

# Scituate Harbor Resiliency Master Plan

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**Community Forum**

October 29<sup>th</sup>, 2019



Scituate Harbor Resiliency Master Plan

*Photo: Town of Scituate Harbormaster*

10/29/19

# Scituate Harbor Resiliency Master Plan

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## Community Forum Agenda

- **Introduction**
- **Understanding the risks and vulnerability**
- **Defining the challenges and opportunities**
- **Action planning: Discussing potential solutions**
- **Next steps**
- **Questions and answers and interactive exercise**



# Introduction

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## Task Force Members

- **Karen Connolly** *Board of Selectmen*
- **Brad Washburn** *Planning & Development Director*
- **Penny Scott-Pipes** *Conservation Commission*
- **John Murphy** *Fire Chief*
- **Kevin Cafferty** *DPW Director*
- **Kyle Boyd** *Coastal Management Director*
- **Louise Pfund** *Chairperson Coastal Advisory Commission*
- **Lynda Ferguson** *Scituate Chamber of Commerce Board Member*
- **Michele Wood** *President of Scituate Harbor Business Association*
- **Rick Murray** *Waterways Commission*
- **Sarah Smith** *Chairperson Scituate Cultural Council*
- **Sue DiPesa** *Chairperson Economic Development Commission*
- **Tom Clark** *Scituate Harbor Cultural District Committee Member*



## MAPC Staff



**Josh Fiala** AICP AIA LEED AP

*Principal Planner*



**Darci Schofield**

*Senior Environmental Planner*



**Christian Brandt**

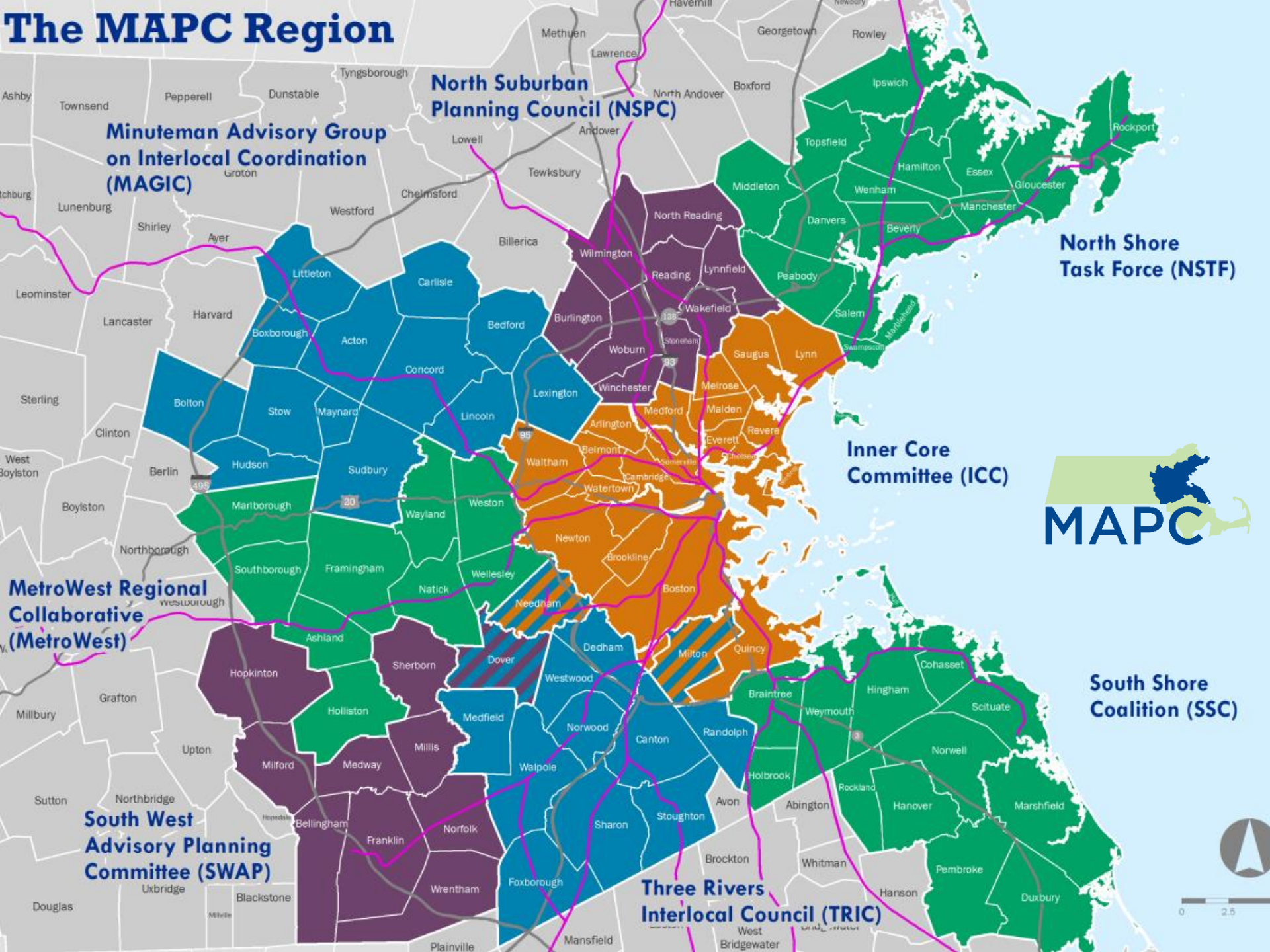
*Community Engagement Coordinator*



## Town of Scituate Staff

- **Kyle Boyd**  
*Coastal Management Officer*
- **Brad Washburn**  
*Director of Planning and Development*

# The MAPC Region



0 2.5



## INTRODUCTION SURVEY

***PLEASE USE YOUR PHONE  
(OR PAPER SURVEY)***

TO CONNECT TO THE INTERACTIVE SURVEY

**TEXT:**

**MAPCMTG**

**TO:**

**22333**

ONCE TO JOIN



*Photo: Scituate Harbor Business Association*



# What is your primary relationship to Scituate Harbor?

Shopper/patron of businesses

Resident (living in the district)

Business/property owner

Water-based business

Water-based recreation

Visitor/land-based recreation

Other





# How often do you visit Scituate Harbor?

At least once per day

At least once per week

At least once per  
month

At least once every  
few months

At least once per year

Less frequently



# What is your main concern for Scituate Harbor?

Businesses, shops,  
restaurants

Things to do, events,  
community gathering

Access to the water

Convenient parking

Flood risks

Other

# Focus Group Meetings

- **(6) Focus Groups** (34 individuals):



Front Street (non-water-based) Businesses



Cultural Institutions, Committees, Organizations



Water-based Businesses



Municipal Staff



Property Owners



Residents



# Study Introduction

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# Study Focus

This study seeks to identify specific and viable long term **solutions to improve the resilience** of Scituate Harbor.

Solutions can only be identified if we **clearly define the problem** we are trying to solve.

This meeting is an initial step in that process of defining the problem and identifying solutions.

# Study Focus

## Scope of Work

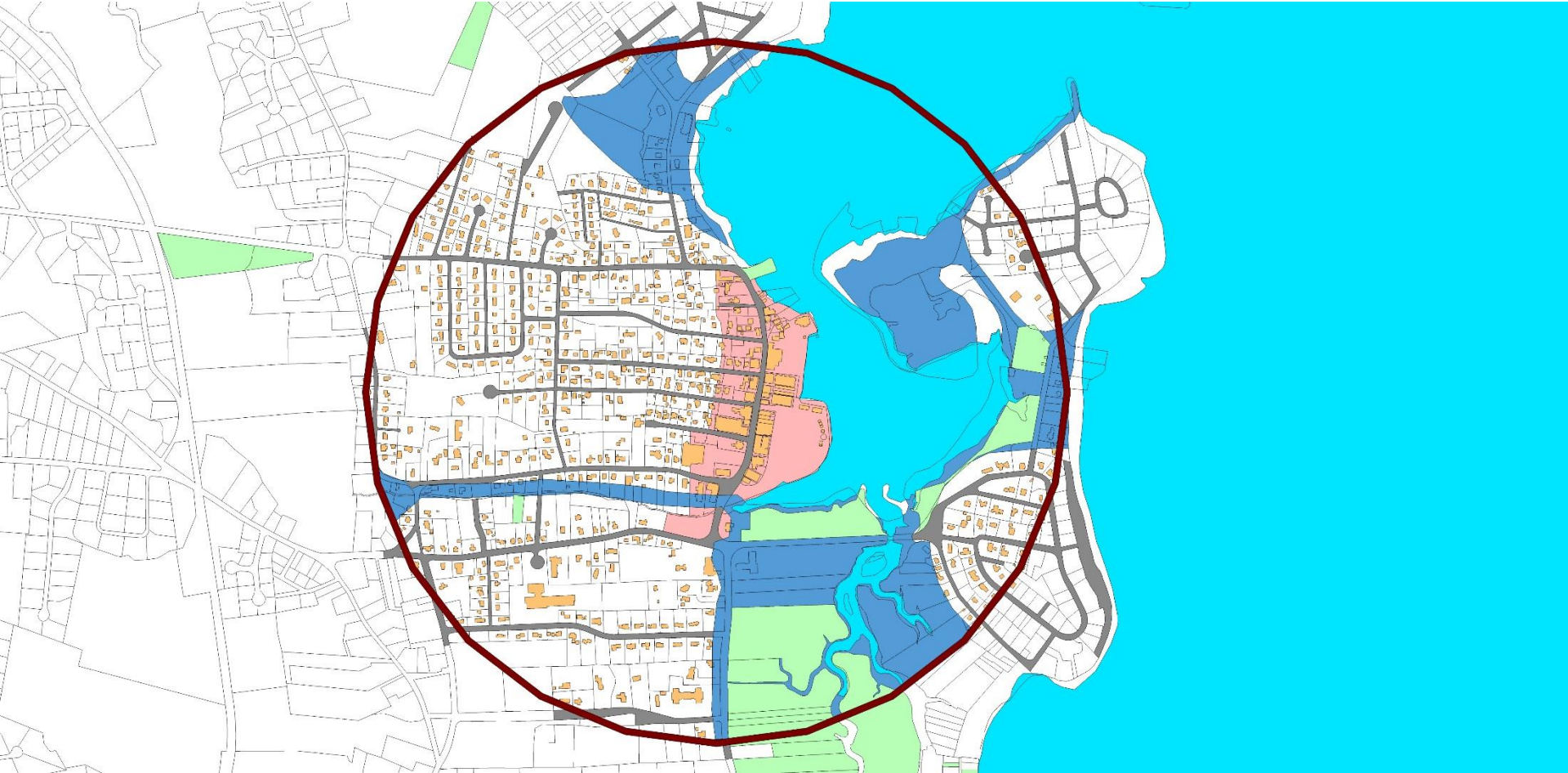
- **Task 1: Existing Conditions**
- **Task 2: Review of Relevant Plans and Policies**
- **Task 3: Resiliency Assessment and Action Plan**
- **Task 4: Vision Plan and Zoning Recommendations**
- **Task 5: Implementation Plan**
- **Task 6: Community Engagement**

## Project Outcomes

- **Detailed Resiliency Assessment**
- **Solutions with Synergy Identified**
- **Project Champions Enabled**
- **Shared Interests Supported**



# Study Area



# Study Area





# Study Area



# Study Schedule

Task	Year/Month													
	2019							2020						
	05	06	07	08	09	10	11	12	01	02	03	04	05	06
<b>Task 1 – Existing Conditions</b>	[Blue Bar]													
<b>Task 2 – Review of Relevant Plans and Policies</b>	[Blue Bar]													
<b>Task 3 – Resiliency Assessment and Action Plan</b>				[Blue Bar]										
<b>Task 4 – Vision Plans/Zoning Amendments</b>					[Blue Bar]									
<b>Task 5 – Implementation Plan</b>											[Blue Bar]			
<b>Task 6 – Community Engagement</b>	<i>Preparation and Engagement</i>				<i>More Public-facing Engagement</i>									
Task Force Meetings		[Icon]			[Icon]		[Icon]	[Icon]		[Icon]	[Icon]	[Icon]	[Icon]	
Community Engagement Meetings				[Icon]		[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]



- Community Meeting and Board/Committee Presentations
- Community Open House
- Focus Group Meetings

# Understanding the risks and vulnerability

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# Risk Assessment

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*Risks (probability and severity)*

**Solutions**

## Environmental

- **Sea level rise/storm surge**
- **Increasing precipitation and severe weather events**
- **Stormwater** (capacity, water quality, damage, green infrastructure, backflow)
- **Extreme heat** (least likely for Scituate Harbor)

## Economic

- **Property impacts**
- **Infrastructure impacts** (including energy, utilities)
- **Climate-driven changes to water-businesses**
- **Weather and climate disruption to businesses**

## Social

- **Disproportionately impacted groups**



# Scituate Harbor Resiliency Current Flood Zones




**FEMA National Flood Hazard Layer**

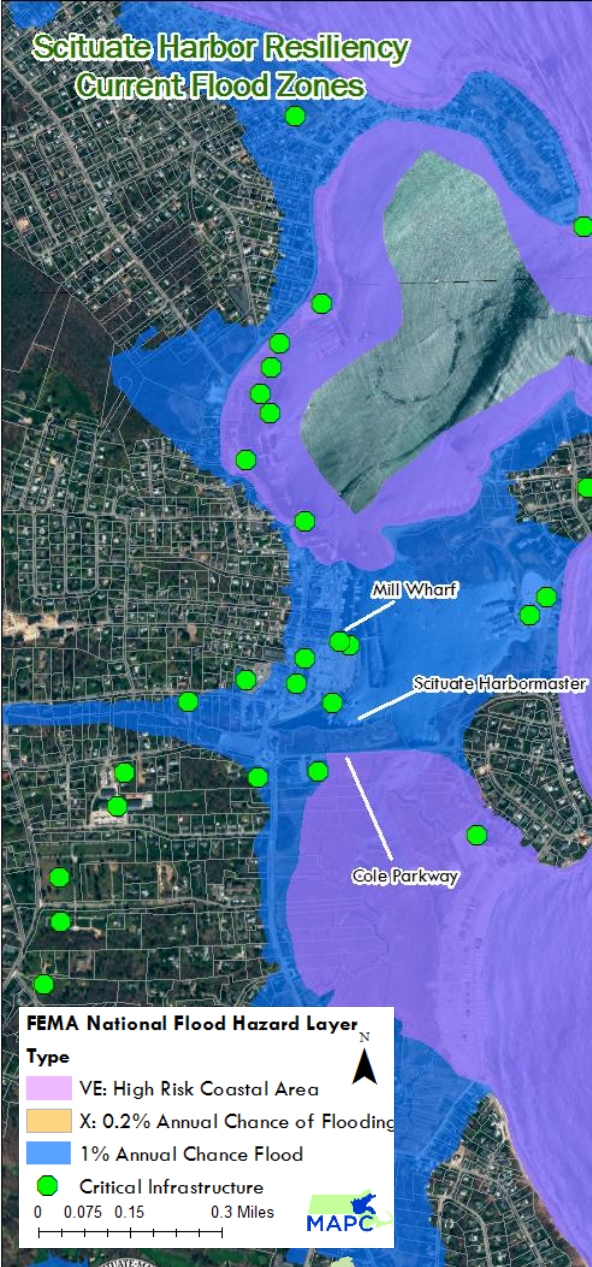
Type

- VE: High Risk Coastal Area
- X: 0.2% Annual Chance of Flooding
- 1% Annual Chance Flood
- Critical Infrastructure

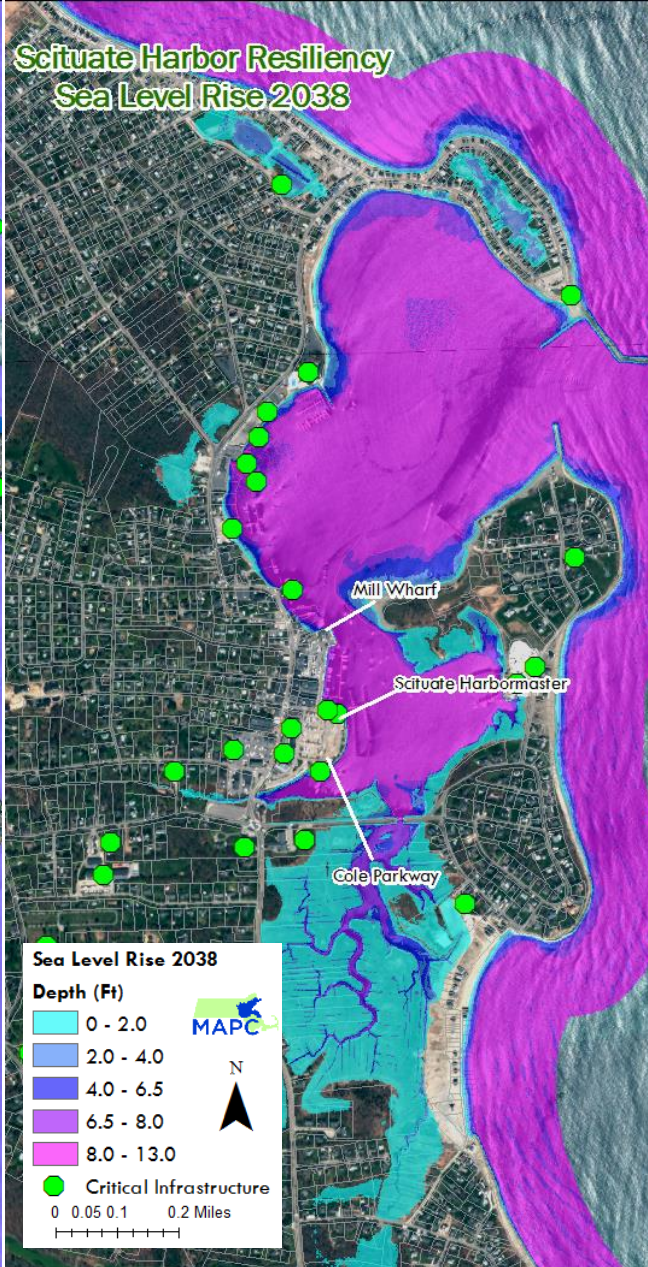
0 0.075 0.15 0.3 Miles



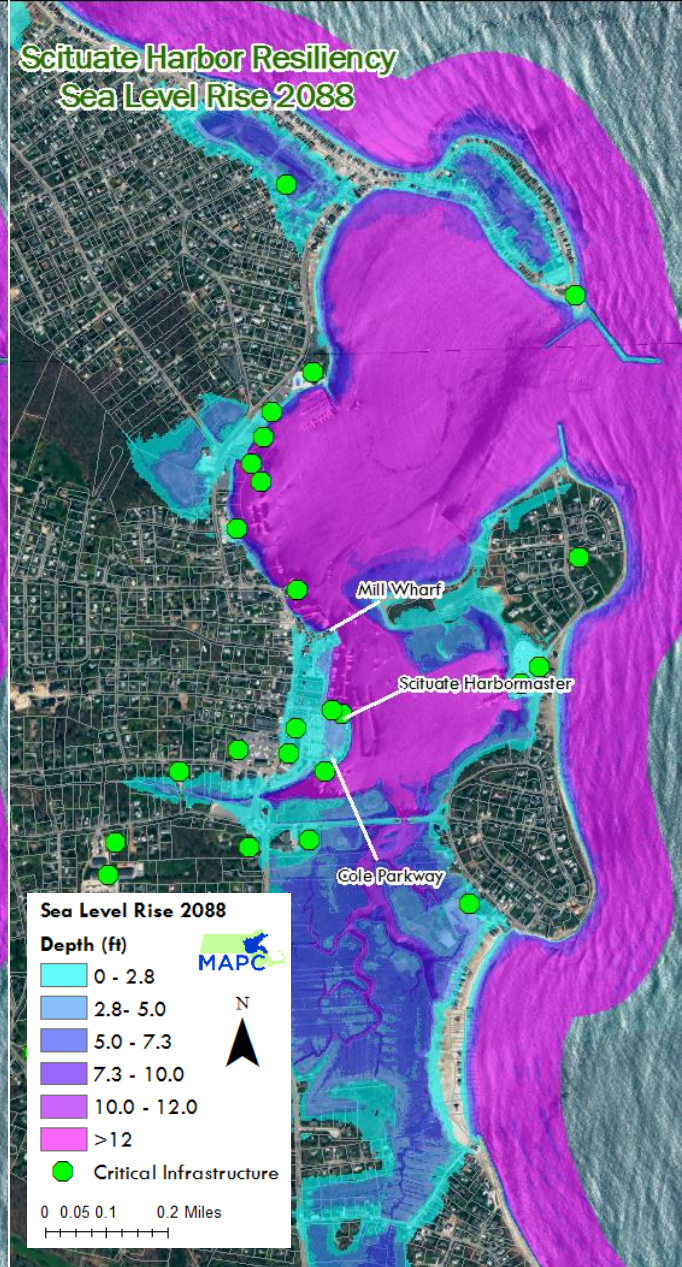
# Scituate Harbor Resiliency Current Flood Zones



# Scituate Harbor Resiliency Sea Level Rise 2038



# Scituate Harbor Resiliency Sea Level Rise 2088



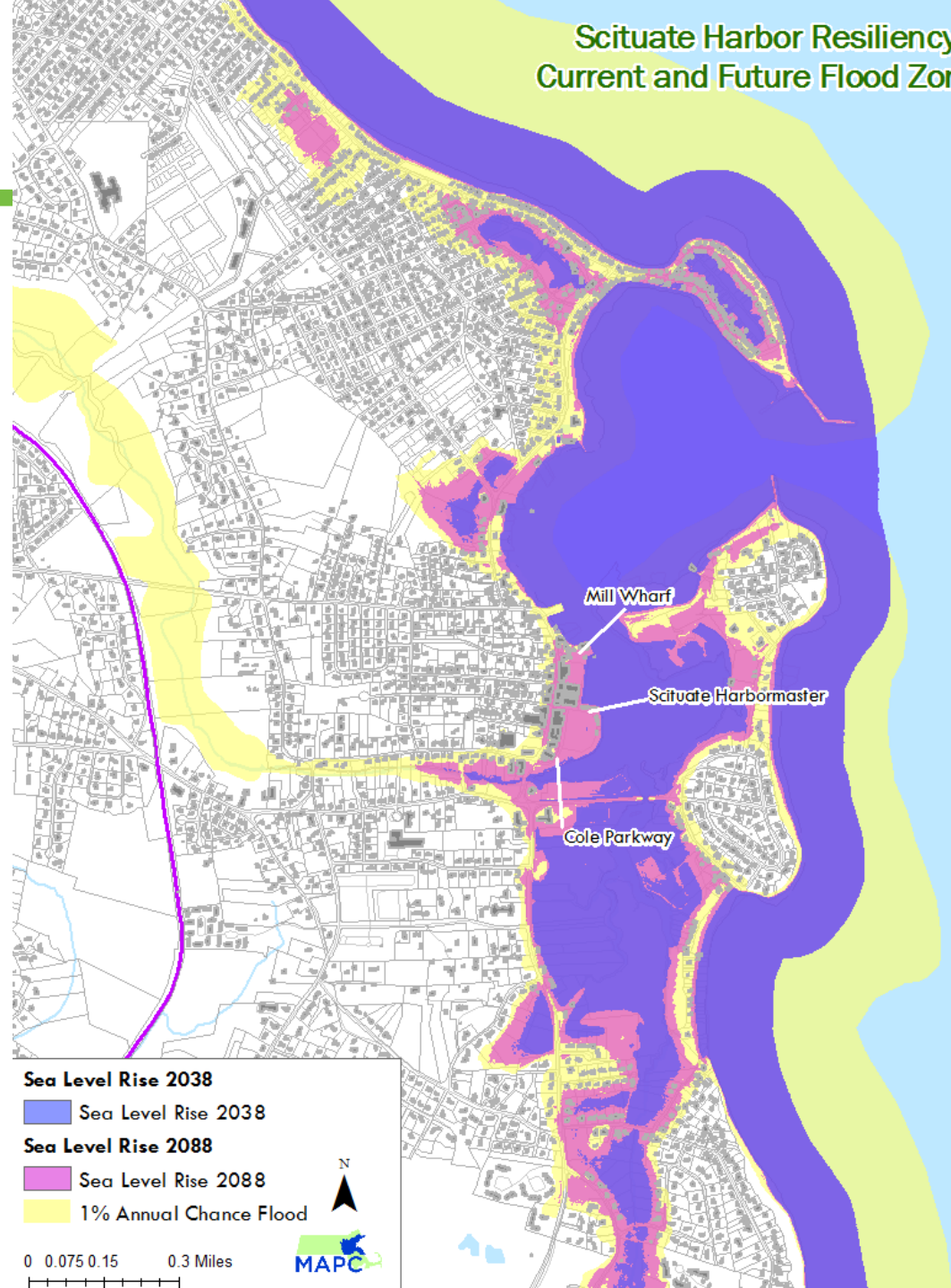
# Comparison

Current

Future (2038)

Future (2088)

Scituate Harbor Resiliency  
Current and Future Flood Zones



Scituate Harbor Resiliency Master Plan

Sea Level Rise 2038

Sea Level Rise 2038



Sea Level Rise 2088

Sea Level Rise 2088

1% Annual Chance Flood

0 0.075 0.15 0.3 Miles





# How urgent do you feel coastal flooding issues are?

Least urgent

Less urgent

Moderately urgent

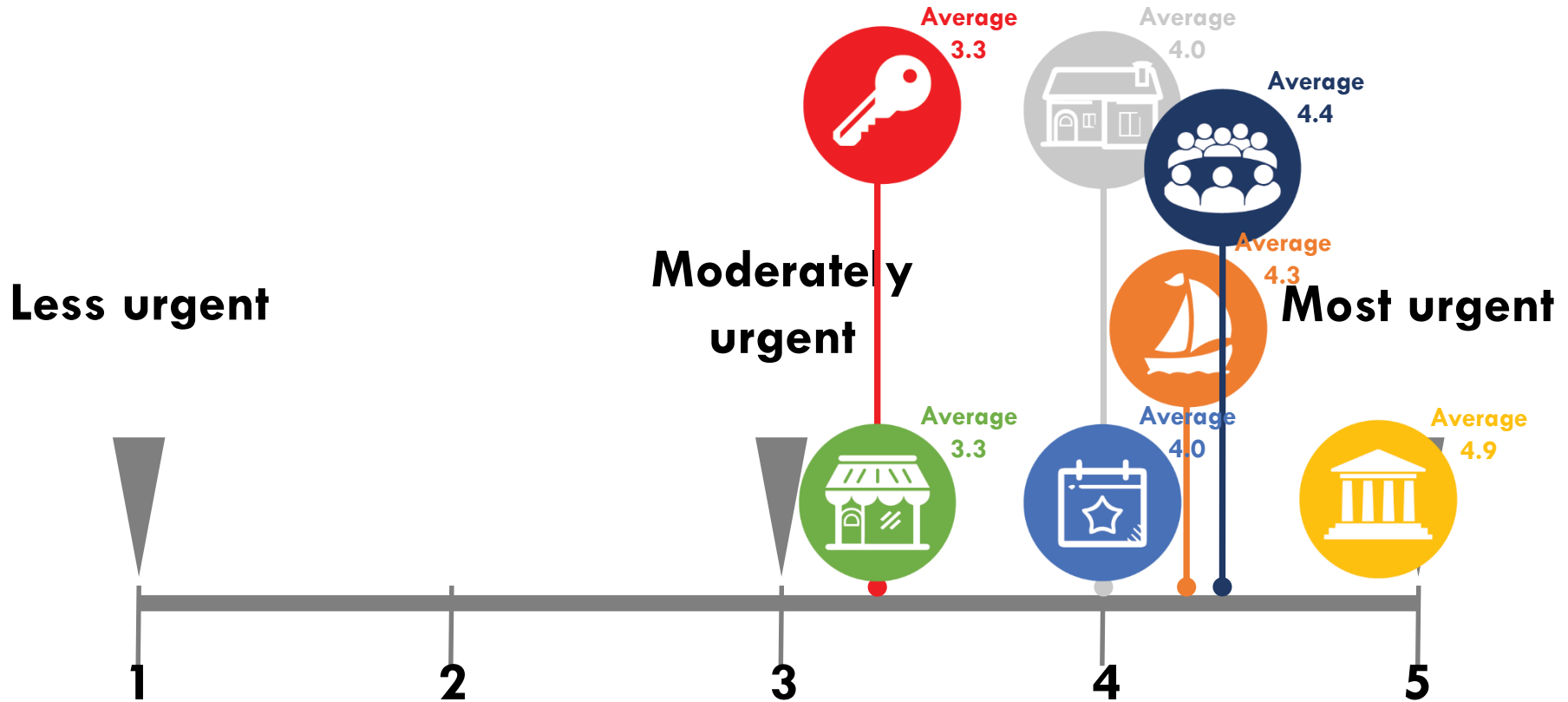
More urgent

Most urgent





# Focus Group Results

## HOW URGENT DO YOU FEEL COASTAL FLOODING ISSUES ARE?



-  Front Street (non-water-based) Businesses
-  Cultural Institutions, Committees, Organizations
-  Water-based Businesses
-  Municipal Staff and Leadership
-  Property Owners
-  Residents
-  Task Force



# What should be done collectively to protect Scituate Harbor?

Very little, it is a lost cause

Minimal improvements

Strategic investments, that have other benefits

Substantial improvements

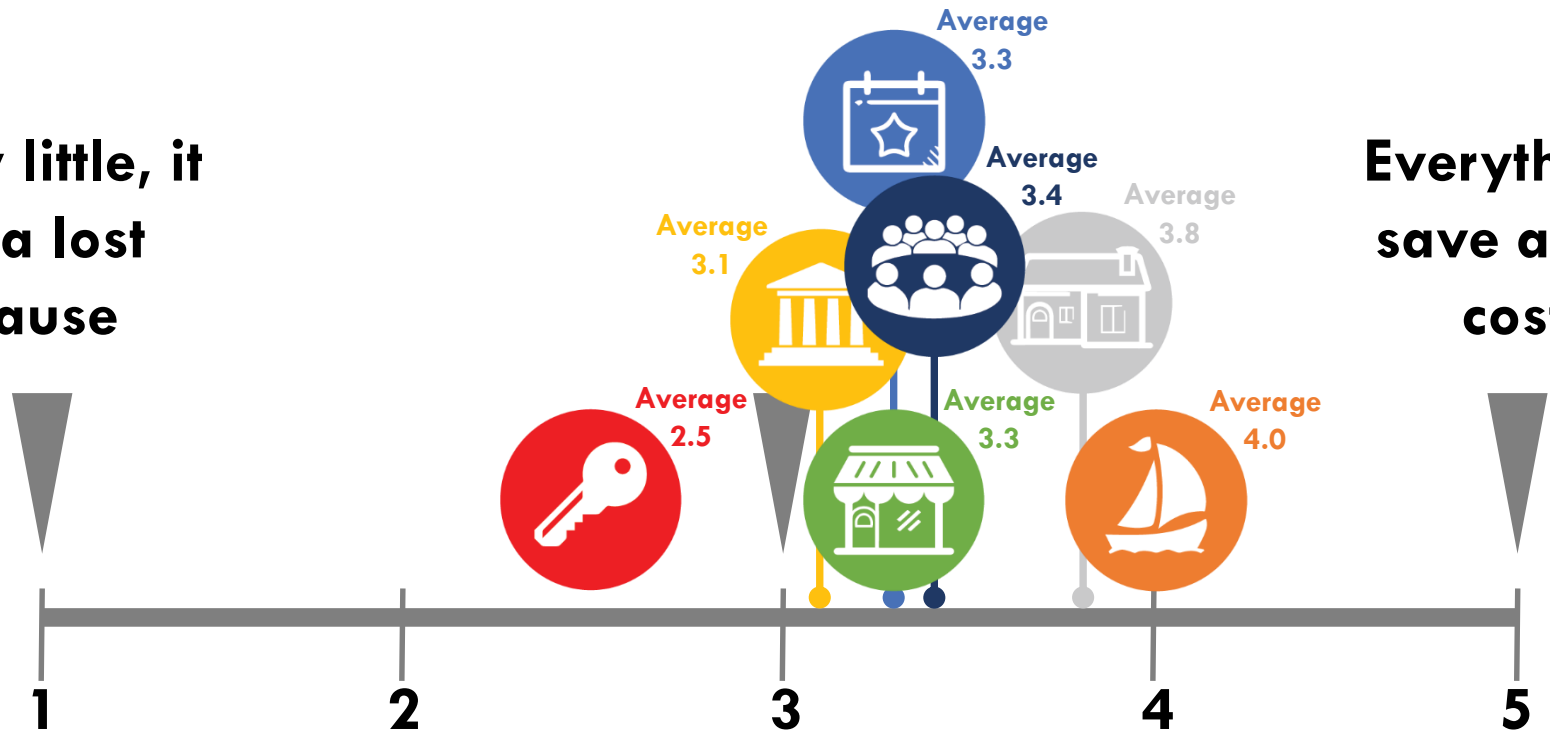
Everything, save at all cost

# Focus Group Results

## WHAT SHOULD BE DONE COLLECTIVELY TO PROTECT SCITUATE HARBOR?

Very little, it is a lost cause

Everything, save at all cost



-  Front Street (non-water-based) Businesses
-  Cultural Institutions, Committees, Organizations
-  Water-based Businesses
-  Municipal Staff and Leadership
-  Property Owners
-  Residents
-  Task Force



# What would you do to protect Scituate Harbor?

Will not spend my  
money

Would make minor  
investments

Continuously evaluate  
cost and benefit

Would make substantial  
investments

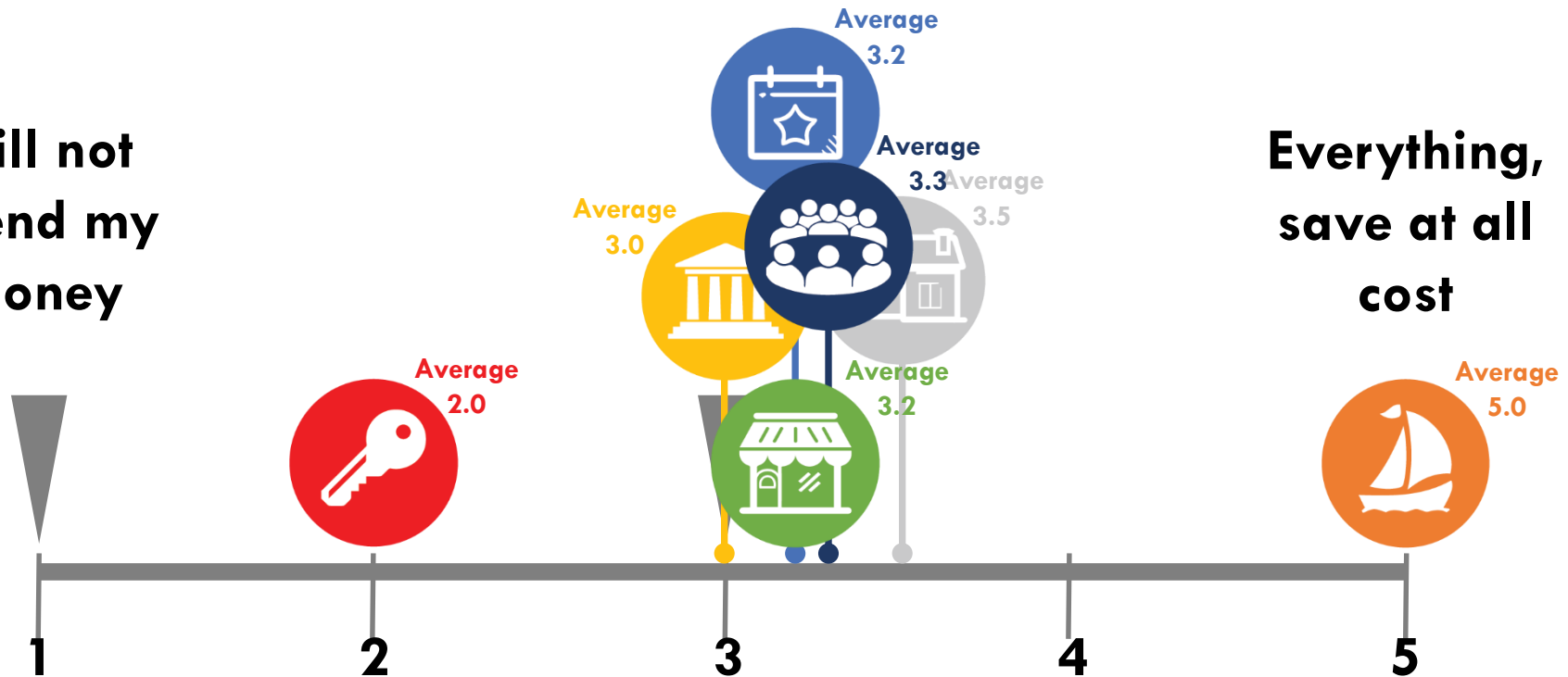
Everything, save at all  
cost

# Focus Group Results

## WHAT WOULD YOU DO TO PROTECT SCITUATE HARBOR?

Will not  
spend my  
money

Everything,  
save at all  
cost



Front Street (non-water-based) Businesses

Water-based Businesses

Property Owners

Task Force



Cultural Institutions, Committees, Organizations

Municipal Staff and Leadership

Residents

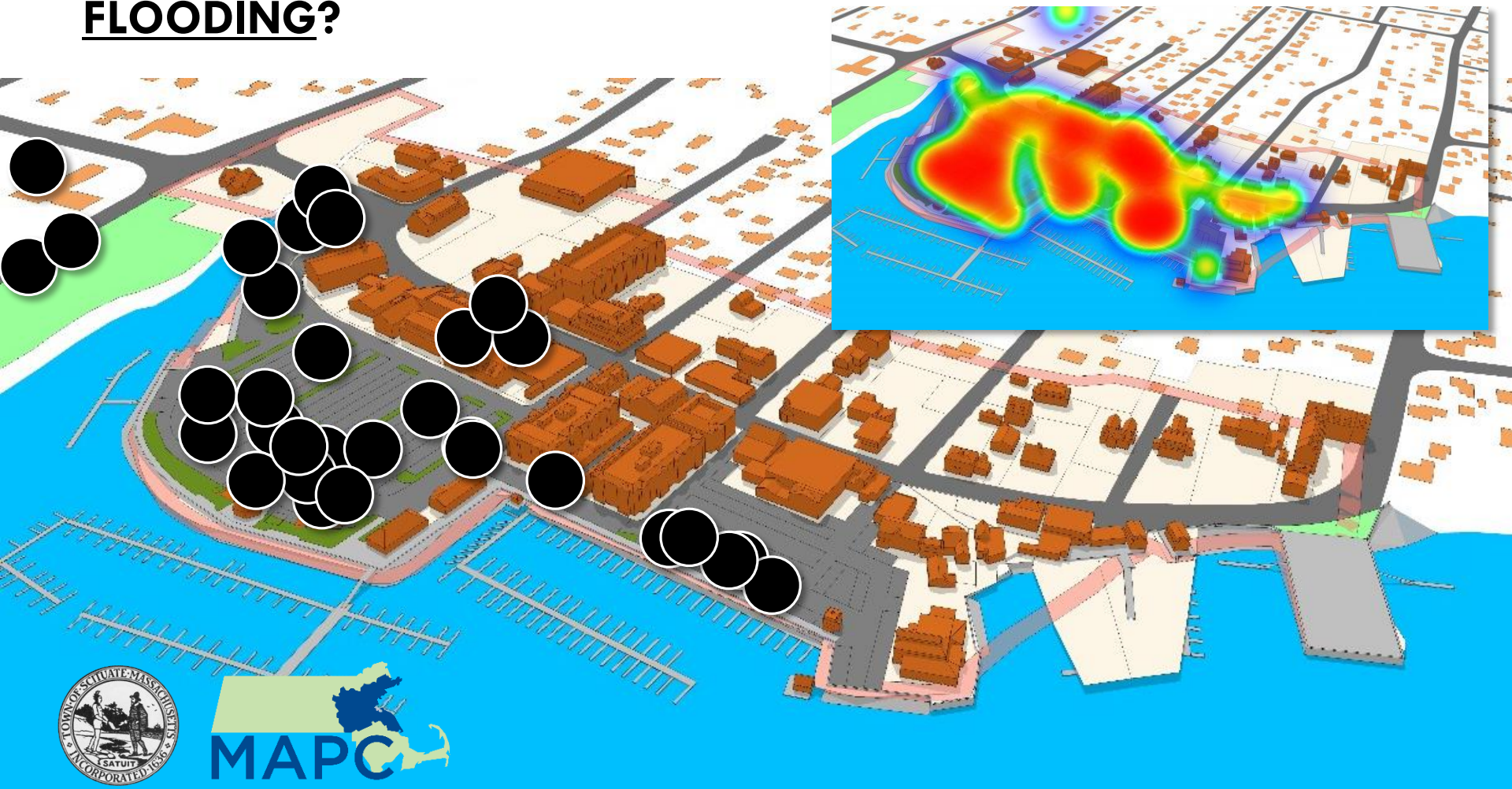
# Focus Group Results

## WHERE HAVE YOU SEEN THE BIGGEST ISSUES WITH FREQUENT FLOODING?



# Focus Group Results

## WHERE HAVE YOU SEEN THE BIGGEST ISSUES WITH FREQUENT FLOODING?



# Defining the challenges and opportunities





# Previous Studies

- *Building a Resilient Scituate: Climate Vulnerability and Action Plan, 2018*
- *Scituate Zoning Bylaw Audit, 2017*
- *South Shore Chamber of Commerce Regional Development Strategy, 2017*
- *Harbor Parking Management Plan, 2016*
- *Scituate Natural Hazard Mitigation Plan, 2016*
- *Scituate Harbor Cultural District, 2015*
- *Scituate Housing Production Plan, 2015*
- *Harbor Parking Study, 2015*
- *Water Conservation Plan, 2015*
- *Scituate Economic Development Plan, 2014*
- *Harbor Planning and Streetscape Plan, 2003*
- *Scituate Wastewater Master Plan*
- *Zoning Regulations, floodplain regulations, and other land use codes*
- *Wayfinding Program, on-going*
- *Civic organization initiatives (Community Preservation Act, Affordable Housing Trust, Cultural District, SCC, HBA, etc.)*

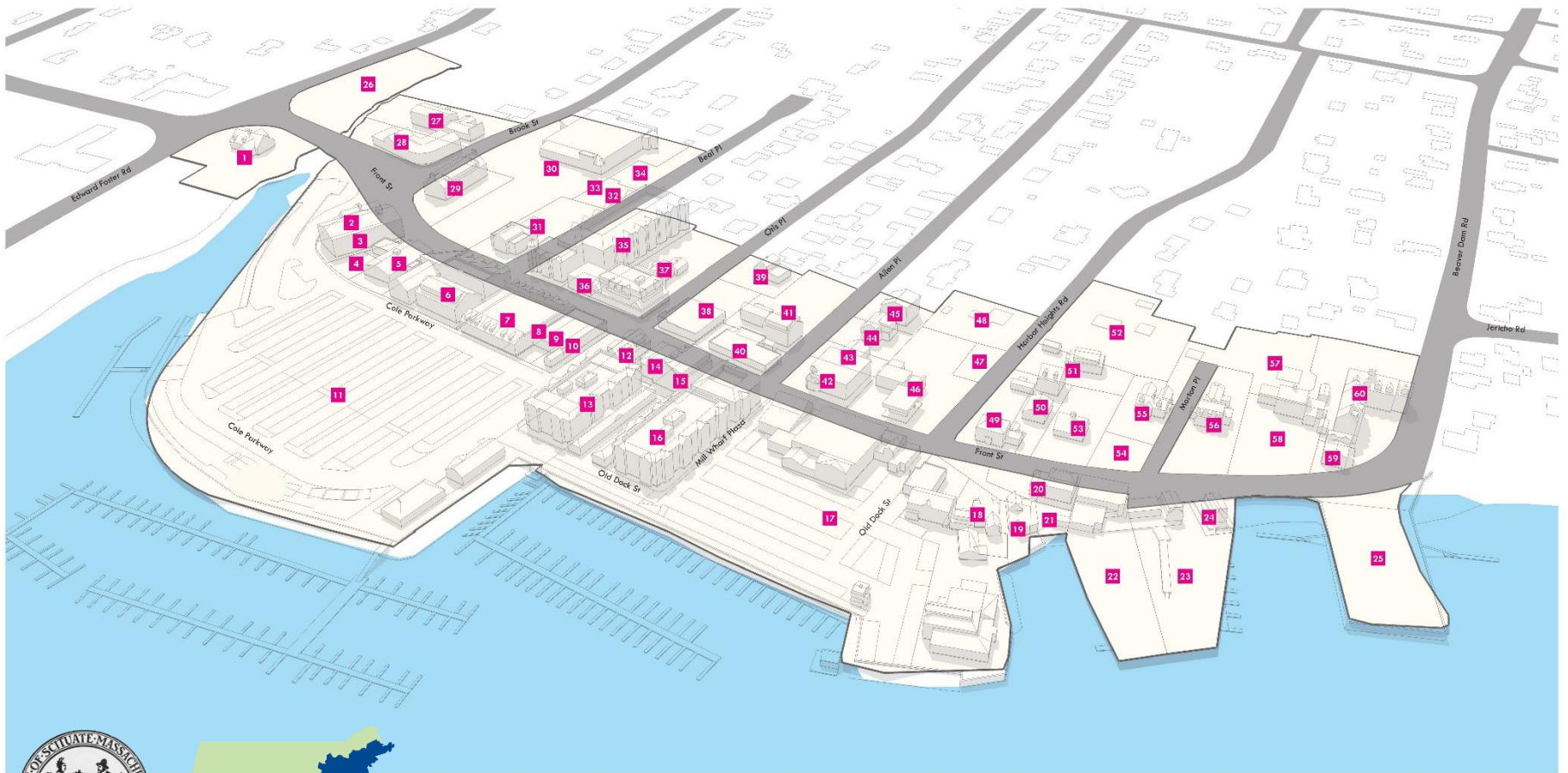
# Case Studies

- *Boston Climate Ready Neighborhood Planning: East Boston and others*
- *NYC Planning Resilient Neighborhoods: Sheepshead Bay and others*
- *Estes Park Downtown Plan: A Vision for a Resilient Future*



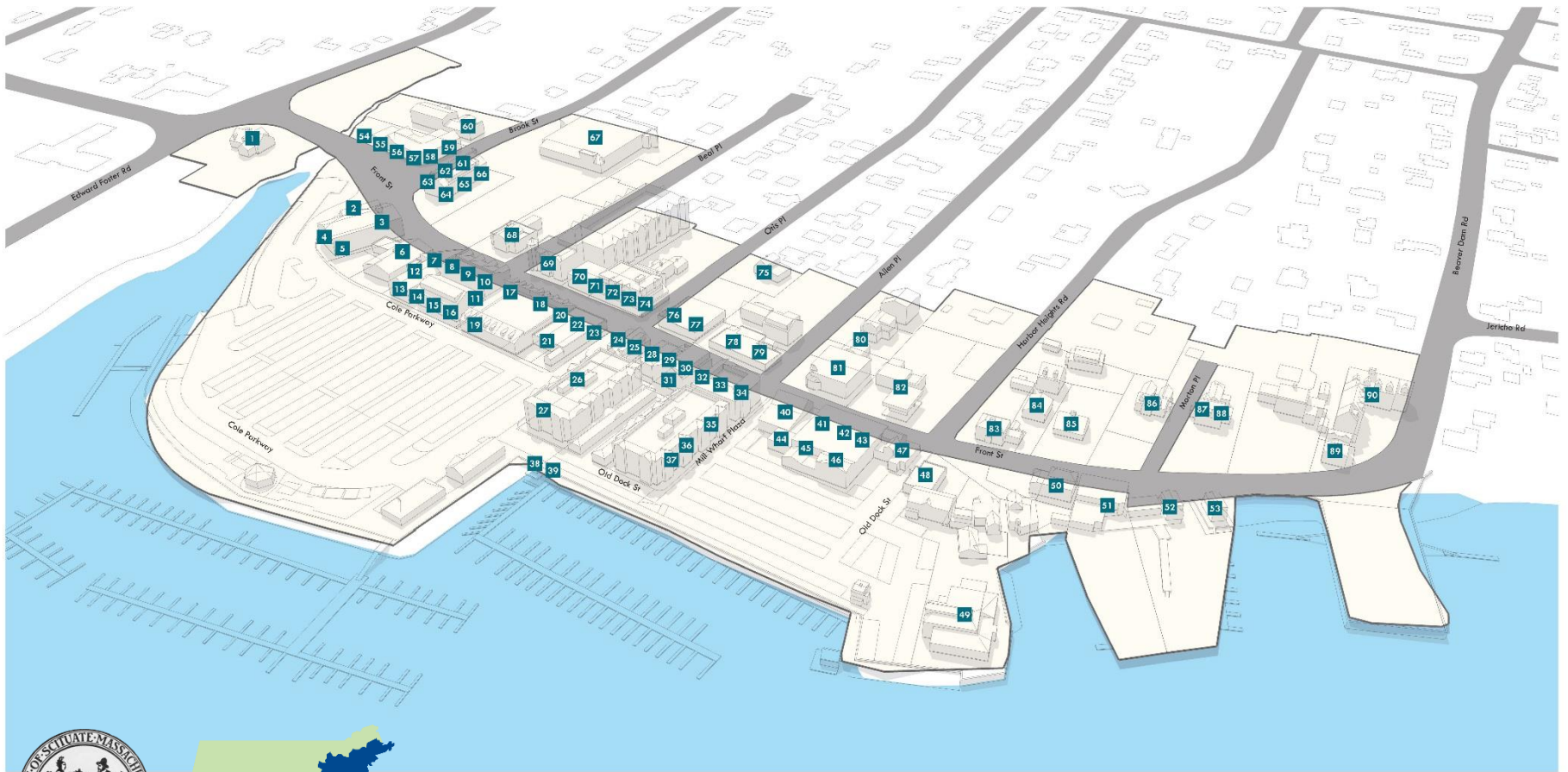
# Existing Challenges and Opportunities

## Property Inventory and Map



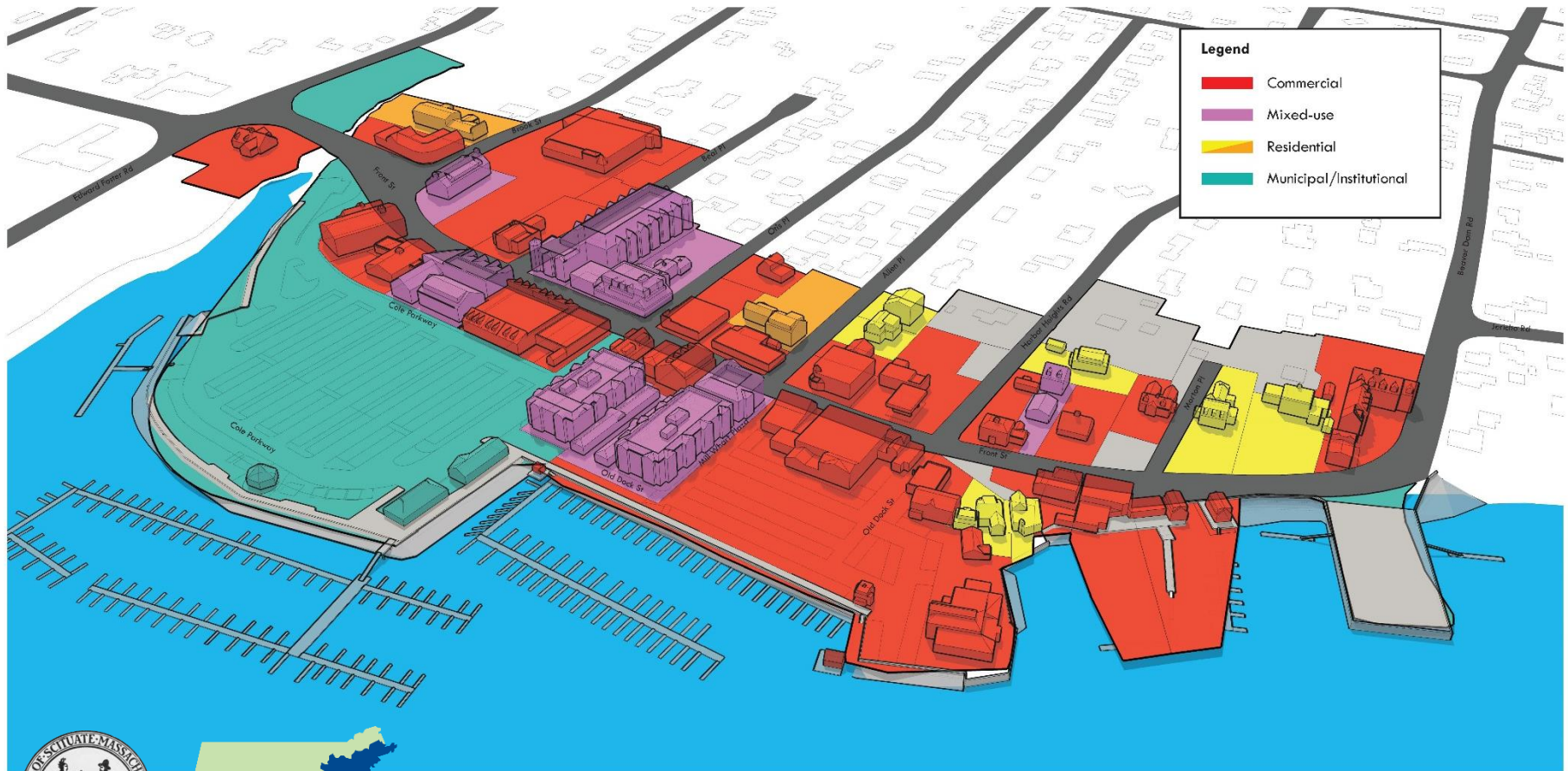
# Existing Challenges and Opportunities

## Business Inventory and Map



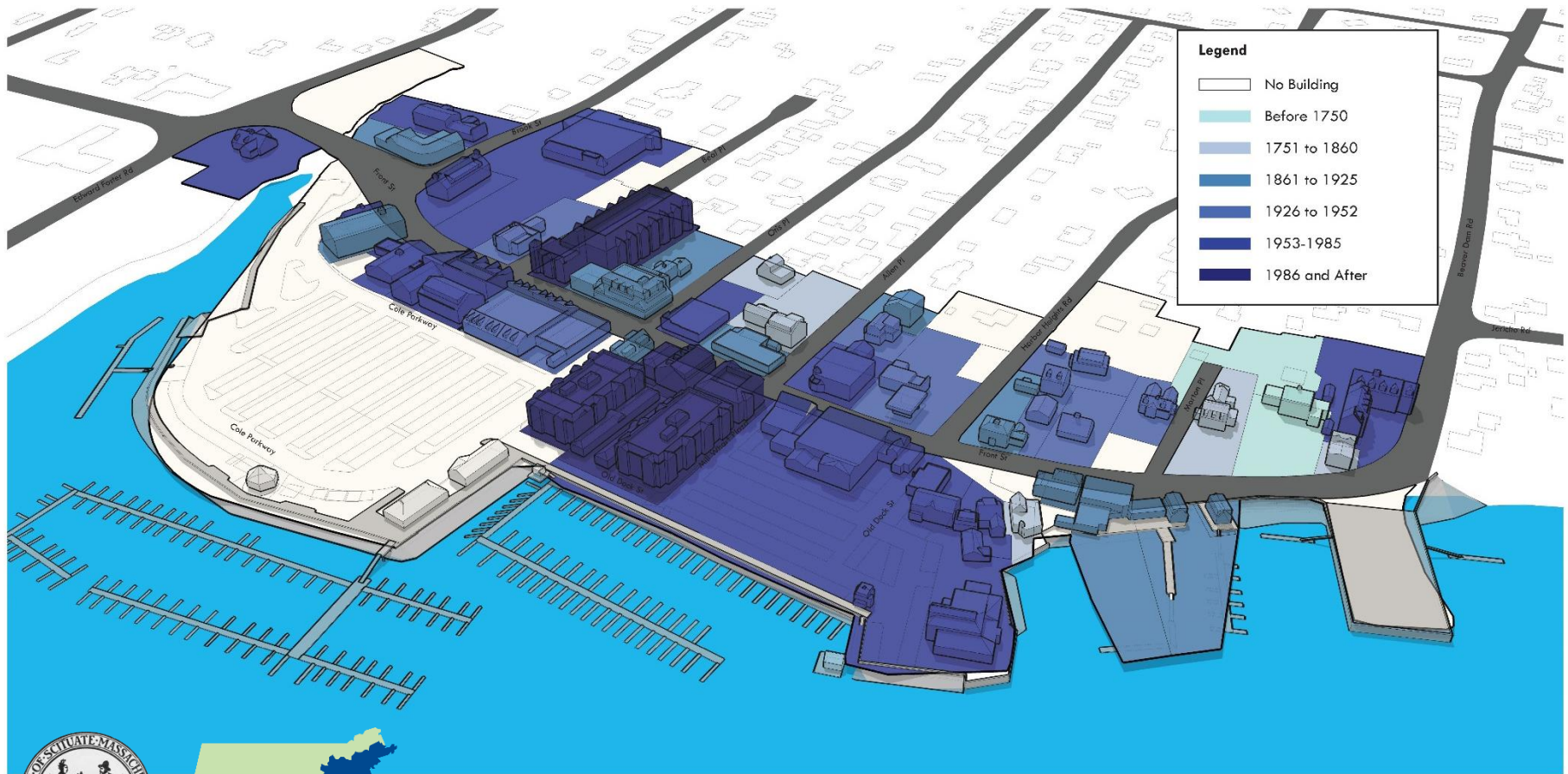
# Existing Challenges and Opportunities

## Existing Conditions Mapping – Land Use



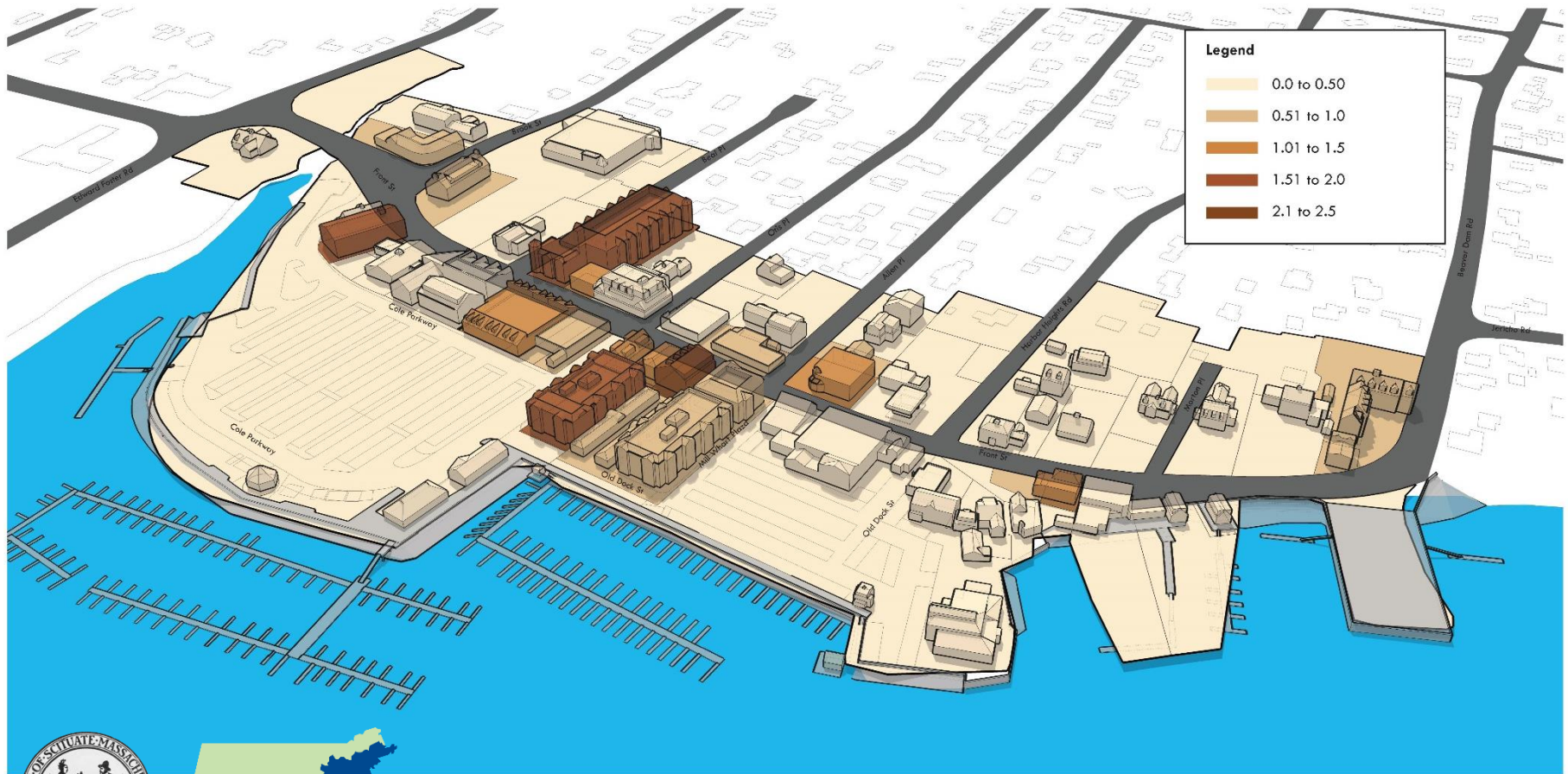
# Existing Challenges and Opportunities

## Existing Conditions Mapping – Age of Structures



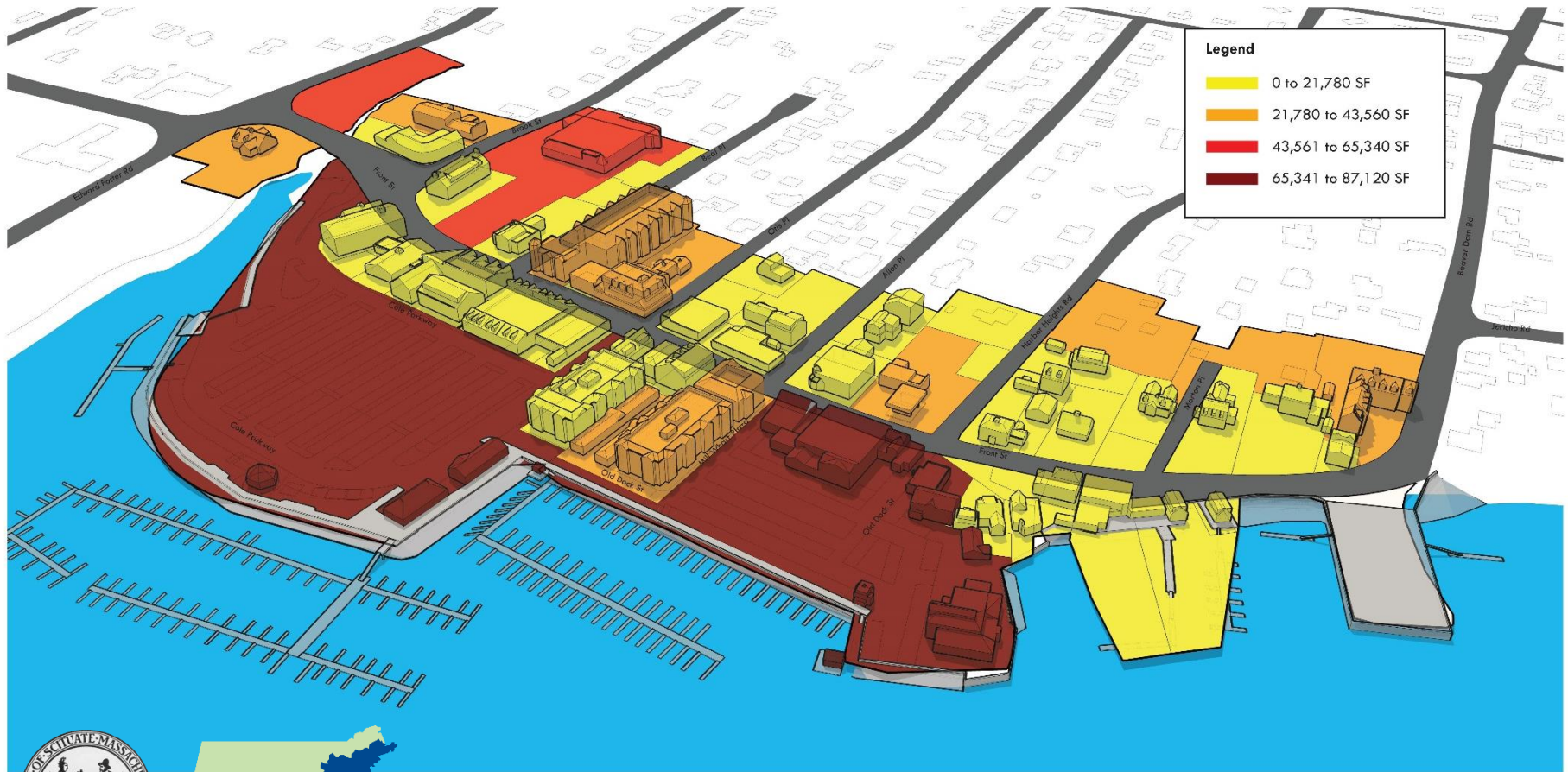
# Existing Challenges and Opportunities

## Existing Conditions Mapping – Density of Structures (FAR)



# Existing Challenges and Opportunities

## Existing Conditions Mapping – Size of Properties







# What is not working well today in Scituate Harbor?





# What is working well today in Scituate Harbor?



# What is most important for the future of Scituate Harbor?

# Action planning: Discussing potential solutions

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# Case Studies

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New Bedford

- ***Hurricane Protection Barrier***



Image credit: US Army Corps of Engineers



# Case Studies

New Bedford

- *Hurricane Protection Barrier*



Image credit: Jesse Costa/WBUR



# Case Studies

New Bedford

- *Hurricane Protection Barrier*

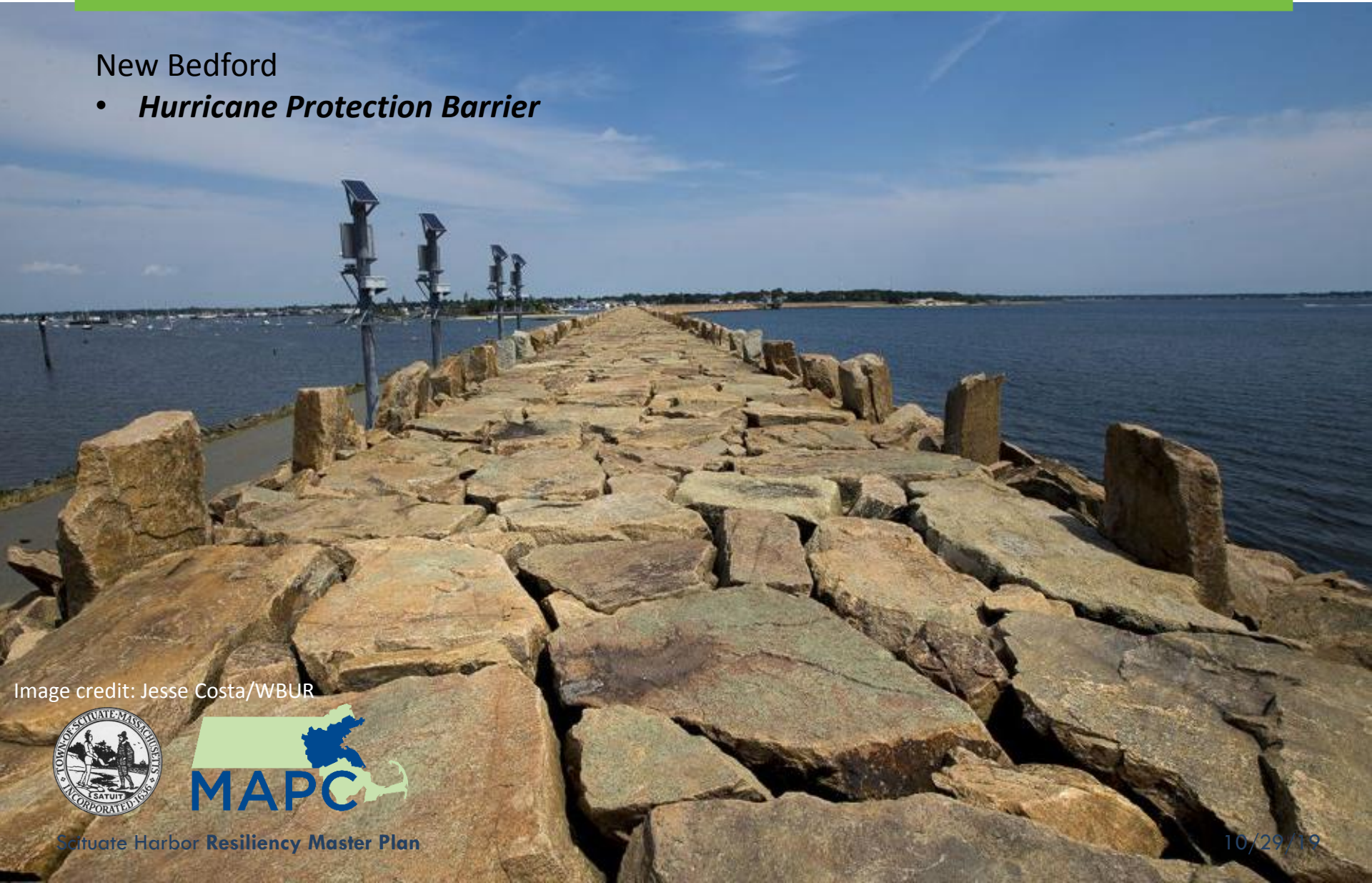


Image credit: Jesse Costa/WBUR



# Case Studies

Hingham

- *Hingham Harbor Resilience Investments*



# Case Studies

Hingham

• *Hingham Harbor Resilience Investments*





# Case Studies

Hingham

*Hingham Harbor Resilience Investments*



# Case Studies

Hingham

- *Hingham Harbor Resilience Investments*



# Case Studies

Netherlands

- *River Park Nijmegen on the Waal*



Image credit: RWS



Image credit: Johan Roerink



# Case Studies

Netherlands

- *River Park Nijmegen on the Waal*

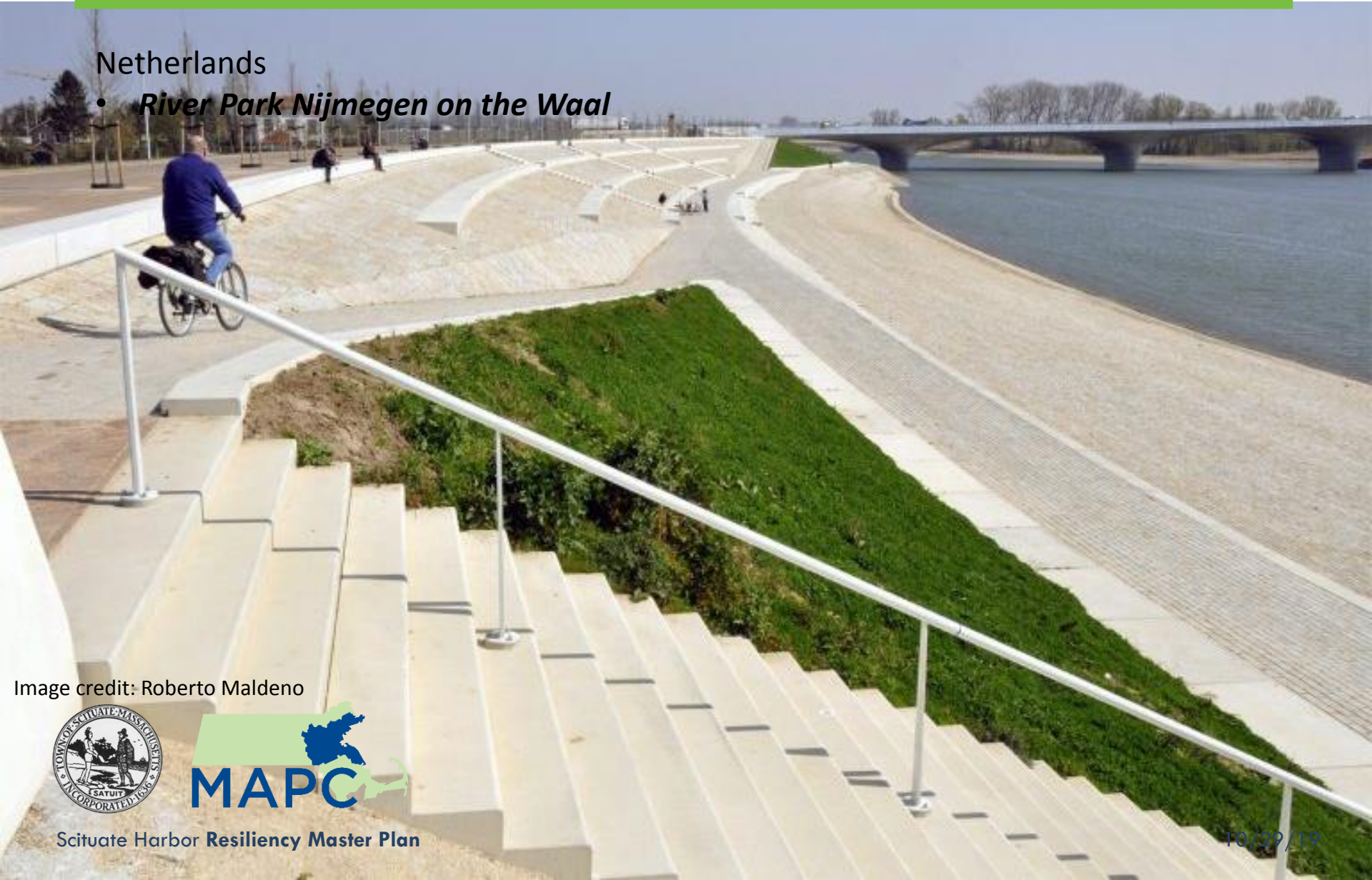


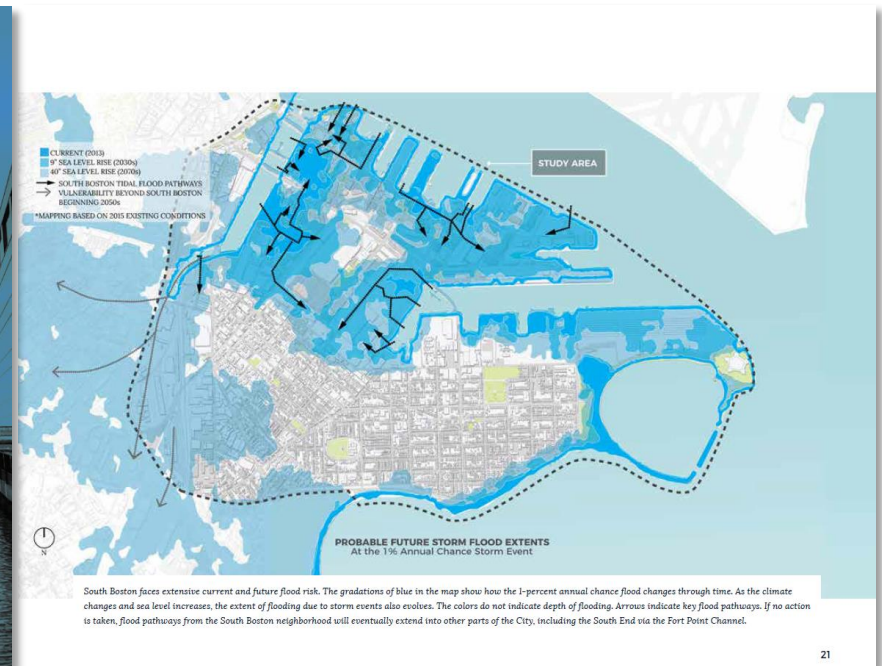
Image credit: Roberto Maldeno



# Case Studies

## Boston

- ***Climate Ready Boston*** and neighborhood resilience plans
- ***Coastal Resilience Solutions for South Boston*** Final Report October 2018



# Case Studies

## Boston


- **Climate Ready Boston** and neighborhood resilience plans
- **Coastal Resilience Solutions for South Boston** Final Report October 2018

"The 2002 Fort Point Channel Watersheet Activation Plan looks at ways to activate the calm water along the channel through public realm improvements and the development of water dependent uses. The 100 Acres Master Plan provides a framework for transforming the existing surface parking lots around the Proctor & Gamble/Gillette ("PG&G") plant, the USPS facility, and Fort Point historic structures to a vibrant 24-hour, mixed-use neighborhood anchored by over 11 acres of new public open space and almost 5.9 million square feet of development."

- Boston Planning and Development Agency (BPDA) website

**PLANNED PROJECTS**

**General Electric To Build Headquarters On Fort Point Channel**




**Future GE Headquarters**

General Electric will build its new Boston headquarters on land along Fort Point Channel in South Boston that GE bought from Proctor & Gamble Co.

GE announced Monday it will build its headquarters on Fort Point in Fort Ware, across the channel from the U.S. Post Office at South Boston. The new office will be built on a 10-acre site that GE bought from Proctor & Gamble Co. in 2008.

The new GE complex, which GE expects about 200 people to work, will consist of one connected and one freestanding building, which GE expects to be completed in 2015. GE said it plans to spend \$200 million on the project, which includes renovating existing buildings, parking, transit, utilities, energy and the waterfront.


**'Martin's Park' breaks ground this week, honoring youngest marathon bombing victim**



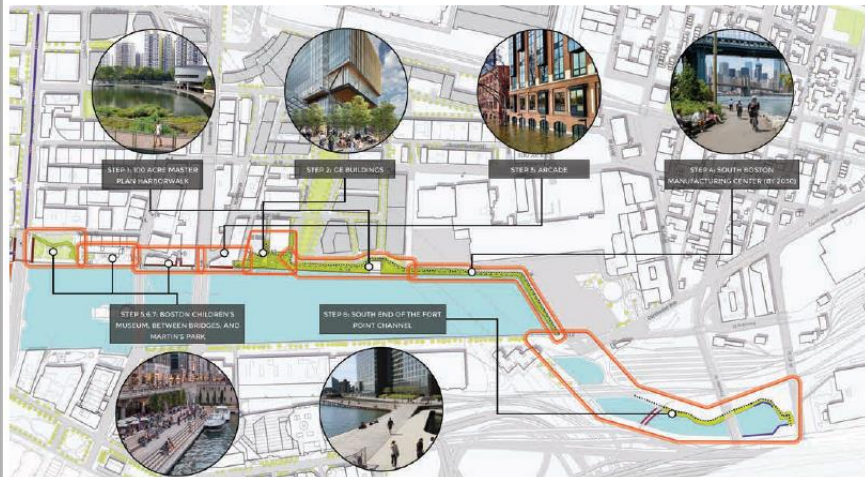
Rendering of Martin's Park. (Courtesy Boston.gov)

The open space adjacent to the Boston Children's Museum is currently being transformed into Martin's Park, an accessible park and playground. The design of Martin's Park was reviewed as part of Coastal Resilience Strategies for South Boston, and the process recommended flood mitigation improvements to the design.

Areas along the Fort Point Channel's east shoreline are undergoing transformative redevelopment. General Electric is planning the new GE Headquarters Facility, known as Innovation Point.



**GE Innovation Point Development site**



**Design concept prototypes for flood protection alignment option at the mouth of the Fort Point Channel**

**NEAR-TERM COASTAL RESILIENCE SOLUTION STEPS**

**STEP 1. 100 Acres Master Plan Harborwalk:**  
Create a 40-50 foot wide Harborwalk park with an earthen berm land side of the Harborwalk.

**STEP 2. GE Building:**  
Use new development to provide continuous line of protection along the waterfront.

**STEP 3. Building/Arcade as Seawall:**  
Assess the structural soundness of the existing buildings to withstand flooding.



# Case Studies

## Boston, Martin Richard Park



*Before*

*After resilience and park improvements*



# Case Studies

Boston, Martin Richard Park



Image credit: Boston Globe





# Case Studies

Boston, Martin Richard Park

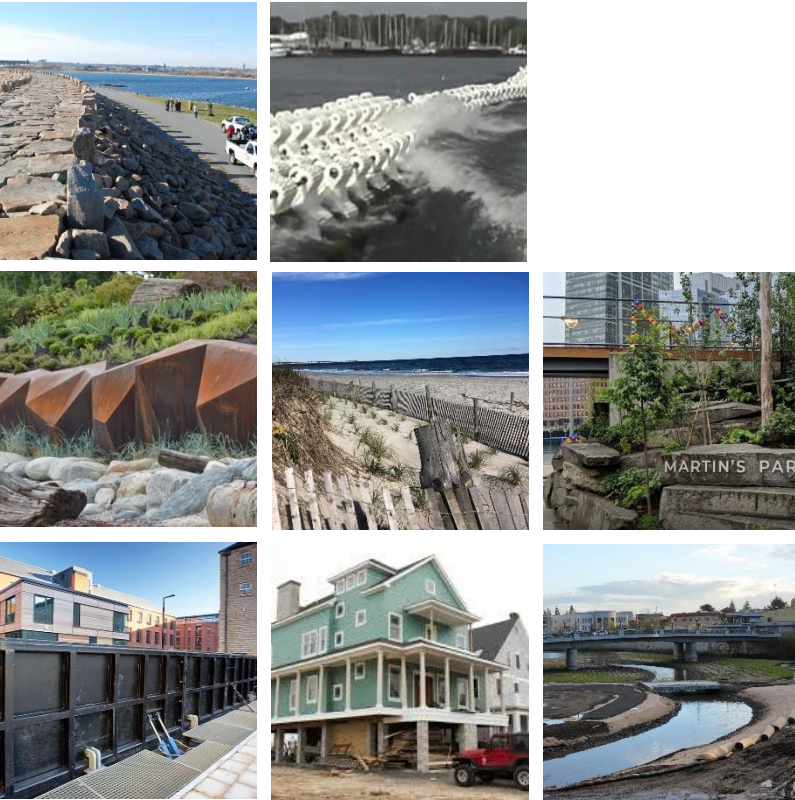


Image credit: Boston Herald



# Scituate Harbor Resiliency Master Plan









## Potential Solutions Inventory



- **Open Ocean Adaptation**
  - Fortification (*outer/inner harbor barrier, hurricane gate*)
  - Attenuation (*wave attenuation/dampers*)
- **Coastal/Harbor Adaptation**
  - Fortification (*sea wall, boulders, sheet piling*)
  - Attenuation (*beach nourishment, living shorelines, oyster reefs, break waters*)
  - Elevated (*earthen berms, elevated harbor walk*)
- **Land Adaptation**
  - Fortification (*flood proofing buildings/infrastructure*)
  - Elevated (*elevate buildings/infrastructure, utilities*)
  - Accommodate (*floodable buildings/infrastructure, flood diversions*)
  - Migrate (*buy-out, relocation, zoning changes*)



# Potential solutions matrix:

Category	Potential Investment \$ \$ \$ \$	Potential Environmental Impact 🌿 🌿 🌿 🌿	Public or Private Funding	Example
<b>Open Ocean Adaptation</b>				
<b>A Fortification</b> (outer/inner harbor barrier, hurricane gate)	\$ \$ \$ \$	🌿 🌿 🌿	Public or Private Funding	
<b>B Attenuation</b> (wave attenuation/dampers)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Public or Private Funding	
<b>Coastal/Harbor Adaptation</b>				
<b>C Fortification</b> (sea wall, boulders, sheet piling)	\$ \$ \$ \$	🌿 🌿 🌿	Public or Private Funding	
<b>D Attenuation</b> (beach nourishment, living shorelines, oyster reefs, break waters)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Public or Private Funding	
<b>E Elevated</b> (earthen berms, elevated harborwalk)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Public or Private Funding	
<b>Land Adaptation</b>				
<b>F Fortification</b> (flood proofing buildings/infrastructure)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Private Funding	
<b>G Elevated</b> (elevate buildings/infrastructure, utilities)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Public or Private Funding	
<b>H Accommodate</b> (floodable buildings/infrastructure, flood diversions)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Public or Private Funding	
<b>I Migrate</b> (buy-out, relocation, zoning changes)	\$ \$ \$ \$	🌿 🌿 🌿 🌿	Public Funding	

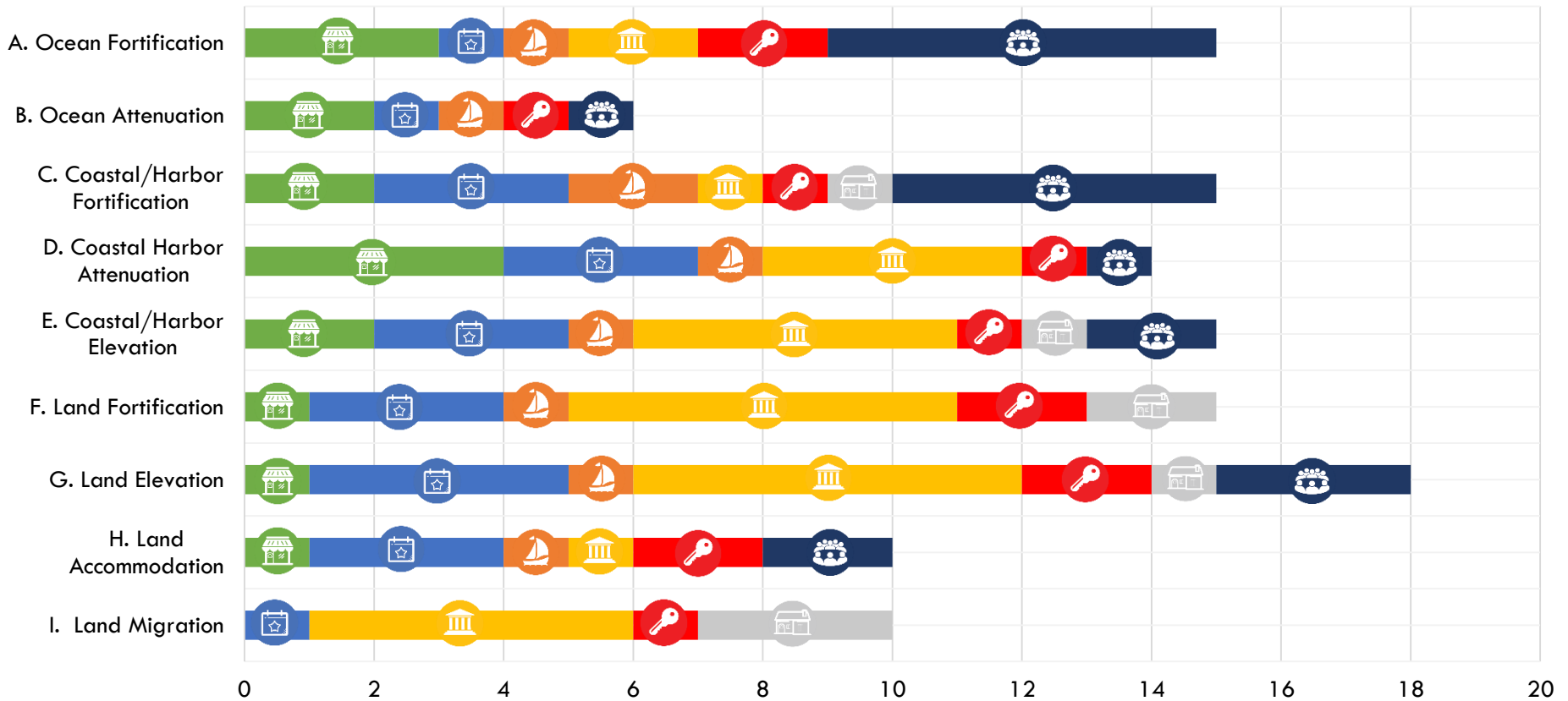


# Potential solutions diagram:



# Focus Group Results

Which types of solutions do you think are most appropriate?



-  Front Street (non-water-based) Businesses
-  Cultural Institutions, Committees, Organizations
-  Water-based Businesses
-  Municipal Staff and Leadership
-  Property Owners
-  Residents
-  Task Force

# Open Discussion and Next Steps

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# Scituate Harbor Resiliency Master Plan

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## Next Steps and how to stay involved

- **Task Force Meeting (November)**
- **Community Open House (December)**
- **Project Website:** <https://www.mapc.org/resource-library/resilient-scituate-harbor/>



# Project website

<https://www.mapc.org/resource-library/resilient-scituate-harbor/>

**MAPC**  
METROPOLITAN AREA PLANNING COUNCIL

LEARN OUR WORK GET INVOLVED ABOUT MAPC

JOB S CALENDAR PRESS ROOM BLOG

SEARCH Search GO

## Scituate Harbor

### Sustainability & Resiliency Master Plan

UPDATES ABOUT PROJECT TIMELINE DOCUMENTS EVENTS

## UPDATES

### UPCOMING EVENTS

**Focus Groups**  
Tuesday, August 20 and Wednesday, August 21  
Maritime Center




**Questions? Contact:**  
Josh Fiala, Principal Planner  
[jfiala@mapc.org](mailto:jfiala@mapc.org)  
617-933-0760



# Next Steps

Task	Year/Month													
	2019							2020						
	05	06	07	08	09	10	11	12	01	02	03	04	05	06
<b>Task 1 – Existing Conditions</b>	[Blue Bar]													
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Community Engagement Meetings				[Icon]		[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]



-  Community Meeting and Board/Committee Presentations
-  Community Open House
-  Focus Group Meetings

# Open House Exercise

Scituate Harbor Resiliency Master Plan

**Help define appropriate resilience solutions for Scituate Harbor**

Follow the 3 steps to share your priorities:

**Step 1** Review potential resilience strategies below and pick your top (3) strategies for improved resilience in Scituate Harbor

**Step 2** Pick the (3) pins that correspond to the color of your top (3) strategies

**Potential Solutions Inventory**

Category	Strategy	Description	Example	Pin Color
Open Ocean Adaptation	<b>A</b> Fertilization	A major man-made problem that causes a fertilization or loading of a fertilizer to the water that causes excessive algae and sea urchins.	A water pump (artificial barrier) or waterways gate such as the Little Back Bay Hydroelectric Fertilization Barrier (LFB) in Scituate or the Fox Point Hydroelectric Barrier in Providence.	Red
	<b>B</b> Attenuation	Flooding adjacent to the open ocean or the outer edge of the harbor, such as the harbor or inner harbor.	Flowing to waterways over a vegetated dune, typically consisting of low, porous, sand, dune-like structures or other shore features in the water.	Blue
	<b>C</b> Fertilization	A variety of coastal policies, structures, and other shore features, such as dunes, beach nourishment, and other shore features that protect against rising sea levels and waves.	A variety of coastal policies, structures, and other shore features, such as dunes, beach nourishment, and other shore features that protect against rising sea levels and waves.	Black
	<b>D</b> Attenuation	A variety of seawall systems or other shore features that reduce or reduce wave action and sea level surge by dissipating the wave energy.	A variety of seawall systems or other shore features that reduce or reduce wave action and sea level surge by dissipating the wave energy.	Yellow
Coastal/Harbor Adaptation	<b>A</b> Fertilization	A variety of coastal policies, structures, and other shore features, such as dunes, beach nourishment, and other shore features that protect against rising sea levels and waves.	A variety of coastal policies, structures, and other shore features, such as dunes, beach nourishment, and other shore features that protect against rising sea levels and waves.	Black
	<b>B</b> Attenuation	A variety of seawall systems or other shore features that reduce or reduce wave action and sea level surge by dissipating the wave energy.	A variety of seawall systems or other shore features that reduce or reduce wave action and sea level surge by dissipating the wave energy.	Yellow
	<b>C</b> Elevated	A variety of seawall systems or other shore features that reduce or reduce wave action and sea level surge by dissipating the wave energy.	A variety of seawall systems or other shore features that reduce or reduce wave action and sea level surge by dissipating the wave energy.	Blue
Land Adaptation	<b>A</b> Fertilization	Permanent or temporary barriers of berms, dunes, and other shore features, such as dunes, beach nourishment, and other shore features that protect against rising sea levels and waves.	Permanent or temporary barriers of berms, dunes, and other shore features, such as dunes, beach nourishment, and other shore features that protect against rising sea levels and waves.	Black
	<b>B</b> Elevated	Increasing the height of the building will allow it to rise above the water level during a flood event.	Increasing the height of the building will allow it to rise above the water level during a flood event.	Yellow
	<b>C</b> Elevated	Increasing the elevation of the building to increase the height of adjacent lower shore structures.	Increasing the elevation of the building to increase the height of adjacent lower shore structures.	Blue
	<b>D</b> Accommodate	Design parks, athletic buildings, and other infrastructure to flood without incurring damage.	Design parks, athletic buildings, and other infrastructure to flood without incurring damage.	Yellow
	<b>E</b> Migrate	The impacts and associated reduction of land loss or high vulnerability locations away from flood risk.	The impacts and associated reduction of land loss or high vulnerability locations away from flood risk.	Blue

**Looking for something else?**  
If nothing fits with what you're thinking, put it on a sticky note and we'll talk about your ideas.

Community Forum  
October 29th, 2019

Scituate Harbor Resiliency Master Plan

**Prioritize the most important locations for your top (3) strategies**

Follow the 3 steps to share your priorities:

**Step 3** Place the (3) pins you selected in "Step 2" in the highest priority locations where the strategies would be appropriate in Scituate Harbor

**Use enlarged area below**

Community Forum  
October 29th, 2019



# Scituate Harbor Resiliency Master Plan

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**Community Forum**

October 29<sup>th</sup>, 2019



Scituate Harbor Resiliency Master Plan

*Photo: Town of Scituate Harbormaster*

10/29/19