

Scituate Harbor Resiliency Master Plan

Task Force Meeting #4

January 22, 2020



Scituate Harbor Resiliency Master Plan

Task Force Meeting #4 Agenda

- **Process Overview**
- **Coordination with Coastal Vision Process**
- **Defined Problem Statement**
- **Evaluation of Alternative Approaches**
- **Community Forum**
- **Next Steps**



Process Overview



Schedule

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



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

Coordination with Coastal Vision Process



Coastal Vision Process

- 50-year coastal visioning process for Scituate coast
- Lead by Consensus Building Institute
- Facilitating small-group gatherings throughout February
- Facilitating a visioning workshop in March



Defined Problem Statement



Problem Statement

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.

Problem Statement

Create a cohesive vision for Scituate Harbor that will build resilience incrementally, through coordinated and layered measures, to meet flood challenges projected for mid-century (2050) and beyond. Near term and long-term actions should create more flood resilience while creating additional benefits to the district that will:

- Enhance economic vitality
- Improve the public realm
- Strengthen community and civic gathering
- Improve district parking
- Maintain cost effectiveness
- Retain the ability to implement
- Reduce the negative impacts

Problem Statement

- Enhance economic vitality of the district by protecting, strengthening or expanding the key assets of the district,
- Improve the public realm of the district for pedestrian and bicycle safety and sustainable infrastructure,
- Strengthen community and civic gathering to reinforce Scituate Harbor as the heart of the community,
- Improve district parking to improve access and functionality,
- Maintain cost effectiveness by strategically weighing benefits and disadvantages of investments,
- Retain the ability to implement current and future actions to further protect and improve the district
- Recognize and reduce the negative (environmental, social, or community) impacts that may result from investments

Problem Statement

Create a cohesive vision that will build resilience incrementally, through coordinated and layered measures, while creating additional benefits to the district that will:

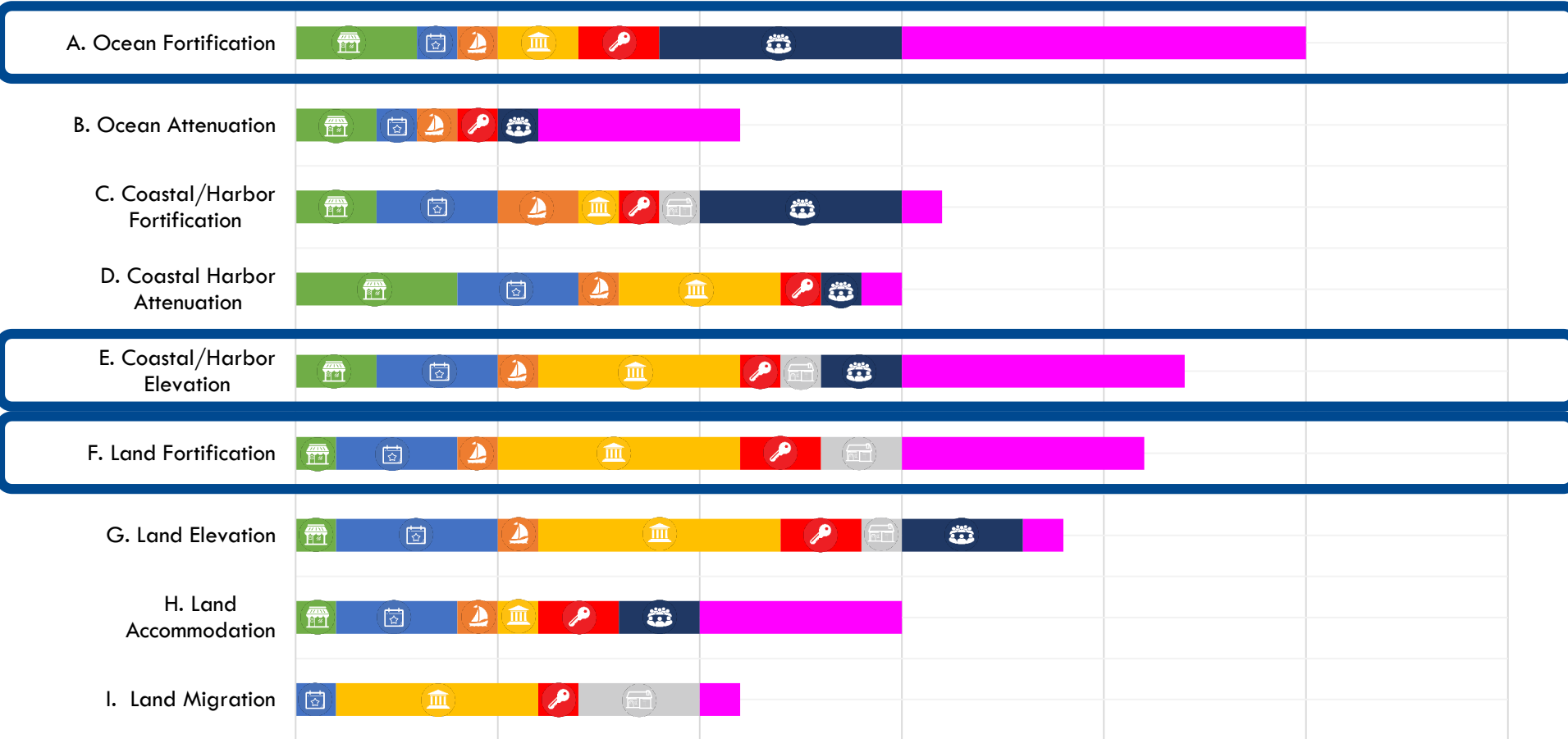
	Enhance economic vitality	Improve the public realm	Strengthen community and civic gathering	Improve district parking	Maintain cost effectiveness	Retain the ability to implement	Reduce negative impacts
Alternative A	-1	0	0	0	-1	-1	-1
Alternative B	0	0	-1	-1	+1	+1	+1
Alternative C	+1	+1	+1	+1	0	0	0

Evaluation of Alternative Approaches



Most Preferred Approaches

Which types of solutions do you think are most appropriate?



Existing Coastal Conditions

About 5 miles of Scituate coast shown in diagram



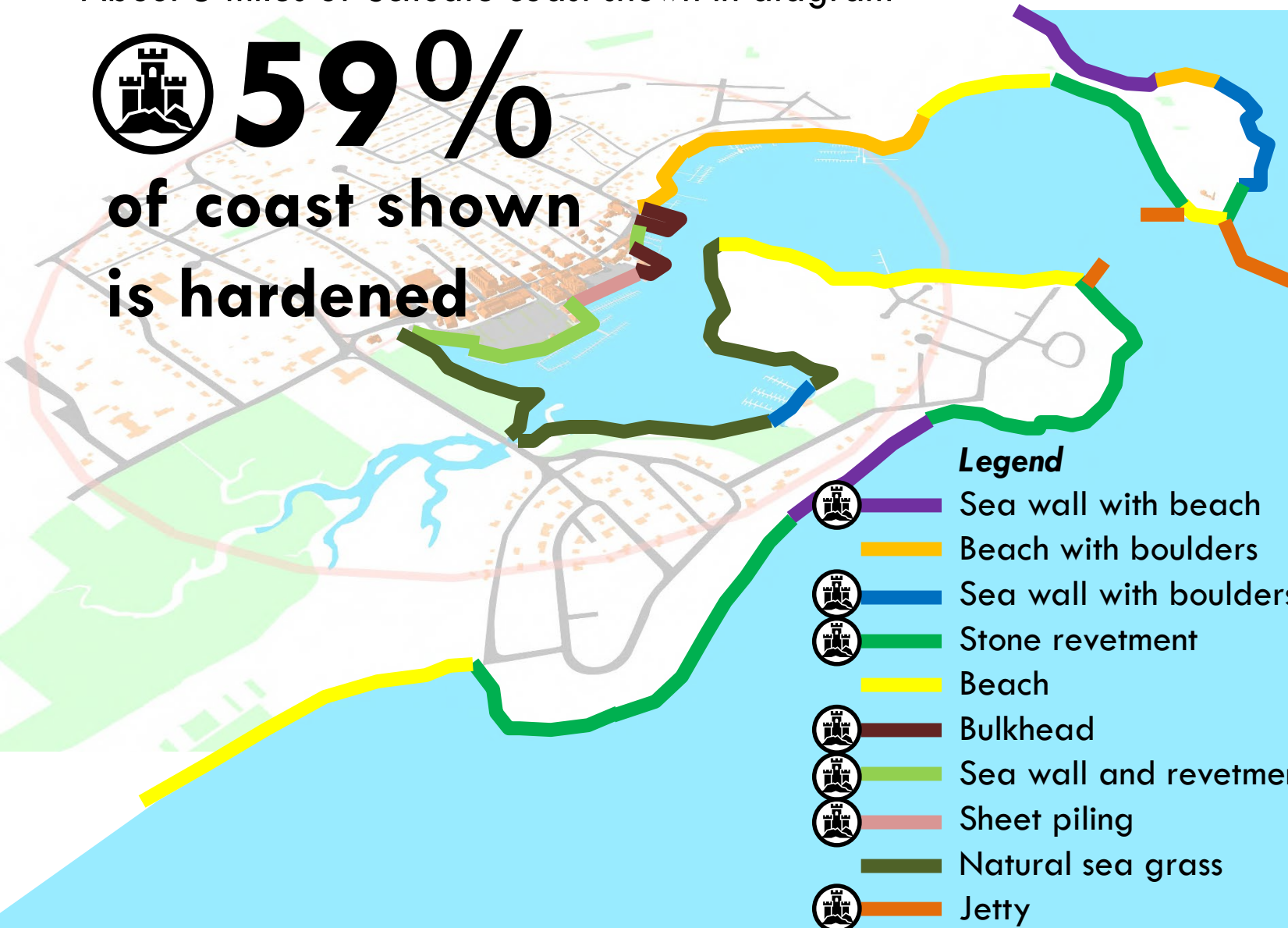
Existing Coastal Conditions

About 5 miles of Scituate coast shown in diagram



59%

of coast shown is hardened

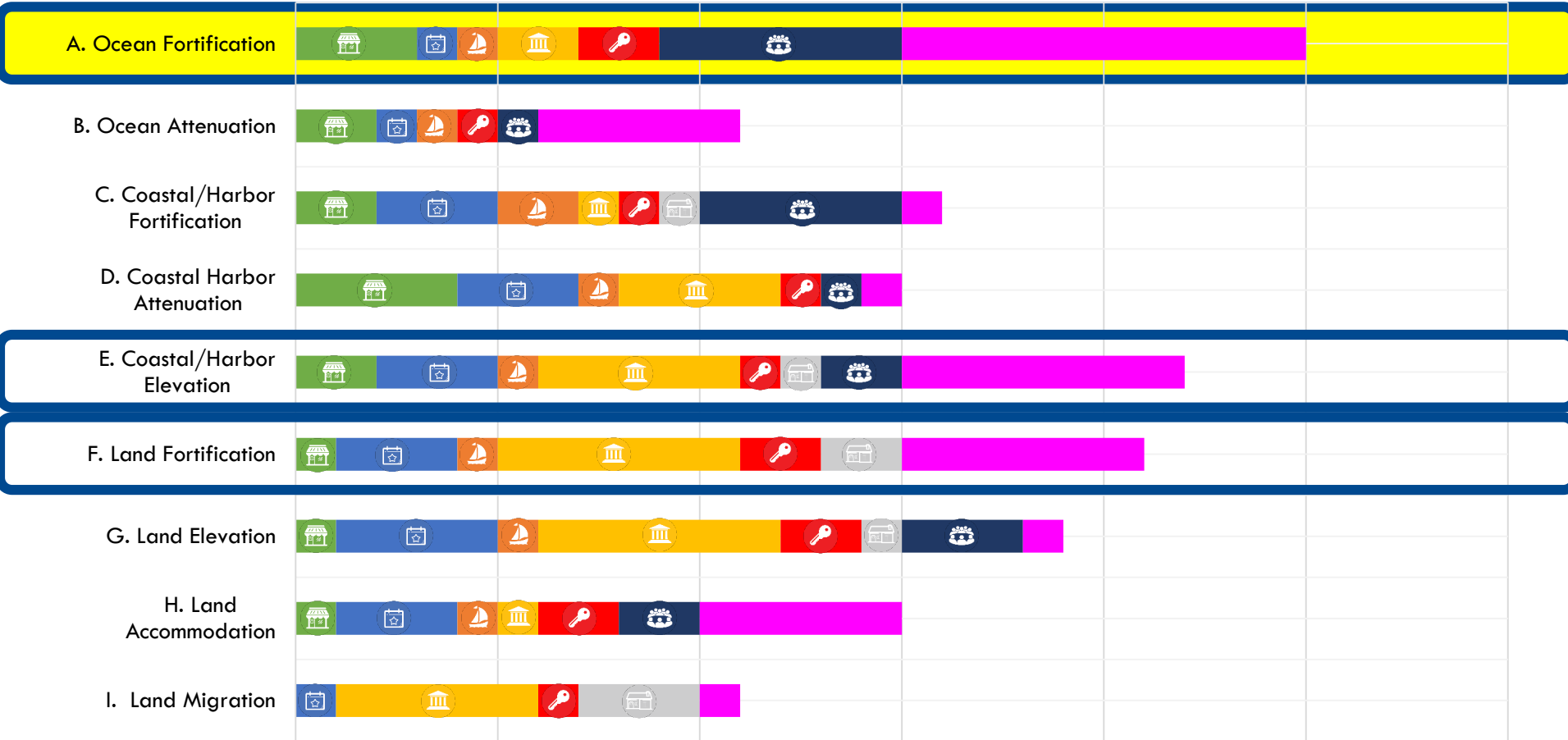


Legend

	Sea wall with beach	2,710 LF
	Beach with boulders	2,760
	Sea wall with boulders	1,640
	Stone revetment	6,640
	Beach	4,490
	Bulkhead	2,600
	Sea wall and revetment	620
	Sheet piling	570
	Natural sea grass	4,360
	Jetty	1,620

Conceptual Alternative A

Which types of solutions do you think are most appropriate?



Conceptual Alternative A

“Close the mouth” – Harbor barrier infrastructure

Approach most similar to the New Bedford Hurricane Protection Barrier case study:



Image credit: US Army Corps of Engineers



Image credit: Jesse Costa/WBUR

Conceptual Alternative A

“Close the mouth” –

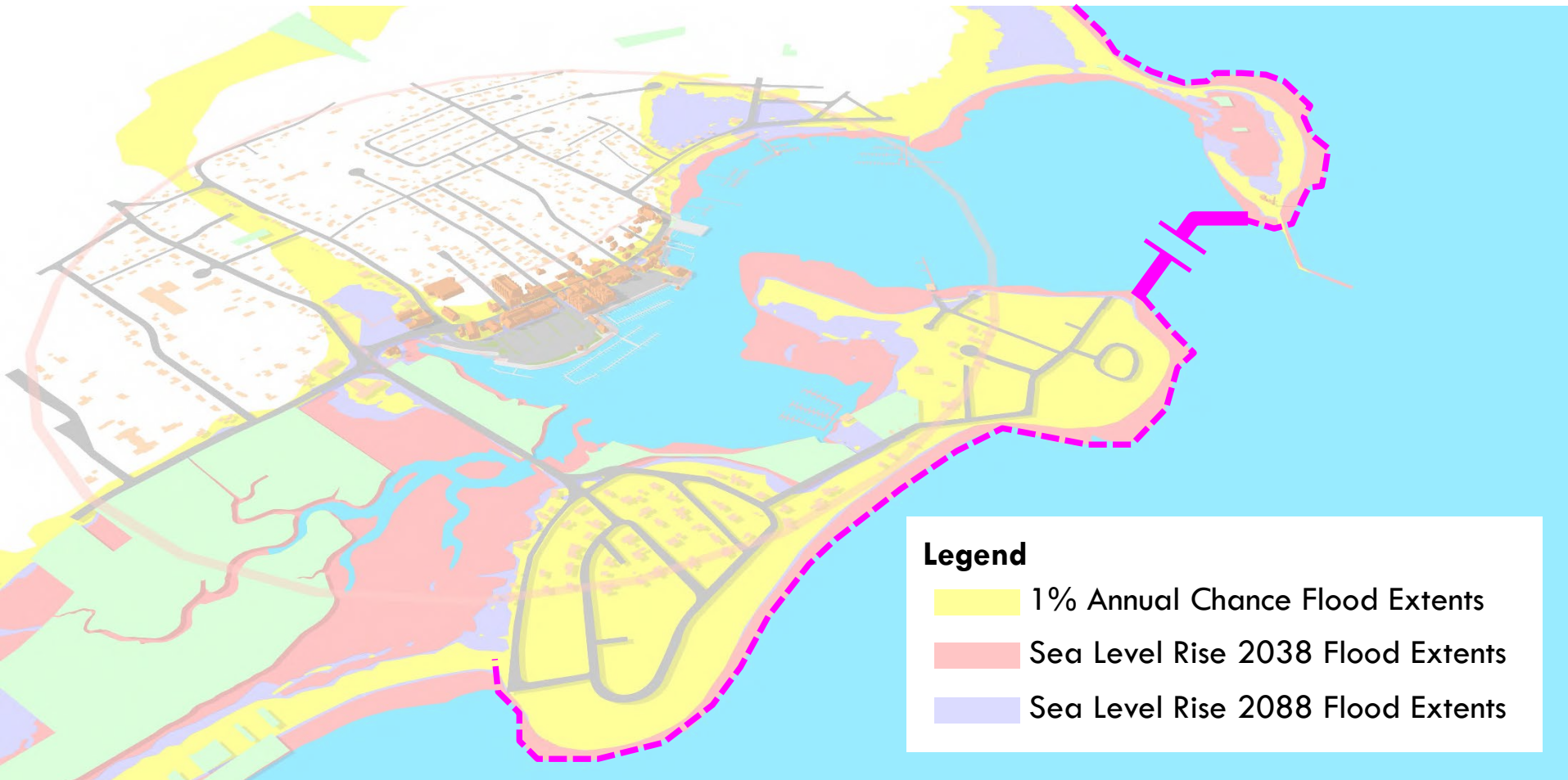
Harbor barrier infrastructure



Conceptual Alternative A

“Close the mouth” –

Harbor barrier infrastructure



Conceptual Alternative A

“Close the mouth” –

Harbor barrier infrastructure



Conceptual Alternative A

“Close the mouth” –

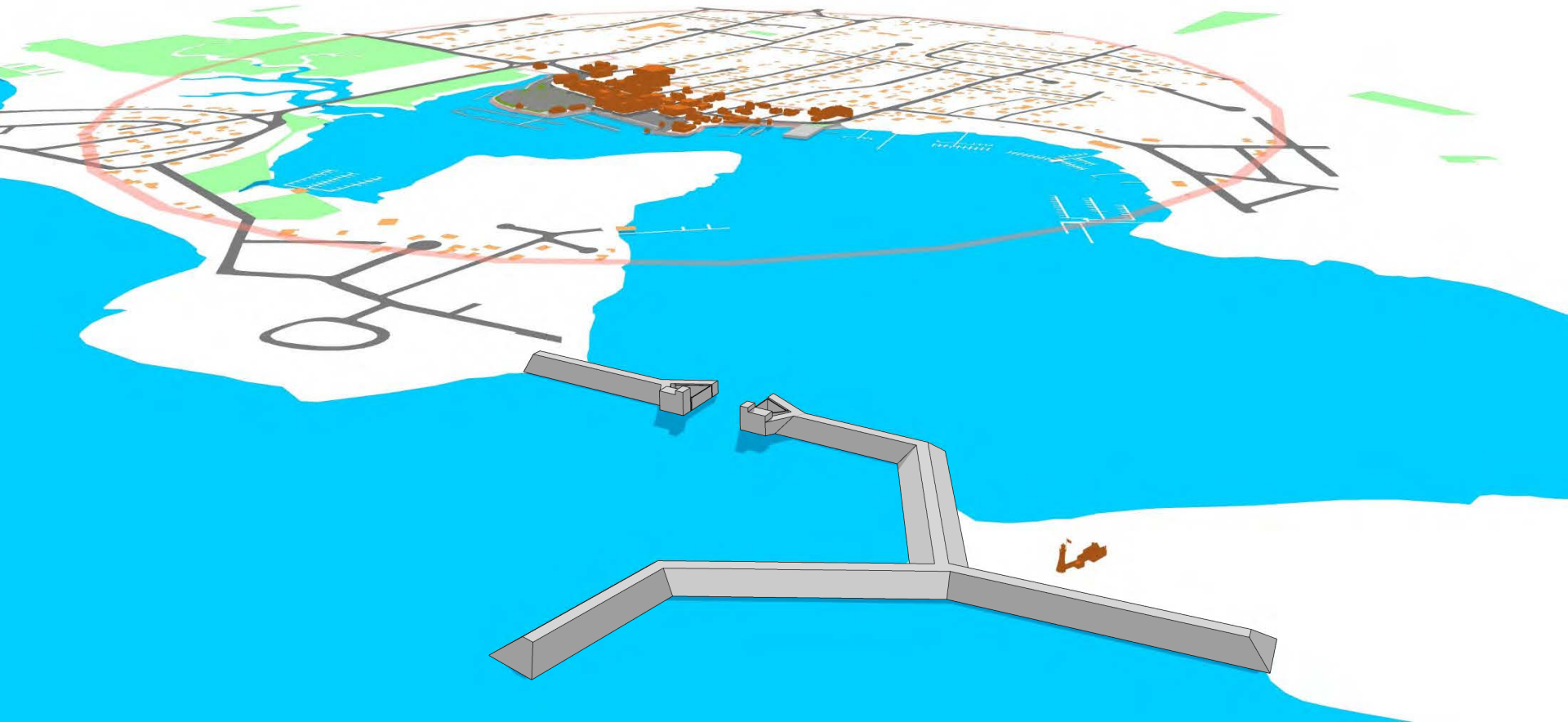
Harbor barrier infrastructure



Conceptual Alternative A

“Close the mouth” –

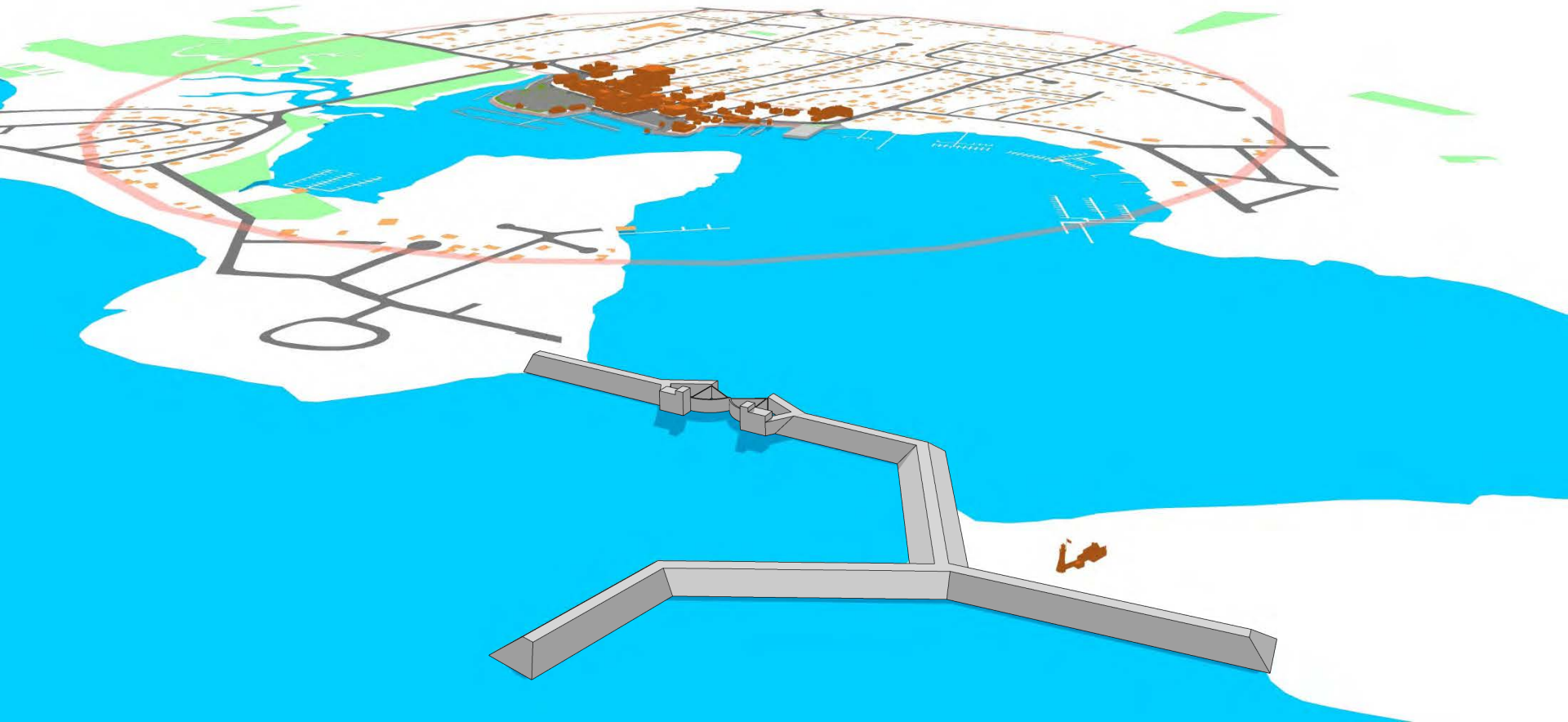
Harbor barrier infrastructure



Conceptual Alternative A

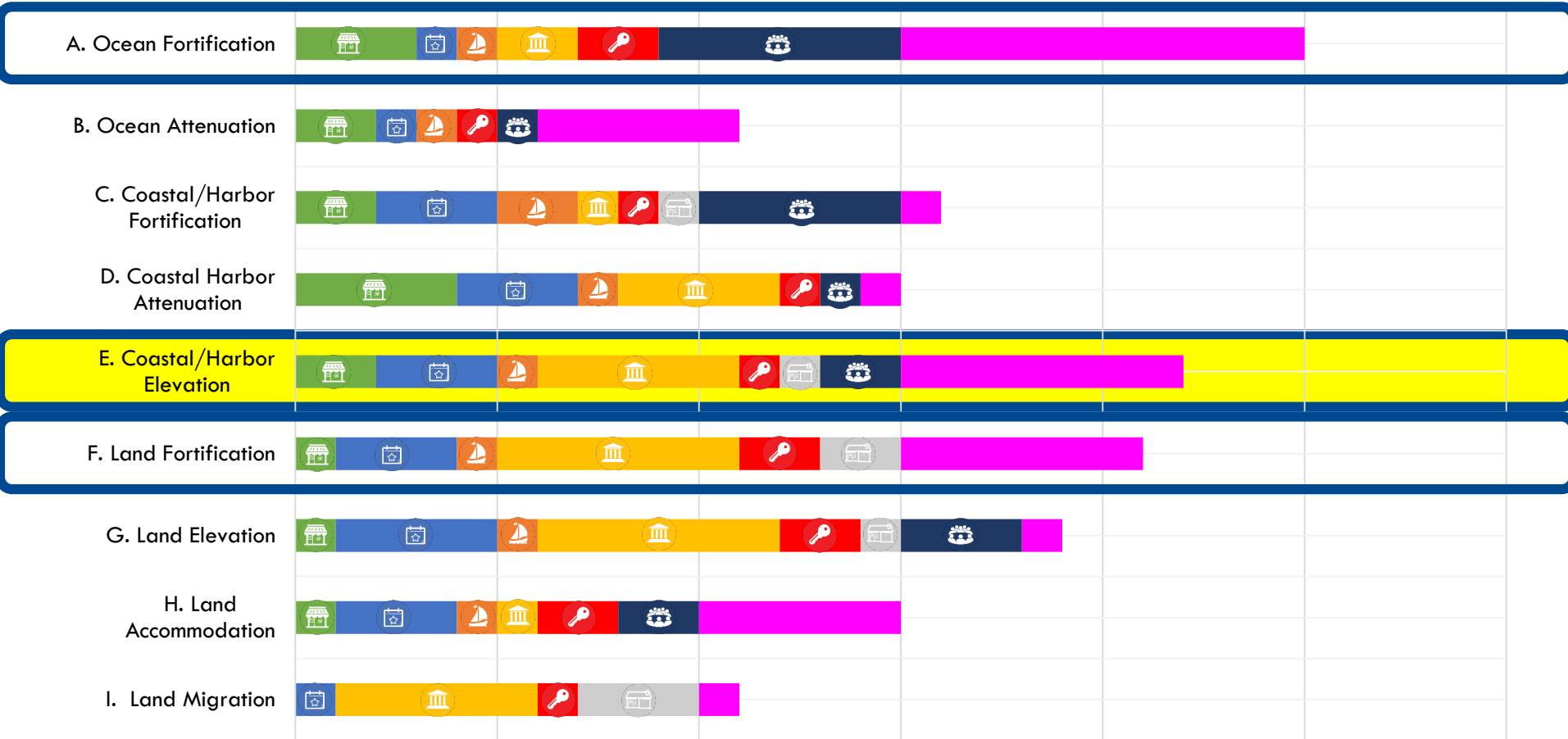
“Close the mouth” –

Harbor barrier infrastructure



Conceptual Alternative B

Which types of solutions do you think are most appropriate?



Conceptual Alternative B

“Lift the edge” –

Incremental elevation of coast

Approach most similar to the Hingham Harbor Resilience Investments case study:



Image credit: MAPC



Image credit: MAPC



Image credit: MAPC

Conceptual Alternative B

“Lift the edge” –

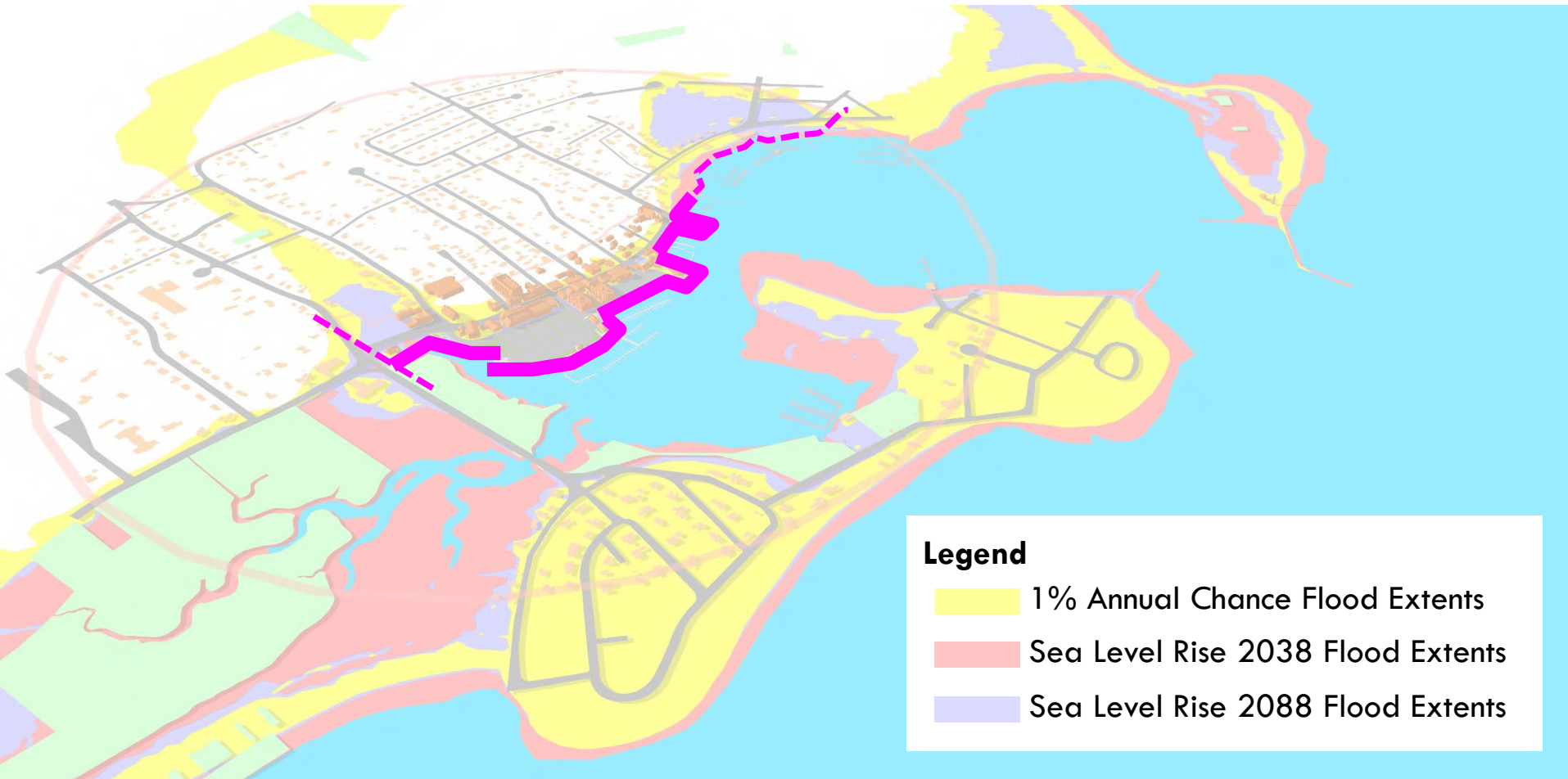
Incremental elevation of coast



Conceptual Alternative B

“Lift the edge” –

Incremental elevation of coast



Conceptual Alternative B

“Lift the edge” –

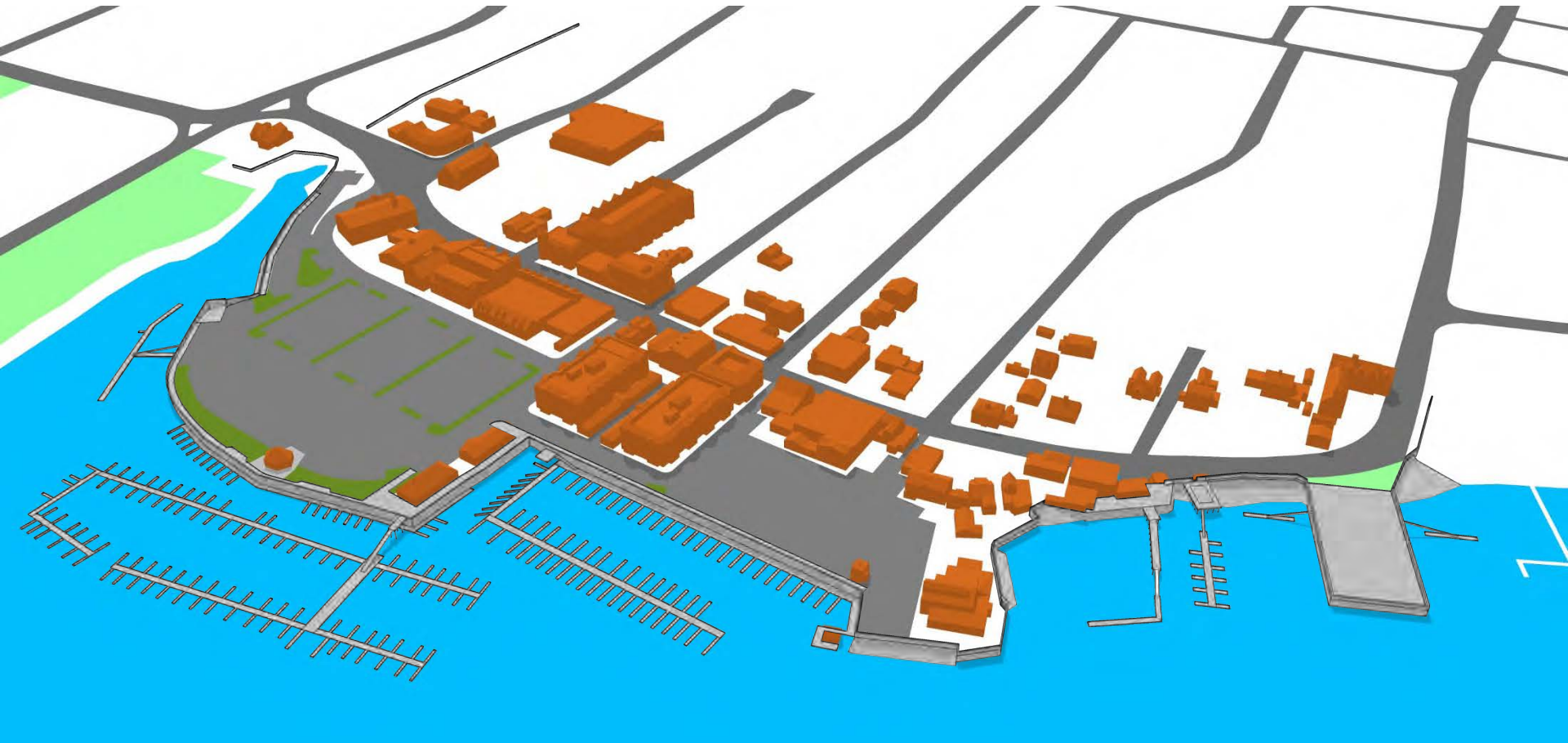
Incremental elevation of coast



Conceptual Alternative B

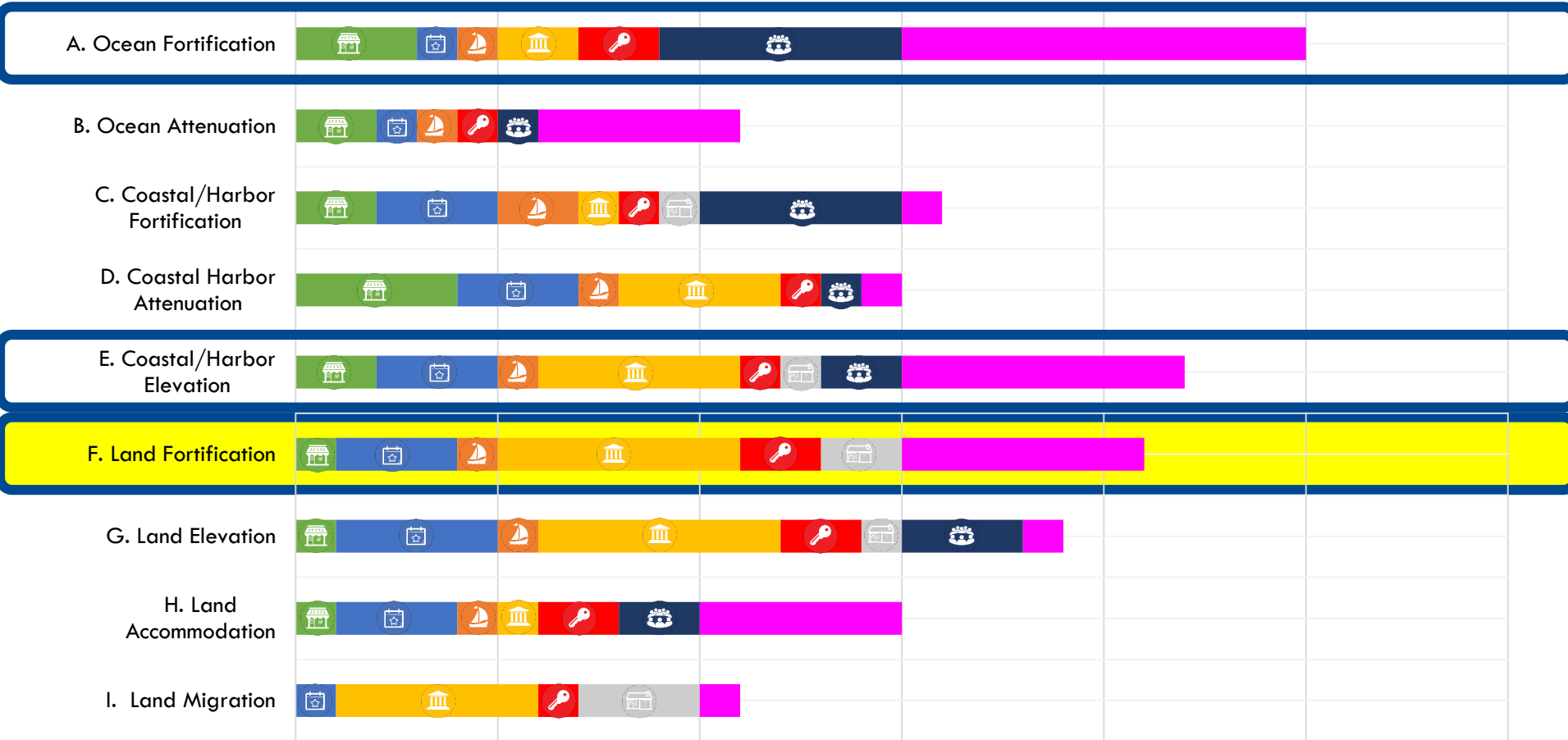
“Lift the edge” –

Incremental elevation of coast



Conceptual Alternative C

Which types of solutions do you think are most appropriate?



Conceptual Alternative C

“Work with water” –

Adapt coast and land configuration

Approach most similar to the Boston Martin Richard Park case study:



Image credit: Boston Globe



Image credit: Boston Herald

Conceptual Alternative C

“Work with water” –

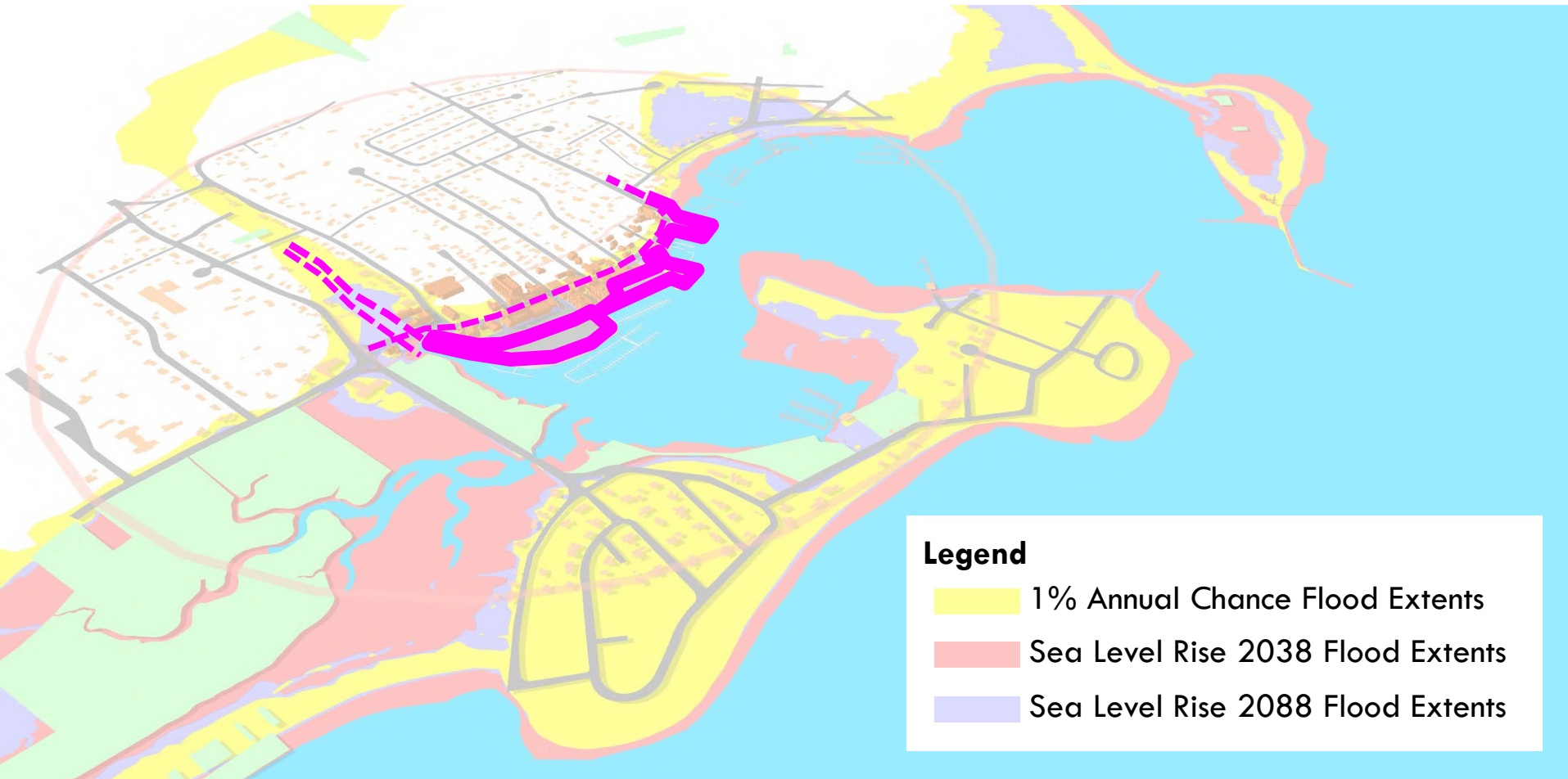
Adapt coast and land configuration



Conceptual Alternative C

“Work with water” –

Adapt coast and land configuration



Conceptual Alternative C

“Work with water” –

Adapt coast and land configuration



Conceptual Alternative C

“Work with water” –

Adapt coast and land configuration



Problem Statement

Create a cohesive vision that will build resilience incrementally, through coordinated and layered measures, while creating additional benefits to the district that will:

	Enhance economic vitality	Improve the public realm	Strengthen community and civic gathering	Improve district parking	Maintain cost effectiveness	Retain the ability to implement	Reduce negative impacts
Alternative A	-1	0	0	0	-1	-1	-1
Alternative B	0	0	-1	-1	+1	+1	+1
Alternative C	+1	+1	+1	+1	0	0	0

Summary of Preferred Alternatives

Conceptual Alternative A

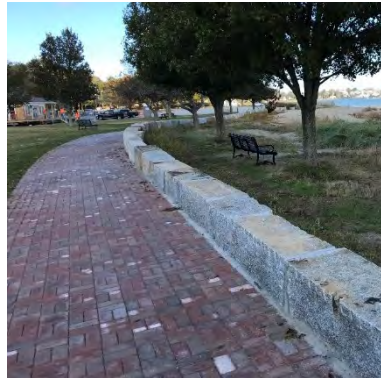
“Close the mouth” –
Harbor barrier infrastructure



About **10,000 linear feet** of adaptations, including harbor gate

Conceptual Alternative B

“Lift the edge” –
Incremental elevation of coast



About **5,500 linear feet** of adaptations

Conceptual Alternative C

“Work with water” –
Adapt coast and land configuration



About **4,300 linear feet** of adaptations

Enhance economic vitality

Conceptual Alternative A

"Close the mouth" –
Harbor barrier infrastructure

-1

- Protection from storm surge, does not protect against more frequent tidal flooding
- + Protects about 450 acres of total land
- May impact recreational and commercial boating with impacts to local economy



Conceptual Alternative B

"Lift the edge" –
Incremental elevation of coast

0

- + Protection from storm surge and more frequent tidal flooding
- Protects about 35 acres of total land
- No substantial positive or negative impact foreseen for economy



Conceptual Alternative C

"Work with water" –
Adapt coast and land configuration

+1

- + Protection from storm surge and more frequent tidal flooding
- Protects about 35 acres of total land
- + May create coastal configuration to increase boat slips and create new shoreline parks that could be tourist destinations



Improve the public realm

Conceptual Alternative A

"Close the mouth" –
Harbor barrier infrastructure

0

- +** Opportunity to create extensive expanded harbor walk
- No investments directly in the Scituate Harbor business district that could be used for improvements



Conceptual Alternative B

"Lift the edge" –
Incremental elevation of coast

0

- Opportunity to create expanded harbor walk
- Investments directly in Scituate Harbor business district, but focused on the coastal edge



Conceptual Alternative C

"Work with water" –
Adapt coast and land configuration

+1

- +** Opportunity to create expanded harbor walk
- +** Investments directly in Scituate Harbor business district that can potentially integrate with Cole Parkway and Front Street improvements



Strengthen community and civic gathering

Conceptual Alternative A

"Close the mouth" –
Harbor barrier infrastructure

0

- May create new community landmark or feature of civic pride
- Creates opportunity for extensive harbor walk
- Does not create new civic gathering place



Conceptual Alternative B

"Lift the edge" –
Incremental elevation of coast

-1

- Does not create new community landmark or feature of civic pride
- Creates opportunity for expanded harbor walk
- Does not create new civic gathering place



Conceptual Alternative C

"Work with water" –
Adapt coast and land configuration

+1

- Opportunity to create new community landmarks and features of civic pride
- Creates opportunity for expanded harbor walk
- Opportunity to expand civic gathering space at Cole Parkway



Improve district parking

Conceptual Alternative A

“Close the mouth” –
Harbor barrier infrastructure



0

-  May create more opportunity for walking with a desirable pathway connecting nearby neighborhoods
-  No investments in district that could be used to improve parking

Conceptual Alternative B

“Lift the edge” –
Incremental elevation of coast



-1

-  Does not add walking connections beyond what exists today
-  No investments in district that could be used to improve parking

Conceptual Alternative C

“Work with water” –
Adapt coast and land configuration

+1

-  Does not add walking connections beyond what exists today
-  Investments in district could be used to improve or reconfigure existing parking areas

Maintain cost effectiveness

Conceptual Alternative A

"Close the mouth" –
Harbor barrier infrastructure

-1

- About 10,000 linear feet of adaptations
- About \$8,000 per linear foot based on price escalations from New Bedford Hurricane Barrier
- Minimum of \$80M order of magnitude cost
- \$500,000 order of magnitude annual operational cost to Town
- + Protects about \$444M in assessed value

Conceptual Alternative B

"Lift the edge" –
Incremental elevation of coast

+1

- About 5,500 linear feet of adaptations
- About \$3,000 per linear foot based on price estimations for Hingham Resilience
- + Minimum of \$16.5M order of magnitude cost
- + Annual maintenance cost would be minimal except for wall replacements in the future
- Protects about \$86M in assessed value

Conceptual Alternative C

"Work with water" –
Adapt coast and land configuration

0

- + About 4,300 linear feet of adaptations
- About \$3,000 per linear foot based on price estimations for Hingham Resilience; \$7M destination park cost based on Martin's Park Boston
- Minimum of \$19.9M order of magnitude cost
- Annual maintenance cost would include additional park features
- Protects about \$86M in assessed value

Retain the ability to implement

Conceptual Alternative A

"Close the mouth" –
Harbor barrier infrastructure

-1

- One large capital investment could impact ability to invest in other projects
- Approvals at Federal, State and Local levels will be extensive, costly, and time consuming

Conceptual Alternative B

"Lift the edge" –
Incremental elevation of coast

+1

- Investments can be made incrementally and phased to respond to sea levels and risk
- + Less extensive approvals at Federal, State and Local levels – in many locations, shoreline is already hardened

Conceptual Alternative C

"Work with water" –
Adapt coast and land configuration

0

- Investments can be made incrementally and phased to respond to sea levels and risk. More extensive interventions may impact future investments
- Less extensive approvals at Federal, State and Local levels – in many locations, shoreline is already hardened, land-based improvements may be easily permitted, but could be disruptive

Reduce negative impacts

Conceptual Alternative A

"Close the mouth" –
Harbor barrier infrastructure

-1

Water:

- Potential environmental disruption to salinity, fisheries, pollution, tidal circulation, sedimentation, water exchange rate
- Potential impacts to recreational and commercial boating navigation and safety
- Potential impacts to abundance, distribution, and behavior of fish populations

Land:

- Potential impacts to landowners at locations requiring elevated or improved flood resilience measures

Conceptual Alternative B

"Lift the edge" –
Incremental elevation of coast

+1

Water:

- Potential impacts to tidal circulation and sedimentation
- + Potential expansion of marina docks adjacent to shoreline edge

Land:

- Potential Impacts to landowners at locations requiring elevated or improved flood resilience measures

Conceptual Alternative C

"Work with water" –
Adapt coast and land configuration

0

Water:

- Potential impacts to tidal circulation and sedimentation
- + Potential expansion of marina docks adjacent to shoreline edge

Land:

- Potential Impacts to landowners at locations requiring elevated or improved flood resilience measures
- Potential impacts to current patterns of circulation and parking near shoreline

Concept Development and Evaluation

Create a cohesive vision that will build resilience incrementally, through coordinated and layered measures, while creating additional benefits to the district that will:

	Enhance economic vitality	Improve the public realm	Strengthen community and civic gathering	Improve district parking	Maintain cost effectiveness	Retain the ability to implement	Reduce negative impacts	Overall Performance
Alt. A	-1	0	0	0	-1	-1	-1	-4
Alt. B	0	0	-1	-1	+1	+1	+1	+1
Alt. C	+1	+1	+1	+1	0	0	0	+4

Summary of Preferred Alternatives

Conceptual Alternative A

“Close the mouth” –
Harbor barrier infrastructure



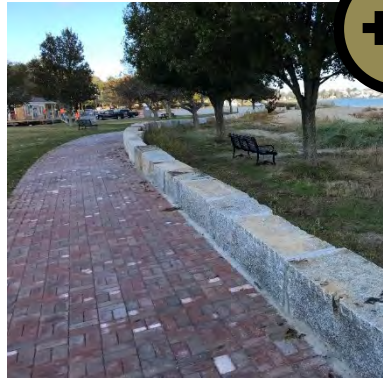
-4



About **10,000 linear feet** of adaptations, including harbor gate

Conceptual Alternative B

“Lift the edge” –
Incremental elevation of coast



+1



About **5,500 linear feet** of adaptations

Conceptual Alternative C

“Work with water” –
Adapt coast and land configuration



+4

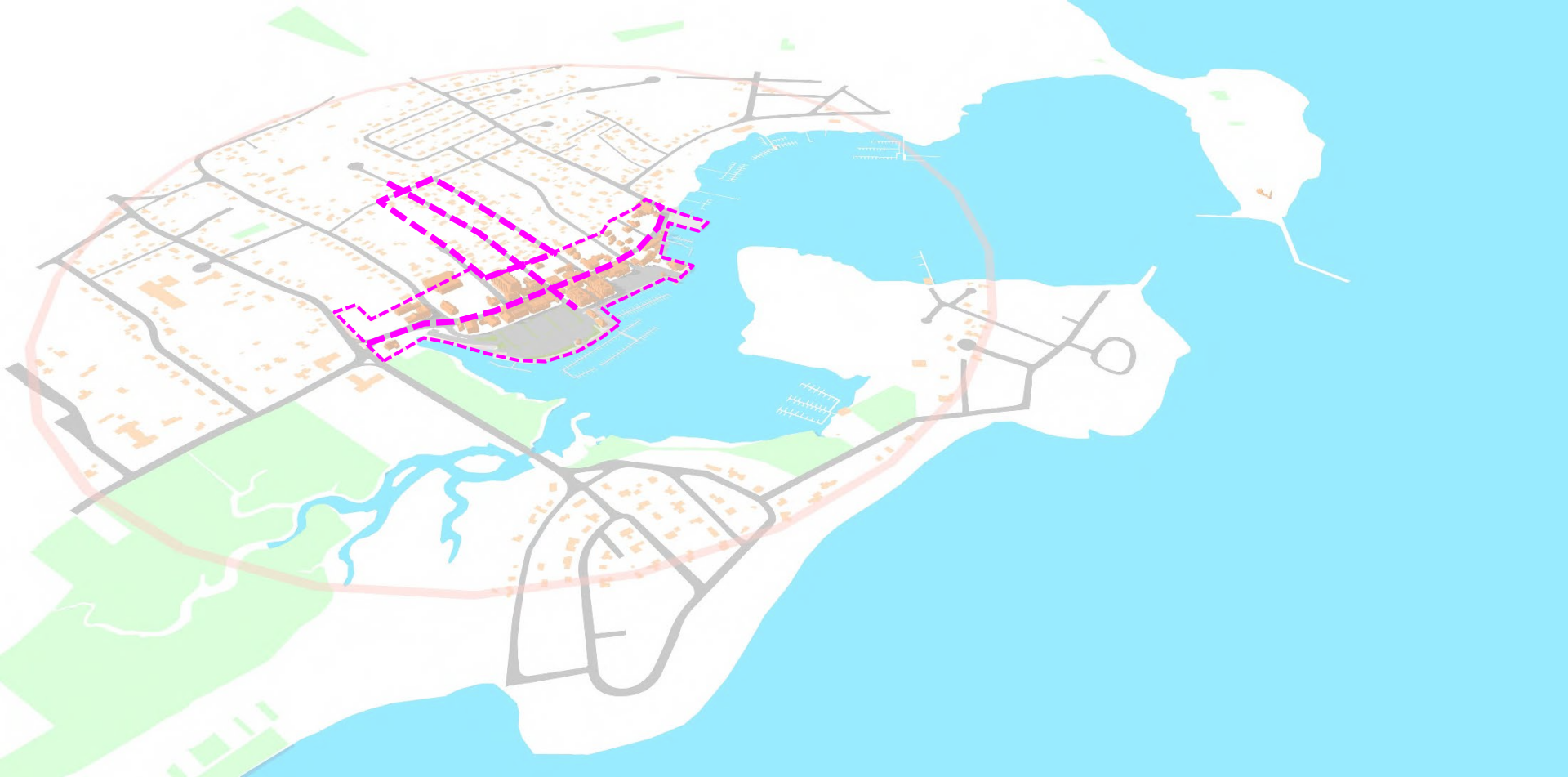


About **4,300 linear feet** of adaptations

Other District Improvements

- Pedestrian safety and streetscape improvements – enhanced or raised crosswalks, curb bump-outs, expanded sidewalks
- Stormwater and streetscape improvements – rain gardens, new plantings
- Parking management program
- Vacant storefront program and policies
- Zoning revisions to enhance resilience

Future Zoning Considerations



Community Forum



Second Community Forum

- **Tuesday, March 3rd 7:00 pm Jericho Road**
- **Presentation and discussion of results of first forum, defined problem statement, preferred alternatives, evaluation of alternatives, and other district improvements**

Next Steps



Scituate Harbor Resiliency Master Plan

- **Second Community Forum**
- **Task Force Meeting – Mid-March**
- Shift to preferred resilience approach(es), district strategies and actions

Schedule

Task	Year/Month													
	2019							2020						
	05	06	07	08	09	10	11	12	01	02	03	04	05	06
Task 1 – Existing Conditions	■													
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Task 6 – Community Engagement	<i>Preparation and Engagement</i>				<i>More Public-facing Engagement</i>									
Task Force Meetings		●			●		●		●	●	●	●	●	●
Community Engagement Meetings				●		●		●	●		●		●	●



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

Project website

<https://www.mapc.org/ResilientScituateHarbor>

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
617-933-0760

Scituate Harbor Resiliency Master Plan

Task Force Meeting #4

January 22, 2020



Scituate Harbor Resiliency Master Plan

Photo: Town of Scituate Harbormaster

01/22/20