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MEETING NOTES
MAY 3, 2023 9:00 – 10:30 AM

PROJECT NAME: Coastal Vulnerability Action Plan
EVENT NAME: Steering Committee Meeting
ATTENDEES:

Name	Affiliation
Alex Maxwell	Fuss & O'Neill
Chelsea Zakas	Fuss & O'Neill
Lara Sup	Fuss & O'Neill
Joe Famely	Woods Hole Group
Sue Croft	Town of Manchester-by-the-Sea
Nate Desrosiers	Town of Manchester-by-the-Sea
Greg Federspiel	Town of Manchester-by-the-Sea
Patricia Bowie	Coastal Zone Management
Jim Brown	Downtown Improvement Committee
Chris Comb	Harbor Advisory Committee
Rosemary Costello	Historic District Commission
Steve Carhart	Downtown Improvement Committee
Ann Harrison	Select Board
Laura Tenny	Planning Board
Barbara Warren	Salem Sound Coast Watch

SUBMITTED BY: Chelsea Zakas

Progress Update on Coastal Vulnerability Action Plan Project

- Introduced the project team
- Presented slides on the Coastal Vulnerability Action Plan project and updates regarding the alternatives analysis
    - Reviewed the goals of the plan and the planning approach and the anticipated timeline
    - Reviewed the existing conditions assessment and vulnerability assessment, which included the inner harbor and downtown's vulnerability to sea level rise and storms
    - Discussed the approach to the alternatives analysis and the suite of alternatives to consider
    - Discussed the key focus areas for neighborhood-scale and site-scale alternatives
    - Discussed the proposed near-term alternatives, which were focused on providing floodproofing for critical infrastructure and consideration of relocating or elevating key infrastructure (e.g., generators, mechanical, and electrical systems), and planning ahead for the potential relocation of recreational amenities
    - Discussed the medium-term alternatives, which were focused on the implementation of raised berms, elevated roadways, possible buyouts and restoration of the area along Saw Mill Brook, deployable flood barrier during storm events between berms on the roadway
    - Discussed the long-term alternatives, one which focused on raising the railway, and one which focused on the railway remaining at the current grade.

Discussion of Alternatives Analysis

- Confirmed that the proposed alternatives are based on today's science and guidelines for climate action planning provided by the State – and that the Action Plan is intended to be a dynamic and

changing document as new science and data are developed resulting in potential changes to future inundation projections
    - Discussed the need to focus on projected flood inundation elevation, rather than being too focused on the projected year,
- Discussed the importance of considering sunny day flooding/high tides in the future, and how that will fit in the proposed alternatives/solutions
    - Confirmed that the tide gauges deployed during the vulnerability assessment in both the inner and outer harbor did not show much attenuation, but that it is important to think about planning for storm events in addition to high tide flooding (Designing for everyday flooding will also provide protection for smaller, more common storm events in the future.)
- Discussed the usefulness of having short, medium, and long-term plans
    - Agreed that the short-term alternatives seemed like reasonable approaches and not needing large investments; whereas, the long-term solutions will require more money and time
- Discussed the importance of the Town considering the cost-benefit between the medium-term and long-term alternatives
- Discussed the importance of considering universal design and accessibility, community benefits, maintaining waterfront access, and other factors (e.g., urban heat island effect) for each of the proposed alternative
- Discussed whether it is possible to channel flood waters to other areas (e.g., beyond Tappan St where there are existing large wet areas)
    - Confirmed that when redirecting water, it can often cause flooding in other areas
    - Discussed the floodable park concept at Masconomo Park and how it could act as an area for rerouted water to go if it is designed to let water in
- Discussed the proposed berm(s) and the potential for developing two different elevations based on the two long-term alternatives (Precise elevations will be provided to the Town.)
- Discussed the MBTA's participation as a partner in this process
    - Confirmed their participation is not guaranteed; however, it would be advantageous for the Town to have a plan prepared to present to them with data that shows what is necessary to provide protection to the Town's assets and infrastructure
    - Discussed how the MBTA commuter rail is critical infrastructure for the Metro Boston area and will likely not be removed (However, if one day the MBTA removes the commuter rail it could provide the room necessary to build a flood barrier.)
- Discussed the consideration of a larger floodgate or barrier further out in Manchester Harbor that would block water from coming into the harbor (e.g., similar to the New Bedford Hurricane Protection Barrier)
    - Confirmed the project team considered this option; however, the costs outweigh the benefit
- Discussed the potential for placing a barrier in front of the railway, instead of raising the railway. Confirmed the proposed berms act as that barrier.
- Discussed the importance of using highly graphic, relatable images for the public to understand the proposed alternatives

    - Note: For the public presentation, more precedent images (e.g., an elevated berm looks like, a tide gate, etc.) will be included
- Discussed mentioning retreat as an alternative, to give the public the sense that the alternatives are being proposed to avoid full retreat (Without a berm or flood barrier, the discussion of retreat accelerates. Buyout and restoration are retreat alternatives.)
- Discussed the different sea level rise (SLR) projections being presented by the IPCC and the State, and how the IPCC report predicts lower SLR projections than the State
    - Discussed the concern around planning for late-century projections, given the IPCC SLR data, and how the Town needs to be implementing the short-term alternatives
    - Noted the importance of incorporating flexibility into the plan and how planning for adaptation is the most realistic approach
    - Confirmed that the plan will not suggest implementing long-term, more costly alternatives in the near term
    - Confirmed the Town is in the process of implementing short-term solutions now (e.g., for relocation of public safety infrastructure)
- Discussed the possibility for the Town to install a tide gauge in the Manchester harbor to better position the Town for monitoring SLR at the local level
- Discussed the ongoing discussions in the town regarding the relocation of the new Harbor Master office and how it may be needed in the future

Discussion of Next Steps and Review of Action Items

- Discussed how the next step in the project process includes developing a draft Recommended Action Plan, followed by finalizing the Plan in late June
- Action item: Fuss & O'Neill staff will revise (e.g., public meeting start time) and circulate slide deck, and meeting notes after the Steering Committee meeting via the project website and a separate email to the Committee.
- Action item: Fuss & O'Neill to provide the Town with more information on the proposed height of the berm(s).

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ATTACHMENT A: STEERING COMMITTEE MEETING PRESENTATION SLIDES

MANCHESTER-BY-THE-SEA | COASTAL VULNERABILITY ACTION PLAN

STAKEHOLDER MEETING

05/03/2023

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ABOUT THE PLAN

- Manchester-by-the-Sea experiences **frequent flooding** in the downtown and inner harbor area
- **Critical infrastructure** is at lower elevations
- Plan will provide a **roadmap to reduce coastal flood risks** and increase coastal resilience
  - Build upon **past studies**
  - Develop a **phased approach** to establishing action-oriented mitigation measures

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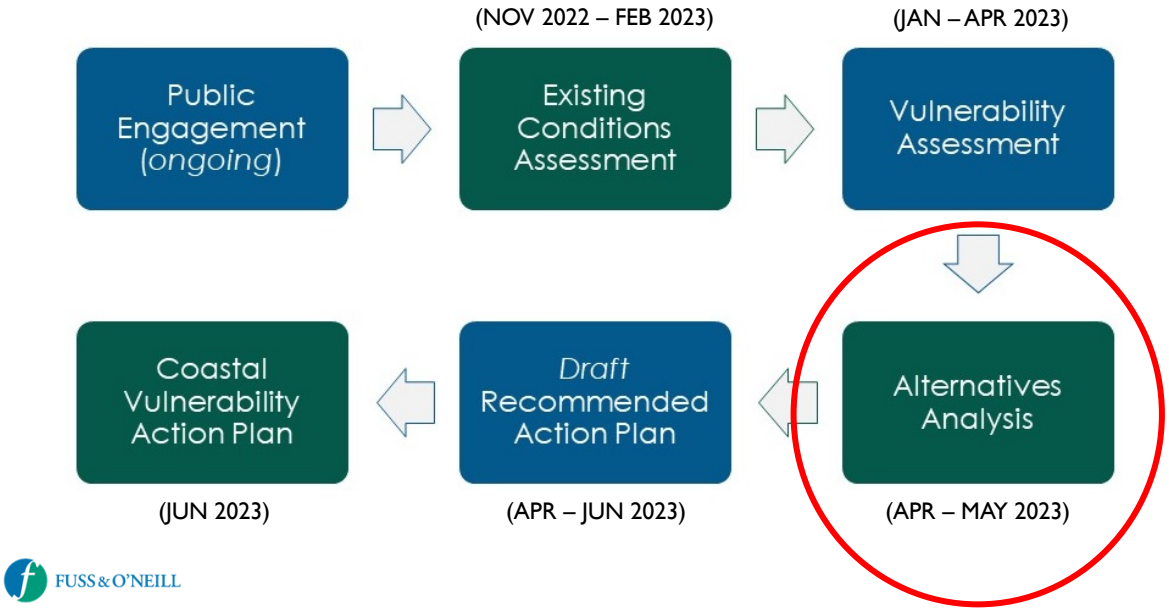
PLANNING APPROACH & ANTICIPATED TIMELINE



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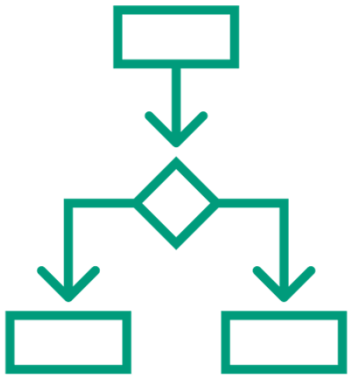
ALTERNATIVES ANALYSIS

4

ALTERNATIVES ANALYSIS

- Identify potential neighborhood-scale and site-scale **alternatives**
- Maximize the potential of **nature-based and hybrid design approaches**
- Propose **phasing** of improvements



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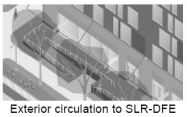
ALTERNATIVES: SITE SCALE

Building Form + Access

Elevate on extended foundation walls or open foundation

Elevate on fill

Repurpose/Relocate Ground Floor Use



Exterior circulation to SLR-DFE

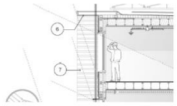
Interior circulation to SLR-DFE

Building Adaptation

Wet Floodproofing

Dry Floodproofing

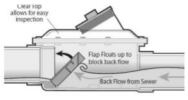
Flood Damage-Resistant Materials



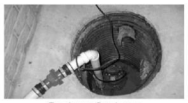
Enhanced Building Envelope

Building Systems

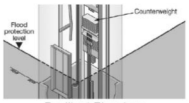
Protecting Critical Systems



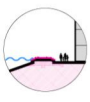
Backflow Prevention



Back-up Systems



Resilient Elevators



Site

Vegetated Berm

Harborwalk Barriers

Raised Roadways

Deployable Barriers

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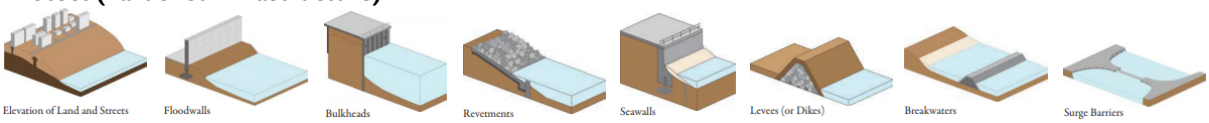
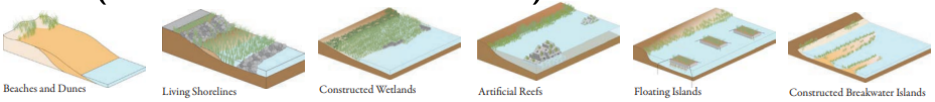
(Credit: Modified from Boston Planning & Development Agency, Coastal Flood Resilience Design Guidelines)

ALTERNATIVES: NEIGHBORHOOD SCALE

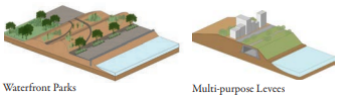
Protect (hardened infrastructure)



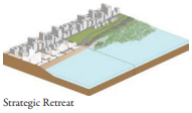
Protect (natural or nature-based infrastructure)



Protect (hybrid infrastructure)



Relocate/Retreat



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(Credit: Modified from NYCPlanning, Coastal Climate Resilience Urban Waterfront Adaptive Strategies)

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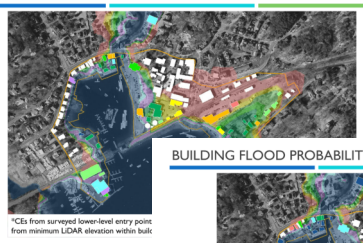
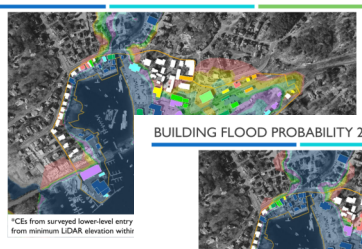
ALTERNATIVES ANALYSIS – DEFINING KEY FOCUS AREAS & PLANNING HORIZONS

- **Neighborhoods-scale**
  - **Masconomo Park**/Days Creek
  - **Tappen Street/Beach Street** Neighborhood
  - **Manchester Marine**
- **Site-scale**
  - **Wastewater Treatment Plant** (WWTP)
  - **Town Hall** (incl. Police Station)
  - **Manchester Fire Department**

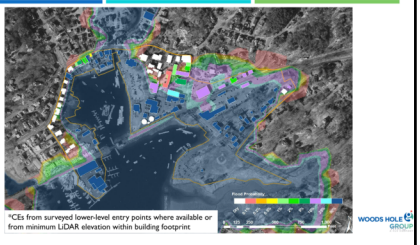
BUILDING FLOOD PROBABILITY 2030



BUILDING FLOOD PROBABILITY 2050



BUILDING FLOOD PROBABILITY 2070



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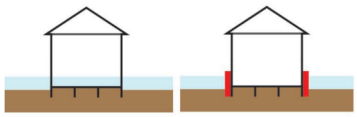
ALTERNATIVES ANALYSIS – DRAFT NEAR-TERM ALTERNATIVES

Retrofitting a building to be dry floodproofed means to seal a building's exterior and openings to inhibit water infiltration in the event of a storm.



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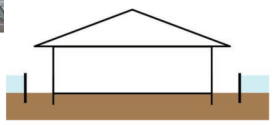
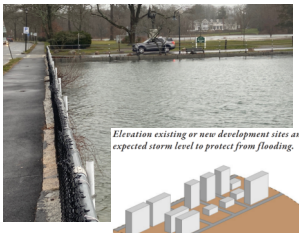
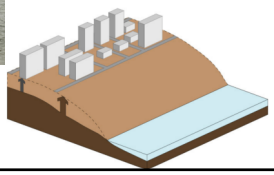
ALTERNATIVES ANALYSIS – DRAFT MEDIUM-TERM ALTERNATIVES

The use of floodwalls (deployable or permanent) or a berm on the exterior of building or around the site's perimeter to prevent water infiltration.





Elevation existing or new development sites and streets above the expected storm level to protect from flooding.



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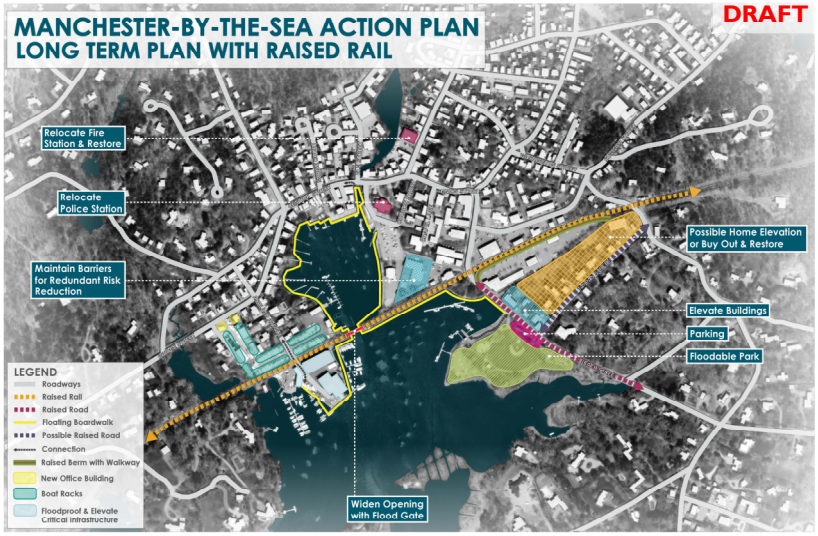
ALTERNATIVES ANALYSIS – DRAFT LONG-TERM ALTERNATIVES



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ALTERNATIVES ANALYSIS – DRAFT LONG-TERM ALTERNATIVES

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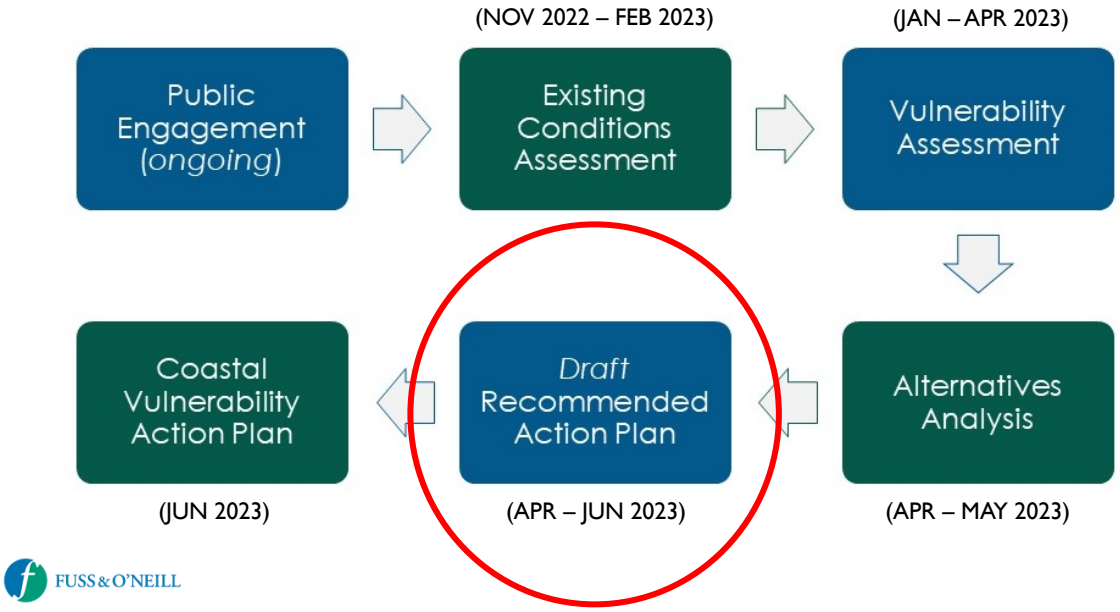
QUESTIONS & DISCUSSION

REVIEW OF NEXT STEPS

NEXT STEPS



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PUBLIC ENGAGEMENT

- **Public meetings**
  - Public Meeting – Wednesday, May 10th 6:30 PM
- **Project website**
  - https://tinyurl.com/yck5dm9n
- Email sign-up form

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THANK YOU

- Thank you for your time and we look forward to engaging with you as the project moves forward
- Contact:
  - Alex Maxwell, Resilience Planner | Project Manager, Fuss & O'Neill: amaxwell@fando.com
  - Joseph Famely, Climate & Sustainability Team Lead | Woods Hole Group: jfamely@woodsholegroup.com

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