

Resilient Woods Hole

Steering Committee Meeting #2

December 9, 2021

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Woods Hole Group



Agenda

1. (re)Introductions
2. ResilientWoodsHole Phase 3 Overview and Schedule
3. Stakeholder Interviews Debrief
4. Public Outreach Strategies
5. Plan Public Workshop #1 (Vulnerability)
6. Feedback on Adaptation Themes



ResilientWoodsHole Steering Committee

Project Partners

Woods Hole Oceanographic Institution
Marine Biological Laboratory
NOAA Fisheries
Town of Falmouth

Consulting Team

Woods Hole Group
Nutter

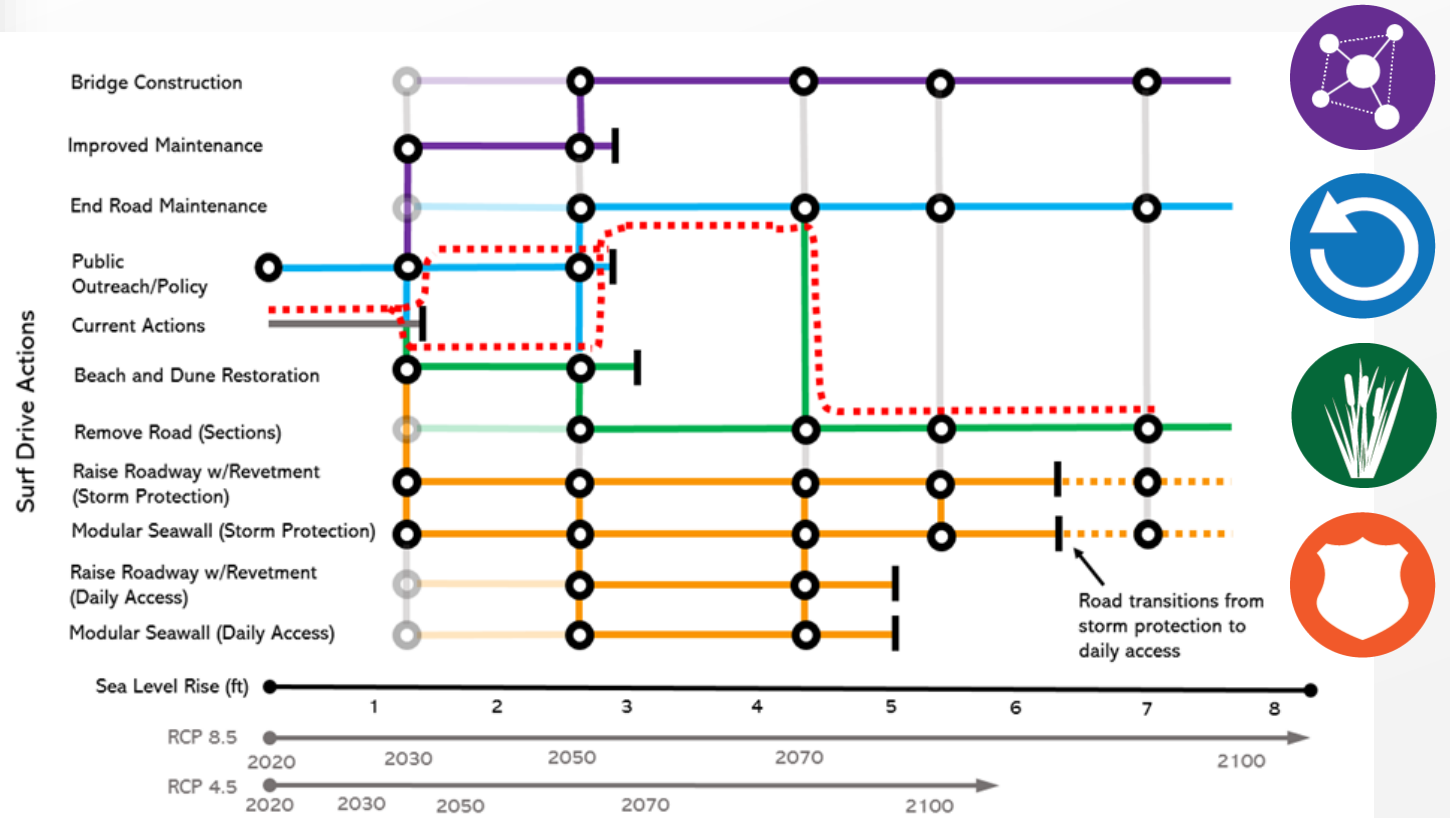
Steering Committee

(Project Partners)
Cape Cod Cooperative Extension
Community Liaisons
Steamship Authority
Sea Education Association
US Coast Guard Station Woods Hole
US Geological Survey
Woods Hole Business Association
Woods Hole Community Association
Woodwell Climate Research Center
MA Office of Coastal Zone Management

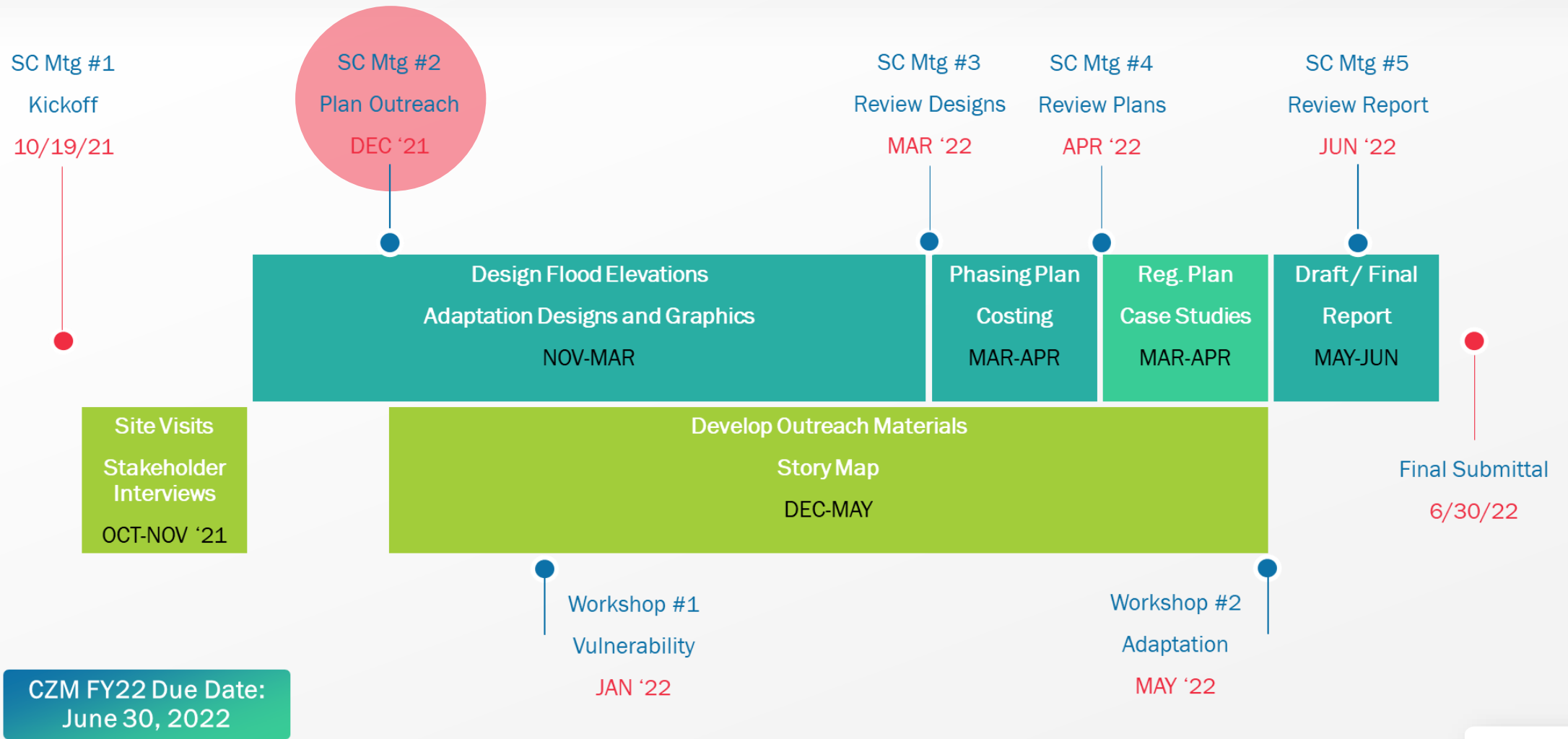
ResilientWoodsHole Phase 3 Overview

Comprehensive phased strategy that integrates resilient design concepts and community visioning

1. Develop community-wide **understanding of local climate impacts**.
2. Build effective **partnerships** for Village planning and visioning.
3. Develop **short-, mid-, and long-term climate adaptation actions** across strategic themes.
4. Identify key **thresholds and transition points**, based on adaptive management
5. Chart **dynamic adaptation pathways** that optimize community outcomes over time, based on community preferences and scientific projections.



ResilientWoodsHole Phase 3 Schedule



Stakeholder Interviews Debrief

Key Themes

residents, institutions, businesses and Town rely on one another for support, need to **adapt together** rather than in silos
near-term preference for solutions that enhance ability to **ride out storms and rebound**, rather than walls or retreat
long-term recognition that **some non-water dependent functions can relocate**, but not universally feasible
long-term recognition that **other assets** that are water-dependent or limited alternatives **may need to explore protection**
strong preference to **maintain the existing character** of the Village and **maintain “third places”** that facilitate innovation
identity of Woods Hole Village is tied to close-knit **community, working waterfront, science, business/tourism, open space**
desire to **reduce traffic and congestion**, which could enhance character and accessibility as well as open space
desire to increase access to and engagement with **outdoors, waterfront, and institutions** (community and scientific)

Public Outreach Strategies: Photos



Call for flooding photos
jfamily@woodsholegroup.com

If you have (or know people that have) photos of flooding in Woods Hole, please send them in to help improve communications and outreach.

high tide flooding, hurricanes, nor'easters



Public Outreach Strategies: Survey

Part 1: Review some information on coastal vulnerability and adaptation

Maps of project area, maps of flood projections, photos of flooding, examples of different adaptation strategies

Part 2: Questionnaire

- › What is your connection with Woods Hole Village?
 - live/work/visit
- › If you work or own a business in WHV, please identify.
- › How often do you frequent WHV?
- › Have you experienced flooding in WHV? If yes, where?
- › Is flooding impacting the functions of WHV? If yes, how?
- › What brings you to WHV?
 - shopping/restaurants/arts/science/explore/recreation/film festival/road race
- › What are the important assets/amenities in WHV?
 - ALT: How important are assets X/Y/Z?
- › Of the activities and amenities in WHV, which could function in a different location, and which need to stay where they are?
- › What would make WHV better?
- › Considering sea level rise, what types of strategies would you support in WHV?
 - No action, accommodate, protect (hardened, nature-based, hybrid), retreat
- › Considering storm surge, what types of strategies would you support in WHV?
 - No action, accommodate, protect (hardened, nature-based, hybrid), retreat



Public Outreach Strategies: Symposium Debrief

“The effects of climate change are inevitable. Now more than ever, it’s important we work together as a community to face the challenges that we have.” - Nipam Patel (MBL)

November 18, 2021

MBL Clapp Auditorium

270 in attendance (online + in-person)

- Climate Science Contributions: What are our very own Woods Hole Scientists doing?
- Planning and Resiliency Support for Communities: What is happening locally, regionally and state-wide?
- ResilientWoodsHole: What is it? What do we know? Where are we going?



Plan Public Workshop #1 (Vulnerability)

January (does 18th or 19th work?)

Preference for in-person

Project overview

Share vulnerability results

Gather public feedback (preferences)

- › What aspects of WHV are most important to you?
- › What features of WHV should be improved?
- › What are your ideas to reduce vulnerability?
- › How do you envision the future of WHV?

Stations

- › Existing Conditions
- › Model Results (Vulnerability)
- › Community Input – Valued Features
- › Community Input – Future Actions



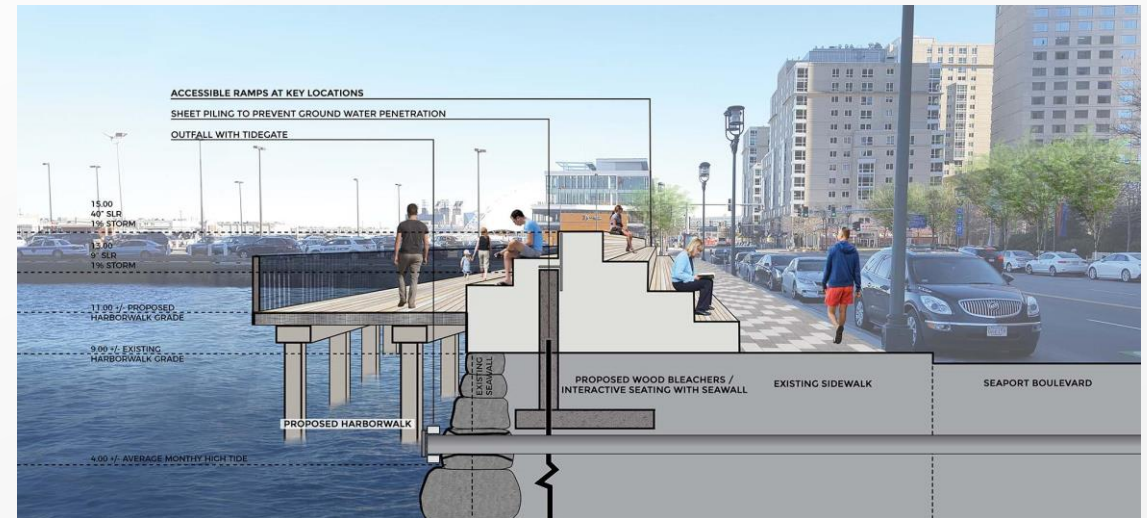
Adaptation Strategies – Accommodate



“Long known for its history of economic and environmental resilience, the Nantucket Island community has come together to discuss, evaluate, and strategize solutions for living with the water..”

(Credit: Yale School of Architecture Team, Nantucket Envision Resilience Challenge)

Adaptation Strategies – Protect (hardened solutions)



“The Harborwalk along Seaport Boulevard could be adapted for flood protection. Higher elevations could be adapted with creative additions and expansions of the Harborwalk. Solutions such as elevated sidewalks or stepped planters would preserve sight lines and avoid significantly disrupting the pedestrian relationship with the waterfront.”

(Credit: City of Boston, Climate Ready South Boston)

Adaptation Strategies – Protect (nature-based solutions)



Dune reconstruction at previously flooded and eroded coastal parking lot
(Breakwater Beach, Brewster)

Adaptation Strategies – Protect (hybrid solutions)



ALTERNATIVE: RAISE HARBORWALK

Raising the Harborwalk in place can be coupled with living shoreline interventions that allow for tidal and subtidal ecosystem enhancements. This option offers fewer ecosystem and recreational benefits compared to the preferred solution.



“The proposed expanded wetlands area and berm park at Neponset Circle will increase waterfront access, connect the existing open spaces along the Neponset Riverfront, enhance ecology, expand natural resources, and lastly provide public recreational amenities.”

(Credit: City of Boston, Climate Ready Dorchester)

Adaptation Strategies – Retreat (managed)

Short-term Vision







Long-term Vision



Short-term and long-term visions from the Resilient Edgemere Community Plan
(Credit: New York City Department of Housing, Preservation, and Development)

Feedback on Adaptation Themes

| PROJECT PURPOSE | GOALS | SCENARIOS & STRATEGIES (THEMES) | ADAPTATION ACTION EXAMPLES |
|---|---|---|--|
| Develop short-, mid-, and long-term strategies to increase the coastal resiliency of the Surf Drive area. | Preserve, restore and enhance coastal and marine ecosystems to improve coastal resiliency and promote healthy ecosystem functions. | <p>NATURAL RESOURCES</p> <p>Emphasize ecosystem health and resilience</p>  | <ul style="list-style-type: none"> • Beach/dune nourishment • Culvert widening; enhanced fish passage/tidal exchange; reduce dredging needs • Protect residential neighborhoods with living shorelines • Provide salt marsh migration corridors to adapt to SLR |
| | Improve resiliency of infrastructure along the Surf Drive coastline to protect operational capacity. | <p>PROTECTION</p> <p>Emphasize protection and maintenance of infrastructure</p>  | <ul style="list-style-type: none"> • Armor Surf Drive • Elevate roadway • Protect/elevate homes • Floodproof and/or elevate Surf Drive sewer lift station • Floodproof Mitchell Bathhouse • Protect/maintain Woods Hole sewer line in place |
| | Maintain important public access, transportation corridor, and utility line connections. | <p>CONNECTION</p> <p>Emphasize maintenance of vital access, transportation and utility corridors</p>  | <ul style="list-style-type: none"> • Maintain access to beach† • Maintain transportation connections† • Maintain (redundant) utility lines† • Maintain bikeway to W.H. † <p>†Could be shifted in location</p> |
| | Balance the use, access, and enjoyment of coastal resources, while accounting for geologic and ecosystem shifts in response to sea level rise, and encouraging community-wide adaptability. | <p>MANAGED RETREAT</p> <p>Emphasize a balance of uses now with increased costs and risks in the future through a multi-phased retreat plan</p>  | <ul style="list-style-type: none"> • Identify thresholds for <u>abandoning Surf Dr.</u> • Shift bikeway landward (potential boardwalk sections) • Shift sewer main landward • Remove Mitchell Bathhouse; convert to portable restrooms • Adopt bylaws that limit future development |



Thank you

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