



Resilient Rhody 2025

November 2025 | EC4

ARUP

 **FUSS & O'NEILL**

 **DEM**
RHODE ISLAND

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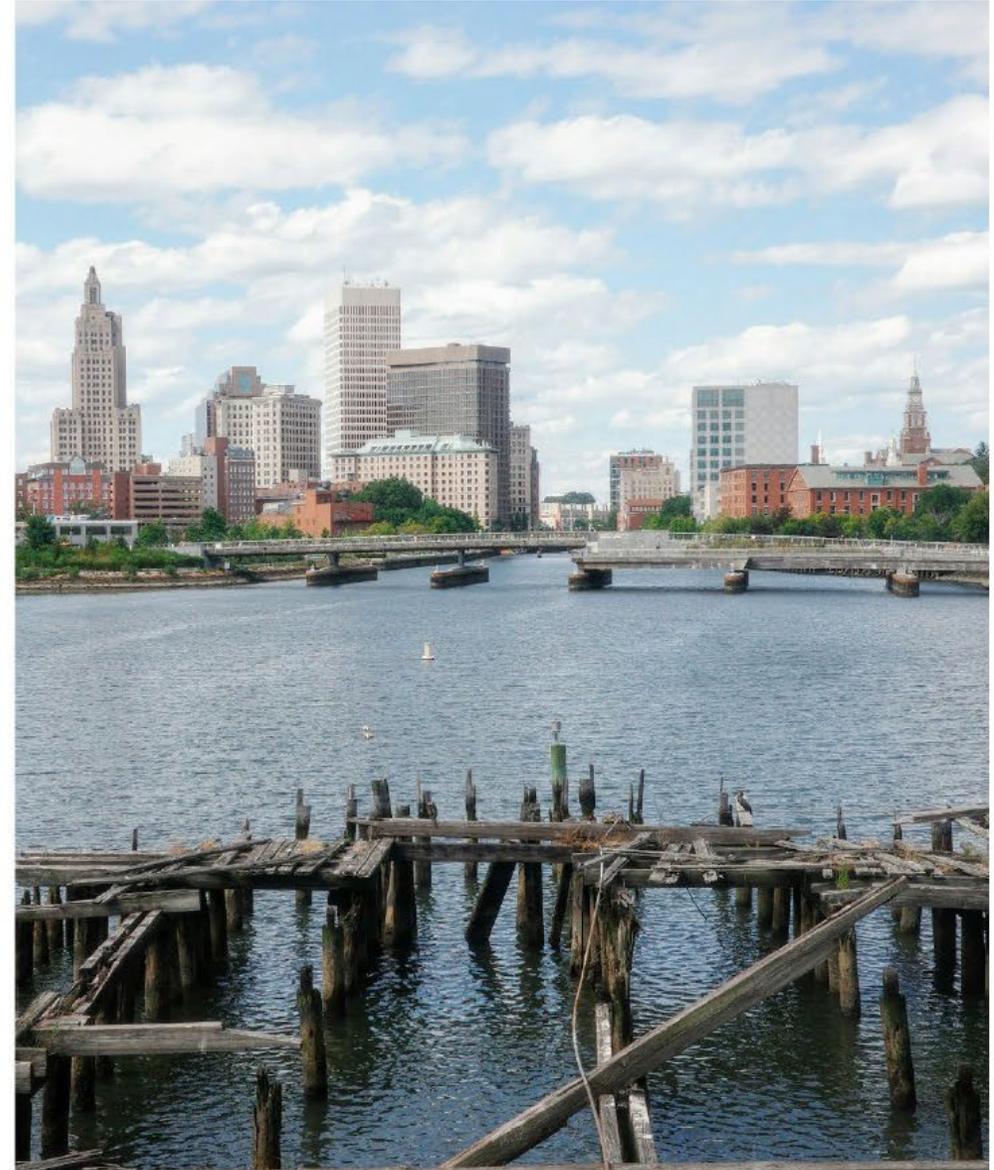
Resilient Rhody 2025 – Objective

2025 Statewide Coastal Resilience Plan

This initiative seeks to:

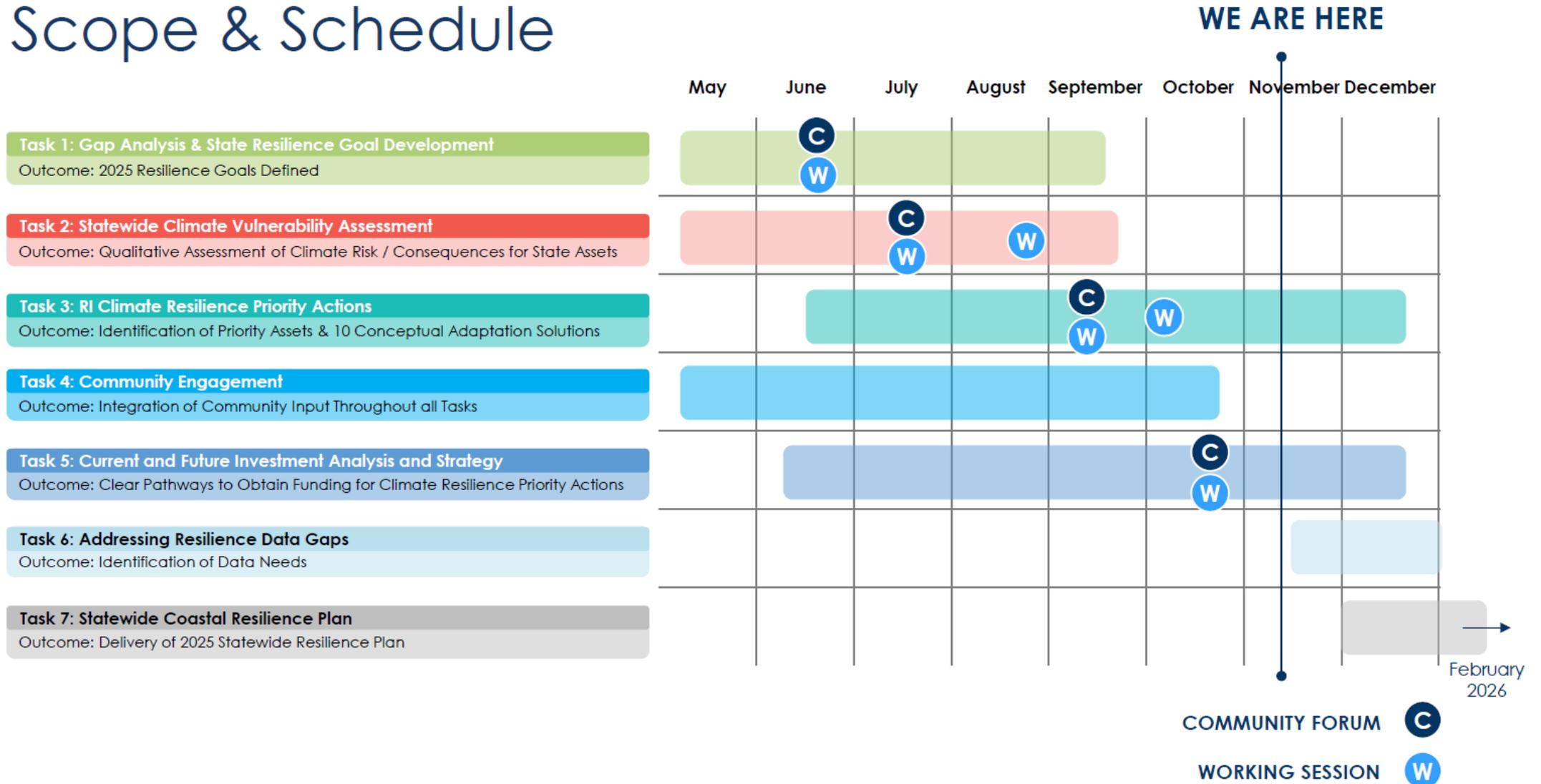
Develop a targeted, feasible, and implementable coastal resilience plan that:

- Helps **secure Rhode Island's communities** and economy
- Develops a **rigorous vulnerability assessment** for state assets
- **Identifies priority assets** for investment
- Engages across state and municipal government to **build consensus** and capacity
- Includes **robust community and stakeholder engagement**
- Provides funding and investment strategies to **advance identified projects**



Resilient Rhody 2025 – Scope & Schedule

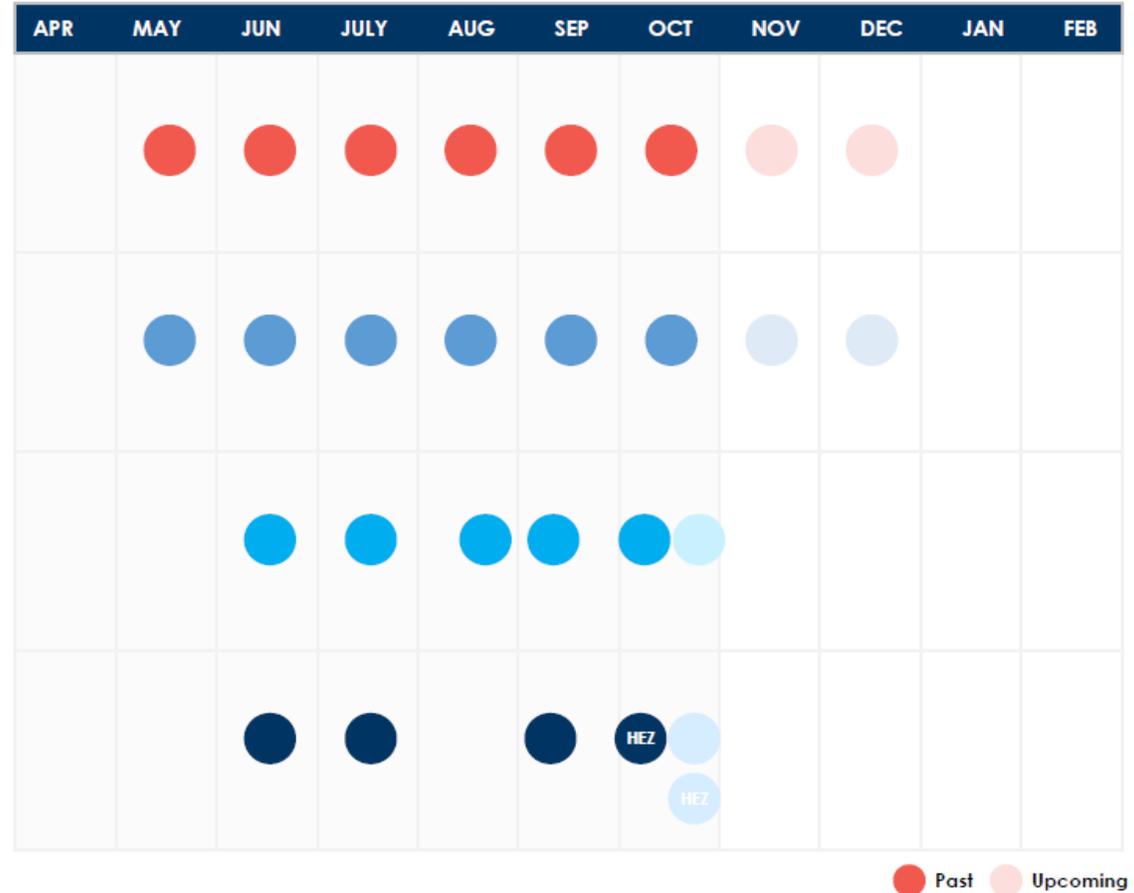
Scope & Schedule



Resilient Rhody 2025 - Partners

Engaged Partners

- **Resilience EC4 Subgroup**
 - **Monthly** meetings with **14** State Agencies
- **Rhode Island Resilience Partner Group**
 - **Monthly** meetings with **over 40** entities including non-profit organizations, institutions, and subject matter experts
- **Municipal Stakeholders**
 - **115** in attendance at 5 working sessions
- **Community Forums**
 - **Over 100** attendees at 3 community forums
 - Two targeted **HEZ** meetings



Resilient Rhody 2025 – Accomplishments

Accomplished to Date

Task 1: Gap Analysis & State Resilience Goal Development

Defined 79 Actions based on a Gap Analysis, Stakeholder Engagement, and Adaptive Capacity Study.

Task 2: Statewide Climate Vulnerability Assessment

Completed a comprehensive Climate Vulnerability Assessment covering **21 asset types** amounting to **132,978 assets!**

Task 3: RI Climate Resilience Priority Actions

Implemented a **3-step Prioritization Approach** to narrow down over **10,000 high-risk assets** to a Priority Asset List based on stakeholder-driven weighting and 10 solutions.

Task 4: Community Engagement

Completed **5 community forums** and **6 municipal stakeholder working sessions** over **250 total attendees**.

Task 5: Current and Future Investment Analysis and Strategy

Completed a **Funding and Legislative Needs Assessment** for the proposed 2025 Actions including a comprehensive **inventory of funding and financing mechanisms**.

Task 6: Addressing Resilience Data Gaps

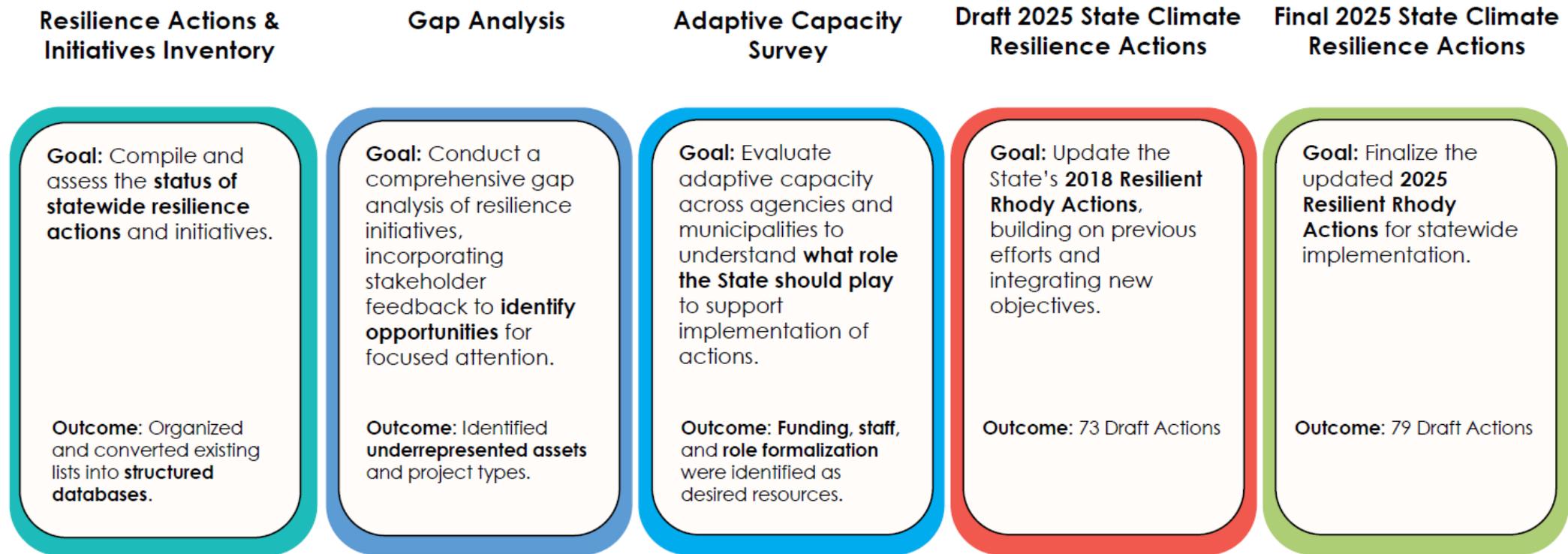
Forthcoming!

Task 7: Statewide Coastal Resilience Plan

Forthcoming!

Resilient Rhody 2025 – Resilient Rhody Actions

Task 1: Gap Analysis & State Resilience Goal Development



Resilient Rhody 2025 – Resilient Rhody Actions

Gap Analysis

Key Findings:

Represented Resilience Initiatives existed surround:

- Community Health and Resilience
- Financing Climate Resilience Projects
- Coastal Wetlands

Resilience Initiatives gaps existed in:

- Drinking Water Infrastructure
- Fuel Supply
- Building Design & Construction
- Evacuation Shelters & Routes



Resilient Rhody 2025 – Resilient Rhody Actions

Example 2025 Resilient Rhody Actions

By Action Type

<p>Resilient Infrastructure</p> <p>Number of Actions: 11</p>	<p>4.01 Encourage the integration of green infrastructure to enhance the capacity of traditional stormwater systems while delivering co-benefits such as improved water quality, ecosystem health, and community resilience.</p> <p>18.04 Develop a Resilience Hubs Program that provides funding and technical support to create new Hubs, implement backup power systems, deploy mobile health units, and carry out necessary retrofits for shelters, community centers, and other critical infrastructure.</p>	<p>Agency</p> <p>RIDEM</p> <p>DPUC, PUC, OER, and Utilities</p>	<p>Funding</p> <p>Number of Actions: 12</p>	<p>6.04 Build on the Resilient Microgrid for Critical Services Report and Program, as well as the RI Public Utilities Commission (PUC) 's microgrid feasibility study, to establish a long term, state budget funding mechanism to support the grid resiliency and microgrid deployment technical assistance programs, particularly in rural communities.</p> <p>19.01 Create new funding programs to specifically to support voluntary buyouts; local vulnerability studies...; emergency relief for non-federally declared disasters; maintenance of installed resilience solutions; and for other key needs established throughout the state resilience actions.</p>	<p>Agency</p> <p>OER</p> <p>RIIB, RIDEM</p>
<p>Data & Mapping</p> <p>Number of Actions: 10</p>	<p>14.12 Establish state funding to ensure that data are consistent across agencies and municipalities... Create a centralized platform for state climate resilience data...policy planning and resilience design standards. Ensure all data and materials are offered in multiple languages.</p>	<p>RIDEM , URI, CRMC,</p>	<p>Standards & Codes</p> <p>Number of Actions: 6</p>	<p>10.07 Develop strengthened municipal resilience standards across agencies and programs that consider various assets, such as residential, commercial, roads, wastewater, stormwater, drinking water infrastructure, electrical infrastructure, and open space.</p>	<p>RIDEM, Resilience EC4 Subgroup</p>
<p>Planning</p> <p>Number of Actions: 32</p>	<p>18.02 Develop model municipal ordinances to ensure climate resilience goals are met, ensuring that development does not occur in floodplains, highly erosive areas, and other climate vulnerable locations.</p> <p>11.04 ... Identify priority areas for voluntary buyouts and potential coastal retreat, such as marsh migration corridors and areas vulnerable to coastal flooding.</p>	<p>Div. of Statewide Planning</p> <p>RIDEM, CRMC</p>	<p>Education & Workforce Development</p> <p>Number of Actions: 9</p>	<p>18.10 Continue to develop technical assistance and statewide support for bottom-up, community-led groups and Health Equity Zone (HEZ) community members to carry out planning and action to make their communities more climate resilient, including coordinated guidance on identifying and securing funding.</p> <p>18.08 Develop a centralized, multilingual platform to educate current and prospective homeowners, renters, and business owners about property-specific climate risks, resilience strategies, and zoning-based insurance options.</p>	<p>RIDOH, EOHS, RIDEM</p> <p>RIDEM, Div. Statewide Planning, CRMC, EMA</p>

Resilient Rhody 2025 – Resilient Rhody Actions

Actions' Presentation

Action 11.01

Wetland Restoration & Migration: Continue monitoring and assessment of coastal wetland habitats and management practices to evaluate and prioritize future actions. Statewide models, such as the Sea Level Affecting Marshes Model (SLAMM) and the Statewide Coastal Rapid Assessment Method (MarshRAM), should be expanded and updated to identify opportunities for conservation and restoration to assist in planning for future marsh migration. Expand wetland and riparian protection especially where buffers are limited. To minimize loss and preserve the benefits of coastal wetland habitats, conservation and management must be approached at multiple scales and timeframes with distinguished strategies for rural, urban, and waterfront areas.

Establish habitat restoration standards relative to climate resilience and develop incentives for these standards to be implemented locally. Increase resources and technical assistance to coastal municipalities for coastal habitat restoration and enforcement staffing.

Category:

Infrastructure **Natural Systems** Community Resilience Emergency Preparedness

Asset Type:

All Critical Infrastructure Drinking Water Wastewater Dams Stormwater
 Ports Electric Grid Fuel Supply Roads, Bridges, & Culverts Public Transportation
 Beaches & Barriers **Coastal Wetlands** Forests Water Resources
 Evacuation Shelters & Routes Building Design & Construction Emergency Services Community Health & Resilience Financing Climate Resilience Projects

Responsibility:
CRMC, RIDEM

1

Driver:

2

State Gap Analysis Community
 Partner Municipal

Timeframe:

Short-Term (1-2 years) Medium-Term (2-5 years) **Long-Term (Ongoing)**

3

Metrics for Success:

4

- Adoption of habitat restoration standards that incorporate climate resilience principles.
- Incentives are developed to encourage local implementation of standards.
- The number of municipalities accessing state-provided technical assistance increases.

Funding Need:

N/A **\$** \$\$ \$\$\$ \$\$\$\$

7

5 Legislative Need(s):
Rules & Regulations, Community Incentives, Technical Assistance & Capacity Building, Data Collection & Information Systems, Enforcement & Compliance Mechanisms

6 Potential Funding Source:
NOAA Coastal Zone Management (CZM) Program Grants, National Estuary Program (Narragansett Bay Estuary), National Coastal Resilience Fund (NCFR), US DOD Readiness and Environmental Protection Integration (REPI)

1. Responsibility

Indicates the lead or partner entities responsible for the action.

2. Action Driver

Identifies the stakeholder group(s) that initiated, influenced, or recommended the action.

3. Timeframe

Indicates short-term, medium-term, or long-term/ongoing actions.

4. Metrics of Success

Indicators of success to measure progress towards the action against.

5. Legislative Need(s)

Indicates policy or legislative needs necessary to implement the action. These are categorized into four groups: Funding, Policy & Compliance, Tools & Training, & Coordination needs.

6. Potential Funding Source:

Indicates potential funding sources ranging from federal, state, local, and innovative mechanisms.

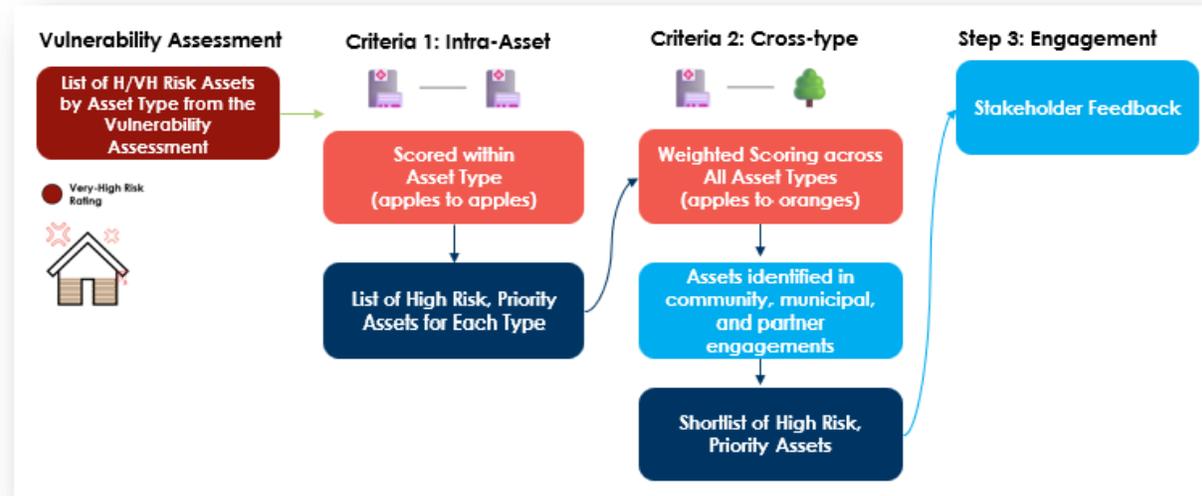
7. Funding Need

Indicates the relative funding amounts necessary to carry forward the action. N/A indicates actions focused on advocacy, efficiency, or priority setting.

Resilient Rhody 2025 – Priority Assets

Asset Prioritization Criteria Approach

- 1. Vulnerability Assessment**
Assets determined to be High or Very High risk in the Vulnerability Assessment (**approx. 10k assets**) were carried forward to prioritization.
- 2. Intra-Asset Comparison**
The first step was Intra-Asset prioritization (ex. WWTF vs. WWTF). This resulted in **approx. 200 assets**.
- 3. Cross-Type Comparison**
Once we narrowed to **approx. 100-200 assets**, assets were compared across categories (ex. WWTF vs. Forest) using stakeholder-informed, weighted Cross-Type Criteria.
- 4. Community & Municipal Feedback**
After narrowing to **approx. 40 assets**, we overlaid sites mentioned in the community forums, municipal stakeholder forums, and technical assistance package and annual resilience update meetings with the regional resilience coordinators to add or remove assets accordingly.



Resilient Rhody 2025 – Priority Assets

Adaptation Solutions In Development

Addressing Priority Assets' Risk



Critical Infrastructure Adaptation Solutions

Road & Bridge Flood Mitigation Solutions with a focus on evacuation routes

Resilient Port Infrastructure Solutions

Energy Resilience Solutions with a focus on Washington County and Block Island

Sewer & Stormwater Infrastructure Solutions

Wastewater Treatment Facilities Hardening

Drinking Water & Reservoir Resilience



Natural Systems Adaptation Solutions

Beach & Wetland System Restoration

Inland Water Area Restoration with a focus on the Moshassuck River



Community Resilience & Emergency Preparedness Adaptation Solutions

School & Public Safety Building Solutions with hardening and relocation opportunities



Hospital Flood & Energy Resilience Solutions

These **10 solutions** are being developed and costed.

Guidance is meant to **serve as a template for projects that can be activated across the state**, with first exploration at priority assets identified through the Vulnerability Assessment and Prioritization Process.

Resilient Rhody 2025 – Adaptation Solutions

Solution Templates

1. Ongoing Actions & Resources

Summarizes current efforts at the state and local levels, with links to relevant reports, plans, and initiatives.

2. Steps for Implementation

Provides guidance on actions required to advance projects from identification to implementation.

3. Representative Priority Assets

Includes a summary of climate risk profiles and the context of assets identified during the prioritization process.

4. Strategy Guidance

Outlines specific strategies for each solution, including associated hazards, solution mechanisms, level of innovation, and relative costs.

5. Community Voices

Features quotes or key takeaways from engagement activities to demonstrate how community preferences have been incorporated.

Adaptation Solution Title Summary

1

Main takeaways of the solution including the main problem it addresses, how the specific strategies come together and the benefits of implementation. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative.

Ongoing Actions
This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative.

Resources

- Resource Description
- Resource Description
- Resource Description

Steps for Implementation

2

- Task**
Insert supporting text here to explain the step in more detail, including any recommended best practices or guidelines that should be followed.
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Representative Priority Assets

3

Provide a high-level summary of the assets from the priority list that informed this strategy, including their specific context, any high-level representative assets examples, this is additional filler text to demonstrate how long the description should be.

Route-14 Corridor
Municipality: Providence – Bristol
Current Climate Risk: [Low] [Medium] [High]
2050 Climate Risk: [Low] [Medium] [High]
2080 Climate Risk: [Low] [Medium] [High]
Context: Evacuation Route, Three Miles North Hospital, and Major Route in Rhode Island.

Interstate - 95
Municipality: Cranston
Current Climate Risk: [Low] [Medium] [High]
2050 Climate Risk: [Low] [Medium] [High]
2080 Climate Risk: [Low] [Medium] [High]
Context: Evacuation Route, Three Miles North Hospital, and Major Route in Rhode Island.

Adaptation Solution Title Strategies

4

Main takeaways of the strategies here and how they work together to fit the project typology. Text here with further information to describe how these strategies work together. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative.

Example: Elevate Critical Equipment

Text here describing the specific strategy and how it works. Include considerations around design life and maintenance needs. Description should include reference to best practices and considerations for implementation. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative.

Adaptation Strategy

Text here describing the specific strategy and how it works. Include considerations around design life and maintenance needs. Description should include reference to best practices and considerations for implementation. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative.

Community Voices

Strategies or specific examples that emerged during engagement sessions and are relevant to these solutions. Include lessons learned or community preferences that can inform implementation.

Adaptation Strategy

Text here describing the specific strategy and how it works. Include considerations around design life and maintenance needs. Description should include reference to best practices and considerations for implementation. This is additional filler text to demonstrate how long the description should be please disregard and replacement with narrative.

Adaptation Strategy

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Representative Priority Assets

5

Provide a high-level summary of the assets from the priority list that informed this strategy, including their specific context, any high-level representative assets examples, this is additional filler text to demonstrate how long the description should be.

Route-14 Corridor
Municipality: Providence – Bristol
Current Climate Risk: [Low] [Medium] [High]
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Context: Evacuation Route, Three Miles North Hospital, and Major Route in Rhode Island.

Resilient Rhody 2025 – Adaptation Solutions

Strategy Types

Solution Mechanism



Protect

Defend vulnerable areas using **physical or engineered measures**



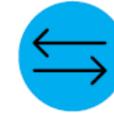
Accommodate

Adapt buildings and infrastructure to withstand changing conditions



Restore

Rehabilitate natural systems to buffer against hazards

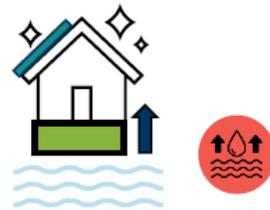


Rethink

Reevaluate planning strategies and support people, infrastructure, and critical assets relocate away from high-risk areas

Strategy Examples

Building & Infrastructure Retrofits



Ex. **Elevating** and reinforcing structures

Shoreline Protection



Ex. Engineered measures such as berms and **living shorelines** that stabilize coasts

Green Infrastructure Solutions



Ex. **Nature-based solutions** like rain gardens that capture and filter stormwater

Zoning & Regulation



Ex. Implementing land-use **policies** and **development standards** that steer growth away from high-risk areas

Resilient Rhody 2025 – Community & Municipal Engagement

October Engagement Meetings

We held **3 engagement meetings** in October:

- Our fourth and final **Community Forum**, held at the Rogers Free Library in Bristol on October 22nd
- Our sixth and final **Municipal Stakeholder Working Session** online on October 24th
- A Health Equity Zone '**Frontline Community Forum**' in Olneyville on October 29th



Resilient Rhody 2025 – Community & Municipal Engagement

Community Forum 04

Activities

The presentation was followed by a Mentimeter and then an at-table engagement activity. The activity involved choosing potential solutions for hypothetical projects to indicate which solutions the State should fund, and which it shouldn't.

BUILD YOUR OWN PROJECT

Work with your neighbor to explore which actions you think the State should - and shouldn't - fund for Rhode Island's resilience projects.

01 Choose your project. Pick a project card and place it in the Project box below.

02 Choose your solutions. Pick two solutions you'd like the State to fund for this project, and one you wouldn't. Place them in the boxes below and talk with your neighbor about why.

PROJECT	SOLUTION 01	SOLUTION 02	DON'T USE
+	+	+	+
<small>This is the solution you think would work best for this project.</small> <small>Why would this be the best choice?</small>	<small>This is another solution that could help or complement your main idea.</small> <small>How would it strengthen your project?</small>	<small>This is a solution you would not want the State to fund for this project.</small> <small>Why wouldn't you choose this one?</small>	
<small>Your name:</small> <small>Why did you choose this project?</small>			

PROJECT CARDS:

- PROJECT: STORMWATER SOLUTIONS
- PROJECT: BEACH BARRIER SYSTEM
- PROJECT: SCHOOL
- PERMEABLE PAVEMENT
- BUILDING/INFRASTRUCTURE RETROFITS
- SALT POND RESTORATION
- UNDERGROUND STORAGE TANKS
- ZONING + REGULATION

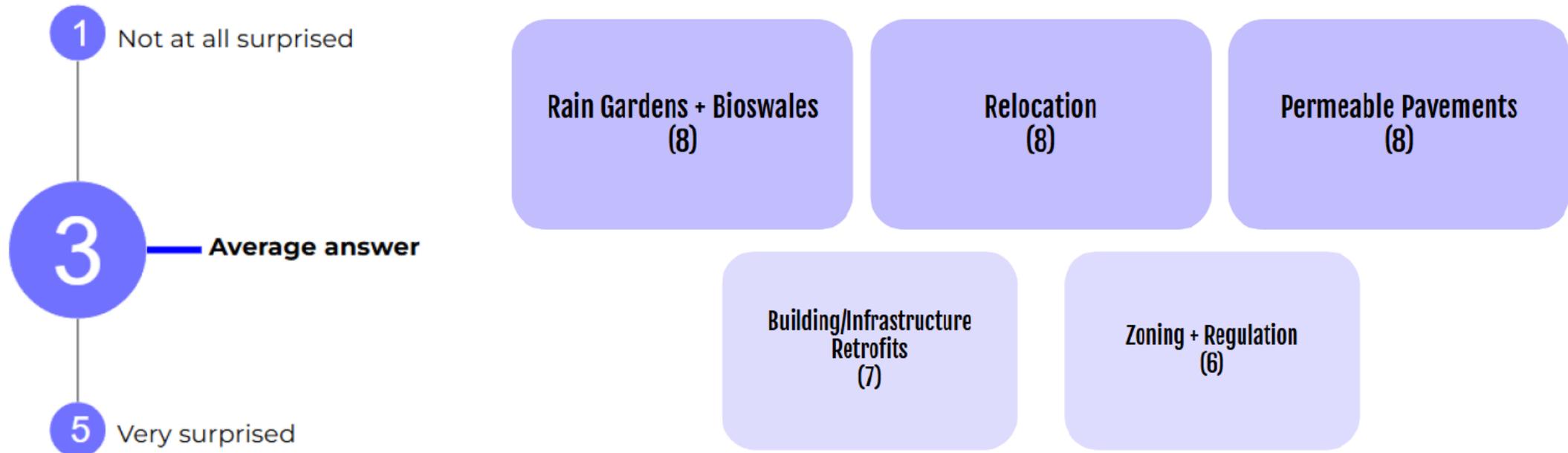
Resilient Rhody 2025 – Community & Municipal Engagement

Community Forum 04

Results

The Mentimeter survey, asked participants 3 key questions, including were you surprised with the asset shortlist? From 1 (not at all surprised) to 5 (very surprised) participants averaged somewhere in between with an average answer of 3.

During the 'Build Your Own Project' activity, participants chose Rain Gardens and Bioswales, Relocation, and Permeable Pavements as their top solutions.



Resilient Rhody 2025 – Community & Municipal Engagement

Frontline 'HEZ' Community Forum

Meeting Overview

Organized in partnership with the Woonasquatucket River Watershed Council and tailored towards Rhode Island's Health Equity Zones (HEZs) and frontline community organizations, the Frontline Community Forum gathered approximately 42 attendees, most of whom were Spanish-speaking community members.



**WOONASQUATUCKET RIVER
WATERSHED COUNCIL**

THANK YOU!



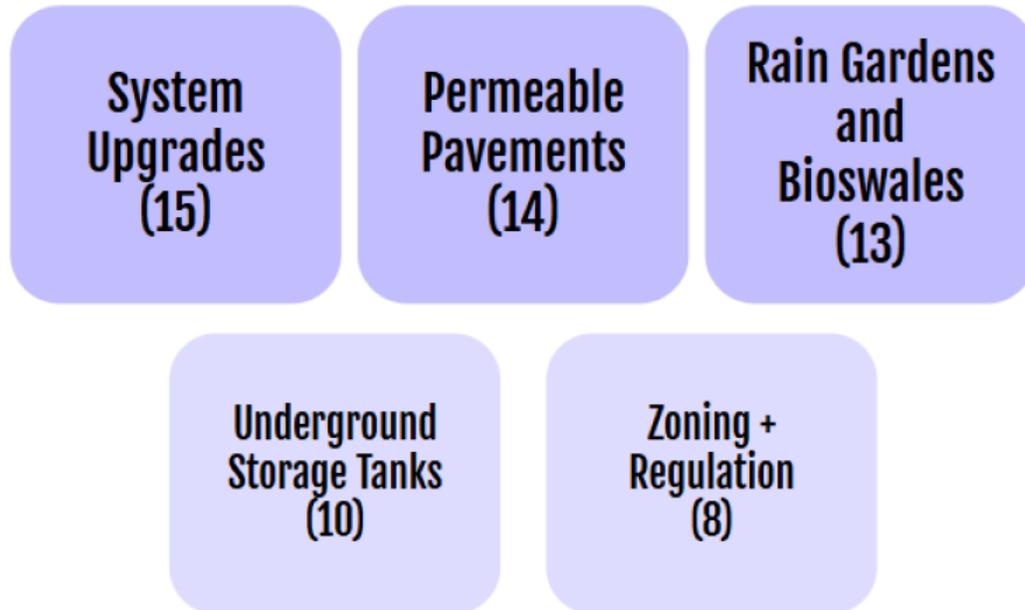
Resilient Rhody 2025 – Community & Municipal Engagement

Frontline 'HEZ' Community Forum

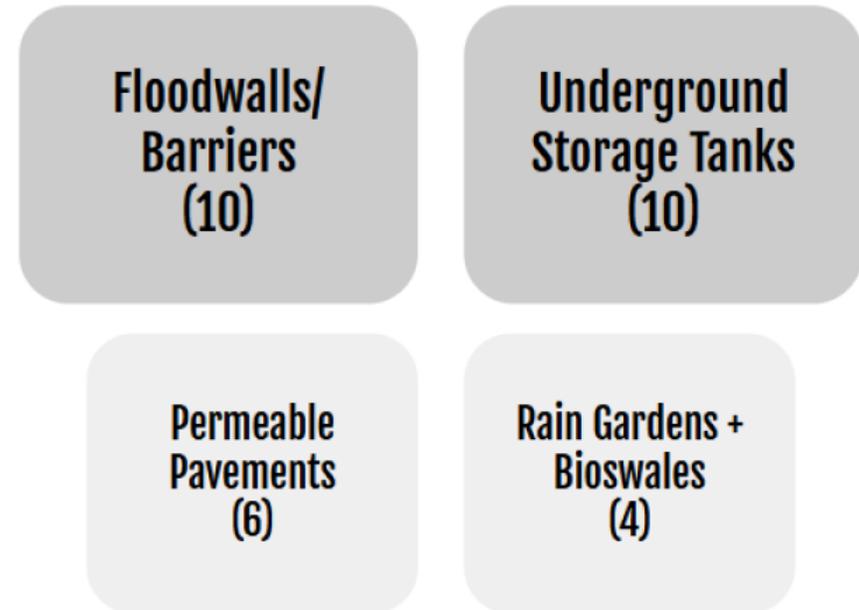
Results

During the 'Build Your Own Project' activity, participants chose Rain Gardens and Bioswales, Relocation, and Permeable Pavements as their top solutions.

The most popular solutions overall were...



The least popular solutions overall were...



Resilient Rhody 2025 – Community & Municipal Engagement

Municipal Stakeholder Session 06

Meeting Overview

The sixth and final municipal stakeholder meeting for the Rhode Island Statewide Coastal Resilience Project was focused on final priority assets and implementation.

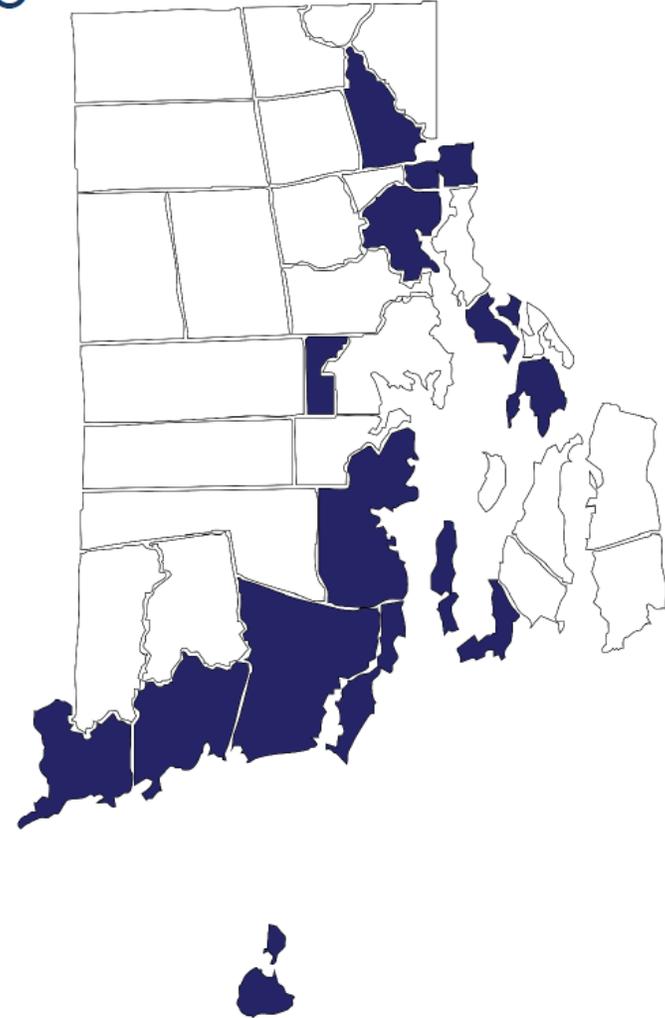
The meeting was held on Friday October 22nd, 2025 at 10am online.

There were approximately 15 attendees from municipalities across Rhode Island including: Barrington, Bristol, Charlestown, Jamestown, Lincoln, Narragansett, Newport, New Shoreham, North Kingstown, Pawtucket, Providence, South Kingstown, Westerly, West Warwick

This list includes those who were recorded and may not be exhaustive.

Agenda:

- Project Overview and Priority Assets Presentation
- Mentimeter Check-In
- Miro Activity: Projects + Solutions
- Debrief and Wrap-Up



Resilient Rhody 2025 – Community & Municipal Engagement

Municipal Stakeholder Session 06

Activities

We began engagement with a Mentimeter before participants moved into breakout rooms for the 2nd engagement activity. For this part of the session, participants were asked to review the shortlist of projects and drag and drop the project icons to answer questions about implementation.

01. How innovative should solutions be?
Place each project icon on the scale below from traditional (gray) to innovative (green).

02. What role should the State play?
Place each project icon on the scale below indicating what you feel the State's involvement should be - policy, funding, or technical assistance.

03. How should the project be funded?
Place each project icon on the scale below on Federal, State, or other funding mechanisms.

The image displays three interactive scales for project implementation, each with a legend on the right side. The legend includes three project types: Reservoir Resilience (represented by a hand holding a pen), Providence Station Resilience (represented by a train), and Hurricane Barrier Alignment (represented by a barrier with waves). The scales are as follows:

- Scale 01: Innovation Level**
A horizontal scale from TRADITIONAL (gray background) to INNOVATIVE (green background). The middle section is labeled HYBRID. Project icons are placed across the scale, with some in the traditional and hybrid sections and others in the innovative section. A yellow sticky note at the bottom left reads: "This is a traditional project that is being implemented in a traditional way." Another sticky note at the bottom right reads: "When we are in a hybrid state, we are in a hybrid state." A third sticky note at the bottom center reads: "When we are in a hybrid state, we are in a hybrid state." A fourth sticky note at the bottom right reads: "When we are in a hybrid state, we are in a hybrid state."
- Scale 02: State Involvement**
A Venn diagram with three overlapping circles labeled POLICY (pink), FUNDING (green), and TECHNICAL ASSISTANCE (gray). Project icons are placed in the overlapping areas. A yellow sticky note at the top left reads: "This is a project that is being implemented in a traditional way." A yellow sticky note at the top center reads: "This is a project that is being implemented in a traditional way." A yellow sticky note at the top right reads: "This is a project that is being implemented in a traditional way." A yellow sticky note at the bottom right reads: "This is a project that is being implemented in a traditional way."
- Scale 03: Funding Source**
A horizontal scale from FEDERAL (gray background) to STATE (green background) to OTHER (light green background). Project icons are placed across the scale, with some in the federal and state sections and others in the other section. A yellow sticky note at the top left reads: "This is a project that is being implemented in a traditional way." A yellow sticky note at the top right reads: "This is a project that is being implemented in a traditional way."

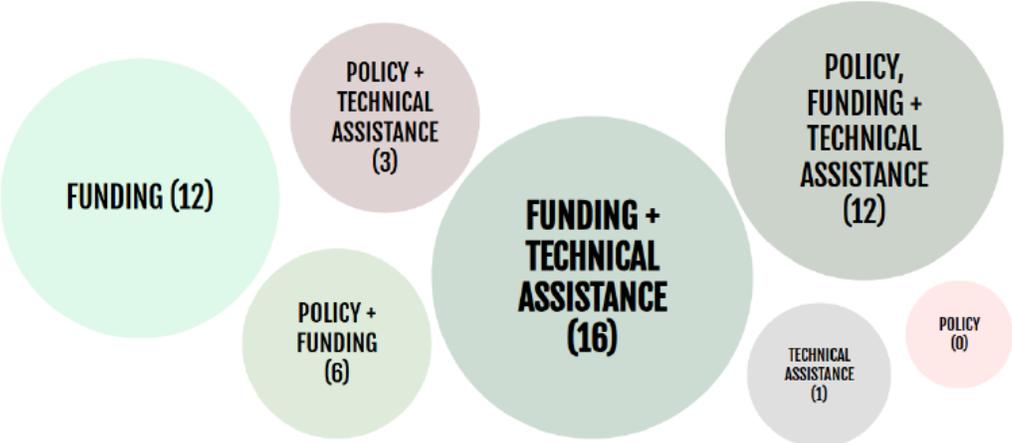
Resilient Rhody 2025 – Community & Municipal Engagement

Municipal Stakeholder Session 06

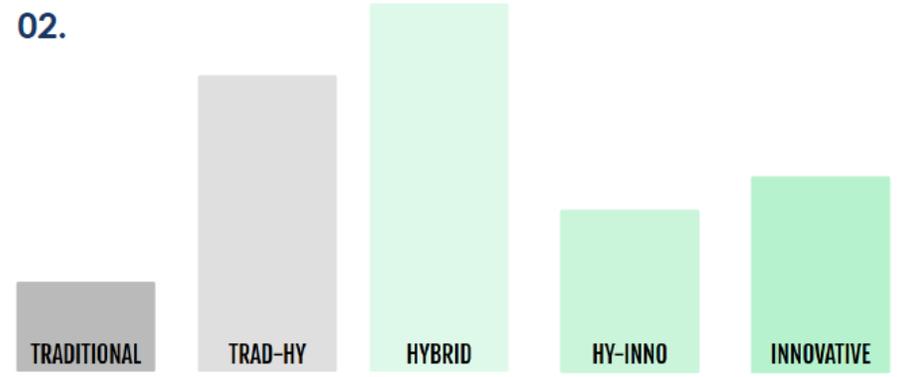
Results

Participants then used a Miro board to drag and drop projects to answer 3 questions: 1. what role the State should play - between funding, policy, and technical assistance? 2. how innovative should solutions be? 3. how should projects be funded?

01.



02.



03.



Resilient Rhody 2025 – Community & Municipal Engagement

Municipal Stakeholder Session 06

Results

During the Mentimeter survey, Participants were invited to answer a short series of questions. The first question in the Mentimeter survey asked, “Which challenges are most important for the State to help address?” Answers included:

Funding

(8/15 answers mentioned funding)

How to manage retreat and assist municipalities to manage that change (tax roll losses, infrastructure changes, etc.)

Manage projects that require solutions that require regional cooperation

Funding that is resilient to federal politics and enabling policies

Invest in climate resilient infrastructure, nature-based solutions
Funding, technical assistance

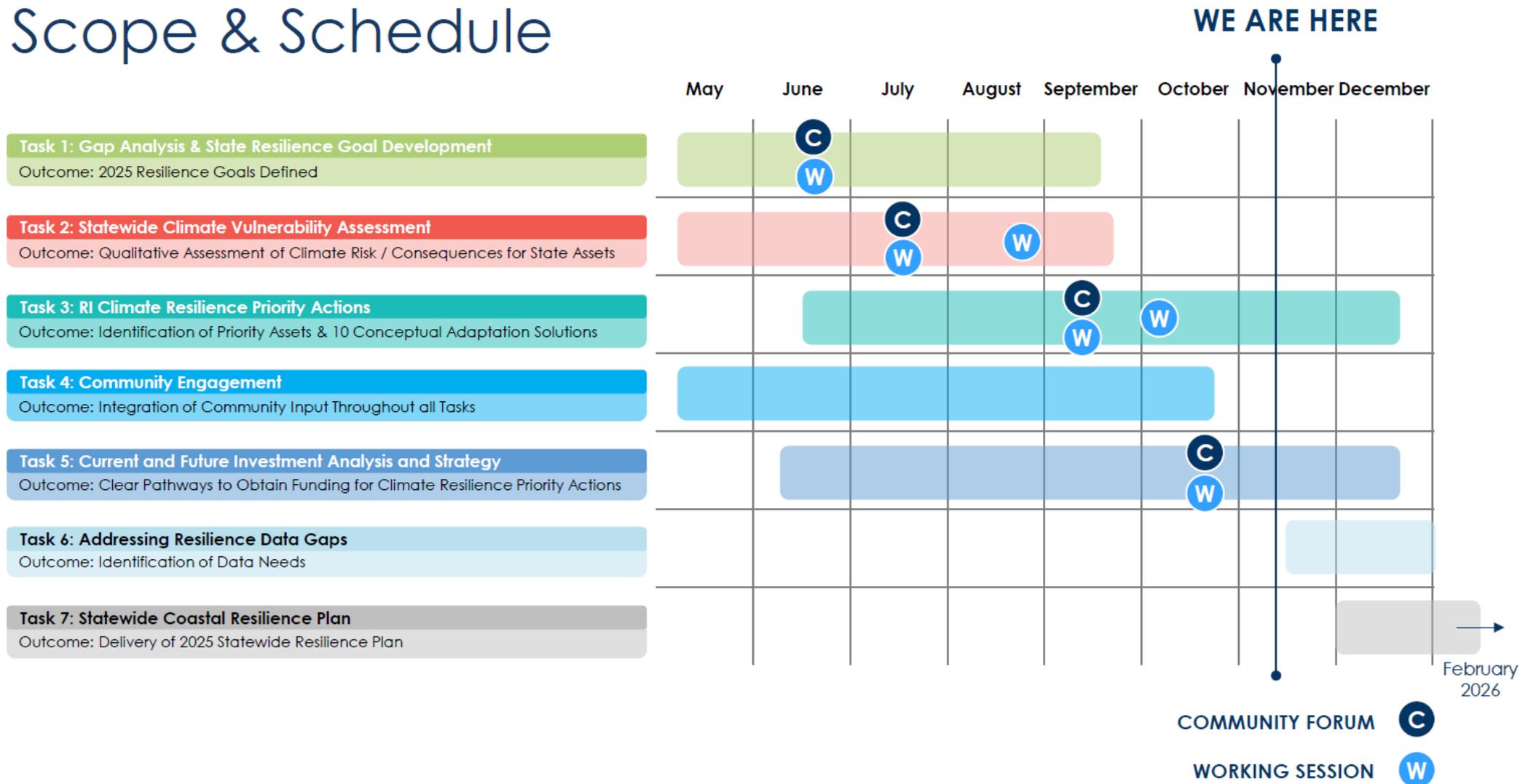
Challenges for which small towns lack administrative capacity to manage

Watershed level planning

Setting the stage for nature based solutions - making it possible to permit them

Resilient Rhody 2025 – Next Steps

Scope & Schedule



Contact Information

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