Chapter 9
Resilience Best Practices

Purpose of This Document

The purpose of this document is to present a curated compilation of resilience best practices intended to inform and facilitate the implementation of *Resilient Rhody 2025*. Although these practices were developed to support the objectives of this Plan, they are designed to serve as a comprehensive reference for Rhode Island stakeholders and other entities engaged in adaptation and resilience planning.

This document constitutes a point-in-time assessment of approaches and emerging models from across the United States and internationally. These examples are illustrative and are not intentioned to represent a comprehensive list. It is provided as a resource for guidance and inspiration, enabling users to evaluate and adapt these practices within their respective local contexts, priorities, and available resources prior to implementation.

Contents

Best Practice #1
Data Tools To Support Local Adaptation Capacity

Description

Interactive, university or state-supported platforms that go beyond static websites by providing centralized, decision-ready access to localized climate data, dynamic mapping, future projections, and actionable planning tools. These tools are designed to help municipalities update zoning, prioritize investments, and secure funding by translating climate science into locally relevant decisions; complementing, but distinct from, informational pans like *Resilient Rhody*.

Precedents

University of Washington Climate Impacts Group (CIG) Data Hub
Location: Washington, USA
Scale: Regional

Interactive digital platform offering downscaled climate projections, mapping, and planning tools that help municipalities incorporate climate science into land use, infrastructure, and hazard mitigation decisions.

Outcome: Used by 20+ municipalities and tribal nations to integrate climate projections into comprehensive plans, energy infrastructure, and hazard mitigation strategies. Helped secure $16.7M in FEMA BRIC and FMA grants by aligning local projects with science-based risk data.

Takeaway for RI: Link climate data with state planning and decision-making tools.

University of Michigan Great Lakes Integrated Sciences + Assessments (GLISA)
Location: Michigan, USA
Scale: Regional

Regional decision support tool providing localized climate data, visuals, and strategies to help plan for climate impacts via informed zoning, stormwater, and climate action policies.

Outcome: GLISA informed resilience planning in 20+ Great Lakes cities, including Toledo's stormwater management tool and Detroit's climate action plan. Contributed to successful applications for over $10 million in adaptation and planning grants.

Takeaway for RI: Ensure municipalities can apply projections to local planning and zoning processes.

Massachusetts Acts of 2018, Chapter 209:
Location: Massachusetts, USA
Scale: State

Requires state agencies and municipalities to use future climate projections in planning and infrastructure decisions. It authorized $2.4 billion in funding for resilience, nature-based solutions, and data-driven tools.

Outcome: The law supported the launch of the Climate Resilience Design Standards Tool and expanded the Municipal Vulnerability Preparedness (MVP) Program. It formalized the use of scientific data hubs in statewide planning.

Takeaway for RI: Consider legislation that unifies climate data, design standards, and funding.

University of Oregon Climate Change in Oregon (CCO) Data Portal:
Location: Oregon, USA
Scale: State

Statewide digital resource, backed by state funding, that combines climate projections, sea level rise maps, and scenario tools to support local governments in updating resilience ordinances, zoning codes, and infrastructure plans.

Outcome: CCO supported updates to zoning and floodplain ordinances in coastal cities like Coos Bay and Lincoln City.

Takeaway for RI: Consider a climate data portal with zoning and ordinance integration.

Relevant Hazards

Relevant Actions

Action #14.11: Develops a university collaborative to provide tools and expertise.

Action #14.12: Standardizes data for uniform design and progress tracking.

Action #14.13: Maintains dedicated GIS analyst positions to integrate state climate resilience data.

Action #18.07: Develops public tools that boost flood risk awareness and close insurance gaps.

Action #19.02: Updates the state climate change website to serve as a climate resilience data hub.

Ideas for RI

- Modify existing *Resilient Rhody* website to serve as the central hub for state climate resilience data and decision support tools.
- Expand and integrate requirements for the use of STORMTOOLS and Beach SAMP, as well as other projections vetted by RI and relevant to design, into municipal zoning, permitting, and grant guidance.

Best Practice #2
Innovative Insurance Tools to Improve Flood Recovery and Reduce Risk

Description

Innovative flood insurance strategies, such as parametric insurance (which pays out based on triggers like rainfall or flood depth) and CRS incentives (which reduce premiums for communities that exceed federal flood standards), can complement existing programs to lower financial risk, improve affordability, and support faster recovery for vulnerable communities.

Precedents

Hazard Parametric Insurance

Location: Freemont, California, USA; Utah, USA
Scale: Local

Hazard, or flood-specific, parametric insurance models automatically trigger an insurance payout when a predefined hazard threshold is met (e.g., water level), unlike traditional insurance that requires damage assessments and claims processing time. Many policies, such as Fremont's, allow funds to be used adaptively for different events to supplement uninsured residents' losses or cover debris clean-up.

Outcome: Although Freemont has not yet met the qualifying trigger for parametric flood insurance payouts, the parametric insurance model has been used successfully to address earthquake damages. In 2020, the State of Utah, who has also implemented a parametric insurance model for earthquake risk, received a payout within 30 days covering expenses before traditional insurance payout deductibles were met.

Takeaway for RI: Parametric insurance can deliver rapid payouts and initiate recovery when traditional assistance lags.

Caribbean Catastrophe Risk Insurance Facility

Location: Various
Scale: International

Provides parametric coverage to Caribbean and Central American countries. Payouts, usually within 14 days after major events, support disaster response and reduce aid dependence.

Outcome: Since its inception in 2007, the CCRIF has made 78 payouts for hurricanes and climate-related events, totaling approximately $390 million.

Takeaway for RI: Regional parametric risk pools incentivize shared resilience investment and offer immediate disaster funding without reliance on federal aid.

NYC NFIP Affordability Demonstration

Location: New York City, New York, USA
Scale: Local

Federal pilot testing strategy to make flood insurance more affordable for low- and moderate-income homes under NFIP. Explored premium subsidies and tools to address insurance gaps.

Outcome: The pilot identified barriers to enrollment—including cost and awareness—and developed affordability models to inform national NFIP reforms. It helped NYC align flood risk data with social vulnerability to improve insurance equity.

Takeaway for RI: Flood insurance subsidy pilots improve access for vulnerable households and build more equitable climate resilience.

Relevant Hazards

Relevant Actions

Action #19.05: Tracks climate change impacts on Rhode Island insurance markets and develops strategies for rising costs, data sharing and modelling, and updating building codes.

Action #18.07: Develops public tools that boost flood risk awareness and close insurance gaps.

Ideas for RI

- Launch an NFIP affordability pilot with RIEMA, informed by retrospective analysis of recent flood events and NYC's demonstration program.
- Explore a regional parametric insurance model to supplement federal disaster recovery.
- Create a Flood Insurance Navigator Program to expand access and education in frontline communities.

Best Practice #3
Community Science & Workforce Training for Nature-Based Resilience

Description

Training residents and youth in nature-based resilience through community science and workforce development builds local capacity for climate adaptation. These programs empower communities to monitor wetlands, manage stormwater, and steward green infrastructure while integrating traditional and Indigenous knowledge. Combining hands-on education with career pathways advances equity and improves adaptive management.

Precedents

North Carolina Coastal Federation (NCCF)

Location: North Carolina, USA
Scale: Regional

Offers living classroom trainings to communities, schools, and property owners to teach low-impact development and provide technical guidance on installation and monitoring methods for resilient solutions to stormwater and coastal flooding.

Outcome: The NCCF trained over 400 individuals, including students and displaced workers, in wetland restoration and living shoreline installation, restoring 8,000+ feet of habitat. Rain gardens built by students diverted over 100,000 gallons of stormwater.

Takeaway for RI: Paying local residents to monitor wetlands on public lands or conservation easements builds community skills while maintaining nature-based infrastructure.

Pantanal Wetland Citizen Science

Location: Pantanal, Brazil
Scale: Regional

Citizen science program trained local fishers and residents to monitor wetland biodiversity and hydrology, integrating Indigenous and local knowledge into data collection.

Outcome: Community-led data collection dispelled overfishing myths, improved Indigenous rights and resulted in a 5,000 km² community-managed reserve. Outreach to schools and community centers boosted science literacy and strengthened local environmental governance.

Takeaway for RI: Involving Indigenous and local participants in wetland monitoring enhances ecological stewardship and community-driven conservation.

Illinois Energy Transition Assistance Act

Location: Illinois, USA
Scale: State

The 2021 bill was established to support clean job workforce training programs, pre-apprenticeships, and community grants for marginalized populations. Created clean energy incubator program for small businesses.

Outcome: Allocated over $180M per year to workforce development, including $21M+ for contractor training and $6M for EJ outreach. Established 13 workforce hubs, increasing solar jobs by 50% and expanding access to green infrastructure careers for EJ communities.

Takeaway for RI: State-backed workforce programs that fund training in climate technologies can support both equity and local green-economy growth.

Adopt-A-Wetland Program

Location: Georgia, USA
Scale: State

State-supported program that trains residents and youth to monitor wetland health through workshops, certification, and standardized data collection on water quality and ecology.

Outcome: Hundreds of certified volunteers contribute monitoring data statewide, supporting public engagement, school partnerships, and long-term wetland tracking. The program has expanded to include curriculum partnerships with schools and community groups statewide.

Takeaway for RI: Volunteer training and certification builds public ownership sentiment and generates actionable data for adaptive management of wetland resilience

Relevant Hazards

Relevant Actions

Action #18.09: Provides technical assistance and funding guidance and develops Community Assessments through partnerships with Health Equity Zones.

Action #18.10: Supports climate resilience workforce development.

Action #2.03: Establishes a workforce development program for wastewater infrastructure.

Ideas for RI

- Partner with local tribal groups, organizations (e.g., CCRI, Groundwork RI, WRWC, RIGIC), and schools to train youth in green infrastructure installation and monitoring.
- Secure legislative funding (modeled on IL's ETAA) to scale up workforce pipelines.
- Fund paid community monitoring pilots tied to green infrastructure maintenance and data collection.
- Building off of MyCoast, launch a community-led wetland monitoring program to train volunteers to track water quality and conditions in restored and at-risk wetlands.

Best Practice #4
Formal and Nonformal Educational Learning Opportunities

Description

Expanding climate change education across formal and nonformal learning environments strengthens community resilience and prepares the next generation to respond to evolving environmental challenges. Integrating climate concepts across K–12 subject areas, alongside hands-on and place-based learning, helps students understand the causes and impacts of climate change while building practical problem-solving skills.

Precedents

New Jersey 2020 Student Learning Standards

Location: New Jersey, USA
Scale: State

Requires all school districts to integrate climate change education across K–12 learning standards, equipping students with the knowledge and skills to understand climate impacts and engage in climate solutions.

Outcome: New Jersey was the first state in the United States to offer climate change-specific content in K-12 schools. The state offers plentiful resources for educators and provides hundreds of grants to schools for Climate Awareness Education.

Takeaway for RI: Embedding climate education across all K–12 standards can ensure every student gains foundational climate knowledge and skills.

New England 3CRS Hub Resource Library

Location: Virtual
Scale: Regional

Provides an accessible collection of tools, data portals, and educational materials that helps practitioners, educators, and community members explore coastal climate research and strengthen resilience across the Northeast.

Outcome: Strengthens learning and educational engagement by connecting users with curated climate resources that deepen understanding of coastal hazards and support informed resilience planning.

Takeaway for RI: Centralizing climate resources can improve access to high-quality climate data, information, and learning resources.

ClimeTime Science Teacher Professional Development

Location: Washington, USA
Scale: State

Washington State grant program that supports professional development for teaching climate science that is aligned with the Next Generation Science Standards.

Outcome: Each of Washington's nine Educational Service Districts has received funding, allowing more than 1,800 schools, 177,000 students, and 26,000 educators to access the highest quality climate education standards for science and math subject areas.

Takeaway for RI: Investing in teacher training can equip educators with the tools they need to effectively teach climate science.

Project Narragansett

Location: Rhode Island, USA
Scale: State

Save The Bay offers a year-long professional development program for Rhode Island fourth grade educators designed to expand hands-on, Narragansett Bay-focused curriculum in Rhode Island schools. Teachers learn how to create locally grounded, experiential lesson plans and educational resources aligned with state and national science standards, as well as NAAEE's Excellence In Environmental Education guidelines.

Outcome: To date, the program has served over 200 teachers and 12,000 students throughout the state of Rhode Island, connecting teachers and students with experiential education.

Takeaway for RI: Locally-focused climate resilience curriculum can be expanded across the state of Rhode Island.

Relevant Hazards

Relevant Actions

Action #18.05: Integrates climate and environmental literacy into K–12 and higher education while expanding hands-on, community-based, and informal learning opportunities that cultivate climate-informed, engaged citizens.

Action #18.10: Supports climate resilience workforce development.

Ideas for RI

- Require all school districts (regardless of coastal flood risk level) to embed climate change and environmental literacy across K-12 standards.
- Invest in large-scale climate change education training and professional development for educators.
- Fund hands-on, interactive programming that engages students in planning efforts, environmental monitoring, and climate-related field work.
- Establish paid internship and fellowship pipelines for high school and college students to work with state agencies, resilience projects, and community partners.

Best Practice #5
Community-Led Green Infrastructure Corridors for Enhanced Resilience

Description

Community-led green infrastructure corridors offer a scalable, cost-effective solution for managing stormwater while advancing equity and climate resilience. Strategies like bioswales, rain gardens, and pocket parks reduce flooding, improve water quality, and add green space in underserved neighborhoods. Designed with local communities, these projects build trust, create jobs, and deliver measurable outcomes, including diverting stormwater runoff, reducing impervious surfaces, and protecting homes from flooding.

Precedents

The Mill Creek Project

Location: Philadelphia, Pennsylvania, USA
Scale: Local

Uses rain gardens, tree trenches, and vegetated bioswales to manage stormwater and reduce sewer overflows in underserved areas. Community planning sessions and local hiring addressed environmental justice concerns and ensured the project reflected local priorities.

Outcome: Engaged local schools and residents, involving hundreds of students in resilience education and construction of two community-designed stormwater gardens.

Takeaway for RI: Integrating rain gardens, bioswales, and tree trenches in underserved neighborhoods yields both hydrological benefits and community trust.

Street Edge Alternatives (SEA Streets)

Location: Seattle, Washington, USA
Scale: Local

Redesigns residential streets with vegetated swales, permeable pavement, and native landscaping to mimic natural drainage and reduce runoff. The project blends aesthetics, traffic calming, and environmental function, and has informed citywide design standards.

Outcome: Reduced stormwater runoff volumes by 99% in a ~2-acre pilot area via vegetated swales, bioswales, and narrowed roads. Reduced impervious surfaces by 11% and attenuated 0.75 in of rainfall per event. Residents helped select plantings and supported long-term O&M.

Takeaway for RI: Reconfiguring street designs with permeable surfaces and landscaping turns urban neighborhoods into natural stormwater systems.

Proctor Creek Green Infrastructure

Location: Atlanta, Georgia, USA
Scale: Local

Funded by a $14M Environmental Impact Bond, this initiative built six green infrastructure projects, including bioretention cells and stream restoration, co-designed with residents through equity workshops. It supports flood reduction, public health, and green space goals.

Outcome: Financed green infrastructure projects, protected 500 homes from flooding, and created dozens of sustainable jobs. Community groups guided project siting and helped secure local buy-in.

Takeaway for RI: Community co-design of green infrastructure (GI) projects improves flood control and public health and restores trust in underserved areas.

Boston Water and Sewer Commission Stormwater Charge

Location: Boston, Massachusetts, USA
Scale: Local

Charges properties with more than 400 square feet of impervious surface a stormwater fee which directly funds the operation, maintenance, and upgrading of Boston's stormwater system. Properties that install approved green infrastructure can reduce their fee, incentivizing on-site stormwater management and reducing pressure on the public system.

Outcome: Strengthens and stabilizes funding for stormwater management, reduces localized flooding, and supports water-quality improvements.

Takeaway for RI: Demonstrates how a dedicated stormwater utility fee can create a reliable funding stream for green infrastructure.

Relevant Hazards

Relevant Actions

Action #4.01: Updates stormwater design rules to reflect new precipitation data and standards.

Action #4.02: Expands green infrastructure with co-benefits while streamlining funding and permitting.

Action #4.03: Works with municipalities to create sustainable stormwater funding, share best practices, and develop state-led resources for vulnerability assessments and equipment support.

Action #18.09: Provides technical assistance and develops Community Assessments through partnerships with Health Equity Zones.

Ideas for RI

- Create a Green Infrastructure Corridor Design Guide and precedent catalog to support municipalities in planning and implementing community-led stormwater and greening projects in priority neighborhoods.
- Apply equity co-design methods from Proctor Creek and SEA Streets models.
- Offer GI overlay and maintenance grants to municipalities with performance metrics for stormwater reduction.

Best Practice #6
Nature-Based Cooling Strategies in Heat-Vulnerable Communities

Description

Expanding nature-based cooling strategies in heat-vulnerable EJ communities reduces extreme heat risks through solutions like urban forests, green roofs, shaded rest areas, and resilience hubs. These interventions lower temperatures, improve public health, and deliver co-benefits such as air quality improvements, energy savings, and community engagement.

Precedents

Resilience Hubs

Location: Los Angeles, California, USA
Scale: Local

A former music studio (BHAC) transformed into an ADA-accessible resilience hub offering workforce training, senior and youth programs, and emergency cooling. Integrates shade structures, passive cooling design, and solar-powered backup systems.

Outcome: The BHAC provides year-round programming and serves over 250 residents weekly. Capable of operating independently for up to 7 days during emergencies, offering cooling, clean air, and power in a trusted community space.

Takeaway for RI: Resilience hubs offering passive cooling, backup power, and community services safeguard neighborhoods during heat waves and power outages.

Green Corridors

Location: Medellín, Columbia

Scale: Local

Since 2016, the city has planted 8,000+ trees to create shaded green corridors along 30 major roadways and waterways to address growing concerns of extreme heat and air pollution.

Outcome: Transformed 20 km of roads and waterways into vegetated corridors, lowering average air temperature by 3.5°C and surface temperature by up to 10°C, generated 75 permanent green jobs, and reduced morbidity rate from acute respiratory infections.

Takeaway for RI: Tree corridors in heat-prone neighborhoods reduce urban heat and improve walkability and air quality.

Green Roofs

Location: New York City, New York, USA
Scale: Local

Launched in 2008 and renewed in 2024, the Green Roof Tax Abatement offers property tax breaks to incentivize the incorporation of green roofs to reduce urban heat, improve air quality, enhance energy efficiency, and provide urban habitat. New York City also adopted LL92/94 that require green roofs or PV on many new roofs.

Outcome: NYC now has over 730 green roofs (as of 2022), which reduce rooftop temperatures by up to 30–40°F, and help cut building cooling costs by 20–30%.

Takeaway for RI: Tax breaks and other financial subsidies can incentivize property owners to construct cooling strategies on their property, such as green roofs.

Cool Pavements

Location: Pacoima, California, USA
Scale: Local

Municipal Pilot project that applied high-albedo cool pavement coatings across 700,000 ft² of streets in a heat-vulnerable, low-income neighborhood, aimed at reducing surface and ambient temperatures in underserved communities.

Outcome: Reduced surface temperatures by up to 3.5°F during extreme heat events, demonstrating measurable cooling benefits in a historically underserved neighborhood.

Takeaway for RI: Cool pavements in heat-vulnerable, low-canopy areas offer scalable, low-cost cooling and complement green infrastructure.

Relevant Hazards

Relevant Actions

Action #12.03: Supports urban tree planting and master planning.

Action #18.03: Resilience hubs provide cooling and shelter during heat waves

Action #18.08: Expands the Low-Income Home Energy Assistance Program (LIHEAP) program.

Ideas for RI

- Create model zoning language to require nature-based cooling (e.g., shade trees, green roofs) in high-heat and traditionally redlined areas.
- Refine existing heat maps using public health data and the Universal Thermal Climate Index (UTCI) to prioritize investments in heat-vulnerable neighborhoods.
- Fund nature-based cooling projects in frontline communities using equity and health-informed criteria.
- Launch a fund for the creation of resilience hubs in Rhode Island communities.

Best Practice #7
Coastal Resilience Through Local Ordinances and Adaptation Design

Description

Adopt and implement municipal zoning ordinances and bylaws that integrate current and projected climate risk data—such as sea level rise, precipitation trends, and storm surge zones—into land use and development standards. These regulations should establish protective measures such as coastal setbacks, floodplain restrictions, elevation requirements, and site design guidelines that reduce long-term vulnerability.

Precedents

Coastal Resilience Overlay Zone (CRO) Update

Location: Norfolk, Virginia, USA
Scale: Local

Norfolk's zoning code includes Coastal and Upland Resilience Overlay Zones that require elevated construction, prohibit basements, and encourage flood-resistant design. A Resilience Quotient scoring system incentivizes development practices that reduce flood risk and enhance sustainability.

Outcome: Zoning reform increased the number of building permits in low-risk zones compared to those in high-risk areas – Housing values were not negatively impacted.

Takeaway for RI: Overlay zones with built-in flood and elevation standards ensure consistent, future-ready coastal development across municipalities.

Transfer of Development Rights (TDR)

Location: King County, Washington, USA
Scale: Regional

Allows development rights to be transferred from ecologically sensitive or high-risk lands to urban sites, promoting retreat and conservation via zoning tools and conservation easements.

Outcome: Over 144,000 acres of rural and resource lands were conserved and protected from 2000-2019 through the King County TDR Program. As a result, 2,467 potential dwelling units have been relocated from rural to urban areas, consolidating development in desired locations.

Takeaway for RI: Using TDR programs can protect rural and flood-prone lands while steering development into resilient urban zones.

Cape Cod Commission Model Coastal Resilience Bylaws

Location: Cape Cod, Massachusetts, USA
Scale: Regional

Model bylaws promote elevation and shoreline adaptation by encouraging municipalities to adopt flexible floodplain and wetland performance standards, such as freeboard requirements and buffer zones based on future climate projections rather than historical FEMA maps.

Outcome: Cape Cod towns adopted enhanced wetlands protection or floodplain ordinance bylaws, with design strategies such as increased freeboard requirements or wetland buffers tied to modeled future storm risk instead of historic FEMA 100-year floodplains.

Takeaway for RI: Model bylaws with future-focused flood buffers help towns quickly adopt strong coastal protections.

National Park Service Guidelines on Flood Adaptation for Rehabilitating Historic Buildings

Location: National
Scale: National

Provides guidance for adapting historic buildings to withstand flood risks while maintaining their historic character and meeting federal preservation standards. The guidelines outline acceptable treatments, documentation requirements, and adaptation strategies that balance resilience with preservation.

Outcome: Establishes the nation's first standardized framework for flood-adaptation of historic buildings.

Takeaway for RI: Offers a clear, federally recognized roadmap that Rhode Island can use to help protect state and local historic buildings vulnerable to flooding and sea-level rise.

Relevant Hazards

Relevant Actions

Action #19.01: Creates incentives to support the adoption of statewide resilience standards and funding.

Action #18.02: Develops model municipal ordinances to promote resilience goals.

Action #18.08: Expands the Low-Income Home Energy Assistance Program (LIHEAP) program.

Action #18.09: Provides technical assistance and develops Community Assessments through partnerships with Health Equity Zones.

Ideas for RI

- Support towns in adopting model floodplain bylaws based on Cape Cod Commission templates.
- Enable Transfer of Development Rights (TDR) to steer development away from high-risk areas.
- Develop a coastal zoning ordinance toolkit with sample language and technical assistance for towns.

Best Practice #7
Coastal Resilience Through Local Ordinances and Adaptation Design

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Adopt and implement municipal zoning ordinances and bylaws that integrate current and projected climate risk data—such as sea level rise, precipitation trends, and storm surge zones—into land use and development standards. These regulations should establish protective measures such as coastal setbacks, floodplain restrictions, elevation requirements, and site design guidelines that reduce long-term vulnerability.

Precedents

Resilient Nantucket: Flooding Adaptation & Building Elevation Design Guidelines
Location: Nantucket, Massachusetts, USA
Scale: Local

Nantucket's Building Elevation Design Guidelines specifically addresses the island's many historic structures, including guidance for elevation, wet and dry floodproofing, and relocation.

Outcome: The adopted guidelines strengthened Nantucket's capacity to protect its extensive historic district by providing structured processes, public tools, and FEMA-aligned strategies for adapting historic properties to flood risk, supported by community workshops, digital documentation, and integration into broader climate-resilience planning.

Takeaway for RI: Providing clear guidance on a range of flood-resilient design strategies can strengthen the long-term resilience of historic properties while supporting sound planning and market stability.

City of Newport Design Guidelines for Elevating Historic Buildings
Location: Newport, Rhode Island, USA
Scale: Local

The City of Newport's design guidelines for elevating historic structures involves detailed documentation, adherence to specific design requirements, and careful evaluation of streetscape and contextual impacts.

Outcome: These guidelines help protect Newport's historic buildings by reducing flood risk, supporting FEMA compliance, and improving long-term documentation of preservation, while maintaining neighborhood character.

Takeaway for RI: Rhode Island can adopt similar guidelines for historic buildings by applying rigorous, resilience-focused elevation standards that both protect structures from flooding and support their preservation.

Relevant Hazards

Relevant Actions

Action #19.01: Creates incentives to support the adoption of statewide resilience standards and funding.

Action #18.02: Develops model municipal ordinances to promote resilience goals.

Action #18.08: Expands the Low-Income Home Energy Assistance Program (LIHEAP) program.

Action #18.09: Provides technical assistance and develops Community Assessments through partnerships with Health Equity Zones.

Ideas for RI

- Support towns in adopting model floodplain bylaws based on Cape Cod Commission templates.
- Enable Transfer of Development Rights (TDR) to steer development away from high-risk areas.
- Develop a coastal zoning ordinance toolkit with sample language and technical assistance for towns.

Best Practice #8
Embedding Climate Justice in Adaptation Planning

Description

Embedding climate justice into every step of adaptation planning ensures that resilience strategies address the unique needs of historically underserved and vulnerable communities. Convene inter-agency and cross-sector committees to define equity goals, reform state funding criteria to prioritize disadvantaged communities, and integrate equity into project design, implementation, and evaluation.

Precedents

Targeted Community Engagement

Location: Boston, Massachusetts, USA
Scale: Local

Initiatives to re-center equity and justice in planning. Prioritizes racial and socio-economic equity by funding grassroots climate education, partnering with community-based organizations, and engaging residents to inform adaptation strategies.

Outcome: Aligned with Climate Ready Boston, the City adopted the Coastal Flood Resilience Overlay District (CFROD) and has integrated findings from Climate Ready Boston into other plans such as the City's Hazard Mitigation Plan and Imagine Boston 2030.

Takeaway for RI: Well-structured engagement ensures adaptation investments reflect community needs and build local support for resilience projects.

Environmental Justice Fund Scoring Rubric

Location: Seattle, Washington, USA
Scale: Local

Dedicates funding to projects conducted by and benefiting historically disadvantaged and marginalized communities. A thorough scoring rubric is used to prioritize projects based on community need, community involvement, and benefits to the community.

Outcome: Seattle's Environmental Justice Fund saw a 44% increase of total grantees funded in 2022 compared to 2018. Additional funding through a Payroll Expense Tax enabled the Fund to increase the minimum award amount from $40,000 in 2018 to $90,000 in 2022.

Takeaway for RI: Equity-based grant scoring ensures climate funds reach frontline, community-led projects.

Massachusetts Environmental Justice (EJ) Grant Program

Location: Massachusetts, USA
Scale: State

Provides flexible grants to Equity Partners and community-based organizations to lead outreach, planning, and climate justice work in EJ communities. Equity Partners support subgrantees and extend technical capacity.

Outcome: Awarded over $2.3M to Equity Partners and local grantees for multilingual engagement and capacity-building in overburdened communities.

Takeaway for RI: Providing funding to trusted Equity Partners to support local grantees increases access, capacity, and equity in climate adaptation efforts across EJ communities.

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Relevant Hazards

Relevant Actions

Action #19.01: Creates incentives support the adoption of statewide resilience standards and funding.

Action #18.06: Assesses the physical and mental health risks of climate change.

Action #18.08: Expands the Low-Income Home Energy Assistance Program (LIHEAP) program.

Action #18.09: Provides technical assistance and develops Community Assessments through partnerships with Health Equity Zones.

Action #18.10: Expands climate resilience training through Real Jobs RI and CTE programs.

Ideas for RI

- Establish a Climate Justice Grant Program that funds both community-led projects and designated Equity Partners, drawing from models in Connecticut and Massachusetts.
- Use equity scoring rubrics and co-design strategies from Boston and Seattle.
- Create an equity scoring rubric for climate grants to prioritize frontline, community-led projects, based on Seattle's model.

Best Practice #8
Embedding Climate Justice in Adaptation Planning

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Embedding climate justice into every step of adaptation planning ensures that resilience strategies address the unique needs of historically underserved and vulnerable communities. Convene inter-agency and cross-sector committees to define equity goals, reform state funding criteria to prioritize disadvantaged communities, and integrate equity into project design, implementation, and evaluation.

Precedents

Climate & Equity Grant Program

Location: Connecticut, USA
Scale: State

Funded community-led climate resilience efforts in underserved areas with no match required, centering equity, local leadership, and capacity-building.

Outcome: Though no longer funded, the $10M pilot advanced community resilience through 21 equity-focused projects, with 87% meeting engagement goals and 70% securing follow-on funding.

Takeaway for RI: Small, no-match grants empower community and tribal groups to lead equitable climate adaptation planning

Climate Ready Together

Location: Providence, Rhode Island, USA
Scale: Local

The Providence Resilience Partnership's nine-month program provides eight cohorts of Providence residents training on how to address climate change in their neighborhoods. The series of workshop are available in both English and Spanish, and participants receive a $450 stipend.

Outcome: The program started in November 2025, and 155 individuals have signed up.

Takeaway for RI: Climate education programs rooted in community engagement are desired by Rhode Island residents, and they should be expanded across the State.

Providence Climate Justice Plan

Location: Providence, Rhode Island, USA
Scale: Local

A dedicated city plan to promote equity in sustainability and resilience planning. The plan established carbon-reduction targets and outlined near-term strategies for achieving them in an equitable way.

Outcome: Following the plan, the Mayor Brett P. Smiley of the City of Providence established $6 million in federal funding to support initiatives aligned with the Climate Justice Plan in FY24.

Takeaway for RI: Strategic planning helps move projects from vision to implementation. Equity-centered plans like this one should be expanded and adopted by municipalities across Rhode Island.

NYS Climate Resilient Farming Program

Location: New York, USA
Scale: State

A state grant program funding projects that help small and midsized farms adapt to flooding, extreme rainfall, and drought through on-farm water management, soil health systems, and climate-smart agricultural practices.

Outcome: The 8 rounds of CRF funding to date have awarded $69 million to support more than 580 farm-level adaptation projects in communities throughout the state of New York.

Takeaway for RI: Agriculture can serve as a cross-cutting climate justice strategy. Supporting small farmers and agricultural communities enhances food security, ecosystem health, rural economic resilience, and equitable access to adaptation resources.

Relevant Hazards

Relevant Actions

Action #19.01: Creates incentives support the adoption of statewide resilience standards and funding.

Action #18.06: Assesses the physical and mental health risks of climate change.

Action #18.08: Expands the Low-Income Home Energy Assistance Program (LIHEAP) program.

Action #18.09: Provides technical assistance and develops Community Assessments through partnerships with Health Equity Zones.

Action #18.10: Expands climate resilience training through Real Jobs RI and CTE programs.

Ideas for RI

- Establish a Climate Justice Grant Program that funds both community-led projects and designated Equity Partners, drawing from models in Connecticut and Massachusetts.
- Use equity scoring rubrics and co-design strategies from Boston and Seattle.
- Create an equity scoring rubric for climate grants to prioritize frontline, community-led projects, based on Seattle's model.

Best Practice #9
Regional Resilience Collaboratives & Capacity Models Across State and Local Government

Description

Supporting regional resilience at multisector levels places an emphasis on the effectiveness of implementing risk management strategies across a broader geography. Climate change impacts are not limited to neighborhood or municipal boundaries, and from a funding and co-benefit perspective, regional approaches to risk management strategies can be advantageous.

Precedents

Municipal Vulnerability Preparedness (MVP) Program

Location: Massachusetts, USA
Scale: State

Provides financial support for regional and municipal vulnerability planning and implementation, prioritizing multi-community proposals and scalable solutions.

Outcome: Between its establishment in 2017 and 2022, the Massachusetts MVP program awarded over $100 million to 341 communities and funded over 700 projects, increasing the capacity for local and regional climate adaptation planning and implementation.

Takeaway for RI: State-funded model that builds regional resilience by supporting local planning and implementation with grants and technical assistance. Municipality-led vulnerability assessments paired with implementation grants strengthen local resilience capacity through peer learning and funding. Supporting projects identified in local resilience workshops builds trust through advancing initiatives with community-wide buy-in and consensus.

California Alliance of Regional Collaboratives for Climate Adaptation (ARCCA)

Location: California, USA
Scale: State

Statewide network of eight regional collaboratives that support climate adaptation through multisector coordination, shared resources, and joint initiatives.

Outcome: Advanced State policy and program development, creating valuable tools and resources to assist local governments with overcoming common institutional barriers. Supports 8 regional collaboratives in total that encompass 80% of the state's population, facilitating shared tools, best practices, and campaigns that scale adaptation statewide.

Takeaway for RI: Regional collaboratives with state support align adaptation strategies and strengthen local capacity.

New York State Adaptation and Resilience Plan (NYSARP)

Location: New York, NY
Scale: State

Delivers a coordinated resilience strategy with regional planning, technical assistance, and funding through programs like Climate Smart Communities and Green Resiliency Grants.

Outcome: Launched in 2025, NYSARP introduced a unified statewide framework and dedicated funding streams (e.g., grants), enhancing local capacity and fostering regional planning partnerships across 10 Department of Environmental Conservation regions.

Takeaway for RI: A statewide climate adaptation plan can align agency goals and regional efforts, ensuring coordinated resilience implementation.

Relevant Hazards

Relevant Actions

Action #18.01: Supports equity-focused adaptation through regional frameworks and Regional Resilience Coordinators.

Action #19.03: Funds regional resilience projects statewide.

Action #20.01: Encourages cross-sector collaboration in resilience initiatives and grant programs.

Ideas for RI

- Formalize and expand the Municipal Resilience Program (MRP) to support regionally coordinated projects and offer increased funding for multi-municipality proposals.
- Fund regional resilience capacity through existing regional entities (e.g., conservation districts, land trusts) or by embedding regional coordinators within state agencies like the Office of Statewide Planning.
- Build upon Municipal Resilience Program and Regional Resilience Coordinator assistance to formalize a state-local resilience partnership modeled on ARCCA (CA) and NYSARP (NY).

Best Practice #10
State Managed Retreat Programs and Funding

Description

State-level resilience funding laws and grant programs provide sustained, flexible revenue to support climate adaptation via voluntary buyouts, disaster recovery, and resilience planning. Funding for high-risk communities and infrastructure can address long-term climate vulnerabilities, promote equity, and reduce future recovery costs.

Precedents

Department of Environmental Protection (DEP) Blue Acres

Location: New Jersey, USA
Scale: State

Acquires flood-prone property following a natural disaster or through proactive approaches. Voluntary program that demolishes the acquired property and permanently preserves the land through a deed restriction. Funding is dependent upon multiple factors, including federal support allotments and state revenues that are allocated pursuant to the Preserve New Jersey Act.

Outcome: Since 1995, the Blue Acres program has used state and federal funding to buy out more than 1,100 flood-prone properties. Over $190 million has been allocated to fund planning and community engagement to reduce future risks.

Takeaway for RI: State-led, voluntary buyout program that proactively reduces flood risk, preserves open space, and leverages both state and federal funding to support long-term community resilience.

California Floodplain Management, Protection, and Risk Awareness (FMPRA) Grant Program

Location: California, USA
Scale: State

State-funded program that prioritizes equity by supporting voluntary buyouts, nature-based flood mitigation, and dedicating up to 10% of funding to resilience planning and vulnerability assessments to drive data-informed local adaptation.

Outcome: Enabled voluntary property acquisitions and nature-based flood risk solutions in disadvantaged communities, with $5 million reserved specifically for planning and monitoring to guide future resilience efforts.

Takeaway for RI: State-funded competitive grant model that supports voluntary buyouts, small-community resilience planning, and equity-centered, nature-based flood risk reduction.

Proposition 4 (2024 Climate Bond)

Location: California, USA
Scale: State

Authorized $10 billion in general obligation bonds to finance projects for vulnerable community infrastructure including drinking water, wildfire prevention, coastal resilience, and flood protection. Bonds repayable through the state's General Fund and includes annual audits to ensure transparency and effectiveness.

Outcome: Proposition 4 enables long-term investment in resilience by funding over $10 billion in community-driven projects, including voluntary buyouts, wildfire mitigation, and green infrastructure. It supports hundreds of local planning efforts, prioritizes underserved communities, and strengthens accountability through required audits, advancing equity and statewide climate preparedness.

Takeaway for RI: Statewide climate bonds unlock major financing for buyouts, infrastructure, and nature-based resilience, especially in underserved communities.

Relevant Hazards

Relevant Actions

Action #11.03: Establishes state funding to acquire flood-prone and repetitive loss properties.

Action #14.07: Incorporates managed retreat into land use planning.

Action #19.03: Funds buyouts through launching the *Resilient Rhody* Infrastructure Fund.

Action #19.05: Tracks climate change impacts on Rhode Island insurance markets and develops strategies for rising costs, data sharing and modelling, and updating building codes.

Ideas for RI

- Pass bond legislation to support voluntary buyouts, planning, and nature-based resilience projects.
- Continue to fund state resilience grant programs (MRP Action Grants, Climate Resilience Fund, and/or OSCAR) and state revolving loan programs (RIIB's *Resilient Rhody* Infrastructure Fund) to provide long-term support for adaptation and retreat projects. Propose this funding through State Green Economy Bond and/or broader state budget.
- Foster partnership and ongoing collaboration between RIDEM State Resilience Office and funding partners such as Rhode Island Infrastructure Bank and RI Commerce to coordinate resilience bond funding requests, federal matches, and local support.

Best Practice #11
Statewide Resilience Standards and Metrics for Climate-Informed Governance

Description

Statewide Resilience Standards provide consistent practices, codes, or criteria to ensure that state agencies, municipalities, and project developers incorporate future climate projections into infrastructure and development planning. Resilience metrics establish a clear framework for tracking and reporting progress across agencies, promoting accountability and long-term implementation.

Precedents

Resilient MA Action Team (RMAT) Climate Resilience Design Standards Tool

Location: Massachusetts, USA
Scale: State

Created a digital tool with sea level rise, surge, heat, and precipitation projections. Required for planning, permitting, and grants to ensure consistent, climate-informed decisions.

Outcome: The RMAT tool has informed the design of over 150 state-funded infrastructure projects. Over $1 billion in capital project funding evaluated using RMAT standards with over 7,000 planners and practitioners trained in climate resilience design via the MVP Program.

Takeaway for RI: Mandating the use of climate data in design maintains consistency across projects and ensures infrastructure is designed to be resilient to projected climate impacts.

Climate Change Resilience Strategy & Executive Order 89

Location: New Jersey, USA
Scale: State

New Jersey's Executive Order 89 established a statewide resilience strategy and interagency council that mandates use of future climate data and tracks progress through shared metrics

Outcome: Executive Order 89 established a statewide framework for climate-informed governance by creating the Interagency Council on Climate Resilience, which coordinates 16 state agencies in adopting shared standards and metrics that integrate future climate data into planning, permitting, and investment decisions across sectors.

Takeaway for RI: Interagency coordination through executive structures and funded planning enhances statewide climate preparedness and consistency.

Community Risk and Resiliency Act (CRRA):

Location: New York, USA
Scale: State

Requires agencies and municipalities to use sea level rise, flood, and storm surge data in permitting and funding. Provides legal mandates, guidance, and model laws.

Outcome: CRRA institutionalized the use of future climate projections in permitting and land use, with over 300 municipalities adopting aligned ordinances, advancing consistent, climate-informed standards across New York.

Takeaway for RI: Mandating climate projections in permitting and zoning, paired with state guidance and model laws, enables consistent and achievable municipal resilience.

FEMA Building Code Adoption Tracker (BCAT)

Location: National
Scale: National

A digital tool to track the extent to which local jurisdictions throughout the United States have implemented current hazard-resistant building codes.

Outcome: The tool is regularly updated to track building code adoption status in all 50 states and U.S. Territories.

Takeaway for RI: Helps Rhode Island track where modern, hazard-resistant building codes are in place and focus support on communities that need stronger building standards to improve climate resilience.

Relevant Hazards

Relevant Actions

Action #14.01: Refines and shares tracking system for state resilience actions.

Action #14.03: Establishes State Resilience Office to oversee state resilience planning efforts.

Action #14.05: Strengthens municipal resilience standards across agencies.

Action #14.12: Standardizes data for uniform design and progress tracking.

Ideas for RI

- Use public projects to pilot resilience standards, demonstrate benefits, and build support for broader application in private development.
- Utilize collaboration between the Resilience EC4 Subgroup and the State Building Commission to align building codes with climate resilience, following the Massachusetts BBRS model.
- Require a Resilience Checklist for projects funded by state or quasi-state agencies to ensure climate data and equity alignment.
- Expand interagency coordination and mandate future climate data in state planning and permitting.

Best Practice #12
Resilience Ordinances and State Support for Forest Management & Drought Response

Description
Building statewide capacity to address growing wildfire and drought concerns through proactive planning, land-use policies, and accessible climate data helps reduce the likelihood and severity of future disasters. By adopting model ordinances and statewide risk mapping, communities can make informed development decisions, conserve natural resources, and better protect public safety and infrastructure.

Precedents

Wildland-Urban Interface (WUI) Building Code
Location: Austin, Texas, USA
Scale: Local

Requires property owners in high-risk zones to reduce fuels available for fire (i.e., coniferous trees, wood mulch, combustible landscape vegetation), maintain defensible space, and safe storage practices.

Outcome: 45,000+ parcels in Austin designated within the WUI zone. New construction now requires fire-resistant materials and defensible space buffers.

Takeaway for RI: Local WUI ordinances mandating defensible space and fire-resistant construction enhance wildfire resilience in high-risk areas.

Permanent Outdoor Water Restrictions
Location: Bozeman, Montana, USA
Scale: Local

Adopted mandatory permanent outdoor watering restrictions during specific days and times.

Outcome: Within just a few months of implementation, the city reported a reduction of 25 gallons per person per day in water usage during peak summer months. This, in turn, helped maintain reservoir levels and avoid emergency drought declarations.

Takeaway for RI: Permanent outdoor watering limits help conserve water during droughts and foster long-term drought resilience.

Wildfire Hazard Mapping & WUI Building Regulations
Location: Oregon, USA
Scale: State

Created wildfire hazard maps and established stricter building and defensible space codes.

Outcome: Oregon's 2022 legislation initiated the mapping of over 1.8 million properties in wildfire risk zones and authorized rules for fire-resistant building standards in high-risk areas.

Takeaway for RI: Wildfire hazard maps and defensible-space codes reduce risk and guide safer development.

Relevant Hazards

Relevant Actions

Action #12.01: Encourages the protection and restoration of forest cover and migration corridors.

Action #12.02: Encourages the creation and utilization of Forest Stewardship Plans.

Action #12.04: Establishes funding for needed statewide natural resource mapping.

Action #17.01: Develops and coordinates response procedures and best practices for emergency services and facilities.

Action #17.02: Supports disaster preparedness training for municipal emergency services.

Action #17.03: Creates a centralized, multilingual platform for emergency preparedness materials.

Ideas for RI

- Establish wildfire and drought programs modeled on regional and national examples, such as the APA Multihazard Planning Framework for communities in the Wildland-Urban Interface.
- Support municipal buffer and outdoor water use and conservation guidance and regulations, coordinating with RIDEM and water utilities.
- Build on RIDEM's Firewise Community Program to develop a statewide wildfire and drought plan with hazard maps and ordinance templates.

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Precedents

Forest Restoration & Wildfire Risk Mitigation Program
Location: Colorado, USA
Scale: State

Colorado's Forest Restoration & Wildfire Risk Mitigation Program provides state grants for local wildfire resilience efforts including forest thinning, invasive species control, and restoration projects.

Outcome: Since 2017, Colorado has funded more than 200 wildfire mitigation projects, treating over 35,000 acres.

Takeaway for RI: Develop a wildfire resilience grant program for municipalities to fund vegetation management and forest health projects.

California Wildfire Resilience Program
Location: California, USA
Scale: State

The California Wildfire Resilience Program has received over $2.73 billion in funding between 2021 and 2023, supported through California Climate Investments (CCI) and other state budget packages. Additionally, $200 million annually has been committed from 2024 through 2029 under SB 1552. This funding supports a wide range of wildfire prevention and resilience efforts, including grants for forest thinning, prescribed burns, and habitat restoration.

Outcome: As of August 2024, CAL FIRE had awarded more than $450 million in its Wildfire Prevention Grants Program to over 450 projects across the state in the past five years.

Takeaway for RI: Integrate water use, water quality, and habitat restoration potential into eligible activities and grant evaluation criteria.

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