



**EESI**

# **Improving Coastal Resilience in the Northeast**

**Innovative Solutions to Protect Communities,  
Property, and the Environment**

October 23, 2019

**Materials will be available at:**

[www.eesi.org/102319northeast](http://www.eesi.org/102319northeast)

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# EESI

Environmental and  
Energy Study Institute

- Founded in **1984** by a **bipartisan** Congressional caucus.
- Now an **independent**, bipartisan **nonprofit** with no Congressional funding.
- We provide **fact-based information** on **energy** and **environmental** policy for Congress and other policymakers.
- We focus on **win-win solutions** to make our energy, buildings, and transportation sectors **sustainable** and **resilient**.

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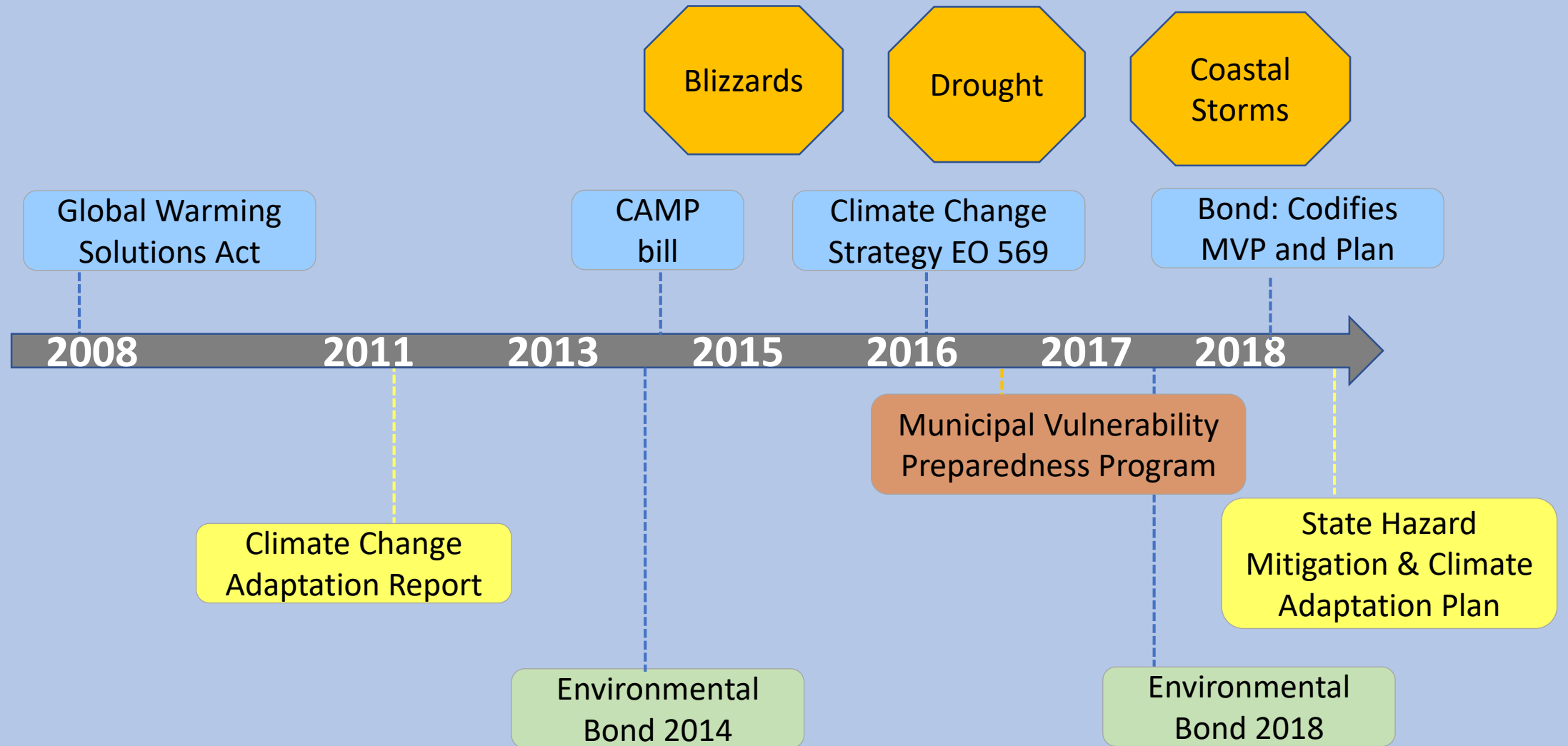
# Municipal Vulnerability Preparedness Program, MA and Nature Based Solutions

## Oct. 23, 2019



The Nature Conservancy   
Protecting nature. Preserving life.  
[Sara.burns@tnc.org](mailto:Sara.burns@tnc.org)

# Massachusetts Climate Adaptation History



# 2016: Executive Order 569: An Integrated Climate Change Strategy for the Commonwealth



- Reducing greenhouse gas emissions to combat climate change
- Protecting life, property, natural resources and our economy from the impacts of climate change
  - State Plan
  - Agency Vulnerability Assessments
  - Municipal Support
  - Climate Coordinators

# 2017: Statewide Resilience Planning Development and Implementation

- Resilient MA Clearinghouse: Science and Data
- Statewide Combined Hazard Mitigation and Climate Adaptation Plan
- Municipal Vulnerability Preparedness Program



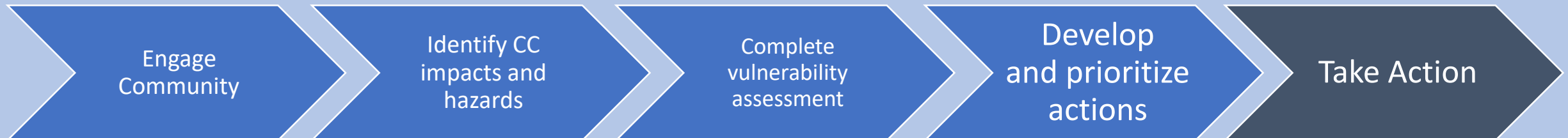
# *MVP: State and local partnership to build resiliency to climate change*

## Planning Grants & Certification

- Planning for climate impacts and changes in natural hazards
- Planning workshop and report consider strengths and vulnerabilities:
  - Society
  - Environment
  - Infrastructure

## Action Grants - Implementation

- Implementation of MVP Plans
- Nature Based Solutions prioritized



# Nature-Based Solutions

**Nature-Based Solutions** use natural systems, *mimic* natural processes, or *work in tandem with* traditional approaches to address natural hazards like **flooding**, **erosion**, **drought**, and **heat islands**.



Green Infrastructure

Engineered Solutions





# Year One MVP Plan Summaries

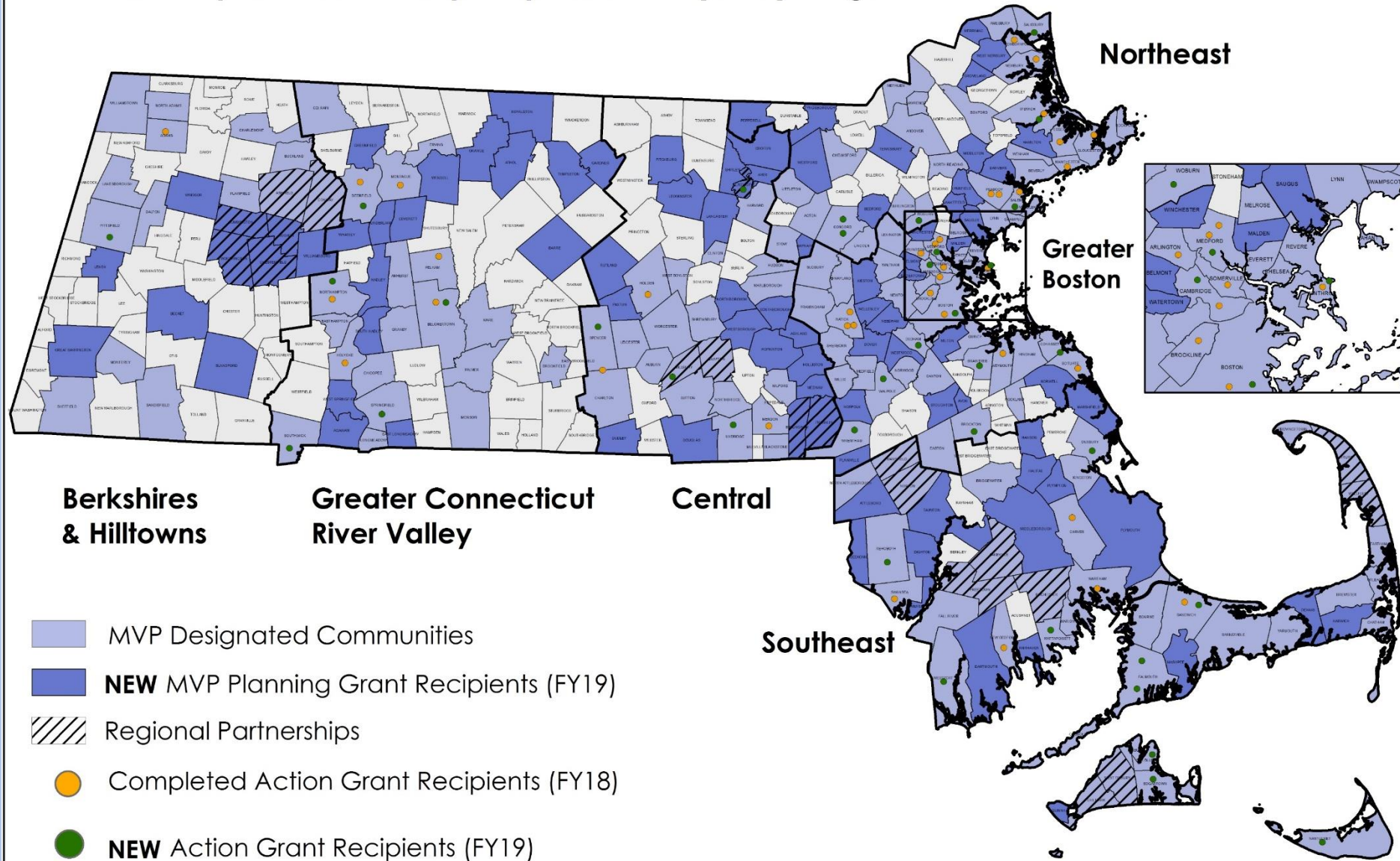
- Top Hazards (Year 1): Severe Storms, Inland Flooding, Heat, Wind
- Top Actions (Year 1): Emergency Management, Power Infrastructure, Stormwater Management, Regulations, Drinking Water



# MVP Planning Status: 71% of the Commonwealth/ 249 communities



## Municipal Vulnerability Preparedness (MVP) Program



# MVP Action Grant Status

Action Grant Amounts: \$15.3 million for implementation; 67 projects funded

- Eligible Projects Include:
  - Nature Based Solutions for storms, erosion, drought, water quality, heat island, air pollution
  - Ecological Restoration and Habitat Management to Increase Resiliency
  - Detailed Vulnerability and Risk Assessments
  - Bylaw Review
  - Education and Outreach
  - Redesign and retrofits
  - Energy Resilience
  - Chemical Vulnerability and Safety
  - Subsidized Low Income Housing Resilience
  - Mosquito Control Districts



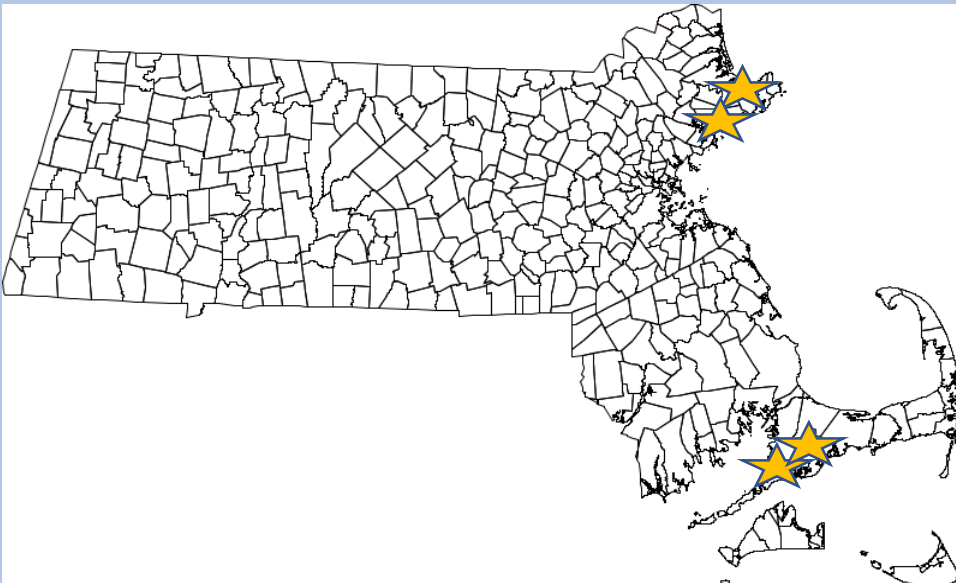
*Essex Causeway/Main Street and businesses showing inundation from the Essex River.  
Photo credit: Abby Manzi, DeRosa Environmental*



# Essex, Newbury, Falmouth, Mattapoisett

## Nature Based Solutions for Resilience

- Living Shoreline Feasibility
- Cranberry Bog restoration
- Watershed Land Protection
- Salt Marsh Restoration

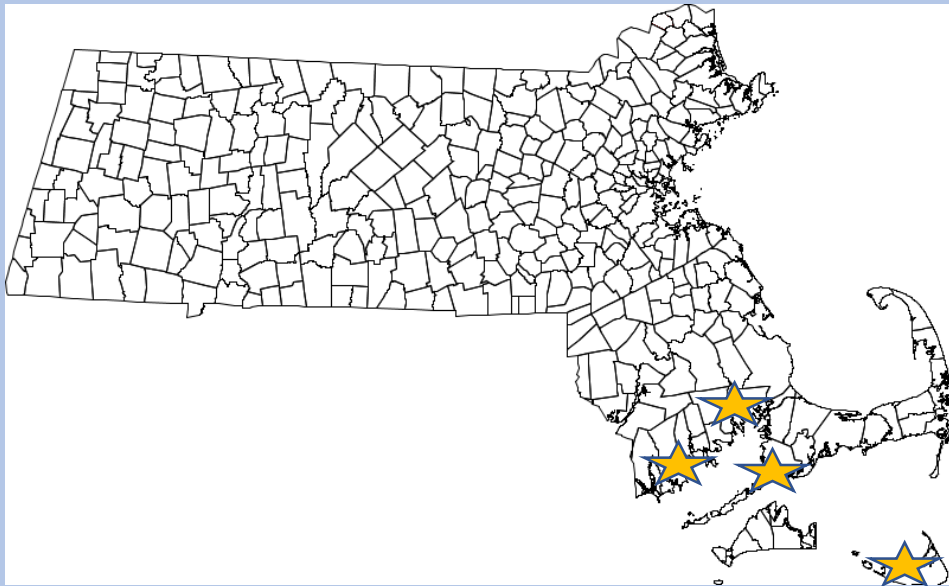




# Falmouth, Wareham, Westport, Nantucket

## Coastal Resiliency Planning for Road Corridors and Infrastructure

- Barrier Beaches
- Road is a few feet above sea level
- Long term road planning
- Building design, public education

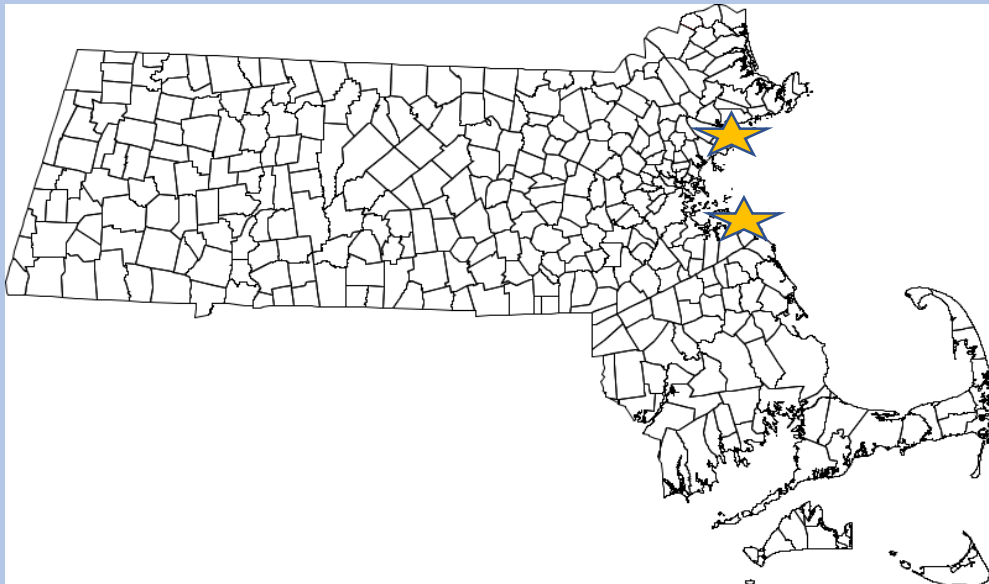


<https://www.capeandislands.org/post/climate-change-creates-uncertain-future-falmouths-surf-drive#stream/0>



# Scituate, Salem

- Comprehensive Wastewater Treatment Resilience Feasibility
- Sanitary Sewer Trunk Line Relocation Assessment
- Green Infrastructure for Stormwater Management in City Projects



# Funding Infrastructure Resilience Federally

- PROTECT grants can help other states replicate the MA funding program
- Incorporate PROTECT grants, as proposed by America's Transportation Infrastructure Act of 2019 (ATIA), a part of final surface transportation bill passed by Congress



*Essex Causeway/Main Street and businesses showing inundation from the Essex River.  
Photo credit: Abby Manzi, DeRosa Environmental*



Thank You

Sara Burns

[Sara.burns@tnc.org](mailto:Sara.burns@tnc.org)





# Our Coast, Our Future

A roadmap to resilience in  
New York and New Jersey

Kate Boicourt  
Director of Resilience  
Waterfront Alliance



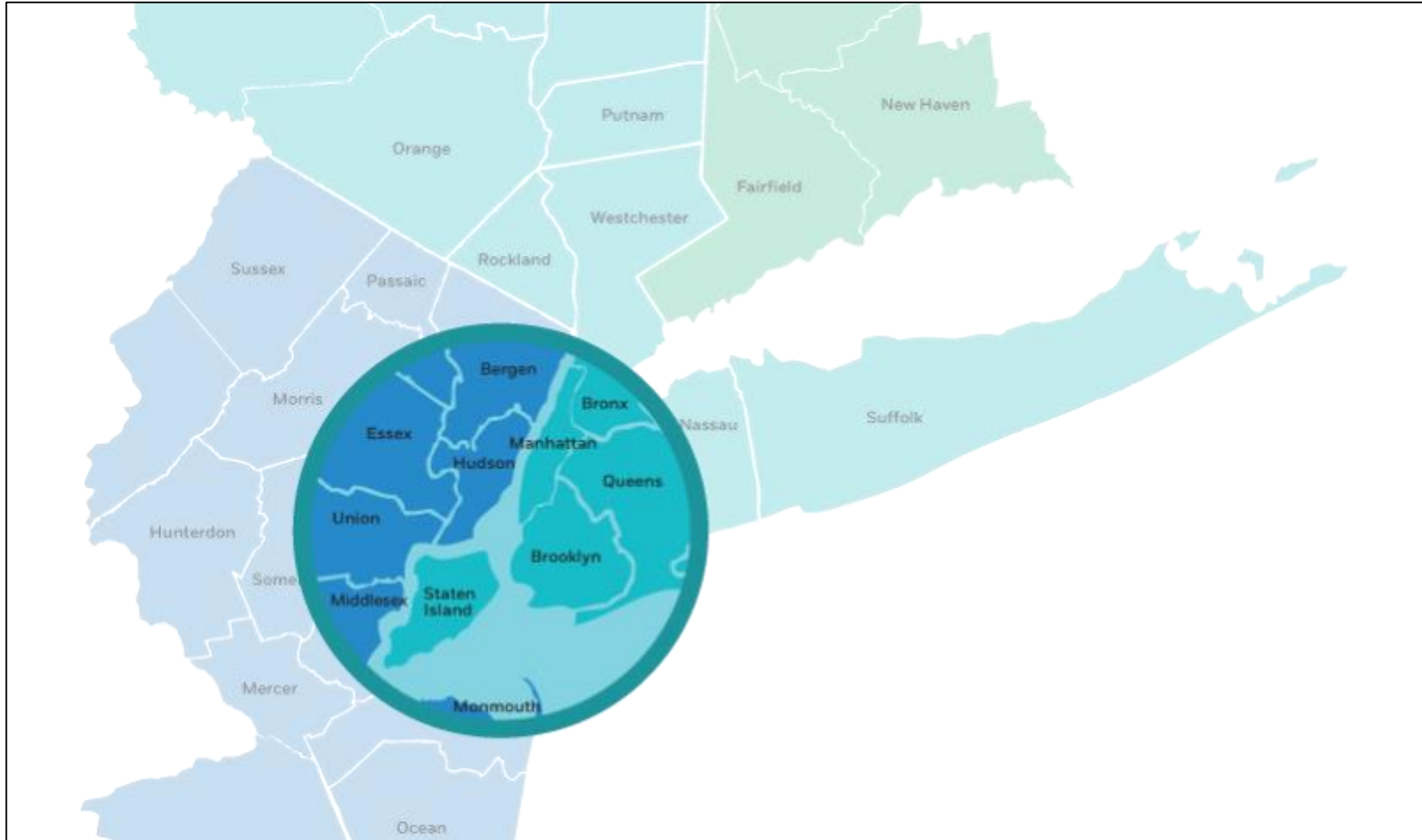
# Who we are



The Waterfront Alliance inspires and effects resilient, revitalized, and accessible coastlines for all communities.



# Scope



# Our Priorities



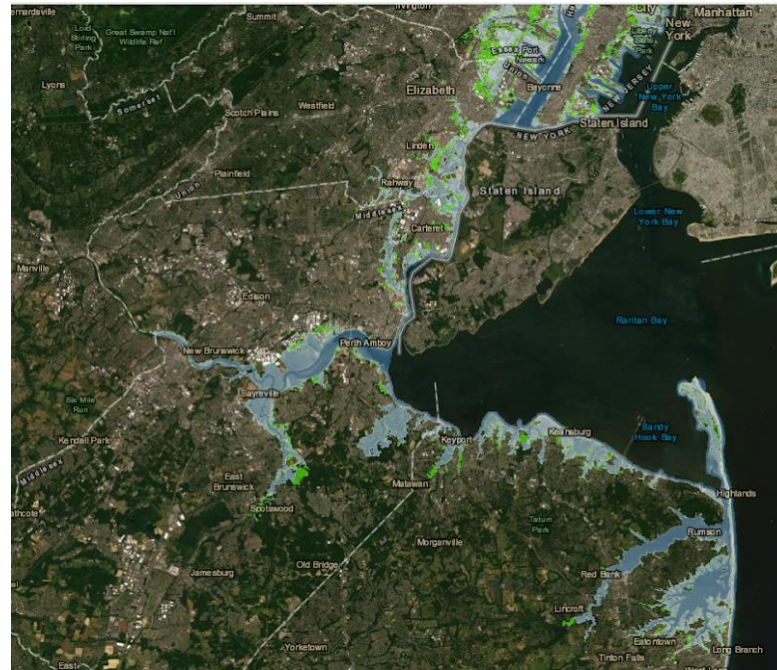
# Waterfront Edge Design Guidelines



# 1,000,000+

In the floodplain

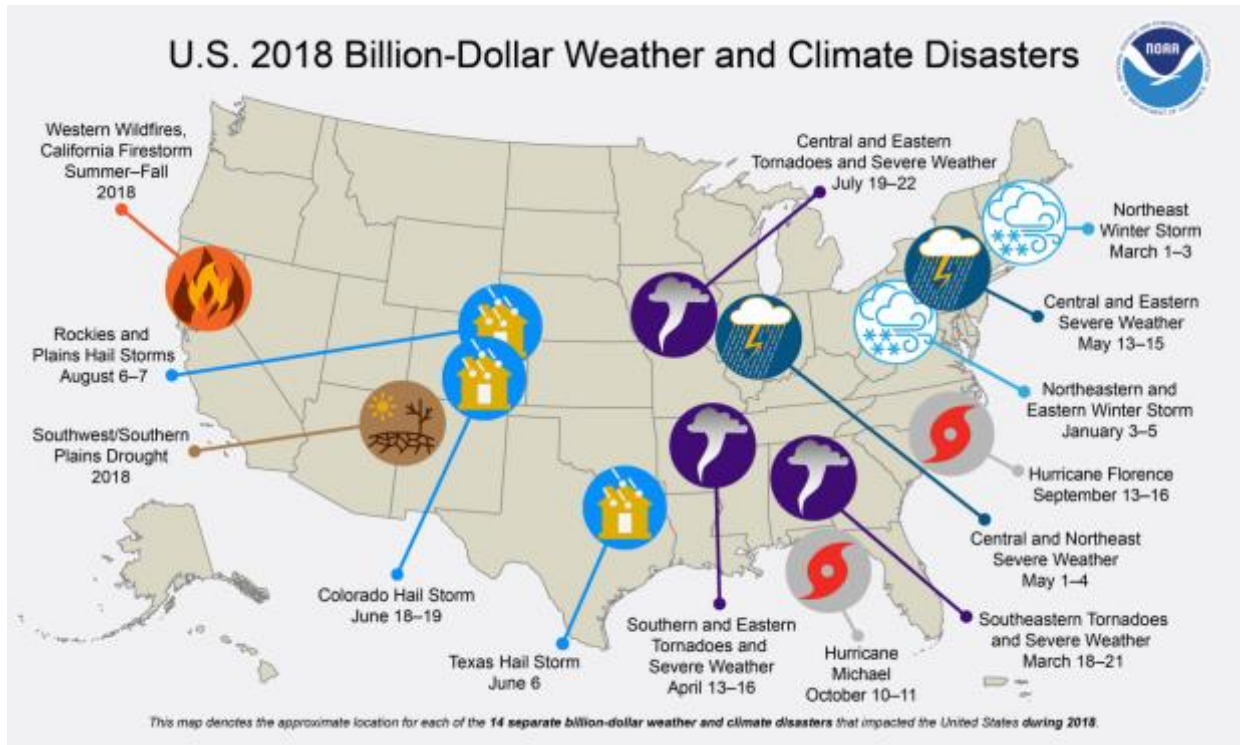
# TODAY



# \$20,000,000,000

## In National Flood Insurance Program

# DEBT



# 6:1

Return on investment for flood risk reduction





An aerial night photograph of a city, showing a dense grid of buildings. The lighting is dark, with some streetlights and building lights visible. The text is overlaid on the center of the image.

1/10

# Public Housing

## Developments in the Floodplain

# IN THE RED

Storms and sea level rise widen wealth gaps

INVESTIGATIONS

## How Federal Disaster Money Favors The Rich

March 5, 2019 - 5:00 AM ET  
Heard on [All Things Considered](#)

 REBECCA HERSHER   ROBERT BENINCASA 

 LISTEN · 12:16  + PLAYLIST   

**106 mi<sup>2</sup>**



**wetlands**  
**at risk by 2100**

**And it's not  
just numbers...**

# It's getting to work





**It's playing  
outside**



It's our culture



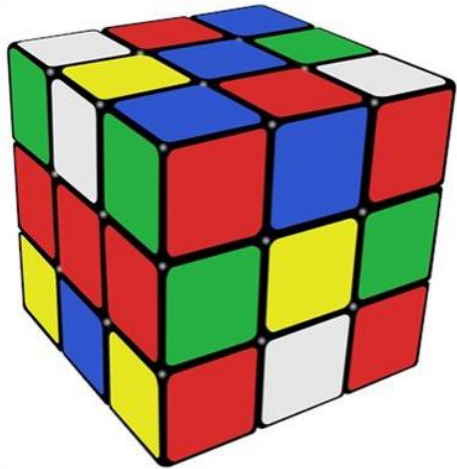
**It's home**



**What is the  
future that we  
want?**

We need  
**consensus** and a  
**galvanized**  
constituency

# Our process



We are here



# But we agree that a resilient future is...

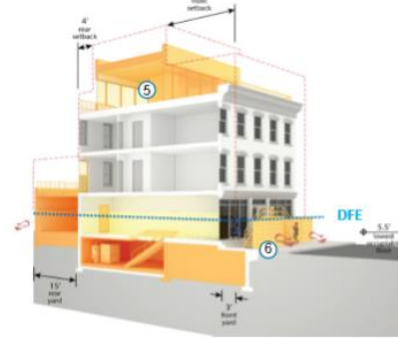
- **Risk-informed**
- **Managed**
- **Equitable and Just**
- **Funded**
- **Green**

# There are solutions! No silver bullet or scale

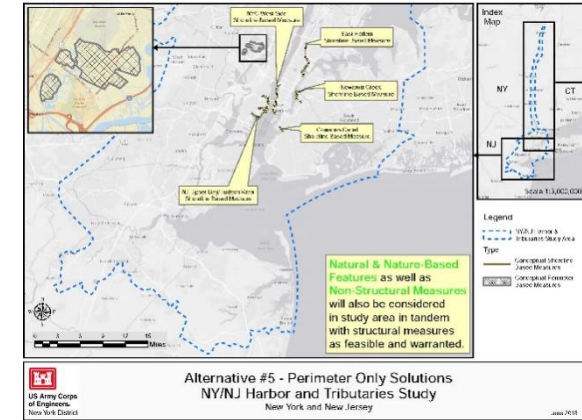
## Local



## Building



## Regional



Nathan Kensingler

## Site

# What can we do at a federal level to adapt and ensure green and equitable approaches?

- **Fund them**
- **Improve cost-benefit analyses**
- **Invest in/ask communities**
- **Reform FEMA and NFIP**
- **Build awareness**
- **Facilitate efficiencies**

# A simultaneous federal project: NY/NJ HATS

[Home](#) / [Missions](#) / [Civil Works](#) / [Projects in New York](#) / [NY & NJ Harbor & Tributaries Focus Area Feasibility Study \(HATS\)](#)

## NY&NJ HATS Interim Report

[Main Report](#)  
[Cost Analysis](#)  
[Economics](#)  
[Engineering](#)  
[GIS Report](#)  
[Plan Formulation](#)  
[Public Engagement](#)

## NY & NJ Harbor & Tributaries Focus Area Feasibility Study (HATS)



Coastal storms have severely impacted the north Atlantic coast of the United States, including the New York-New Jersey Harbor region. In response to these storms, the US Army Corps of Engineers (Corps) is investigating measures to manage future flood risk in ways that support the long-term resilience and sustainability of the coastal ecosystem and surrounding communities, and reduce the economic costs and risks associated with flood and storm events. In support of this goal, the Corps completed the North Atlantic Coast Comprehensive Study, which identified nine high-risk, focus areas on the north Atlantic Coast for further in-depth analysis into potential coastal storm risk management measures. One of the nine areas identified was the New York-New Jersey Harbor and Tributaries study area.

## More about HATS

The New York New Jersey Harbor and Tributaries focus area feasibility study, which will include a tiered Environmental Impact Statement, is evaluating five initial alternatives, which currently are

# But if we can't figure it out, Ron will





# Thank you!



*Supported by:*



# Planning for Coastal Resilience: Challenges facing small rural Maine communities

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Sam Belknap  
October 23, 2019



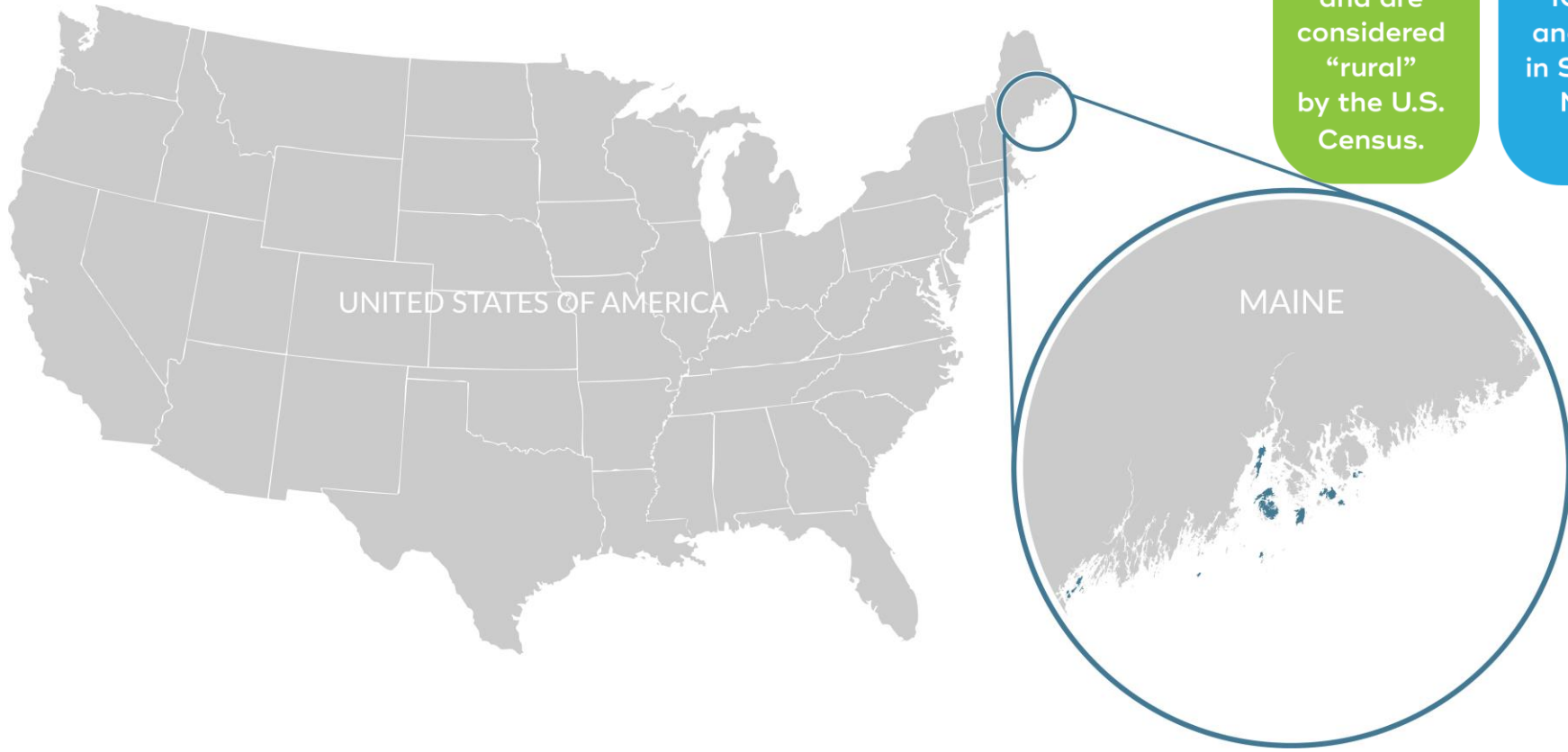
ISLAND  
INSTITUTE

# Who We Are

The Island Institute works to sustain Maine's island and coastal communities, and exchange ideas and experiences to further the sustainability of communities here and elsewhere.



# Where We Work



**84**  
coastal and island communities have fewer than 2,500 residents and are considered "rural" by the U.S. Census.

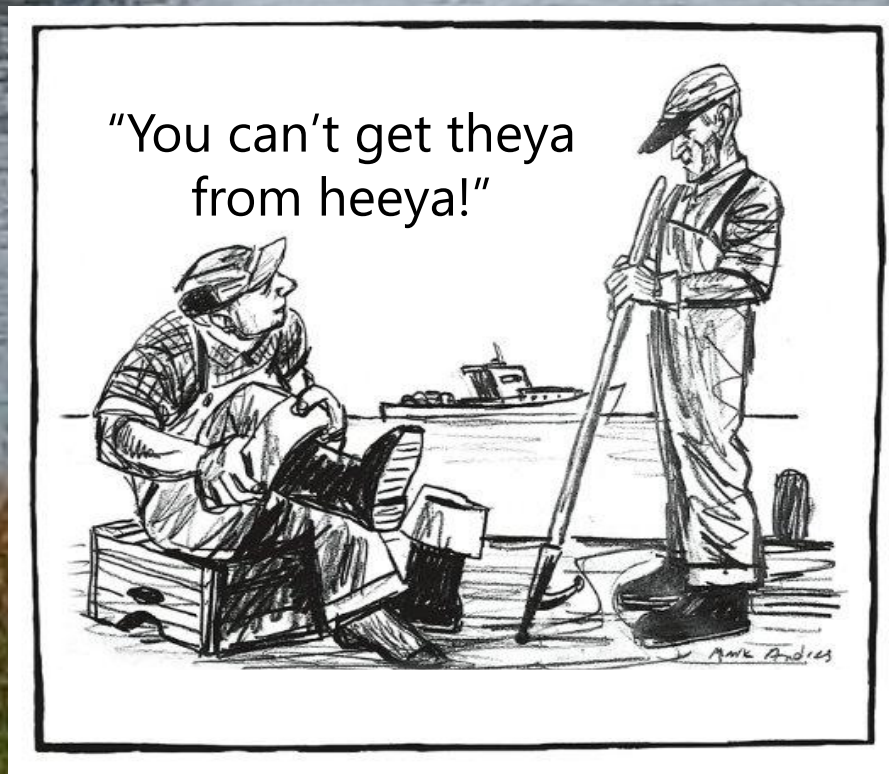
**9**  
coastal and island communities have populations larger than 10,000 and all are in Southern Maine.

**75%**  
of coastal and island communities have fewer than 3,500 residents.

**25%**  
of coastal and island communities have fewer than 800 residents.

Why Rural Matters:

It's part of what defines  
our region.



# Bridging the Rural Efficiency Gap

Expanding access to energy efficiency upgrades in remote and high energy cost communities

Brooks Winner, Suzanne MacDonald, Lisa Smith, Juliette Juillerat



<http://www.islandinstitute.org/bridging-rural-efficiency-gap>



# How We Work

- Facilitating community conversations to spur adaptive actions
- Providing planning and technical support to move communities forward
- Making targeted investments to leverage larger returns from State and Federal Programs



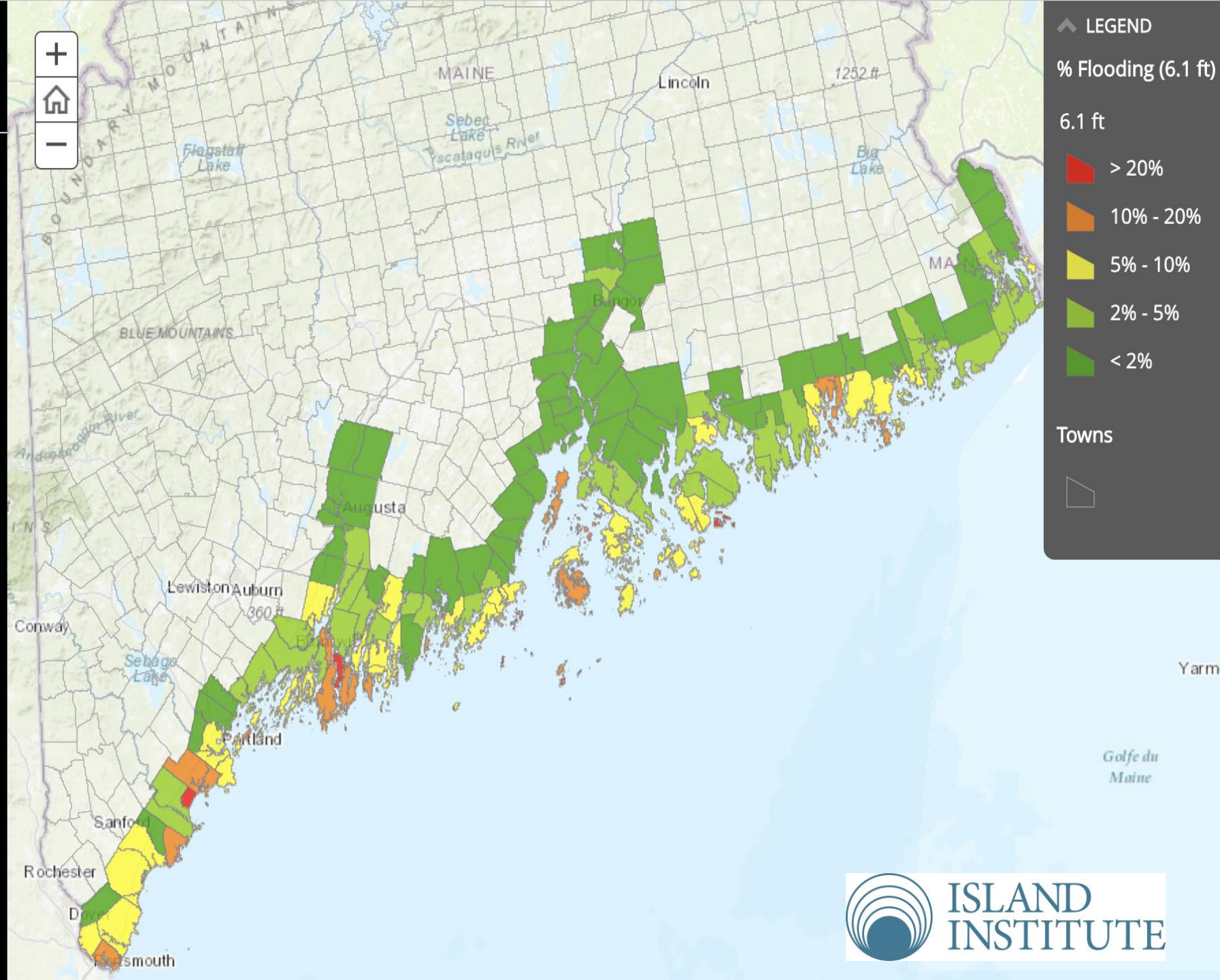
# Cost of Sea Level Rise

## Sea Level Rise Inundation

All of Maine's coastal communities will experience changes because of sea level rise. The amount and type of change each community experiences will be dependent on multiple factors. Here the map shows the percent of total acreage of each community that will be flooded by a sea level rise of 6.1 feet. Vinalhaven could lose more than 10% of its land by 2100 given current projections.

## Projected Scenarios

The Maine Geological Survey viewers use sea level rise scenarios ranging from 1.2-10.9 feet on top of the highest astronomical tide. For our analysis, we used the 1.6 feet (intermediate low), 3.9 feet (intermediate),







HARD RUNNY TIDE





# Vinalhaven

1150 year-round residents

# Cost of Sea Level Rise

**Sea level rise is an increasing threat to the sustainability of the coastal regions of Maine. If unmitigated, it will fundamentally change the economy and way of life of Maine's island and coastal communities.**

## Sea Level Rise Inundation

All of Maine's coastal communities will experience changes because of sea level rise. The amount and type of change each



# WHAT WORKS SOLUTIONS LIBRARY

## *Challenge*

# PREPARING FOR RISING SEAS

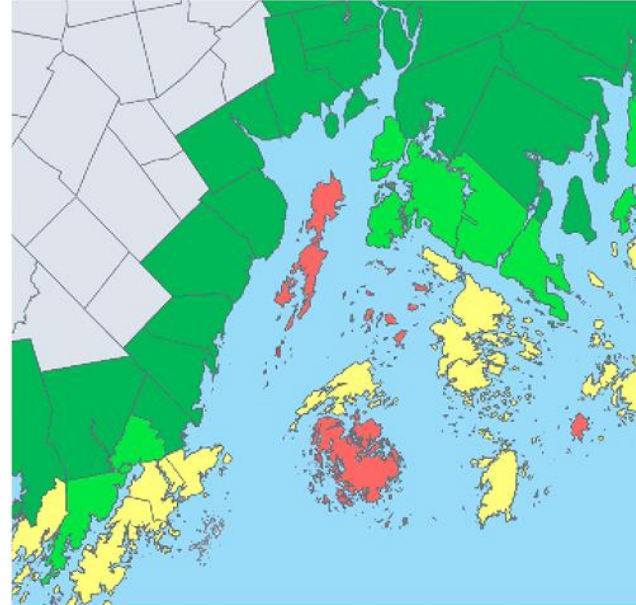
Late in 2017, the U.S. government released a report on climate change that estimates more extreme and damaging weather disaster events and a rise in global sea levels amounting to several inches in the next 15 years and one to four feet – with the possibility of rising even by as much as eight feet – by 2100. Looking to the future, the National Oceanic and Atmospheric Administration (NOAA) identifies the coast of Maine as being particularly vulnerable to storm events and sea level rise. In fact, the coast and islands are already grappling with historic storm damage and coastal flooding.

# SHOREUP MAINE 2019

## *Sea Level Rise: Who Pays and How?*

**FRIDAY, SEPTEMBER 27, 2019**

**UNITED FARMERS MARKET OF MAINE • BELFAST, MAINE**



<http://www.islandinstitute.org/resource/shoreup-maine-2019-who-pays-and-how>

# What We Need

We need direct investments into the state...

It's about the ability to Plan...

...and the ability to know the cost and time horizon





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INSTITUTE

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Sam Belknap  
Community Development Officer  
Sea Level Rise Resilience Project Lead  
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[www.islandinstitute.org](http://www.islandinstitute.org)





## **Improving Coastal Resilience in the Northeast**

**Innovative Solutions to Protect Communities, Property, and the Environment**

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Please take 2 minutes to let us know at:  
[www.eesi.org/survey](http://www.eesi.org/survey)**

**Materials will be available at: [www.eesi.org/102319northeast](http://www.eesi.org/102319northeast)**

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