

Resilient Nantucket

Preparing Your Historic Property for a Future of Rising Seas



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NANTUCKET**

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Your partners in preservation, planning and policy

Today's Agenda

Welcome – Lisa Craig/ Holly Backus

Town of Nantucket Resilience Efforts – Chuck Larson / Holly Backus

Resilient Nantucket: Design for Adaptation – Lisa Craig

Hazard Mitigation – Sarah White

Flood Adaptation – Shannon Hulst

Flood Insurance – Joseph Rossi

Q&A



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Welcome...



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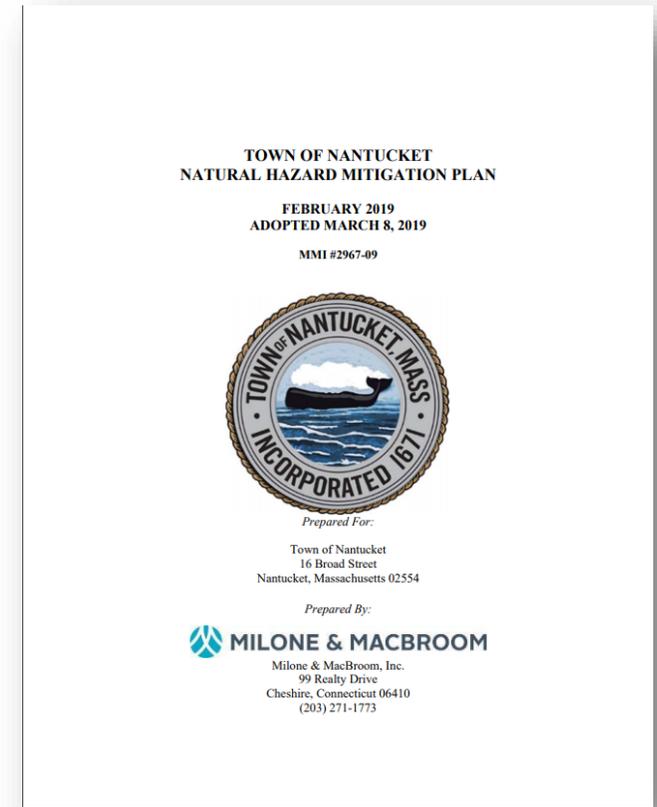


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Town of Nantucket Resilience Efforts

- Natural Hazard Mitigation Plan
 - Adopted March 2019
- Town of Nantucket Coastal Resilience Coordinator
 - Coastal Resilience Advisory Committee
- Coastal Risk Assessment and Resiliency Strategies Report
 - January 2020
- Coastal Resilience Plan (in progress)
- Sesachacha Pond living shoreline project (in progress)



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Resilient Nantucket 2019

Resilient Nantucket emerged from the Keeping History Above Water: Nantucket 2019 symposium hosted by Nantucket Preservation Trust, as well as the Municipal Vulnerability Grant awarded to Nantucket for work on understanding the threat of climate change and work towards resilience.



Fact Bulletin:

With over 60 coastal cities and towns, Massachusetts is especially vulnerable to sea-level rise, coastal erosion, superstorms, and flooding. (Massachusetts State Historic Preservation Plan 2018-2022, July 2018)

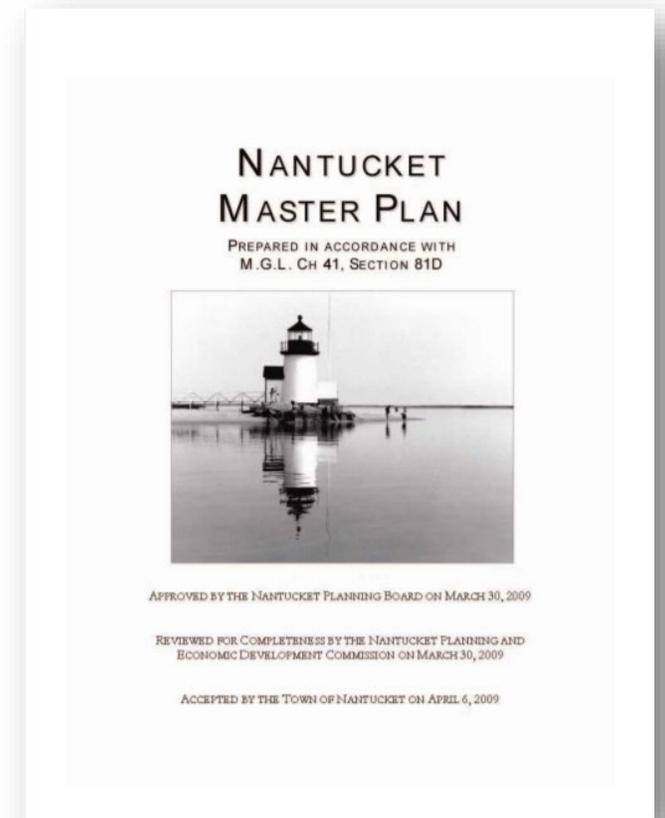


Resilient Nantucket: Community Values

“Like the ebb and flow of Nantucket’s tidal currents, the Plan is intended to be an active, fluid, and evolving document that is a resource for those who seek to understand the past and present, and to imagine the future.”

Community Values

- Protect the quality of residential districts of Nantucket
- Protect open spaces and natural resources
- Enhance the ability of Nantucket residents to live and work on the Island
- **Protect the historical integrity of the landscape and buildings**
- Maintain a strong, tourism-based economy
- Maintain access to beaches and open space
- Provide a healthy environment for all residents

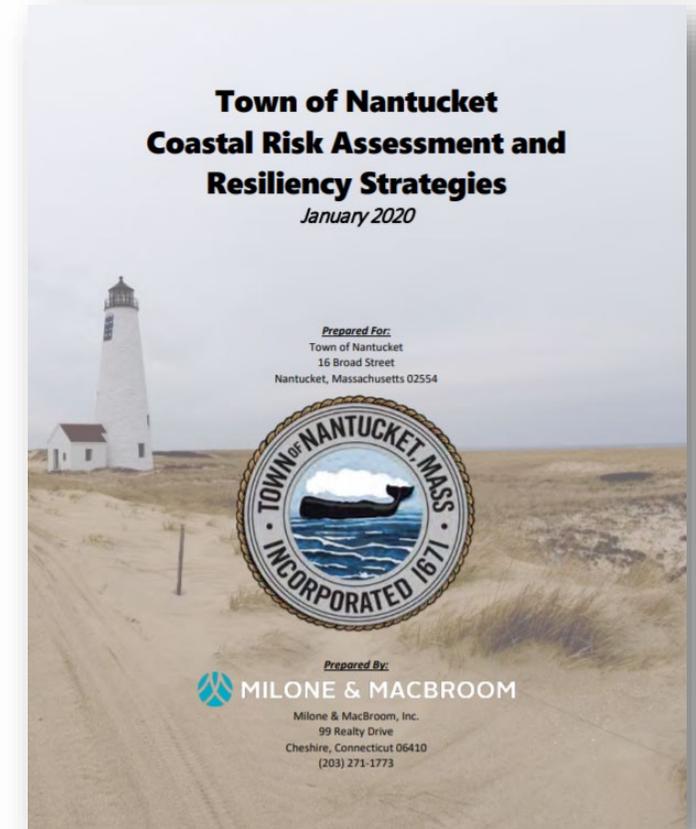


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Resilient Nantucket 2020: Designed for Adaptation

- Recommendations
 - Develop Guidelines to preserve historic streetscapes while mitigating hazards
 - Guidelines should provide information specific to the different and unique types of historic resources found on Nantucket, as well as the different and unique hazardous threats in different locations.



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Resilient Nantucket 2020 - Progress

Municipal Vulnerability Preparedness Grant awarded

Integrate local initiatives such as #ACKLOCAL and ACKclimate Nantucket

Resilient Nantucket Community Forum 1

FEMA workshop on flood risk and flood insurance

Presentation of Nantucket Digital toolkit

Community Charrette

Open to the community as a roundtable discussion and to showcase experts in floodproofing

Draft Design Guidelines for Town review

Resilient Nantucket Community Forum 2

Presentation and discussion with the community on draft resilient Nantucket design guidelines

Resilient Nantucket Community Forum 3

Continue building awareness regarding flood risk and adaptation strategies, to present the final design guidelines and to represent a model for other historic coastal communities on how to develop adaptation and elevation design guidelines



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Town of Nantucket Storm History

December – 1898

“To particularize in detail the damage wrought by the storm would be impossible... All along the southern and eastern seaboard a tremendous surf rolled in, one of the highest ever known.”

April – 2007

“The storm hit the southwest shore of Nantucket and bit chunks out of fragile sand bluffs in Madaket, loosening the foundation beneath a half-dozen houses. One of the cottages on Sheep Pond Road dropped into the ocean, one was deemed uninhabitable, and four need to have their foundations reinforced, said Nantucket Fire Chief Mark McDougall.



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1938 New England Hurricane

Category 5

Peak winds of 186 mph

The instruments used to observe windspeed were damaged at the Blue Hills Observatory



Flooding being observed during the Hurricane of 1938 – Nantucket Historical Association



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September 1961 Hurricane Esther

Category 4

First large storm to be discovered using satellite imagery.

20-foot waves onshore in Madaket

Broad Creek Crossing Flooded

Smith's Point was cut off from the rest of Nantucket and known as Esther's Island until it naturally reconnected in the mid-1980s.



The west end of the island, shortly after hurricane Esther cut off Smith's Point, and created Esther Island. The sign in the middle reads: Use Road at Your Own Risk. – Nantucket Historical Association



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August 1991 Hurricane Bob

Category 2

Tidal surges of 10 feet above normal

Wind gusts of 150 mph reported

Some areas in Nantucket and Martha's
Vineyard lost up to 50 feet of beachfront from
erosion



“An elm that stood for a century at the corner of Pearl and South Water streets was toppled by the fury and 100-mile-an-hour winds of Hurricane Bob” – The Inquirer and Mirror, 2016



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October 1991 No Name Storm

Also known as “The Perfect Storm”

Nor’easter evolving into a small
hurricane

25-foot wave heights

Estimated \$30 million in damage on
Nantucket

*“Dozens of harborside homes in the Brant Point
neighborhood were smashed by waves and flooded by water
that reached five feet. Decks, stairways, shutters and other
debris littered downtown Nantucket.”*

The Boston Globe, November 1, 1991



Storm damage on Old North Wharf - Digital Commonwealth



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October 1991 No Name Storm

Great Point was split from the island due to erosion for five months until it naturally reconnected.

Gap was reported to be a quarter mile wide and six feet deep

Fact Bulletin:

The highest water level on record was recorded in 1991 during the No Name Storm. (NOAA)



Aerial view of Great Point, showing how the No-Name Storm separated it from the main island of Nantucket.” - Nantucket Historical Association



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January 2015 Winter Storm Juno

23 inches of snow recorded in Boston
78 mph winds recoded in Nantucket
Nearly all Nantucket residents lost power
Flooding substantially affected many neighborhoods

“With 78 miles an hour winds lashing the island, ferry service from the mainland has been suspended and whiteout conditions make flights to the island impossible, leaving the island residents stranded.”

weather.com, January 27, 2015



Icy water covered a street in Nantucket, Mass. Source: Greg Hinson/NantucketStock.com, via Associated Press



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Winter 2018 Nor'easter

January

Catastrophic sewer failure

March

Wave height of 7 feet

Brant Point was separated

Polpis Road washed away in multiple locations



“Waves lashed waterfront buildings along Washington Street where the water flowed freely over bulkheads into the street. Sea water flowed up Commercial Wharf, across Washington Street onto Coffin Street, and about half of the downtown Stop & Shop parking lot was under water. Easy Street was completely under water at the basin and floodwaters stretched from its intersection with Broad Street to South Beach Street.”

Inquirer & Mirror, March 8, 2018

Fact Bulletin:

Second highest water level on record: January 4, 2018

Fifth highest water level on record: March 3, 2018

Ninth highest water level on record: January 30, 2018
(NOAA)



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Erosion on Nantucket

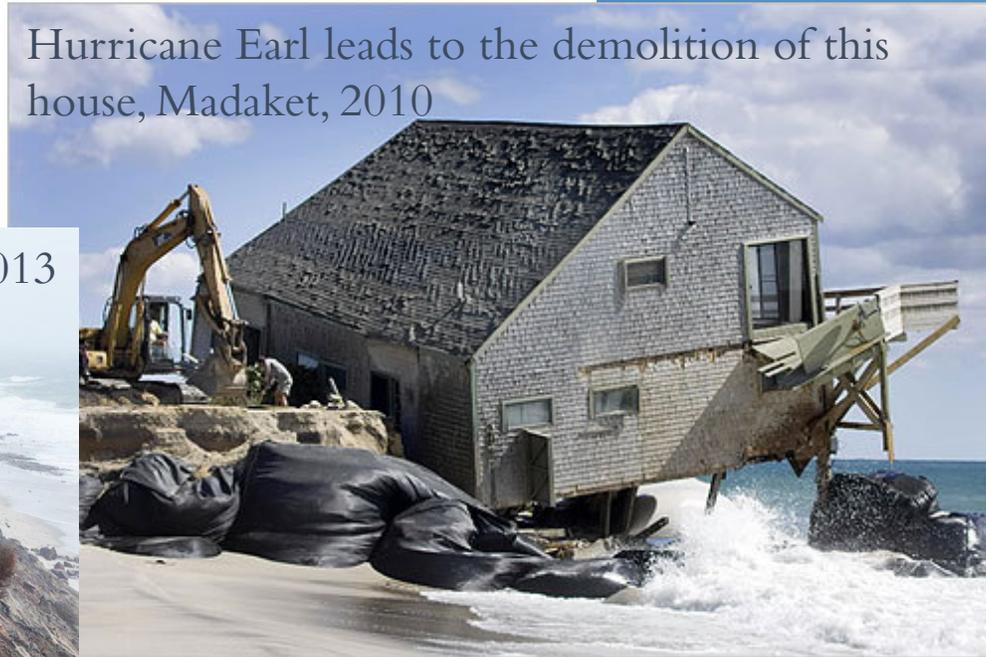
Storm weakened the 10-foot cliff causing the house to fall, Madaket, 2009



Moving of Sankaty Lighthouse due to erosion threats, Sconset, 2007



Hurricane Earl leads to the demolition of this house, Madaket, 2010



Sconset, 2013



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Preservation Institute Nantucket

3D Digital Documentation and Sea Level Rise Visualization

Resilient Nantucket: 3D Digital Documentation and Sea Level Rise Visualization is an initiative to digitally document the core of historic Nantucket Town, its waterfront, and Brant Point and to prepare 3D visualizations of sea level rise projections.

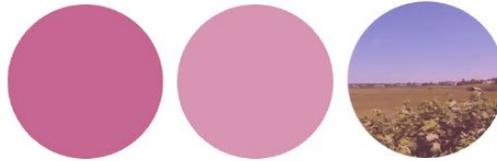
The initiative is a collaboration of the Town of Nantucket, Nantucket Preservation Trust, and University of Florida Preservation Institute Nantucket. Funding was provided by the Nantucket Community Preservation Committee, Massachusetts Coastal Zone Management Program, Osceola Foundation, and ReMain Nantucket.



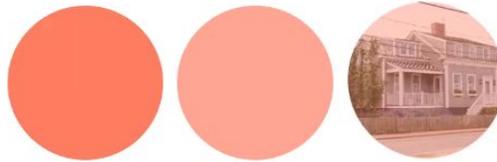
29 June 2019

UF UNIVERSITY OF FLORIDA

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South Washington Street



Resilience and Adaptation Area Strategy

12 August 2020



Morris Hylton



designLAB architects



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EASY & BROAD STREETS

2019

Old North Wharf

Removed, future park

The Cantina

Sheriffs Office

Town Hall



EASY & BROAD STREETS

3.25 FEET in 2040



Old North Wharf

Removed, future park

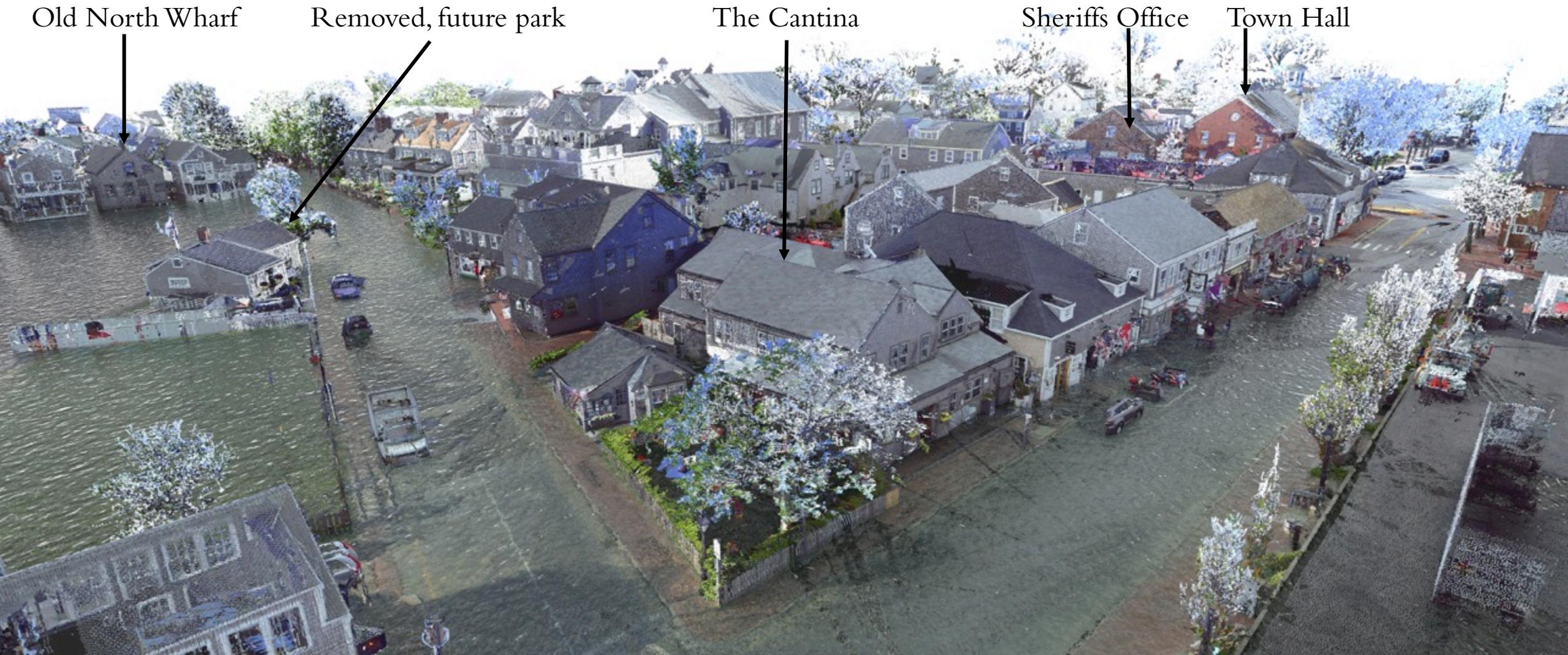
The Cantina

Sheriffs Office

Town Hall

EASY & BROAD STREETS

4.54 FEET in 2060



Old North Wharf

Removed, future park

The Cantina

Sheriffs Office

Town Hall

EASY & BROAD STREETS

6.14 FEET in 2080



EASY & BROAD STREETS

8.04 FEET in 2100



PACIFIC CLUB & LOWER MAIN STREET

2019

Submitted request for additional two stories, keeping in massing with Pacific Club

Pacific Club



PACIFIC CLUB & LOWER MAIN STREET

6.14 FEET in 2080

Submitted request for additional two stories, keeping in massing with Pacific Club

Pacific Club



PACIFIC CLUB & LOWER MAIN STREET

8.04 FEET in 2100

Submitted request for additional two stories, keeping in massing with Pacific Club

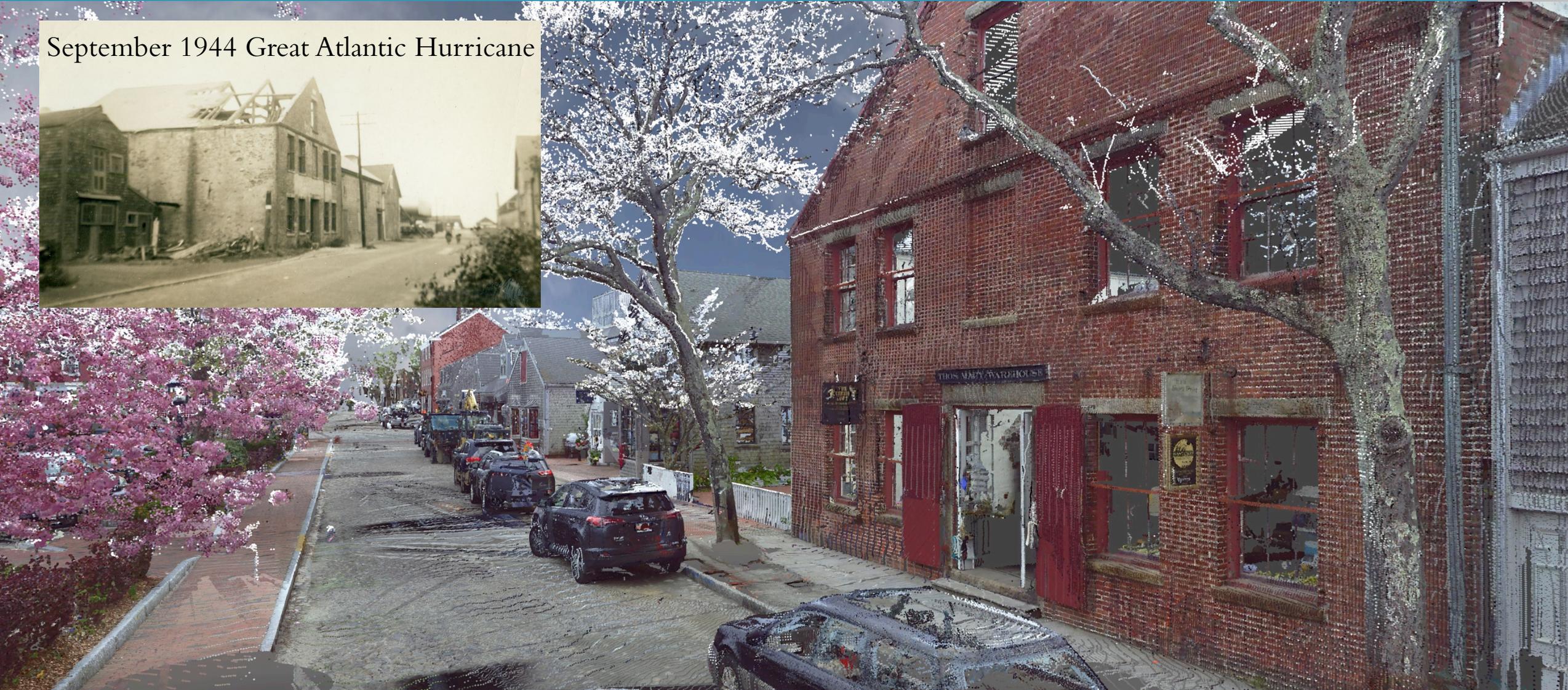
Pacific Club



MACY WAREHOUSE at LOWER MAIN STREET

2019

September 1944 Great Atlantic Hurricane



MACY WAREHOUSE at LOWER MAIN STREET

4.54 FEET in 2060

September 1944 Great Atlantic Hurricane



MACY WAREHOUSE at LOWER MAIN STREET

6.14 FEET in 2080

September 1944 Great Atlantic Hurricane



MACY WAREHOUSE at LOWER MAIN STREET

8.04 FEET in 2100

September 1944 Great Atlantic Hurricane



WAVE SHUTTLE TERMINAL

2019



WAVE SHUTTLE TERMINAL

6.14 FEET in 2080



WAVE SHUTTLE TERMINAL

8.04 FEET in 2100



Resilient Nantucket: Designed for Adaptation Toolkit

Modeling and Visualizations

Resources for Community Officials

National Flood Insurance Program

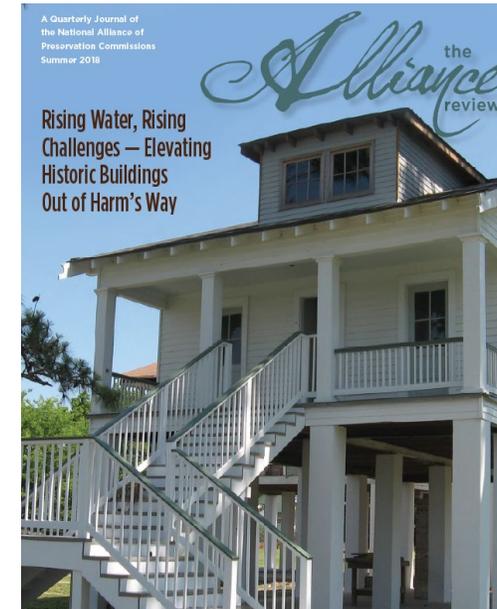
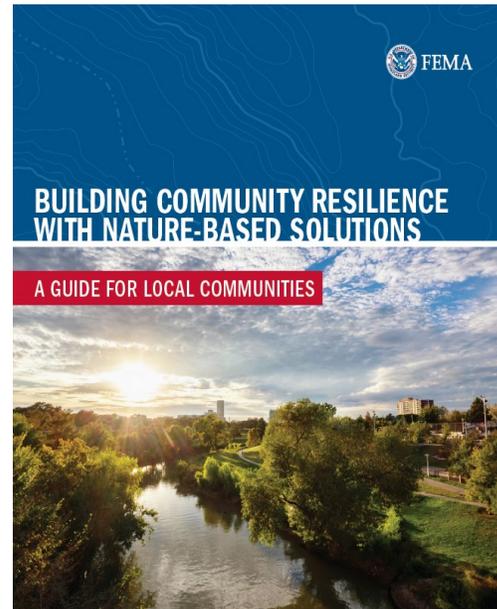
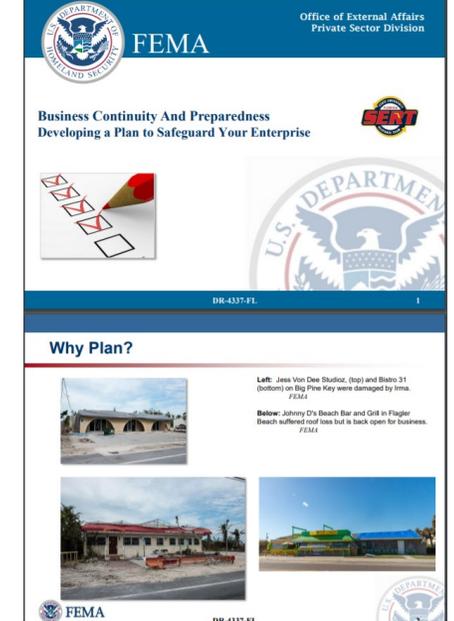
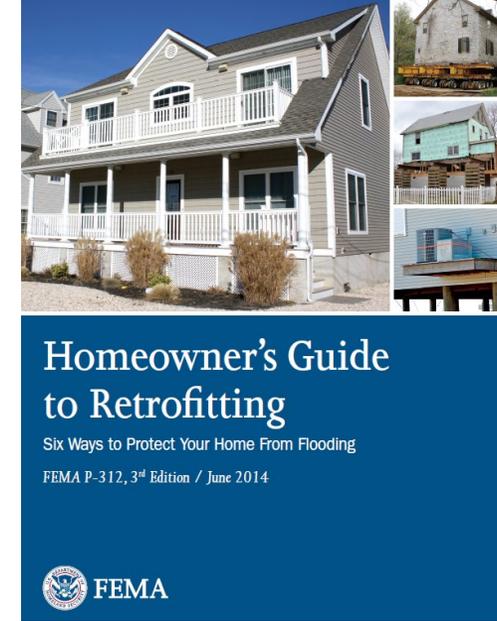
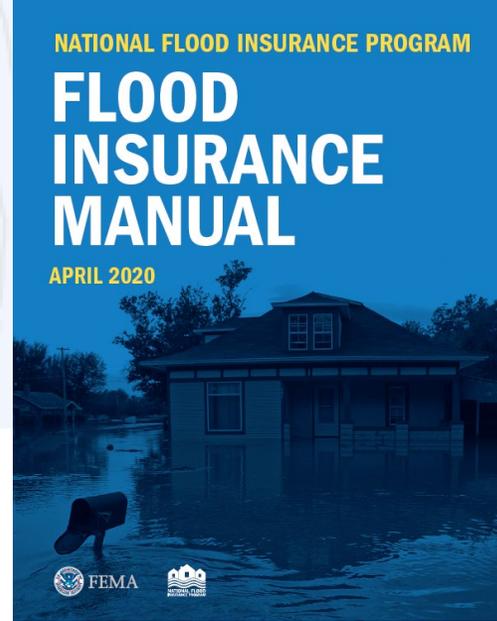
Resources for Residential Properties

Resources for Commercial Properties

Resources for Small Business Owners

Funding Opportunities

Family Disaster Preparedness



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Thank you to our Presenters...



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Joseph Rossi

Vice President, Flood Specialist | Business
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Hazard Mitigation

- Identifying actions for **risk reduction** agreed upon by stakeholders and the public
- **Focusing resources** on the greatest risks and vulnerabilities
- **Building Partnerships** – businesses, organizations, and citizens
- Increasing education and **awareness to risks** and hazards
- Providing a tool to **communicate priorities** to local, state, and federal officials
- Aligning risk reduction with **other community objectives**

This is hard...

- ▶ Planning for change is challenging but planning for uncertainty is extremely challenging.
- ▶ How can we best categorize climate change impacts in order to understand (and best present) its potential affect on our lives?
- ▶ How will these adaptation or actions be paid for, and by whom?



Vulnerability Assessment

- ▶ State resources and agencies will be affected by climate change and exacerbation of natural hazards
- ▶ State Hazard Mitigation and Climate Adaption Plan is the states playbook for this work.

Resilientma.org



Mitigation and Adaption Strategy

- Construction and retrofits
- Nature based approaches
- Emphasis on buildings and infrastructure
- Planning and regulatory
- Administrative and technical
- Financial
- Education and outreach

FEMA's Hazard Mitigation Program



Local Hazard Mitigation Plans

- The mitigation strategy serves as *the long-term blueprint* for reducing the potential losses identified in the risk assessment.
- Outlines projects and actions for the community to take
- Plans are updated and FEMA approved every 5 years.

Hazard Mitigation Grants

- FEMA's Hazard Mitigation Assistance Programs fund planning, engineering, and project construction.
- Projects **MUST** have a FEMA BCA analysis above 1.0.
- Cannot fund rehab, repair, or deferred maintenance activities.

BRIC's Guiding Principles

Guiding Principles

-  Support Community Capability & Capacity Building
-  Encourage and Enable Innovation
-  Promote Partnerships
-  Enable Large Infrastructure Projects
-  Maintain Flexibility
-  Provide Consistency

Supports FEMA's Strategic Plan

-  Build a Culture of Preparedness
-  Ready the Nation for Catastrophic Disasters
-  Reduce the Complexity of FEMA

Building Resilient Infrastructure and Communities
BRIC

Interested communities must submit a
STATEMENT OF INTEREST
by October 16, 2020 to MEMA.

Flood Mitigation

- Project Scoping (Advance Assistance)
- Community Flood Mitigation Projects
- Flood Hazard Mitigation Planning
- Individual Flood Mitigation Projects



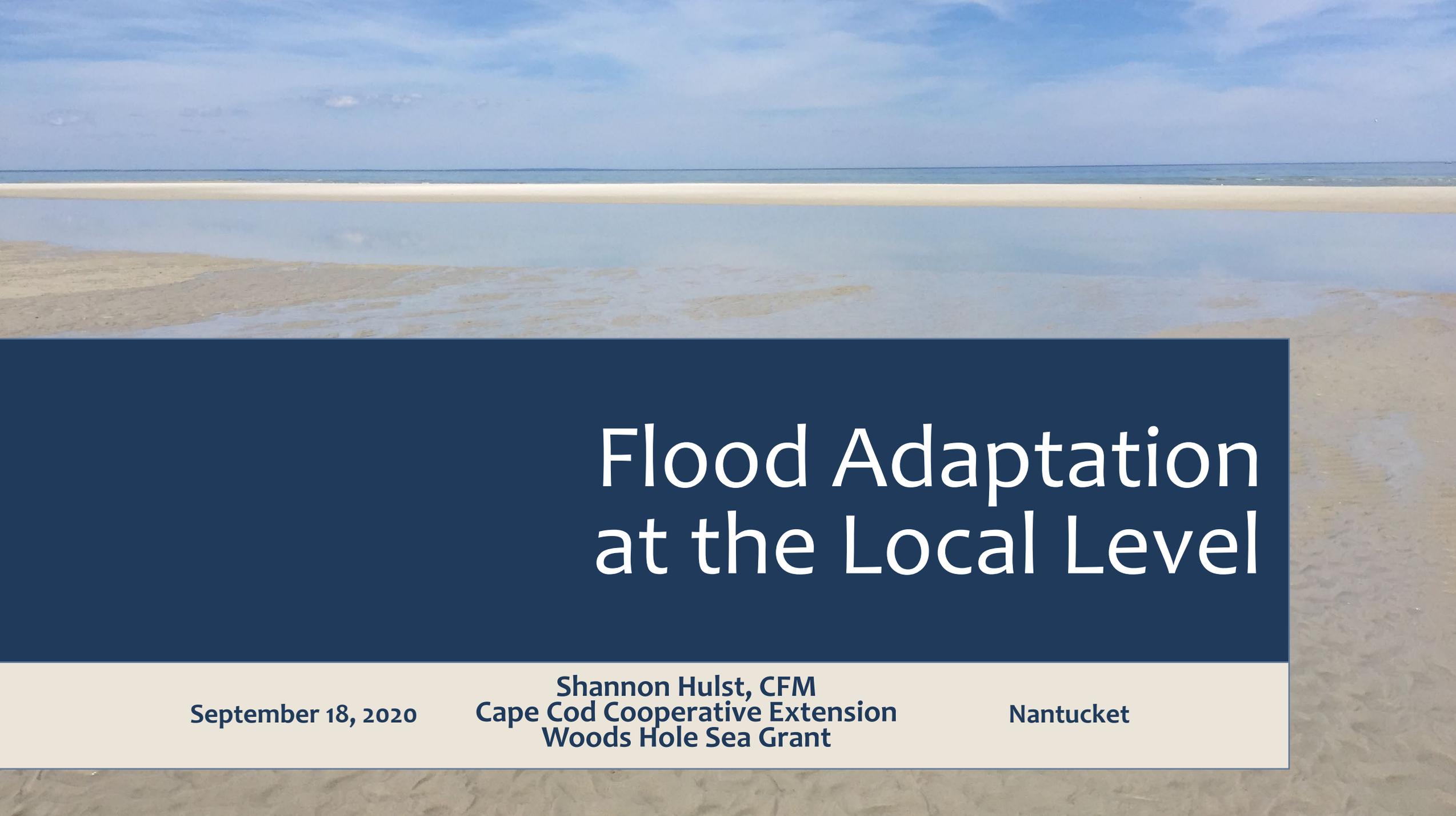


Thank you

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Massachusetts Emergency Management Agency

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Flood Adaptation at the Local Level

September 18, 2020

Shannon Hulst, CFM
Cape Cod Cooperative Extension
Woods Hole Sea Grant

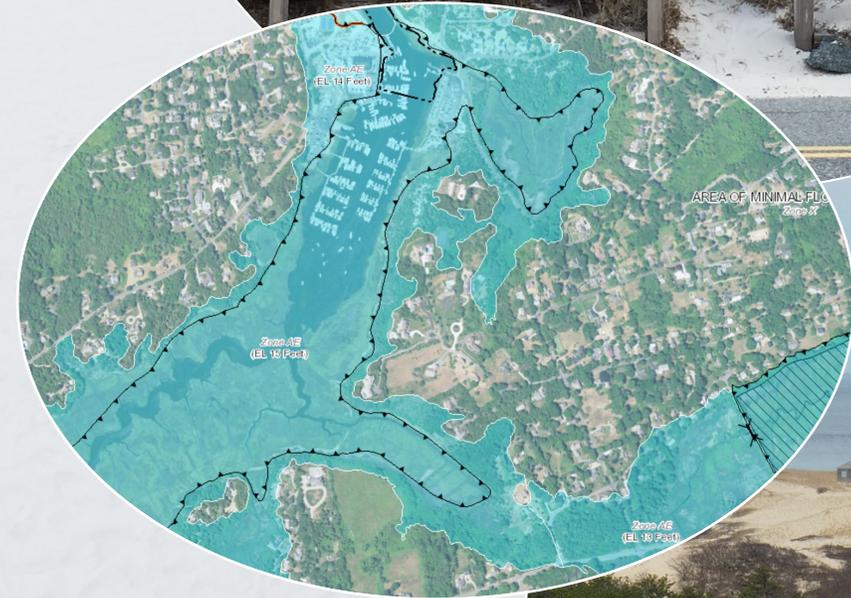
Nantucket

Community Adaptation



Floodplain Management

- Framework for flood adaptation
- Balance reduced flood losses and protect natural functions; consider future conditions
- National Flood Insurance Program
 - Flood maps
 - Flood insurance
 - Floodplain regulations
- **Improving resilience to flooding overall**



Who is responsible in my community?



- Town Departments

- Building
- Planning
- Natural Resources/Conservation
- Recreation/Beach
- Public Works
- Emergency Management

- Conservation efforts

- Town Conservation Trust
- Town conservation land
- Private property easements

- Town Boards

- Zoning
- Planning
- Conservation Commission
- Economic Development
- Community Preservation
- Historic Districts
- Affordable Housing
- Board of Selectmen

Floodplain Management in Historic Communities

- Start to think now about how to blend historic nature with future realities
- Special exceptions to balance flood safety and historic character
- Only National Register properties qualify (unless the town gets approved as a Local Certified Government program)
- See new guide: [Floodplain Regulations and Historic Structures in MA](#)



Adaptation Examples: Limit Development

- Strictly enforced no-disturb buffers along wetland protection areas (Wellfleet)
- Prohibition on some new development in the floodplain (Chatham)
- Allow cluster zoning to protect open space in the floodplain (Sandwich)
- Prioritize open space preservation in flood zones (Barnstable)
- Prohibit substantially damaged structures from rebuilding (National Seashore – North Beach Island)
- Use federal funding to elevate or raze frequently-damaged structures (Dennis)



Adaptation Examples: Grants

- Erosion management and protection (Nantucket)
- Public information and engagement (Sandwich, Truro)
- Low-lying road assessment (Eastham)
- Retreat of beach parking lot (Brewster)
- Installation of pervious pavement (Provincetown)
- Construct resilient municipal buildings (Harwich)
- Application to the CRS (Barnstable)
- Better flood mapping (Cape Cod Bay shoreline, Nantucket)
- Invest in adaptation planning for historic structures (Nantucket)



Flood Insurance



Flood Insurance: Individual and Community Protection

- First line of defense in rebuilding
- Flooding not covered by homeowner's insurance!
- National Flood Insurance Program
 - Community participation enables access to NFIP flood insurance
 - Agree to enforce certain regulations
 - Foundation for floodplain management
 - Framework and incentives for adaptation through the Community Rating System



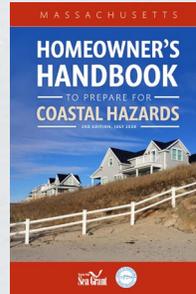
Combining Flood
Insurance and
Local Adaptation:
**Community
Rating System**



The Community Rating System (CRS)



- Flood insurance discounts in exchange for actions that reduce flood risk
- Improves flood resilience
 - Incentive for resilience
 - Improved building code enforcement & awareness
 - Open space preservation
 - Public education
 - Ideas for advanced floodplain management



CRS Rating Table

Class	Points	Premium Discount
10	0-499	0%
9	500-999	5%
8	1000-1499	10%
7	1500-1999	15%
6	2000-2499	20%
5	2500-2999	25%
4	3000-3499	30%
3	3500-3999	35%
2	4000-4499	40%
1	4500+	45%

CRS Activity Categories

- **Public Information**
 - Newsletters, brochures, presentations, reading flood maps
- **Mapping and Regulations**
 - Open space preservation, stormwater management regulations
- **Flood Damage Reduction**
 - Acquisition/relocation, mitigation, hazard mitigation planning
- **Warning and Response**
 - Flood emergency response and warnings



OMB No. 1660-0022
Expires: March 31, 2020

National Flood Insurance Program
Community Rating System

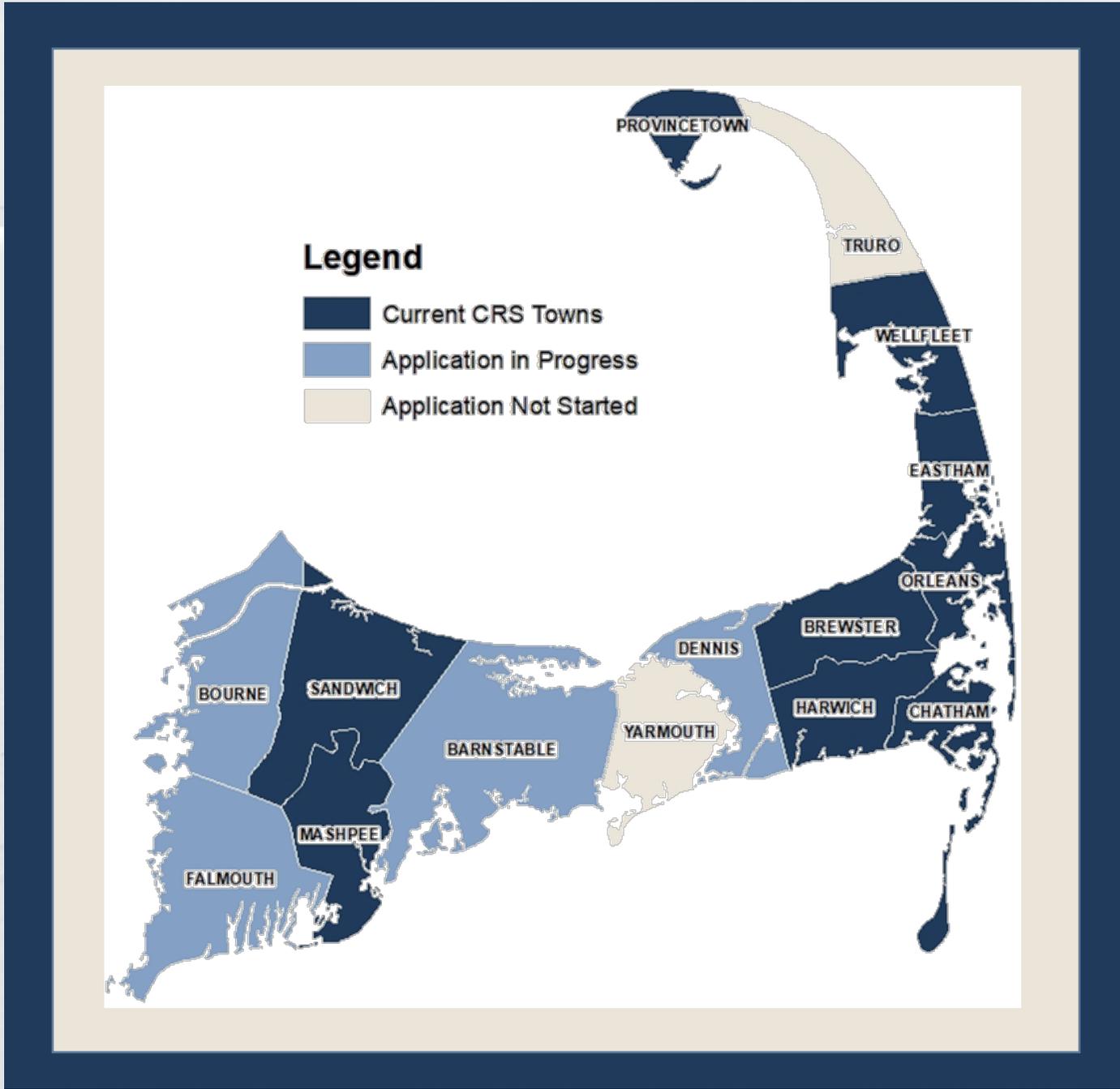
Coordinator's Manual

FIA-15/2017



FEMA

Barnstable County



Nantucket and the CRS



Nantucket Flood Insurance

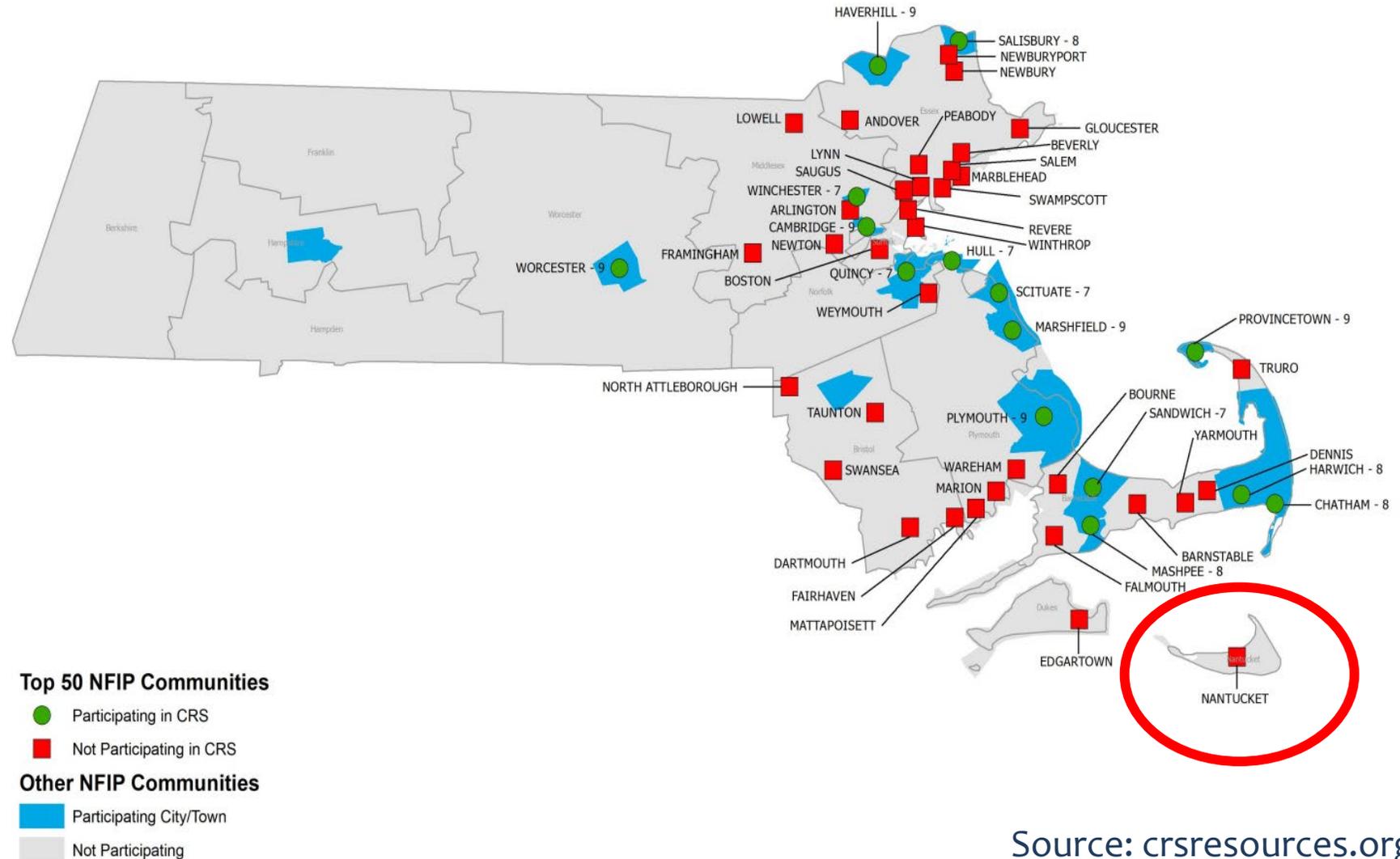
- 1,000 NFIP policies
- \$1.7 million annual premium payments
- \$4,000 average annual premium (floodplain)



CRS Annual Savings for Nantucket

CRS Annual Savings			
	5% Discount	10% Discount	15% Discount
Total Savings	\$75,000	\$142,000	\$208,000
Average Savings	\$200	\$400	\$600

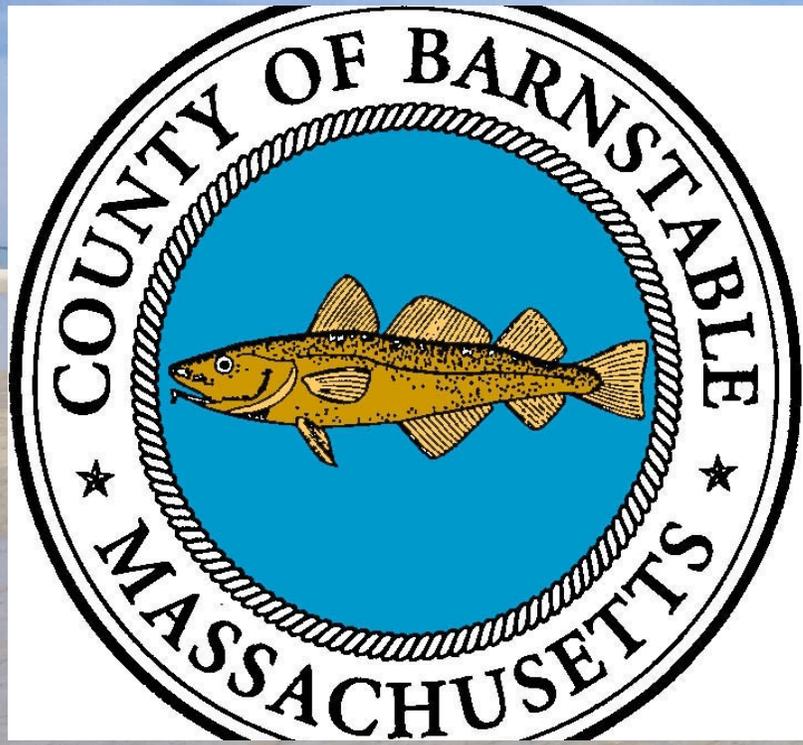
MA Communities with the highest number of NFIP Policies that do/do not participate in CRS



Source: crsresources.org



Coastal communities have access to many resources to adapt to sea level rise and changes in flooding.



Thank You!

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Flood Insurance

As a bank account for community resilience

Joe “Flood” Rossi, ANFI, CFM

Joe “Flood” Rossi, ANFI, CFM

- Flood Specialist- RogersGray Insurance
- Chair- Mass. Coastal Coalition
- Chair- Marshfield CRS Committee
- Co-Chair- National Flood Association Legislative Committee
- Board Member- Flood Insurance Producers National Committee
- Certified Floodplain Manager
- Associate in National Flood Insurance
- Degree in Architecture from Wentworth Institute of Technology



Questions we need to answer

- How do we make recovery better, faster, stronger?
- How does flood insurance make us resilient?
- How do they come together to better our community?

April: National Financial Capability Month

“Check your insurance coverage. Having insurance for your apartment, home or business property is the best way to be sure you will have the necessary financial resources to help you repair, rebuild or replace whatever is damaged.”

- <https://www.ready.gov/financial-preparedness>
- #FinancialFuture2019

Closing the Insurance Gap

Resiliency requires all levels of government and the private sector



Help your customers understand the risk they face for all disasters, and take action to protect the life they've built through insurance.



Share the importance of flood insurance through your networks and marketing channels.



Provide clients with options to mitigate their home to bring down the cost of hazard-specific insurance.

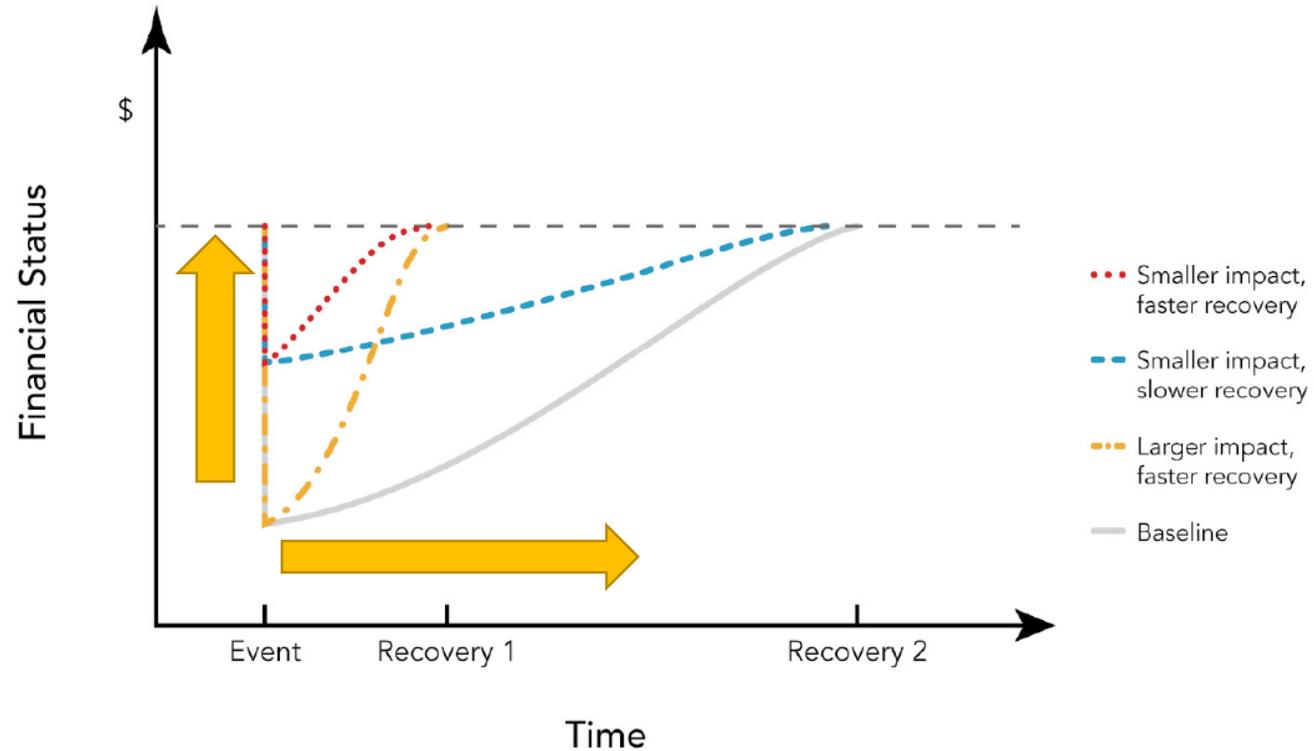


Together, we can double the amount of flood coverage nation-wide by 2022.



Challenges, innovations, and "setting the course"

Figure 2. Conceptual Representation of Resilience for a Particular Disaster Event



“The red dotted curve conceptualizes what could be achieved by widespread take-up of flood insurance, which increases the resilience of individuals and communities by both speeding recovery and lessening the magnitude of the shock”



History of the NFIP

History

National Flood Insurance Program

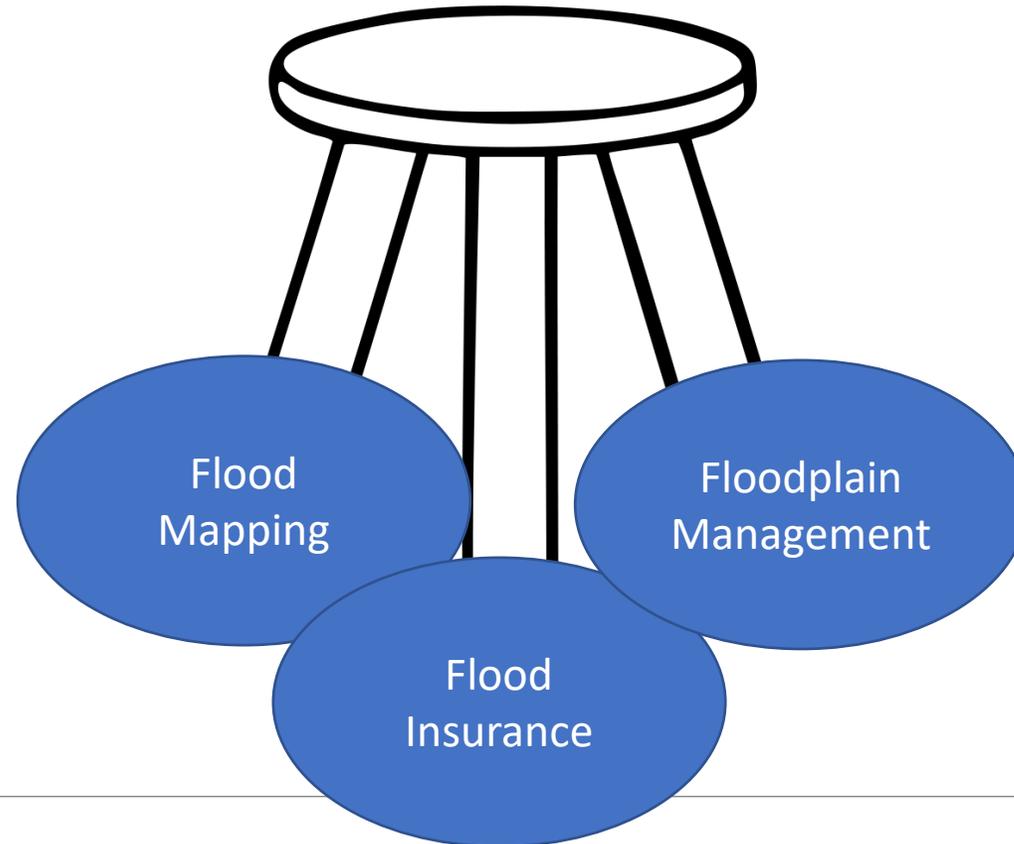
- National Flood Insurance Act established the National Flood Insurance Program (NFIP) August 1st, 1968
- Reasons for NFIP (from 1968 Act)
 - Flood disasters had burned the government
 - Programs at the time didn't create sufficient financial protection of future flood losses
 - A flood program would share the risk of flood loss which can help with preventative measures
 - Ability, over time, to facilitate reasonable rates
- The goals of the program were to increase flood insurance coverage, identify flood prone areas, and require communities and home owners to participate in order to receive federal assistance
- Congress established the NFIP; must be reauthorized by Congress every so many years.
- **NFIP expires September 30th 2020**



History

National Flood Insurance Program

- Communities must participate in order to receive Federal Flood Insurance
- Participation is voluntary: 22,000 participate out of 26,000 communities



History

National Flood Insurance Program

- Prevention of losses:

Flood Mapping

- Identification of risk
- Establishes high and low risk flood zones
- Sets rates
- Flood zones set the standards for mitigation

Flood Insurance

- Premiums inform risk
- Financially resilient
- Increase in mitigation activity
- Grants!

Floodplain Management

- Avoided losses (\$2B a year)
- Both structural and non structural
- More mitigation = lower rates



Recovery

1. A return to a normal state of health, mind, or strength.
2. The action or process of regaining possession or control of something stolen or lost.

Recovery

Definition of a flood

- **From NFIP:**
 - A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (one of which is your property) from:
 - **a.** Overflow of inland or tidal waters,
 - **b.** Unusual and rapid accumulation or runoff of surface waters from any source,
 - **c.** Mudflow.
 - Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.
- **Simply:** Water coming over land, from off the property on to the property.

Recovery

Private flood insurance now an option

- Most of the private market is **non-admitted**
- **Non Admitted** doesn't mean not allowed: it means not regulated
- These companies are Lloyds of London
- There are also reinsurers taking risks (mostly commercial)
- Admitted programs also exist (regulated), but not many
- Endorsements to homeowners

	NFIP	Private Flood
Eligibility	All flood zones	Can choose which areas/zones/locations they will insure
Coverage Limits	\$250,000 building/ \$100,000 contents for 1-4 family buildings	Ability to cover up to replacement cost.
Deductible	Max: \$10,000	Ability to go above \$10,000
Regulated by	Congress	Do business in what is called "non-admitted" market. The product is still able to be sold, but the companies have no obligation to submit their rates for approval or regulation.
Annual increases	Set by congress- capped at 18%/25%	Could be no annual increase some years, and huge ones in other years. Not set by any regulatory body
Loss History	No limit on losses	Varies by company- traditionally will not accept multiple losses

Recovery



**Elevation Cert not required
required**

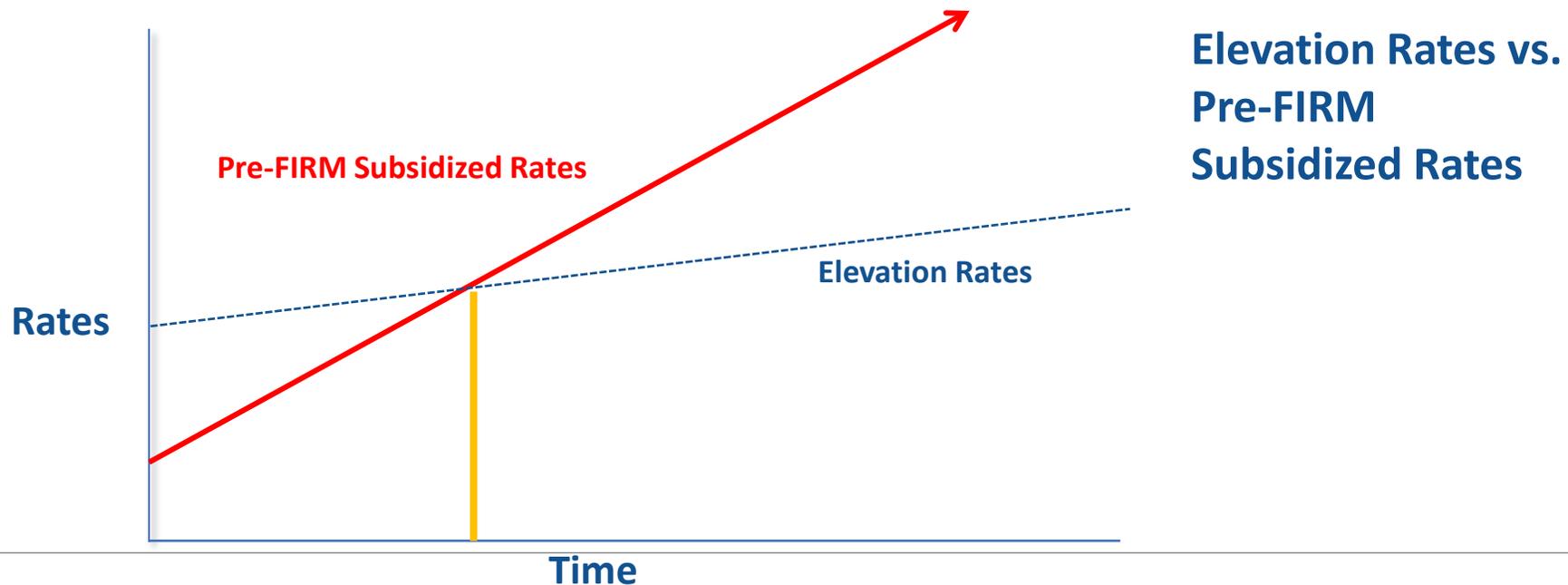
Elevation Cert

EXAMPLE: Marshfield Pre-FIRM date- October 14th, 1977

Recovery

Elevation rating

- If a building is Post-FIRM and is determined to be in a flood zone, an elevation certificate is typically required to rate the building
- The building will always fall under 1 of 11 diagrams
- Pre-FIRM rates do not depend on elevations, but elevations could help
- Even though they have an expiration date, for insurance reasons we can use an old ECs



Recovery

Coverage Exclusions

- Damage caused by moisture, mildew, or mold **that could have been avoided by the property owner.**
- Currency, precious metals, and valuable papers such as stock certificates.
- Property and belongings outside of a building such as trees, plants, wells, septic systems, walks, decks, patios, fences,
- seawalls, hot tubs, and swimming pools.
- Living expenses such as temporary housing.
- Financial losses caused by business interruption or loss of use of insured property.
- Rate increases do not include fees and surcharges

But cleanup and debris removal is covered!

Recovery

With flood insurance...

- How do I make myself and community more resilient?
- What options can help me retain my policy without the expense?
- Why is my flood insurance increasing/so expensive?

TYPE OF BUILDING	PAYING IN AE (NFIP)	PAYING IN VE (NFIP)
Pre-FIRM primary residence	\$3,030	\$6,697
Pre-FIRM second home	\$8,173	\$18,598
Pre-FIRM SRL	\$8,650	\$16,346

TYPE OF BUILDING	PAYING IN AE (Private)	PAYING IN VE (Private)
Pre-FIRM primary residence	\$1,772	\$4,560
Pre-FIRM second home	\$1,772	\$4,560
Pre-FIRM SRL	No option	No option

Recovery

Homeowners Role

- Flood is NOT covered under most homeowners policies
- If a house burns down (or damaged other than a flood) and is in a high risk flood zone, it will still be required to come into compliance with the flood maps
- VERY important to have more ordinance and law coverage in these areas
- Most homeowners carriers require copy of flood coverage



Recovery

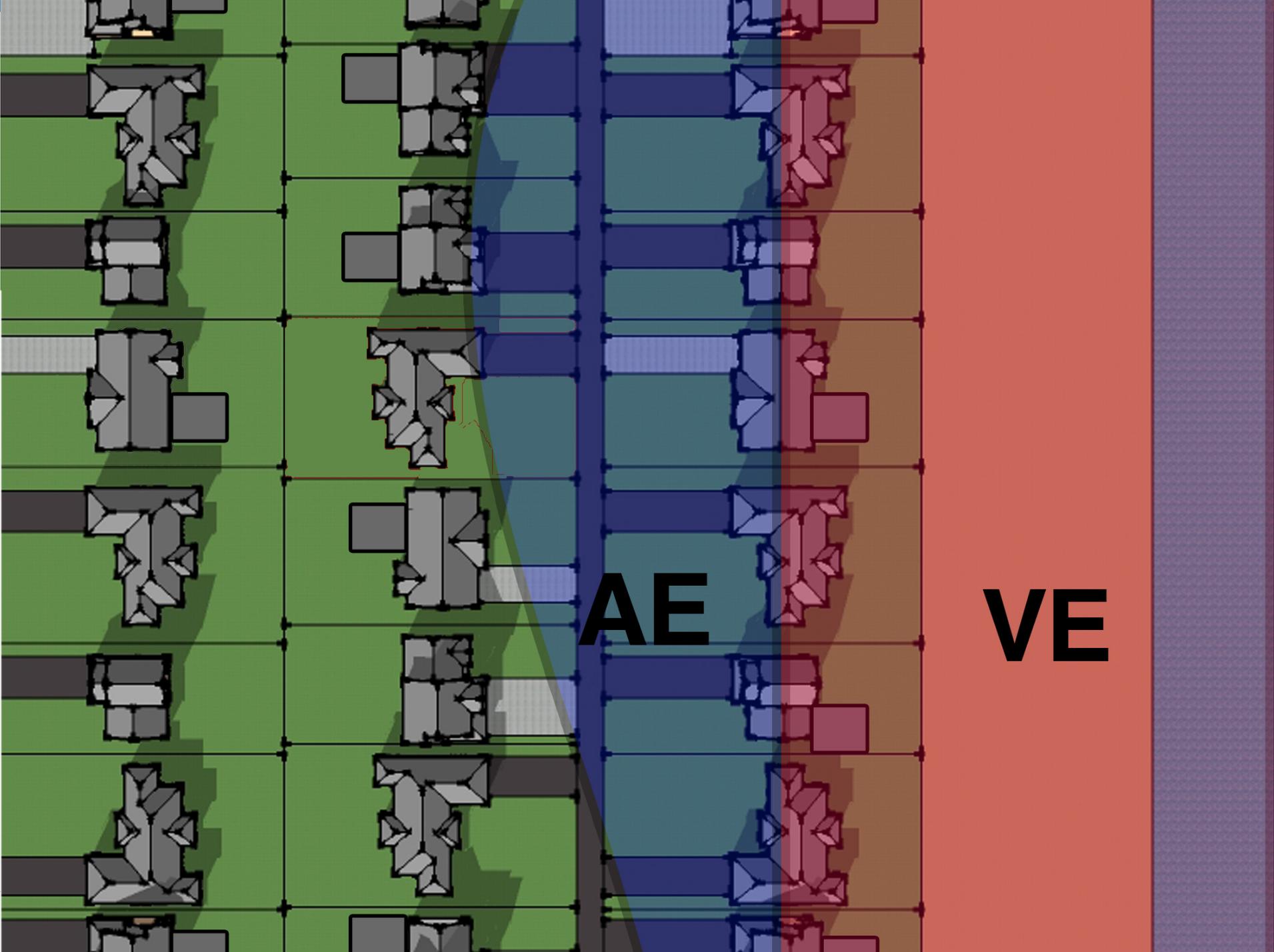
Concurrent disasters real possibility

- COVID-19 has stretched our state and Federal partners thin
- YOU are your best first responder
- Every state now has a presidentially declared disaster at the same time (first time ever)
- “We need to help individuals and families understand their personal roles in preparing for disasters and taking action – they are our true first responders”
 - Former FEMA Administrator Brock Long



Resiliency

1. The capacity to recover quickly from difficulties; toughness.
2. The ability of a substance or object to spring back into shape; elasticity.



Resiliency

Flood City

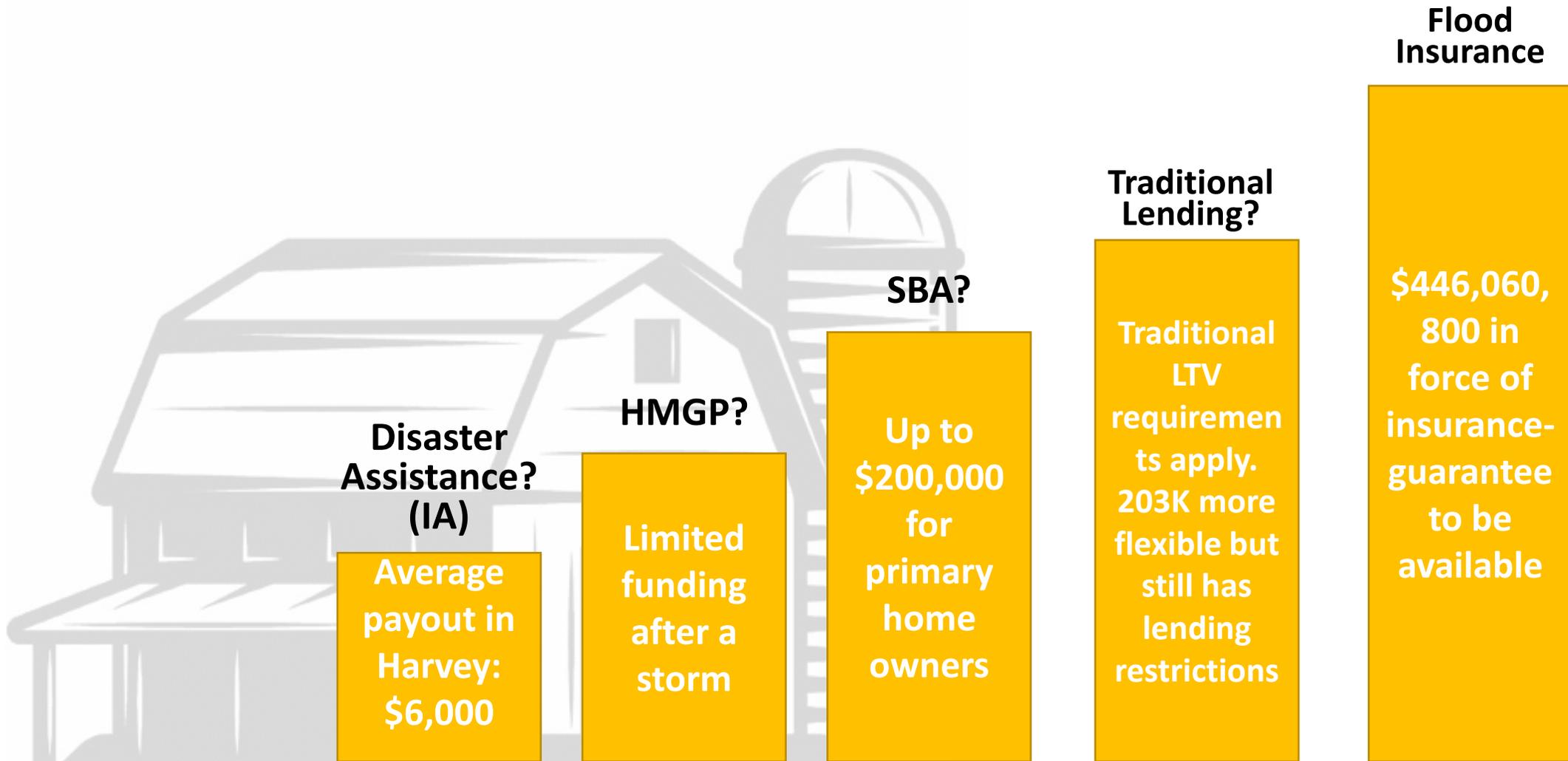
- Flood City has a total of 10,000 buildings
- Flood City has a total of 1764 flood policies
- The total insurance in force is \$446,060,800
- Flood City has a population of about 20,000 citizens

Recovery



Resiliency

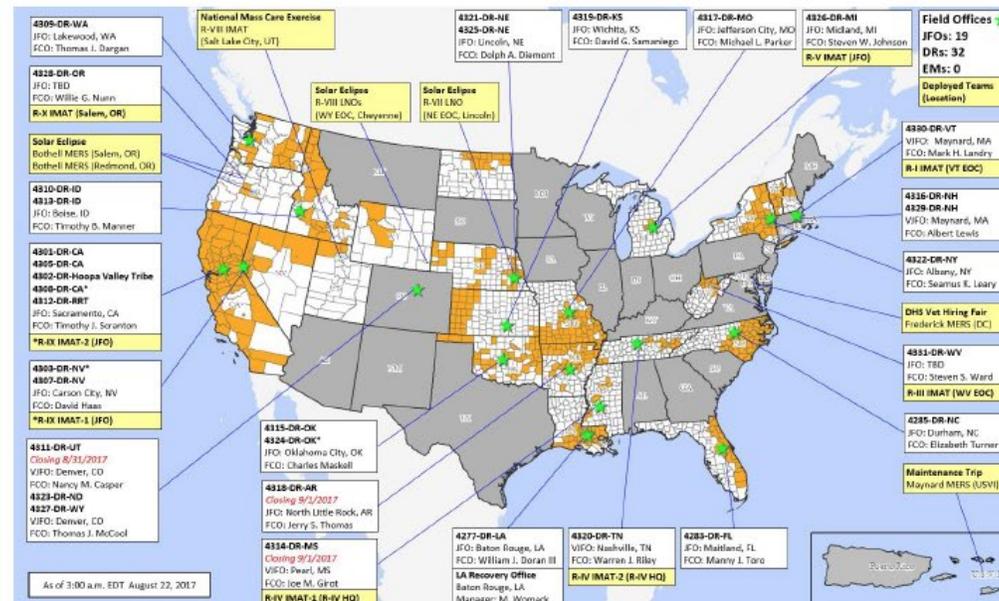
Resiliency



Resiliency

Federally Supported, State Managed, and Locally Executed Readiness for Target States Moving Forward

Disasters costing \$41 M or less constitute **80% of declared disasters**



FEMA National Situational Report, Pre-Harvey (August 22, 2017)



Challenges, innovations, and "setting the course"

39,266 declared disasters- 54% did not include IA

Resiliency

Flood Insurance Affordability

- 26% of policyholders inside the SFHA are low income.
- 21% of policyholders outside the SFHA are low income.
- 51% of non-policyholders in the SFHA are low income.
- 41% of non-policyholders outside the SFHA are low income.

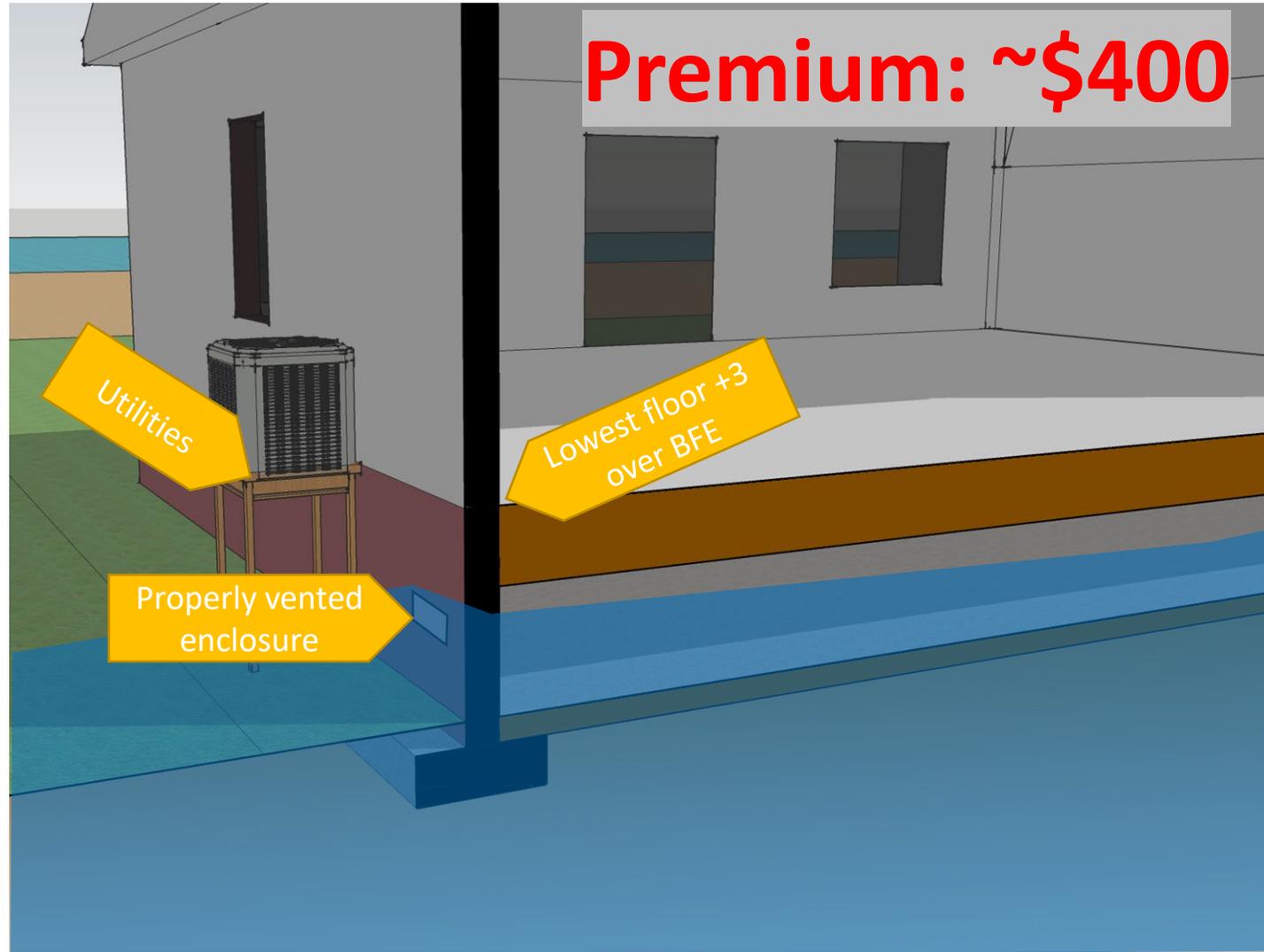
Annual Increases

- Pre-FIRM second homes, Pre-FIRM businesses and Pre-FIRM SRLs increase at 25% a year
- All Pre-FIRM structures have a mandatory annual increase of at least 5%
- All rate increases occur on April 1st
- Rate increases do not include fees and surcharges

Resiliency



Resiliency



Resiliency

Marshfield, MA

Bump Out: “When floodproofing an existing home on a preexisting nonconforming residential lot, one single-story thirty-two-square-foot utility addition (bump out) located on the first floor may project into the side or rear setback.”

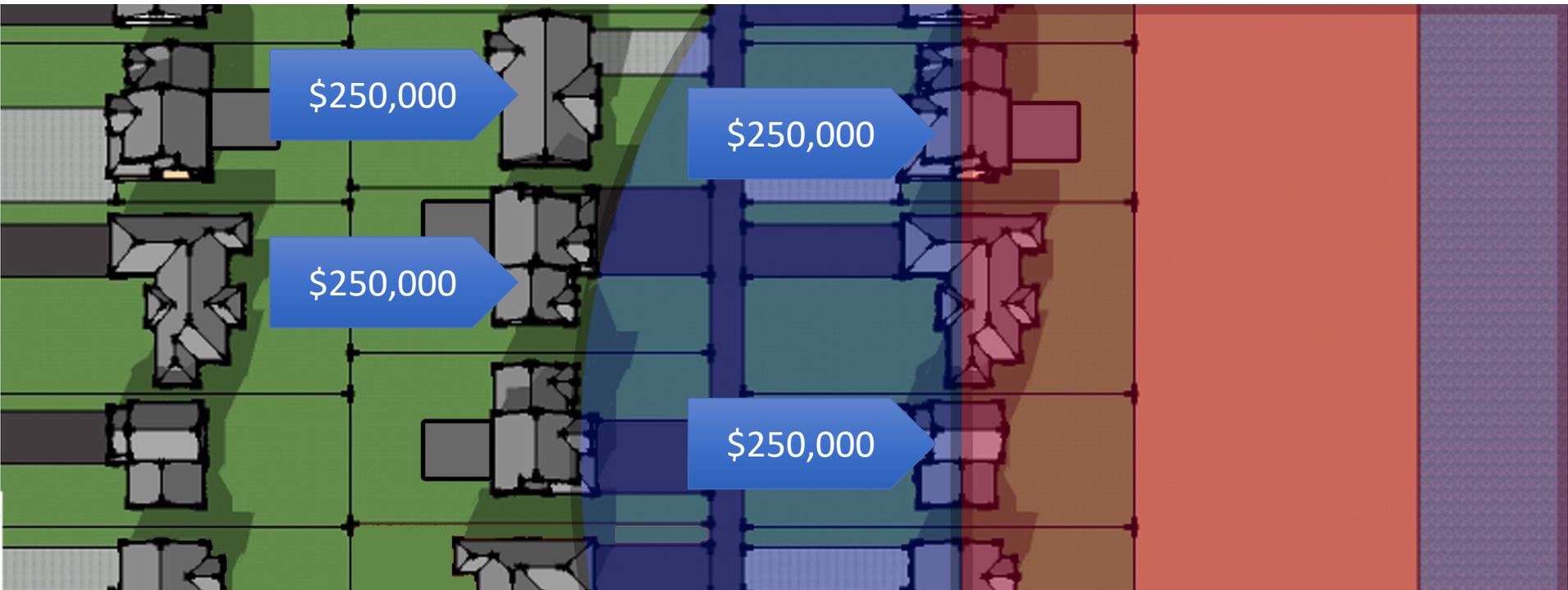
Hull, MA

Freeboard Incentive: In September 2009, the Hull Board of Selectman unanimously voted to enact the state's first freeboard incentive program... to offer a credit up to \$500 for permit fees to builders and homeowners who elevate new and renovated structures at least two feet above the highest federal or state requirement.

Resiliency

Flood City

- Why worry about 1 or 2 policies being sold?
- Single family building fully insured at \$250,000
- Every 4 policies sold = \$1,000,000 in more coverage for the community



Resiliency

Examples and solutions

- Pre and Post Disaster Outreach
- Community rating system implementation
- Flood insurance experts and resources
- Publicity and awareness (flood awareness month)



Resources

Resources

Enter an address, place, or coordinates: ?

Enter an address, place, or coordinates

Search



Whether you are in a high risk zone or not, you may need [flood insurance](#) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](#) to reduce the risk flood damage.

Search Results—Products for MARSHFIELD, TOWN OF

The flood map for the selected area is number **25023C0231K**, effective on **11/04/2016** ?

DYNAMIC MAP



PRINT MAP/
FIRMette

MAP IMAGE



DOWNLOAD
FIRM PANEL

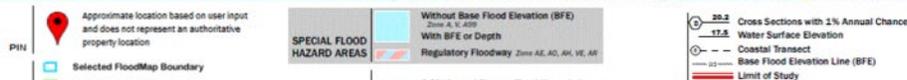
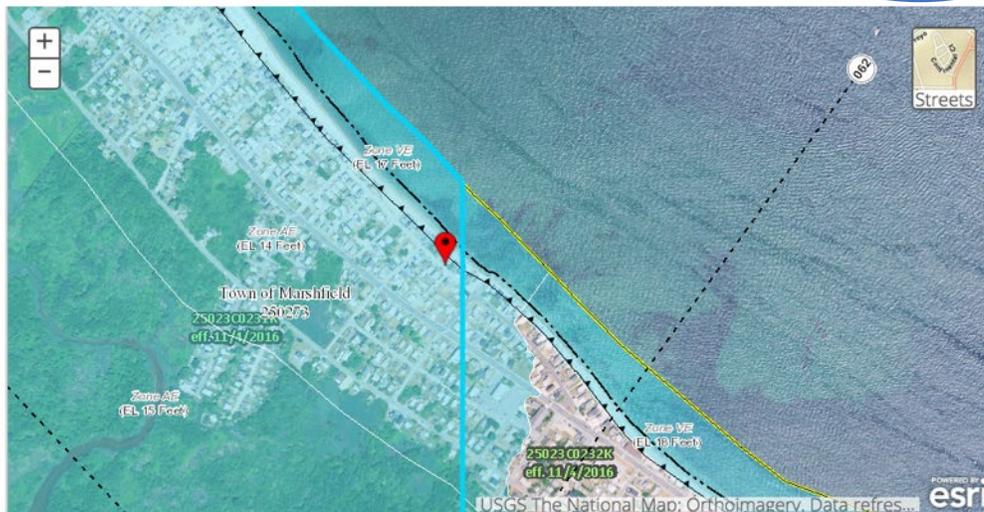
Changes to this FIRM ?

- Revisions (1)
- Amendments (3)
- Revalidations (1)

Show ALL Products »

Go To NFHL Viewer »

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette.

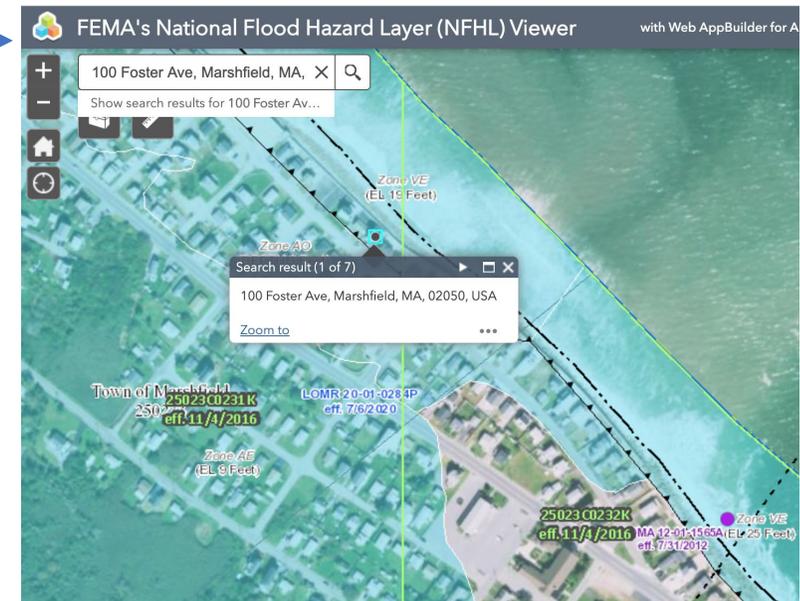


Search Results for MARSHFIELD, TOWN OF

Click [subscribe](#) to receive email notifications when products are updated. If you are a person with or have low vision, and need assistance, please contact a [map specialist](#).

Please Note: Searching All Products by county displays all products for all communities. You can refine your search results by specifying your specific jurisdiction location using the menus above.

- Effective Products (62) ?
- Preliminary Products (0) ?
- Pending Product (1) ?
- Historic Products (150) ?
 - FIRM Panels (55) DL ALL
 - FIS Reports (8) DL ALL
 - LOMC (87)
- Flood Risk Products (0) ?



Examples

Helpful resources

- Your local building/planning department
- State NFIP Coordinators Office:
 - Joy Duperault, CFM, State NFIP Coordinator & Deputy Hazard Mitigation Officer/Dept. of Conservation & Recreation, Office of Water Resources
 - joy.duperault@mass.gov
- NFIP Regional Office:
 - Thomas Young
 - 603-625-5125
- Massachusetts Coastal Coalition (MCC)
 - www.knowflood.org
 - info@knowflood.org
- Massachusetts Association of Floodplain Management (MassFM)
 - www.massfm.org
 - massfloodplain@gmail.com

Contact Joe Flood



JOE "FLOOD" ROSSI

Flood Specialist

781-635-5152

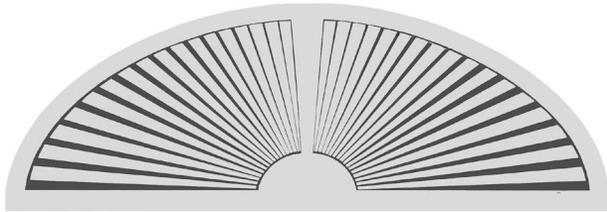
jrossi@rogersgray.com

- www.joefloodrossi.com

Thank you to our Partners...



ACKClimate
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NANTUCKET PRESERVATION TRUST



Executive Office of Energy and
Environmental Affairs



resilient **MA**

Climate Change Clearinghouse for the Commonwealth



ideas • investments • initiatives



Preservation Institute:
Nantucket



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Thank You for Your Questions: Q&A Panel Members



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