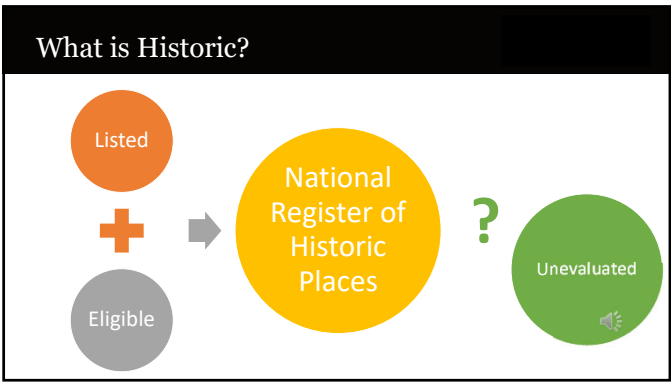
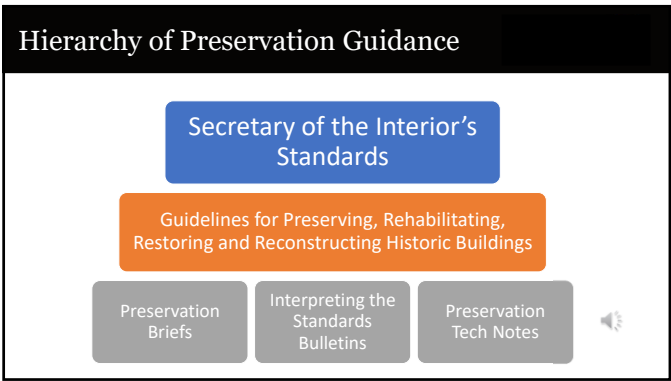




2



4



6

Four Treatment Standards

The Secretary of the Interior's
Standards for the Treatment of Historic Properties



Preservation



Restoration



Rehabilitation



Reconstruction

7

The Rehab Standards

10 Standards - 3 Basic Principles

- 1. Retain and repair historic materials, features, spaces
- 2. Retain historic character, even if use changes
- 3. Design compatible, reversible additions, alterations



8

Guidelines

Standards

Guidelines



Guidelines on
Sustainability



Guidelines on
Flood
Adaptation

9

Getting to Know Guidelines

MASONRY: STONE, BRICK, TERRA COTTA, CONCRETE, ADOBE, STUCCO, AND MORTAR

RECOMMENDED	NOT RECOMMENDED
Identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the building (such as walls, brackets, railings, cornices, window and door surrounds, steps, and columns) and decorative ornament and other details, such as tooling and bonding patterns, coatings, and color.	Altering masonry features which are important in defining the overall historic character of the building so that, as a result, the character is diminished. Replacing historic masonry features instead of repairing or replacing only the deteriorated masonry. Applying paint or other coatings (such as stucco) to masonry that has been historically unpainted or uncoated. Removing paint from historically-painted masonry.
Stabilizing deteriorated or damaged masonry as a preliminary measure, when necessary, prior to undertaking preservation work.	Failing to stabilize deteriorated or damaged masonry until additional work is undertaken, thereby allowing further damage to occur to historic building.
Protecting and maintaining masonry by ensuring that historic drainage features and systems that divert rainwater from masonry surfaces (such as roof overhangs, gutters, and downspouts) are intact and functioning properly.	Failing to identify and treat the causes of masonry deterioration, such as leaking roofs and gutters or rising damp.



10

Flood Guidelines

Available online and in print



THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION & GUIDELINES ON FLOOD ADAPTATION FOR REHABILITATING HISTORIC BUILDINGS



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Flooding and the Federal Government

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Why NPS?

National Park Service
U.S. Department of the Interior

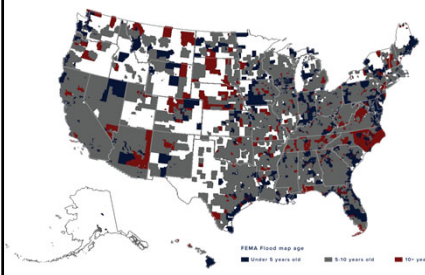




The **National Historic Preservation Act (1966)** directs the National Park Service, among other duties and responsibilities, to develop guidance and technical information on the preservation of historic properties.

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NFIP: How it Works



National Flood Insurance
Program (**NFIP**)

Federal Emergency
Management Agency (**FEMA**)

Flood Insurance Rate Map (**FIRM**)

Special Flood Hazard Area (**SFHA**)

Base Flood Elevation (**BFE**)

FEMA Flood map age

■ under 5 years old ■ 5-10 years old ■ 10+ years old ■ Unmapped

Age of FEMA flood maps by location. Areas in white were unmapped as of 2019.

15

Pre-FIRM “Historic” Properties

- Before the maps
- Help to stabilize costs of insurance
- Historic “exemption”:
- Individually NR listed or determined eligible
- Contribution to an NR district
- Listed in a state inventory
- Part of a local inventory (Certified Local Government, we think)



WE  PRE-FIRM BUILDINGS

© 2019 National Park Service FEMA map updated by: 10/18/2019

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Jamestown Island, VA
Colonial National Historical Park

OTHER FLOOD AREAS

- AE**
Areas of 1-2% annual flood (100-year flood) and of 1% annual flood (500-year flood) and of 0.2% annual flood (1000-year flood) and of 0.1% annual flood (2000-year flood) and of 0.05% annual flood (4000-year flood) and of 0.02% annual flood (10000-year flood) and of 0.01% annual flood (20000-year flood) and of 0.005% annual flood (40000-year flood) and of 0.002% annual flood (100000-year flood) and of 0.001% annual flood (200000-year flood) and of 0.0005% annual flood (400000-year flood) and of 0.0002% annual flood (1000000-year flood) and of 0.0001% annual flood (2000000-year flood) and of 0.00005% annual flood (4000000-year flood) and of 0.00002% annual flood (10000000-year flood) and of 0.00001% annual flood (20000000-year flood) and of 0.000005% annual flood (40000000-year flood) and of 0.000002% annual flood (100000000-year flood) and of 0.000001% annual flood (200000000-year flood) and of 0.0000005% annual flood (400000000-year flood) and of 0.0000002% annual flood (1000000000-year flood) and of 0.0000001% annual flood (2000000000-year flood) and of 0.00000005% annual flood (4000000000-year flood) and of 0.00000002% annual flood (10000000000-year flood) and of 0.00000001% annual flood (20000000000-year flood) and of 0.000000005% annual flood (40000000000-year flood) and of 0.000000002% annual flood (100000000000-year flood) and of 0.000000001% annual flood (200000000000-year flood) and of 0.0000000005% annual flood (400000000000-year flood) and of 0.0000000002% annual flood (1000000000000-year flood) and of 0.0000000001% annual flood (2000000000000-year flood) and of 0.00000000005% annual flood (4000000000000-year flood) and of 0.00000000002% annual flood (10000000000000-year flood) and of 0.00000000001% annual flood (20000000000000-year flood) and of 0.000000000005% annual flood (40000000000000-year flood) and of 0.000000000002% annual flood (100000000000000-year flood) and of 0.000000000001% annual flood (200000000000000-year flood) and of 0.0000000000005% annual flood (400000000000000-year flood) and of 0.0000000000002% annual flood (1000000000000000-year flood) and of 0.0000000000001% annual flood (20

17

[illegible]

This image contains two photographs. The left photograph shows three weathered metal flood marks mounted on a stone wall. The top-left mark reads 'FLOOD MARK' and 'MARCH 1947'. The top-right mark reads 'FLOOD MARK' and 'NOV. 1894'. The bottom mark reads 'FLOOD MARK' and 'JAN. 2003'. The right photograph shows a white rectangular sign with the text 'This road floods' floating in turbulent water, attached to a small wooden post.

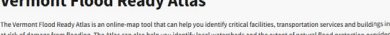
18

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An Official Vermont Government Website

State of Vermont
Flood Ready

Home
 Rising Danger - Flood Costs
Community Risk Assessment
 Community Reports
 Map Tools
Vermont Flood Ready Atlas
 Safe Family and Friends
 River Corridors
 Update your Plans
 Use Natural Flood Protection
 Improve Infrastructure
 Find Funding



Vermont Flood Ready Atlas

The Vermont Flood Ready Atlas is an online-map tool that can help you identify critical facilities, transportation services and buildings in your community that are at risk of damage from flooding. The Atlas can also help you identify local watersheds and the extent of natural flood protection provided by forests, wetlands, floodplains and river corridors.

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[illegible]

Changing Laws and Regulations



- \$24+ billion spent in < 10 years
- 2012 the Biggert Waters Flood Insurance
 - Limit subsidies
 - Massive financial pressure to adapt to BFE: elevate, move, or demo
- 2014 Homeowner Flood Insurance Affordability Act
 - amends Biggert Waters
 - Retained more subsidies for primary residences
 - Indication that more adaptation methods would be acceptable

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Risk Rating 2.0 in Vermont

Risk Rating 2.0 in Vermont

Immediate Decreases
1,103 Policies
33%

On Average, \$0 - \$10 Per Month (\$0 - \$120 Per Year) Increases
1,669 Policies
50%

On Average, \$10 - \$20 Per Month (\$120 - \$240 Per Year) Increases
307 Policies
9%

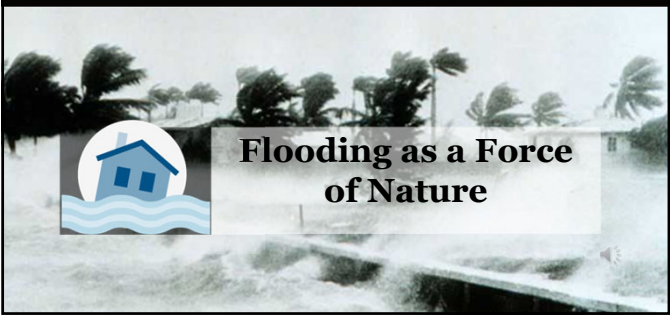
On Average, Greater Than \$20 Per Month (\$240 Per Year) Increases
252 Policies
8%

NFIP Policies in Force in VT by Rate Class



NFIP Policies in Force in VT	Properties in VT Not Covered by NFIP Policy	Average NFIP Claim Payout in VT in the Past 10 Years
3,300	300,000	\$34,300

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Flooding as a Force of Nature

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Framing the Issue: Natural Threats

- Multiple environmental and climatic trends
- Trends depart from historic norms
- Historic structures are potentially stressed beyond the conditions for which they were originally designed
- Evidence indicates these trends will continue
- Variability in the timing likely to exacerbate effects



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Types of Flooding



- Not all floods are the same—flash, surface, riverine, and coastal
- Understand the characteristics of the threat
- Not all water impacts are flooding but some of the issues are shared

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Flood Characteristics

				
Flash/Surface Floods • Little warning time—minutes to hours • Not necessarily associated with bodies of water • Fast moving water with debris • Recede quickly	Riverine Floods • Crest predictions for large rivers - days • Speed of water dependent on terrain • Often last days or weeks	King Tides / Nuisance Floods • Predictable by tides • Coastal • Limited to a few inches of water • Frequency increasing: SLR	Storm Surge / Tsunamis • Predictable* - varies • Caused by other events: storms or earthquakes • Coastal • Fast moving with waves	Sea Level Rise • Predictable – years • Magnitude uncertain • Coastal and tidal rivers • Incremental changes with minor and major events

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Realtor Check

- Permanent loss of value
- Cost of insurance
- Where are people willing to invest
- Mortgage cycles

National Park Service
U.S. Department of the Interior

Climate change is creating a \$200 Billion price bubble in the U.S. housing market

What do intense rainstorms in California, rising sea levels in Florida, and a real estate bubble have in common? **Flood risk.**

New research looked at unpriced flood risk in the US real estate market, finding that properties are **overvalued by US\$121 – \$237 billion.**

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Summary

- Rehab Standards and Flood Guidelines work together to identify space for adaptation and resilience – not FEMA/NFIP compliance
- Old and new laws and regulations prioritize smart (dis)/investment and development in floodplains
- FEMA and NFIP have tools and expertise
- Markets are changing
- Not all flooding is the same
- It's not business as usual

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