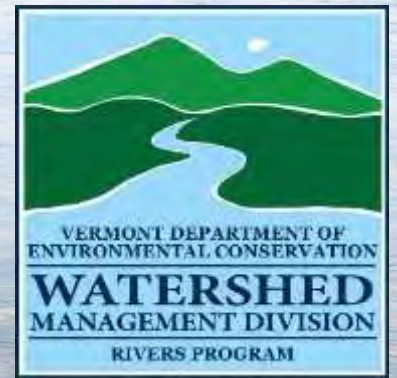


# Post-Flood Permitting & Substantial Damage Estimates (SDEs)



River Corridor & Floodplain Protection Program  
Vermont Rivers Program



# FLOODS Are Vermont's #1 Disaster



Woodstock, VT– Taftsville Bridge  
Photo credit unknown



# Inundation

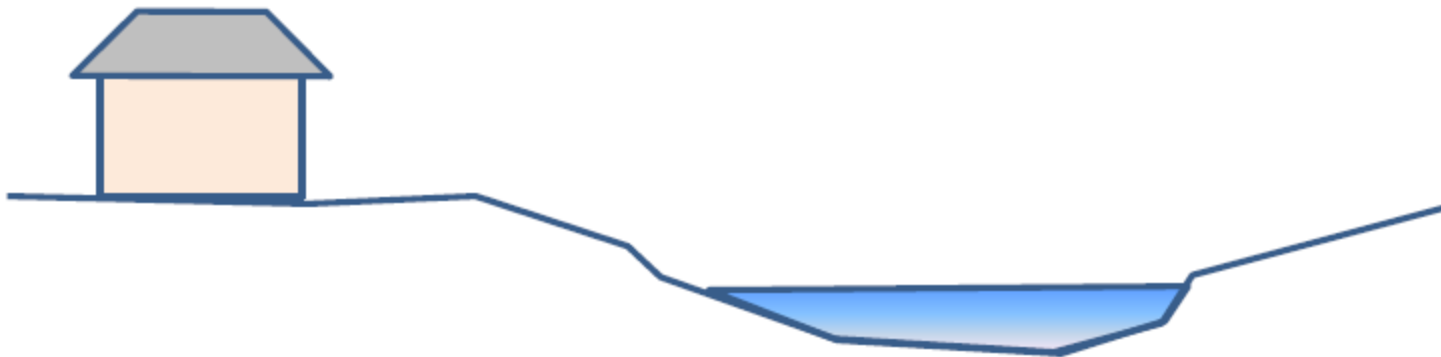


Richmond, VT 8/29/11

An aerial photograph showing a residential area completely inundated with floodwater. Several houses of various colors (white, yellow, brown) are visible, surrounded by water. Many trees, some with pink blossoms, are also submerged. A road or path is partially visible, cut off by the water. The overall scene depicts a severe flooding event.

# Inundation

Colchester Point, VT 5/2011







Aerial view of the Montpelier 1992 flood.  
Cover photo of the *Ice and Water* book.

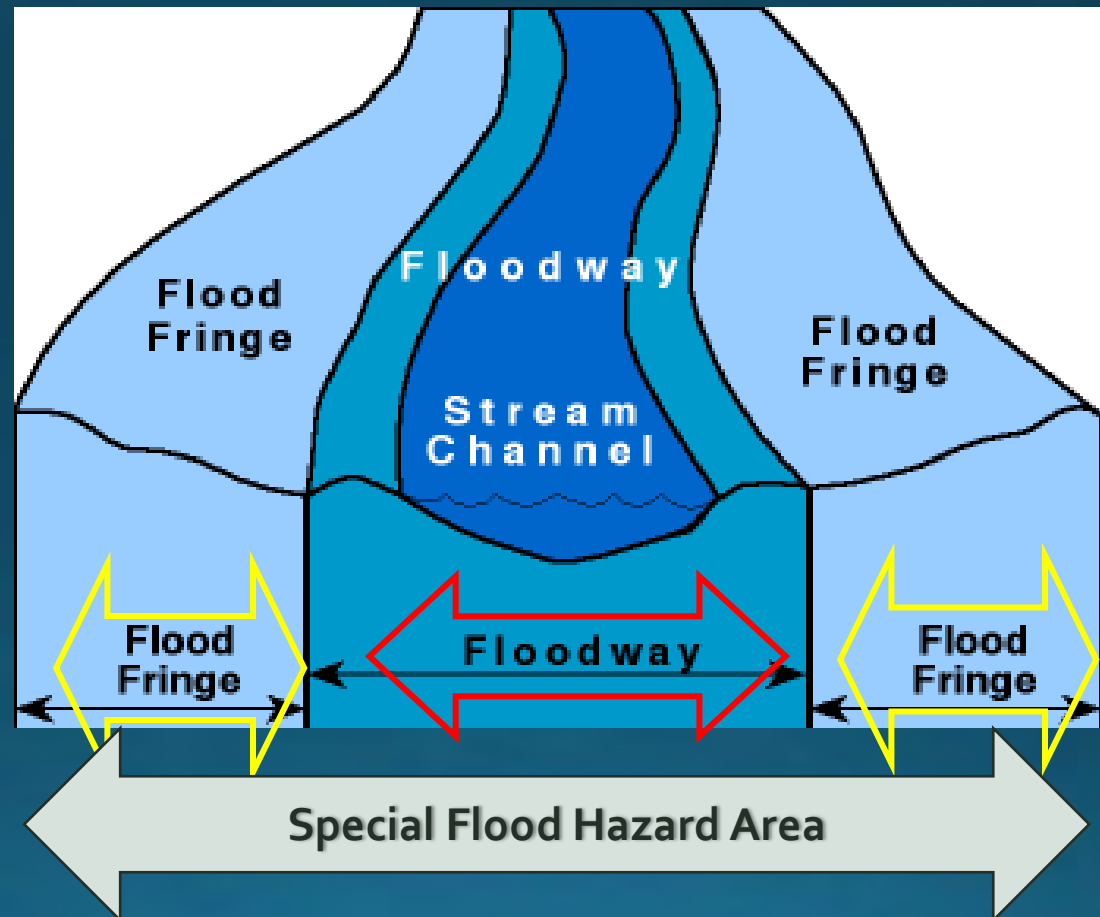


Jim Cole, Associated Press  
Copyright 1992 "Ice and Water" Committee

# FEMA's Special Flood Hazard Area (SFHA)

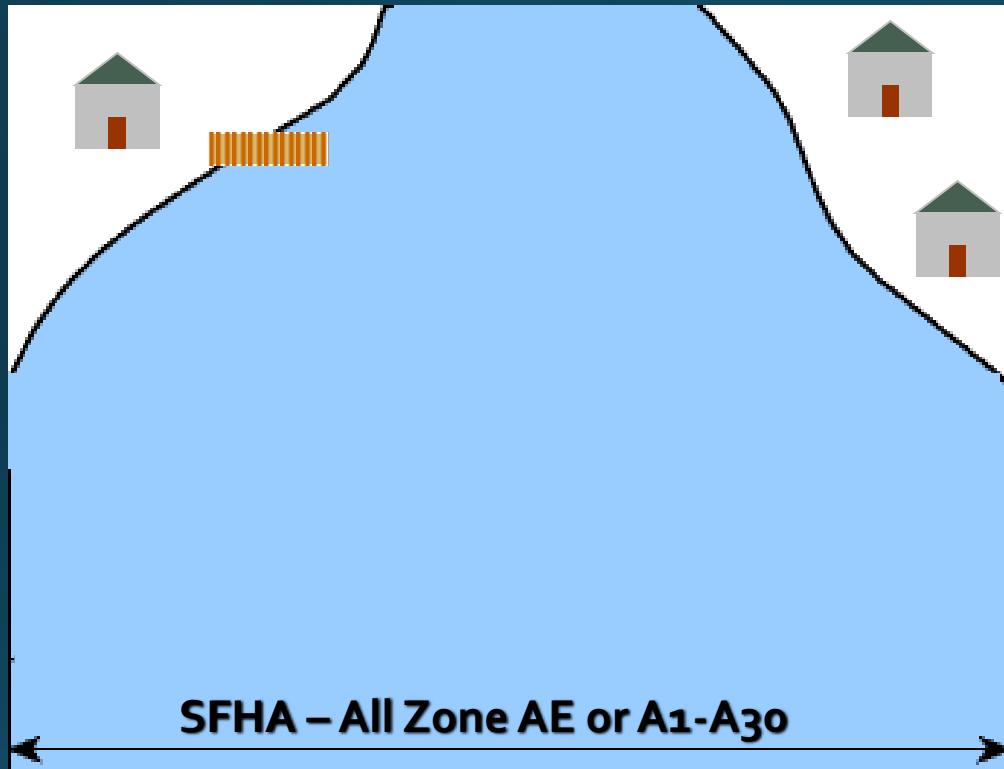
**Floodway = Flood  
Right-of-Way**

**Flood Fringe = More  
Shallow and Slower  
Floodwaters**



Land area inundated by the base flood, or  
the area affected in the 1% annual chance flood, aka  
the "100 year" floodplain

# Special Flood Hazard Area - Lakes



There is no floodway for a lake,  
but waves and ice can be  
just as dangerous!

**Special Flood Hazard Area**

Land area inundated by the base flood  
The area affected in the 1% annual chance flood,  
aka the "100 year" floodplain.



A black and white photograph of a residential street completely inundated with floodwater. In the background, there are several houses and bare trees. The water reflects the sky and the structures. The overall mood is somber and highlights the impact of flooding on communities.

# National Flood Insurance Program (NFIP)

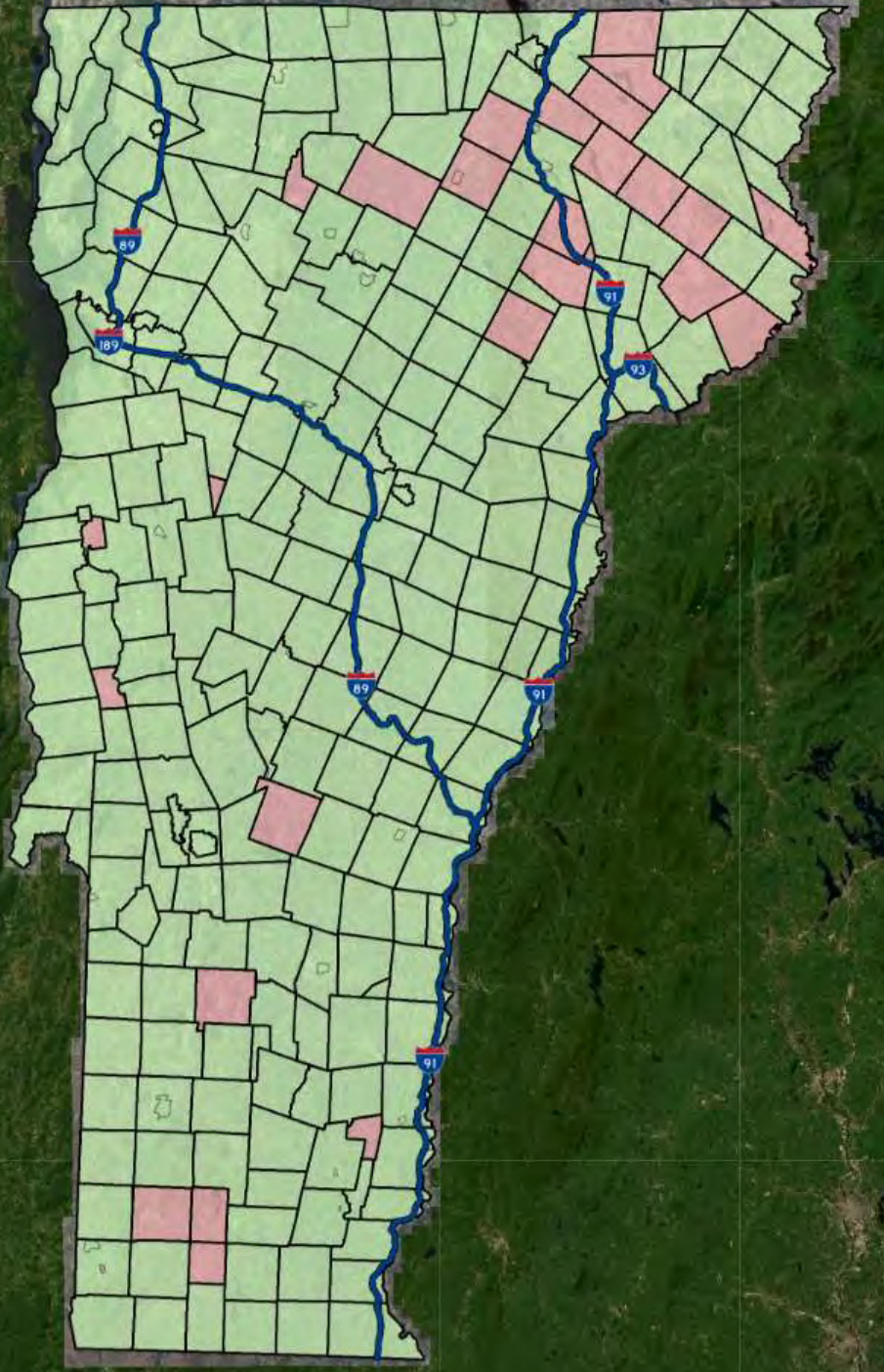
- Flood Insurance
- Floodplain Management Regulations
- Flood Hazard Mapping
- Flood Hazard Mitigation

# Community Participation in NFIP

Voluntary participation allows for:

- NFIP flood insurance policy access for everyone in the community
- The community/individuals to receive Federal grants or loans (PDM, HMGP, etc.) in the SFHA
- Federal disaster assistance to repair insurable buildings in the SFHA





# Vermont NFIP Participation 7/2023

Legend

☒ Flood Ready

ERAF Rates

River Corridor Protection

☒ National Flood Insurance

Program

Participating Community

Not Participating

Map available from:  
[Flood Ready Vermont](#)  
Atlas



# Communities must adopt, implement & enforce flood hazard area regulations

Protection of public safety



Reduce future flood damages & suffering





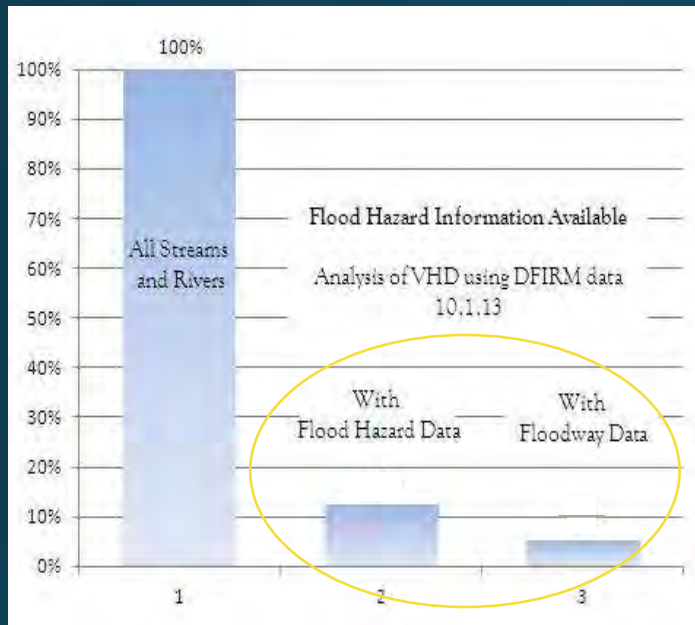
## After flooding, communities must:

- Issue permits for all repair work
- **Make Substantial Damage Estimates for buildings**
- **Require mitigation for substantially damaged buildings**



- Substantial Damage is when the repairs needed to bring a building to its pre-damaged condition would equal or exceed 50% of the pre-damaged market value of the structure (not including land).
- Substantial Damage means that the building must meet the community's current flood hazard regulations.
- Substantial Damage Estimates are required even if the building doesn't have flood insurance!

# Many Vermont flood risks are NOT identified by NFIP floodplain delineations



Substantial Damage determinations are only required in the FEMA-mapped SFHA



Unnamed Tributary, White River, 2007



# Many Vermont flood risks are NOT identified by NFIP floodplain delineations



Historic Structures are usually exempt from Substantial Damage determinations

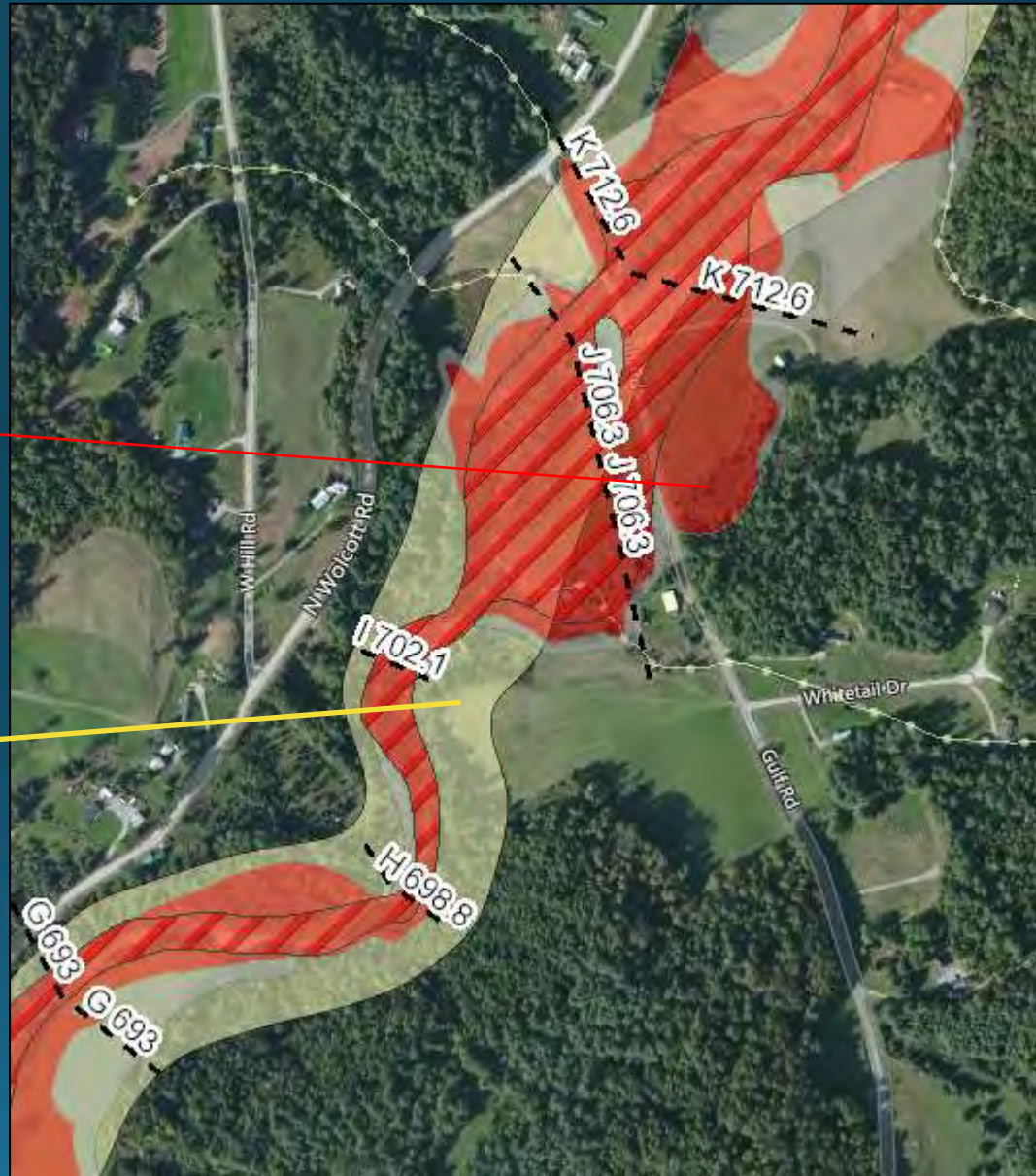
- Check your regulations
- They may still need to meet the rest of your local flood hazard requirements for ALL DEVELOPMENT

# Floodplains & River Corridors

\*Substantial Damage does NOT apply in River Corridors outside of the SFHA

Special Flood Hazard Area

River Corridor





# Tour the Floodplain

- By Air

(drone imagery map at:  
<https://2023flood.mapvt.com>)



- Driving or Walking  
(if it's safe to do so)

# Tour the Floodplain: Triage



- **RED** – Clear Substantial Damage  
(home moved off foundation, most of the building inundated)
  - Mitigation required before repairing/rebuilding
- **YELLOW** – SDE needed as a first step
  - Owners can give you more detailed information for final SD determination
- **GREEN** – Minor flooding & damages
  - repairs to proceed with a permit



# Substantial Damage

- Substantial Damage means the building must meet the community's current flood hazard regulations, regardless of the intended repairs or improvements
- Substantial Damage Estimates are required even if the building doesn't have flood insurance!



Whetstone Brook, Marlboro, VT, 2011

# Substantial Improvement

Substantial Improvement is when the rehabilitation or improvement of a building would equal or exceed 50% of the building's market value (not including land).

- Any improvements an owner proposes during repairs must be added to the substantial damage assessment to determine if the building must be mitigated
- Check to see if your community tracks Substantial Damage or Substantial Improvement over a certain time frame





# Substantial Damage Assessments

- Use the same approach for all properties – Adopt a process to stay consistent
- Use Assessed Values as a starting place for pre-damaged value
- A SDE is a first estimate to know where more info is needed
  - Owners can provide contractor's estimates or a recent real estate appraisal
  - Community can refine assessed value
  - More detailed assessment can be done

## Procedure to Determine Substantial Damage or Substantial Improvement

Vermont DEC 11/7/2018

### Background

Substantial Improvement and Substantial Damage (SI and SD) have specific definitions and requirements in flood hazard area regulations. This procedure describes how the community makes Substantial Improvement or Substantial Damage determinations. Additional guidance can be found in the

# Substantial Damage Assessments



## Substantial Damage Estimator (SDE) User Manual and Field Workbook

Using the SDE Tool to Perform Substantial Damage Determinations

FEMA P-784 / Tool Version 3.0 / August 2017

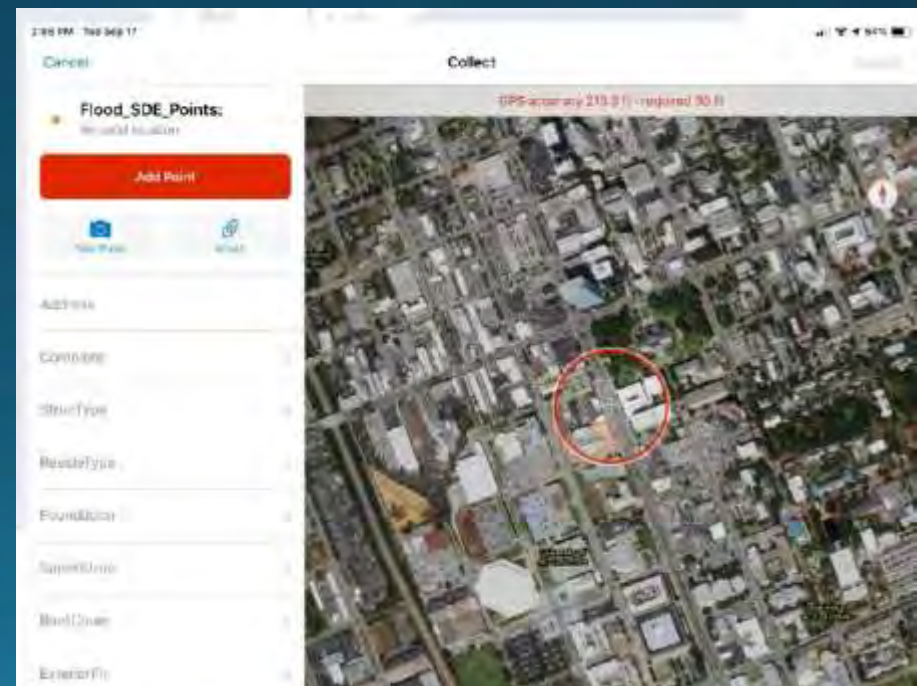


FEMA's SDE 3.0 Tool/worksheets

OR

ArcGIS Field Collector app

(created and shared by South Carolina's Flood Mitigation Program)





# Substantial Damage Assessments

## Substantial Damage Estimate Worksheet

Team Name/Number: \_\_\_\_\_

Date: \_\_\_\_\_

Community Name/NFIP number: \_\_\_\_\_

Base Cost per Square Foot: \_\_\_\_\_

### Building Address

Owner Name: \_\_\_\_\_

Address: \_\_\_\_\_

Best way to contact: \_\_\_\_\_

Mailing Address (if different than building address): \_\_\_\_\_

### Structure Attributes

Residence Type: \_\_\_\_ Single Family; \_\_\_\_ Town or Row House; \_\_\_\_ Mobile Home

Non-residential: \_\_\_\_ Commercial; \_\_\_\_ Accessory; \_\_\_\_ Other

Foundation: \_\_\_\_ Continuous Wall w/Slab; \_\_\_\_ Basement; \_\_\_\_ Crawl Space  
\_\_\_\_ Slab-on-Grade; \_\_\_\_ Piers and Posts

Superstructure: \_\_\_\_ Stud-Framed; \_\_\_\_ Common Brick; \_\_\_\_ ICF; \_\_\_\_ Other

Roof Covering: \_\_\_\_ Shingles (asphalt, wood) or metal (not standing seam); \_\_\_\_ Standing Seam; \_\_\_\_ Slate

Exterior Finish: \_\_\_\_ Siding or Stucco; \_\_\_\_ Brick Veneer; \_\_\_\_ EIFS; \_\_\_\_ Other

HVAC System: \_\_\_\_ Heating and/or Cooling; \_\_\_\_ None

Story: \_\_\_\_ One Story; \_\_\_\_ Two or More Stories

### Comments:

### Structure Costs

Total Square footage: \_\_\_\_\_

Depreciation Rating: \_\_\_\_ 1. Very Poor Condition (88.9%)  
\_\_\_\_ 2. Requires Extensive Repairs (66.5%)  
\_\_\_\_ 3. Requires Some Repairs (38.8%)  
\_\_\_\_ 4. Average Condition (24.2%)  
\_\_\_\_ 5. Above Average Condition (13.4%)  
\_\_\_\_ 6. Excellent Condition (2.9%)  
\_\_\_\_ 7. Other Depreciation Rating (specify) \_\_\_\_\_

Geographic Adjustment: \_\_\_\_ (default to "1" in SC)

### Optional data costs

Professional Market Appraisal: \_\_\_\_\_

Tax Assessed Value: \_\_\_\_\_

Contractor's Estimate of Damage: \_\_\_\_\_

### Damage Information

Damage Undetermined: \_\_\_\_ No Physical Damage Sustained; \_\_\_\_ Vacant; \_\_\_\_ Resident Refused  
Inspection; \_\_\_\_ Address does not exist; \_\_\_\_ Other (explain) \_\_\_\_\_

Date Damage Occurred: \_\_\_\_\_

Cause of Damage: \_\_\_\_ Fire; \_\_\_\_ Flood; \_\_\_\_ Flood and Wind; \_\_\_\_ Seismic; \_\_\_\_ Wind;  
\_\_\_\_ Other (specify) \_\_\_\_\_

Duration of Flood: \_\_\_\_ Hours \_\_\_\_ Days

Depth of Flood Above Ground (inches): \_\_\_\_\_

Depth of Flood Above Lowest Floor (inches): \_\_\_\_\_

### Percent Damage estimates

Foundation (not required for MH): \_\_\_\_\_

Superstructure: \_\_\_\_\_

Roof Covering: \_\_\_\_\_

Exterior Finish: \_\_\_\_\_

Interior Finish: \_\_\_\_\_

Doors and Windows: \_\_\_\_\_

Cabinets and Countertops: \_\_\_\_\_

Floor Finish: \_\_\_\_\_

Plumbing: \_\_\_\_\_

Electrical: \_\_\_\_\_

Appliances: \_\_\_\_\_

HVAC: \_\_\_\_\_

Skirting/Forms Piers (MH only): \_\_\_\_\_

### Comments:

# Substantial Damage Challenges

## Access to Properties



Courtesy SC Flood Mitigation Program



# Substantial Damage Challenges

Mold



Courtesy SC Flood Mitigation Program

# Substantial Damage Challenges

## Complete Removal/Demo



Courtesy SC Flood Mitigation Program



# Substantial Damage Challenges

## Challenging Structures:

- Abandoned
- Previous Disaster
- Disrepair



Courtesy SC Flood Mitigation Program

# Substantial Damage Challenges

## Challenging Structures:

- Safety is top concern
- Rely on area knowledge
- Note that it is abandoned or in disrepair, etc.

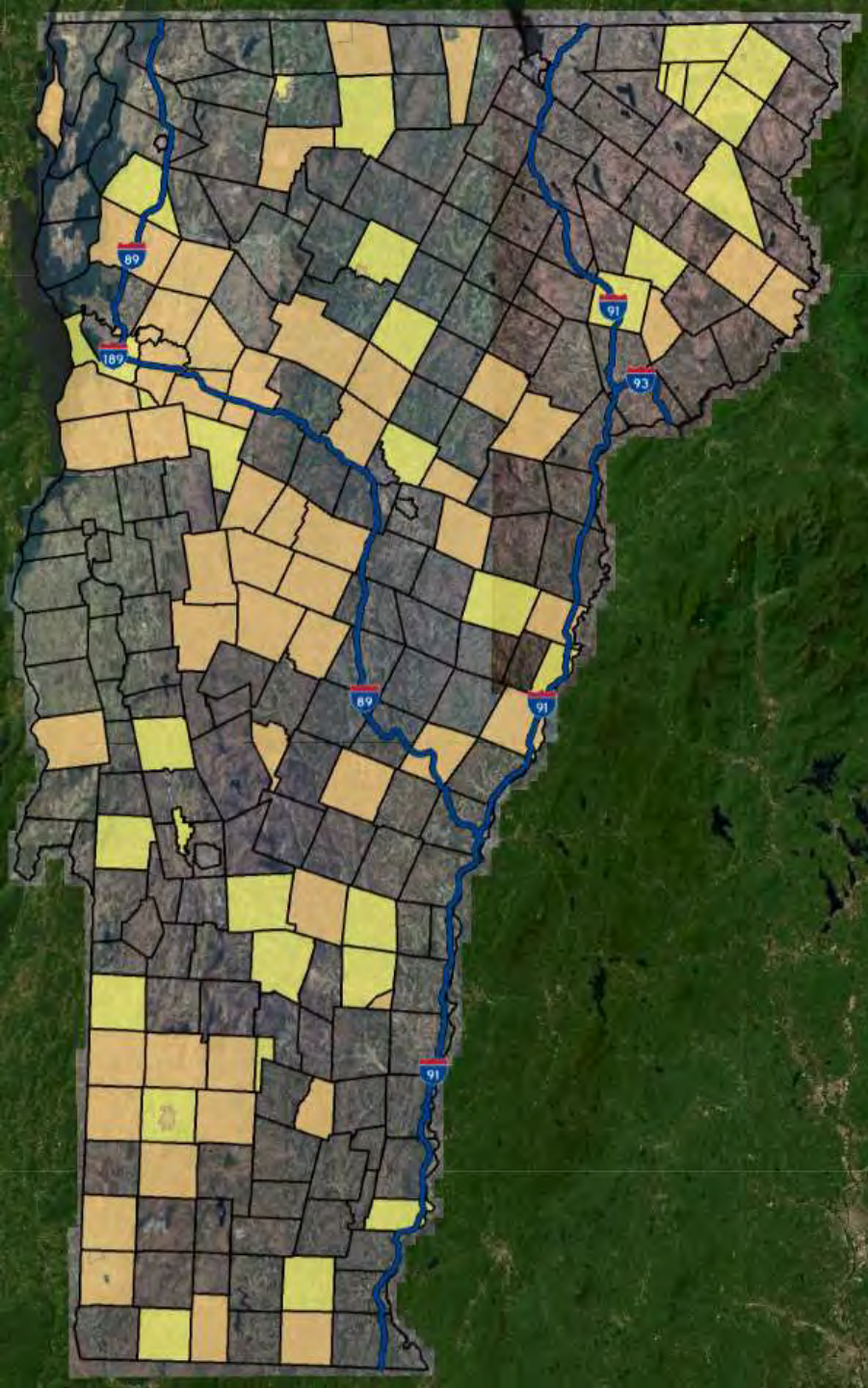


Courtesy SC Flood Mitigation Program



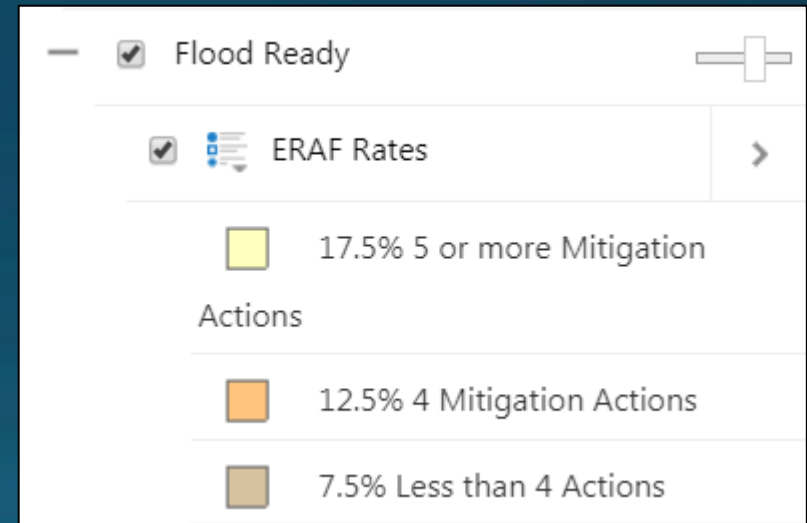
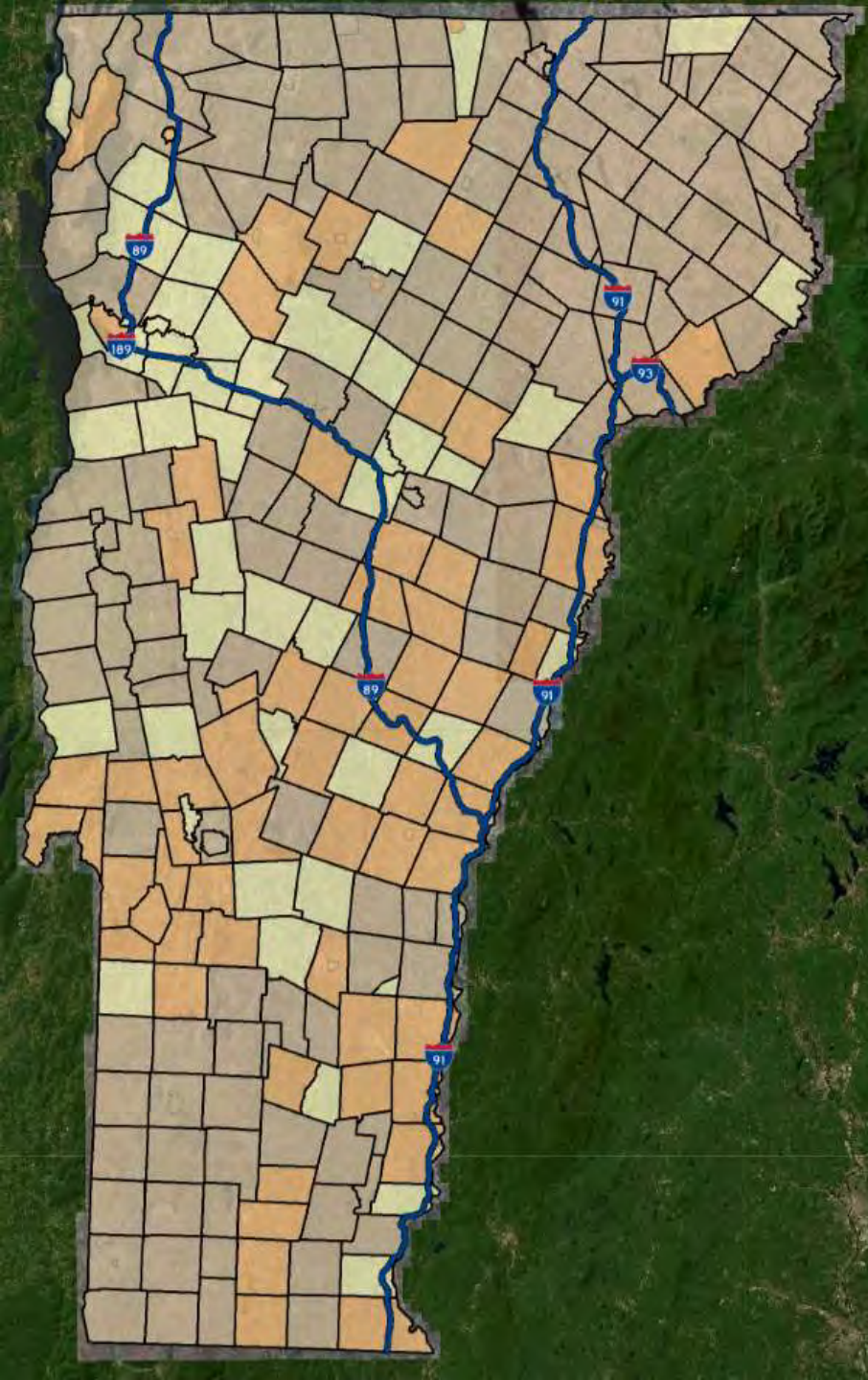
# River Corridor & Floodplain Protection Regulations

7/2023



Map available from:  
[Flood Ready Vermont](#)  
Atlas

# ERAF Reimbursement Rates 7/2023



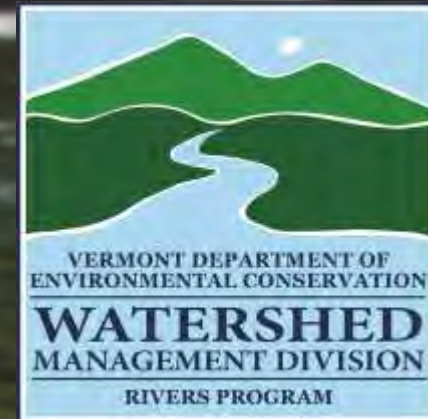
Map available from:  
[Flood Ready Vermont](#)  
Atlas



Rebecca Pfeiffer

Vermont NFIP Coordinator;  
State Floodplain Manager

[Rebecca.Pfeiffer@Vermont.gov](mailto:Rebecca.Pfeiffer@Vermont.gov), 802-490-6157



Visit:

► MORE INFORMATION

For complete details on Substantial Damage requirements, see FEMA's Substantial Improvement/  
Substantial Damage Desk Reference Guide (P-758):

[www.fema.gov/media-library/assets/documents/18562](http://www.fema.gov/media-library/assets/documents/18562)

For more resources for local officials, please go to  
VTDEC's **After the Flood** website:



<https://dec.vermont.gov/watershed/rivers/river-corridor-and-floodplain-protection/after-a-flood>

For questions, please contact your local VT DEC  
Regional Floodplain Manager at:



[https://dec.vermont.gov/sites/dec/files/wsm/rivers/docs/floodplain\\_mngr\\_regions.pdf](https://dec.vermont.gov/sites/dec/files/wsm/rivers/docs/floodplain_mngr_regions.pdf)

Flood Ready Vermont (River Corridor FAQs, ERAF & More):

<http://Floodready.Vermont.gov>

Vermont Rivers Program (Municipal Assistance):


<http://watershedmanagement.vt.gov/rivers/htm>

# Additional Information

(discussed during the Teams session)



# Find your Community's Flood Maps

**FEMA**

[Navigation](#)

[Search](#)

[Languages](#)

[MSC Home](#)

[MSC Search by Address](#)

[MSC Search All Products](#)

[MSC Products and Tools](#)

[Help](#)

[CMC Batch File](#)

[Product Availability](#)

[MSC Frequently Asked Questions \(FAQs\)](#)

[MSC Email Subscriptions](#)

[Contact MSC Help](#)

## FEMA Flood Map Service Center: Welcome!

Looking for a Flood Map? [?](#)

**Enter an address, a place, or  
longitude/latitude coordinates:**



[Search](#)

Looking for more than just a current flood map?  
Visit [Search All Products](#) to access the full range of flood risk products for your community.

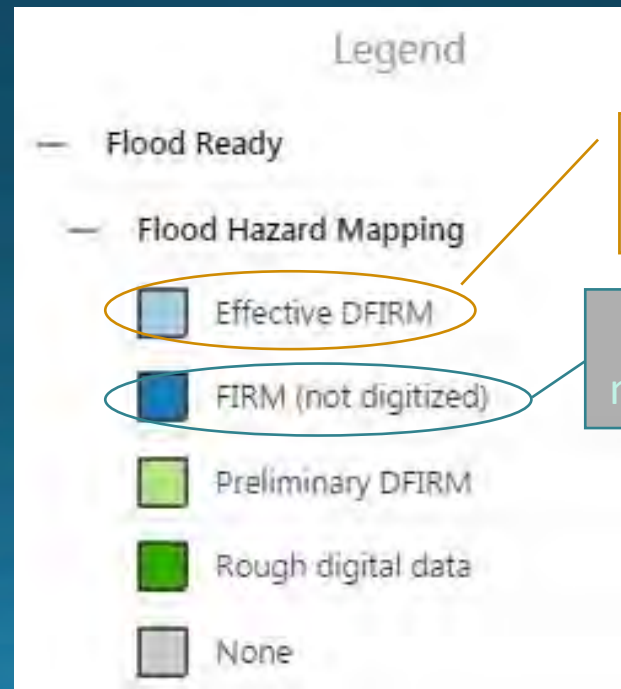
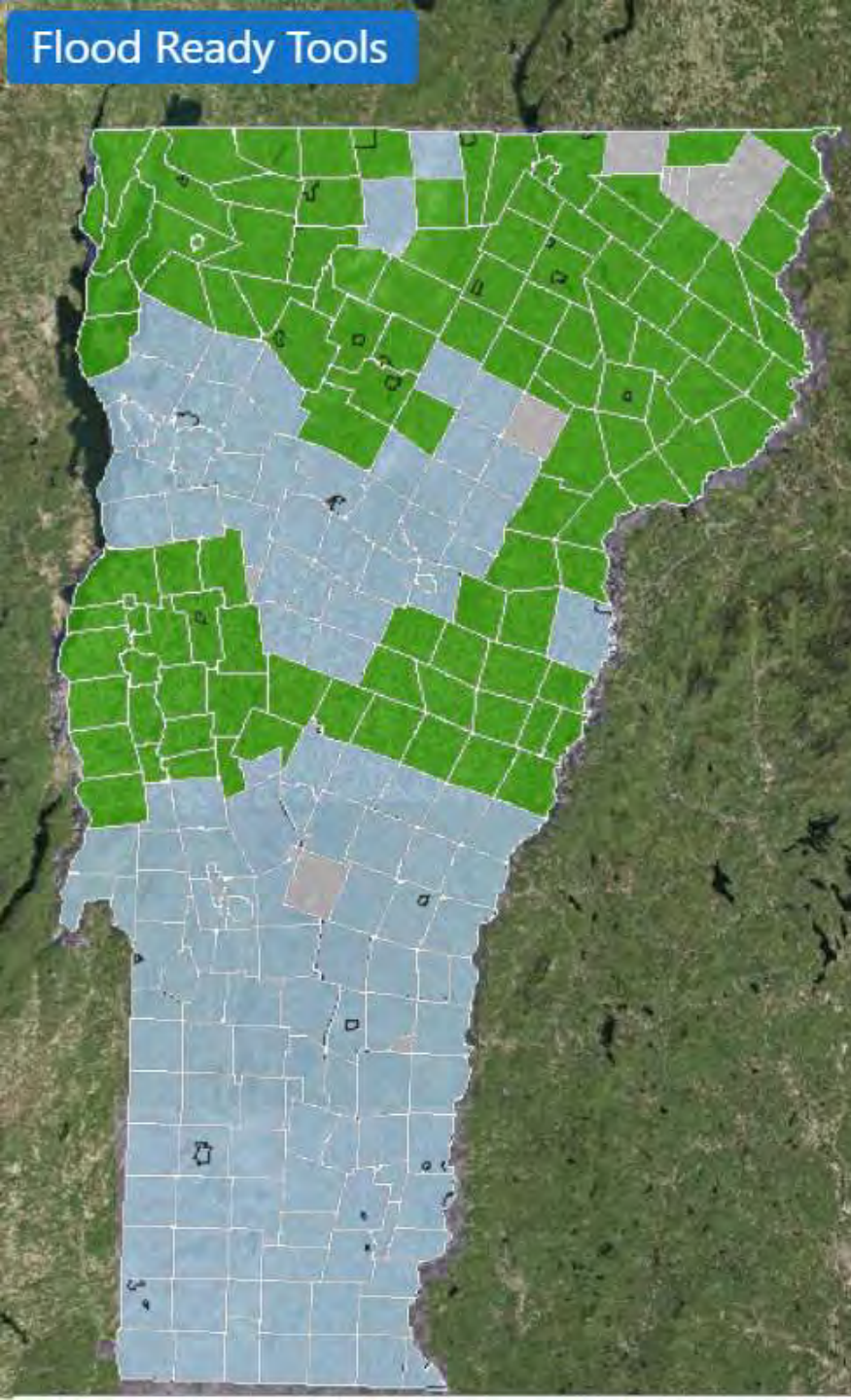
### About Flood Map Service Center

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of the National Flood Insurance Program (NFIP). Use the MSC to find your official flood map, access a range of other flood hazard products, and take advantage of tools for better understanding flood risk.

FEMA flood maps are continually updated through a variety of processes. Effective information that you download or print from this site may change or become superseded by new maps over time. For additional information, please see the [Flood Hazard Mapping Updates Overview Fact Sheet](#).

[msc.fema.gov](https://msc.fema.gov)

# FEMA Flood Insurance Rate Map (FIRM) Status 1/2019



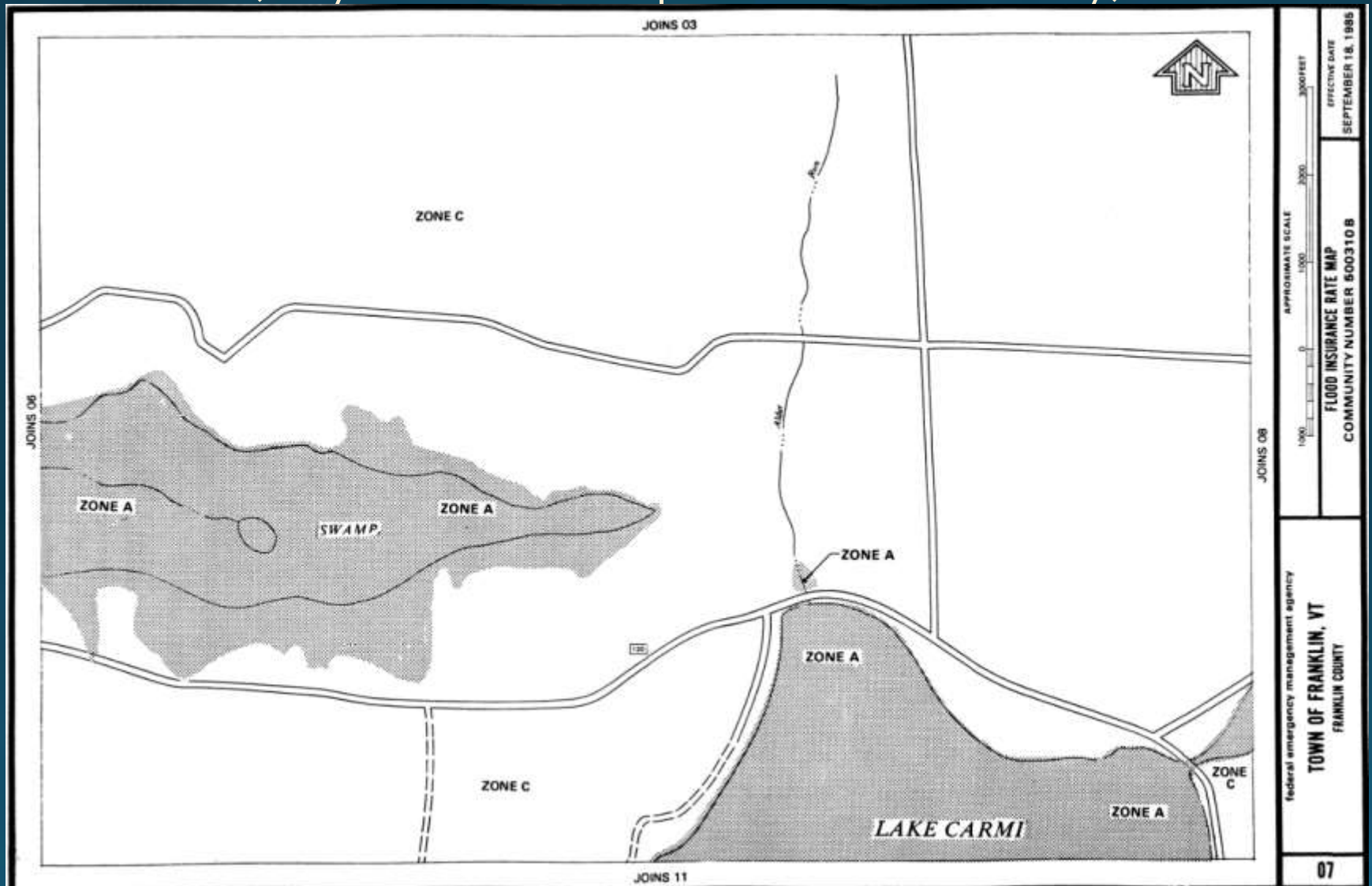
Available  
on Atlas

Available at  
[msc.fema.gov](https://msc.fema.gov)



# Flood Hazard Boundary Maps

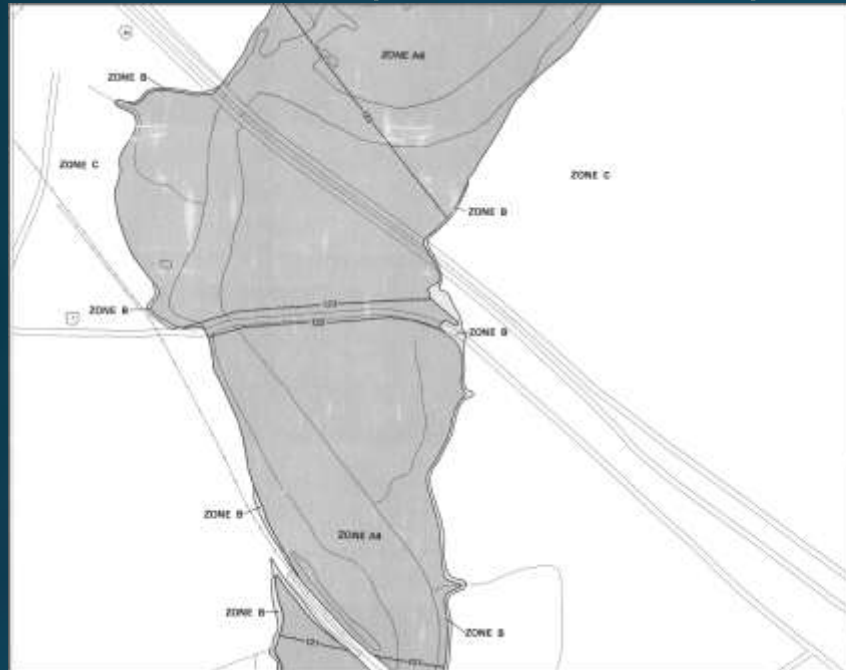
(may still be the maps for Franklin County)



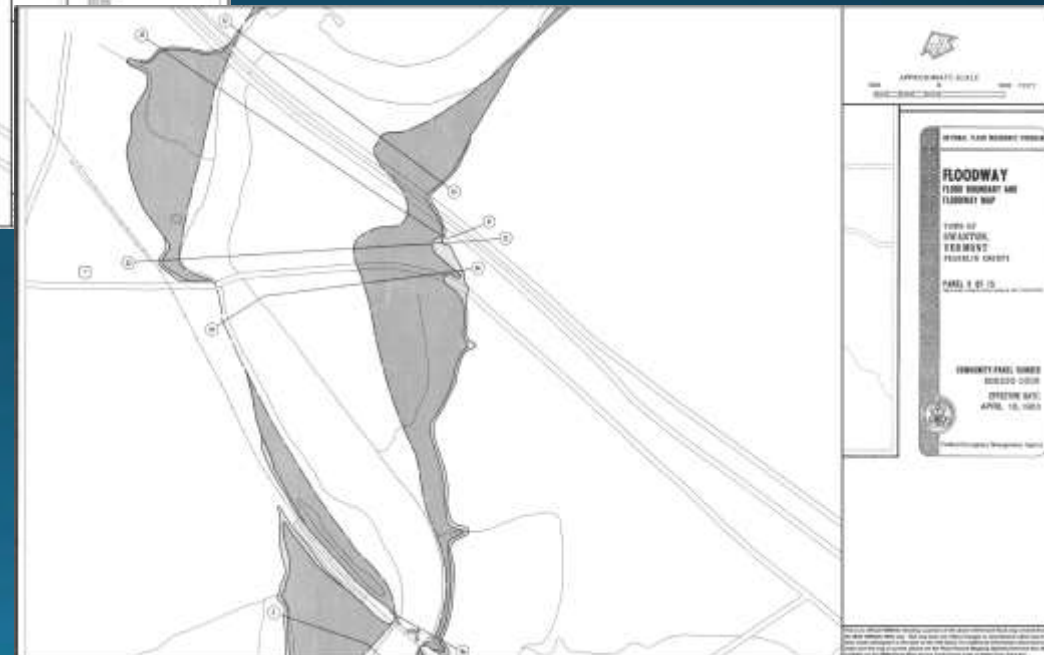
# Slightly Less Old-style Flood Maps

(may still be the maps for Franklin & Grand Isle Counties)

Flood Hazard  
Boundary and  
Floodway map  
(FHBM)

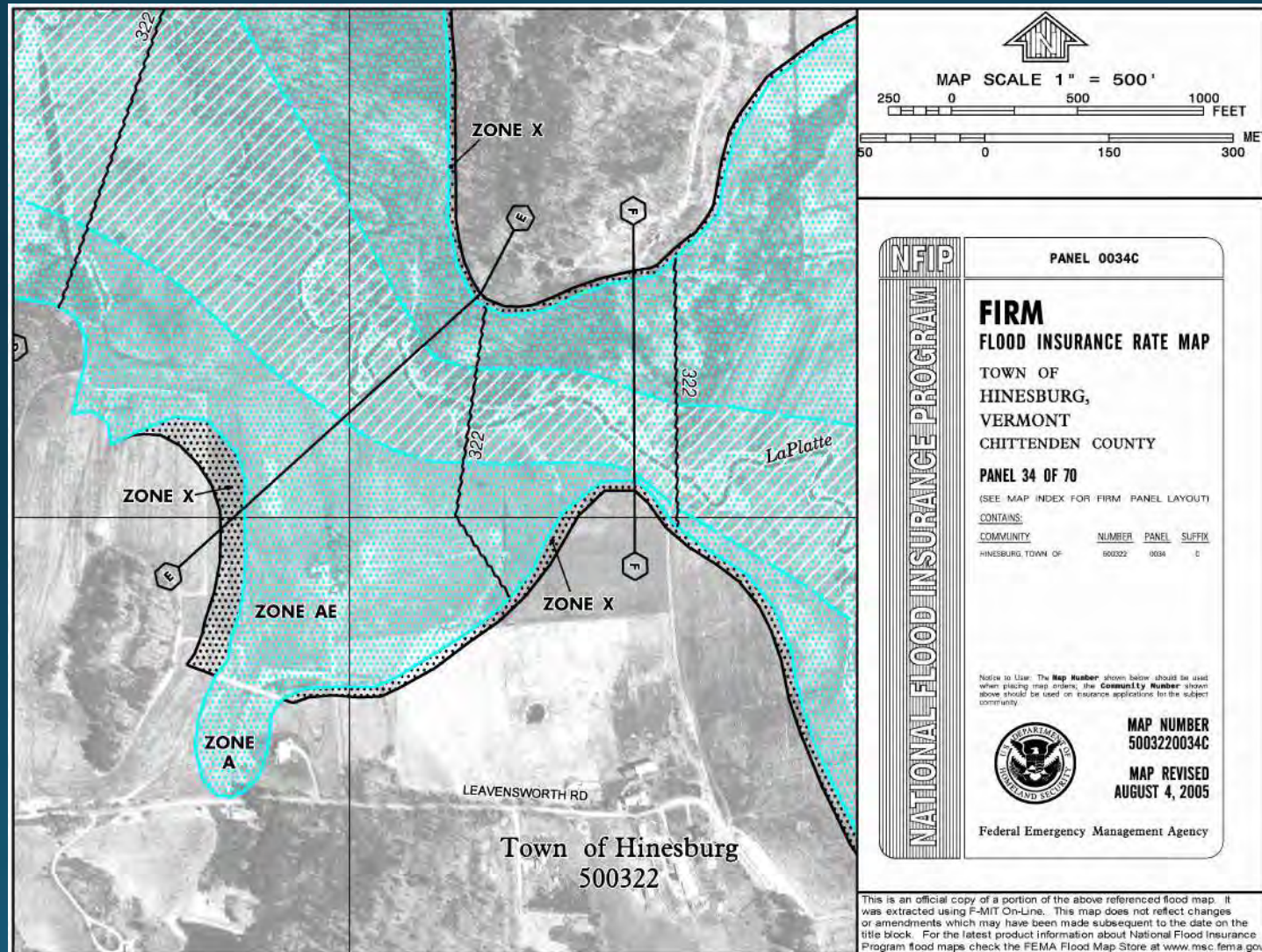


Flood Insurance  
Rate Map  
(FIRM)





# Digital Flood Insurance Rate Map



# ERAF Benefits & River Corridors

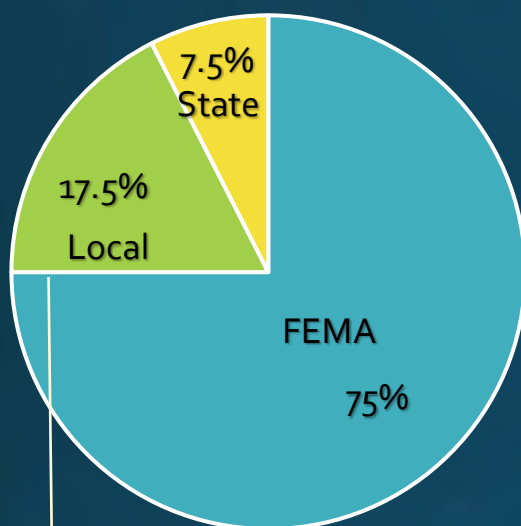
Emergency Relief  
and Assistance Fund

October 2014

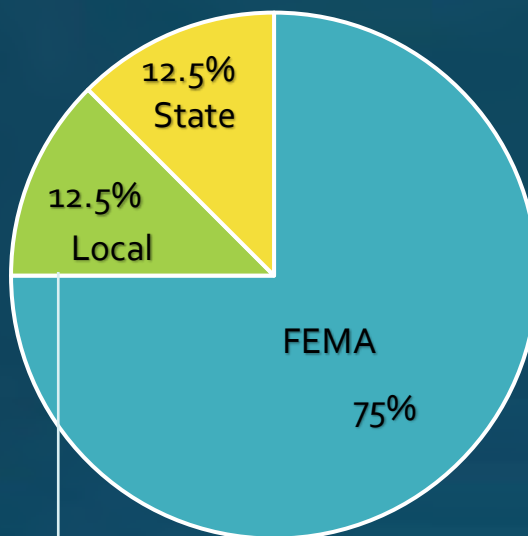




## After the Disaster:

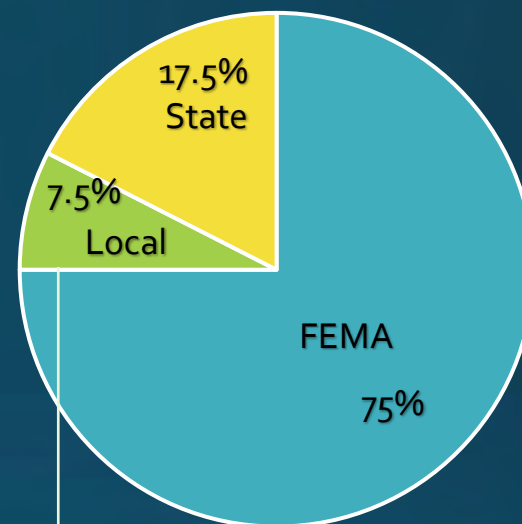


No action



### Four mitigation actions:

1. Current AOT Road standards
2. National Flood Insurance Program
3. Local Hazard Mitigation Plan
4. Local Emergency Operations Plan



### Four mitigation actions *and*

- River Corridor Protection, *or*
- FEMA Community Rating System credit for no new structures in FEMA flood hazard area