

Act 121 (The Flood Safety Act): Limiting Development in River Corridors to Reduce Flood Risks



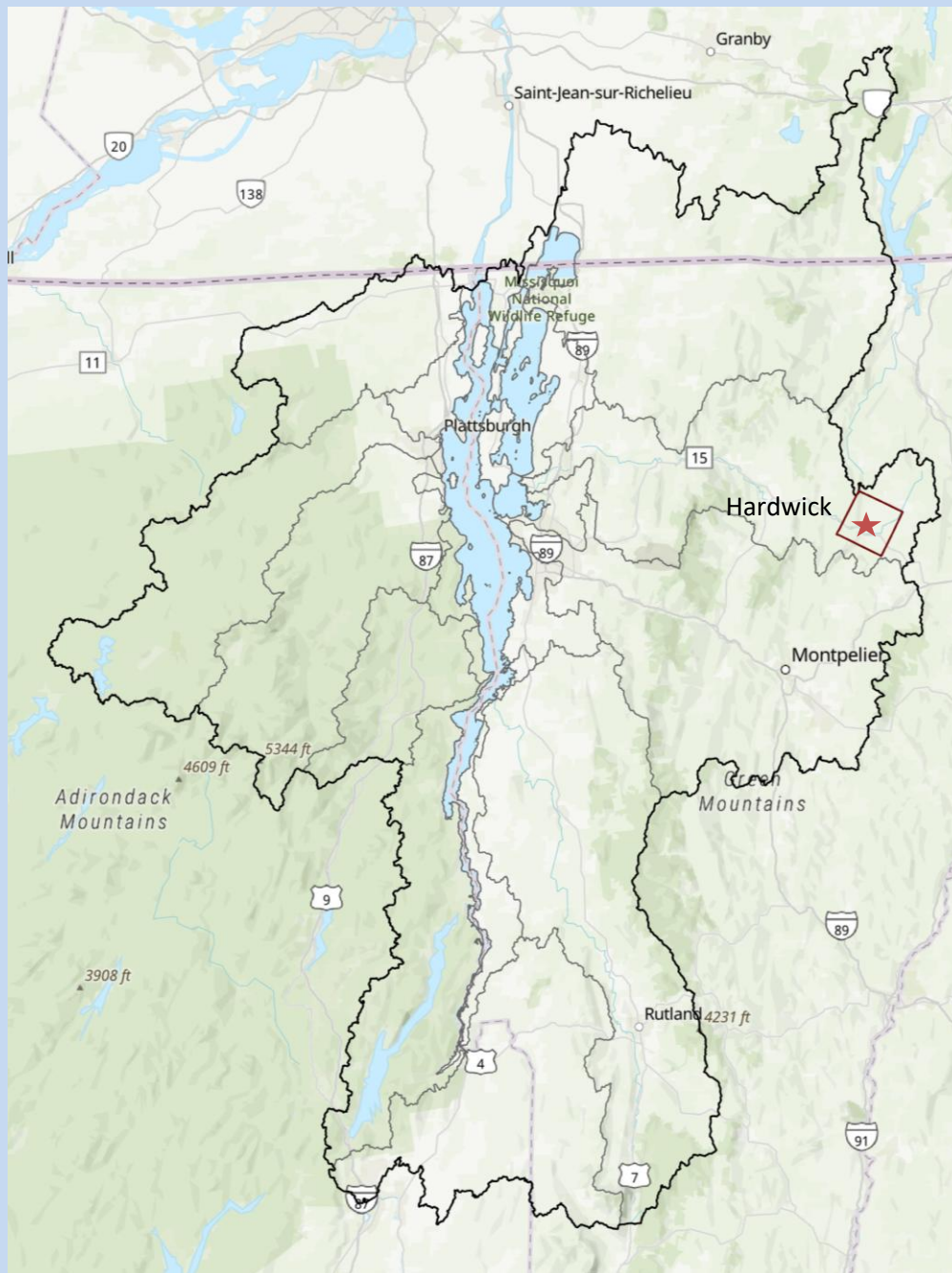
Shayne Jaquith: The Nature Conservancy

Alison Spasyk: Lake Champlain Sea Grant



Outline

- Overview of VT flood history
- Factors that make VT floods so damaging
- Reducing exposure to flood hazards through river corridor regulations and the Flood Safety Act.
- Questions



A History of Vermont's Largest Floods

All New England Flood:	1869	Unknown
The Great Vermont Flood:	1927	\$450M
The Great New England Hurricane:	1938	\$482M
Floods of 1973:	1973	\$326M
Tropical Storm Irene:	2011	\$750M

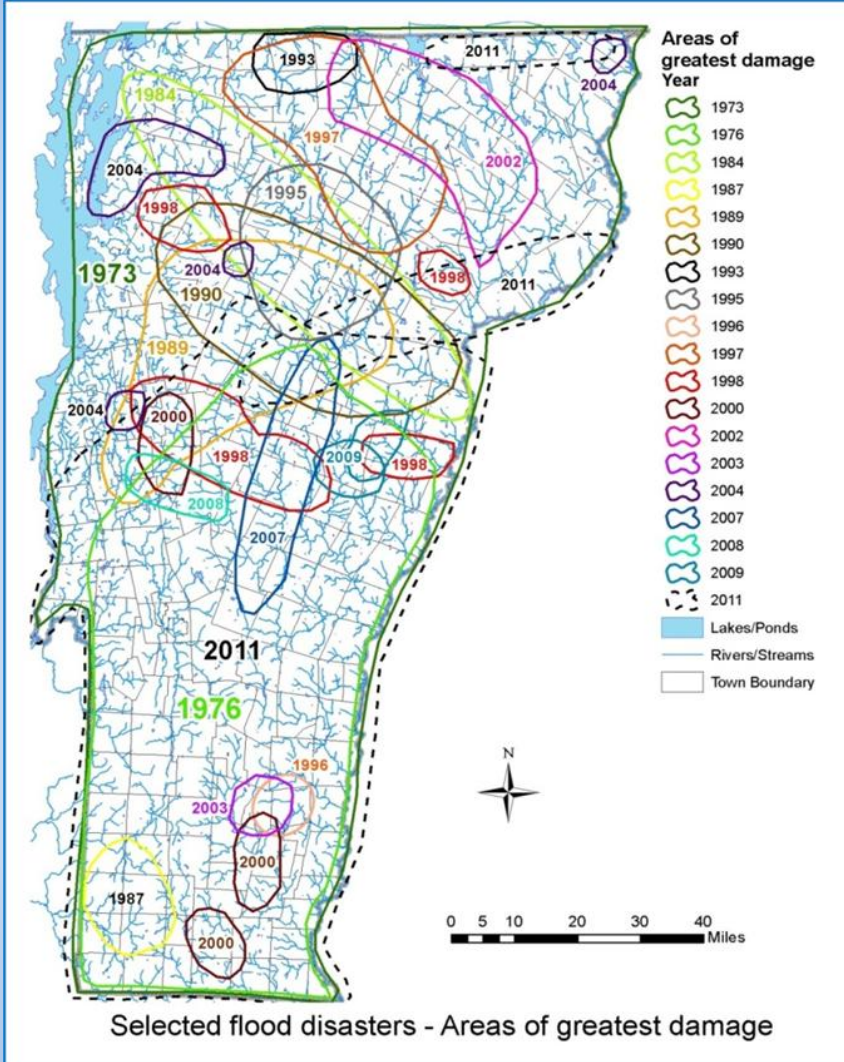
Source: National Weather Service
Cost figures adjusted for 2012 dollars

More Frequent Floods

Frequent Flood Disasters

- 1927 – 2011: **3** large-scale disastrous floods (1 every 14 years)
- 1973 – 2011: **19** disastrous floods of regional-scale (1 every 2 years)

Flooding is the most common and costly recurring hazard in Vermont



Flooding Damage:



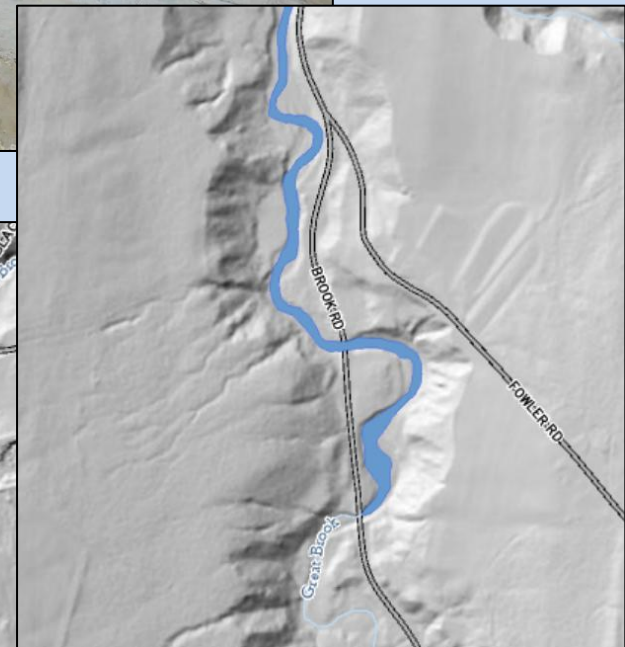
Inundation vs. Erosion

Over 75% of monetary flooding damages are due to fluvial erosion in Vermont
State Hazard Mitigation Plan

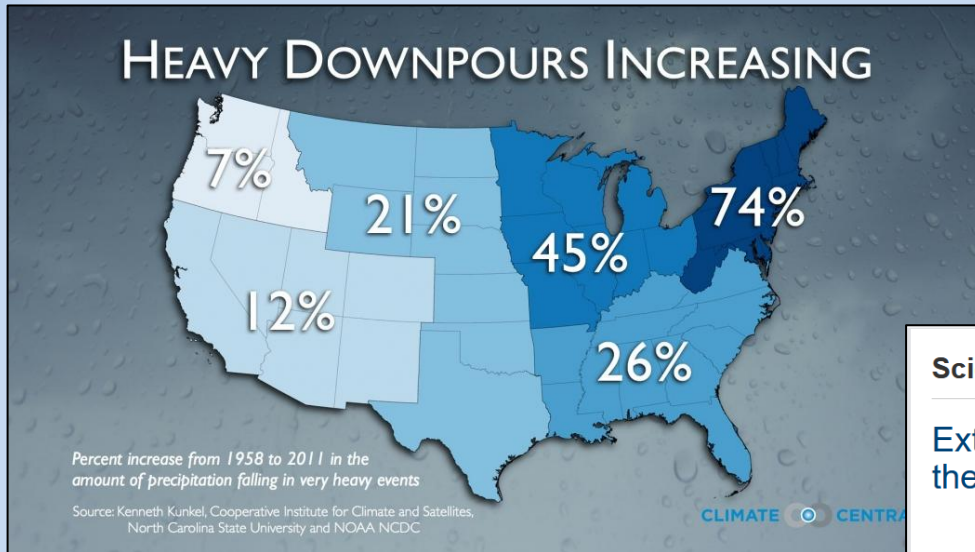
What makes our floods so damaging?

- Topography
- Precipitation
- Risky Development

Topography



Precipitation Trends



Science News

from research organizations

Extreme precipitation in Northeast US to increase 52% by the end of the century

Date: May 30, 2023

Source: Dartmouth College

Summary: With a warmer climate creating more humid conditions in the Northeast, extreme precipitation events -- defined as about 1.5 or more inches of heavy rainfall or melted snowfall in a day -- are projected to increase in the Northeast by 52% by the end of the century, according to a new study.

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Property damages from flooding in Vermont are calculated to exceed \$5.2 billion over the next 100 years.

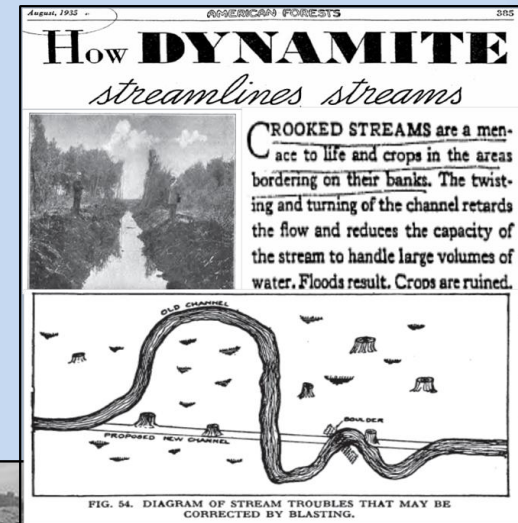
-UVM Gund Institute

Risky Developments

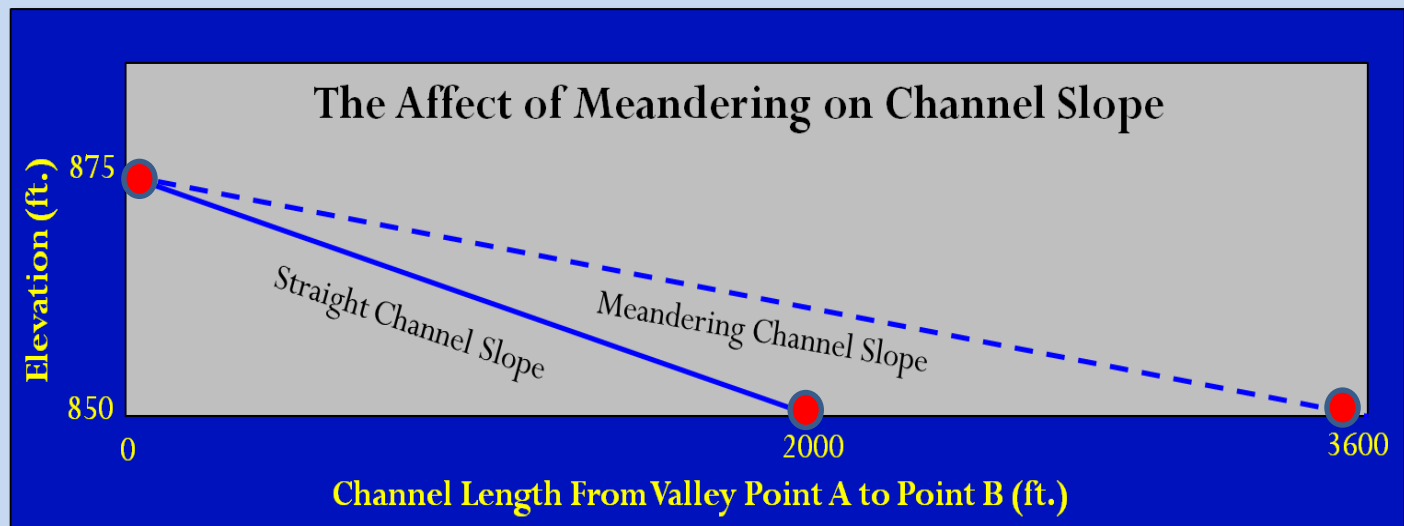
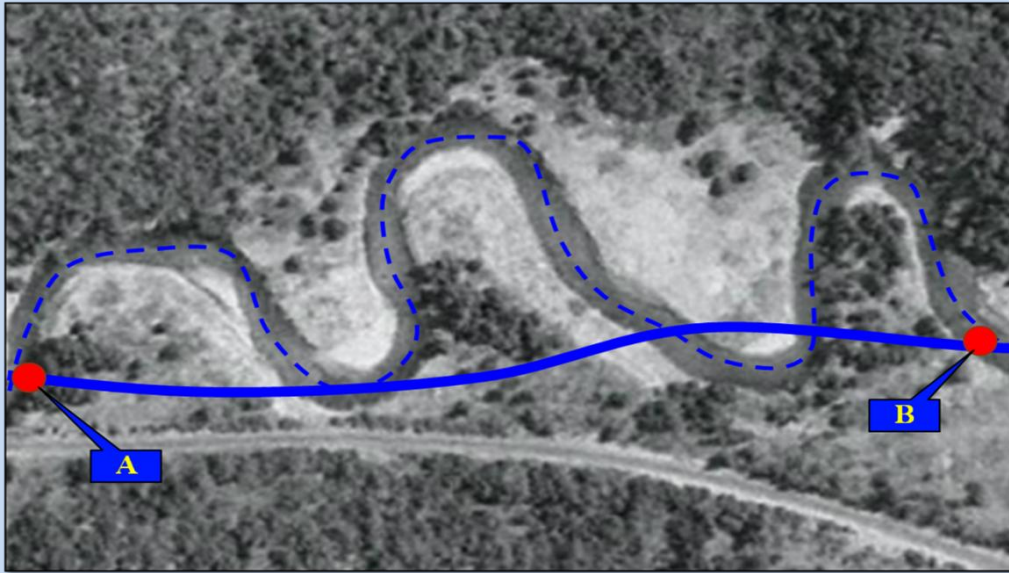


Photo: Mansfield Heli-flight 2011

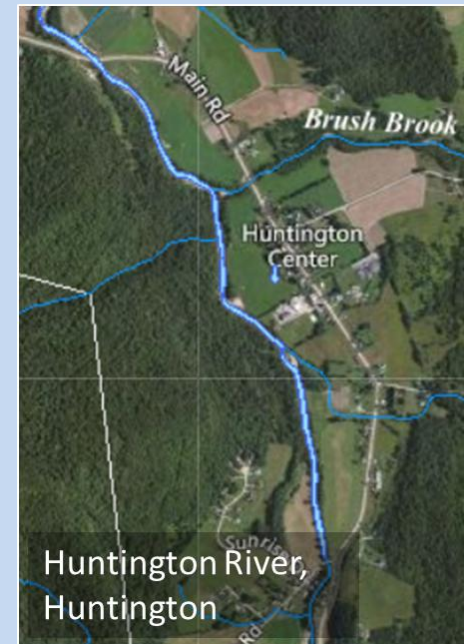
Protecting Development by Controlling the River



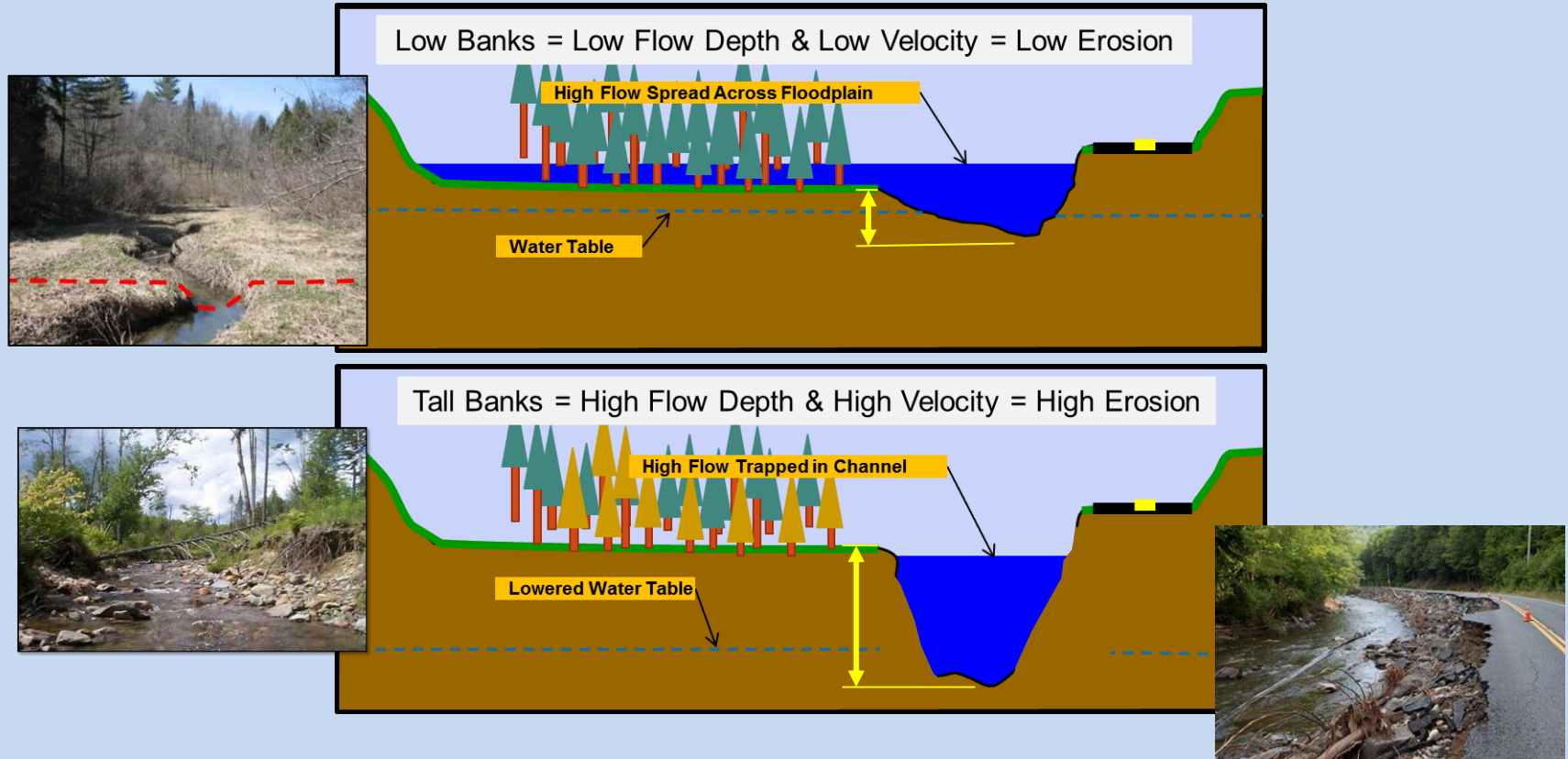
Channel Straightening and Slope



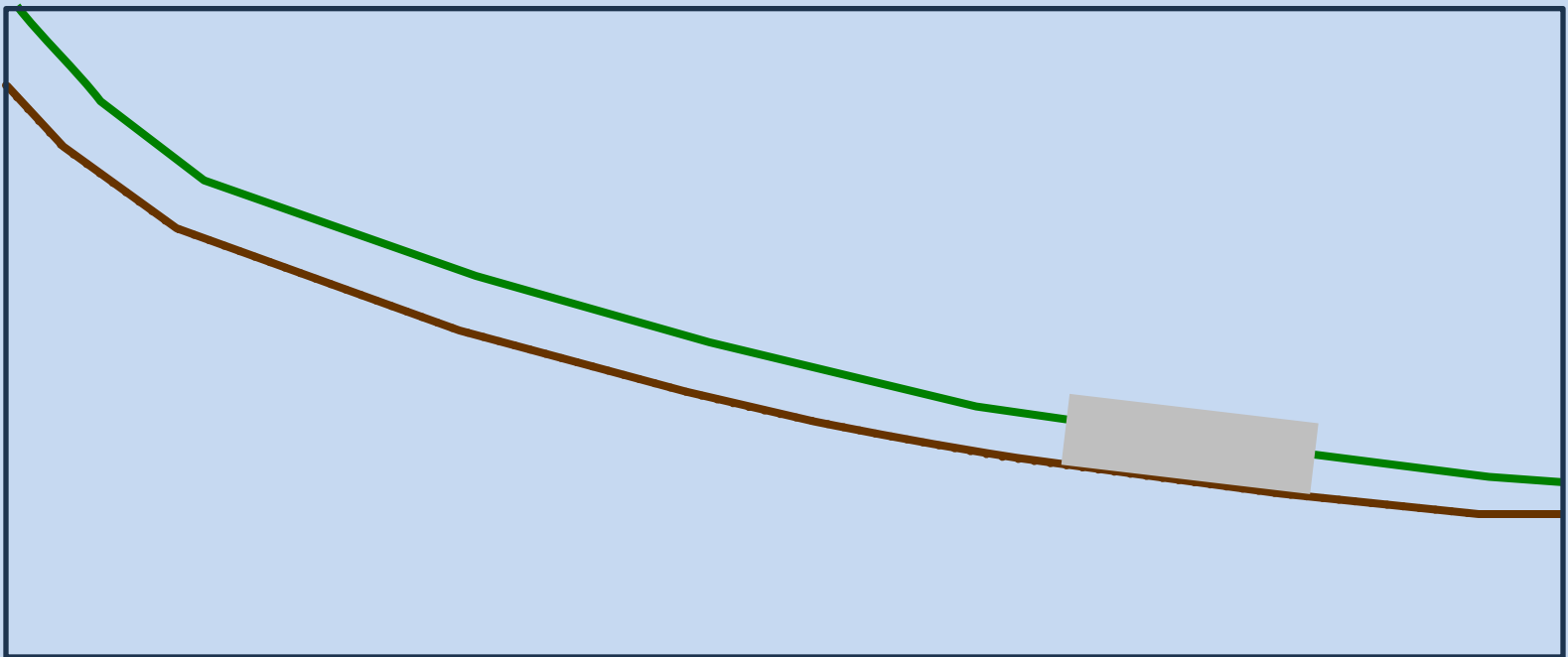
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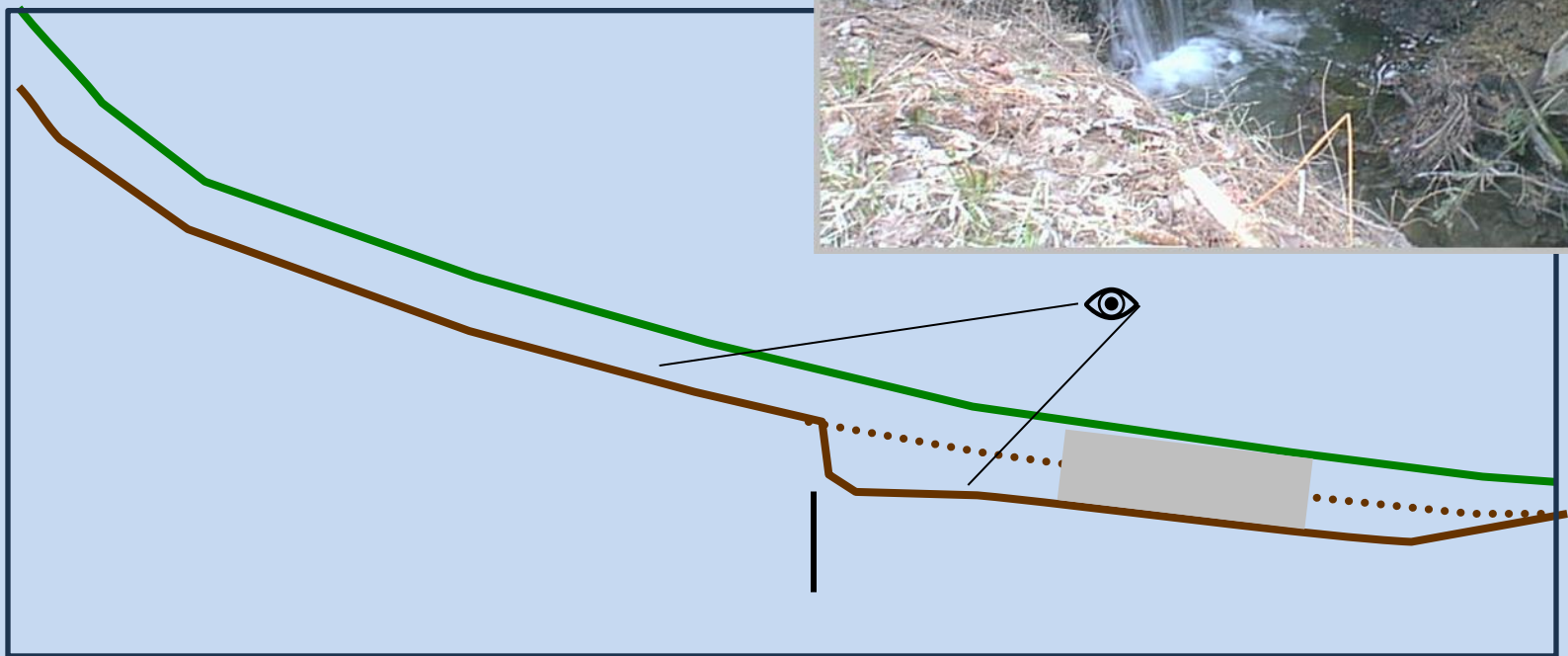
Channel Dredging and Erosion



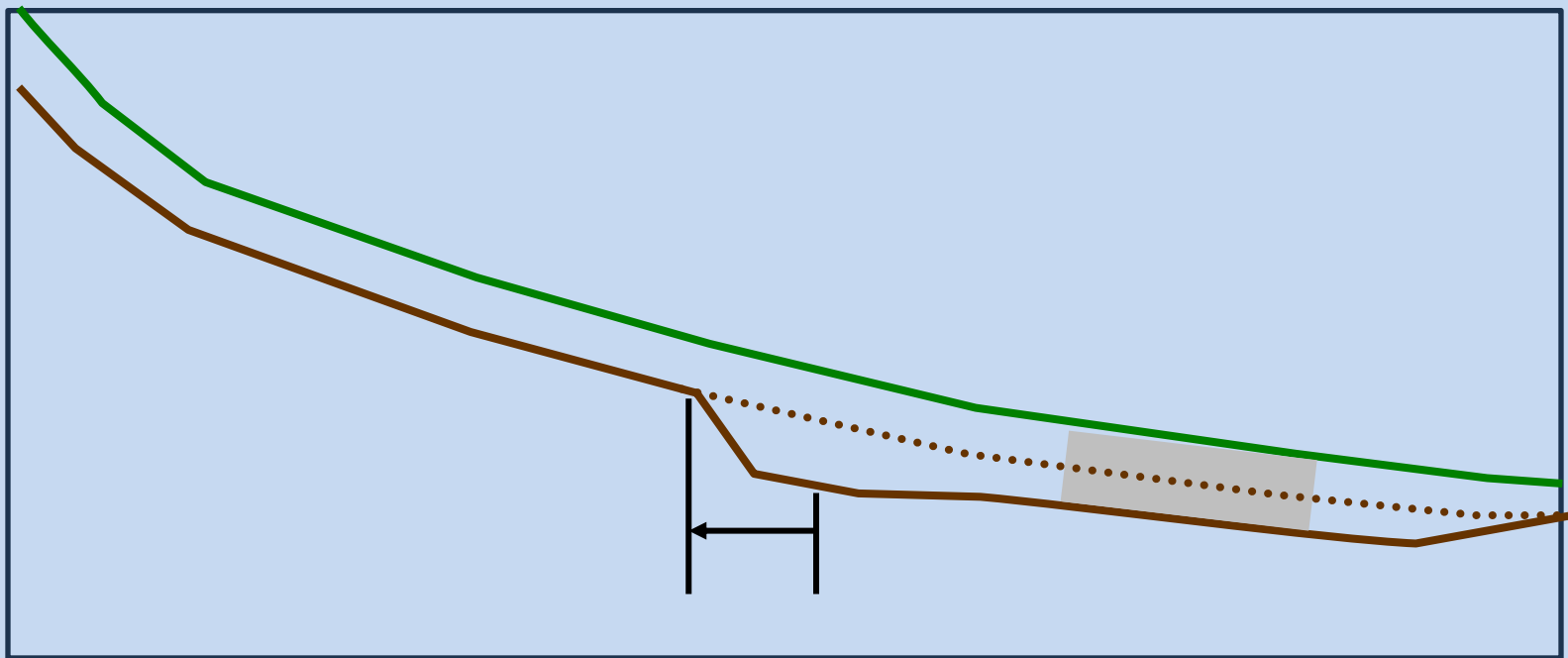
Headcutting



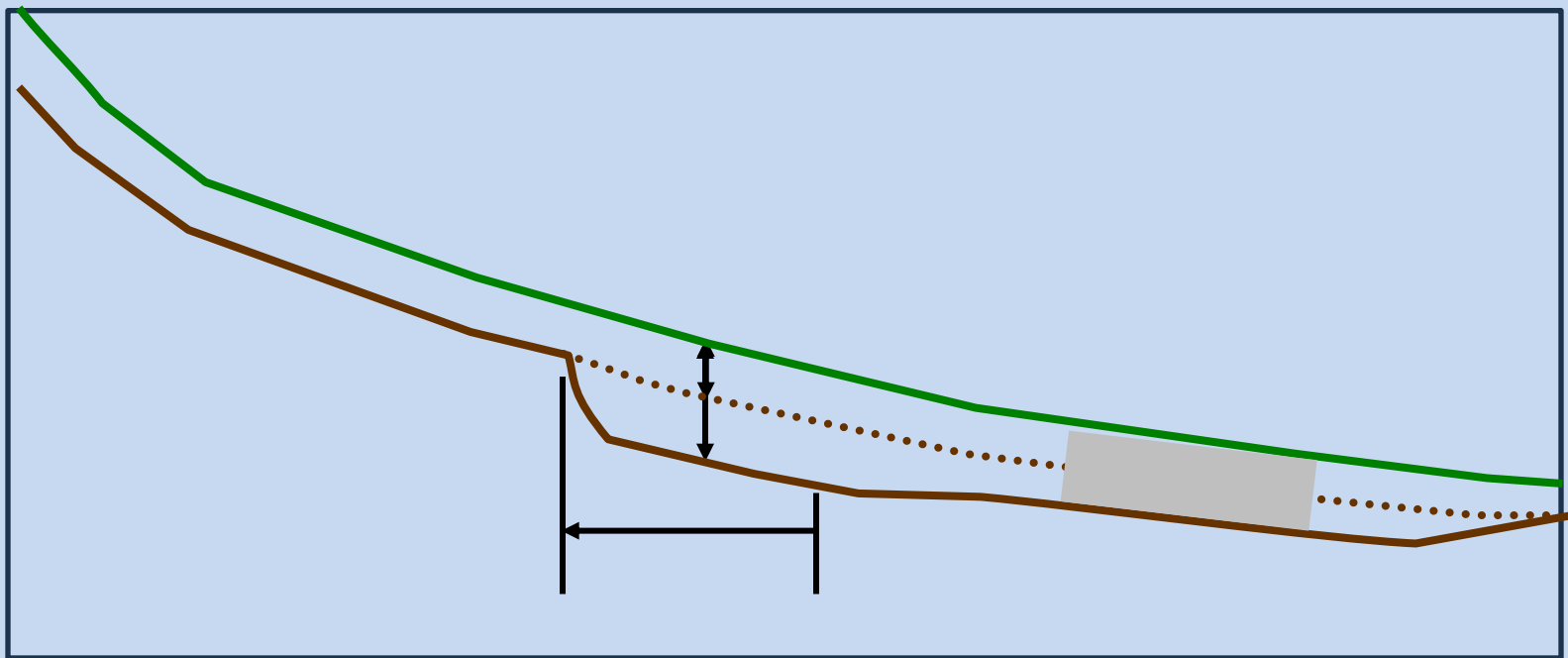
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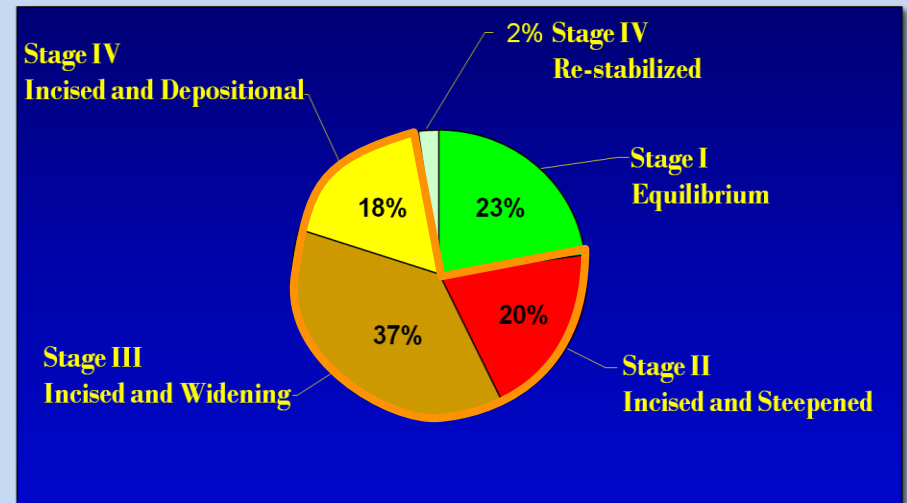
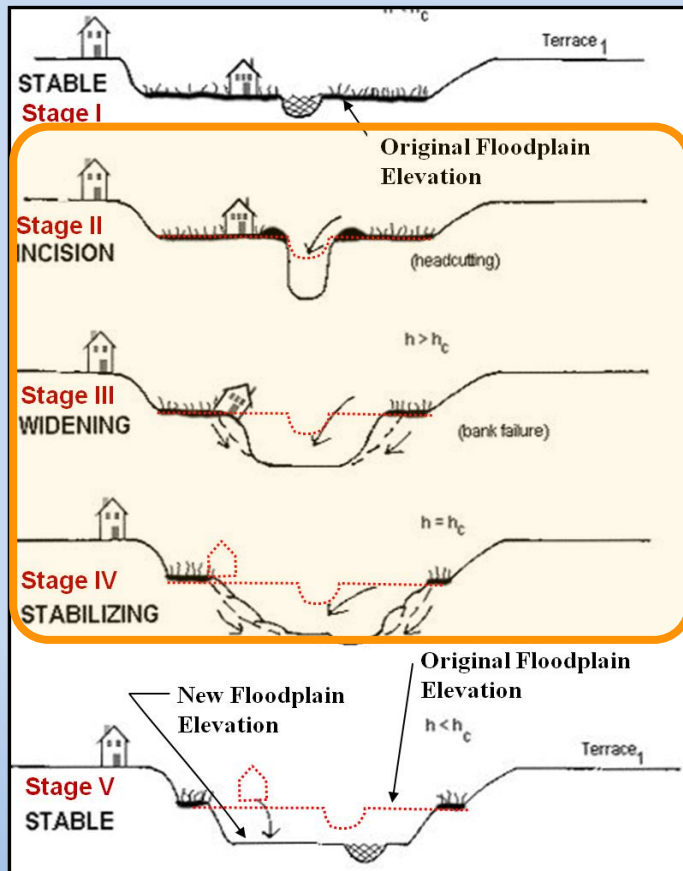


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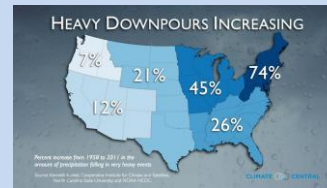
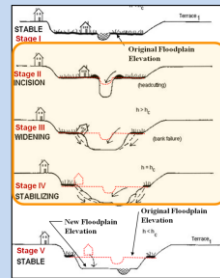
Protecting Development by Controlling the River

Historic land use and channel management activities have resulted in extensive channel instability.



- 5,000 river miles assessed.
- 75% undergoing channel evolution.

Comprehensive Flood Hazard Regulations: National Flood Insurance Program & Vermont River Corridor Protections





FEMA



**NATIONAL FLOOD
INSURANCE PROGRAM®**

National Flood Insurance Program (NFIP)

**Floodplain
Regulations**
Adopted and
enforced by towns

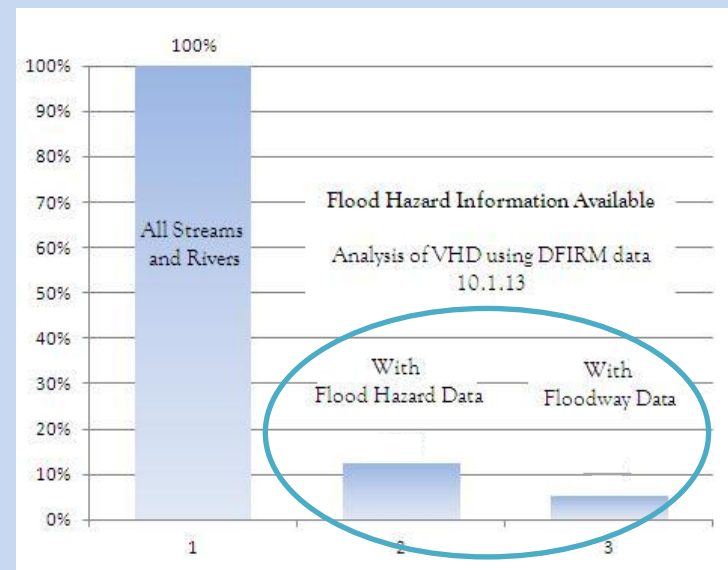
Flood Maps
Show areas that will
flood in a 1% change
flood

Flood Insurance
Backed by feds made
available to citizens
in those towns

Many Vermont flood risks are not identified by the NFIP floodplains



- Many streams have no FEMA-mapped floodplain
- Flash flooding and moving streams are not mapped



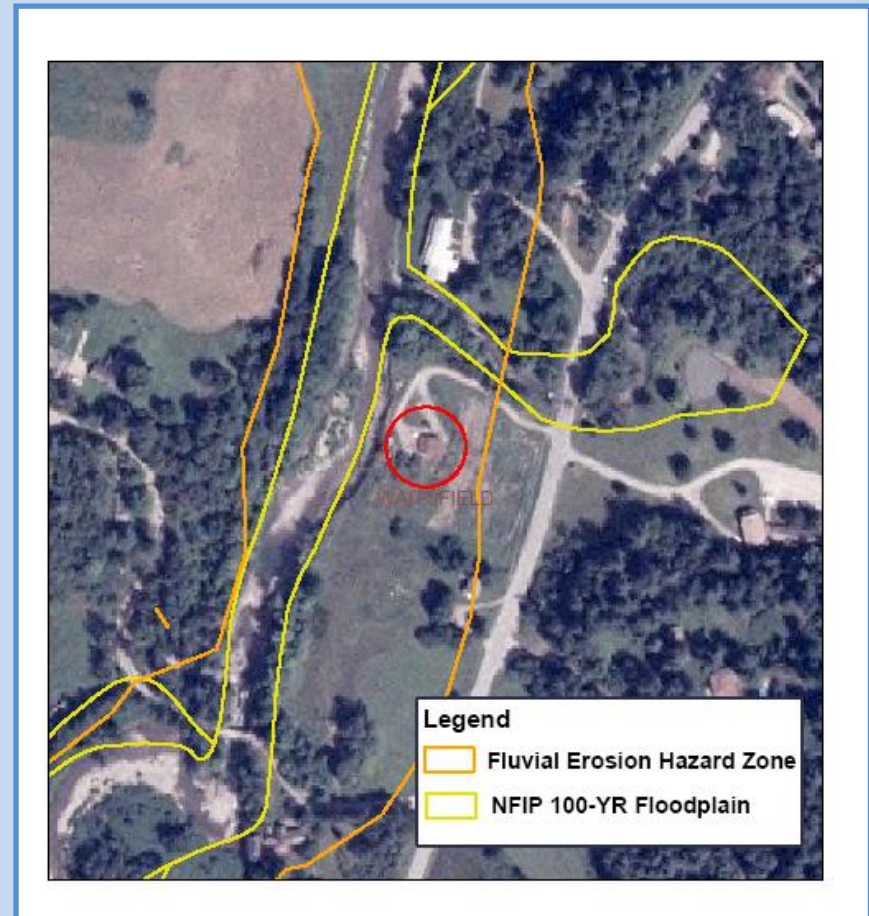
National Flood Insurance Program Does Not Address Fluvial Erosion Hazards

Not in the NFIP Floodplain



Mad River in Waitsfield, Vermont

100 feet from NFIP Floodway and 8 feet above the 100yr. flood elevation.





Vermont NFIP Participation

1/2025

Legend



National Flood Insurance

Program

274
Communities



Participating Community

20
Communities



Not Participating

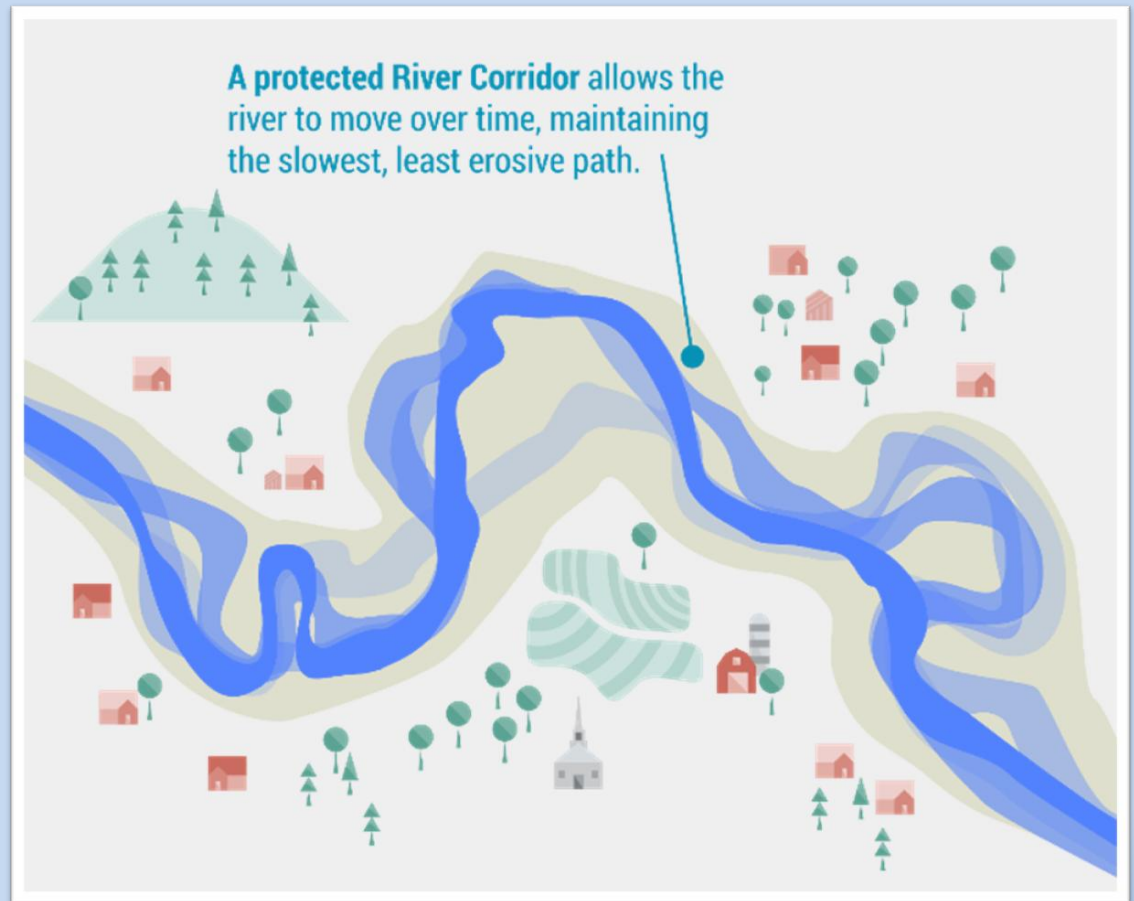
List of NFIP Participating communities
available at:

<https://www.fema.gov/cis/VT.html>

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

Mapping River Corridors to Reduce Exposure to Fluvial Erosion hazards

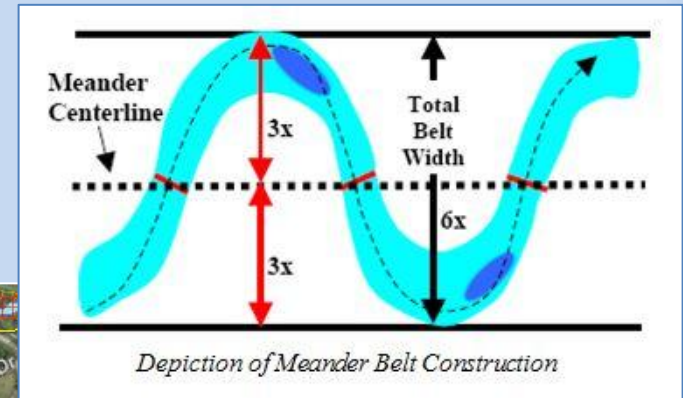
River Corridors:
the area on either
side of the river
where we expect
the channel to
adjust over time





Incorporating River Corridors Into municipal Zoning

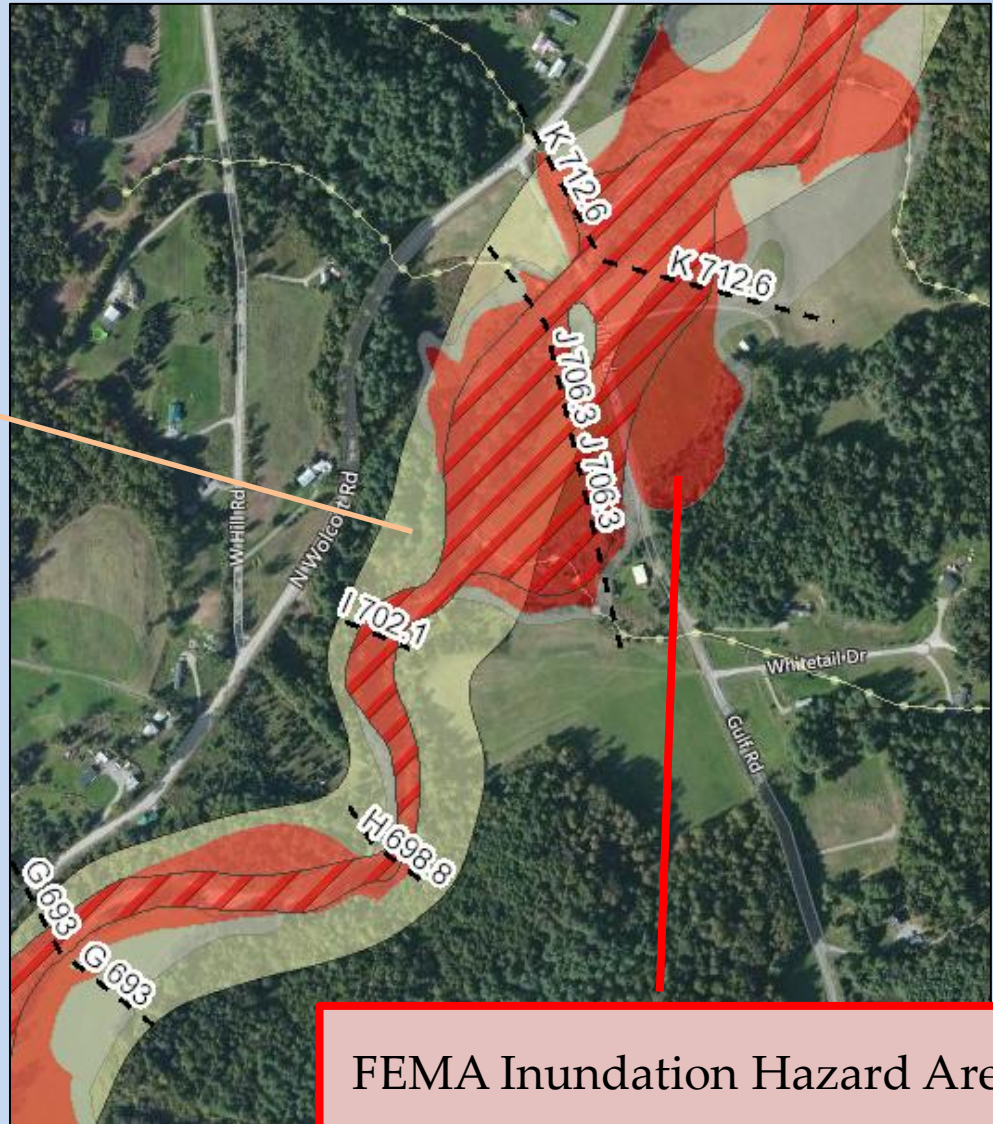
- River corridors are mapped by the state with input from the towns.
- Towns that adopted zoning that prohibits new development in river corridors received financial incentives for participating



Protection Of Floodplains & River Corridors

ANR River Corridor

- The river corridor and NFIP inundation hazard area work together to provide comprehensive protection
- In some areas they overlap, in others they do not



FEMA Inundation Hazard Area

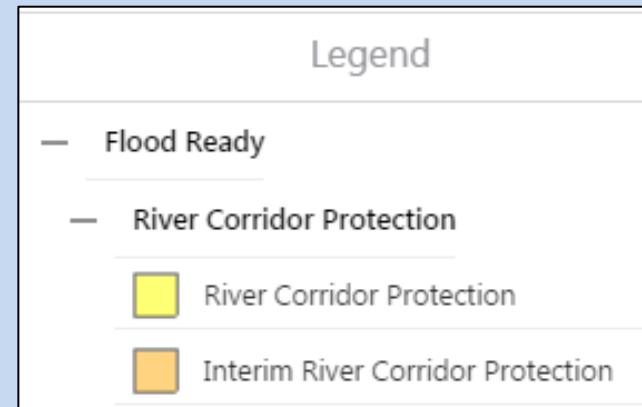
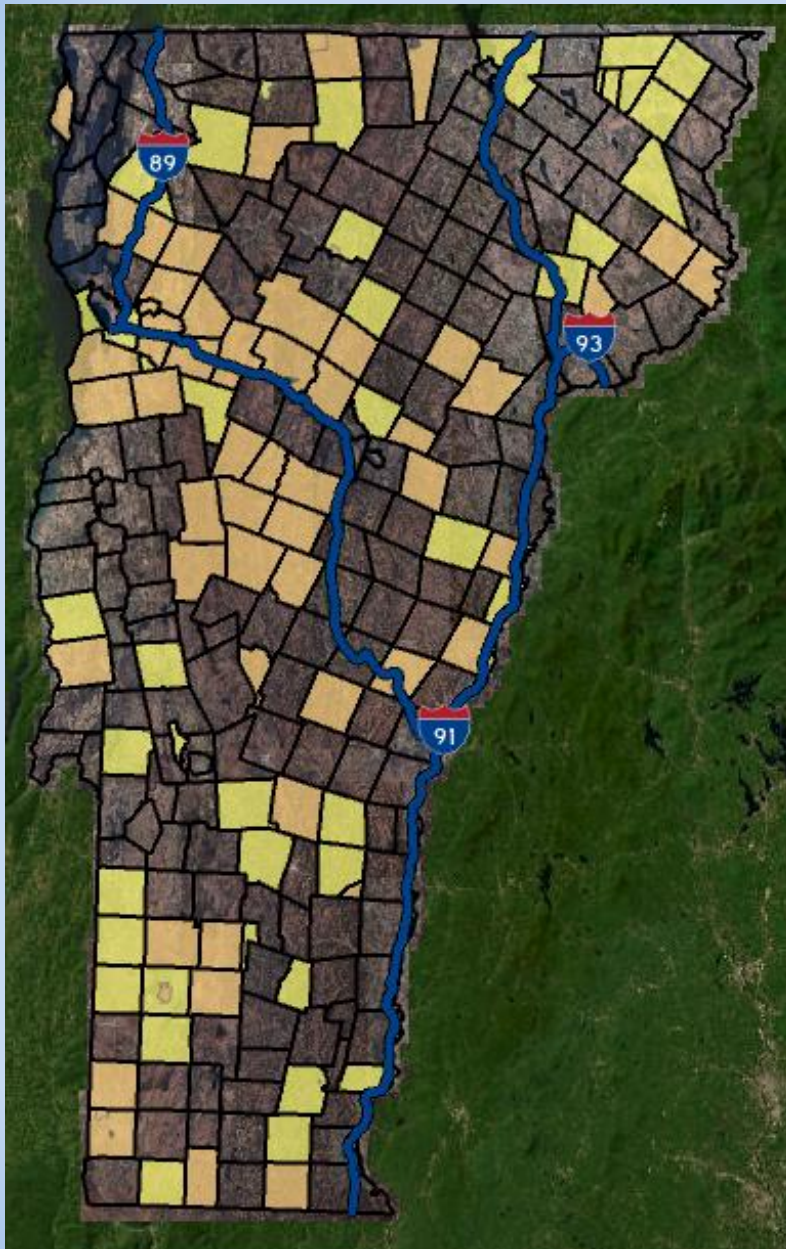
A River Corridor is different than a Buffer

- Minimum space needed to maintain the natural, least-erosive slope of the channel.
- Avoid new encroachments to minimize future river conflicts



Many towns have already adopted river corridor bylaws

1/2025



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

Flood Safety Act (Act 121) aims to mitigate flooding in multiple ways



**Gives DEC
authority to limit
new development
in river corridors
statewide**



**Strengthen
oversight and
strategically
remove derelict
dams**



**Protect and restore
wetlands to create
a net gain in
wetland acreage**

River Corridors Timeline

- Conduct 2-yr. education and outreach effort and collect input from the public (Jan. 1, 2025 – Jan. 1, 2027)
- Update River Corridor map to ID areas in existing settlements that will not increase fluvial erosion hazards (Jan. 1, 2026)
- Submit a report to legislature summarizing public input (Jan. 15, 2027)
- Adopt rules to limit new development in the mapped river corridors (July 1, 2027)
- Begin administration of the rules (Jan. 1, 2028)



We want your feedback

- Do you have more questions about river corridors or the new statewide changes passed under Act 121?
- What information would be helpful for your community?
- Feel free to provide feedback in this short survey:

<https://forms.office.com/r/RVK0i3mc3n>

Flood Safety Act Presentation
Feedback Form



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Alison Spasyk: Lake Champlain Sea Grant – Alison.Spasyk@uvm.edu

