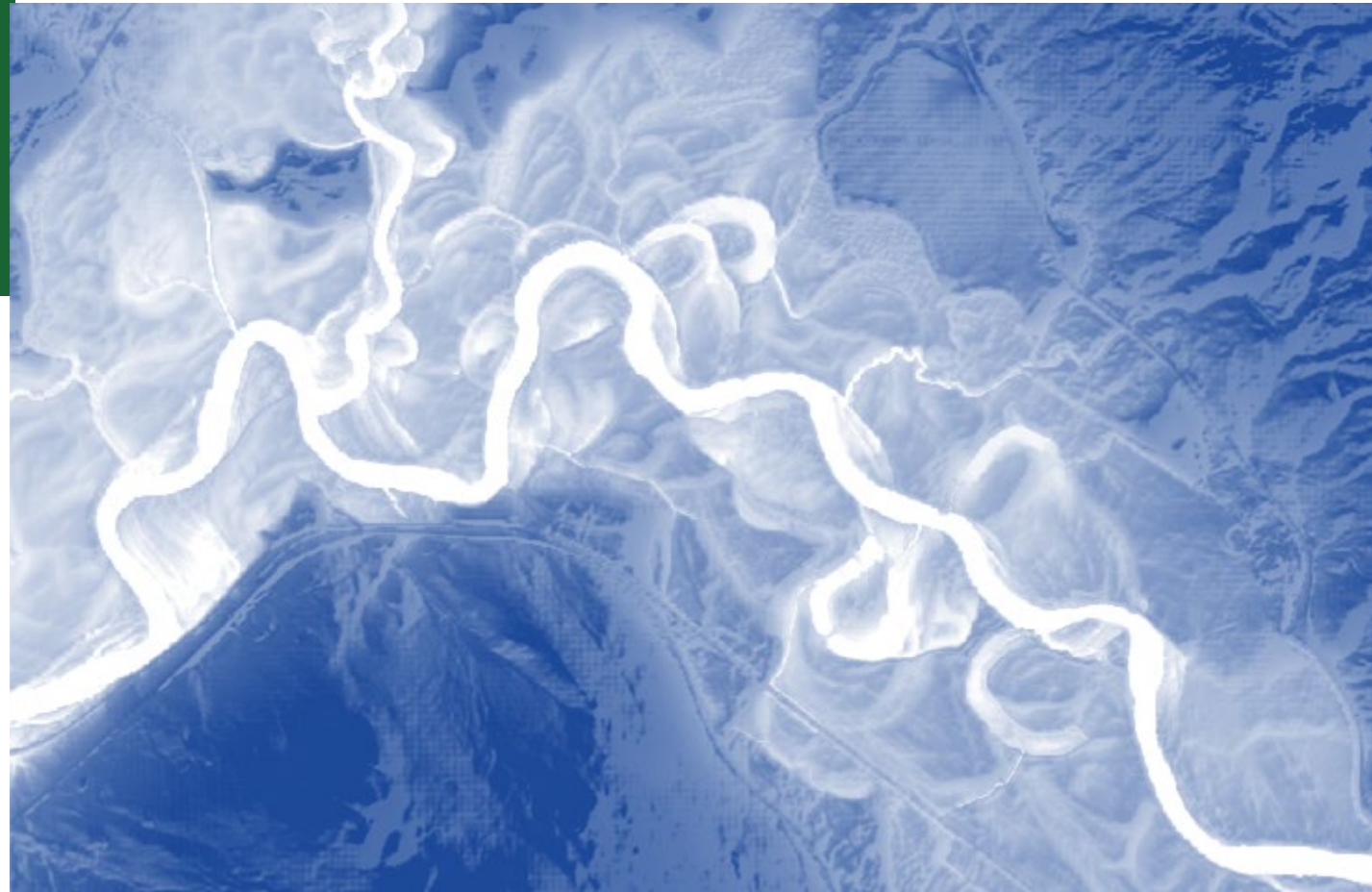


Flood Hazard Areas & River Corridors Overview

Rob Evans
Rivers Program Manager
Agency of Natural Resources
Department of Environmental Conservation





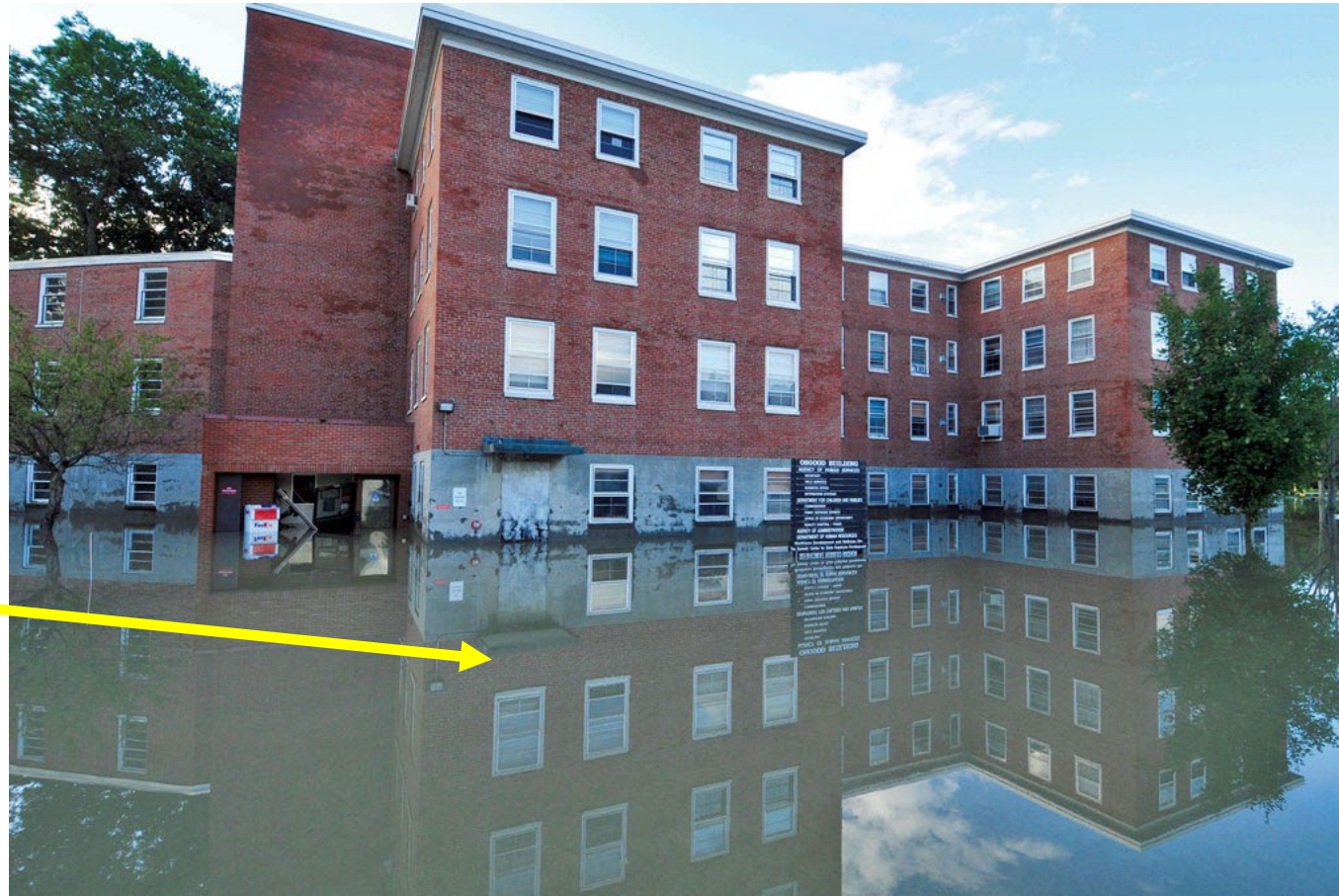
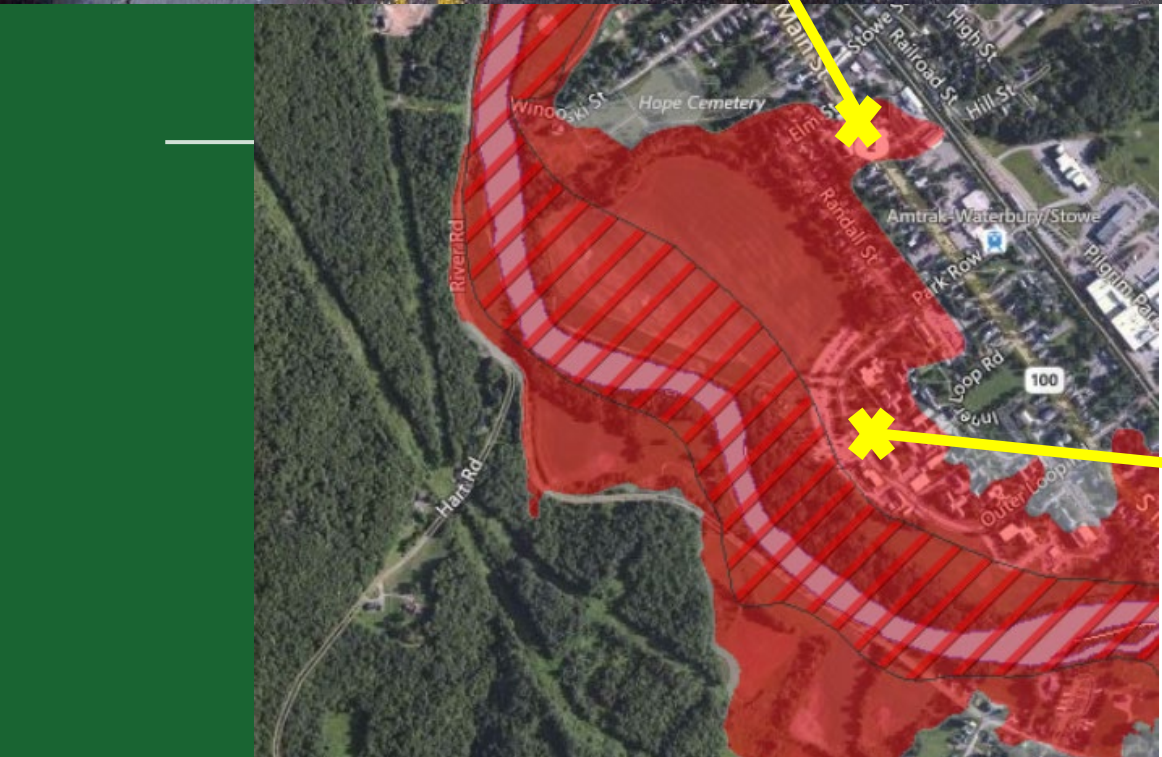
1. Mapping – Areas Regulated
 - Flood Hazard Areas
 - River Corridors
2. Jurisdiction walk-through
 - Local – National Flood Insurance Program (NFIP)
 - Act 250 – Criterion 1D
 - Flood Hazard Area & River Corridor Rule
3. NFIP minimums vs No Adverse Impact Standards
4. Examples
 - Developed Areas
 - Undeveloped Areas



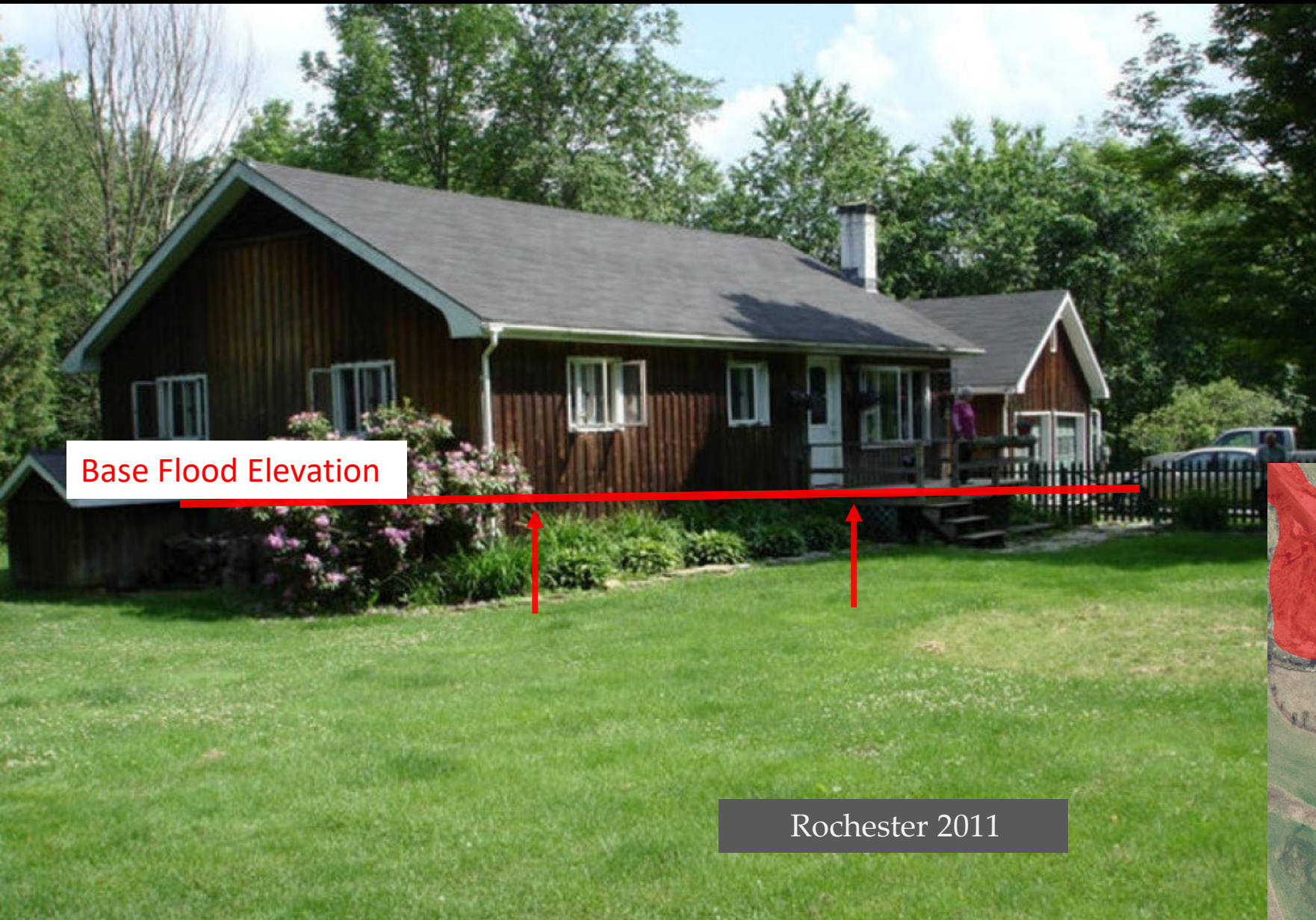
Waterbury, 2011

AP

Flood Hazard Areas: Inundation



Flood Hazard Areas: Elevate Low Floors



Base Flood Elevation

Rochester 2011

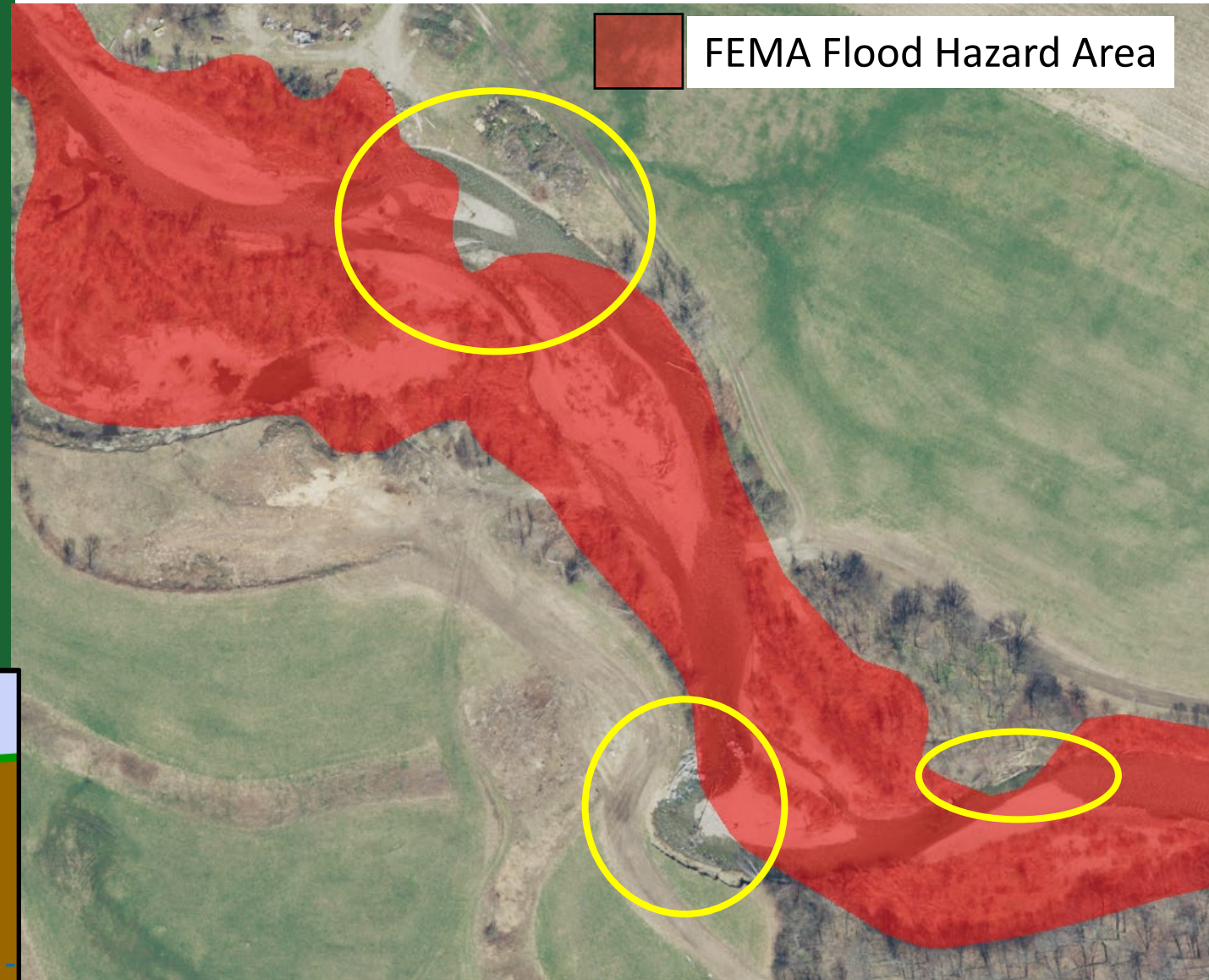


Inundation maps and standards alone do no suffice..



Inundation Flood Hazard Maps Under- represent flood risk

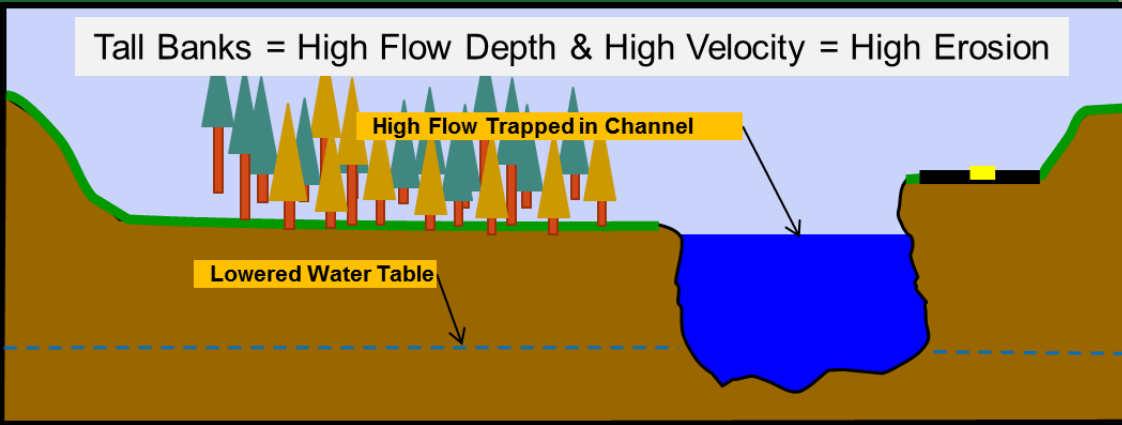
Browns River, Underhill VT

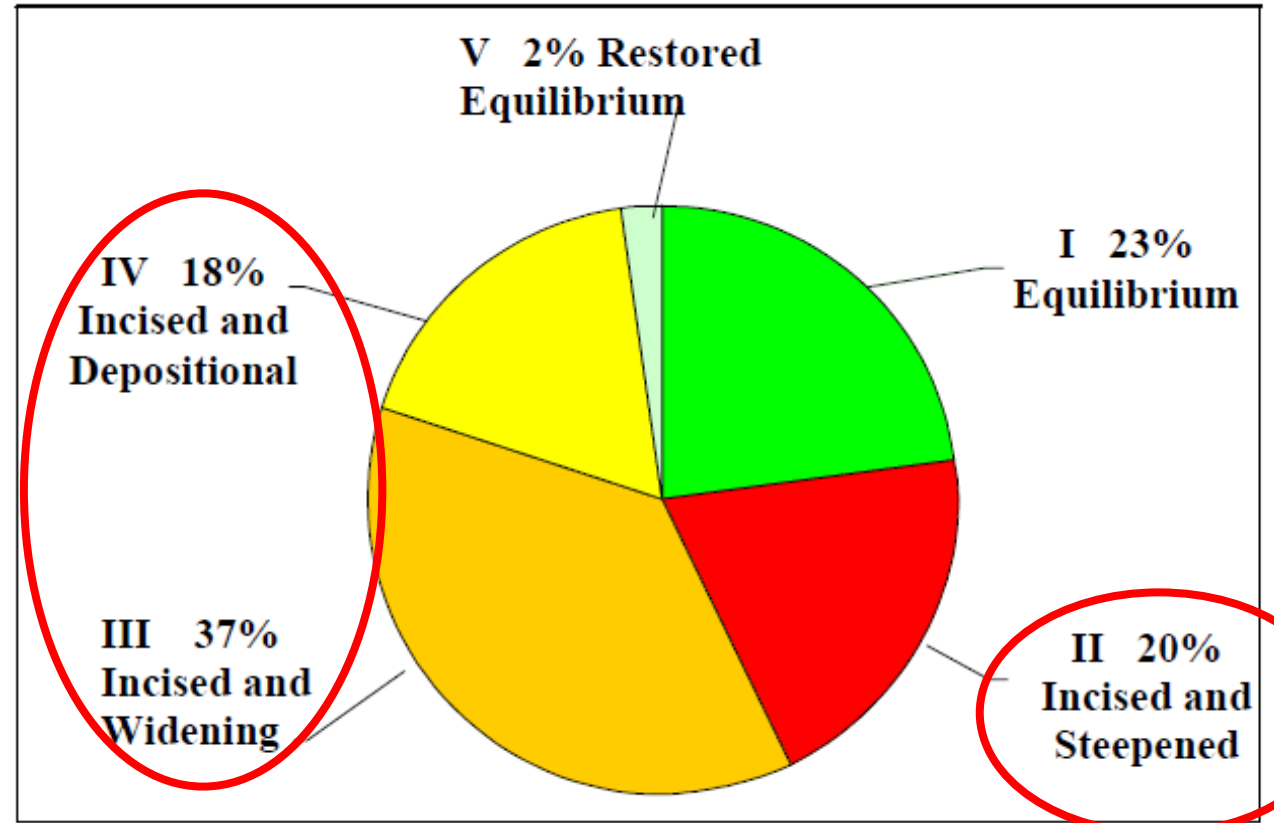


Tall Banks = High Flow Depth & High Velocity = High Erosion

High Flow Trapped in Channel

Lowered Water Table







1984

2012

Google





New encroachments

=

**new bank armoring to
protect to new
encroachments...**

=

**Increased erosion to
adjacent properties and
infrastructure**

River Corridor Mapping

factors the dynamic
nature of rivers into
planning and regulation

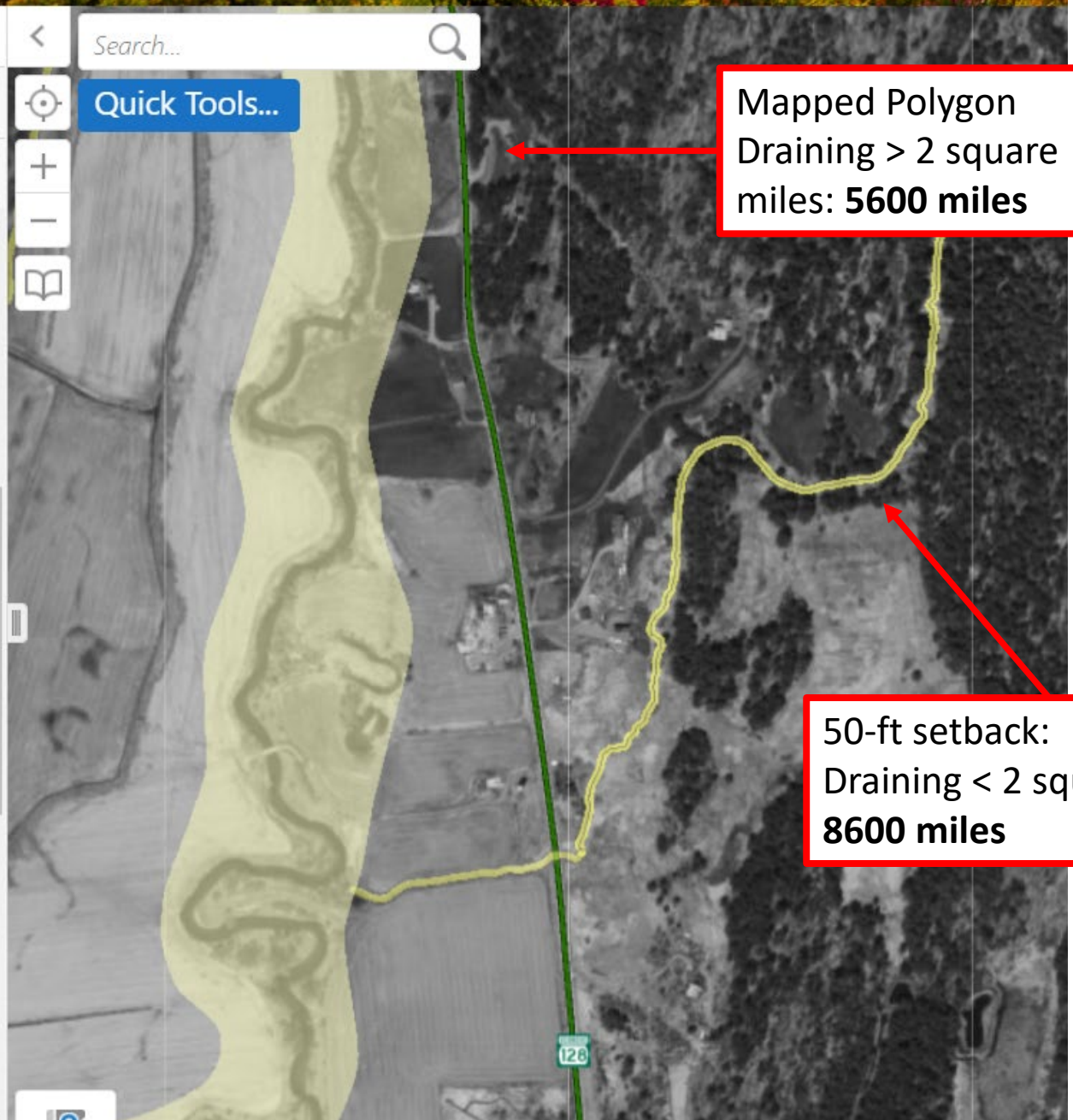


Layers

Atlas Layers

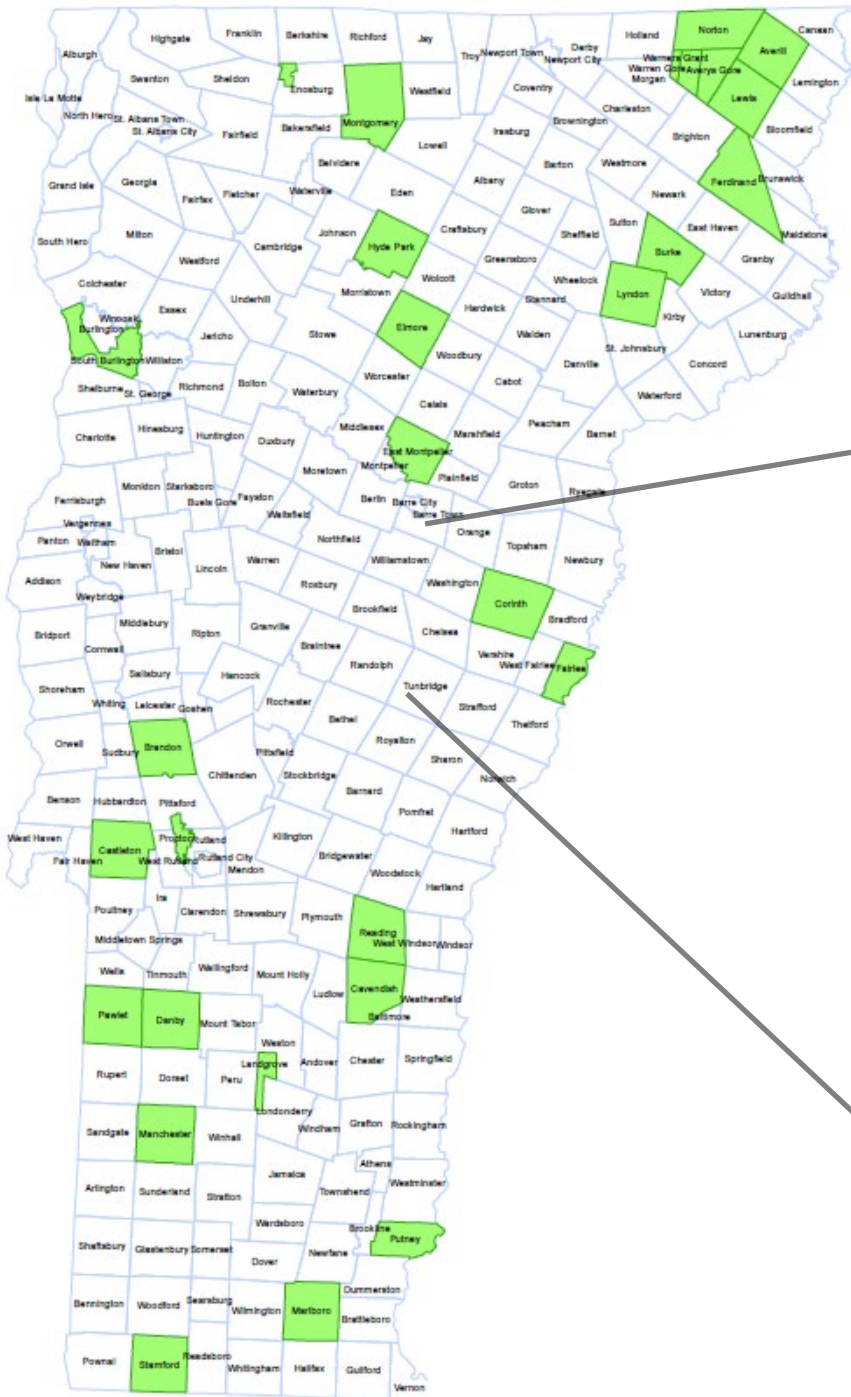
Filter Layers... Filter

- EPMs
 - DFIRM X-Sections
 - DFIRM - Letter of Map
 - Revision (LOMR)
 - DFIRM Panels
 - DFIRM Floodways
 - Flood Hazard Areas (Only FEMA-digitized data)
 - River Corridors
 - River Corridors (Aug 27, 2019)
 - Small Streams (50ft. setback)
 - .5 - 2 sqmi.
 - .25-.5 sqmi.
 - River Corridor Easement
 - River Management Engineer
- Districts



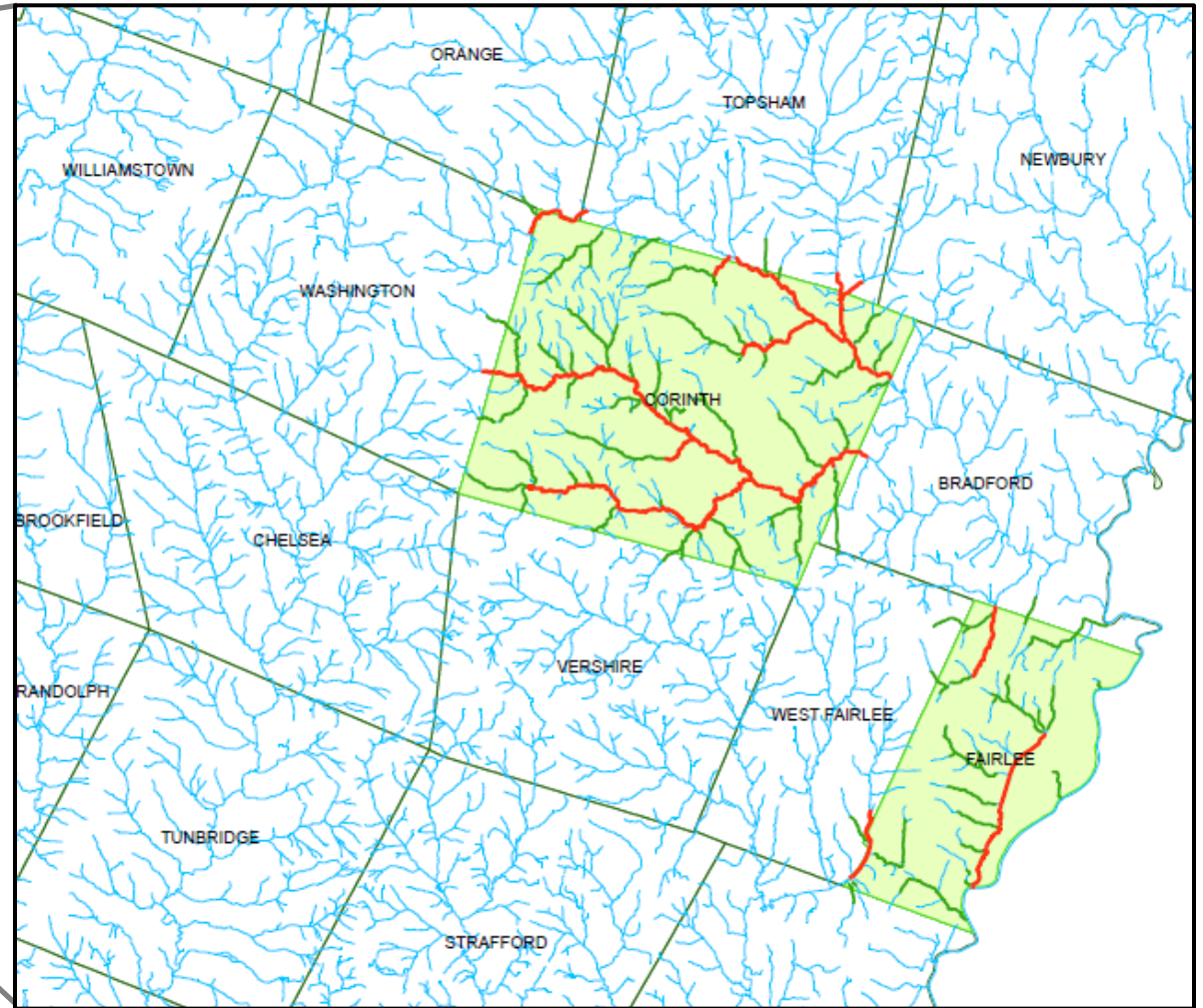
Mapped Polygon
Draining > 2 square
miles: **5600 miles**

50-ft setback:
Draining < 2 square miles:
8600 miles



Towns with adopted River Corridor bylaws

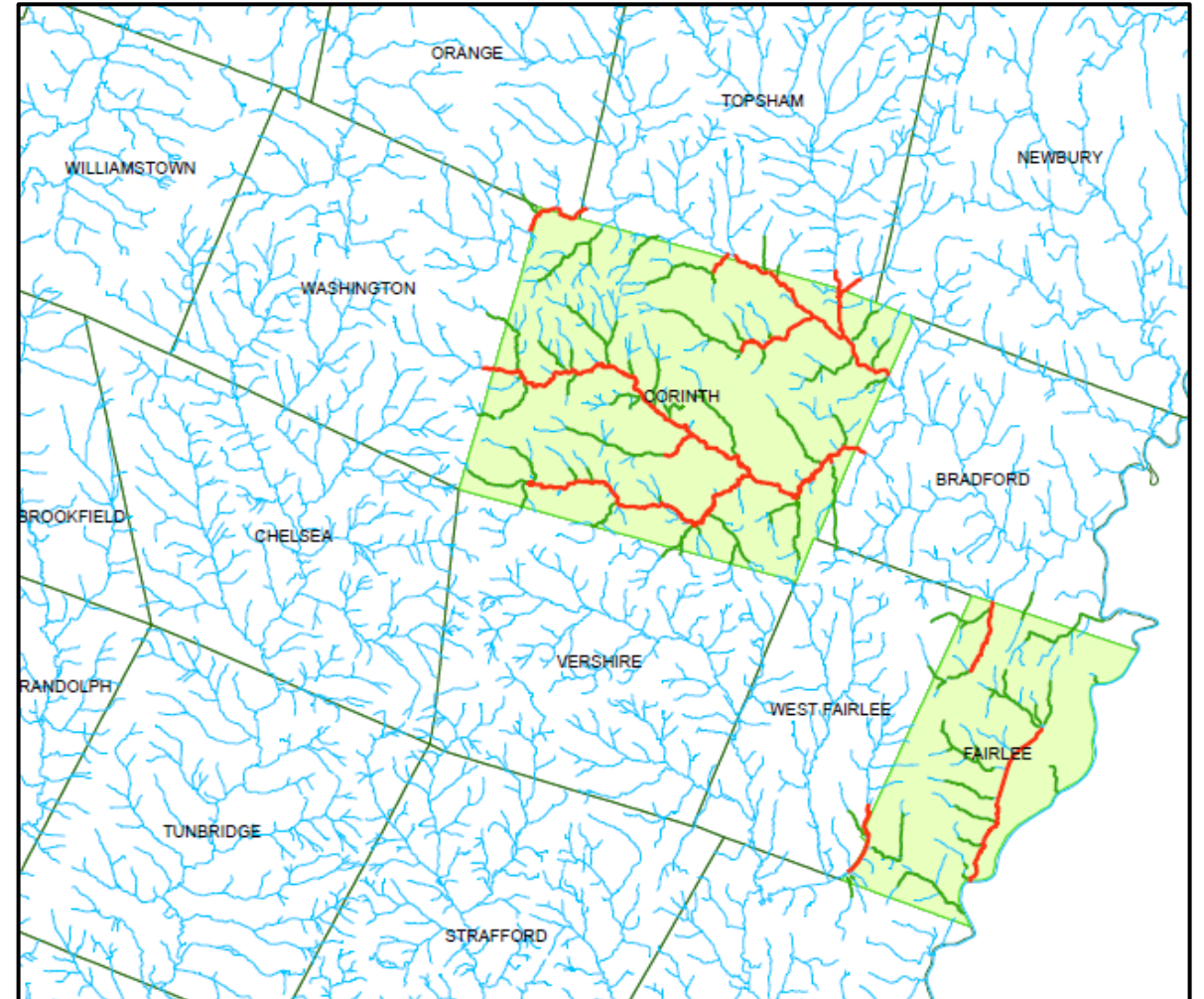
- 29 Towns (town-wide regulation)
- 9 % of perennial stream miles





Towns with adopted River Corridor bylaws

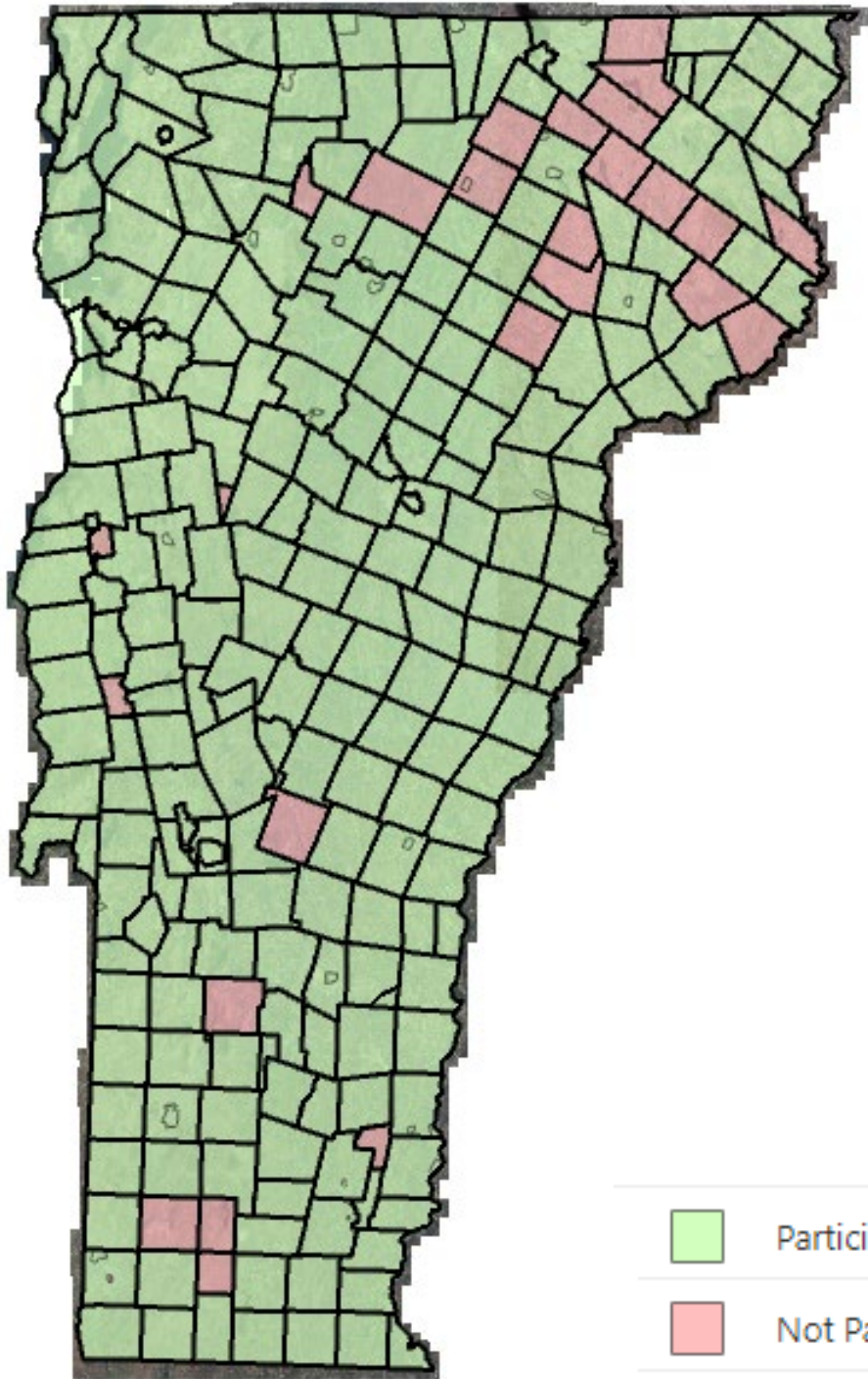
- 29 Towns (town-wide regulation)
- 9 % of perennial stream miles





Hazard Area Jurisdictions

1. Municipal Regulation
(National Flood Insurance Program)
2. Act 250 or PSB: Criterion 1D (Flood Hazard Areas & River Corridors)
3. Flood Hazard Area & River Corridor Rule (new 2015)



Municipal Regulation (National Flood Insurance Program)

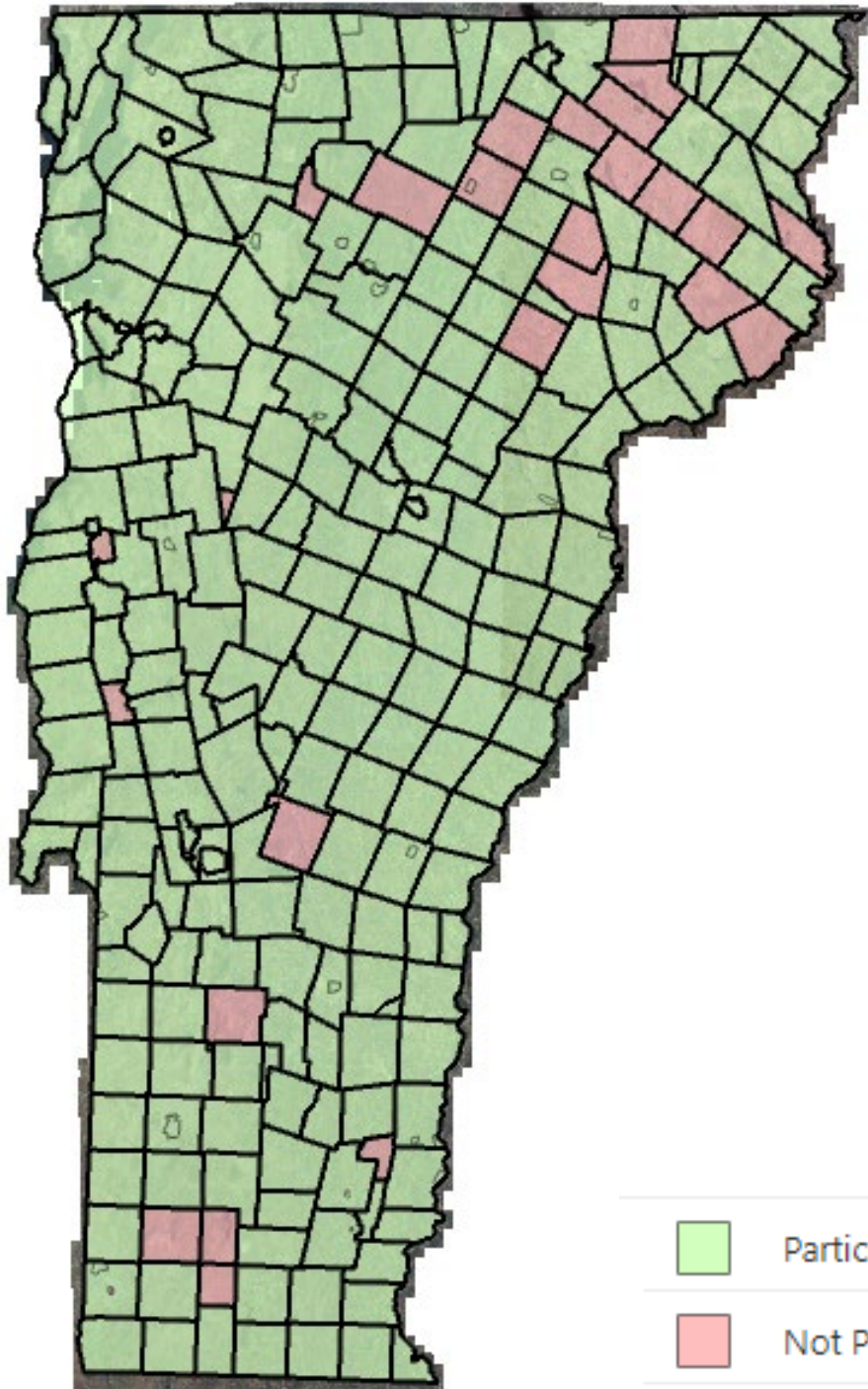
- 90% of communities participating
- 97 communities have adopted higher standards
- 29 Communities have adopted town-wide river corridor regulations





Municipal Regulation (National Flood Insurance Program)

S.213 dramatically increases DEC regulation of Flood Hazard Areas statewide

- Tremendous resource needs
- NFIP is a community-based program.
 - Given the scale and complexity of the NFIP framework and how we currently operate within that framework, we think other options need to be considered in the nearer term.



 Participating Community

 Not Participating



DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**FLOOD HAZARD AREA AND RIVER CORRIDOR
PROTECTION PROCEDURE**

SEPTEMBER 7, 2017

Act 250 Criterion 1D

Flood Hazard Areas & River Corridors

- Provide regulatory recommendations to District Commissions
- No Adverse Impact Standards established in Procedure





Flood Hazard Area & River Corridor Rule (2015)

- Required by Act 138 (2012)
- Regulates Activities exempt from municipal regulation
 - State owned buildings and facilities
 - Required Agricultural and Silvicultural Practices
 - Section 248 – Public Utility Commission projects
- S.213 makes this a statewide program for all FEMA mapped flood hazard areas and for mapped river corridors = 5600 miles of river corridor)



Example of federal minimum standards

- Development and Fill allowed up to the floodway (hatched area)
- Structure needs to have lowest floor elevated to the base flood elevation (a.k.a. 100 year flood)*

*Other standards apply such as anchoring, elevating/floodproofing building utilities, using flood resistant materials, etc.



Example of minimum standards (cont)

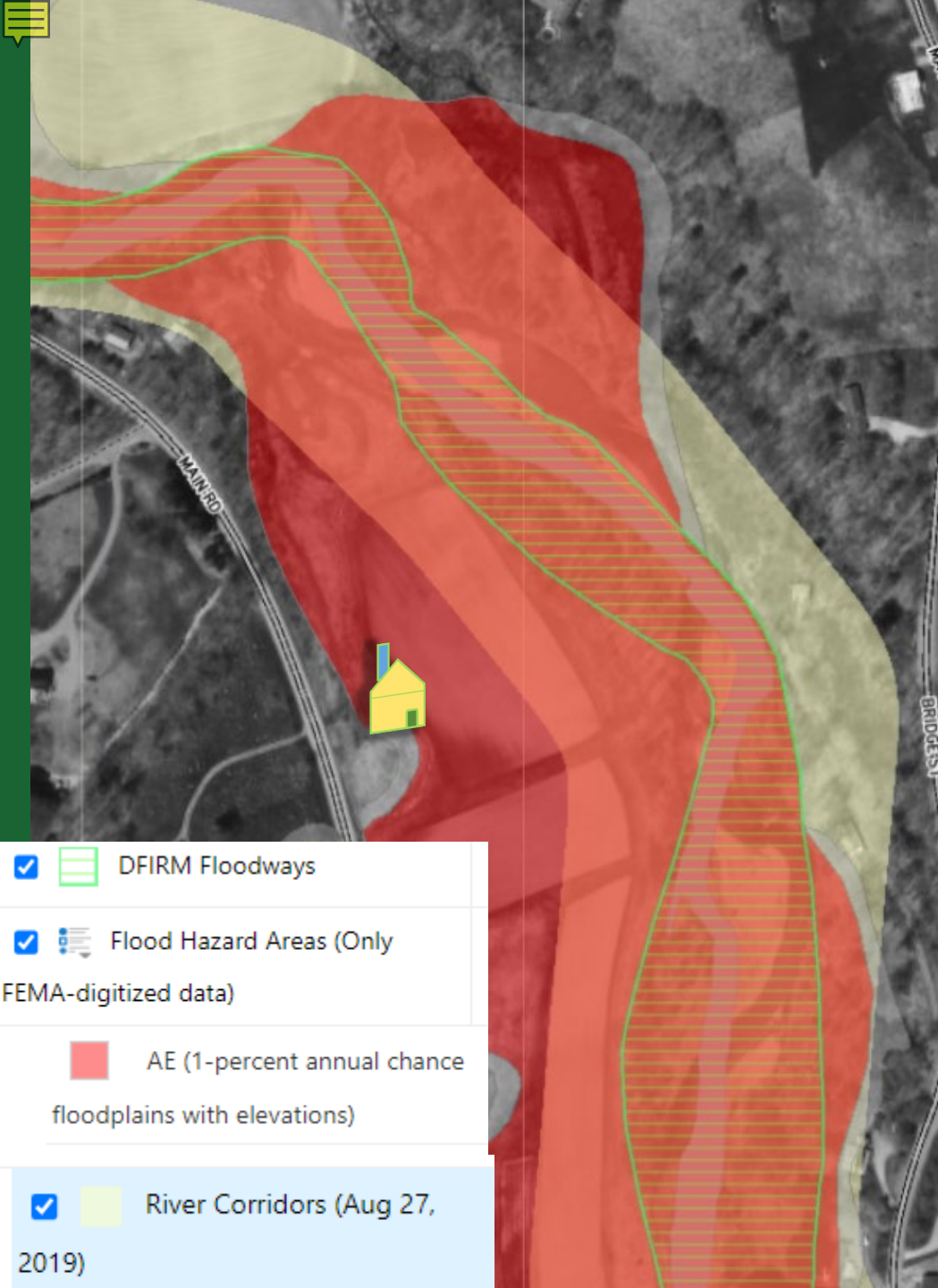
Even if minimum standards are met:

- Structure is w/n the river corridor and at heightened risk from flood related erosion
- There is now a new channel management commitment – new bank armoring to protect the structure will cause further instability in the river system impacting other property owners
- If elevated on fill, there may be loss of flood storage and conveyance capacity, increasing flood elevations and velocities for other property owners
- If elevated to the base flood elevation, structure will still be inundated during larger floods (becoming more common place with climate change)



Example of No Adverse Impact Undeveloped Areas

- Structure must be outside the FEMA-designated floodway AND the ANR mapped river corridor
- Structure's lowest floor must be elevated to 2 feet above the base flood elevation
- If elevated on fill, compensatory flood storage must be provided to ensure no impact to flood storage and conveyance capacity





Example of No Adverse Impact Developed Area

- Structure must be outside the FEMA-designated floodway
- Structure's lowest floor must be elevated to 2 feet above the base flood elevation
- If elevated on fill, compensatory flood storage must be provided to ensure no impact flood storage and conveyance capacity,
- What about the river corridor???



Map example of No Adverse Impact Developed Area

Infill and redevelopment can take place in densely developed river corridors

- No closer to the river than pre-existing encroachments
- In this context river is and will continue to be heavily channelized and managed – no need for additional bank armoring
- Flood inundation criteria are the focus (e.g. elevation/floodproofing)
- S.213 requires mapping of “infill polygons”

River Corridor Infill Polygons...



- Green area indicates that River Corridor regulations do not get applied to development proposals
- River is already heavily channelized and will continue to be heavily channelized to protect existing human investments
- Additional development does not exacerbate erosion

Search...



Quick Tools...

