



VERMONT'S APPROACH TO ADAPTATION AND INCREASING RESILIENCE

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Vermont Agency of Natural Resources
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Overview

- Vermont facts & figures
- Approach to adaptation
 - Fast, effective response and early recovery
 - Building long-term resilience
- Key Tools/Approaches
- Next steps



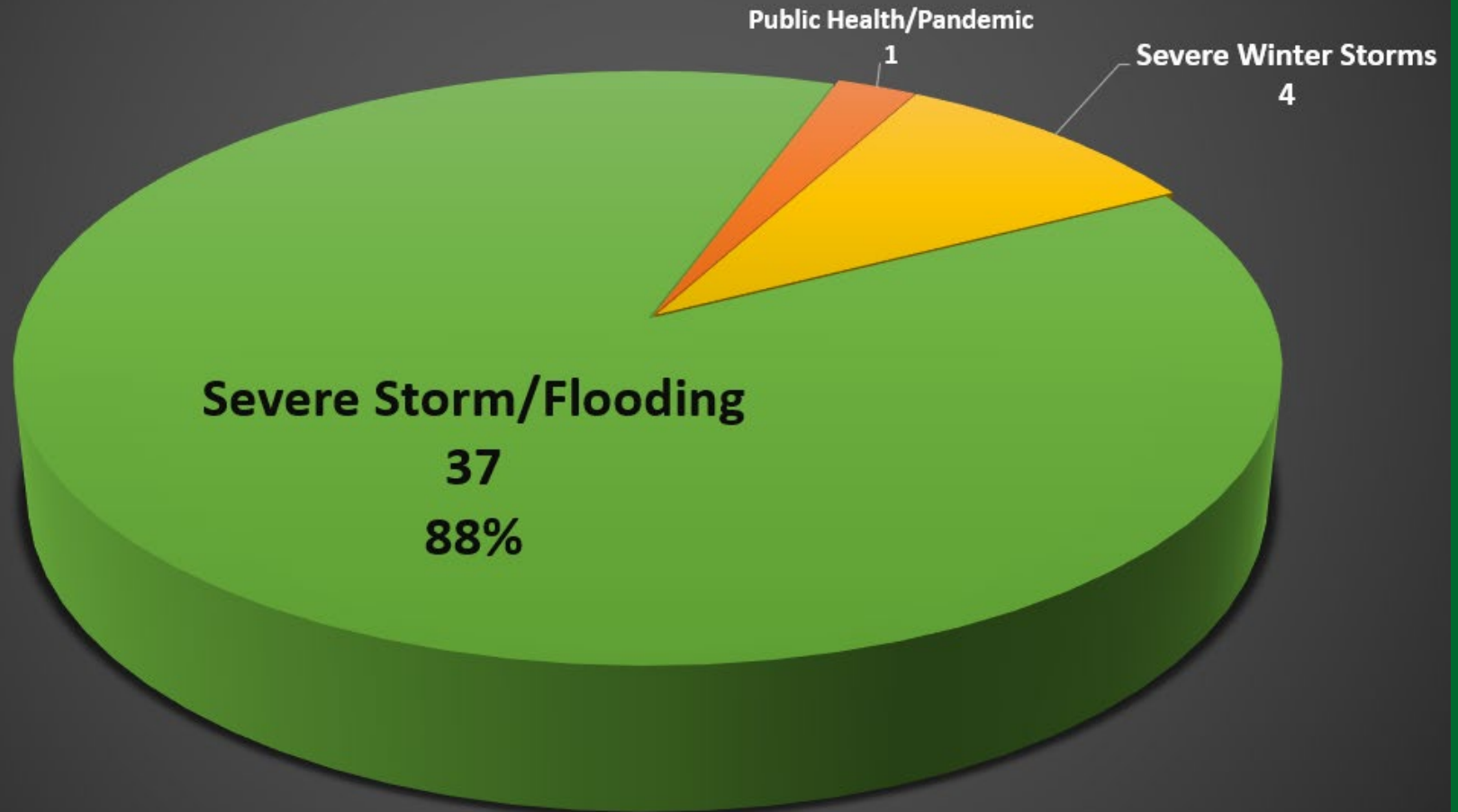
A bit about Vermont...

- Vermont's land area is just over 9,000 square miles (5,760,000 acres)
 - About $\frac{1}{4}$ the size of Maine
- Roughly 650,000 residents
- 256 municipalities + 30 incorporated villages and no real county government
 - Only 4% of municipalities >10,000 residents
- 14,000 miles of rivers and streams (drainage area >0.25 sq mi)
- 209,000 acres of [mapped] riparian area/river corridors
 - 274 municipal entities regulate land uses in FEMA-mapped flood hazard areas
 - More than 12,400 structures located in or immediately adjacent to FEMA mapped flood hazard areas statewide
- 250,000 acres of (mapped) wetlands
- More than 800 known dams



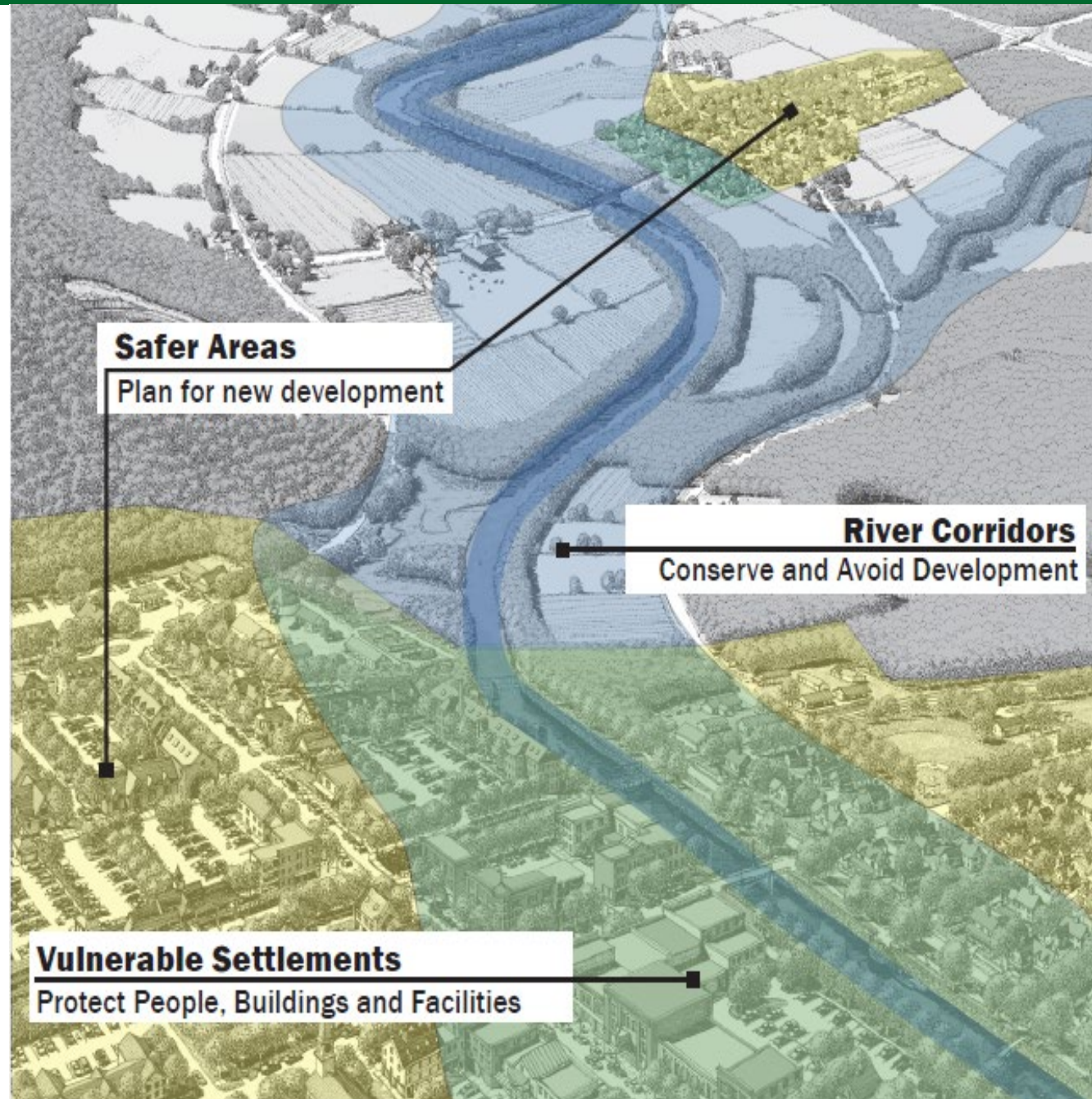


1990-2023 42 Federal Disaster Declarations



Approach to Adaptation

- Fast, Effective Response and Early Recovery
 - Emergency authorities
 - VT WARN
 - Survey 123 app
 - SEOC “recovery unit”
 - Local liaisons program
- Building Long-Term Resilience
 - Avoiding the unmanageable
 - Hazard mitigation
 - Land use planning and regulation
 - Nature-based solutions
 - Managing the unavoidable
 - Floodproofing and hardening existing assets
 - Designing and maintaining reliable infrastructure

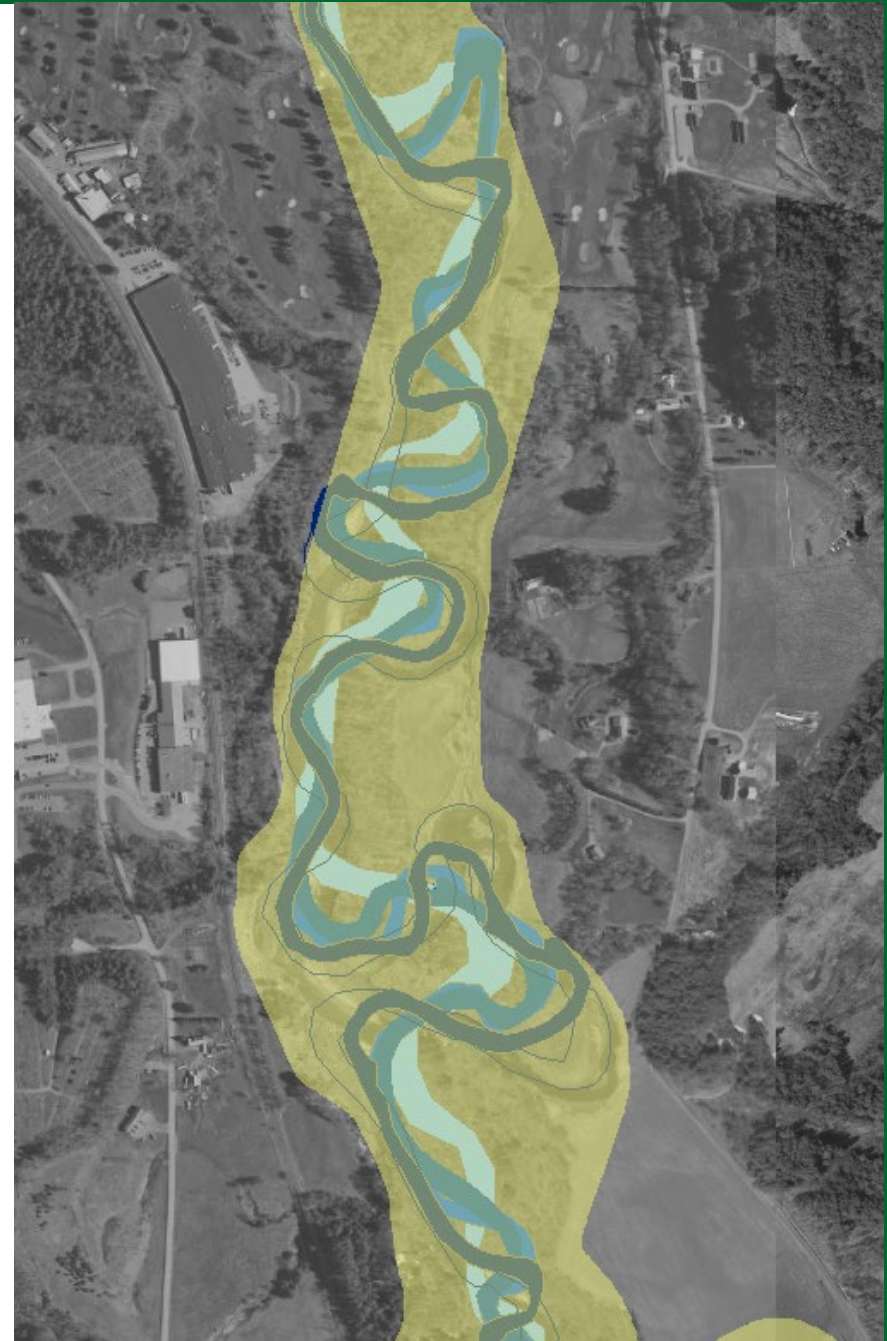


VT WARN

- Every state, including Maine, has a WARN (Water/Wastewater Agency Response Network)
- Allows water and wastewater systems to receive rapid mutual aid and assistance from other systems
- VT WARN was revived in 2020
 - VT WARN is co-chaired by DEC and Vermont Rural Water
- VT WARN owns two Emergency Response Trailers, two Ground Penetrating RADAR units for pipe locating, two portable correlators, and tilt-and-pan sewer line camera, and a valve and hydrant exerciser, plus safety gear, lights, generators, pumps, and portable tanks.
 - Trailers & equipment were funded by a grant from CDC
 - Trailers are outfitted with counterspace and cabinets to support mobile lab set-up (no water or wired electric)
- VT WARN facilitates muni-to-muni equipment borrowing
 - During recent emergencies, impacted communities have sought things like: pumps, tubing and parts, generators, street sweepers, dehumidifiers and KN-95 masks
- Standard template, provided by EPA, spells out reimbursement for costs, liability, worker's compensation, insurance, confidentiality, etc. to protect both parties.

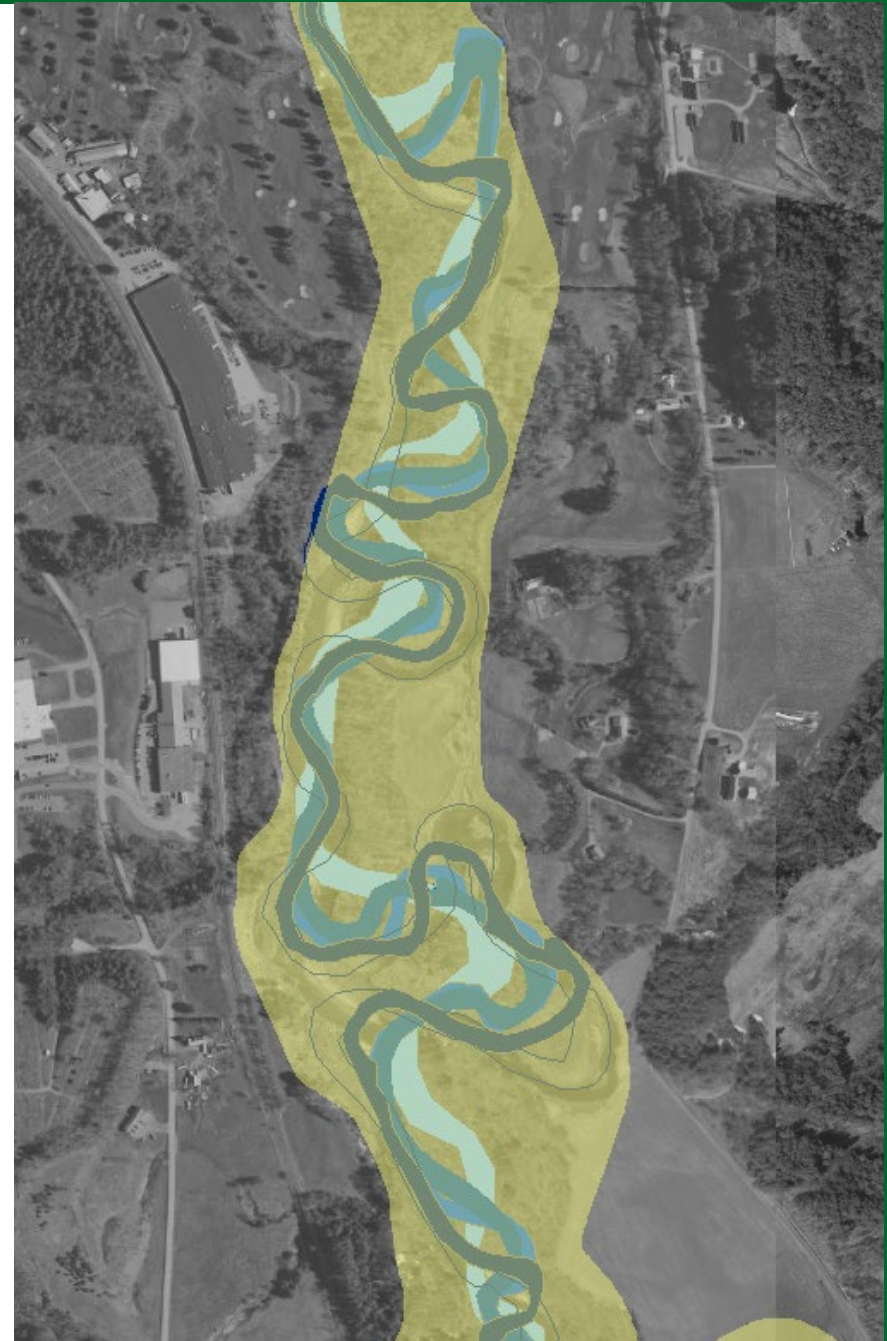
Key Tools/Approaches

- Aligning state programs, funding and incentives
 - Municipal Technical Assistance Program (MTAP)
 - Emergency Relief Assistance Fund (ERAF)
 - Flood Resilient Communities Fund (FRCF)
 - Climate Action Plan ↔ State Hazard Mitigation Plan
 - Climate Action Plan ↔ Comprehensive Energy Plan
- Mitigation, restoration and conservation
 - River corridor easements
 - Functioning floodplains
 - Wetland restoration
- Land use planning and regulation
 - Town road and bridge standards
 - Stream alteration general permit
 - River corridor model bylaw
- Evaluating vulnerabilities and establishing priorities
 - Municipal Vulnerability Index
 - Municipal Climate Toolkit



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- Land use planning and regulation
 - Town road and bridge standards; Municipal Roads General Permit
 - Stream alteration general permit
 - Statewide floodplain standards; river corridor regulation
- Evaluating vulnerabilities and establishing priorities
 - Municipal Vulnerability Index; Municipal Climate Toolkit
 - Dam regulation; Unsafe Dams Revolving Fund
 - Resilience Implementation Strategy



Municipal Technical Assistance Program (MTAP)

- MTAP utilizes one-time state general funds, and offers technical assistance through Vermont's Regional Planning Commissions and the Vermont League of Cities and Towns
- Even prior to the floods, Vermont's smallest municipalities have projects that need help to make progress
- If a town is ranked in or above the 50th percentile of the Vermont Community Index or it is in the 25-50th percentile and was "significantly" impacted by the flooding, then it is preapproved to receive FREE assistance through MTAP – NO competitive application is necessary!
- What can MTAP support?
 - Funding application and permit assistance
 - Project management & implementation
 - Capacity-building activities
- What types of projects can MTAP assist with?
 - Water and sewer infrastructure
 - Housing
 - Community recovery, workforce development, and business support
 - Climate change mitigation and resilience
 - Community and economic development

Emergency Relief and Assistance Fund (ERAF)

- Provides State funding to match Federal Public Assistance after federally-declared disasters
- Eligible public costs are reimbursed by federal taxpayers at 75%
 - State of Vermont contributes an additional 7.5% toward the costs for all communities.
 - For communities that take specific steps to reduce flood damage the State will contribute more
 - Communities that adopt mitigation measures receive an additional 5% (total of 12.5%)
 - Participate in the NFIP
 - Adopt Town Road and Bridge Standards
 - Adopt annually a Local Emergency Management Plan
 - Have a FEMA-approved Local Hazard Mitigation Plan
 - Communities that also protect flood hazard areas or river corridors receive an additional 5% (total of 17.5%)

Emergency Relief and Assistance Fund (ERAF)

	7.5% ERAF Rate	12.5% ERAF Rate	17.5% ERAF Rate
Federal Share	\$750,000	\$750,000	\$750,000
State Share	\$75,000	\$125,000	\$175,000
Municipal Share	\$175,000	\$125,000	\$75,000
Total	\$1,000,000	\$1,000,000	\$1,000,000

Flood Resilient Communities Fund (FRCF)

- Established by the Legislature in 2022 with American Rescue Plan Act (ARPA) dollars
- Focused on (voluntary) buyouts of flood-vulnerable properties
 - Prioritizes projects with greatest economic need that mitigate repetitive loss and are ineligible for FEMA
- Eligibility Requirements:
 - Projects must reduce future flood risk and improve water quality
 - Increase floodplain storage to reduce flood flows
 - Allow room for future natural river channel changes in ways that don't threaten property
 - Re-establish floodplain and riparian vegetation and functions
 - Improve filtration of flood waters.
 - For public infrastructure projects, community must have a currently approved Local Hazard Mitigation Plan (LHMP).
- Applicants can apply for up to 100% of project costs.
- Example Projects: home buyouts, vacant lot purchases, restoring natural floodplain access to improve floodplain function, dam removal projects that have the benefit of reducing flood risk, natural infrastructure and nature-based solutions for flood storage or improved floodplain and river functions, green infrastructure, and low-impact development to manage stormwater and reduce future flooding.

Town Road & Bridge Standards

- Includes "...a suite of practical and cost-effective Best Management Practices (BMPs) for the construction, maintenance, and repair of all existing and future town highways in order to address pollution caused by transportation-related stormwater runoff."
 - Road crowning
 - Ditch shaping and stabilization
 - Culvert sizing for intermittent streams
 - The stream alteration general permit is THE code/standard for perennial stream crossing structures
- Municipalities that adopt codes and standards that meet or exceed State minimums:
 - Receive an additional 10% state funding in all roadway and structure grants
 - Following declared disaster, FEMA Public Assistance will support replacing destroyed structures with ones that meet current standards
 - Also necessary to qualify for additional ERAF cost share (7.5% → 12.5%)

Statewide Floodplain Standards

- During 2024 session, Legislature directed the Agency to establish a statewide Flood Hazard Area Standard Rule that any town participating in the NFIP would need to adopt the state-wide floodplain standards.
- Will allow State to provide direct technical assistance including developing guidance, templates, supporting documents, and training and education materials to the new state standard.
 - Responsive to capacity concerns being expressed by many small Vermont communities

River Corridor Regulation

- ANR has long made available model river corridor regulations for towns to voluntarily adopt
- Legislation adopted this past session requires ANR to adopt rules and stand-up a statewide river corridor permitting program, prohibiting development in a mapped river corridor without a permit from the Agency
 - Anticipated to effect 5,600 miles of riparian areas along of the larger rivers and streams around the state, or over 209,000 acres of land that includes part, or all, of an estimated 45,000 parcels
- Legislation requires rules be adopted by January 2027 and permit requirements go into effect January 2028
 - Unclear whether ANR can meet these mandates

Resilience Implementation Strategy

- Opportunity assessment
 - Inventory of current state activities that have a nexus to climate resilience
 - Intake Form (survey) for the Opportunity Assessment closed on July 10th; 97 separate activity entries from 15 different Agencies/Departments or instrumentalities of the State
 - “Activity” is defined broadly to mean and program, plan, tool, dataset, etc. that has a nexus to climate resilience. The survey included 30 questions that covered basic information about the activity, intended outcome related to climate resilience, budget and available funding for the activity
- Looks for gaps
 - Identify and prioritize gaps which can be filled through adjustments to the scale, scope, and capacity of State activities to better deliver climate resilience benefits to Vermonters.
 - Grouping activities in categories (i.e., helps to reduce vulnerability to climate change impacts, increase ability to anticipate climate change impacts, increase ability to withstand a climate change impact, facilitates short or long term recovery from a climate change impact, or facilitates the ability of flora and/or fauna to access new habitats).
- Prioritize needs
- Form funding strategy, in conjunction with State Treasurer

Next Steps

- Maximize FEMA funding
 - Secure match
 - Complement with FRCF
- Establish statewide floodplain standards and proceed with river corridor rulemaking
- Operationalize unsafe dam revolving fund
- Complete *Resilience Implementation Strategy*

