

Welcome!



INSTITUTE FOR
Sustainable
Communities

Resilient Vermont Project Solutions Summit

May 20-21, 2013

About ISC

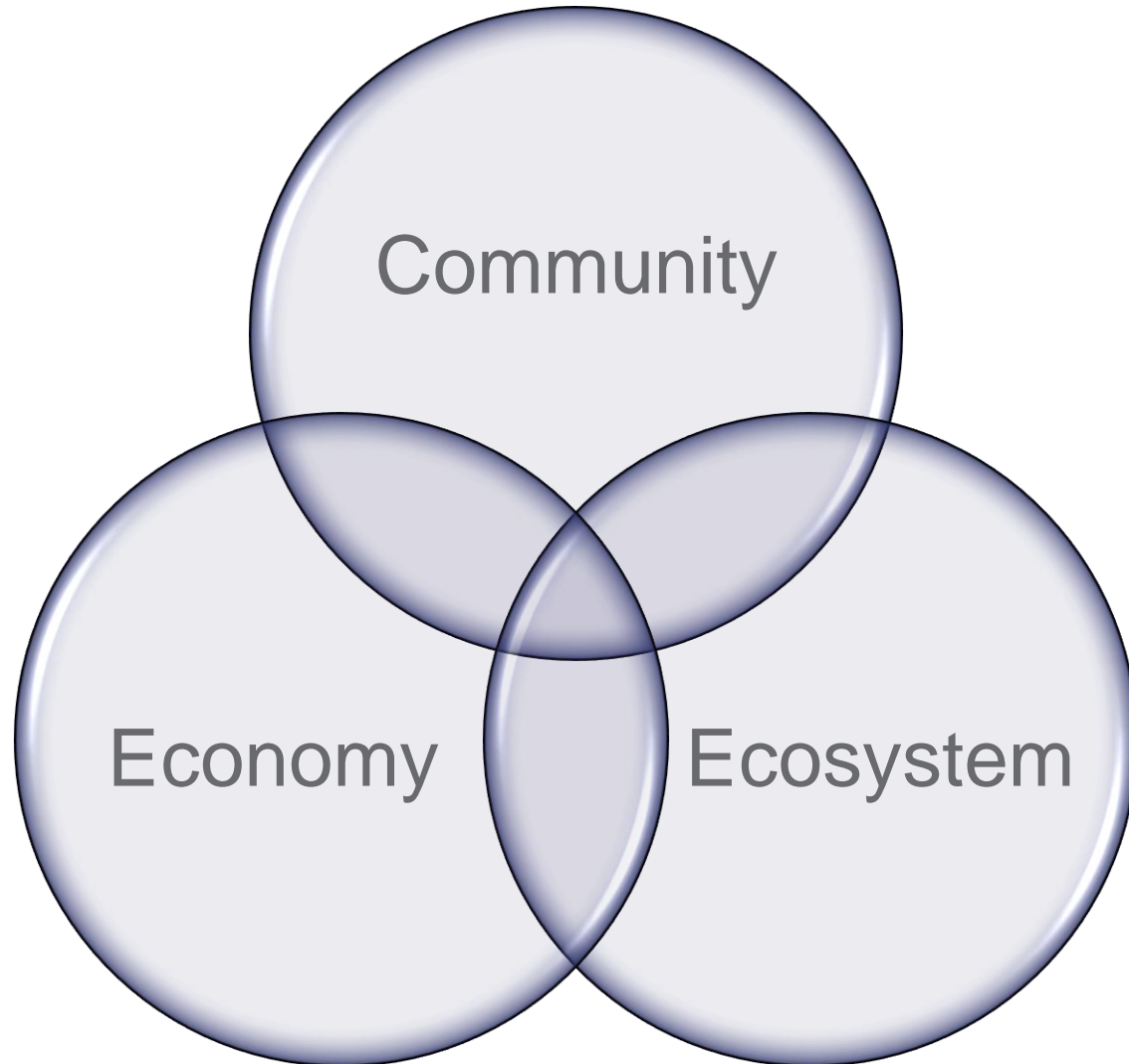


The Overarching Goal

**Accelerate transition from recovery to resilience;
Create a shared framework and roadmap**



An Integrated Approach to Resilience



How will we get there?

Process

Research and
Inventory

Strategy
Identification

Prioritizing and
Refinement

Detailed
Recommendations



Milestones

October
Convening

Working
Groups

May
Convening

Roadmap/
September
Convening

Since last we met...



Since last we met...

- Processed input from the first workshop...
- Crafted “shared definition”...
- Continued intensive work on inventory and gaps analysis...
- Convened three working groups to develop preliminary recommendations...
- Designed this second workshop...

What we'll accomplish today...

- Continue to develop our shared definition;
- Consider our vulnerabilities and our opportunities;
- Hear working groups report-out recommendations;
- Refine and prioritize the recommendations; and
- Identify work for tomorrow.

The “shared definition” (DRAFT)

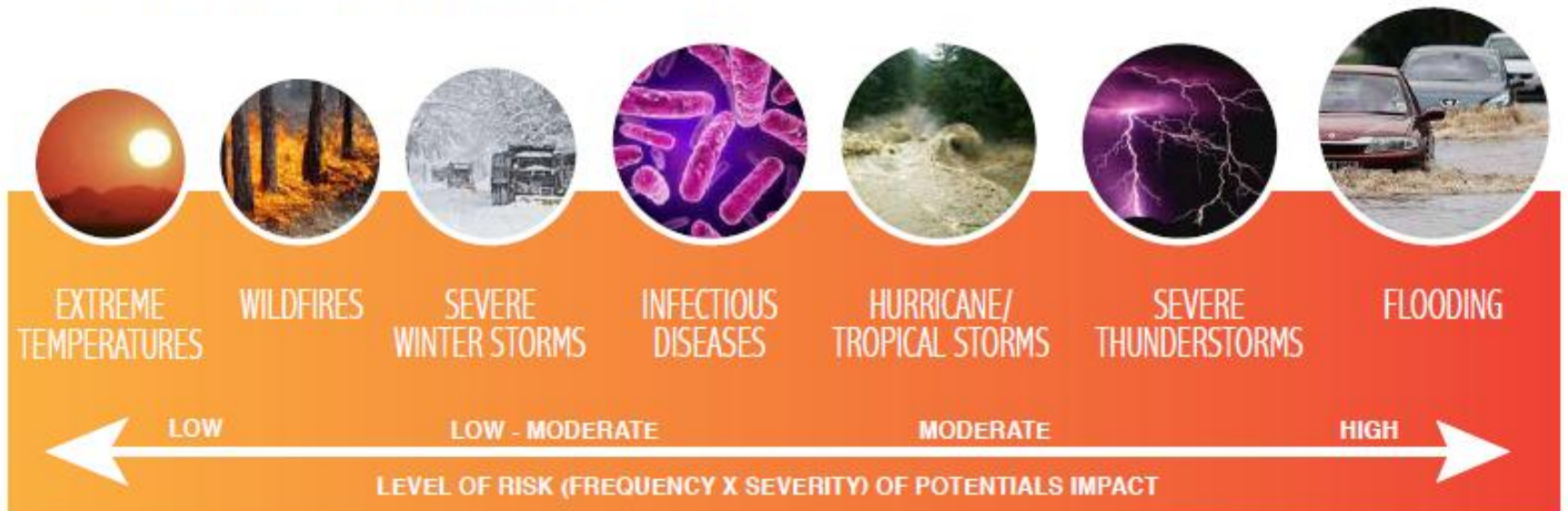
- **better prepared for** and able to more **effectively manage** and **bounce back** from natural disasters and climate-related shocks;
- Proactively **reduce Vermont’s carbon emissions** and contributions to climate disruption;
- Proactively **reduce vulnerabilities** and **improve response and recovery**;
- Recognize that resilience is not a final destination, but **an ongoing process**;
- Pursue resilience at **every level** and have a **shared sense of responsibility**; and
- **Collaboratively** advance resilience through collective action and effective use of resources.

A stylized graphic of a plant with long, pointed leaves, rendered in various shades of orange and light beige, positioned on the left side of the slide.

Taking Stock of Vermont's Resilience

Resilient to what?

CLIMATE HAZARDS FACING VERMONT



Potential Climate Impacts

- More frequent and intense precipitation
- Warmer temperatures
- Shorter winters
- Increased potential for drought and wildfires in summer
- Other “cascading impacts”

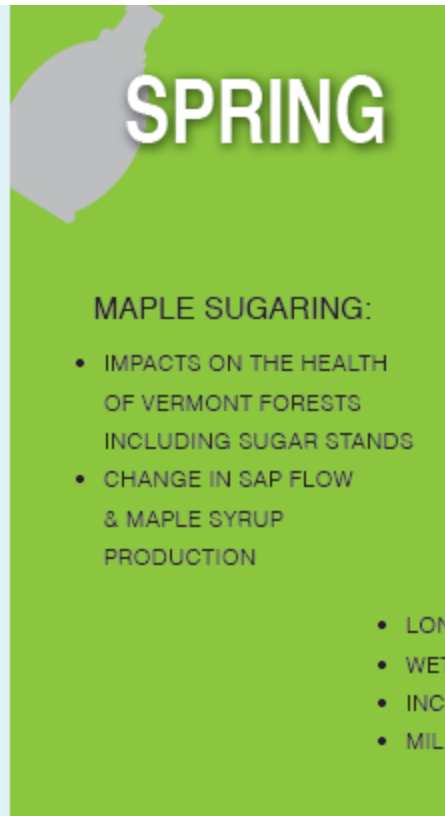
What will climate change mean for Vermont?



WINTER

WINTER TOURISM:

- SHORTER WINTER SEASON
- REDUCED SNOW COVER FOR WINTER SPORTS
- EARLIER THAW AFFECTS ICE FISHING & SKATING



SPRING

MAPLE SUGARING:

- IMPACTS ON THE HEALTH OF VERMONT FORESTS INCLUDING SUGAR STANDS
- CHANGE IN SAP FLOW & MAPLE SYRUP PRODUCTION



SUMMER

SUMMER TOURISM:

- LONGER, WARMER TOURISM SEASON
- REDUCE WATER QUALITY IN LAKES & PONDS

AGRICULTURE:

- LONGER, WARMER GROWING SEASON
- WETTER SPRING PLANTING SEASON
- INCREASED RIVER FLOODING IMPACT NEAR BY FARMS
- MILDER WINTERS ENABLE PESTS TO OVERWINTER



FALL

FALL FOLIAGE:

- IMPACTS ON THE HEALTH OF VERMONT FORESTS
- POTENTIAL CHANGE IN TIMING OF PEAK FOLIAGE

Advancing Resilience in Key Sectors

- Emergency Management
- Infrastructure
- Land Use
- Natural Resources
- Economy
- Social and Human Systems

Opportunities for Action

- **Five Key Areas:**
 - Collaboration and Governance
 - Policy and Planning
 - Investment and Capital Improvement
 - Education, Training and Technical Assistance
 - Data, Inventory and Analysis to Guide Decision- Making

Opportunities for Action (examples)

- Create a sustained river corridor mapping program;
- Better integrate hazard mitigation, land use and river corridor planning;
- Identify and implement appropriate adaptation practices to create more robust and resilient infrastructure systems;
- Establish a resilience coordination position within state government.

Building the Roadmap

Key Action Areas

Collaboration and Governance


Policy and Planning

Investment and Capital Improvement

Education, Training and Technical Assistance

Data, Inventory and Analysis to Guide Decision- Making

Building the Roadmap

	Levels 		
Key Action Areas	Local	Regional	State
Collaboration and Governance			
Policy and Planning			
Investment and Capital Improvement			
Education, Training and Technical Assistance			
Data, Inventory and Analysis to Guide Decision-Making			

Recommended strategies will be...

- Practical;
- Actionable;
- and will include critical information such as benefits, cost, potential partners, time to implement, and next steps.

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Emergency Management

Members of the Emergency Management Working Group:

Kate Ash, Irene Recovery Office

Erica Borneman, Department of Emergency Management and
Homeland Security

Zack Borst, Department of Emergency Management and Homeland
Security

Chris Company, Windham Regional Commission

Tracy Collier, Central Vermont Community Action Council

Bob Costantino, Agency of Human Services

Larry Crist, Red Cross

Ross Nagy, Department of Emergency Management and
Homeland Security

Ben Rose, Department of Emergency Management and Homeland
Security

Emergency Management

Emergency Management #1: Institutionalize a robust recovery function in the new Hazard and Recovery Section at the Vermont Department of Emergency Management and Homeland Security (formerly Vermont Emergency Management)

Emergency Management #2: Continue to support and institutionalize recovery and resilience at the local level.

Emergency Management #3: Prepare for potential reductions in federal funding support.

Emergency Management

Emergency Management #4: Create a resiliency coordination position/function within state government.

Emergency Management #5: The State of Vermont should lead by example and elevate the public discourse regarding emergency preparedness.

Emergency Management #6: Invest in increasing capacity for emergency management at the local level.

Emergency Management

Emergency Management #7: Create tools to support local communities in response and recovery phases.

Emergency Management #8: Develop and disseminate information about the climate impacts that we need to prepare for in accessible and user-friendly formats that can help to inform hazard mitigation plans and emergency preparedness efforts.

Resilient Landscapes and Communities

Members of the Resilient Landscapes and Communities Working Group:

Charlie Baker, Chittenden County Regional Planning Commission

Dan Baker, UVM Department of Community Development & Applied Economics
Diane Bothfeld, Agency of Agriculture

Ann Cousins, Preservation Trust of Vermont

Peter Gregory, Two Rivers-Ottawaquechee Regional Commission

Eric Howe, Lake Champlain Basin Program

Deb Markowitz, Agency of Natural Resources

Noelle Mackay, Department of Housing and Community Development

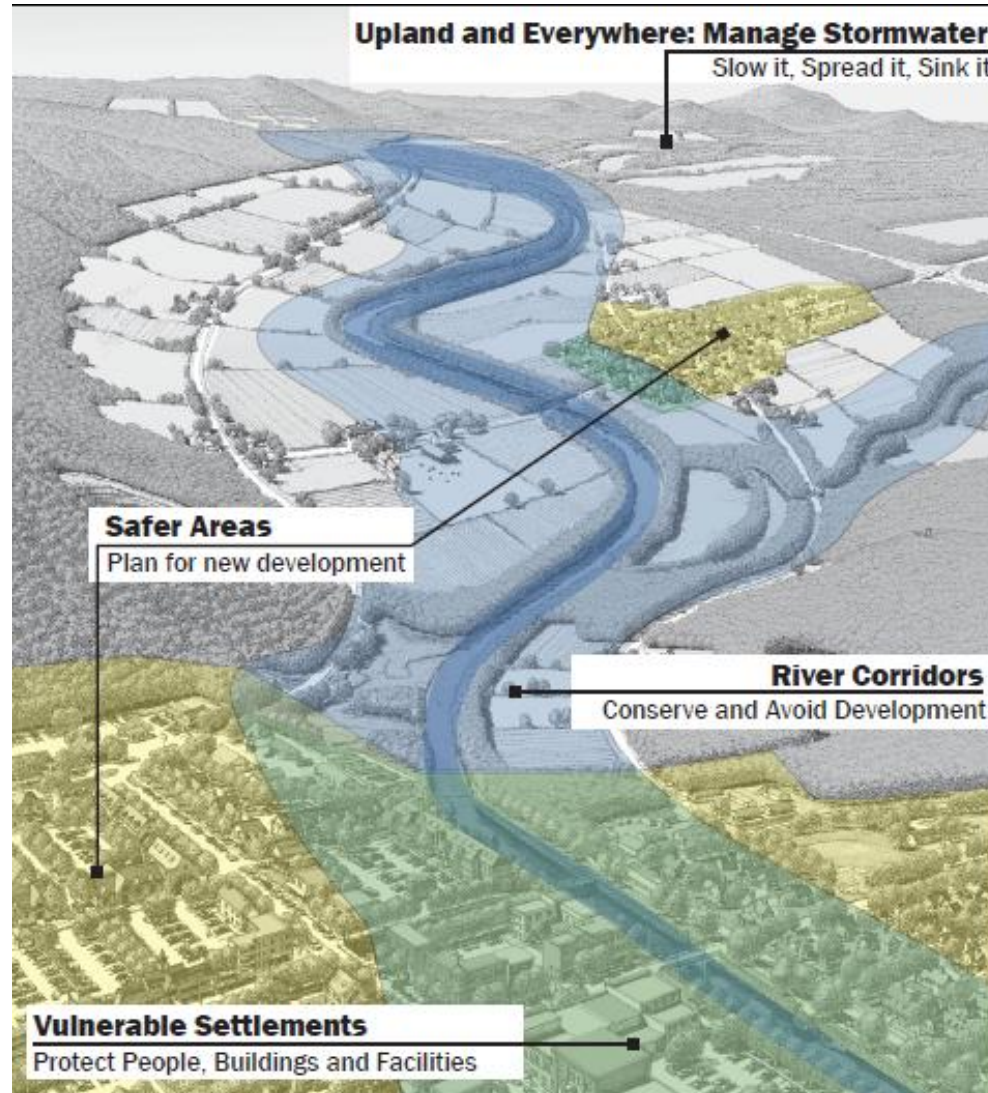
Sarah McKearnan, Agency of Natural Resources

Joe Segale, VT Agency of Transportation

Josh Schwartz, Mad River Valley Planning District

Keith Thompson, Chittenden County Forester

Resilient Landscapes and Communities



Resilient Landscapes and Communities

Land Use #1: Link municipal plans, regional plans, river management/corridor plans, stormwater master plans, and hazard mitigation plans so they are consistent, coordinated, integrated, and improve the efficiency and effectiveness of the planning process. This will allow for the identification of a multitude of risks and a coordinated approach to addressing them.

Land Use #2: Increase emergency planning and preparedness for vulnerable populations.

Resilient Landscapes and Communities

Land Use #3: (Regulatory) Adopt and implement consistent, flood resilient development standards that a) provide standards for appropriate development within existing villages, downtowns and compact settlements, and b) reduce or restrict development within river corridors outside of these areas.

Land Use #4: (Regulatory) Improve management of stormwater runoff.

Resilient Landscapes and Communities

Land Use #5: (Regulatory) Provide incentives and disincentives that direct Vermont-scale development toward the least flood-prone and stormwater-impacted areas.

Land Use #6: (Non-Regulatory) Work with private land owners to implement land use and management practices that will reduce flood impacts.

Land Use #7: Encourage and support relocation of vulnerable housing, especially mobile home parks.

Resilient Landscapes and Communities

Land Use #8: Establish funding mechanisms to support the purchase of hazard-prone properties and/or conserves land that contributes flood resilience benefits.

Land Use #9: Promote community/public acceptance of floodplain management, river management, and stormwater issues, principles and regulations.

Land Use #10: Expand and improve the technical assistance to municipalities.

Resilient Landscapes and Communities

Land Use #11: Develop and update accurate river corridor maps for the entire state that clearly indicate high hazard areas, integrate consideration of uplands into river corridor mapping, identify opportunities to reduce flood impacts, and provide guidance to prioritize investment in flood mitigation. Utilize maps to identify highest risk locations for detailed river corridor planning that will result in specific recommendations for buy-outs, land conservation, floodplain restoration, green infrastructure and other mitigation actions.

Land Use #12: Create consistency between state program and policies.

Infrastructure and the Built Environment

Members of the Infrastructure and the Built Environment Working Group:

Eric Blatt, Vermont Department of Environmental Conservation

Michele Boomhower, Chittenden County Regional Planning Commission

Mike Burke, Green Mountain Power

Gina Campoli, VT Agency of Transportation

Andrea Cohen, Vermont Businesses for Social Responsibility

Peg Elmer, Resilientcommunities.org

Shaun Fielder, Vermont Rural Water Association

David Grass, Vermont Department of Health

Karen Horn, Vermont League of Cities and Towns

Bill Jordan, Vermont Department of Public Service

Kelly Launder, Department of Public Service

Sarah McKearnan, Agency of Natural Resources

David Mears, Department of Environmental Conservation

Jim Sullivan, Bennington County Regional Commission

Infrastructure and the Built Environment

Infrastructure #1: Increase and enhance local, regional, and state pre-disaster mitigation planning to identify and fully document infrastructure damage and needed upgrades, relocations and recovery projects.

Infrastructure #2: Enhance growth center planning and adoption to include river corridor planning and mechanisms to ensure that economic development is supporting the implementation of mitigation strategies that would protect the center from flood and fluvial erosion.

Infrastructure and the Built Environment

Infrastructure #3: Establish and implement consistent standards for river management and river-related infrastructure to ensure that new or replacement structures (i.e., bridges and culverts) are more resilient in future floods.

Infrastructure #4: Create Resilient Right-of-Ways along state and local roads for co-location of power, telephone, broadband, culvert and road improvements.

Infrastructure and the Built Environment

Infrastructure #5: Incentivize resilience for projects applying to state grant or revolving loan funds through prioritization of infrastructure projects that increase system resilience. Conversely, disincentivize projects that do not demonstrate resilience to future hazards.

Infrastructure #6: Implement strategies to adapt the transportation system to flooding and other effects of climate change.

Infrastructure and the Built Environment

Infrastructure #7: Implement strategies to adapt water and wastewater infrastructure to flooding and other climate impacts.

Infrastructure #8: Explore the potential for decentralized energy, sewer and water infrastructure to provide system redundancies or otherwise support community/individual self-sufficiency.

Infrastructure and the Built Environment

Infrastructure #9: Create a funding mechanism for entities from various sectors to "credit share" for discharge standards.

Infrastructure #10: Establish an ANR-based incident Command System with a network of River Management Engineers, Scientists, and Restoration Specialists prepared and operationally supported to respond rapidly after a flood disaster and provide technical assistance in restoring infrastructure and managing debris.

Infrastructure and the Built Environment

Infrastructure #11: Create a mechanism by which state agencies can coordinate efforts related to resilience, including land use planning, natural resource management, and hazard mitigation planning.

Infrastructure #12: Provide education and training regarding river science and management to those who manage and maintain infrastructure systems.

Infrastructure and the Built Environment

Infrastructure #13: Provide additional training and technical assistance to municipalities to:

1. Identify projects and operational strategies for improving the resilience of water and wastewater systems and other critical infrastructure (e.g. by adding redundancy, or mitigating major hazards such as pipes lying in rivers)
2. Secure funding through existing federal grant and loan programs (and other sources) to implement those projects
3. Conduct return on investment analysis for infrastructure investments
4. Utilize Asset Management tools

Infrastructure and the Built Environment

Infrastructure #14: Develop community resilience organizations with members from: planning boards, conservation commissions, emergency and human service organizations. Conduct annual statewide trainings.

Infrastructure #15: Develop tools that will enable infrastructure managers to see value of investment vs. the mid- and long- terms costs if no improvements/changes are made.

Infrastructure and the Built Environment

Infrastructure #16: Support a sustained mapping program responsible for developing and maintaining river corridor maps.

Infrastructure #17: Improve the availability of climate projection data for the State of Vermont.