# Flood Resilience Checklist for Vermont Communities

Is your community prepared for flooding?

Use this checklist to identify opportunities to make flooding in your community less damaging and to prepare for recovery that is faster, stronger and less expensive.

The checklist was adapted from the <u>EPA Flood Resilience Checklist</u> prepared in Vermont through the Smart Growth Implementation Assistance Program.

#### Who should use this? When?

Use this checklist when you begin work on municipal plan updates, Hazard Mitigation Plans and other efforts to make the community more resilient. The Planning Commission can use this tool to assess current conditions and help set integrated priorities. Selectboards and local entities working on emergency response and hazard mitigation can use it to evaluate community readiness and to avoid preventable flood damages and costs.

# Why is it important?

Completing this checklist is the first step in assessing how well your community is positioned to avoid or reduce flood damage, reduce insurance rates and to protect people and property.

Municipalities also have an opportunity to increase the amount of relief funds available after flood damage by taking steps for the Emergency Relief and Assistance Fund (ERAF). See the chart on next page for an overview.

#### **Checklist Contents**

Find questions about how your municipality can address flood risks under the following topics:

- Municipal Plan (Page 3)
- Non-Regulatory Flood Resilience Strategies (Page 7)
- Regulatory Flood Resilience Strategies (Page 9)
- Emergency Preparedness and Hazard Mitigation Strategies (Page 11)

Safer Areas
Plan for New Development

River Corridors
Conserve Land and Discourage Development

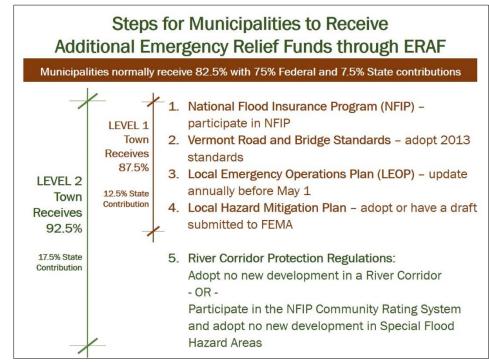
Vulnerable Settlements
Protect People, Buildings and Facilities

The checklist focuses on four key strategies to improve flood resilience, in addition to helping municipalities prepare the flood resilience sections of their municipal plans and hazard mitigation plans.

Please submit the electronic checklist after completing it by clicking the Submit Form button in the top right corner of the PDF screen. Your checklist responses will help state agencies better provide assistance to municipalities.

# Where do we start? Five easy steps!

- 1. Learn about Flood Resilience Review EPA's *Planning for Flood Recovery and Long-Term Resilience in Vermont*, with background on the strategies for River Corridors, Vulnerable Settlements, Safer Areas and Whole Watersheds. (See image on page 1 above.)
- **2. Learn where your community stands** Get Community data, information and maps at Flood Ready Vermont: <a href="www.floodready.vt.gov">www.floodready.vt.gov</a> by taking these steps:
  - a. Generate an Expanded Community Report.
  - b. Review the flood resilience steps your community has already taken to qualify for more state support through ERAF. Update the information where appropriate and identify next steps.
  - c. Review how many vulnerable buildings and critical facilities your community has in the Special Flood Hazard Areas. What percentage of those buildings in the high risk zone have flood insurance? (Use this checklist and recommended resources to consider what steps the municipality can take to make these buildings safer and less costly to insure.)
  - d. Identify River Corridor and Flood Hazard Areas at <a href="mailto:tinyurl.com/floodreadyatlas.">tinyurl.com/floodreadyatlas.</a>
- 3. Find short, simple explanations and helpful tools for municipalities from the Vermont Economic Resilience Initiative.
- 4. Learn what actions your community can take to reduce flood costs and damage by completing this Flood Resilience Checklist and submitting it electronically.
- 5. Review the items you selected for 'considering future action.' **Pick two** or three of those actions to pursue over the next year. Contact your Regional Planning Commission if you need help.



#### Planning for Flood Resilience

# Municipal Plan Role:

- Provides the big picture
- Frames the problems
- Points to opportunities

### **Hazard Mitigation Plan Role:**

- Identifies specific flood hazards
- Identifies tasks to reduce hazards as well as funding sources

Most Vermont municipalities prepare both a municipal plan and a hazard mitigation plan. Coordinating your plans and policies helps you prepare for faster, stronger and less expensive recovery after a flood.

Municipality:	Prepared by:	Date	e Prepared:				
Municipal Officers Involved from: ☐ planning commission ☐ selectboard ☐ emergency management ☐ other							
MUNICIPAL PLAN							
Flood Resilience Checklist Questions	YES:	If NO, Select Status	s: Notes:				
Use your municipal plan to identify actions that can help reduce the high costs of flood damage. You can also improve access to a variety of state grants and other benefits by addressing flood resilience along with other required elements in your municipal plan and having the plan approved by your Regional Planning Commission (RPC). The following steps prepare you to address the flood resilience requirements of state statute – 24 V.S.A. §4382(a)(12) and §4302(c)(14).							
1. Does your community have a municipal plan with a flood resilience element that has been approved by the RPC? Contact your RPC if NO.	Adoption date:	☐ in process ☐ considering future ac ☐ no action anticipated					
2. If your community <u>does not</u> have a plan with a flood resilience element taken the following actions or plans to do so (these are statutory requirement)		lopt one, indicate if you	or municipality has				
A. Identify Rivers Corridors as available on the <u>Flood Ready Atlas</u> and Special Flood Hazard Areas as posted on the <u>FEMA Map Service Center</u> together with any other available data.	☐ Yes	☐ in process☐ considering future ac☐ no action anticipated					
B. Designate areas to be protected to reduce the risk of flood damage to infrast	tructure and vulne	erable properties in:					
i. Floodplains?	□ Yes	☐ in process ☐ considering future ac ☐ no action anticipated					
ii. River corridors?	□ Yes	☐ in process ☐ considering future ac ☐ no action anticipated					
iii. Land adjacent to streams?	☐ Yes	☐ in process ☐ considering future ac ☐ no action anticipated					

Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
iv. Wetlands?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
v. Upland forests?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
C. Recommend policies and strategies to protect the following areas and to mit and municipal investments in the designated:	itigate risks to pub	olic safety, critical infrastructure,	historic structures,
i. Floodplains?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
ii. River corridors?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
iii. Land adjacent to streams?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
iv. Wetlands?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
v. Upland forests?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
D. Encourage flood resilient communities per statewide goal in 24 V.S.A. §43	02(c)(14), address	ing the following:	
<ul> <li>Avoiding new development in identified flood hazard and river corridor protection areas and if new development is to be built in such areas, avoiding increasing flooding and fluvial erosion.</li> </ul>	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
ii. Protecting and restoring floodplains and upland forested areas that reduce and moderate flooding and fluvial erosion.	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	

Flood Resili	ence Checklist Questions	YES:	If NO, Select Status:	Notes:
iii. Encouraging flood en	mergency preparedness and response planning.	□ Yes	<ul><li>☐ in process</li><li>☐ considering future action</li><li>☐ no action anticipated</li></ul>	
	esilience components, does, or will, the Municipy of these items are included in the Local Haz			
A. Is the Local Hazard Mitiga Plan?	ation Plan (LHMP) referenced in the Municipal	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
B. Are the important recommon specifically into the Municipal Control of the Municipal Control o	nendations from the LHMP incorporated cipal Plan?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
Emergency Management 1	ection of the Municipal Plan informed by the Director, first responders, road floodplain manager and others impacted by	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
	w your municipality will improve or maintain its e post-disaster funding through the Emergency d (ERAF)?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
E. Does the plan prioritize ac	ctions to reduce current flood risk?	☐ Yes	<ul><li>☐ in process</li><li>☐ considering future action</li><li>☐ no action anticipated</li></ul>	
and Municipal Plan) align	entified flood resilience actions (from the LHMP with other important municipal priorities such as alization and improving public facilities?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
G. Have responsibilities, fund actions?	ding and timeframes been identified for the	☐ Yes	<ul><li>☐ in process</li><li>☐ considering future action</li><li>☐ no action anticipated</li></ul>	
roads, culverts, bridges an	vements to critical facilities, public buildings, d municipal green infrastructure identified and tation or utilities and facilities chapters in the	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	

Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
I. If your municipality has many homes, businesses and public facilities in vulnerable locations, has the community identified safer locations for new development in the municipal plan?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
i. If so, is it planned to be walkable and conforming with smart growth principles? See definition in 24 V.S.A. 24 V.S.A. § 2791 (13)?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
J. Does the plan promote coordination with other communities in the watershed?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	

Municipality:		Prepared by:		Date Prepared:	
Мι	ınicipal Officers Involved from: ☐ planning commission ☐ selectboard ☐ emerge	ncy management	other		
N	ON-REGULATORY FLOOD RESILIENCE STRATEGIES				
	Flood Resilience Checklist Questions	YES:	If NO, Select St	atus:	Notes:
1.	<b>RIVER CORRIDOR PROTECTION</b> – Has the municipality worked on acquiring flood hazard and flood storage areas in conjunction with other community priorities such as open space, greenway, recreation or park space?	☐ Yes	☐ in process☐ considering futu☐ no action anticip		
2.	Has the municipality worked to secure river corridor, flood plain and channel management easements on agricultural lands to reduce flooding in other locations?	☐ Yes	☐ in process☐ considering futu☐ no action anticip		
3.	Are the state river corridor maps for your municipality adequate for determining what areas need protection and restoration?	☐ Yes	☐ in process☐ considering futu☐ no action anticip		
	A. If not is the municipality pursuing more detailed river corridor information? (See Tools for Protecting Floodplains and River Corridors.)	☐ Yes	☐ in process☐ considering futu☐ no action anticip		
4.	<b>VULNERABLE SETTLEMENTS</b> – Does the municipality provide property owners with information on how to reduce flood damage before a flood? (Outreach may include mailing, posting, on its website as or a handout with permit applications, etc.) Information may include elevating heating, ventilation, and air conditioning (HVAC) systems, elevating utilities and propane tanks, converting basements to flood-vented flood storage, and other floodproofing measures. (See <u>Tools for Weathering the Storm.</u> )	□ Yes	☐ in process ☐ considering futu ☐ no action anticip		
5.	In areas subject to flooding has the community encouraged neighborhood cooperation in preventing damage and lowering flood insurance rates by such actions as jointly hiring a surveyor to secure Elevation Certificates to inform mitigation actions?	☐ Yes	☐ in process☐ considering futu☐ no action anticip		
6.	<b>SAFER LOCATIONS FOR DEVELOPMENT</b> – If your municipality has identified locations in safer places for new development, does the capital budget and program support development in preferred, safer growth areas through investment in water, wastewater treatment facilities, sidewalks and roads, etc.?	☐ Yes	☐ in process ☐ considering futu ☐ no action anticip		

	Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
7	. WATERSHED-WIDE STORMWATER MANAGEMENT – Has your municipality participated in basin planning to develop a watershed-wide approach to stormwater management, flood risk reduction and channel equilibrium?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
8	Are flood-adaptive improvements to critical facilities, public buildings, roads, culverts, bridges and municipal green infrastructure identified and prioritized in the community's capital improvement plans and budget?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	

М	unicipality:	Prepared by:		Date Prepar	ed:		
М	Municipal Officers Involved from: ☐ planning commission☐ selectboard ☐ emergency management ☐ other						
RI	REGULATORY FLOOD RESILIENCE STRATEGIES						
	Flood Resilience Checklist Questions	YES:	If NO, Select St	atus:	Notes:		
1.	RIVER CORRIDOR AND FLOODPLAIN PROTECTION – Has your municipality adopted land use regulations to prevent new encroachments in river corridors? (ERAF Level 2 Option)	Adoption date:	☐ in process ☐ considering futur ☐ no action anticip				
	A. If your municipality has flood hazard regulations, have they been updated since 2007 in keeping with <u>state models</u> ?	Adoption date:	☐ in process ☐ considering futur ☐ no action anticip				
	B. Do municipal regulations protect wetlands, riparian vegetation and buffers?	Yes	☐ in process☐ considering futur☐ no action anticip☐				
2.	<b>VULNERABLE SETTLEMENTS</b> – Do municipal regulations address ways damage by requiring:	s to make structur	es in flood hazard area	as less vulne	rable to flood		
	A. Buildings to be elevated with Lowest Floor Elevations at least two feet above the Base Flood Elevation? (Flood damage and the cost of flood insurance can be reduced by elevating buildings higher than required above the base flood. See <a href="https://www.floodsmart.gov">www.floodsmart.gov</a> .)	☐ Yes	☐ in process ☐ considering futur ☐ no action anticip				
	B. Use of the best available flood data? (Some communities have more recent studies from USGS, USACE or NRCS.)	□ Yes	☐ in process ☐ considering futur ☐ no action anticip				
	C. If and where new development is necessary, require it to have no adverse impact on other vulnerable structures?	□ Yes	☐ in process ☐ considering futur ☐ no action anticip				
	D. Waiver of setbacks and height restrictions where possible to encourage the safe elevation and/or relocation of existing buildings exposed to flood damage?	☐ Yes	☐ in process☐ considering futur☐ no action anticip☐				
	E. Clear guidelines and allowing for the mitigation of flood risk to historic buildings to both reduce the risk of damage and maintain their contributions to community historic values?	□ Yes	☐ in process ☐ considering futur ☐ no action anticip				

	Flood Resilience Checklist Questions	YES:	If NO, Select Status: Notes:
3.	Has the municipality created a post-flood process to assess for Substantial Damage and to expedite minor repairs where possible? (For background, see <u>Floodproofing Tools</u> .)	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated
4.	<b>SAFER LOCATIONS FOR DEVELOPMENT</b> – Have the land use regulations been evaluated to ensure that development in safer areas meet the community's needs for desired uses?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated
	A. Also evaluate if these regulations promote the type of development envisioned by the community and avoid overly restrictive off-street parking requirements, building height and density, front-yard setbacks and other such requirements?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated
<b>5. WATERSHED-WIDE STORMWATER MANAGEMENT</b> – Do land use regulations minimize the amount of stormwater running off the property by:			
	A. Requiring use of Low Impact Development principles and Green Infrastructure practices to avoid or reduce current problems with stormwater?	□ Yes	<ul> <li>□ in process</li> <li>□ considering future action</li> <li>□ no action anticipated</li> </ul>
	B. Restricting development on steep slopes?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated
	C. Requiring street trees and reduce removal of existing tress trees in new developments?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated
	D. Requiring protection of forest cover on steep or elevated lands or in compromised and flashy watersheds? (See <u>Green Infrastructure Tools</u> .)	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated

Municipality:	Prepared by:	Date Pre	epared:
Municipal Officers Involved from: $\Box$ planning commission $\Box$ selectboard $\Box$ eme	ergency management	other	
EMERGENCY PREPAREDNESS AND HAZARD MITIGATION STRATE	EGIES		
Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
Towns and cities can use additional tools to reduce local damage and costs in the <u>for Municipalities</u> .	next disaster and im	prove access to funding. See	Preparation Matters
1. <b>HAZARD MITIGATION PLAN</b> - Does your community have a current Local Hazard Mitigation Plan (LHMP) that has been approved by FEMA? If NO, please contact your <u>Regional Planning Commission</u> .	FEMA approval date:	☐ in process ☐ considering future action ☐ no action anticipated	1
Does, or will, the LHMP:			
A. Identify critical facilities and infrastructure that are located in vulnerable areas and should be protected, repaired, or relocated (e.g., town facilities, bridges, roads, and wastewater facilities)?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	1
B. Emphasize non-structural pre-disaster flood-damage mitigation measures such as protecting river corridors?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	1
i. Adopt No Adverse Impact standards in floodplains (not allow any development that creates a greater hazard for others)?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	1
C. Prioritize actions to reduce the risk to public safety, secure critical public services and avoid damage to community assets?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	1
D. Identify top LHMP flood mitigation projects?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	1
i. Assemble the necessary information to apply for FEMA Hazard Mitigation Assistance?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	1

	Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
2.	<b>MATCH FUNDS</b> – Has the municipality created a local fund that can be used to match FEMA Hazard Mitigation Grants or other similar assistance that requires a local match?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
3.	EMERGENCY PLAN - Does your community have a Local Emergency Operations Plan (LEOP)? (ERAF Level 1). If NO, please contact your Regional Planning Commission.	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
Is	there a flood specific annex to the LEOP that does or will:			
	A. Specifically address a flood emergency including identifying methods for managing communications, evacuations, safe transportation, safe shelter, damage assessment, debris management, hazardous waste management, volunteer management and scammer control?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
	B. If your municipality or school system has critical facilities or structures exposed to flood damage – does the community have a continuity of operations plan addressing staff safety, municipal services, preservation of records and so on?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
4.	ROAD AND BRIDGE STANDARDS - Has the Municipality adopted town road and bridge standards consistent with or exceeding those listed under the most current version of <i>Town Road &amp; Bridge Standards, Handbook for Local Officials</i> , published by the Vermont Agency of Transportation? (ERAF Level 1)	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
5.	<b>COMMUNITY RATING SYSTEM</b> - Does the Municipality maintain an active rate classification (class #1 through 9) under FEMA's <u>Community Rating System (CRS)</u> that includes activities that prohibit new structures in mapped flood hazard zones? (Participating in the CRS can reduce flood insurance rates and is an (ERAF Level 2 Option) and may be appropriate for communities with a high percentage of existing structures in the flood hazard area.)	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
6.	COMMUNITY FLOOD READINESS - Do one or more of your community	plans:		
	A. Prepare for the character of future flooding by using best available federal or state studies, the effect of development trends in the watershed, and the impact of shifting climate on precipitation patterns?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	

Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
B. Identify opportunities and priorities for river corridor and floodplain restoration and related projects in a <u>river corridor plan</u> or in a <u>tactical basin plan</u> for future funding opportunities?	□ Yes	<ul><li>☐ in process</li><li>☐ considering future action</li><li>☐ no action anticipated</li></ul>	
C. Encourage groups in the community that are exposed to flood damage such as local businesses, schools, medical services, farmers, to obtain flood insurance, prepare emergency operations plans and continuity of operations plans or take advantage of other emergency planning resources? (See <u>Tools for Weathering the Storm</u> )	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	