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 EPA Flood Resilience Checklist 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

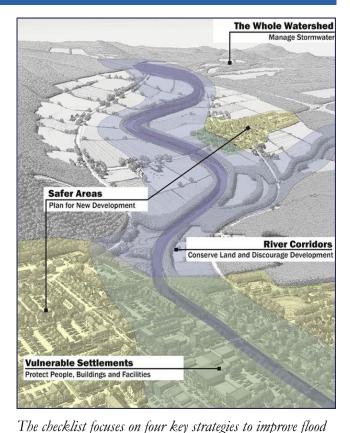
Find questions about how your municipality can address flood risks under the following topics:

- 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)

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

resilience, in addition to helping municipalities prepare the

flood resilience sections of their municipal plans and hazard



Vermont Department of Housing and Community Development – January 2016

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: www.floodready.vt.gov 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 tinyurl.com/floodreadyatlas.
- 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 submit it electronically. (Data submitted will be compiled annually and used by state agencies to determine how best to assist municipalities.)



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.

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.

Municipality:	lity: RPC: Prepared by:		Date Prepared:			
Municipal Officers Involved from: ☐ planning commiss.	ion □ selectboard □ e	emergency	y management	□ other		
MUNICIPAL PLAN						
Flood Resilience Checklist Que	estions		YES:	If NO, Select Sta	atus:	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 we element that has been approved by the RPC? C		a	Adoption late:	☐ in process ☐ considering future ☐ no action anticipa		
2. If your community <u>does not</u> have a plan with taken the following actions or plans to do so (the state of the following actions or plans to do so (the state of the state o				opt one, indicate if	your mun	icipality has
A. Identify Rivers Corridors as available on the Flood Hazard Areas as posted on the FEMA N with any other available data.			□ Yes	☐ in process ☐ considering future ☐ no action anticipa		
B. Designate areas to be protected to reduce the ri	sk of flood damage to	infrastruc	ture and vulner	rable properties in:		
i. Floodplains?			□ Yes	☐ in process ☐ considering future ☐ no action anticipa		
ii. River corridors?			□ Yes	☐ in process ☐ considering future ☐ no action anticipa		
iii. Land adjacent to streams?			□ Yes	☐ in process ☐ considering future ☐ no action anticipa		

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 and municipal investments in the designated:	to mitigate 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	1. §4302(c)(14), address	ing the following:	
 Avoiding new development in identified flood hazard and river corridor protection areas and if new development is to be built i such areas, avoiding increasing flooding and fluvial erosion. 	n	☐ in process ☐ considering future action ☐ no action anticipated	
ii. Protecting and restoring floodplains and upland forested areas the reduce and moderate flooding and fluvial erosion.	hat	☐ in process ☐ considering future action ☐ no action anticipated	

Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
iii. Encouraging flood emergency preparedness and response planning.	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
3. Beyond the required flood resilience components, does, or will, the Munici such as the following? (If any of these items are included in the Local Haza indicate that in the notes column.)			
A. Is the Local Hazard Mitigation Plan (LHMP) referenced in the Municipal Plan?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
B. Are the important recommendations from the LHMP incorporated specifically into the Municipal Plan?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
C. Was the flood resilience section of the Municipal Plan informed by the Emergency Management Director, first responders, road superintendent/foreman, floodplain manager and others impacted by flooding?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
D. Does the plan identify how your municipality will improve or maintain its actions to qualify for more post-disaster funding through the Emergency Relief and Assistance Fund (ERAF)?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
E. Does the plan prioritize actions to reduce current flood risk?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
F. Do your municipality's identified flood resilience actions (from the LHMP and Municipal Plan) align with other important municipal priorities such as road projects, village revitalization and improving public facilities?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
G. Have responsibilities, funding and timeframes been identified for the actions?	☐ Yes	☐ in process ☐ considering future action ☐ no action anticipated	
H. Are flood-adaptive improvements to critical facilities, public buildings, roads, culverts, bridges and municipal green infrastructure identified and prioritized in the transportation or utilities and facilities chapters in the plan?	□ 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	

Μι	Municipality: RPC: Prepared by:		Date Prepa	ared:				
Мι	unicipal Officers Involved from: planning commission	on □ selectboard □ e	mergen	icy management	other			
N	ON-REGULATORY FLOOD RESILIENCE STRA	ATEGIES						
	Flood Resilience Checklist Ques	stions		YES:	If NO, Select S	tatus:	Notes:	
1.	RIVER CORRIDOR PROTECTION – Has the acquiring flood hazard and flood storage areas in concommunity priorities such as open space, greenway,	njunction with other		☐ Yes	☐ in process ☐ considering futu ☐ no action anticip			
2.	Has the municipality worked to secure river corridor management easements on agricultural lands to redu locations?		nel	□ Yes	☐ in process ☐ considering futu ☐ no action anticip			
3.	Are the state river corridor maps for your municipals determining what areas need protection and restorat			☐ Yes	☐ in process ☐ considering futu ☐ no action anticip			
	A. If not is the municipality pursuing more detailed (See <u>Tools for Protecting Floodplains and River</u>		ation?	☐ Yes	☐ in process ☐ considering futu ☐ no action anticip			
4.	VULNERABLE SETTLEMENTS – Does the magnety owners with information on how to reduce flood? (Outreach may include mailing, posting, on it with permit applications, etc.) Information may include ventilation, and air conditioning (HVAC) systems, elepropane tanks, converting basements to flood-vente floodproofing measures. (See Tools for Weathering	e flood damage before s website as or a hando ade elevating heating, levating utilities and d flood storage, and or	out	□ Yes	☐ in process ☐ considering futu ☐ no action anticip			
5.	In areas subject to flooding has the community enco cooperation in preventing damage and lowering floo actions as jointly hiring a surveyor to secure Elevation mitigation actions?	od insurance rates by su	uch	□ Yes	☐ in process ☐ considering futu ☐ no action anticip			
6.	SAFER LOCATIONS FOR DEVELOPMENT identified locations in safer places for new development and program support development in preferred, safe investment in water, wastewater treatment facilities,	nent, does the capital ber growth areas through	oudget h	□ 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	

Mι	Municipality: RPC: Prepared by:		Date Prepa	red:			
Мι	unicipal Officers Involved from: \Box planning commission	on 🗆 selectboard 🗆 e	emergen	icy management	other		
RE	EGULATORY FLOOD RESILIENCE STRATEG	IES					
	Flood Resilience Checklist Que	stions		YES:	If NO, Select S	status:	Notes:
1.	RIVER CORRIDOR AND FLOODPLAIN PRomunicipality adopted land use regulations to prevent river corridors? (ERAF Level 2 Option)	-	,	Adoption date:	☐ in process ☐ considering futu ☐ no action antici		
	A. If your municipality has flood hazard regulations since 2007 in keeping with state models?	s, have they been upda	ated	Adoption date:	☐ in process ☐ considering futu ☐ no action antici		
	B. Do municipal regulations protect wetlands, ripar	rian vegetation and bu	ffers?	□ Yes	☐ in process ☐ considering futu ☐ no action antici		
2.	VULNERABLE SETTLEMENTS – Do municipal damage by requiring:	pal regulations address	s ways to	o make structure	es in flood hazard are	eas less vulno	erable to flood
	A. Buildings to be elevated with Lowest Floor Elevabove the Base Flood Elevation? (Flood damage insurance can be reduced by elevating buildings the base flood. See www.floodsmart.gov .)	e and the cost of flood	l	□ Yes	☐ in process ☐ considering futu ☐ no action antici		
	B. Use of the best available flood data? (Some comstudies from USGS, USACE or NRCS.)	munities have more re	ecent	□ Yes	☐ in process ☐ considering futu ☐ no action antici		
	C. If and where new development is necessary, requimpact on other vulnerable structures?	uire it to have no adve	erse	□ Yes	☐ in process ☐ considering futu ☐ no action antici		
	D. Waiver of setbacks and height restrictions where safe elevation and/or relocation of existing build damage?			□ Yes	☐ in process ☐ considering futu ☐ no action antici		
	E. Clear guidelines and allowing for the mitigation buildings to both reduce the risk of damage and contributions to community historic values?		ic	☐ Yes	☐ in process ☐ considering futu ☐ no action antici		

	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.	SAFER LOCATIONS FOR DEVELOPMENT – 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
5.	WATERSHED-WIDE STORMWATER MANAGEMENT – Do land use reproperty by:	egulations minin	nize the amount of stormwater running off the
	A. Requiring use of Low Impact Development principles and Green Infrastructure practices to avoid or reduce current problems with stormwater?	□ Yes	☐ in process ☐ considering future action ☐ no action anticipated
	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

unicipality: RPC: Prepared by:		Date Prepared	d:		
Municipal Officers Involved from: ☐ planning commission	on 🗆 selectboard 🗆 e	emergency management	other		
EMERGENCY PREPAREDNESS AND HAZARD	MITIGATION STR	RATEGIES			
Flood Resilience Checklist Ques	stions	YES:	If NO, Select St	atus:	Notes:
Towns and cities can use additional tools to reduce local for Municipalities.	damage and costs in	the next disaster and im	prove access to fundi	ng. See <u>Prepa</u>	ration Matters
1. HAZARD MITIGATION PLAN - Does your con Local Hazard Mitigation Plan (LHMP) that has been NO, please contact your <u>Regional Planning Commis</u>	approved by FEMA:		☐ in process☐ considering futur☐ no action anticip☐		
Does, or will, the LHMP:					
A. Identify critical facilities and infrastructure that a areas and should be protected, repaired, or reloc bridges, roads, and wastewater facilities)?			☐ in process☐ considering futur☐ no action anticip☐		
B. Emphasize non-structural pre-disaster flood-dan such as protecting river corridors?	nage mitigation measu	res	☐ in process☐ considering futur☐ no action anticip☐		
i. Adopt No Adverse Impact standards in flo development that creates a greater hazard		ny □ Yes	☐ in process☐ considering futur☐ no action anticip		
C. Prioritize actions to reduce the risk to public safe services and avoid damage to community assets?	•	olic	☐ in process☐ considering futur☐ no action anticip☐		
D. Identify top LHMP flood mitigation projects?		□ Yes	☐ in process☐ considering futur☐ no action anticip		
i. Assemble the necessary information to app Mitigation Assistance?	oly for FEMA Hazard	☐ Yes	☐ in process☐ considering futur☐ no action anticip☐		

	Flood Resilience Checklist Questions	YES:	If NO, Select Status:	Notes:
2.	MATCH FUNDS – 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? (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 & 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.	COMMUNITY RATING SYSTEM - 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	☐ in process☐ considering future action☐ no action anticipated	
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	