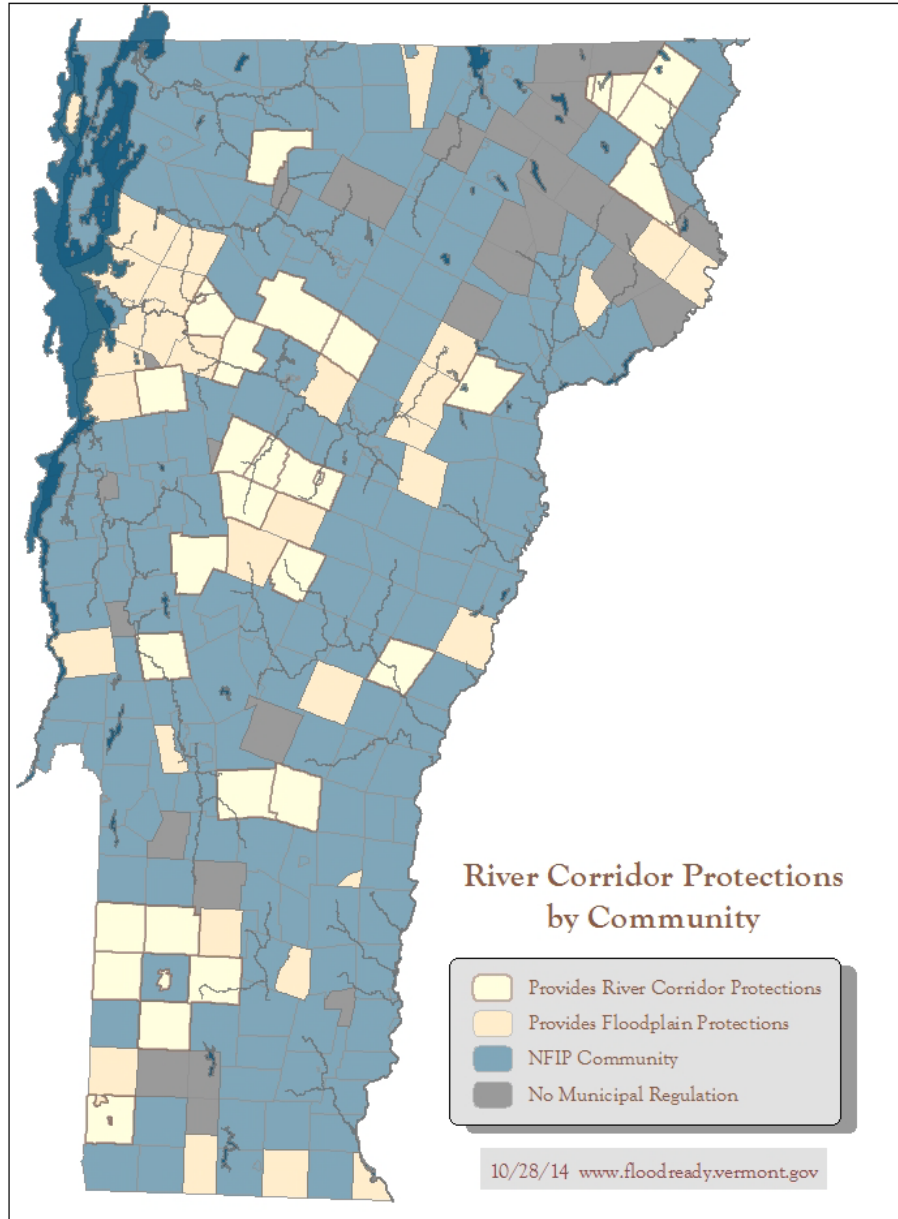


# River Corridor and Floodplain Management Program and Shoreland Protection Program

Biennial Report to the General Assembly Pursuant to Act 110

Vermont Department of Environmental Conservation  
January 2015



# **River Corridor and Floodplain Management Program and Shoreland Protection Program**

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#### **Introduction**

Acts 110 and 138 amended 10 V.S.A. § 1427 such that the Secretary of Natural Resources shall establish a river corridor and floodplain management program and a shoreland management program, effective February 1, 2011, to provide municipalities with maps of designated river corridors and develop recommended best management practices for the management of river corridors, shorelands and buffers. Beginning January 15, 2011 and biennially thereafter, the Agency of Natural Resources shall report to the House Committee on Fish, Wildlife and Water Resources and the Senate Committee on Natural Resources and Energy regarding the status of river corridor, shoreland, and buffer zoning within Vermont.

#### **River Corridor and Floodplain Protection**

##### **1. Final copy of memorandum of understanding (MOU) on implementation of exemption from municipal flood hazard regulation**

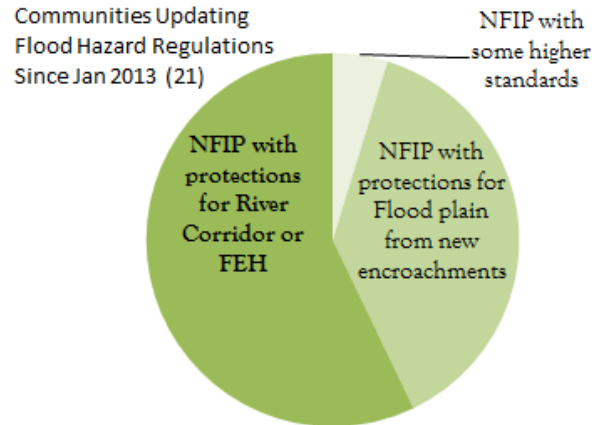
The [Flood Hazard Area and River Corridor Rule](#) was adopted on 10/24/2014, and becomes effective on March 1, 2015. The Rivers Program is currently drafting the general permit, and will follow with MOU development with the Agencies of Agriculture and Transportation prior to March 1, 2015.

##### **2. River Corridor and Floodplain Protection - Municipal Bylaw Adoption**

Many communities have taken action to protect river corridors and /or floodplains in recent years (Table 1, Figure 1). Since 2008, the number of communities enrolled in the National Flood Insurance Program (NFIP) has increased from 226 to 247 (9%). The effort to review and update flood hazard bylaws was required to meet deadlines for new FEMA Digital Flood Insurance Rate Maps (DFIRMs) that were updated in six counties. The DEC Rivers Program used the bylaw update process as an opportunity to educate municipalities on the benefits of adopting regulatory standards that exceed federal minimums. The impetus of the FEMA map update process that was driving municipal bylaw updates is coming to an end with Bennington County DFIRMs scheduled to go effective in 2015. FEMA has made no commitments to update maps for the remaining eight counties in Vermont.

Outside of the DFIRM adoption process, the recently amended [Emergency Relief and Assistance Fund \(ERAF\) Rule](#) created financial incentives to adopt river corridor and floodplain protection bylaws. In addition, a few communities have begun or completed a process of joining the NFIP in response to direct experience with flood events and related damage or to qualify at a higher ERAF reimbursement rate (Figure 2). In 2014, the Unified Towns and Gores of Essex County, comprised of 6 communities in the Northeast Kingdom, enrolled in the NFIP and adopted river corridor protection bylaws as a way to protect remaining floodplain functions and to minimize sophisticated administrative permitting processes. Other communities in the Northeast Kingdom and elsewhere in the state have undertaken updates to their municipal plans and/or zoning and have sought to incorporate current standards to prohibit new encroachment in river corridors and floodplains.

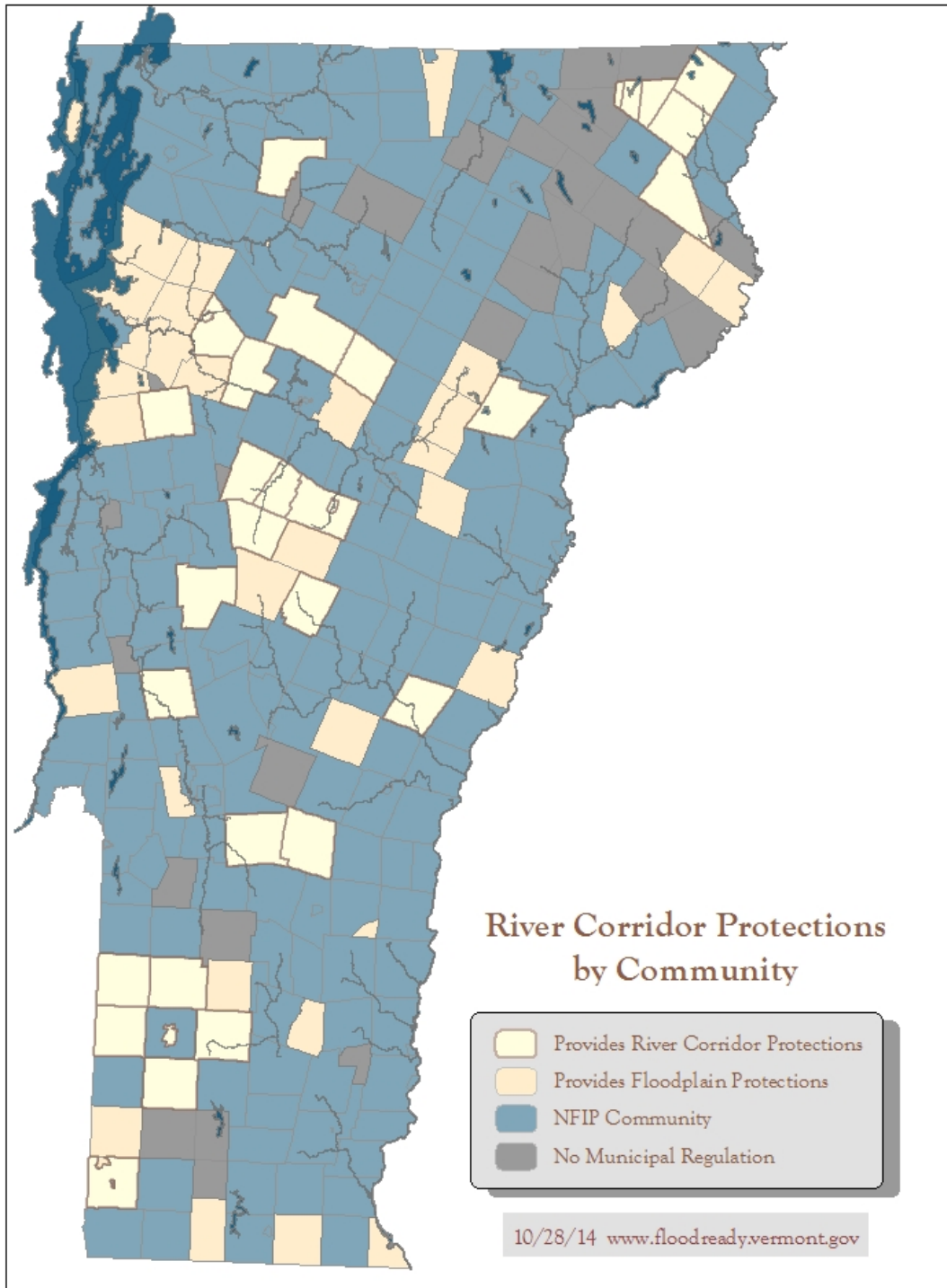
Of the 21 communities that have updated their flood hazard bylaws since the beginning of 2013 all have adopted higher standards, eight protect floodplains from new encroachments and twelve have acted to protect river corridors or fluvial erosion hazard areas.



**Table 1 Municipal River Corridor and Floodplain Protection Bylaws (12/8/14)**

<b>Municipality</b>	<b>SFHA Protection</b>	<b>River Corridor Protection</b>	<b>Municipality</b>	<b>SFHA Protection</b>	<b>River Corridor Protection</b>
Averill UTG	Yes	Yes	Northfield Village	Yes	Yes
Averys Gore UTG	Yes	Yes	Orange	Yes	
Bakersfield		Yes	Orwell	Yes	
Baltimore	Yes		Peacham	Yes	Yes
Barnard	Yes		Peru	Yes	
Bennington		Yes	Plainfield	Yes	
Bolton	Yes	Yes	Plymouth	Yes	Yes
Braintree	Yes	Yes	Readsboro	Yes	
Brandon	Yes	Yes	Richmond	Yes	
Cabot	Yes		Ripton	Yes	Yes
Cabot Village	Yes		Roxbury	Yes	
Charlotte	Yes		Rupert	Yes	Yes
Colchester	Yes		Sandgate	Yes	Yes
Dorset	Yes	Yes	Shaftsbury	Yes	
Essex	Yes		Sharon	Yes	Yes
Essex Junction Village	Yes		Shelburne	Yes	
Fayston	Yes	Yes	Shrewsbury	Yes	Yes
Ferdinand UTG	Yes	Yes	South Burlington	Yes	
Granby	Yes		Stowe		Yes
Granville	Yes		Sunderland		Yes
Guildhall	Yes		Thetford	Yes	
Halifax	Yes		Troy	Yes	
Hinesburg		Yes	Vernon	Yes	
Isle La Motte	Yes		Waitsfield	Yes	Yes
Jeffersonville Village	Yes		Warners Grant UTG	Yes	Yes
Jericho	Yes	Yes	Warren	Yes	Yes
Jericho Village	Yes	Yes	Warren Gore UTG	Yes	Yes
Kirby	Yes		West Rutland	Yes	
Lewis UTG	Yes	Yes	Westford	Yes	
Manchester Village	Yes	Yes	Williston	Yes	
Marshfield	Yes		Windham	Yes	
Middlesex	Yes		Winhall	Yes	Yes
Milton	Yes		Winooski	Yes	
North Bennington Village	Yes		Worcester	Yes	Yes
Northfield	Yes	Yes	Total Dec 2014	64	32
			New Since Jan 2013	9	9
			Increase of:	16%	39%

**Figure 1. Municipal Bylaws Protecting River Corridors**



### **3. Incentives for Municipalities to Adopt River Corridor and Shoreland Protection Bylaws**

Act 138 created a new *River Corridor Protection* section (10 V.S.A, § 1428) which directs the Secretary of Administration, after consultation with relevant state agencies, to create a Flood Resilient Communities Program and list the existing financial incentives under state law for which municipalities may apply for financial assistance, when funds are available, for municipal adoption and implementation of bylaws under 24 V.S.A. chapter 117 that protect river corridors and floodplains, shorelands, and buffers.

Obvious incentives that may motivate municipalities to adopt river corridor and flood hazard bylaws are flood hazard avoidance, public safety improvements, and abatement of water quality and habitat impacts. Minimizing water quality impacts, protecting aquatic habitat, and supporting recreation values should be motivating factors for shoreland and buffer protection. Continuing the Agency's outreach to municipalities is essential to raise awareness about the important proactive steps that can be taken at the local level to achieve these objectives.

Financial incentives to nudge municipalities to adopt river corridor and shoreland protection zoning bylaws include qualifying criteria in grants, pass-through funds, technical assistance, and educational support that encourage municipalities to adopt and implement bylaws that conserve and restore river stability, floodplains, wetland and riparian buffer function. Table 2 below summarizes the status of currently available incentives and an inventory of all grant and loan programs within the Agencies of Natural Resources, Transportation, Commerce & Community Development, and the Department of Public Safety for which consideration has been made to incorporate incentives for municipal adoption of river corridor and shoreland protection. Notes are provided which describe the steps necessary for implementation of the incentive.

Model municipal river corridor and floodplain protection bylaws have been developed. Newly adopted River Corridor Procedures describe the stream geomorphic assessment and mapping protocols that will be the basis for the development of municipal river corridors and river corridor protection area maps.

The fundamental standard to qualify for financial incentives is that the local bylaw must be designed to: (a) achieve and maintain stream equilibrium conditions; or, (b) ensure good shoreland management including maintenance of a buffer. Additional standards to qualify for incentives, such as the geographic extent of protection coverage required within a municipality, will be determined in a conference involving at least one representative of the local governing body, at least one representative of the municipal planning commission, and representatives of the DEC Rivers Program and Lakes Program. Criteria for consideration will include the history of flood and fluvial erosion damage, stream geomorphic condition, development pattern within the river corridor, lake characteristics, and shoreland development pattern.

**Table 2: Municipal Incentives for River Corridor, Floodplain and Shoreland Protection**

AGENCY	GRANT PROGRAM AS POTENTIAL INCENTIVE	Incentive to be Implemented as:			Require Change in:			COMMENT
		ELIGIBILITY CRITERIA	PRIORITY CRITERIA	ENHANCED STATE MATCH	STATUTE	RULE	PROCEDURE	
ANR	319							As of SFY 2015, no grant funding is available
	Watershed (License Plate)							Will be revisited with F&W commissioner in 2015
	Ecosystem Restoration		X				X	Integrated into SFY2015 grant guidance
	Water Supply Planning							Deemed not suitable by WS Division Director
	Water Supply Construction							Deemed not suitable by WS Division Director
	Clean Water State Revolving Fund				X	X		May be considered as part of future Municipal Pollution Control Priority System Rule amendments
	State Pollution Grant		X			X		Deemed not suitable
	Aquatic Nuisance		X				X	Integrated in SFY2015 grant guidance
DEMHS	Hazard Mitigation Assistance		X				X	FEMA grant program - integrated in to grant review process
	Pre-Disaster Mitigation		X				X	Same as above
	ERAF			X		X		New Rule passed 9/2012. In effect 10/2014

AGENCY	GRANT PROGRAM AS POTENTIAL INCENTIVE	Incentive to be Implemented as:			Require Change in:			COMMENT
		ELIGIBILITY CRITERIA	PRIORITY CRITERIA	ENHANCED STATE MATCH	STATUTE	RULE	PROCEDURE	
VTRANS	Town Highway Bridge (State Match)							Deemed not suitable by VTRANS
	Town Highway Structures							Deemed not suitable by VTRANS
	Town Highway Class 2 Roadway							Deemed not suitable by VTRANS
	Town Highway Emergency			X	X			Will need to propose statutory change
	Better Back Roads		X				X	To be integrated into future grant guidance; further discussions necessary with RC&D
	State Aid to Town Highways					X		Deemed not suitable by VTRANS
	Municipal Planning		X				X	Will establish a priority to support river corridor and buffer planning bylaws
	Enhancement Grants		X				X	Integrated into 2013-2015 grant guidance
ACCD	VT Community Development Program		X				X	Integrated into grant guidance for program



The **Emergency Relief and Assistance Fund (ERAF)** is the most significant incentive to encourage communities to become more flood resilient. In 2012 the ERAF rule was amended to encourage municipalities to take four or five flood damage mitigation actions. By doing the first four, the communities could increase their post-disaster support from the State of Vermont from 7.5% to 12.5%. By additionally acting to protect river corridors the communities would be eligible for a 17.5% rate.

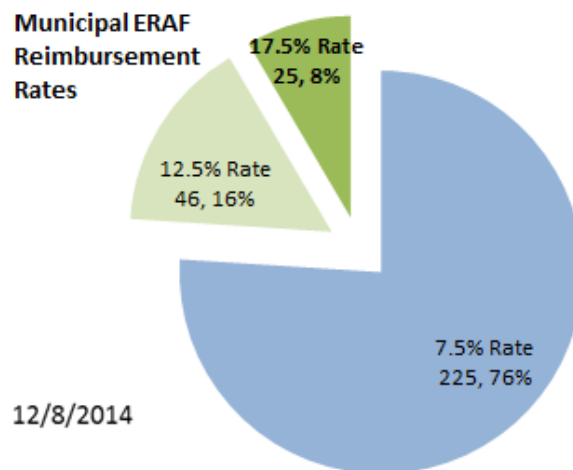
The amended ERAF rule went into effect in October 2014 and many communities have responded. Through January 2014 most communities were missing at least one of the four basic mitigation elements and all Vermont communities were qualified for a 7.5% reimbursement rate from ERAF to supplement federal Public Assistance disaster recovery funding. Since then many communities have acted to adopt 2013 Road and Bridge Standards, prepare a Local Emergency Operations Plan and take other actions as needed. As of early December 2014 nearly a quarter of communities qualified for higher reimbursement rates (Figure 2).

Communities Meeting Standard	ERAF Mitigation Actions
89%	1 NFIP Participation
78%	2 2013 Road And Bridge Standards
61%	3 Local Emergency Operations Plan
40%	4 Local Hazard Mitigation Plan
23%	5 River Corridor Protection

The primary responsibility for administrating the ERAF fund is delegated to the Public Assistance program at the Department of Homeland Security and Emergency Management (DEMHS). Over the past year an ERAF - awareness campaign has been led by Ben Rose, Recovery and Mitigation Section Chief in conjunction with staff from Regional Planning Commissions, VTrans, ANR and others.

One of the primary tools used for this effort has been the public “ERAF Tracking” efforts of ANR using a temporary ANR Flood Resilience Sharepoint site and then, in July 2014 launching Flood Ready Vermont [www.floodready.vermont.gov](http://www.floodready.vermont.gov) a professionally designed application of the State of Vermont template.

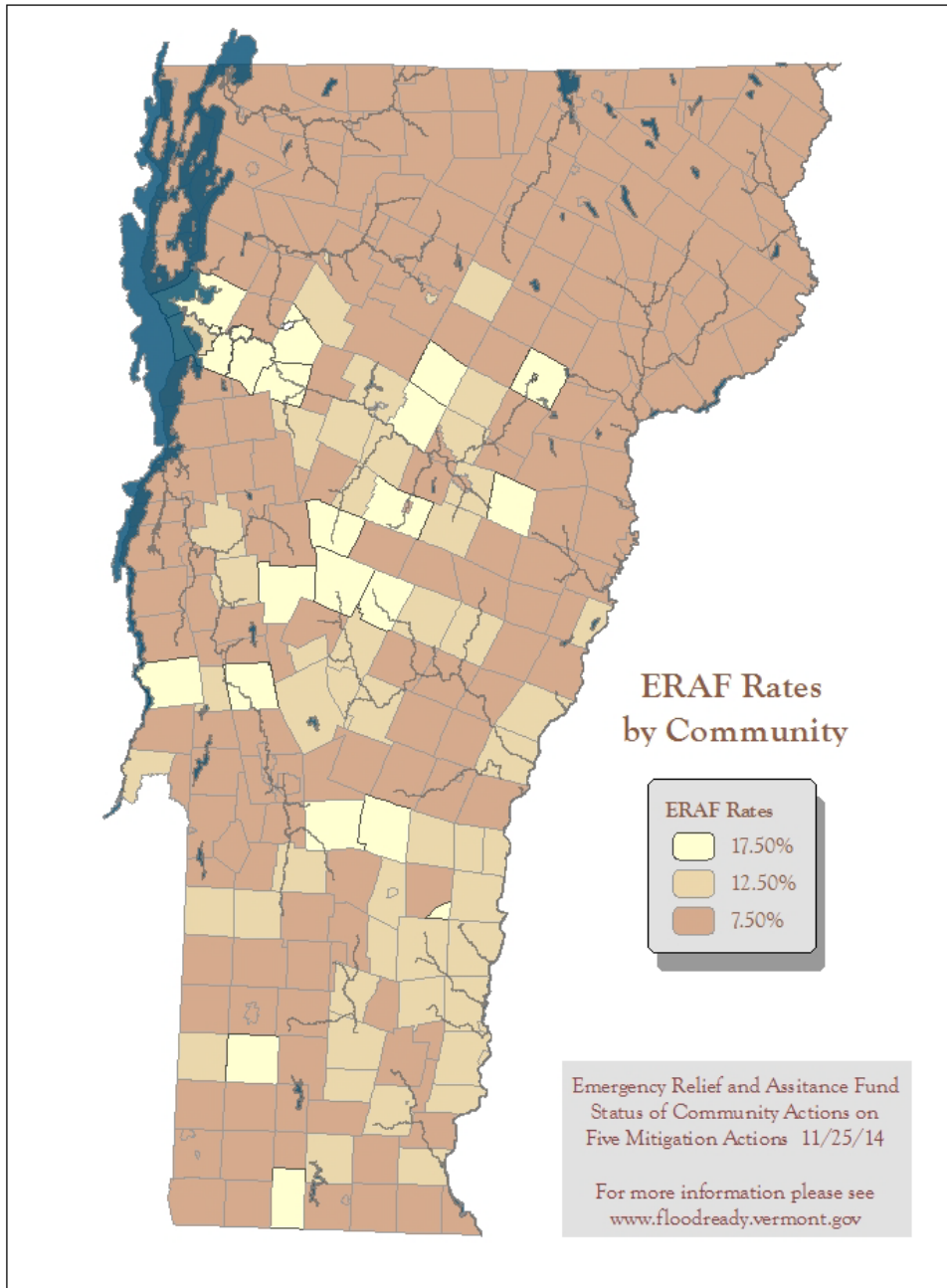
Flood Ready Vermont focuses on the needs of community leaders including select board members and planning commissioners as well as regional and professional planners. A [summary of current municipal actions for ERAF](#) can be found on the Community Reports page of the Flood Ready



Vermont website. The website also features breaking news, a listserv, information on funding sources, the Flood Ready Atlas, and information to support planning for flood resilience.

In addition to Flood Ready Vermont, the flood plain section of the Rivers Program has technical material posted online at: [http://watershedmanagement.vt.gov/rivers/htm/rv\\_floodhazard.htm](http://watershedmanagement.vt.gov/rivers/htm/rv_floodhazard.htm) to provide support to communities managing their river corridors and floodplains.

**Figure 2. ERAF Reimbursement Rates**



## **Lake Shoreland Protection**

### **1. Implementation of the Shoreland Protection Act**

The Vermont Shoreland Protection Act (Act 172), enacted by the Vermont legislature during the 2014 session, took effect on July 1, 2014. The Act provides the State with new regulatory authority over development activities along lake shorelands, specifically with regards to the creation of new cleared areas or impervious areas within 250 feet of the mean water level on all lakes, ponds and reservoirs with a surface area of greater than 10 acres. The Shoreland Protection Act sets forth standards for reasonable and responsible development of lakeshore parcels, for the protection of water quality, shoreland bank stability and shoreland and lakeshore habitat. The Act establishes the required use of best management practices to: (1) ensure that development will occur on a stable slope with minimal erosion, (2) manage, treat and control erosion due to stormwater runoff, and (3) provide erosion control, bank stability, and wildlife habitat.

The Lakes and Ponds Management and Protection Program continues to conduct education and outreach with shoreland property owners, town residents, municipalities, and regional partners on the requirements of the Act and shoreland best management practices, and continues to work with willing property owners on voluntary lakeshore improvement projects under the Lakewise program and through the Watershed Management Division's Ecosystem Restoration Program.

### **2. Municipal Delegation under the Shoreland Protection Act**

The Act requires that the Secretary of the Agency of Natural Resources designate this authority to any municipality that he/she determines has a functionally equivalent bylaw or ordinance to implement shoreland protection. For municipalities that do not request delegation under the Act, the Act will be administered by the Lakes & Ponds Management and Protection Program.

The Agency is not aware of any additional municipalities that have adopted or implemented a new bylaw or ordinance related to shoreland management since the first biennial report filed by the Agency back in January of 2011.

However, prior to the effective date of the Act, and through a working partnership with the Vermont League of Cities and Towns (VLCT) and regional partners, a model shoreland bylaw was developed by the VLCT, dated June 2011, that is available to municipalities that wish to pursue bylaw changes and/or delegation related to shoreland protection. A copy of the model shoreland bylaw can be found on the VLCT web page:  
<http://www.vlct.org/assets/Resource/Models/Model%20Shoreland%20Protection%20Bylaw.doc>.

The Agency will consider the bylaw to be "functionally equivalent" under the Act, should a municipality choose to seek delegation. Municipalities however are not limited to the contents of the model bylaw. As a financial incentive for municipal adoption and implementation of shoreland bylaws through delegation, a municipality would be able to collect fees identified in the Act to support the municipality.

Since the effective date of the Act, the Agency has designated the towns of Colchester and Greensboro. The Agency is also currently working with other municipalities that are requesting delegation or discussing delegation under the Act including the Town of Elmore, the City of Burlington, and the Town of Wilmington. Other municipalities have inquired generally in regards to review of existing shoreland bylaws.

### **3. Shoreland Protection Act Progress**

As required by the Shoreland Protection Act, on or before January 15, 2016, the Agency is expected to report on the progress of the Lake Shoreland Protection Program to the Senate Committee on Finance, the House Committee on Ways and Means, the Senate Committee on Natural Resources and Energy, and the House Committee on Fish, Wildlife and Water Resources. It is expected that this report will occur for the next legislative session which will be after 1 full year of implementation of the Act.

The Agency is not seeking changes at this time to improve the efficacy of the shoreland management program. The Agency continues to conduct education and outreach on the requirements of the Act and lake-friendly development, and continues to monitor the health of Vermont lakes to strengthen and communicate the science related to shoreland management through the Watershed Management Division's ongoing monitoring efforts, both conducted by Division staff and our volunteer partners.