



# Mitigating Flood-Related Fluvial Erosion Hazards (FEH) Using River Corridor Protection FACT SHEET

## Fluvial Erosion Hazards (FEH)

Fluvial (river-related) erosion hazards (FEH) refer to streambed and streambank erosion, often associated with catastrophic physical adjustment of stream channel dimensions (width and depth) and location that can occur during flooding.

## Damages from Flood-Related Fluvial Erosion

Flash flooding represents the most frequent type of natural disaster in Vermont, resulting in the greatest magnitude of property and infrastructure damage. While inundation-related flood loss is a significant component of flood disasters, the predominant mode of damage is fluvial erosion. The National Flood Insurance Program and its Flood Insurance Rate Maps *do not* consider FEH.

## Mapping FEH-based River Corridors

The Vermont Agency of Natural Resources (VANR) is working with towns to identify and map river corridors and implement protection strategies designed to mitigate FEH. A river corridor consists of the river and the adjacent land and is based on:

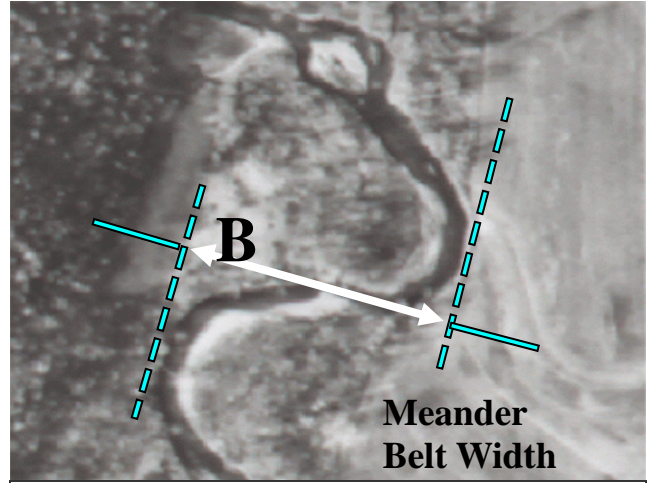
- The meander belt width*, defined as the lateral extent of stable meanders. The meander belt width is governed by valley landforms, geology, and the length and slope requirements of the river in its stable or “equilibrium” form;
- The sensitivity rating*, based on physical (geomorphic) assessment data of the river channel; and,
- a vegetated *riparian buffer* for ecological functions.

## Benefits of FEH-based River Corridors Maps

A river corridor map shows the area a river needs to accommodate equilibrium conditions, specifically the meanders (stream length) and slope requirements of a stable stream channel. It also shows the land most vulnerable to erosion from flooding. Preventing further encroachment into the river corridor will minimize fluvial erosion hazards and property loss from flooding, enhance public safety, maximize channel stability, and maintain or improve water quality and habitat function.

## For More Information

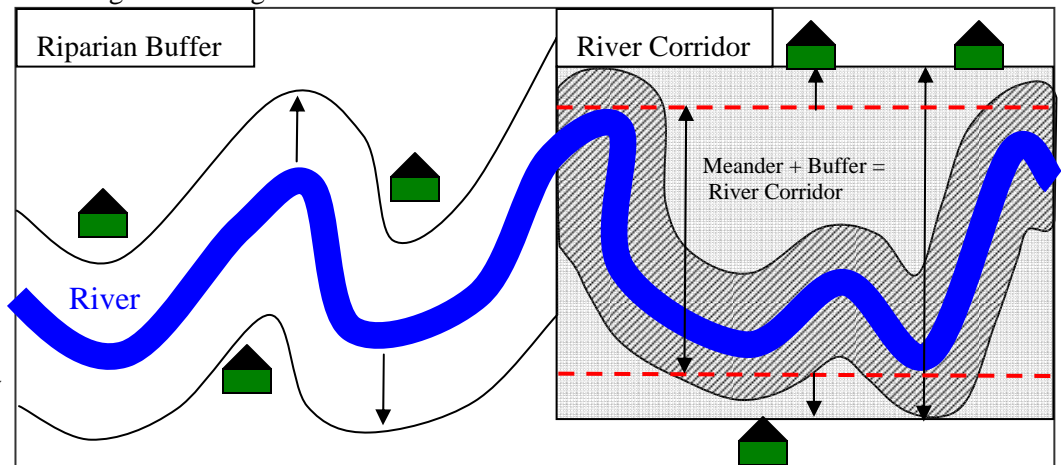
Contact the VANR River Management Program to get a copy of the Municipal Guide to Fluvial Erosion Hazard Mitigation, including a Model FEH Area Overlay District Ordinance:  
Phone: (802)241-3770  
Website: <http://www.vtwaterquality.org/rivers.htm>



Meander Belt Width ( $B_w$ ) defined by the lateral extent of meanders when the channel's slope is in equilibrium with its sediment transport requirements.



Catastrophic erosion during the 1990 flood, Great Brook, Plainfield, VT



Comparing the vulnerability of property to catastrophic erosion from flooding. Properties respecting the river corridor (on the right) are more protected. Source: Adapted from Ohio DNR.