

Fluvial erosion is erosion caused by rivers and streams. Fluvial erosion can range from incremental bank erosion and retreat to catastrophic losses of river bank and major changes in river channel location and dimension during flood events.



The typical response to fluvial erosion-related flood losses has been dredging, armoring, berming, and straightening of the river.



A more sustainable strategy is *Avoidance* of the risks posed by fluvial erosion by limiting **new** development in the river corridor.

Fluvial Erosion Hazard Overlay District and River Corridor Management Plan = strategies for limiting new development in the river corridor.

River Corridor Planning in the South River Watershed

Flooding and Fluvial Erosion Hazards

Ashfield and Conway were settled along the South River to take advantage of the river as a source of food, water, transportation, and perhaps most importantly, as a source of power. For these settlers, the benefits of living and working along the river far exceeded the risk of damage to homes and businesses from floods. In fact, the early residents of the towns straightened and channelized and moved the South River to suit their needs.

Fast forward to the present and flood damages to roads and bridges, bank erosion and degraded habitat are the legacy of historic manipulations of the river, current land use and efforts to repair flood damage. Much of the flood damage occurs because the South River is disconnected from its floodplain or the river is still responding to historic and contemporary changes in the watershed. The river's response is often expressed as *fluvial erosion*.

The common response to flood damage has been to try and manage the river by dredging, armoring the banks, constructing berms, and straightening the river channel. This approach, while well intentioned, is not sustainable and has led instead to an escalating cycle of increasing flood damages and costly repairs.

Strategies for Minimizing Fluvial Erosion Hazards

Floods are inevitable so what is a sustainable, cost-effective river management option to reduce flood losses for Conway and Ashfield?

Avoidance: limiting **new** development in the river corridor. This approach allows room for the river to change its flow, width and depth over time, which reduces flood damages to structures, fluvial erosion losses and habitat degradation. Strategies for protecting existing homes, roads and other infrastructure will continue to include bank armoring and river restoration projects. Preserving the floodplain functions and limiting new development in the river corridor will help to protect existing at risk structures, too.

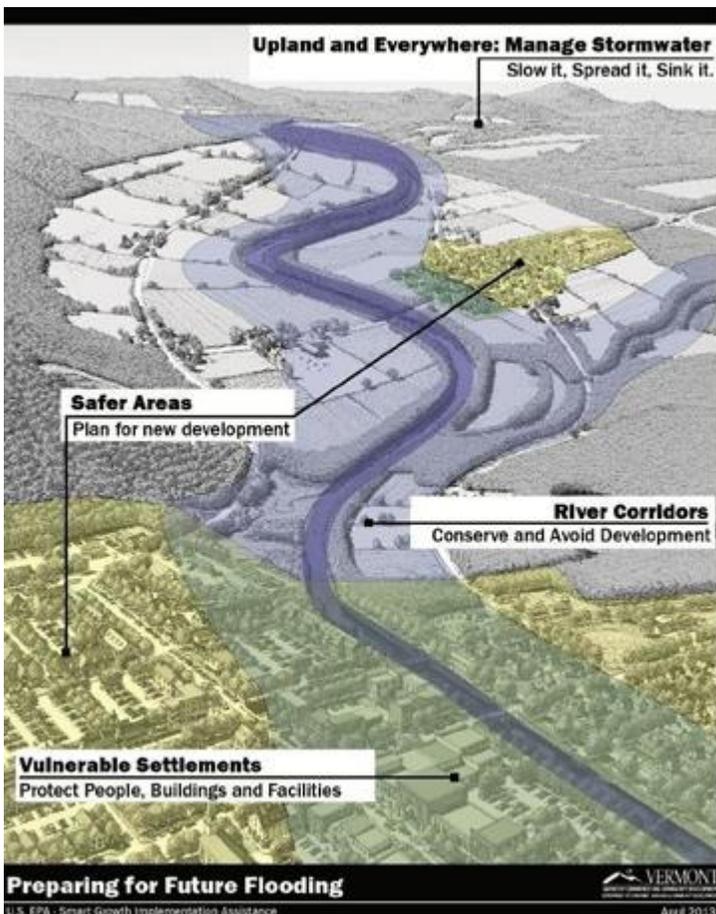
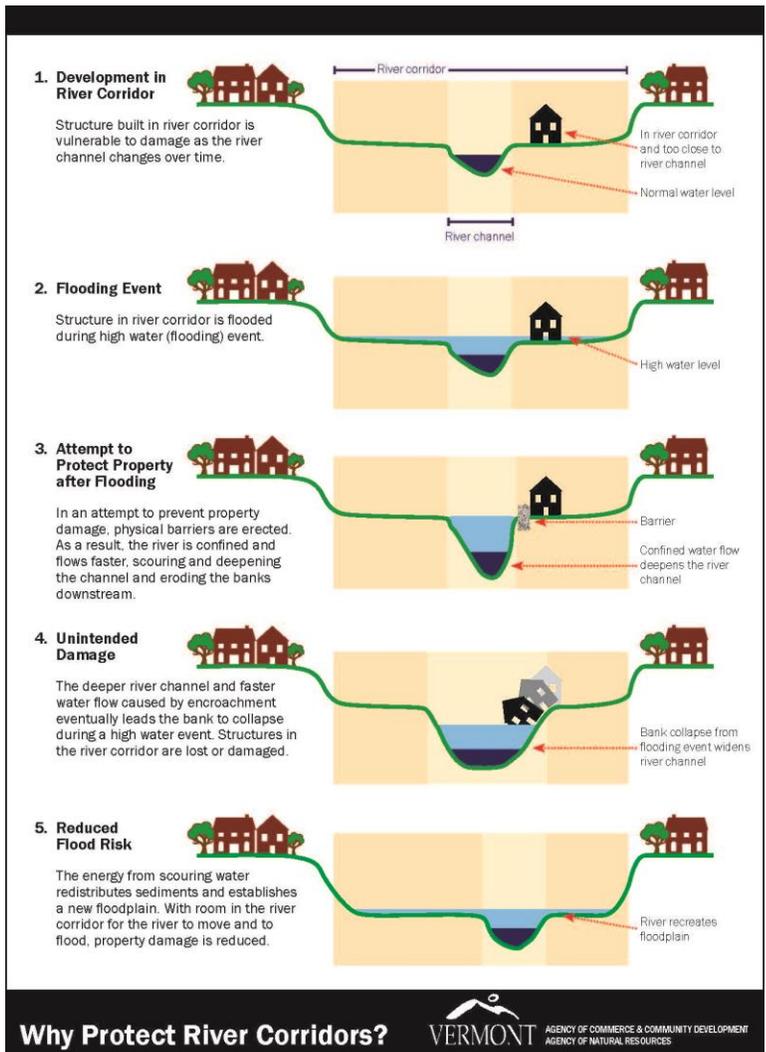
What does the river corridor look like?

A river corridor includes the river, its banks and the land close to the river that carries flood waters and accommodates the meander pattern or movement of the river.

This project focuses on two avoidance strategies for the river corridor: a **Fluvial Erosion Hazard (FEH) Overlay Zoning District** and a **River Corridor Management Plan**.

The degree of protection provided by a FEH overlay district depends upon the needs of the individual town, but could include limits on new structures, prohibition of certain land use activities, or limits on the amount of vegetation that can be removed for new development. Over time, this option will do the best job of minimizing human/river conflicts and limiting losses caused by fluvial erosion.

The River Corridor Management Plan would include recommendations for protecting existing undeveloped floodplain lands, which spread, slow and store flood waters, and undeveloped land along the river, which provides room for lateral adjustments of the river over time.



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