

Inland Wetland Permitting and Response to Storm Damage

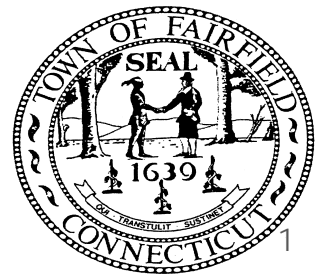


CT Association of Flood Managers Conference
Wednesday October 24 ,2018

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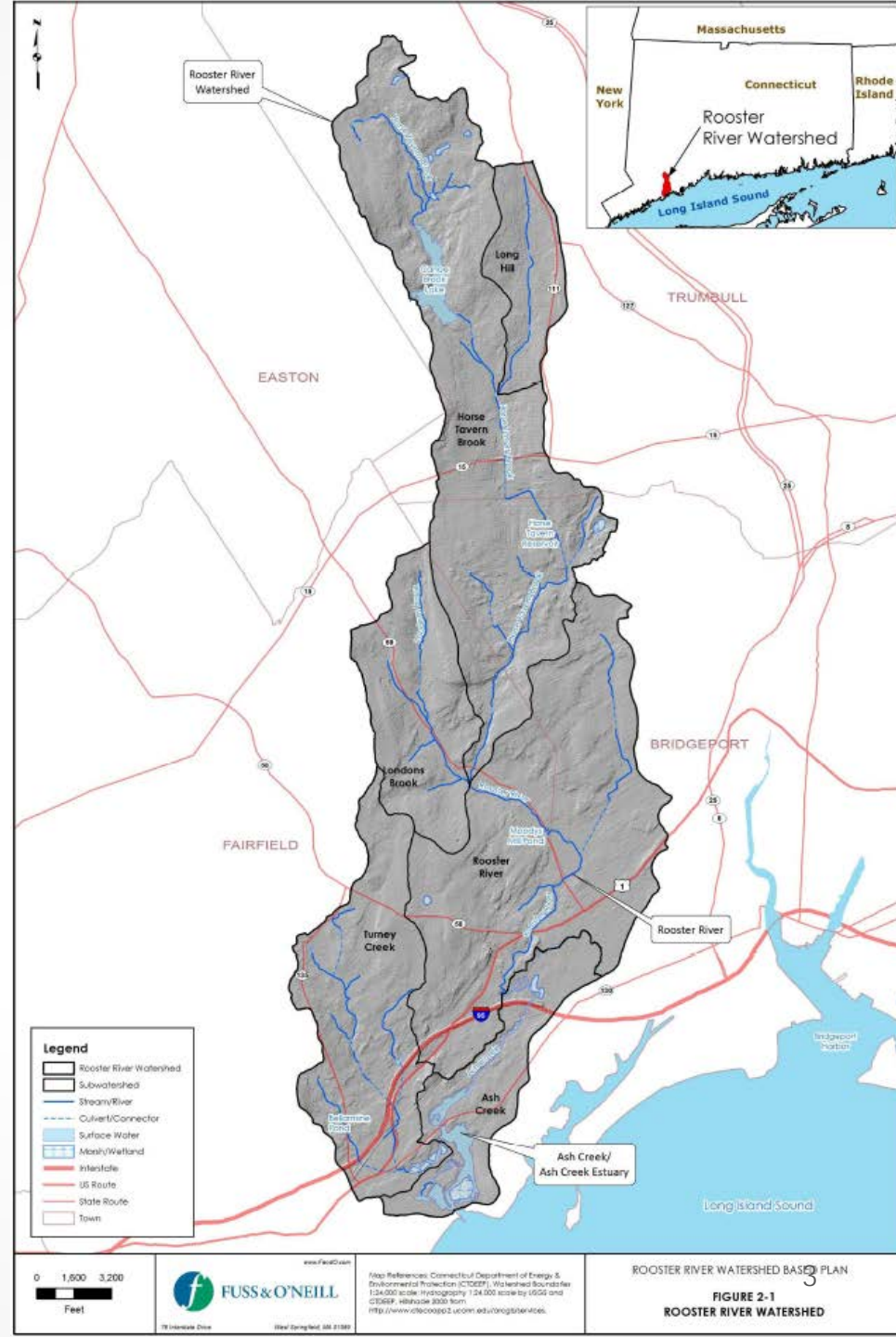


TOWN OF FAIRFIELD CONSERVATION DEPARTMENT

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- **WHAT DO WE DO?**
 - **Inland Wetland Permitting**
 - **Shellfish Program**
 - **Open Space Management**
 - **Tidal Wetland Restoration Program**

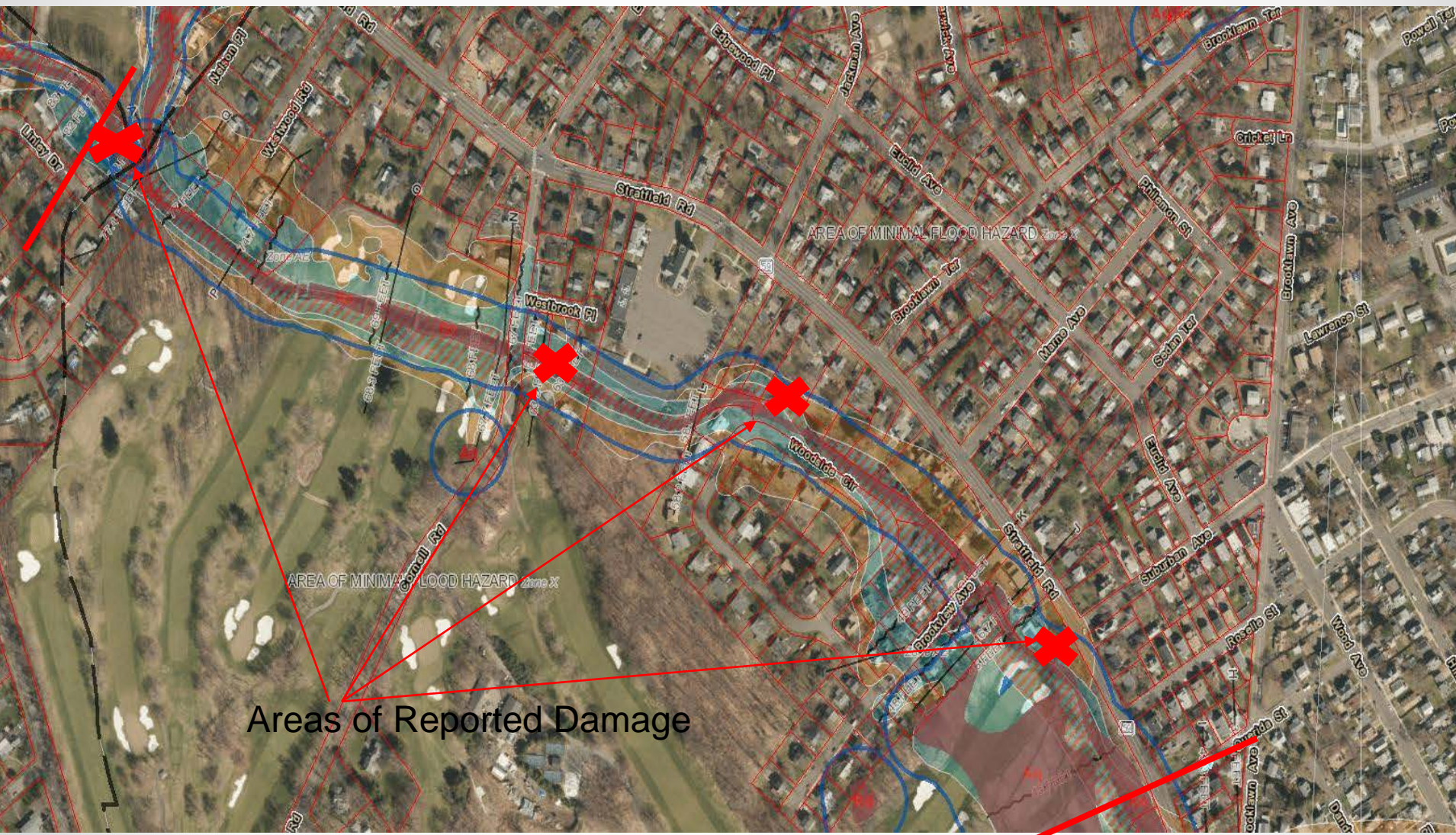
Rooster River Watershed

- Highly urbanized (Approx. 80,000 people)
- Share Municipal Boundaries with Trumbull and Bridgeport
- Majority of the Town's reported flood damage occurred in the Rooster River Corridor during the September 2018 storm event.
- Watershed Management Plan Completed in 2013.
- Town of Fairfield has been conducting water quality monitoring in the watershed since 2016.
- Working on 319 EPA Watershed Grants for funding for BMP retrofits



Rooster River

(Areas of Reported Damage –September 2018)



Types of Storm Damage Observed







Channel Obstructions

Temporary Bank Stabilization



Restoration and Local Permitting

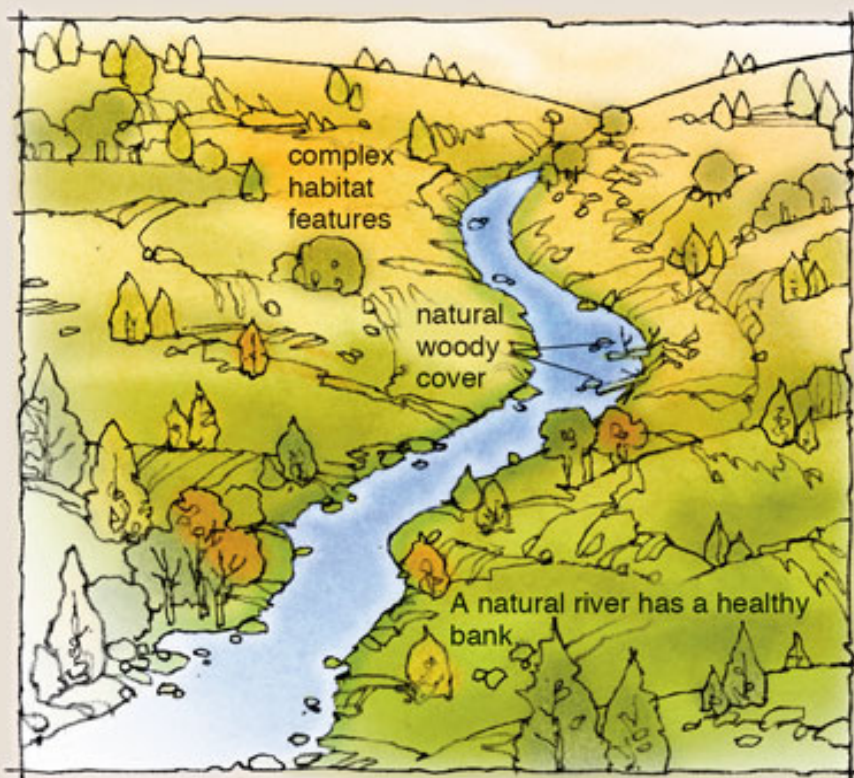
- Town Land Use departments held an internal meeting to discuss coordinated response to storm damage.
- Property owners need to submit an A-2 survey and engineered plans showing the proposed remedy in order to stabilize the existing stream bank erosion. Grading and stabilization through soil bioengineering systems should be proposed. No hard walls will be considered in the floodway since they will not be able to meet the FEMA flood way requirements. Gabion walls or other stone-based revetments might be considered in the Flood Zone as long compensatory flood storage is proposed on the property.
- Recommend that adjacent property owners work together on engineering design, permitting and implementation.
- Once the construction plans are submitted, the Conservation Department, P&Z, and Engineering Department will review the plans with a quick turnaround and will give verbal/written confirmation to start the project under an emergency authorization.
- Once work has started, the property owner submits an IWPA application to the Conservation Commission. Permit fees are waived if damage was caused by the storm.
- Construction can continue during the permitting process in accordance with the submitted engineered plans. Any attempts to rebuild walls or work in a manner that is inconsistent with the standard construction practices will result in a possible Notice of Violation.

Protect Existing and Restore Degraded Riparian Buffers

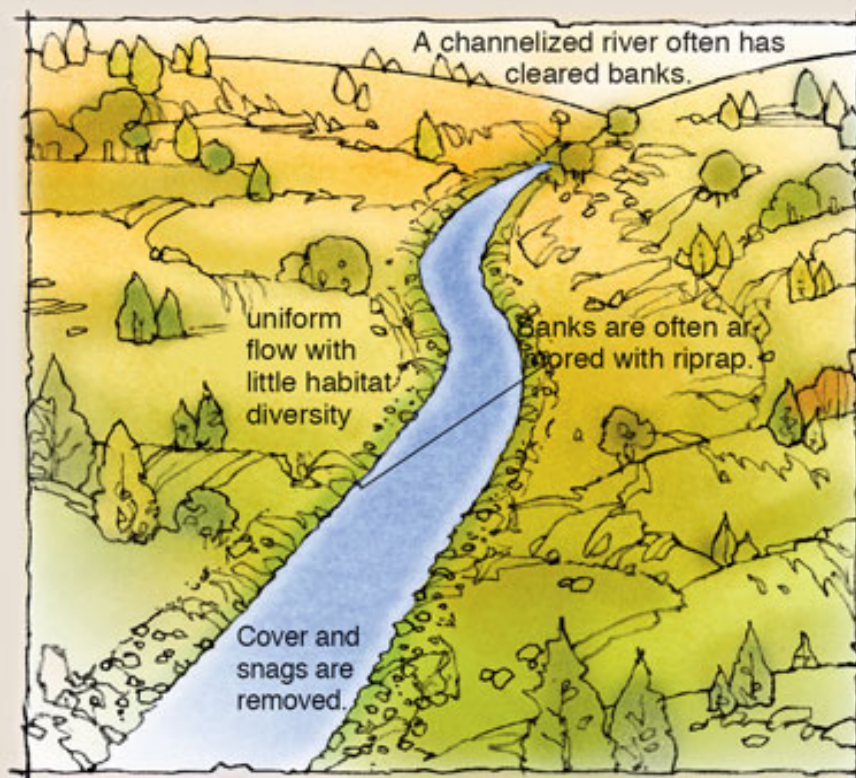
Water Quality vs. Flood Protection

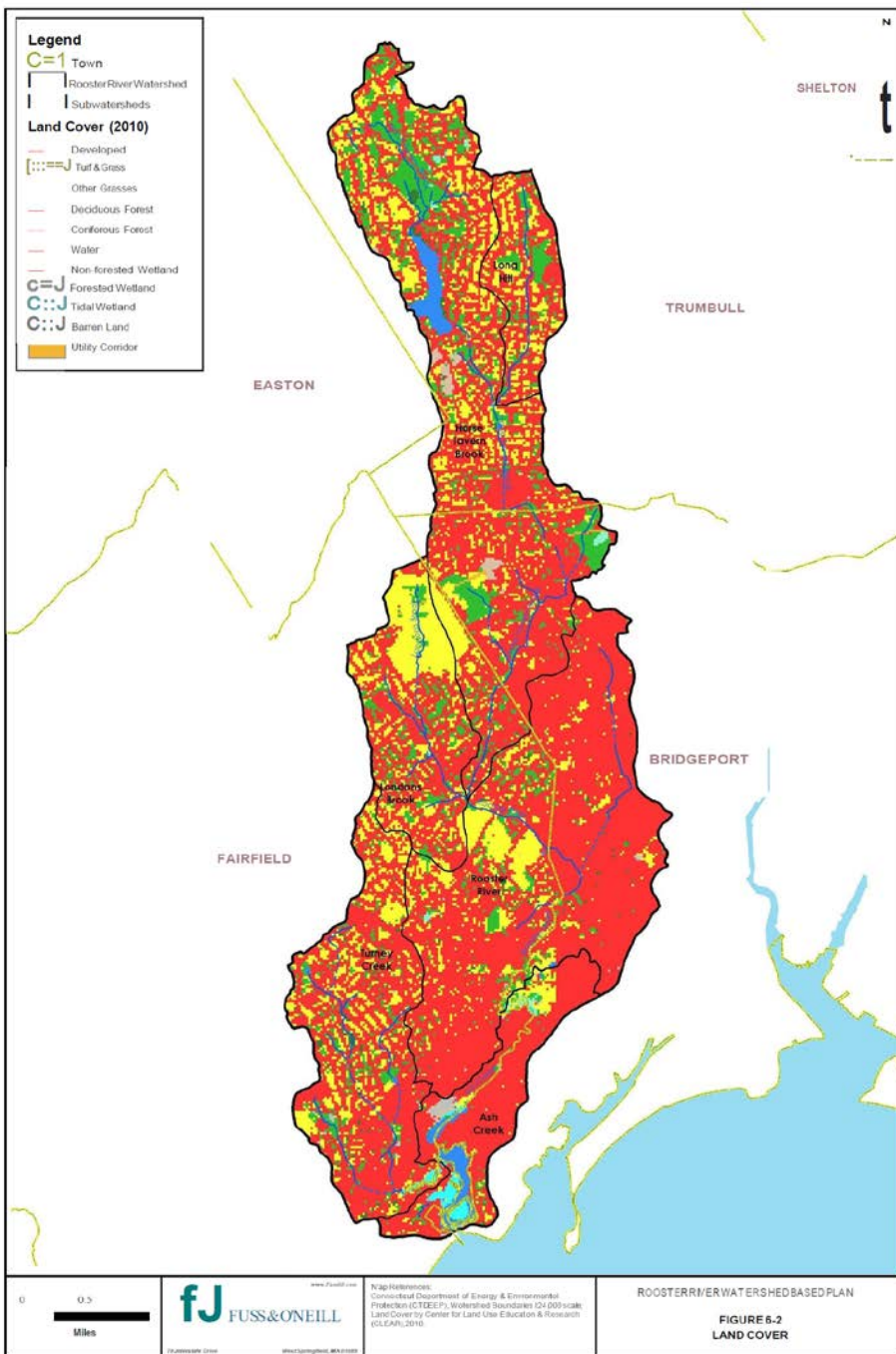
A recent LISS-funded study, conducted by the Center for Land Use Education and Research (CLEAR), characterized Connecticut's watersheds and their riparian areas through the use of remotely-sensed land cover during the 1985 to 2006 time period. Results of this study indicate that the Rooster River watershed experienced a 0.5 to 2 percent loss of forested land within the 300-foot riparian corridor (i.e., within 300 feet on either side of the streams and rivers in the watershed) between 1985 and 2006 (CLEAR, 2011). Overall, the watershed has less than 20% forest cover within the 300-foot riparian corridor.

» Natural River



» Channelized River



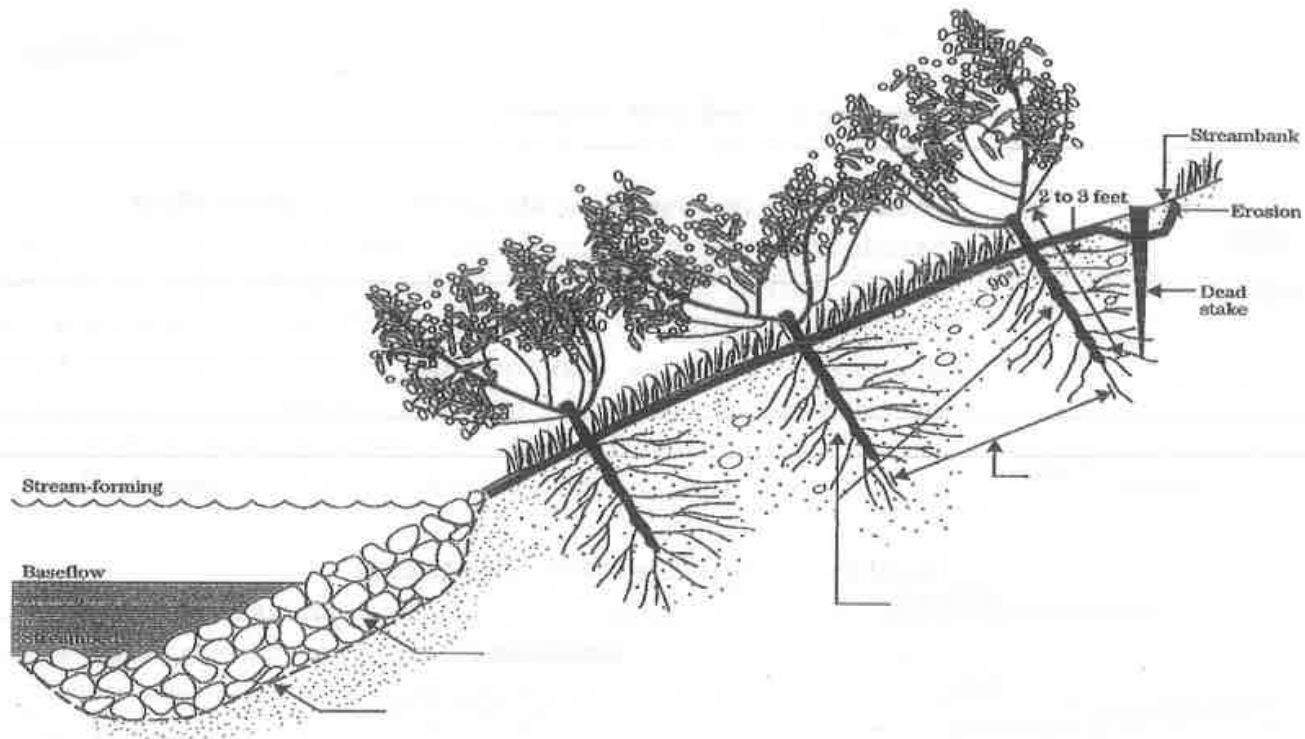


As local land use managers, severe storms provide some opportunities to correct existing issues within the watershed.

Retrofits to existing stormwater systems and implementation of BMPs to improve water quality.

Mitigation funding after Federal Disaster Declarations.

Soil Bioengineering Systems – Preferred Practices

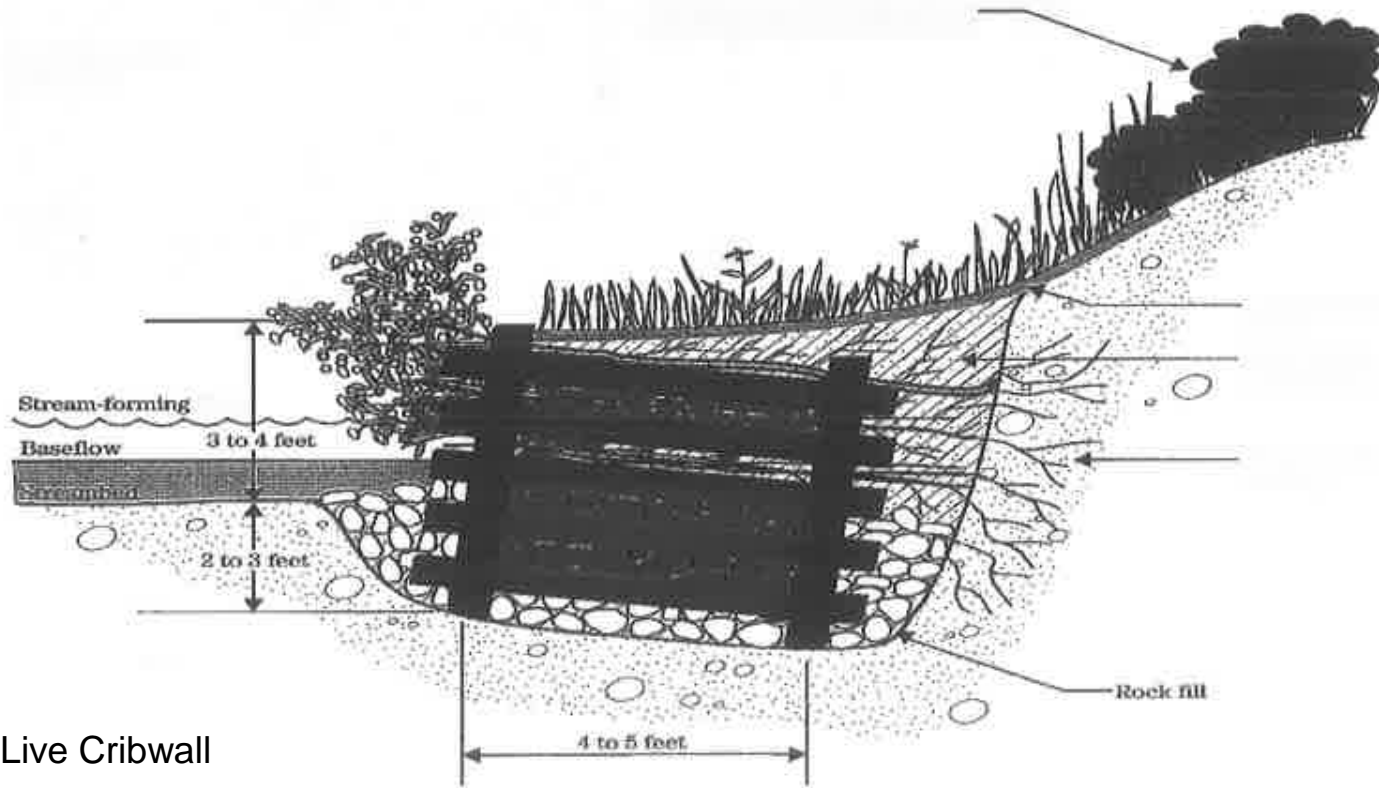


Live –Staking

Live stakes are living, woody plants cuttings capable of rooting when inserted into the banks.



Soil Bioengineering Systems – Preferred Practices



Live Cribwall

A live cribwall is a box-like structure with a framework of logs or timbers, rock and like that can protect eroding streambanks or shorelines. Once live cutting become established, mature vegetation gradually takes over the structural functions of the logs or timbers

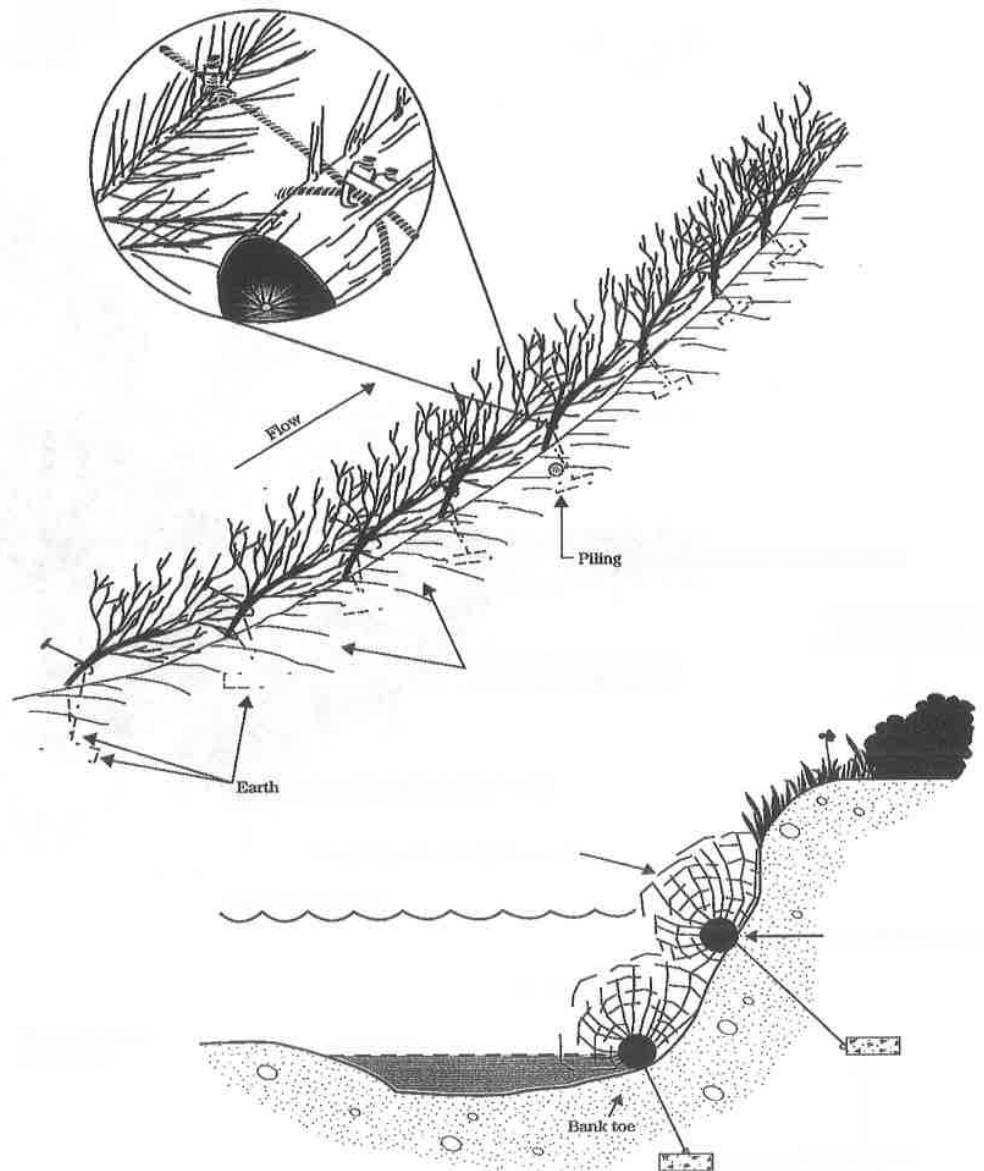


Wood cribwalls are supposed to decay over time after trees and vegetation has established and structural roots are able to maintain the grade.



Tree Revetments

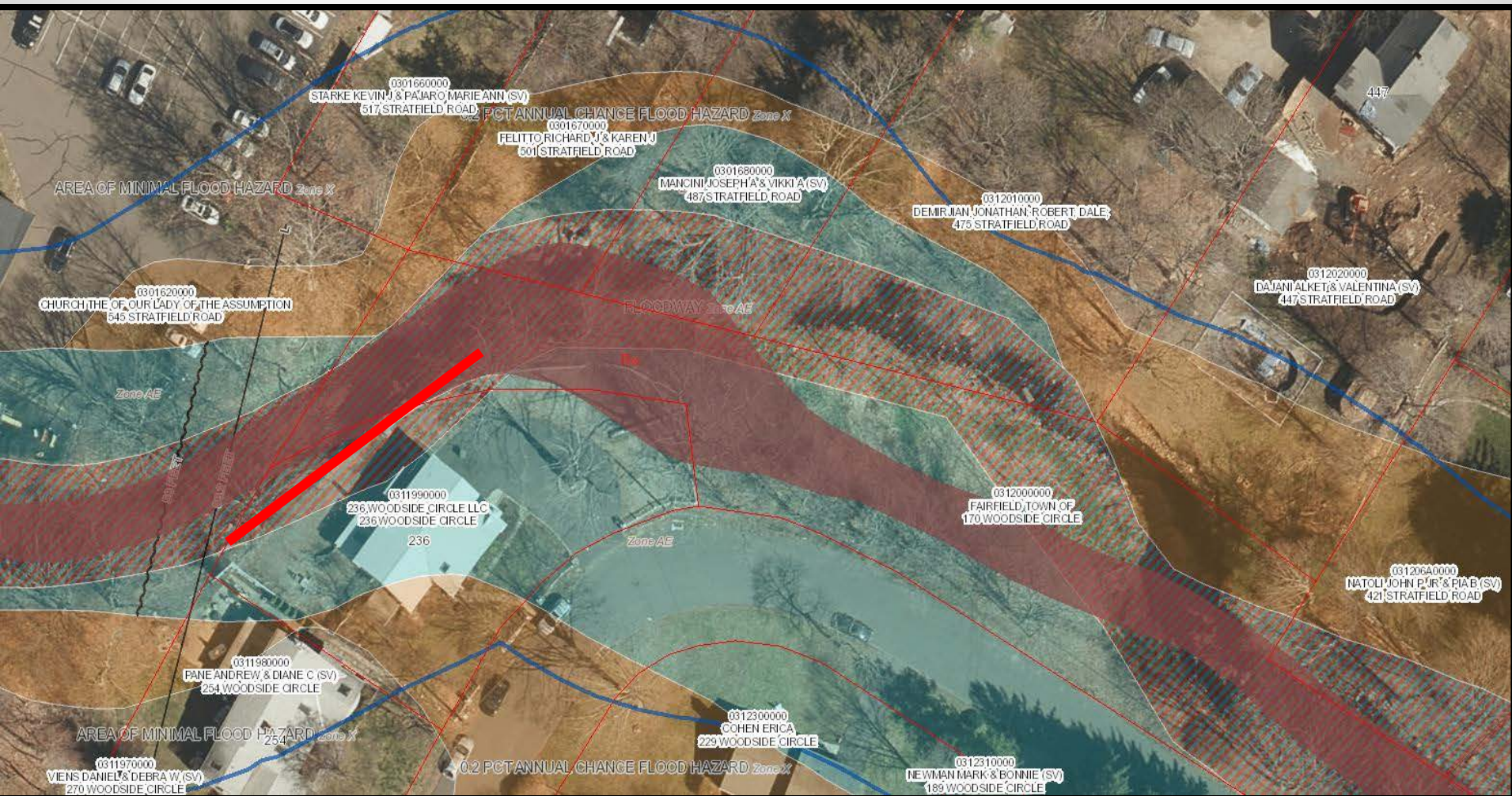
Tree revetments are rows of cut trees anchored to the toe of the bank. This a low cost method, often used for toe protection with other bioengineering techniques.







Retaining Walls and Permitting Issues







Retaining walls increase the flood height and provides little ecosystem benefits and decreased water quality.



QUESTION AND ANSWERS



Fairfield CONNECTICUT

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