

# Restoration and Stabilization along the Little River



The river's bank was eroding.....



September 2004 flooding

The remnant rains from Tropical Storm Ivan in 2004 resulted in catastrophic flooding across the mountains of North Carolina.

A significant amount of soil was washed away from the Little River, both at this location and below Hooker Falls.



June 2005

Major erosion damage occurred to the river bank during flooding in 2004 and 2005. The lack of soil-binding ground vegetation allowed floodwaters to wash away the river's bank at this location. We needed to stabilize and restore the river bank, and figure out how to keep flood waters from damaging the river bank in the future.



July 2006

The Little River's upstream watershed area is almost 25 square miles! The nearby city of Asheville covers over 41 square miles.



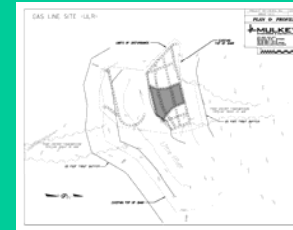
February 2007

## Look across to the other side of the river:

That short wall of stacked boulders alongside the opposite bank is a structure called a "J-Hook Vane." The structure was installed during the restoration, and is shaped like a sideways J with the 'hook' partially submerged. This J-Hook Vane deflects the water flow towards the center of the channel and keeps the river's bank from undercutting and eroding.



.....So we made some repairs.



First, develop a plan of action to engineer a solution. This schematic drawing overviews the placement of water control structures in the river.

Then, bring in lots of boulders and fill material.



Shore-up the river bank with a boulder structure, backfilled with coarse sandy material.



After that, start laying boulders along the opposite bank to construct another boulder structure, called a J-Hook Vane



These three merged photos show the reconstruction of the river bank and access path, as viewed from the middle of the Little River.



## Project Partners & Cooperators



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