

~ III. Stream Restoration Projects ~

“I have never seen a river that I could not love. Moving water...has a fascinating vitality. It has power and grace and associations. It has a thousand colors and a thousand shapes, yet it follows laws so definite that the tiniest streamlet is an exact replica of a great river.” — Roderick Haig-Brown, fisherman and conservationist

Stream restoration is an effort to restore the function of a stream by returning it to the appropriate size, shape, and condition which will allow it to reach a stable form. In other words, the replication of a stable stream is attempted. Restoration differs from “stream bank stabilization” (or other interventions that typically address only a limited problem area) in that restoration looks at an entire reach of stream. Before a restoration project is implemented, a series of important watershed characteristics are studied. Data is gathered in order to design for the proper conditions prior to implementing the project.

Those that embark on a restoration project typically look to ensure that the stream’s slope is not too steep or too flat, and that it has a proper width, depth, and access to its floodplain. This can vary from stabilizing a streambank at a critical location to a full restoration that may include stream re-location. In all situations, streamside vegetation management plays an integral role.

EAST BRANCH DELAWARE RIVER DEMONSTRATION PROJECT

\$300,000 of the project funding in the NYCDEP contract was earmarked for a demonstration project within the watershed. Assessments and investigations narrowed potential projects to four sites in the watershed. A subcommittee of the Project Advisory Committee was appointed to rank all four sites, select the site most in need of restoration and that would fit the NYCDEP contractual requirements for a demonstration project, and report back to the full committee. The Margaretville Village Park site was selected.

Margaretville Village Park

Project Goal

The purpose of this project was to reduce stream bank instability and resulting turbidity in the New York City water supply, and protect public infrastructure and adjoining private property. The existing conditions are characterized by excessively eroding stream banks and stream bed scour during a range of flow conditions.

The plan for restoration consisted of placement of three rock vane structures with rock toe protection. These measures were designed to minimize sedimentation and facilitate a riparian buffer enhancement. This was not a flood control project.

Project Location

The project is located adjacent to the village park in Margaretville, Town of Middletown, Delaware County, New York.

Project Description

This project was to stabilize streambank erosion. Techniques involved installation of 3 single arm rock vanes with upstream rock toe protection to stabilize an eroding stream bank and control bed scour where a failed boiler plate and railroad rail retaining was been removed. The existing riparian buffer will be enhanced and expanded and live willow stakes will be placed in the voids of the existing riprap – in the spring of 2008.

As constructed, the work completed at this site was designed to be a self maintaining streambank stabilization project based on natural stream channel design principles. The project design was based on observations and measurements taken at the project site and upstream and downstream of the project site.

Project Cost - \$293,694

Project Funding – NYCDEP, NYSDEC

OTHER RESTORATION PROJECTS

\$400,000 in of project in the NYCDEP contract was earmarked for facilitating Conservation Reserve Enhancement Program (CREP) projects in both the East Branch and West Branch Delaware River watersheds. These funds are used where streambanks are not stable enough to implement CREP according the CREP guidelines. In the East Branch watershed, the Joy Tuttle farm was selected for a streambank stabilization project. This is the first farm upstream (approximately 0.5 miles) of the Pepacton Reservoir. By stabilizing this streambank, the producer is assured of a minimized risk of further damage to the field and has agreed to place the entire farm into CREP. This project is in cooperation with the Watershed Agricultural Program (WAP) Small Farms Program.

Joy Tuttle Streambank Restoration

Project Goal

The purpose of this project was to reduce stream bank instability and resulting turbidity in the New York City water supply, and protect public infrastructure and adjoining private property. The existing conditions were characterized by excessively eroding stream banks during a range of flow conditions.

The plan for restoration consisted of placement of 250 linear feet of live log crib-wall and live willow staking along the top of the streambanks for approximately 1100 feet on both sides. These measures were designed to minimize sedimentation and facilitate a riparian buffer and livestock exclusion. This was not a flood control project.

Project Location

The project is located approximately 300 feet downstream from Delaware County bridge 1-2 on County Route 1 in the Town of Andes.

Project Description

This project was to stabilize streambank and floodplain erosion. Techniques involved installation of approximately 250 linear feet of live log crib-wall where the stream continually broke out onto the left (looking downstream) floodplain and had excessively eroded the streambank. Existing gravel berms were removed from the site. Live plant material staking was installed on both streambanks for a distance of approximately 1100 feet.

As constructed, the work completed at this site was designed to be a self maintaining streambank stabilization project based on natural stream channel design principles. The project design was based on observations and measurements taken at the project site.

Project Cost - \$71,718

Project Funding – NYCDEP, NYSDEC