

Cherry Creek Stream Mitigation

Design Features: stream stabilization (Redi Rock, rock cross vanes, rip-rap), grading, riparian buffers, channel re-alignment, underdrain

Date of Installation: 2016

Location: Cherry Creek at the Westmoreland County Community College (145 Pavilion Ln, Youngwood, PA 15697)

Client: Westmoreland Conservation District & Pennsylvania Department of Transportation (PennDOT)

Cost: \$231,000

Project Partners: Westmoreland Conservation District, Westmoreland County Community College, Sewickley Creek Watershed Association, Pennsylvania Department of Transportation (PennDOT), Pennsylvania Department of Environmental Protection (DEP)

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Project Specifications

In 2016, PennDOT was constructing their Interstate 70 and New Stanton Interchange Project and needed to perform some additional stream mitigation to accommodate their project. They partnered with the Westmoreland Conservation District to complete a stream mitigation project on Cherry Creek, a small stream that flows through the middle of the Westmoreland County Community College's campus.

The Westmoreland Conservation District provided technical assistance and project management for this project that would benefit multiple entities including the community college itself and the Sewickley Creek Watershed Association. Funds were acquired from PennDOT through a combination of state and federal funds to meet their stream mitigation commitment.

The main stream channel was stabilized by grading the banks and planting vegetation, including native trees and shrubs. Streamside retaining walls were installed to further stabilize the banks. In addition, the existing roadside channels along Armbrust Road were re-aligned to improve the flow towards Cherry



Newly installed Redi Rock walls and rock cross vane

Creek. A free-standing wall and underdrain were installed as well to help control stormwater. Stream monitoring is also in place for five years following the construction of the stream mitigation project.

Benefits

Over 100 live stakes and 50 trees/shrubs were planted to stabilize the graded stream bank, and there is currently a 100% survival rate for the trees and shrubs and a 75% survival rate for the live stakes planted. Water quality ratings have already improved from a poor rating directly after the construction was completed to a fair rating only six months later. Further monitoring of macro invertebrates, water chemistry, and physical habitat will hopefully lead to increasingly improved water quality ratings. The riparian buffer plantings have decreased the water temperature and sedimentation into Cherry Creek, as well as stabilized the stream banks. In addition, the rock cross vanes have improved the stream habitat by creating more pools and in-stream cover for aquatic life. One of the most important changes made for the project was that the bank would no longer be mowed to the edge. A "no-mow zone" was established to let the vegetation grow naturally and create a more functional riparian buffer. **Click here for more information on riparian buffers and "no-mow zones."**

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Furthest upstream portion of Cherry Creek before construction; note the mowed banks all the way up to the edge and erosion on the right-hand bank



The furthest upstream section a year after construction

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Moving downstream, the next section of Cherry Creek before construction; the gabion baskets were falling in on the end and again, the bank was being mowed to the edge



The same section a year after construction with Redi Rock installed in place of the gabion baskets

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The next section downstream before construction



The same section one year after construction

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The furthest downstream section of Cherry Creek before construction



The same section a year after construction; Redi Rock was installed to stabilize the banks underneath the pedestrian bridge

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The parking lot area next to Armbrust road where the stream channel needed re-aligned; note the ice frozen over the parking spaces caused by the poor drainage



The same area after a Redi Rock wall was installed with underdrain, and the channel to the left was re-aligned