

## Westmoreland County Community College - Riparian Buffer and Stormwater Retrofit

**Design features:** Rain garden, porous pavement, infiltration swales and riparian buffer plantings.

**Date of Installation:** 2012

**Location:** Westmoreland County Community College, Hempfield Township, Westmoreland County PA

**Client:** Sewickley Creek Watershed Association, Westmoreland County Community College

**Installation cost:** \$150,000, Pa DEP Growing Greener Grant, \$30,000 WCCC Match

**Partners:** Westmoreland Conservation District, Sewickley Creek Watershed Association, Westmoreland County Community College, Silvis Group Inc.

**Project contact:** Kathryn Hamilton RLA;  
kathyh@wcdpa.com



*View of the rain garden and permeable concrete sidewalk*

### Project Descriptions

This project is a stormwater management retrofit to capture and treat stormwater from an existing uncontrolled 4 acre parking lot. Pollutants and runoff were being discharged directly into adjacent Cherry Creek. A 25-foot wide by 400-foot long area of existing asphalt paving within 15 feet of the stream was removed and replaced with a landscaped riparian buffer, infiltration swales, permeable sidewalk and rain garden. The system captures and retains stormwater runoff from the parking lot reducing the volume of runoff and providing water quality improvements. There was no net loss of parking spaces in the parking lot, and additional green space and landscaping was provided along the riparian buffer of the stream.

### Benefits/Performance Measures

**Impervious area managed:** 4.0 acres

**Stormwater reduction performance analysis:**  
Runoff from a 1/2" storm event on 4.0 acres of impervious area is fully managed by 4,640 sq ft infiltration

swales, 1,000 sq ft rain garden, 560 sq ft permeable concrete, which combined capture 7,500 cu/ft total runoff.

#### **Benefits that have resulted from the project:**

The project provides an additional 25 feet of riparian buffer to the stream. The infiltration swales and rain garden provide catchment for debris and pollutants, provide cooling for heated runoff, and provide volume reduction and water quality improvements to Cherry Creek and the Sewickley Creek Watershed in an area where little currently exists.

**Related information:** The project included pavement demolition, excavation, installation of rain garden, infiltration swales with engineered soil mix, underdrain system, permeable concrete, and landscaping.

### Recommended Maintenance

[Link to maintenance guidelines for similar projects](#)

## Westmoreland County Community College - Riparian Buffer and Stormwater Retrofit



*The Westmoreland County Community College had excess paving at the low end of a 4 acre parking lot that was within just 15 feet of the stream.*



*Nearly 1/4 acre of paving was removed to provide a riparian buffer to the stream and to allow for water quality improvements for the stormwater runoff from the parking lot.*



## Westmoreland County Community College - Riparian Buffer and Stormwater Retrofit



*A system of underdrains and overflow outlets were installed along a 400 foot section of stream to promote infiltration and pollutant removal.*



*Four infiltration trenches were installed over underdrains to capture debris and allow surface runoff to infiltrate. The leading edge was protected with a concrete strip and a turf reinforcement mat.*



## Westmoreland County Community College - Riparian Buffer and Stormwater Retrofit



*The infiltration trenches were seeded with a vigorous grass mix to promote infiltration and to minimize maintenance.*



*Looking up across the existing 4 acre parking lot from a pedestrian bridge, showing the eroded channel from surface runoff concentrating on its way to the stream.*



## Westmoreland County Community College - Riparian Buffer and Stormwater Retrofit



*A new permeable concrete walkway, which will not produce stormwater runoff, connects the end of the pedestrian bridge to the parking lot across the widened riparian buffer.*



*Adjacent to the new permeable concrete walkway is a landscaped rain garden to control a portion of the parking lot stormwater runoff.*