

Ligonier Valley School District Basin Retrofits

Design Features: Retrofitted storm water basins, vegetated channel, rock lined channel, and new outlet structures allowing for additional storage capacity

Date of Installation: 2023

Location: R.K. Mellon Elementary School, Ligonier, Westmoreland County

Client: Ligonier Valley School District

Cost: \$22,826.74 Richard King Mellon Foundation, \$10,400 Ligonier Valley School District/ Markosky Engineering In-Kind Match, \$3,300 WCD In-Kind Match

Project Partners: Westmoreland Conservation District, Markosky Engineering, Richard King Mellon Foundation, and Ligonier Valley School District

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Project Specifications

The goal of this project was to increase time and volume for stormwater retention and improve the safety and efficiency of stormwater conveyance between ponds. Three stormwater basins were retrofitted behind the elementary school. The project proposed restoring the basins to their natural conditions, adding and modifying outlet structures for additional stormwater retention, and replacing the plastic channel with a rock-lined channel.



Finished rock-lined channel for stormwater conveyance leading into the stormwater basin

Benefits/Performance Measures

Before the project, a declining plastic conveyance channel disrupted the efficiency of stormwater drainage into a detention pond. This caused one of the stormwater basins to fill with excess sediment. In response to this issue, new outlet structures were added to two of the existing basins which allowed stormwater to be temporarily stored instead of exiting immediately. The plastic lined channel was replaced with approximately 210 feet of rock lined channel. The project also removed sediment from one of the basins to increase storage capacity, water quality, and protection of habitat.

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(Before) Existing plastic channel as outlet to basin with accumulated sediment.



(After) Plastic channel replaced with rock lined channel. Basin restored to original conditions.



(Before) Stormwater basin outlet structure



(After) Retrofitted outlet structure with risers and trash racks