

Blue Ridge Manor—Infiltration Experiment

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Problem:

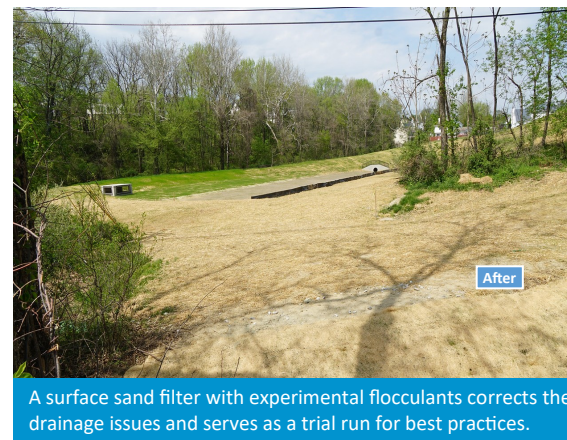
The detention basin at the Blue Ridge Manor facility in the Town of New Windsor was constructed in the early 1990s during the time when stormwater management focused more on flood control than water quality. Erosion at the outfall, overgrown vegetation, trash, and steep slopes surrounding the basin led to this facility being retrofitted in the fall of 2017.

Solution:

Carroll County worked closely with the Town of New Windsor to design and re-construct the facility. The upgraded facility now uses a surface sand filter that provides water quality treatment, channel protection, and peak flow management of a ten year storm for a 31-acre drainage area. While the filter is currently standard practice, the county is striving for an even more cost effective treatment.

Unique aspects of this design are two distinct filter areas in the bottom of the facility each having their own separate underdrain system beneath the filter media. Both filters have the county's standard sand, soil, and green woodchip materials. One filter includes biochar, a commercially available carbon source, similar to charcoal, which studies indicate increases nitrogen removal. The second filter includes alum, a waste by-product from water treatment processes, that has been shown to reduce phosphorus.

Both filter systems are being monitored by county staff to determine effectiveness of this enhanced filter media. Study results are expected in 2019.



A surface sand filter with experimental flocculants corrects the drainage issues and serves as a trial run for best practices.

Photo Credit: Carroll County

Key Project Facts

Project Location: Town of New Windsor, MD

Type of Project: Bioretention / Infiltration

Drainage Area: 31 acres

Impermeable Surface Area: 9 acres

Cost: \$531,558 overall

Per acre cost: \$59,062

Funding Sources: Maryland Department of Natural Resources grant of \$225,490 and joint county/municipal funds of \$306,068

Partners: Center for Watershed Protection, Town of New Windsor

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What is Polluted Runoff?

The growth of our cities has resulted in too many paved surfaces, which prevent rain water from being absorbed by the ground. Instead, the water runs off streets and buildings, collecting trash and dangerous chemicals on its way. This contaminated water overflows into our streams and rivers, creating public health hazards and toxic waters.

Stormwater projects create safe paths for polluted runoff to be captured and filtered before it reaches our waterways. They keep communities healthy and the environment clean.

When communities and their local governments work together to solve big problems like stormwater runoff, that's a story worth telling!