

Butterfly Acres Swale Restoration

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Problem:

A stormwater open-channel drainage swale that flowed through a residential development and adjoining walking trail in Lititz Borough was significantly degraded. The swale had suffered from major erosion and was dominated by invasive plant species. It was not providing the infiltrating and stormwater capture it was intended for even though it was Lititz Borough's largest drainage component in its MS4. After the area was identified as a critical aquifer recharge area (CARA), the need for restoration increased.

Solution:

A four-phase master plan was established to improve stormwater infiltration and restore the site's function as an aquifer recharge area. Porous infiltration trenches were established along the swale to improve water quality. Invasive plant species were eliminated and native vegetation was restored to further contribute to infiltrating groundwater and filtering pollutants. The native plants and wildlife habitat restoration also improved biological function and provided aesthetic benefits to people utilizing the adjacent walking trail. Educational signage installed along the bioswale helps inform the public about how it works and why it is important.



Trail and invasive species before restoration



Functioning swale after restoration

Photo credit: LandStudies, Inc.

Key Project Facts

Project Location: Lititz Borough, PA

Type of Project: Swale restoration for stormwater drainage

Scale: 2,300 foot-long swale

Collaborators: Lititz Borough, private community businesses, LandStudies, Inc.

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What are Critical Aquifer Recharge Areas (CARAS)?

A recharge area is a location where water from precipitation is transmitted to an aquifer. Aquifers with relatively high flow rates that are located in areas where conditions promote high infiltration are important to the recharge and groundwater flow system. Land areas characterized by features or attributes that provide an exceptional amount of replenishment (recharge) to the aquifer per acre are termed Critical Aquifer Recharge Areas (CARAs). (Susquehanna River Basin Commission)

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