

STORMWATER BMP SITES IN PAXTON CREEK WATERSHED

BMP Types: Centennial Acres Park Rain Garden & Stream Buffer



Centennial Acres Park Rain Garden

Name and Location: Centennial Acres Park, a neighborhood facility, is located at 4291 Continental Drive, west of its intersection with Colonial Road in Lower Paxton Township.

Project Site Number and BMP Type Code: 51B,C

GPS Coordinates: Lat N40.30900 degrees, Long W76.00814 degrees;

Site Features: The rain garden at Centennial Acres Park is designed to infiltrate and process (partially remove pollutants) from stormwater running from a small parking area that serves the park. The rain garden initially underperformed briefly, because of improperly amended site soils (too much clay for good drainage), and unexpected additional runoff associated with a clogged drain on Continental Drive, which ran excess runoff into the parking area. Road repairs and additional adjustments to the soils, and garden bed (deeper infiltration with a small spillway) solved the problem. Rain gardens do their work through actions of soils, vegetation, mulch, and other layers of materials. Expected pollutant removals in fully functioning rain gardens are approximately: total suspended solids (mainly dirt) and total phosphorus, 85% each; nitrate, 30%. The pollutant removal efficiencies vary by season (greater removal in spring and summer), and according to garden age or condition (vegetation health and soil porosities can change). A facts sheet about this site, and a project overview brochure are available at www.srbc.net The rain garden is a project of a Targeted Watershed Grant (TWG) for stormwater projects, administered by Susquehanna River Basin Commission in partnering with PCWEA, Parks and Recreation of Lower Paxton Township, and others to develop innovative and cooperative stormwater management approaches for PA communities.

A small tributary of Upper Paxton Creek North subwatershed crosses the park near the rain garden. The erosion pattern in this stream (deep, to bedrock in places) indicates the past runoff has been significant. Upstream from the park suburban residents have sparse woody vegetation along the creek, and mow their yards to edges of these creek banks (an erosion-causing practice evident in many places). Vegetation alongside streams, known as riparian buffers, hinders and diminishes overland stormwater flows (with pollutants) from reaching streams. Where space permits, buffers often are planned

for 3 zones of vegetation of various types, densities, and widths. The buffer at this site, not part of the TWG, is too narrow. Trees were planted along existing vegetation to increase buffer width. Its sparseness, however, and tree covers (tubes for resisting deer predation) indicate inadequate maintenance (dead tree stock and fallen tubes). Pollutant removal effectiveness by adequate buffers at maturity would likely be approximately 65% of total suspended solids (mainly dirt); 50% of total phosphorus; nitrate, 20%). These pollutant removal efficiencies also vary by season (minimal in winter when vegetation metabolism is least, and soils are frozen). This project aims at raising public awareness about the importance of stormwater management, and demonstrates BMP implementation at a high profile facility.

Site Directions: The project site is located on Continental Drive 0.9 mi from the intersection of Colonial Road and Rt. 39 (Linglestown Road). Colonial Road runs N-S between the base of Blue Mountain, crossing Linglestown Road, and joins Allentown Boulevard (Rt. 22) beside the Colonial Park Mall in Lower Paxton Township.