1/9/2012

Van Sciver Elementary School Rain Garden Design

Delaware Riverkeeper Network – Saddlers Woods Restoration Project

At the Van Sciver Elementary School in Haddon Township, New Jersey, the bus drop-off and adjacent parking area has been experiencing drainage problems that have led to flooding and freezing on the pavement and sidewalks. In an effort to alleviate these issues, as well as reduce stormwater runoff into Saddlers Woods that is causing erosion, Meliora Design and Jonathan Alderson Landscape Architects have designed a series of Rain Gardens, consisting of vegetated swales and landscape depressions that will convey stormwater runoff away from the parking lot and drop-off loop. These Rain Gardens will use absorptive soils and native vegetation to capture, filter, and infiltrate runoff.

The Rain Garden system has been designed with a continuous slope, so there will be no surface ponding except in the final Rain Garden behind the school which has been designed to have 6-inches of ponded water to maximize the volume of stormwater captured; existing soils in final Rain Garden are very sandy and percolate very well. Due to slower percolation of existing soils near the bus drop-off loop, the Rain Gardens adjacent to the loop have been revised to function as a wide bio-swale that treats the runoff and allows moderate infiltration as the runoff slowly flows towards the back of the school. This design is a modification from an earlier version that showed ponding in all four Rain Gardens; this revision means that there will not be standing water in the Rain Gardens adjacent to the drop-off except for temporary minor puddling along the swale in the center of those Rain Gardens.

The Rain Gardens will enhance the site’s aesthetics by establishing a native landscape, and will offer educational opportunities for the Van Sciver students. The Rain Gardens will reduce mowing maintenance needed, and provide important stormwater management functions of benefit to the school and Saddlers Woods.