

Royce Brook Watershed Restoration and Protection Plan  
BMP Information Sheet

Project ID: R5 - Parking Lot Next to Triangle School	
<p>Location: South Triangle Road at Triangle Elementary School</p>	<p>Municipality: Hillsborough</p>
	<p>Subwatershed: Royce Brook</p>
<p>BMP Description: Bioretention System/Rain Garden and Educational Program</p>	<p>Targeted Pollutants: Total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) in surface runoff</p>
<p>Existing Conditions and Issues: This site is the overflow parking lot for Triangle Elementary School on South Triangle Road. The site is adjacent to Royce Brook. The parking lot flows to a single catch basin at the south end of the parking lot, which dumps directly into the Royce Brook. The parking lot surface is in fair condition. The pollutants that accumulate in the parking lot are directly discharged to Royce Brook during storm events with no level of treatment. Additionally, the stormwater runoff is quickly discharged to the stream, contributing to the stream's flashy hydrology, which cause bank erosion, downcutting, and localized flooding.</p>	
<p>Proposed Solution(s): The flow from the parking lot (12,000 square feet in size) can be diverted to a bioretention system or rain garden bypassing the existing catch basin. There is ample area for the rain garden, which would be approximately 2,400 square feet in size with a depth of six to eight inches. The design and construction of this bioretention basin or rain garden can be incorporated into the fourth grade science curriculum at the elementary school. The RCE Water Resources Program has a Stormwater Management in Your School Yard program that could be incorporated into the 4th grade curriculum. The students could gain knowledge and increase their awareness of issues associated with stormwater runoff while building a BMP on the school grounds that actually helps address some of the problems.</p>	
<p>Anticipated Benefits: The rain garden would be designed to capture, treat and infiltrate the water quality design storm (1.25 inches of rain over two hours). Since 90% of the annual rainfall in New Jersey comes in storms events less than water quality design storm, the rain garden would remove 90% of the TN, TP, and TSS on an annual basis. Pathogens and Bacteria such as E. coli and Fecal Coliform will be reduced by up to 90% as well. A rain garden would also provide ancillary benefits, such as enhanced wildlife habitat and aesthetic appeal to surrounding property owners. The Triangle Elementary School is located at the proposed site. Rutgers Cooperative Extension Water Resources Program could present the <i>Stormwater Management in Your School Yard</i> curriculum to students and then include them in the rain garden design and planting efforts as an augmentation to the in-class lessons. It can also be used as a demo project to launch educational programming for Hillsborough Department of Public Works staff.</p>	
<p>Possible Funding Sources: 319(h) grants from the New Jersey Department of Environmental Protection Soil Conservation District of Somerset-Union Counties Hillsborough Township Sustainable Jersey Triangle School Home and School Association</p>	
<p>Partners/Stakeholders: Rutgers Cooperative Extension Stony Brook-Millstone Watershed Association</p>	

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Estimated Cost:				
Task	Task Description			Estimated Cost
1	Complete topographic survey and soils test			\$500
2	Prepare final design			\$1,000
3	Activities for BMP installation	Unit Cost	Quantity	
	Plant materials	\$0.50/sq.ft.	2,400	\$1,200
	Soil amendments (course sand)	\$35/cu.yd.	10	\$350
	Mulch	\$25/cu.yd.	20	\$500
	Installation (assume volunteer-based effort)	\$25.22/hr*	30 people 4 hr/person	\$3,027 (no charge)
	Supervision of volunteers	\$1,000	1	\$1,000
	Educational Programs (Schools and DPW)	\$2,000		\$2,000
	Contingency (10%)	-	-	\$655
<b>Total Estimated Project Cost</b>				<b>\$7,205</b>

\*Based on New Jersey State Value for Volunteer Time as reported by the Corporation for National and Community Service