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Cost-effectiveness analysis of stormwater best management practices (BMPs) in urban watersheds

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ABSTRACT

This study demonstrates a cost-effectiveness analysis of stormwater BMPs to answer questions, such as what type to place and how large it should be. Cost-effective analysis showed that for the basin considered, a porous pavement was the most effective means of controling runoff, which was able to bring the peak runoff down to the predevelopment level with the least budget. A storage basin was the second best, which was able to bring the peak runoff down to the predeveloped conditions, but with a higher budget. The effectiveness of a green roof in reducing the peak runoff plateaued beyond a certain budget, and was unable to bring the peak runoff down to the predeveloped level, regardless of cost. It is thought that a porous pavement would be a cost-effective BMP in a severely urbanized setting.

Keywords: Cost-effectiveness; Stormwater BMP; SWMM 5.0

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