Infiltration Through Compacted Urban Soils and Effects on Biofiltration Design

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1 Abstract
The effects of urbanization on soil structure can be extensive. Infiltration of rain water through soils can be greatly reduced, plus the benefits of infiltration and biofiltration devices can be jeopardized. This paper is a compilation of results from several recent and on-going research projects that have examined some of these problems, plus possible solutions. Basic infiltration measurements in disturbed urban soils were conducted during the EPA-sponsored project by Pitt, et al. (1999a). The project also examined hydraulic and water quality benefits of amending these soils with organic composts. Prior EPA-funded research examined the potential of groundwater contamination by infiltrating stormwater (Pitt, et al. 1994, 1996, and 1999b). In addition to the information obtained during these research projects, numerous student projects have also been conducted to examine other aspects of urban soils, especially more detailed tests examining soil density and infiltration during lab-scale tests, and methods and techniques to recover infiltration capacity of urban soils. This paper is a summary of this information and it is hoped that it will prove useful to both stormwater practice designers and to modelers.