

**Title:** Quantification of the Runoff Retention Capacity of Low Impact Development (LID) Technologies for Stormwater Runoff Modeling Purposes

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**Abstract:**

An increasing interest in low impact development (LID) technologies or best management practices (BMPs) has prompted the reevaluation of current stormwater management practices and the examination of such technologies as green roofs and porous pavements which can effectively retain stormwater runoff and drastically reduce runoff and thus CSOs in highly urbanized areas when implemented on a wide scale. In order to accurately assess the potential benefits associated with these technologies, a better understanding of their hydrology must be achieved as well as an understanding of water quality impacts. The monitoring of several different LID technologies, including green streets, porous pavements, tree pits, a green roof, and a rain water harvesting system has aided in the elucidation of their effectiveness in retaining stormwater. The information gathered will be useful in the development of analytical models to describe the hydrologic and hydraulic performance of different LID installations as well as the incorporation of LID technologies into EPA's SWMMv5.0 modeling software. These future developments will provide helpful decision making tools for city planners and others to determine the best means by which to reduce stormwater runoff by (re)establishing pre-development hydrologic conditions and reduce the volume and frequency of CSOs.