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Indicator and Pathogen Removal by Low Impact Development Best Management Practices

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ABSTRACT

Microbial contamination in urban stormwater is one of the most widespread and challenging water quality issues in developed countries. Low impact development (LID) best management practices (BMPs) restore pre-urban hydrology by treating and/or harvesting urban runoff and stormwater, and can be designed to remove many contaminants including pathogens. One particular type of LID BMP, stormwater biofilters (i.e., vegetated media filters, also known as bioinfiltration, bioretention, or rain gardens), is becoming increasingly popular in urban environments due to its multiple co-benefits (e.g., improved hydrology, water quality, local climate and aesthetics). However, increased understanding of the factors influencing microbial removal in biofilters is needed to effectively design and implement biofilters for microbial water quality improvement. This paper aims to provide a holistic view of microbial removal in biofilter systems, and reviews the effects of various design choices such as filter media, vegetation, infauna, submerged zones, and hydraulic retention time on microbial removal. Limitations in current knowledge and recommendations for future research are also discussed.

Full Text

http://ftp.sccwrp.org/pub/download/DOCUMENTS/JournalArticles/958_IndicatorPathogenRemovalLowImpact.pdf