

## Planning of Green Infrastructure on a City Level

**Authors :** James Li, Darko Joksimovic

**Abstract :** Urban development changes the natural hydrologic cycle, resulting in storm water impacts such as flooding, water quality degradation, receiving water erosion, and ecosystem deterioration. An integrated storm water management approach utilizing source and conveyance (termed green infrastructure) and end-of-pipe control measures is an effective way to manage urban storm water impacts. This paper focuses on planning green infrastructure (GI) at the source and along the drainage system on a city level. It consists of (1) geospatial analysis of feasible GI using physical suitability; (2) modelling of cumulative GI's stormwater performance; and (3) cost-effectiveness analysis to prioritize the implementation of GI. A case study of the City of Barrie in Ontario, Canada, was used to demonstrate the GI's planning.

**Keywords :** cost-effectiveness of storm water controls, green infrastructure, urban storm water, city-level master planning

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