

Accepted Manuscript

Research papers

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PII: S0022-1694(18)30666-8

DOI: <https://doi.org/10.1016/j.jhydrol.2018.08.064>

Reference: HYDROL 23078

To appear in: *Journal of Hydrology*

Received Date: 1 May 2018

Revised Date: 25 August 2018

Accepted Date: 27 August 2018

Please cite this article as: Jean, M-E., Duchesne, S., Pelletier, G., Pleau, M., Selection of rainfall information as input data for the design of combined sewer overflow solutions, *Journal of Hydrology* (2018), doi: <https://doi.org/10.1016/j.jhydrol.2018.08.064>

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Selection of rainfall information as input data for the design of combined sewer overflow solutions

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Declarations of interest: none

Abstract

Combined sewer overflows (CSOs) cause environmental problems and health risks, but poor guidance exists on the use of rainfall data for sizing optimal CSO control solutions. This study first reviews available types of rainfall information as input for CSO modelling and, secondly, assesses the impacts of three rainfall data selection methods (continuous simulation, historical rainstorms selected based on rainfall depth or maximum intensity and IDF-derived storms) on the estimation of CSO volume thresholds to control in order to reach specific seasonal CSO frequency targets. The methodology involves hydrological/hydraulic modelling of an urban catchment in the Province of Québec (Canada). Continuous simulation provides the most accurate volume estimations and shows high sensitivity to the number of simulated

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