

ABSTRACT

A REVIEW OF METHODS FOR THE PREDICTION OF RUNOFF  
IN EXPANDING URBANISED AREAS IN TRINIDAD

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Hydrological Modelling is the basis for design in a wide range of engineering projects in the broad field of Water Resources and Hydraulic Engineering. Such modelling can be used to estimate runoff in a given catchment with specific characteristics in the absence of reliable streamflow data. In the construction of flood mitigation structures, this modelling is used as the basis for design and is therefore an integral part of the overall construction process.

In this thesis, three models - the Soil Conservation Services (SCS) Unit Hydrograph Method, SCS Tabular Method and the Transport and Road Research Laboratory Time Area Method were applied to estimate runoff in the Arima River Catchment assuming that the urbanised component (of the catchment) is constantly expanding. A comparison was then made as to the applicability of the methods to the catchment under consideration.

Of the methods considered, the SCS Unit Hydrograph Method gave the most credible results when compared with actual streamflows for a nearby catchment of comparative size with known characteristics.