FINAL YEAR PROJECT REPORT

BACHELOR IN ENGINEERING (HONS) (CIVIL)

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SHAH ALAM, SELANGOR

FIELD DETERMINATION OF FLOW TRAVEL TIME FOR DIFFERENT URBAN CONDITION IN THE HUMID TROPICS -CASE STUDY IN TAMAN MAYANG SUB CATCHMENT

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ABSTRACT

This study is to determine the **Time Of Concentration** for stormwater flow in an urbanized catchment. **Taman Mayang** catchment located in Petaling Jaya has been selected as the study area.

With the installation of a systematic network of rainfall and water level in this catchment, the flood hydrograph of various storms have been analysed in order to derive the time of travel for storm water flow at respective sub-area outlets.

An empirical formulae based on **Multiple Regression Technique** has been obtained which strongly indicated that one of the travel time components i.e. overland flow time was dependent in its sub-area characteristics. The derived formulae can be used to compute overland flow time of other small urban areas once it been verified with other experimental urban catchment data.

CHAPTER ONE

1.0 INTRODUCTION

1.1 GENERAL

Most hydrologic designs involve some measures of flood discharges. Various watershed and hydrometeorological characteristics can be used to reflect the volume of flood runoff, for example, the products of the drainage area and the depth of rainfall give a volume of water that is potentially available for runoff. But volume alone is not adequate for many design problems. As the dimension of discharge indicates, time is an important element in hydrologic design. A given volume of water may not present hazard, as hazard will depend on the time distribution of the flood runoff or the **time of concentration.**

If a significant portion of the total volume passes a given location at about the same time, flood damages will occur. Conversely, if the total volume is distributed over a relative long period of time, flood damages may be minimized. Because of the importance of the travel time of runoff, most hydrologic models require a watershed characteristics that reflect the travel time of runoff.

A number of time parameters have been developed and formulated as a function of watershed characteristics. A number of time parameters are commonly used with hydraulic models, including the time of concentration, the time lag, and reach