DCE 07/05

46

2

COMPARISON OF SOME TECHNIQUES FOR DESIGN FLOOD ESTIMATION

BY

L.P.BATUWITAGE
M.I.E.(SL) C.Eng.

624"85"
627.51

LIBRARY
UNIVERSITY OF MORATUWA, SRI LANKA
MORATUWA

A dissertation submitted in partial fulfilment
of the requirement for the degree of
Master of Engineering

MEng in Applied Hydrology

UM Thesis coll.

78501

Department of Civil Engineering
University of Moratuwa
Sri Lanka

University of Moratuwa
78501
78501

February 1985

LIBRARY
S.L.S.C
UNIVERSITY OF MORATUWA

This dissertation has not been previously presented in whole or part, to any University or Institution for a higher degree.

UOM Verified Signature

L.P.Batuwitage

February 1985.

CONTENTS

ABSTRACT

Sri Lanka, a country with abundant water resources, has a predominantly agriculture oriented economy. Hence, hydrological development plays an important role, not only in the vast irrigation development efforts, but also in meeting the energy requirements of the country through hydro-power.

Many hydrologic design problems require simply an estimation of the peak flow rate generated by a river system under specific conditions. Several methods are available for the estimation of peak flow rate, but many of these are quite inadequate to produce results which are consistant within the accuracy required for hydrologic analysis and design.

In this study several different flood estimation methods have been considered for sixteen catchments to determine their applicability to Sri Lankan catchments. A frequency analysis is also carried out for each of the catchments and their flood peaks are compared with the design floods obtained by different methods.

It is observed that the findings of this thesis lead to various research areas, for further detailed studies with regard to some of the methods of analysis.

UNIVERSITY OF MORATUWA LIBRARY SRI LANKA

ACKNOWLEDGEMENT

Author wishes to express her sincere gratitude to all those who assisted in producing this thesis with much success. Particular mention has essentially to be made on

* Dr. Sunil Wickramasuriya of the University of Moratuwa, the course co-ordinator for the Post Graduate Course of 1982/84 as well as a Supervisor of this thesis, and whose invaluable guidence and the continuous encouragement, supported by his deep knowledge of the subject has been the hidden force behind the successful production of this thesis

* Mr. Palitha Manchanayaka, Assistant Director of the Mahaweli Authority, the other supervisor of this thesis, who had no hesitation at any instance in assisting and guiding the author, in every aspect of the thesis, with his useful experience in the field of hydrology

* Staff of the University of Moratuwa, the Chanceller, the Vice-Chanceller, the Dean of the faculty of Engineering, the Head of the Department of Civil Engineering and the other staff

* Deputy Director of the Hydrology Division of Department of Irrigation, Mr. G.T.Darmasena and the staff who assisted in collecting and processing the data

* Misses Pushpa Jayasinghe, Priyanka Peiris, Amara Senanayake, Nanda Witharama and Kanthi Gange who never showed any sign of fatigue in typing and attending to proof reading and other work with long drafts of this thesis

* Mr. A.K.Herath who assisted in collecting and compiling the data required

* All other well wishes who provided necessary courage in making this thesis a reality