

ESTIMATION OF FLOOD DAMAGE FUNCTIONS FOR

BANGKOK AND VICINITY

I would like to express my gratitude to my advisor, Dr. John C.S. Tang, whose constant care and concern for my academic achievement, has guided and inspired me to mature intellectually during my study at Asian Institute of Technology. I owe him a heavy debt.

by

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Sincere appreciation is extended to my examination committee, Dr. Suphat Vongvisessomjai, who have given me helpful assistances and suggestions throughout the period of this research work. Similarly gratitude also goes to Okitsugu Fujiwara, for valuable comments, suggestion and serving as a member of the examination committees.

A thesis submitted in partial fulfillment of the requirement for the degree of Master of Engineering

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Also I would like to thank all the relevant staffs : Mr. Luechai Kroutnoi, Ms. Apichatpong Pichai Pitanpittayarak for giving time and providing informations required for this study.

TC 513. T48 K36 1989
เลขที่ TC 513. T48 K36 1989
เลขทะเบียน 041247
4/ก.พ. 2537

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Last, but not the least, my sincere appreciation is due to my mother, father, brothers, sisters and friends for their encouragement; to Mr. Tanawut Sukanake, my best friend, for his support and his support whenever needed; and many people not mentioned by name are also contributed.

Asian Institute of Technology
Bangkok, Thailand
December, 1989.

ABSTRACT

The past decade has witnessed the occurrence of floods especially in Bangkok and adjoining provinces. In each of these floods, damages were in the order of thousand millions baht. As a consequence, to alleviate flood damage, economic evaluation of the proposed flood protection projects has appeared to become a predominant issue in the Bangkok Metropolitan Area.

The study herein is concerned with flood damage estimation for Bangkok and vicinity area. Attempt was made to develop damage functions in terms of flood depth and duration for 4 major land use sectors i.e. residence, commerce, industry and agriculture, in order to facilitate benefit/cost analysis of various flood protection projects. Data from 1983 flood survey were obtained and analyzed to arrive at estimates for the direct damage per establishment. Multiple regression technique was used.

Results of statistical analysis indicates that with different magnitude of impact, flood depth and duration are significant variables estimating flood damage to residential and industrial sector. On the other hand, flood duration was found to be the major variable affecting damage to commercial and agricultural sector. Further, it was found that the industrial sector is most sensitive to flood depth followed by the agricultural, commercial, and residential sector. Whereas, the damage in the industrial sector is sensitive to flood duration followed by the residential sector.

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