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SCOUR AND DEPOSITION IN PARI RIVER AFTER THE COMPLETION OF FLOOD MITIGATION PROJECT

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ABSTRACT

Two computer sedimentation models (FLUVIAL-12 AND HEC-6) were used to study sediment movement in the Pari River, a major tributary of the Kinta River in Ipoh. Results of the calibration of the models are presented and their applicapibility in simulating a recent flood is illustrated.

INTRODUCTION

For most of the time, flow in the river is contained within the channel boundary. Occasionally, excess rainfall or other conditions develop causing flood to occur which disrupt the daily activities of the community, damaging the properties and facilities, occurrence of health problem, and danger to human life.

In response to the flooding problems, a number of flood mitigation projects have been implemented in Malaysia. Flood mitigation works including implementation of structural measures which change the physical attributes of the river. Some typical river improvement related to flood mitigation are as follows: straightening a channel; widening or deepening a channel to increase its flood carrying capacity; lowering or raising base level of a channel; and construction of detention/retention facilities. However, recurrence of floods do occur although flood mitigation projects were implemented.

A study was conducted using mathematical model for erodible channel to evaluate the behaviour of Pari River after it was modified by straightening and the banks strenghtened by concrete retaining walls. The two mathematical models used in the study are Fluvial-12 (Chang,1993) and HEC-6 (US Army Corps of Engineers, 1993). The study was divided into three stages namely data collection, model calibration, and simulations for different flood events. This paper will discuss the first two stages of the study.

SELECTION OF STUDY SITE

Pari River basin (Figure 1) in Perak was chosen due to the completed flood mitigation project and availability of data. Flooding problems within the Pari River catchment area was an issue which was brought up as early as 1930. The areas affected by the flood are Kampung Baru Buntung, Kampung Tengku Hussein, Kampung Datuk Ahmad Said, Kampung Majoi, Kampung Sungai Kati, the industrial areas, and the housing areas (Pari Garden, Merdeka Garden, Hock Aun Garden, Lim Garden, Cherry Park and Sungai Pari Tower). In 1961 a committee was set up at state level to study the matter and by 1987 the planning for flood mitigation for Pari River was completed