

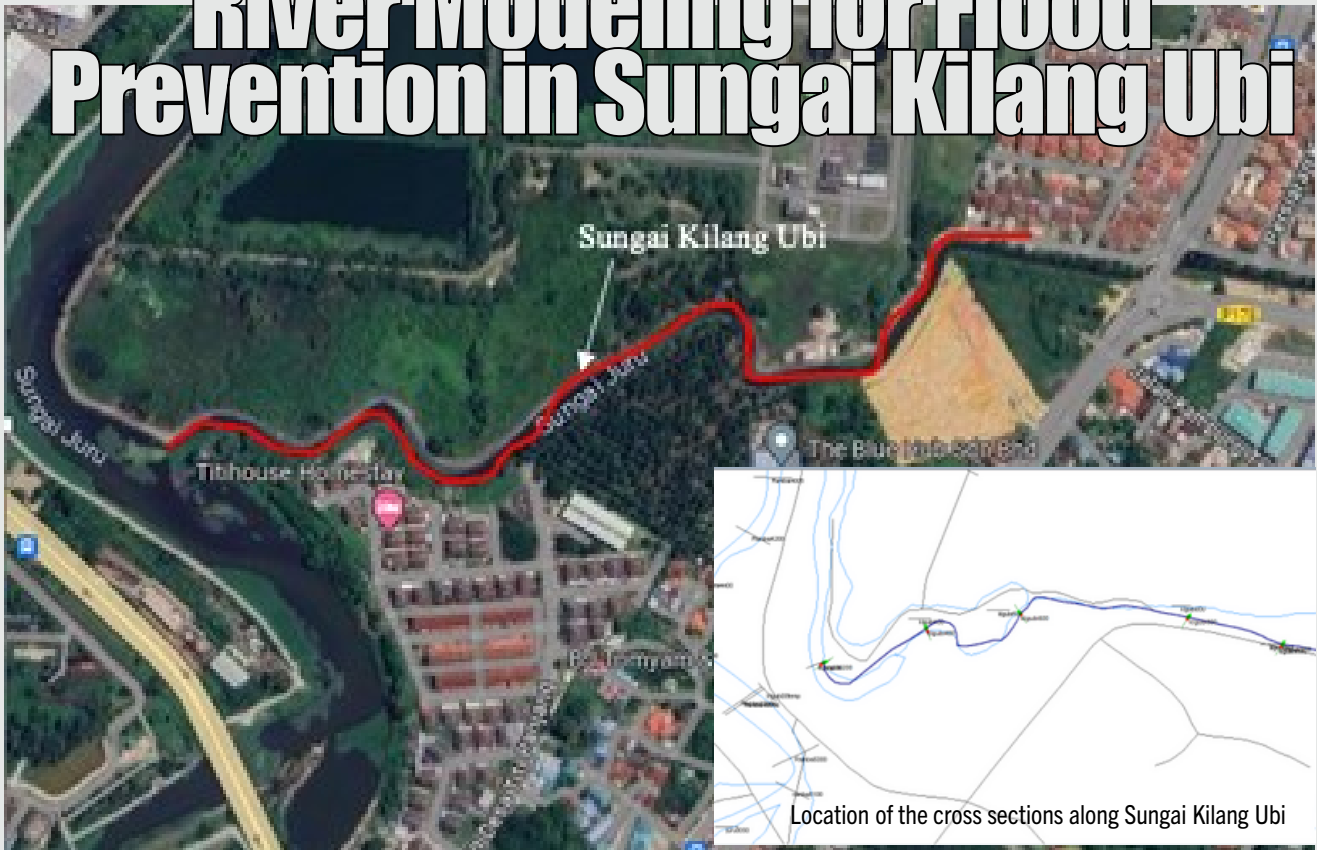


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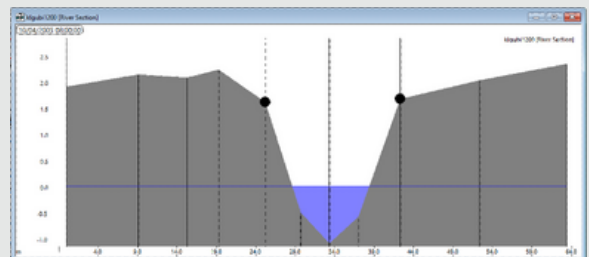


# River Modeling for Flood Prevention in Sungai Kilang Ubi

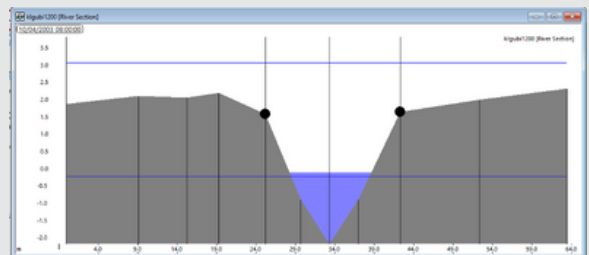


by Nur Shafikah Amirrudin, Mohamad Afzi Jamadin & Ir. Ts. Dr. Nuryazmeen Farhan Haron

Flooding remains a yearly challenge in Malaysia, affecting the environment and infrastructure, with Pulau Pinang particularly vulnerable. Sungai Kilang Ubi, a flood-prone river in this region, was recently studied to develop effective flood control measures using InfoWorks RS, a hydrodynamic modelling software. This study focuses on the 2003 flood event to simulate the river's behaviour, aiming to support flood prevention efforts. The modelling process involved building a 1-dimensional Sungai Kilang Ubi representation, incorporating critical water depth, flow, and velocity data. Researchers used survey data to model the river's cross-section and flow conditions accurately. This model, verified through calibration, allowed for the simulation of various flood scenarios, providing essential insights into how the river responds to heavy rainfall. The study found that river deepening is a practical solution for reducing flood risk in the area. By lowering the riverbed in specific sections, the model showed that water could flow more freely, reducing peak water levels and the chance of overflow. The data highlighted that this adjustment could make Sungai Kilang Ubi less susceptible to flooding during heavy rains.



Initial river cross section before improvement work



Final river cross-section after improvement work

Overall, this research demonstrates how river modelling can guide flood prevention planning. By giving local authorities detailed information on flood-prone areas and possible improvements, such as targeted river deepening, communities can be better protected against future floods. This approach is crucial as climate change and urban growth continue to raise flood risks in Malaysia.



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