



**UNIVERSITI TEKNOLOGI MARA**

**THE EFFECT OF CROSS-SECTION POSITION  
ON FLOOD INUNDATION MAPPING**

**NORSHAHIRA BINTI YUSOF**

Thesis submitted in fulfilment of  
requirements for the degree of  
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## AUTHOR'S DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student : Norshahira Binti Yusof  
Student I.D. No. : 2016711757  
Programmer : Bachelor of Surveying Science and  
Faculty : Geomatics (Honours) – AP220  
Thesis/Dissertation Title : Architecture, Planning & Surveying



Signature of Student : .....  
Date : 14 FEBRUARY 2021

## **ABSTRACT**

Floods are a natural occurrence of a combination of meteorology and hydrology. Hydrologists describe floods as a sudden increase in water production that causes a sudden water peak. In 2010 at Kuala Nerang, Kedah experienced a major flood. The goal of the study was to investigate the effect of the cross-section location on flood mapping. To achieve this goal, the objective of this study is to identify which DEM is suitable for flood mapping and analyze the influence of river crossing position on water surface height and stagnation area. The methodology using is in this process which is steady flow water surface profiles. This part of the modeling system is intended for the measurement of water surface profiles for steady, gradually varying flow. The system can manage either a complete network of channels or a single river. The steady flow portion is capable of modeling water flow surface profiles. In addition, RAS Mapping is a method for inundation mapping and includes the generation of surface water. This process can produce an overflow of water and can determine the height of the water. This can find out the height of the flood area. This study also shows that the use of Ifsar DTM data is more accurate than SRTM and the use of 300m cross-section is better than the cross-section curve. This can help improve flood mapping. This can help improve flood mapping. With the selection of accurate data can get the real flood. Cross-section selection also affects the accuracy of flood inundation mapping.

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