

COMPARISON BETWEEN CALIBRATE AND NON-CALIBRATE MANNING 'N'
VALUE FOR FLOOD INUNDATION MAPPING

MUHAMMAD HAZIQ BIN ROSSMAN

2015218608

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CENTRE OF STUDIES FOR SURVEYING SCIENCE
AND GEOMATIC
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA PERLIS

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Name of student : Muhammad Haziq Bin Rossman
Student I.D. NO. : 2015218608
Programme : Bachelor of Surveying Science and Geomatics (Hons)
AP220
Faculty : Faculty of Architecture, Planning and Surveying
Thesis : Comparison Between Calibrate and Non- Calibrate
Manning 'N' Value for Flood Inundation Mapping
:
Signature of Student :
Date : July 2019

Approved by:

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the department and university and fulfil the requirement for the award of the degree of Bachelor in Surveying Science and Geomatics (Hons).

Name of Supervisor : Madam Suhaila Binti Hashim
:
Signature :

ABSTRACT

In the years 2010, the heavy flood hit two states which are Kedah and Perlis caused by heavy rainfall from October until December. Padang Terap, Kedah was chosen as the dominant research area because that area is affected by heavy flood during November 2010. The aim of this study is (1) To generate flood inundation mapping using DEM data for calibrated and non-calibrated data, (2) To compare the flood depth between Manning 'n' values for calibrated and non-calibrated flood inundation mapping and (3) To validate calibrated and non-calibrated Manning 'n' value flood inundation mapping with ground truth data. HEC-GeoRAS is the software used to perform river analysis. Steady flow that performs on HECRAS software to generate flood inundation by certain parameters that are used, which are channel and flood plain Manning 'n' values. Five interval cross sections which are 100m, 200m, 300m, 400m and 500m running for each calibrated and non-calibrated flood inundation mapping. The result indicated the flood inundation mapping for each five cross sections based on discharge and Manning 'n' values. Water Surface Elevation is elaborated by comparison of observation and predicted results. RMSE and MAE results for validated flood depth calibrated and non-calibrated flood inundation mapping. Comparison of flood area coverage between predicted by model and ground truth data. The result of this study will benefit by providing real and meaningful information related to flood.

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