UNIVERSITI TEKNOLOGI MARA

RAINFALL – LANDSLIDE POTENTIAL MAPPING USING REMOTE SENSING AND GIS AT ULU KELANG, SELANGOR

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ABSTRACT

Malaysia has experienced many landslides that have cause a numbers of death, destructiveness, various losses to human living and immense direct and indirect economical losses. The tragic Highland tower landslide incident in Ulu Kelang, Selangor on 1993 is considered to be the landmark landslide that creates public awareness about the dangerous of landslides. Ulu Kelang, Selangor is known in Malaysia as one of the most landslide prone area. Located in the country which near the equator line with tropical climates, Ulu Kelang receives averaging 2,400mm annually rainfall. Therefore rainfall is one of the main triggering factors that cause landslide event. The aim of this project is to conduct analysis of the relationship between rainfall and landslide occurrence in Ulu Kelang, Selangor. Tropical Rainfall Measuring Mission (TRMM) satellite precipitation data have been used to analyze rainfall pattern, rainfall intensity and accumulated rainfall to establish the landslide-triggering rainfall threshold. While the SPOT-5 imagery is used to identify the land used mapping in Ulu Kelang area for years 2005 and 2009 using ERDAS Imagine 2014. The potential landslide area have been mapped using GIS application by integrated four main factors included rainfall threshold characteristic, slope gradient, geology and land used. The results indicate the potential landslide with five different indexes: very low, low, medium, high and very high; were verified using previous studies and historical landslide occurrence in year 2002 until 2009.

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Peace upon Prophet Muhammad SAW

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