

Damrong Pungsuwan 2006: Evaluation of Landslide Sensitive Areas for Cut Slope in Phuket. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Assistant Professor Suttisak Soralump, Ph.D. 173 pages. ISBN 974-16-2862-5

This study attempted to improve a method of determination of landslide susceptibility map and evaluated landslide sensitive areas for cut slope in Phuket island. The improvement of landslide susceptibility map was made by introducing engineering soil properties parameter, RMR and SMR parameters for weighting factor analysis. The evaluation of landslide sensitive areas for cut slope was evaluated by weighting factor method and logistic regression analysis.

The field investigation was done in 87 areas and located in 14 watersheds. Data collected in each area included a field estimation of strength of intact rock, joint spacing, joint condition, degree of weathering, ground water condition and joint orientation. These were used for evaluation of RMR and SMR factors. Descriptions of slope condition were collected for determination of landslide probability by logistic regression analysis.

The results of weighting factor method shows that RMR and SMR factors have slight effect on landslide hazard map. However, RMR and SMR value show direct relation with the prediction of landslide for slope cutting. As for rainfall intensity factor, the landslide potential map that considered 1 year return period of rainfall gives large difference compared to the map that used concept of 5 return periods of rainfall. Furthermore, landslide potential classes done by cumulative frequency analysis gives more realistic result than using equal range of score concept. Nevertheless, the cumulative frequency analysis of total score shows limited accuracy due to limited and slightly biased data. Finally, RMR and SMR values show significant effect on landslide probability of failure when analyzed by logistic regression data. The significant outcome of the research is the map showing the sensitive areas for slope cutting, produced by weighting factor analysis and logistic regression analysis.

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Thesis Advisor's signature

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