UNIVERSITI TEKNOLOGI MARA

GIS-BASED APPROACH USING AHP METHOD FOR SELECTING SOLID WASTE DISPOSAL SITE IN POKOK SENA, KEDAH

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Thesis submitted in fulfillment
of the requirements for the degree of
Bachelor of Science Surveying and Geomatics (Honours)

Faculty of Architecture, Planning and Surveying

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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 Under Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Nowadays, solid waste management has become one of the most serious global environmental issues especially for developing countries like Malaysia. This is due to the population growth which has caused an increase in residential, commercial and infrastructure development. This negatively affects the environment and life quality. Despite the many facilities being provided by the municipal authorities to the communities, their solid waste management still did not achieve its objectives and satisfactory level. Thus, several territorial and legal factors in landfill siting should be considered in order to reduce negative impacts on the environment. The aim of this study is to evaluate present location of dumping site at JABI and propose a new location of dumping site in Pokok Sena, Kedah using Geographical Information System (GIS) and remote sensing (RS) technology. The types of data used are primary and secondary data. These includes Digital Elevation Model (DEM), satellite image, field observations and different geographical factors. Furthermore, these data were processed through several methods of GIS operation for evaluating present dumping site such as digitizing, buffering, overlaying, spatial analysis and Analytical Hierarchical Process (AHP). The result shows some suitable dumping sites successfully identified. This study proves that GIS and RS techniques are useful as important tools in selecting suitable sites for solid waste disposal. In addition, it serves as an effective identification of suitable solid waste disposal site that helps to solve the environmental issues.

***Keywords*:** solid waste, Geographical Information System (GIS), Analytical Hierarchical Process (AHP), remote sensing (RS), landfill siting

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