UNIVERSITY TEKNOLOGI MARA

OPTIMIZING WASTE MANAGEMENT ACTIVITIES USING GEOSPATIAL TECHNIQUE

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Thesis submitted in fulfilment of the requirements for the degree of

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AUTHOR'S DECLARATION

I declare that the work in this thesis 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

Waste management is a worldwide ecological issue which worries about an extremely critical issue, especially in the route network. In many developing areas, heaps of waste are left uncollected due to the inefficiency and ineffectiveness of existing solid waste collection services, thus causing serious damage to urban health and the quality of life. Generally speaking, the collection method is generally the most labor-intensive and costly method in the entire municipal solid waste management scheme, consisting of storage, collection, transportation, therapy, and final disposal procedures. This research was conducted at Kampung Manjoi, Ipoh Perak. This project aim is to improve E-Idaman's waste management using a geospatial approach. To achieve the aim, several objectives included which is i) to propose the zone of waste collection and ii) to allocate new leach bin based on needs. Database of the household and the amount of waste for each house were recorded.This study method was used the calculations were made to determine zoning in Kampung Manjoi then used the network analysis to get the efficiency of time and distance. Based on the calculation, there have two zones which is Zone A and Zone B and two garbage compactors would cover the area twice a week. Additional, to allocate new bin the two parameters was used which is buffer 100 meters the main road and identification the type of building. Besides, nine new locations of leach bins are required to cover the entire study area especially in the commercial and institutional area. Geographic Information System application was used to allocate and identify the location for bins and estimate the required capacity of them. In conclusion, this study will contribute to the improvement of current practice for E-Idaman Sdn Bhd in term of route network for waste management.

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