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Managing Road Maintenance Using Geographic Information System Application

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ABSTRACT

The development and economic growth of a nation is closely related to its available transportation system. Good and efficient road transport infrastructure facilities will promote industrial and socio-economic development. To provide safety and comfort to road users, a comprehensive road maintenance schedule must be formulated and adopted to ensure those roads are in good condition at all times. Preventive maintenance works, such as road rehabilitation will help to reduce the major road repairs and expenditure. Prior to this, a good database, gathered through GIS will be necessary in order to ensure maintenance is done effectively. Geographic Information System (GIS) is said to be one of the useful tools that can be utilized to manage database in road maintenance engineering. This system is capable of storing, managing, analyzing, computing and displaying all forms of geographical data for road maintenance works. In this study, the author has adopted GIS application software – ArcView, and has reviewed and analyzed its effectiveness in managing road database. These data are then used to assist the management to ensure effective and systematic road maintenance. A typical model of roads in Penang, Malaysia is used as a case study to further clarify the application of GIS in road maintenance.

KEYWORDS

Road Management, Geographic Information System, Database, ArcView

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