Reconceptualising Pavement Maintenance Decision-Making Using GIS as a Visualisation Tool: A Case Study Exemplar

Emad Alfar^{1*}, Muhammad Qasim Rana² and Angela Lee²

¹School of Engineering, University of Bolton, United Kingdom

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²School of Built Environment, University College of Estate Management, United Kingdom

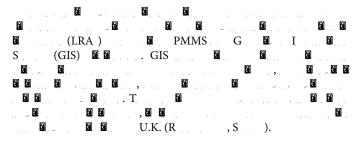
Abstract

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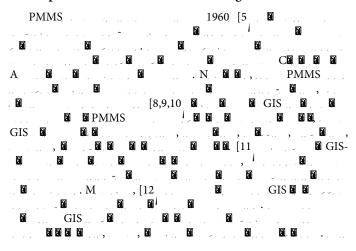
This study explores how a visualised GIS model can aid decision-making in pavement maintenance management, focusing on roads under Local Road Authorities (LRA) control in the U.K. Factors infuencing decision-making in pavement maintenance were identified and ranked through a nationwide questionnaire survey, followed by interviews with LRA experts to validate the rated factors. The Analytical Hierarchy Process (AHP) was employed to configure priority rankings. Subsequently, a GIS-based decision support model was developed and tested using Runnymede roads within Surrey County Council. Fourteen infuential factors a fecting pavement maintenance were identified and ranked. The GIS model was deemed a rational, simple, and usable tool for pavement management. With growing pressures on LRAs from limited budgets, increased accountability, and ageing roads facing higher trafic loads, eficient decision-making processes are crucial. GIS is a valuable tool for visualising results and optimising pavement maintenance strategies.

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GIS in pavement maintenance and management



*Corresponding author: Prof. Emad Alfar, School of Engineering, University of Bolton, United Kingdom, E-mail: m.rana@ucem.ac.uk

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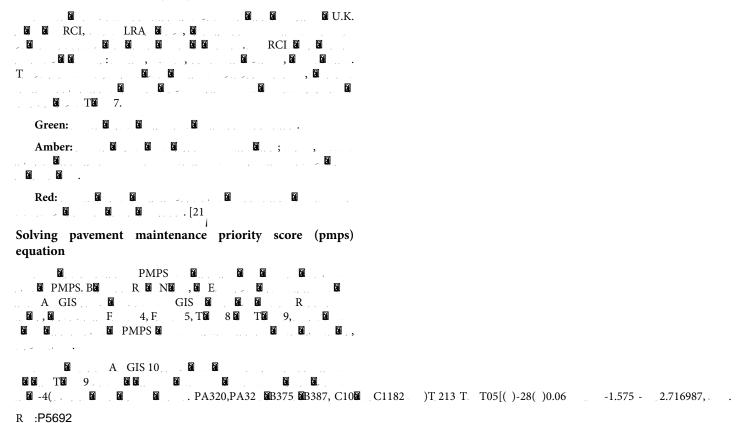
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Road condition indicator (RCI)



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