EVALUATION OF PAVEMENT MAINTENANCE AND STRENGTHENING TECHNIQUES

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ABSTRACT
Prospects of the 21st Century assert that road networks will continue to expand while the existing road infrastructure will remain a valuable asset to be smartly and effectively preserved, operated and managed. The challenge to road operators is to elaborate and implement adequate maintenance and strengthening methods, combining cost-effectiveness and engineering superiority. Road maintenance works create traffic disruption and require financing. Moreover, road operators are continuously in search of maintenance and strengthening techniques of high performance at minimum cost. This research paper examines the decisive criteria for road operators to identify the optimal technique of pavement maintenance with regard to safety, serviceability and satisfaction of road users. These criteria are related to the engineering and economic assessment of the main pavement maintenance techniques, performed in the frame of this research. The research paper presents a simple method to evaluate the current maintenance and strengthening techniques for asphalt pavements using engineering and economic assessment criteria. Engineering criteria include road serviceability but also safety and durability, simplicity of application and environment-friendliness. The economic assessment is performed in terms of financing needs, accident cost, delays cost and toll rates/revenues. Respective tables are proposed to road operators with view to a rational assessment of the current maintenance and strengthening techniques for deteriorating road structures.