STRATEGIC NETWORK-LEVEL PAVEMENT MANAGEMENT ANALYSIS: THE CASE OF SERBIAN ROAD NETWORK

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ABSTRACT
The paper presents the application of World Bank's model RONET to strategic network level analysis of the Serbian state road network. The condition of this network deteriorated considerably during the 1990s due to under-financing of operations and maintenance. In recent years financing for the road sector has gradually increased focusing on the most hazardous and highly trafficked parts of the road network. However, the overall budget allocated to the sector remains inadequate to maintain the entire state road network in stable condition. The goals of the presented study are to obtain the optimum maintenance and rehabilitation (M&R) strategy and related budget, estimate the impact of different funding levels on the future quality, and estimate the economic consequences of budget constraints.

Application of the RONET model led to an optimal M&R strategy with a good balance between rehabilitation, periodic and recurrent maintenance. Implementation of the "Optimal" M&R strategy would cause major improvement compared to the current condition of the network. Implementation of higher than optimal M&R standards would lead to substantially higher road agency costs and consequently lower net benefits, while the implementation of lower than optimal M&R standards would lead to considerably worse network condition for slightly lower agency costs. This means that even minor budget constraints would result in considerably higher total road transport costs for the country's economy.

KEY WORDS: Road network, strategic level pavement management, RONET