

Development of Urban Road Maintenance Management System Using Distress Models of HDM-4

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Abstract

Pavement maintenance management systems are to be developed for the urban road networks for low to medium size cities in India. The study shows the results of progression of roughness of a major secondary road of a Patiala urban road network from Dukhnavarin Sahib Gurudwara to Nabha road with various alternative options and the intervention criteria's are decided in such a manner to keep this road within the serviceability level 2 of roughness i.e. IRI of 4 m/km throughout the analysis period of 15 years as per the guidelines of Ministry of Road Transport & Highways for maintenance management of primary, secondary & urban roads. Survey was conducted in order to build up the inventory data base & pavement condition was assessed using Bump Integrator and Benkelman Beam equipment. Pavement Maintenance and Management System was used for technical & economic analysis purpose. Different calibration factors were used on various distress models of HDM -4 in order to facilitate more steady and reasonable prediction of the road network for local conditions. The calibration factors were chosen on the basis of roughness close to actual measured value of roughness. Also, the comparison between scheduled and responsive criteria's is done for knowing the effectiveness of the strategies. The purpose of present study is useful for the sound decision making and for in time allotting of funds in order to enhance & maintain certain level of serviceability throughout the analysis period.

Keywords: pavement maintenance management system, roughness, international roughness index, level of serviceability.

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