Development of Evaluation Criteria for Routine Maintenance Work in Performance-Based Road Maintenance Contracts

Aruna samith[1] and Saman Bandara[2]

Abstract

Abstract Road Maintenance is the key element for the preservation of a road network condition, implementing further improvements and corrections during the lifespan of the road, through continuous monitoring of the condition of all assets and assessments of further needs. Performance-based road maintenance contracts fully depend on the contractor and contractor's capability of managing the projects. PBMC has had a substantial success record in countries over the last decades. This paper aims to provide a framework for the prioritization of the performance-based road network maintenance related to routine maintenance and to ensure that the asset is preserved to maximize the value of the investment in Sri Lanka. PBMC is already practicing in Sri Lanka, but based on the findings conducting road work according to PBMC does not achieve its objective. Criteria used in Integrated Road Investment Program (iRoad), funded by Asian Development Bank (ADB) are used in the study, such as potholes, missing or destroyed signs, grass cutting, and vegetation and litter control which fall in the category of routine maintenance. Major issues in selected criteria are, not having a relevant selection method and not having any research or literature for the evaluation of selected performance criteria available. To overcome the issues and reach the maximum benefits from a project, suitable indicators and evaluation frameworks must be established. The main focus of this research is on routine maintenance activities because periodic maintenances, such as resurfacing and resealing processes require more time to collect data. Therefore, pavement (potholes) and non-pavement (roadside clearance and signage corrections) categories that are related to routine maintenance activities are the main focus of the study. The gathered information will be used to identify the performance indicators for roadway, shoulders, signage corrections, and road safety. The findings are only applicable for the national highways type in the road-class category. The data collection was carried out using visual inspection, video logging, and instant messenger methods. This was done at Executive Engineer's Division Hambanthota at a one-month frequency over a period of ten months. A database is developed to store all the collected data. A practical performance evaluation mechanism is proposed with the use of the database for future planning intentions. Preliminary data collection suggests that roadside cleaning be arranged once a month, vertical clearance of road to be done approximately once in six months. Road signage to be corrected in one-month intervals. Results help to develop better evaluation criteria and the paper discusses the issues to be considered in performance-based road maintenance contracts.

Keywords: *performance-based road maintenance contracts, evaluation criteria, road network maintenance*

Authors Details;

1. Postgraduate Student, Transportation Engineering Division, Department of Civil Engineering, University of Moratuwa. arunasamith1982@gmail.com

2. Senior Professor, Department of Civil Engineering, University of Moratuwa, bandara@uom.lk