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**DEVELOPMENT OF EVALUATION CRITERIA FOR
ROUTINE MAINTENANCE IN PERFORMANCE-
BASED ROAD MAINTENANCE CONTRACTS FOR
NEWLY REHABILITATED ROADS IN THE DRY ZONE
OF SRI LANKA**

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Thesis/Dissertation submitted in partial fulfillment of the requirements for the degree
Master of Science/Master of Engineering in Civil Engineering

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Declaration

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Abstract

Road maintenance is the key element for the preservation of a road network's 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 (PBMC) are becoming popular as they have a substantial success record in countries such as USA, UK, Sweden and Netherlands over the last few decades. However, PBMC's success fully depends on the contractor and the contractor's capability of managing the projects. This paper aims to provide a framework for the prioritization of performance-based road network maintenance works and to ensure that the asset is preserved to maximize the value of the investment in the dry zone of Sri Lanka. Criteria used in the Integrated Road Investment Program (IRoad), funded by the Asian Development Bank (ADB), are used in the study as a guide.

The main focus of this research is to identify relationships between roadside clearance, signage corrections, and surface defects over time as it helps to allocate resources, improve safety and reduce costs in the dry zone of Sri Lanka. Gathered information is used to identify the performance indicators for roadways, shoulders, signage corrections, and road safety. The study is conducted by collecting data using video logging methods. The observations were carried out on selected road links during the one-year period from January to December in 2021. Observations are carried out at the Executive Engineer's Division in Hambantota at a frequency of at least once a month to record selected defects and check whether the road defects are corrected or not. A database is developed to accommodate 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 at least once a month, and vertical clearance of the road could be done approximately once every six months. Road signs are to be corrected at one-month intervals. Results help to develop better evaluation criteria, and the thesis discusses the issues to be considered in performance-based road maintenance contracts. The evaluated framework has identified optimum frequency that is required to attend to different maintenance

activities such that required performance levels are maintained. This is the first evaluation criteria that's ever been made.

Keywords – Performance-based Road Maintenance Contracts (PBRMC), Routine maintenance, Monitoring & Evaluation, Performance Indicators

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