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ASSESSMENT OF OPERATING SPEEDS OF REHABILITATED RURAL ROADS WITH ASPHALT SURFACING

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DECLARATION

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ABSTRACT

In Sri Lanka, rural roads are not specifically designed on technical requirements. Most of the rural roads (C and D classes) have historical backgrounds as being tracks and trails coming even beyond the colonial times. Hence, most of the rural roads in Sri Lanka are almost following the same traces and not designed technically. Nowadays, rural roads are being rehabilitated. So far those rehabilitation projects underwent with merely construction improvements and proper geometrical improvements have not been adopted. It was found out that the actual speeds can be significantly greater after rehabilitation affecting the safety of road users. Aim of this study was to assess actual operating speeds, posted speed limits and to find design operating speeds that supposed to be after the rehabilitation. Finally it suggests rational speed limits to rural rehabilitated roads under purview. Most of the rural roads in Sri Lanka don't have posted speed limits specified according to the geometric, road environment and functionality level of the road. The speed limits of 70km/h and 50km/h are the usual speed limits enforced for traffic in arterial roads which are categorized as class A and B. Since the speed limits are not categorized according to the type of the road, above speed limits apply to the rural roads as well. It's hardly been seen that traffic speeds are controlled or monitored by law enforcement in rural roads. Hence the speed choice of the rural road drivers depends on variety of other factors. The 85th percentile speed was taken as the operating speed. This speed was used as a basis for suggesting rational speed limit since most drivers behave in a safe and reasonable manner and do not want to get into crashes. Also it encourages drivers to travel at about the same speed. The researchers have studied number of rehabilitated roads in North Western province in Sri Lanka. Each road was divided into several sections; straight and curved. Operating speeds on straight sections were given priority in suggesting rational speed limits. As operating speeds in curves are considerably lower and enforcing lower posted speeds only based on operating speeds on curves for entire road, would not be practical since drivers tend to disrespect the speed limit. The suggested rational speed limit for all the roads under purview is 50 km/h and this speed limit will be overridden to a lesser speed limit at a curved section based on the operating and design speed. This speed limit should be notified using sign boards and shall be enforced only for the curve itself.

DEDICATION

To my beloved wife and parents
who always encouraged me towards success

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LIST OF ABBREVIATIONS

Abbreviation	Description
AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
DBST	Double Bituminous Surface Treatment
GPS	Global Positioning System
NWP	North Western Province
NW	North Western
ROW	Right of Way
STD	Standard Deviation

