

# The Study of Aging Characteristics of Road Marking Material

R.A.D.M.P. Ranawaka<sup>1</sup>, J.M.S.J. Bandara<sup>2</sup>

## Abstract

Road Safety is a major component of the highway sector, and it should be considered well in highway planning, designing, construction and maintenance. The visibility of road marking is essential for efficient traffic flow and road safety. There are complaints that road markings of many roads in Sri Lanka have poor visibility and no effective re-marking processes within a sufficient time period. The major reason for the poor visibility is the low reflection level of road markings. The performance of the road marking can be affected due to the embedment of glass beads, water on road way, driver's eyesight, position, and quality of headlamps, and road surface debris. The adequate noticeable area of road marking, directly affects the visibility of road marking. This noticeable area of road marking decreases due to traffic with respect to time, after applying. It is necessary to repaint the road marking to improve safety to road users.

There is no guideline or methodology available for road agencies in Sri Lanka to follow, when deciding the road marking and repainting period. It is difficult to manage funds, material stock, manpower and machinery in a most effective manner, without guidelines.

The main objectives of this research are to understand the aging characteristics of road marking material with respect to traffic and other environmental parameters, identify the optimum frequency of time for repainting urban roads and introduce guidelines for the repainting of the road marking while integrating it as a program, to a road database in highway management tool, as a future implementation.

Preliminary measurements will be taken on selected high volume traffic roads that have shown a considerable reduction of visibility with time due to traffic. Colombo - Galle – Habantota – Wallawaya road (A002, Rawatawatta ADT - 42711) and Colombo – Horana (B084, Werahera ADT - 40910) road can be considered as examples for roads. Galle road consists with newly painted road marking (2017) and old road marking (2014). It can be seen a considerable quantity noticeably fading within the period of 3 years. These noticeable area of road marking will be compared, with time periods, to many road sections. A relationship between the reduction of visibility and traffic, is to be developed based on these photo based measurements. It is a ranking method based on weightages given to a visible area of a photo view. Newly finished road marking photos with the best visible area will be 10 and it may decrease as per visibility of marking. By comparing many samples, the relationship between the visibility of marking and aging of marking, using these weightages, is tried to be established. It can be possible to identify the frequency of the repainting of road marking.

**Keywords:** Road safety, Road marking, Visibility, ADT, Photo base, Frequency of remarking.

- 
1. Engineer, Road Development Authority, manomawijetunge@uyahoo.com
  2. Senior Professor, Department of Civil Engineering, University of Moratuwa, Sri Lanka