

Accident Analysis on A9 Road Section from Elephant Pass to Pallai

V. Sivagumar¹ and J.M.S.J. Bandara²

Abstract

Accidents considered as major hazard for any highway section. Highway safety can be improved with geometric features such as increasing lane width, improved horizontal and vertical curves, designated U-Turn and vehicle restriction, driver discipline, regulatory action and educational programs to public etc. The study intends to identify major accident causing factors in the particular sections, thus with better understanding of the factors improve safety of all stakeholders. The 20 km of Elephant Pass to Pallai section of A9 road considered as one of the two sections which connects north peninsula with other parts of the country. With the improvement of the sections from 2010 the vehicle entering rate of the section have increased and due to its good road condition vehicles are able to move at higher speeds. Motorcycles, buses, vans are the primary vehicles using this particular section.

The accident data were collected from 2010 to 2015 and its locations were identified. Accident which caused fatal impact, hospitalization of victims and property damage more than 0.1 million were selected for this research. Using GIS system, the accidents and its locations were processed. During the study, blackspots were identified by developing weightage by the impacts and number of accidents. The reasons for accidents were analyzed and categorized under human errors, traffic conditions, improper geometric designs, road conditions and environmental factors. Accident causes patterns were identified by analyzing the causes in five years period. Critical reason was identified as geometry design of the section. In order to verify this reason, another 20 km road section was selected in A9 road, where the geometric design is different from the study section. Hypotheses testing was carried out to validate the accident results of the two different sections. From the study, the accident growth rate per km was identified. Remedial measures to reduce the accidents are studied in this research. One of the major limitations was only police recorded accidents were analyzed in this research. Other limitation was reasons for the accident are ambiguous in many cases.

Keywords: Accident Analysis, Black spot, Geometric design

Author Details

1. Postgraduate Student, Department of Civil Engineering, Faculty of Engineering, University of Moratuwa. vpst50@gmail.com
2. Senior Professor, Department of Civil Engineering, Faculty of Engineering, University of Moratuwa. bandara@uom.lk