Criteria to Identify Optimum Spacing for Service Areas on Southern Expressway Extension

K. W. Kandambi[1], J. M. S. J. Bandara[2]

Abstract

Many of the accidents happened in Expressways is due to the fatigue and sleepiness of the drivers. In the Southern Expressway, there is only one service area for the entire 142km distance which will be a relief for the long-distance drivers due to non-availability of any other rest area. The research overview is analysing the effectiveness of the existing service area located in Southern Expressway with collected traffic data over a one week period. Analysis carried out in order to identify the number of vehicles stopped at the service area. Several statistical and graphical methods were used to obtain the distribution of operating speeds in each of the expressway section and categorized as vehicles stopped at the service area considering the average speed. The accuracy of the results can be increased with a vehicle survey at the service area. However, categorization according to the speed is more convenient as comparison carried out with several criteria. The main objective of the research is to identify the optimum spacing for the service areas of Southern Expressway and finding the suitable location for the proposed service area in Southern Expressway extension. In order to show the usage of an effective service area, a standard was developed. The number of possible criteria was identified which could be influencing the driver to use the service area and those criteria were weighted by comparing with the standard and the traffic data analysis. Then weighted factor was applied to the distance between service areas and selected interchange and adjusted to obtain an optimum value for the spacing between two service areas which will help to find the suitable location for the proposed service area in Southern Expressway Extension.

Keywords: Southern expressway, Rest area, Optimum Spacing of service areas

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1. M. Eng. Student, Department of Civil Engineering, University of Moratuwa, Sri Lanka, kkandambi@gmail.com
2. Senior Professor, Department of Civil Engineering, University of Moratuwa, Sri Lanka, bandara@uom.lk