



PERFORMANCE OF TRAFFIC NOISE MODELS FOR METROPOLITAN CITIES

**Arvind Kumar Shukla¹, Sukhvir Singh Jain², Manoranjan Parida^{2*},
Jyoti Bhushan Srivastava¹**

¹ *Department of Civil Engineering, Institute of Engineering & Technology, Lucknow-262021, India*

² *Department of Civil Engineering, Indian Institute of Technology Roorkee-247667, India*

Abstract

In India, transportation sector is growing fast and the number of vehicles on Indian roads is increasing at a rate more than 7 percent a year. During the period of 50 years from 1951 to 2001, the number of vehicles has increased from 0.3 million to 43 million i.e. an increase of almost 143 times. This has led to overcrowded roads and noise pollution. The transportation sector is one of the major contributors to noise in urban areas, accounting to as much as 55 percent of total noise on the arterials. Interrupted traffic flow noise is associated with the typical congested conditions in the urban area and has different characteristics from the traffic noise generated by free flow traffic on rural roads. These differences arise from the various traffic flow characteristics such as heterogeneity of traffic, flow speeds etc., which is in contrast to traffic on rural roads, where the flow is generally continuous. In this paper, analytical modelling has been used for predicting road traffic noise. Two models namely FHWA (Federal Highway Administration), and CORTN (Calculation of Road Traffic Noise) were applied. The data collected at ten different locations selected on the basis of land usages in urban areas of Lucknow, a historical city in India has been analyzed and utilized for modeling purpose. It was observed that predicted noise levels using a modified FHWA model are more close to observed noise levels than the noise levels predicted by CORTN Model.

Keywords: CORTN, FHWA, model, noise, traffic

* Author to whom all correspondence should be addressed: e-mail mparida@gmail.com