
Traffic noise contour mapping in Tangalle city - Sri Lanka

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Noise pollution is one of the major environmental problems in many cities in Sri Lanka and therefore, systematic studies in city noise pollution are essential to control the situation. Noise from different sources or activities in a certain area can be mapped quantitatively on to a single map called “Noise Contour Map (NCM)”. These maps have been used in Environment Impact Assessments (EIA) and they provide great environmental information of the relevant area. The main objective of this study was to map the noise distribution in Tangalle city (6.0167° N, 80.7833° E) which is a popular destination among tourists. Noise measurements were carried out using B&K Type-2250 hand held analyzer (IEC 61672-1; 2002 Class1) in November, 2013. A-weighted equivalent continuous sound pressure level (L_{Aeq}) was logged to five minutes period ($L_{Aeq, 300s}$) continuously at a single location and for more than 15 minutes continuously on both sides of the road. Total of 25 locations were covered at suburb of A2, B141, B410 and B628 roads in Tangalle city during one week period. Measurements were carried out from 6.00 am to 10.00 pm in each day and therefore busy and calm hours were investigated. Average L_{Aeq} values were used to produce NCM with internationally recommended IMMI mapping software. According to the results, 37.7 ± 7.1 % out of 14.21 km² total area has exceeded the maximum allowed level (63 dB) given by Sri Lanka National Environment Act. No. 47, 1980 for mixed residential area. The densely populated area in the city lies within the noise contours of 65-70 dB. Mapped L_{Aeq} besides A2 road was more than 80 dB at some locations. The results suggest that necessary regulations to reduce the noise production and noise reduction techniques have to be imposed to control the noise pollution and to protect the economic value of the city.

Key words: Traffic noise, Noise contour map, Tangalle city, L_{Aeq} , B&K Type-2250

Acknowledgements: Authors acknowledge financial assistance provided by the TURIS Project, Grant No: RU/DVC/Pro 61.

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