ESTIMATION AND MAPPING OF VEHICULAR TRAFFIC-INDUCED NOISE ALONG A. BONIFACIO AVENUE AND SUMULONG HIGHWAY IN MARIKINA CITY

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Abstract: This study is an attempt to estimate the noise level from motor vehicles using mathematical model and present it through a map. The Golmohammadi, et al (2007) equation was used to estimate noise level from motor vehicles wherein four groups of variables were considered: road dimension parameters, traffic flow, vehicle speed and noise emission levels of four groups of vehicles. The predicted noise values from the model were compared with those measured in the field. Predicted average noise emission levels were found to compare favorably with measured values. In general, the measurements and the model results indicated that the highest noise levels were found to occur close to the road. It was also observed that there is a decrease in noise levels as the distance from the road increases. Using the same equation, the noise emission levels along A. Bonifacio Avenue and Sumulong Highway were calculated. The results indicated that the estimated noise emission values were above the Philippine noise standards. The distances from the road of 75 dB, 65 dB and 60 dB noise level were also calculated using the sound propagation equation. The number of buildings, most especially those classified as noise sensitive receptors, were also determined. The estimated noise levels and the number of noise sensitive buildings were presented in a map using ArcView GIS. The mapped results of this study are useful in transport development, traffic management planning and land use planning.

Key Words: Traffic noise, noise level, noise sensitive receptor