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Assessment on Noise Pollution Near Residential Area at Section 27, Shah Alam, Selangor

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Structured Abstract

Background: The study examines the effects of traffic noise pollution on residential areas near Section 27, Shah Alam, Selangor. Traffic noise from urban areas, including roads with significant vehicle flow, adversely affects public health, daily activities, and environmental quality. Noise sources include engine sounds, tire-road interaction, and vehicular speed. This research seeks to evaluate noise levels, assess traffic volume, and explore their relationship to recommend mitigation strategies.

Methods: In achieving the study objectives, this study employs a combination of environmental monitoring and statistical analysis. Data collection involves using a Sound Level Meter (SLM) to measure noise levels in decibels (dB) across three locations over three days. Traffic volume is monitored manually using a counter meter. The sound levels are calibrated before and after measurements to ensure accuracy. Descriptive statistics and Pearson correlation analysis are performed using SPSS software to analyze the relationship between traffic noise levels and volume

Results: The *L_{Aeq}* in Section 27 ranges from 70.4 dB(A) to 75.3 dB(A). While these levels are above the Noise Exposure Limit (NEL) of 65 dB(A) in urban residential area set by the Department of Environment, (2019) The highest traffic volume recorded was 1,325 vehicles, with a noise level of 73.2 dB(A). The results of this study show that the highest noise levels affect the total traffic volume. High noise level has the significance risk to people who lives in the high- traffic area and likely to suffer from sleep disorders, stress and cardiovascular issues. Additionally, this study demonstrated a strong positive correlation between noise level and total traffic volume with $R^2= 0.875$. This indicates the relationship between the noise level and total traffic volume is significant.

Conclusion: According to the study, noise levels in Section 27, Shah Alam near residential areas, are higher than what the Department of Environment (DOE) has determined is acceptable. Addressing traffic noise pollution in residential areas is crucial to reaching the Sustainable Development Goals (SDG) on Reduced Inequalities (SDG 10) and Sustainable Cities and Communities (SDG 11). The unequal effects of noise pollution can be reduced with techniques like noise mapping, improved urban planning can help to minimize the unequal impact of noise pollution, particularly on vulnerable groups like children and elderly. As a result, this study offers useful information to community planners who want to create residential areas that are more sustainable, healthier and peaceful

Keywords: traffic noise pollution, residential area, traffic volume, noise exposure limit, noise control, noise level

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