

Analysis of Traffic Noise in Coimbatore City

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ABSTRACT

As our towns and cities continue to grow, so too does the volume of traffic travelling on our roads. While this traffic represents an essential part of society's development and prosperity, it is also a growing source of concern for the community. This paper discusses many of the issues relating to the impact of road traffic noise on the community. This study was aimed to examine the reliability of traffic noise and the effects, levels and sources of traffic noise in various location (Autthupaalam, peelamedu, saibaba colony) of Coimbatore.

Key words- Traffic, Noise, Survey, Environment, Pollutants, Coimbatore.

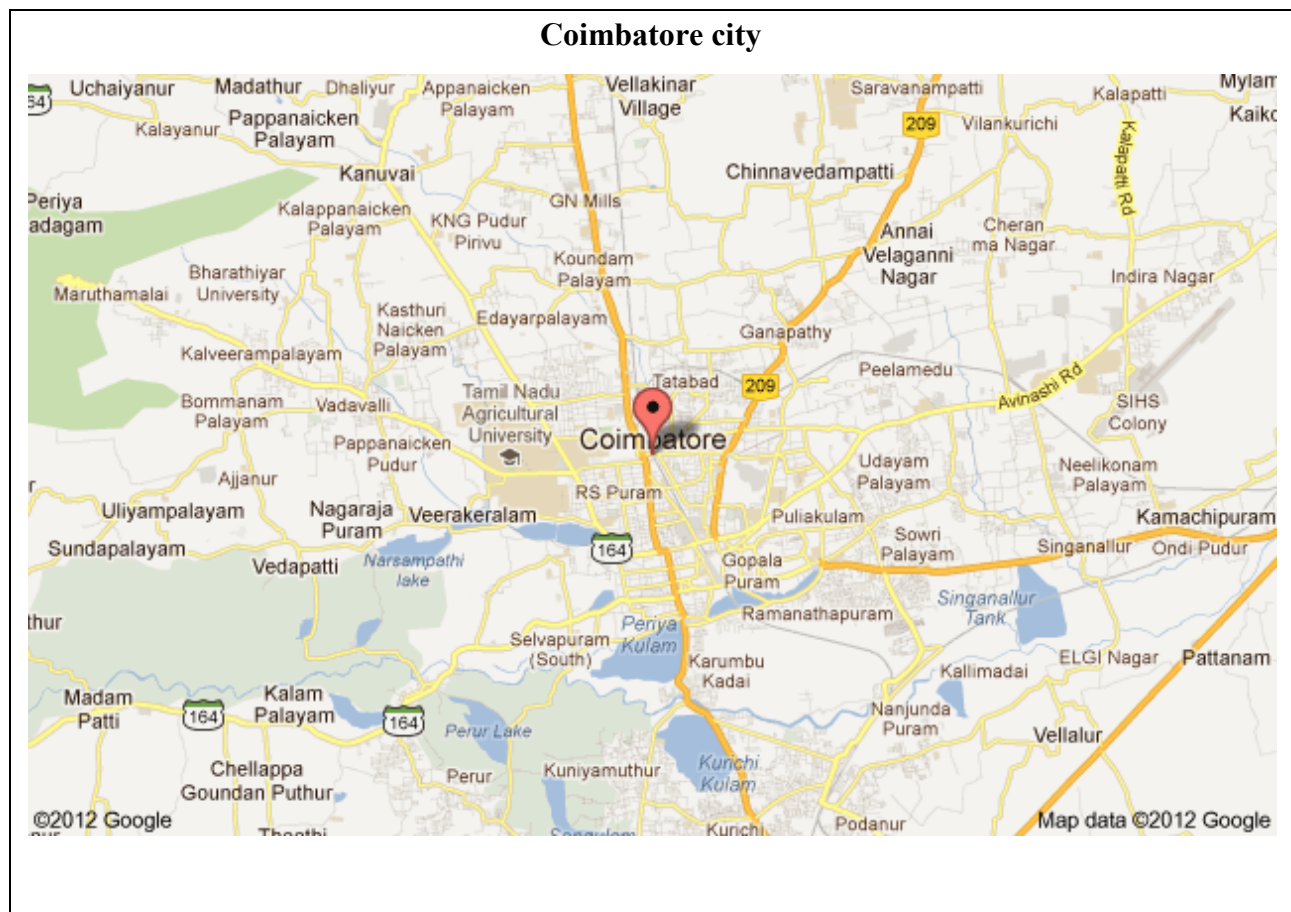
1. INTRODUCTION

Our activities on earth since the Industrial Revolution have continued to modified the environment. Fortunately, the concerns about our environment and the need for its protection have been gaining importance. It has been recognized that rise in the level of pollution of all kinds should be checked. Most of the pollutants that affect our environment are chemical in nature. Noise is a physical pollutant. It is not recognized easily. This is because the sensitivity of human ear gets automatically adjusted to ambient level of sound and so slow increases in the ambient level go unnoticed. Therefore noise continues to do the damage, silently.

High noise levels constitute a serious, although at times neglected, environmental problem because of its effects on the well-being and health of people. The possibility that noise has negative effects on human health has been a strong impetus for research and a major argument for noise control.

People's well-being is diminished by noise, so in this sense of the term there is no doubt that noise affects health. Very loud sounds are highly injurious to man as well as animals.

Coimbatore is the second largest city in Tamilnadu with a metropolitan population of two million. It is a major commercial center and often been referred to as the 'Manchester of south India '. Coimbatore has been ranked fourth among climate by a survey done by the confederation of Indian Industry (CII). There are seven major arterial roads in the city. They are Avinashi road ,Mettupalayam road, Trichy road,Sathyamanglam road, Palakad road, Pollachi road, and Marudhamalai road. There are three National Highways passing the city. They are NH-47, NH-67, NH-209.



2. MATERIALS AND METHODS

Noise measurements were carried out by using Sound Level Meter. Noise levels were measured at Auttupallam and saibaba colony respected the residential zone and Peelamedu respected to commercial zone. The method applied to analyze the traffic noise is taking continues reading in a weekday and weekend day.

Here the readings are taken in three sessions [morning (8am-10am),afternoon(12pm-2pm),evening(5pm-7pm)]. The readings are taken for every 15 minute and tabulated. Each reading have ten sample readings.

Table 1.Measurement of Exterior Vehicle Noise

Noise Type of vehicle	Sound level dB(A)
Personal car	74
Bus and truck with total weight below 3.5 ton with total weight below 2 ton	76
with total weight above 2 ton but below 3.5 ton	77
Bus with total weight above 3.5 ton with engine power below 150 kW	78
with engine power 150 kW or above	80
Truck with total weight above 3.5 ton with engine power below 75 kW	77
with engine power below between 75 kW and 150 kW	78
with engine power above 150 kW	80

Table 2.Limits of Noise In Various Zones

ZONE	DAY (Limits in dB)	NIGHT (Limits in dB)
INDUSTRIAL	75	70
COMMERCIAL	65	55
RESIDENTIAL	55	45
SILENCE	50	40

3. RESULTS AND DISCUSSION

Table 3.Sound Level Zone in Different Sessions

TIME	Autupallam		Saibabacolony		Peelamedu	
	WEEKDAY (dB)	WEEKEND (dB)	WEEK DAY (dB)	WEEK END (dB)	WEEK DAY (dB)	WEEK END (dB)
8:00 AM	73.93	76.36	79.80	75.98	77.44	80.09
8:15 AM	79.41	78.83	81.18	77.80	84.16	75.71
8:30 AM	79.31	77.10	82.74	76.52	77.83	83.63
8:45 AM	82.27	82.45	76.54	79.83	83.23	81.47
9:00 AM	79.10	77.42	89.22	74.96	79.37	80.06
9:15 AM	75.20	73.24	87.63	78.16	83.99	75.75
9:30 AM	77.79	74.04	83.91	77.53	80.94	86.21
9:45 AM	78.99	78.17	97.83	79.28	76.990	77.74
10:00 AM	76.03	76.07	82.45	74.41	79.09	86.21
12:00 PM	82.74	73.29	81.89	79.79	74.80	82.81
12:15 PM	82.48	78.39	84.73	78.30	81.27	88.38
12:30 PM	84.44	74.59	82.35	79.18	79.69	72.89
12:45 PM	85.62	78.04	88.59	80.37	74.38	75.82
1:00 PM	83.35	77.59	86.30	81.29	75.24	81.37
1:15 PM	79.73	78.19	81.25	79.28	75.62	78.48
1:30 PM	81.94	76.26	77.70	77.50	78.79	77.88
1:45 PM	80.68	75.97	74.31	76.88	84.93	76.66
2:00 PM	75.55	76.93	78.96	75.61	81.56	75.54
5:00 PM	77.36	78.13	75.24	76.38	78.82	80.28
5:15 PM	80.79	80.52	76.89	77.97	84.72	80.61
5:30 PM	79.88	81.16	87.65	75.84	84.89	86.78
5:45 PM	79.75	79.55	83.40	76.18	76.81	80.89
6:00 PM	77.34	81.08	89.84	79.14	76.62	79.72
6:15 PM	83.76	84.16	83.96	80.50	80.23	83.81
6:30 PM	75.47	76.57	86.12	82.42	88.14	87.42

6:45 PM	82.95	86.92	80.71	79.31	91.76	94.19
7:00 PM	80.10	87.91	79.37	78.68	83.72	84.60

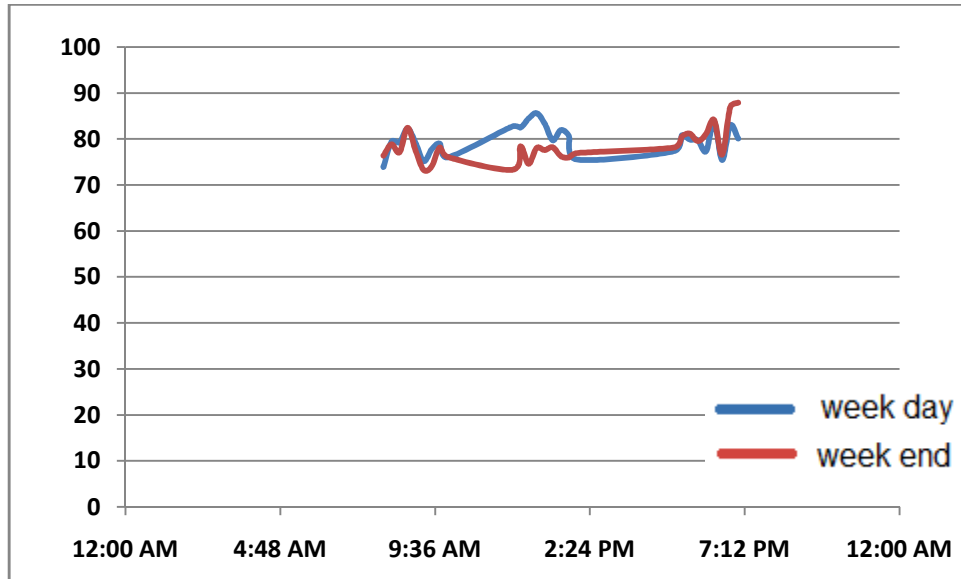


Figure 1.Noise level at Autthupaalam

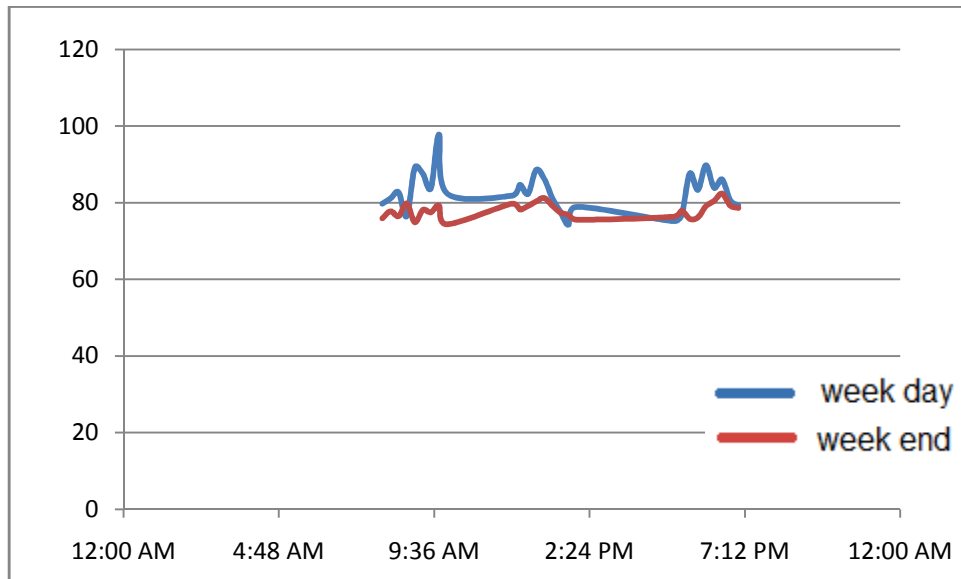


Figure 2.Noise level at Saibaba colony

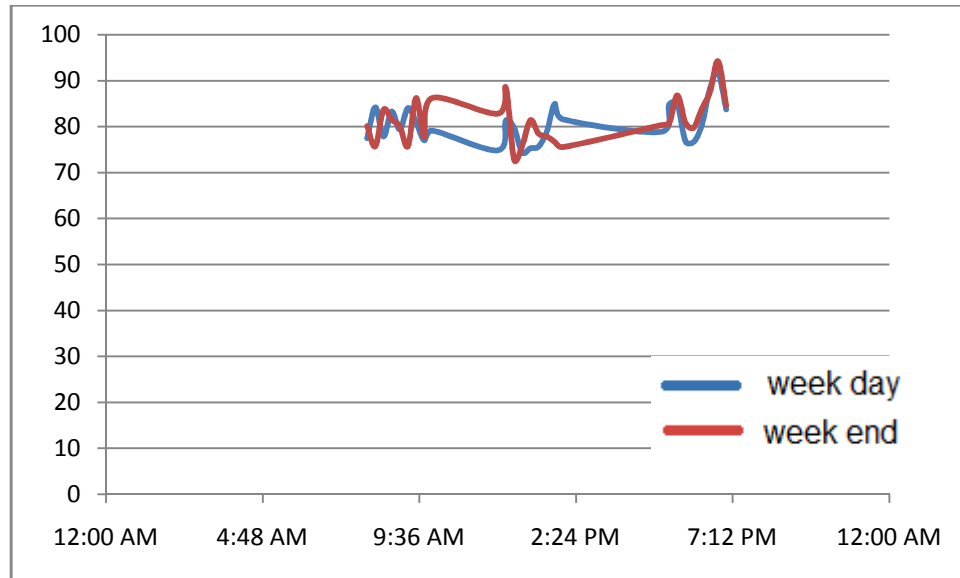


Figure 3.Noise level at Peelamedu

4. REDUCTION OF TRAFFIC NOISE

- The plantation of tree species along road side is one of the cost effective methods to control noise pollution.
- The most inexpensive ways to reduce traffic noise are to insulation of doors and windows, use rugs, mats, curtains or carpeting to absorb noise and plant trees and /or shrubs near windows.
- The noise problem more than 90% of all the exterior noise comes in through the doors and windows. The walls are almost never the problem.
- Don't replace the window a Sound proof window is a second window placed behind the existing window that opens and closes just like the current one.
- There is no need to remove or replace the window the noise problems.

5. CONCLUSIONS

The measurement of noise level in the three major zones in Coimbatore. The traffic noise level in Coimbatore is more than the allowable limits. A Sound poof window will reduce noise level by 75-95%. Much better than any replacement windows, Sound proof windows will act as a sound barrier and eliminate the noise problem. The noise problem more than 90% of all the exterior noise comes in through the doors and windows. The walls are almost never the problem.

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