

# Comparative study of Noise pollution level in Yeola and Manmad towns belonging in Nashik District during Normal days

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## ABSTRACT

Sound that is unwanted or disrupts one's quality of life is called as noise. When there is lot of noise in the environment, it is termed as noise pollution. It disturbs the normal activities such as working, sleeping, and during conversations. Community noise, or environmental noise, is one of the most common pollutants. Community noise includes the primary sources of road, rail and air traffic, industries, construction and public works and the neighborhood' (WHO, 1999). Environmental noise is increasingly becoming a community concern internationally. Considerable efforts have been made over about the last four decades to reduce noise impacts from transportation sources such as road and rail traffic. Most of the towns in the Nashik district of Maharashtra are congested and densely populated. Towns having the combinations of old and new structure. Because of heavy traffic, urbanization, migrants of peoples from village to town for their civil work with vehicles and residential has been increased noise level. We were mentioned noise level by sound level meter at different locations of Yeola and Manmad town. Noise level is notably high at different location as compared to prescribed standard of pollution control Board at both towns, but the present study investigate that noise level in Yeola town is comparatively lower than the noise level in Manmad town. Also Railway junction in Manmad campus this is achieved because well noise more than as in Yeola. Planned development of Yeola town, roads are widened, good plantation cover, modern design of hospitals, Govt. Official building with proper spacing and acoustic design consideration. We conclude that public awareness and public environmental education is essential to safeguard natural environment and to control pollution. Peoples showed be aware about importance of human health and environment protection Act.1986.

**Keywords:** Noise pollution, Noise data, sound level meter, peoples awareness Environment projection Act.1986.

## INTRODUCTION

Vibration in air pressure produce sound. Sound may be pleasant as well as unpleasant, vibrating sound reaches our ears and we hear the sound. The unwanted sound (Loud sound) irritates ear and human health and it is known as noise. We can not hear all sound. Human ear can hear sound between frequency range 20 Hz to 20 KHz. Below 20 Hz is called infrasonic and above 20 KHz is called Ultrasonic, Loudness, and pitch and quality three characteristics of sound. Loudness is measured in decibel (dB)

The speech zone lie in the range of 500 to 2000 Hz. The human ear is most sensitive in the range of 2,000 to 5,000 Hz. Noise has been recognized as ambient air pollutant. Standards in this regard are laid down under Environment (protection) Rules, 1986 and under the model rules of the factories Act. 2948.

Noise pollution is one of the major problems faced by the people of Yeola & Manmad town in Nashik district. A rapid growth of population, uncontrolled urbanization, rural urban migration, industrialization, rail and road transportation, traffic jamming, civil work and machinery, human activities in festivals & cultural programme and unnecessary use of loudspeakers, loud musical systems, harsh sounds of vehicle horns, barking of dogs are the major source & contributors in noise pollution.

Noise is derived from the Latin word "NIVSEA" means unwanted sound. It is undesired. Unpleasant, unexpected, irritant and source of stress. Sound is measured in decibel (dB). It is a logarithmic scale invented by engineers of the bell telephone network in 1923 and named in the honor of the inventor of Telephone Alexander Graham Bell (1847-1922) Audio Engineering Society recommends that a space be used dB A. In India it is often written as dB (A)

## LEGAL PROVISION

According to Report of WHO to the UN Conference on environment, out of all environmental problems noise is easiest to control. It is controlled by law & awareness of people. Constitution of India provides in Article 48A the provision of environment protection

improve the environment and to safeguard the forest and wildlife of the country. Article 51(A) (G) which says that every citizen shall have the duty to protect and improve the natural environment including forest, lakes, rivers and the wildlife. In India number of legislation have been enacted for the protection and preservation of environment. The important legislation Act were framed as Environment Protection Act.1986. under which noise pollution, regulation and control rules 2000 have been framed. Now noise has been recognize as a pollutant and the production and use of high sound intensity firecrackers have been banned. The Central pollution control board (CPCB) committee has recommended permissible noise level for different locations as given be Table.

Area Code	Category of Area/Zone	Limitations in Day time (dB)	Limitations in Night time (dB)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

When sound level reaches 140 dB our ears are hurt and long exposure to noise results in permanent damage to ears and even at 85 dB (A) can cause hearing loss begins. The noise level 120 dB (A) is known as threshold of pain, a level 140 dB (A) is very harmful and causes permanent hearing deafness and 150 dB (A) could kill the person. The international reference pressure level of  $2 \times 10^{-5}$  Pa is the average threshold of hearing. A survey by Central Pollution control Board (CPCB) shown in Delhi, the noise level in most places exceeds the permissible limits, similarly a survey and study of Maharashtra Pollution Central Board (MPCB) shown that people in residential commercial, industrial and silence zone of Mumbai too suffers from high levels of noise pollution. Pinkle and Koppen (1948) showed that there is a sharp decline in auditory acuity rise in fasting blood sugar and increases fatigue. According to Kryster (1970) noise causes heart out put to decrease with greater fluctuation in an arterial blood pressure, Johnson and

Hansin (1977) in one of their studies found that systolic and diastolic blood pressures were significantly higher in industrial workers because of continuous exposure to noise. Shetye et al (1982) had estimated that noise level in crowded places in Mumbai was almost double that of residential standards. Datta (2005) was found that sound level lies within a range of 65-83 dB or above in different places of Burdawan town. West Bengal. Bhatia (1995) showed that noise level 100 dB (A) was increased blood pressure and pulse rate. According to De (2000) 65 dB noise level at distance of one meter affect human heart while 125 dB gives sensation of pain in the ear. Banerjee (2007) estimated increase in noise level in Asansol during Kali Puja Festival.

Noises harm the body and mind both. Effects of noise pollution are auditory and non-auditory; Number of researchers & investigators discussed the impact of noise pollution on human health and behavior. World Health Organization (WHO) suggested that the people should aware and everyone should know the impact of noise pollution on human health.

**Effects of Noise Pollution :**

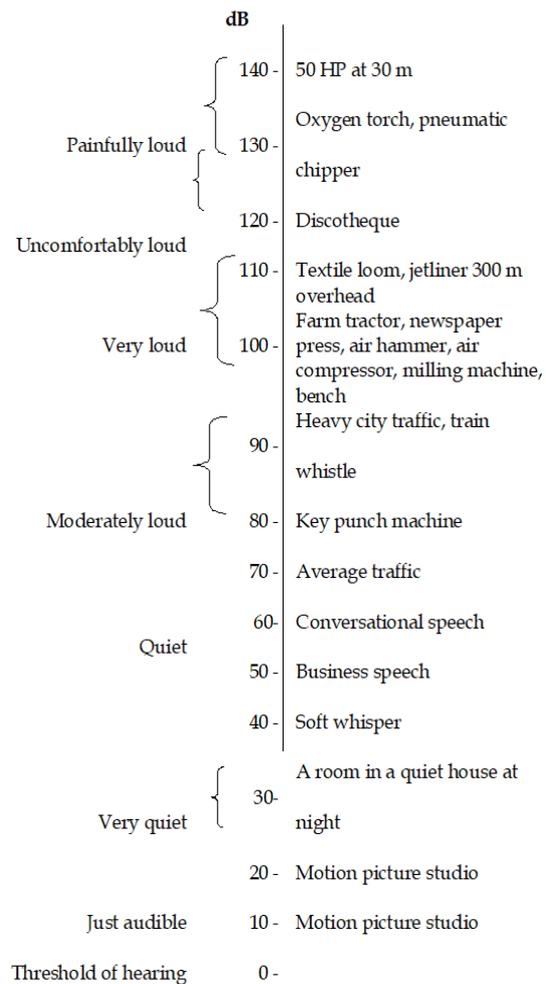
Noise affects health both by physiologically and psychologically Hearing loss, damage of ear, hearing deafness increasing systolic & diastolic blood pressure reduction in birth weight of baby, premature birth skin resistance alteration headache, neurological disorder, respiratory modification loss of memory hyper tension cardiovascular constriction are the physiological effects and annoyance anxiety fatigue, tension, tear, lack of concentration change in behavior interference in communication task inference in performance reduction in work efficiency loss of sleep, cause of irritation, frustration, depression and birds, increases in heart beat rate causing respiratory difficulties in animals and birds, general stress, reaction changes the behaviors of bird, abandonment of territory, loss of ability to produce.

**INTRODUCTION OF TOWN :**

Both Yeola and Manmad have history of Pilgrims. Both cities are popular and Historic background. Both town are populated with near about 80 and 55 thousand population. Holistic place Shirdi is near to Yeola. Yeola is located on Aurangabad and Nagar-

Dhule Highway. Both town are not at side of big rivers. Yeola town is known as textile, silk manufacturer. So indoor noise in handlooms and impact on workers is more than Manmad town. Yeola is also introducing as a birth origin of Senapati Taty Tope and Raghuvir Baba. Manmad is (famous) & popular for Railway Junction and Gurudwara.

**NOISE POLLUTION**



**METHODOLOGY**

Noise levels were monitored at different locations of Yeola & Manmad. it was monitored both on normal working days. This study was conducted in the month of December 2009. Noise sampling being done between 18.00-22.00 Hrs. at night time. The noise levels were observed with sound level meter YF-20 having low range 40-80 (A) and high range 80-120 dB

(A) in 2-5 minute intervals at each location average noise levels were recorded. All readings were taken at height of 1.5 meters from ground level and more than 3 meters away from roads. The sound level meter

consists of capacitance microphone calibration with signal generator amplifier, weighing network and display, indicator meter. The data noted is tabulated in table.

**Table 1:** Sound level information of main areas in yeola ( peak hours)

Sr. No.	Location in Yeola	Noise Level in dB (A)			
		Morning	Afternoon	Evening	Night
1	S.M. College Zone	60	65	55	45
2	Rural Hospital	55	52	50	42
3	Yeola-A.bad Road	65	70	72	65
4	Nagar-Manmad Road	62	72	70	68
5	Yeola Nasik Road	58	67	65	59
6	Bus Stand Inside	70	80	72	70
7	Agricultural Market	68	74	69	62
8	Main Road in city	80	75	80	75
9	Vitthal Nagar Zone	50	50	49	42
10	Ganga Darwaza Corner	60	59	63	60
11	Railway Station Inside	58	58	58	47
12	Mini Sachivalaya	50	55	54	45
13	Krida Sankul	45	47	48	40
14	Eknath Khemchand Petrol Pump Chowfuli	65	70	75	55
15	Fattepur Gate	68	72	74	58

**Table 2:** Sound level information of main areas in manmad (peak hours)

Sr. No.	Location in Manmad	Noise Level in dB (A)			
		Morning	Afternoon	Evening	Night
1	ASC College	60	65	65	50
2	Railway Station Inside	85	90	89	82
3	Shivaji Chowk	72	78	70	65
4	Bus Stand Inside	85	92	72	68
5	FCI colony Area	62	68	60	55
6	SwamiVivekanand Nagar	50	55	52	45
7	Chatre High School Zone	65	75	72	68
8	Chandwad road	80	85	78	70
9	Rural Hospital	75	80	80	65
10	Yeola Road	75	70	65	55
11	Gurudwara	55	60	50	48

The comparative results of noise survey for normal days in Yeola & Manmad Cities shown that noise pollution level in Manmad is significantly higher than Yeola. In Commercial zone in salience zone and residential zone in both cities noise levels are near by equal reduction of noise level in Yeola because of road winding, good plantation cover and over all developments there is need of same development in Manmad town. In Manmad city railway junction is in town and frequency of railway traffic is more. That's why noise level is high in that particular area. In both towns in commercial area and other specific zones noise level is notably high as compared to standard data prescribed by Central Pollution Control Board. To control noise level the easiest control measure is public awareness and public environmental education. It is the duty of every citizen that obey rules and regulation and safeguard protect the natural environment and steps should be taken to reduce noise and overall pollution.

## CONCLUSION

This paper explores the sources, effects, assessment of noise level and offers suggestions for controlling the excessive noise. There is an urgent need to implement good noise control policy and to increase people's awareness by public education and an active participation of schools & colleges in public places. The need to increase funds for environmental policy and educational programmes. The future development plan should be considered with adequate plantation, walkways and underground roads at road crossings, use of insulation and sound absorbing materials in construction is essential. There should be compulsion in use of earplugs and earmuffs for industrial workers, handloom, power loom, textile workers.

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