

**REPORT
ON
AMBIENT NOISE MONITORING DURING GANESH**



FESTIVAL - 2011



MAHARASHTRA POLLUTION CONTROL BOARD
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September, 2011

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Abbreviations

CPCB	Central Pollution Control Board
dB	Decibel
dB(A)	Decibels with "A" weighting
EPA	Environmental Protection Act, 1986
Hz	Hertz
MPCB	Maharashtra Pollution Control Board
KHz	Kilo Hertz
L _{Aeq}	Equivalent continuous A-weighted sound pressure level (dB)
L _{max}	Maximum sound pressure level (dB)
L _{min}	Minimum sound pressure level (dB)
SPL	Sound Pressure Level

1.0 Introduction

Ganesha Chaturthi, the most popular and auspicious festival, also known as 'Vinayak Chaturthi' or 'Vinayaka Chavithi' is celebrated by Hindus around the world as the birthday of "Lord Ganesha", the symbol of wisdom and remover of obstacles. This auspicious day falls on the 4th day of the bright fortnight of Bhadrapada (August-September). This festival is widely celebrated in Maharashtra, West Bengal, Gujarat, Goa, Karnataka, Tamilnadu and Andhra Pradesh.

Ganesh Chaturthi celebrations were initiated in Maharashtra by Chatrapati Shivaji Maharaja, the great Maratha ruler, to promote culture and nationalism. And it had continued ever since. In 1893, Indian freedom fighter and social reformer Lokmanya Tilak transformed the annual festival into a large, well-organized public event. Unfortunately, the growth of the Ganesh Chaturthi festival has not necessarily been sustainable. Over time, public celebrations have become more lavish, grander and louder. As a result, ambient noise levels increases considerably.

In order to assess the problem of rising noise levels in all over the Maharashtra state during Ganesh festival period, Maharashtra Pollution Control Board (MPCB) has taken initiative to carry out the survey for 5 days during Ganesh Festival from 7th to 11th September, 2011.

1.1 Noise and its adverse effect

Noise, by definition, is unwanted sound. Noise pollution can be defined as unwanted or offensive sounds that unreasonably intrude into our daily activities (EPA, 1974). Sound, which pleases the ears, is music and that which cause pain and annoyance, is noise. The major adverse effects of noise on human beings and environment are:

- ❖ The physiological features like breathing amplitude, blood pressure, heartbeat rate, pulse rate and blood cholesterol are affected.
- ❖ It causes pain, ringing in the ears, feeling of tiredness, thereby effecting the functioning of human system.
- ❖ The working performance of workers/human will be affected as they will be losing their concentration.
- ❖ Long exposure to high sound levels cause loss of hearing. But has an adverse impact on hearing function.
- ❖ It affects the sleeping there by inducing the people to become restless, loosing concentration and presence of mind during their activities.
- ❖ Animals are also susceptible to noise pollution as well. It damages the nervous system of the animals.
- ❖ Vibrations caused by noise indirectly weaken the edifice of buildings, bridges and monuments. It creates waves, which can be very harmful and cause damage to the building.

1.2 Units of Sound

Sound is usually made up of a wide range of different frequencies. The spread of sound energy across the audible frequency "spectrum" (about 20Hz – 20kHz) is one factor that helps to make it identifiable to the human ear. The human ear is a very sensitive system with an extensive dynamic range. To accommodate this very large range, sound levels are measured using the **decibel (dB) scale**.

A sound level meter theoretically has a flat response, in other words it responds exactly the same at different frequencies. Unlike a sound level meter, the human ear responds differently at different frequencies, so a weighting, or filter, can be used so that the meter responds more like the human ear. The most commonly used weighting is referred to as the 'A' weighting and readings are usually measured in dBA. The "sound pressure level" (SPL) is twenty times the logarithm to the base 10 of the ratio of the effective pressure (p) of a sound to the reference pressure (Pr) of 20 µPa. Thus the sound pressure level in dB = 20 log₁₀ P/Pr.

1.3. Noise Pollution: Standards

The sound level limits specified by CPCB, represent the general limitation on noise produced by noise sources. Some noises, however, are annoying no matter where or in what kind of environment they exist. High level impulsive noises represent a special category and, consequently, are restricted by an absolute limitation.

The Central Pollution Control Board (CPCB) constituted a National Committee of Experts on Noise Pollution Control. The Committee recommended noise standards for ambient air and for automobiles, domestic appliances and construction equipment, which were later notified under The Environment (Protection) Act, 1986 as given below:

Table 1.1: Standards of Noise Levels under EPA (1986): Noise Pollution (Regulation & Control) Rules, 2000

Area Code	Category of Area	Limits in dB(A) L _{eq}	
		Day time	Night time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned from 6 A.M. To 10 P.M.
2. Night time is reckoned in from 10 P.M. and 6 A.M.
3. Silence zone is referred as areas within 100 meters around premises such as hospitals, educational institutions and courts. The Silence zones are to be declared by the Competent Authority.
4. Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.
5. Mixed categories of areas should be declared as one of the four above mentioned categories by the Competent Authority and the corresponding standards shall apply.
6. State GR / Notification: Implementation Authority for Noise Rules in Maharashtra is enclosed at **Annexure-I**.

2.0 Objective

- To monitor the ambient noise levels for five days from 18:00 hrs to 24:00 hrs at various locations in different cities of Maharashtra.(As per the CPCB letter No: A-21 0 18/7/08-Mon/202 dated April 1, 2008)

- To determine the trends and variations of noise levels at various areas of the city in different land uses.
- To create awareness about noise pollution through availability of scientific noise level data.

3.0 Methodology of the survey

The noise pollution monitoring was carried out from 7th to 11th September, 2011. Noise level measurement was done from 18:00 hrs upto 24:00 hrs. The noise measurements were made at the fast response mode keeping in view the quickly changing nature of noise levels, using 'A' filter. All the measurements were done using recalibrated Sound Level Meters (Type II).

The monitoring was carried out at a distance from Ganesh Pandals, closer to the residential buildings. The main purpose of this exercise was to determine how the environment is disturbed and what effect it has on a normal human being residing in that area or closer to the area. Total 89 locations were covered under 12 major cities of Maharashtra for the present study (Fig 3.1). The 12 cities covered are:

Table 3.1: Noise Monitoring Locations in Maharashtra during Ganesh Festival: 2011.

Sr. No.	City	Number of locations
1	Mumbai	25
2	Navi Mumbai	05
3	Thane	09
4	Pune	20
5	Nashik	05
6	Aurangabad	05
7	Nagpur	05
8	Kalyan	03
9	Amravati	03
10	Jalgaon	03
11	Kolhapur	03
12	Satara	03
TOTAL		89

The detailed list of locations is given in Annexure II.

3.1. Noise Level Measurements

In most cases, the sounds and noises we hear are not steady. Apart from variation in tones, the magnitude or the sound pressure level of a sound or noise changes with time. The equivalent continuous noise level (L_{eq}) is the sound pressure level of a steady sound that has, over a given period, the same energy as a fluctuating sound in question. It was calculated using following equation:

$$L_{eq,T} = 10 \log \left(1 / n \sum_{i=1}^n 10^{\frac{L_i}{10}} \right)$$

Where, L_i = levels observed at n equally spaced times during interval T.

In the present study, hourly and day wise L_{eq} has been calculated to compare the results obtained from various locations.

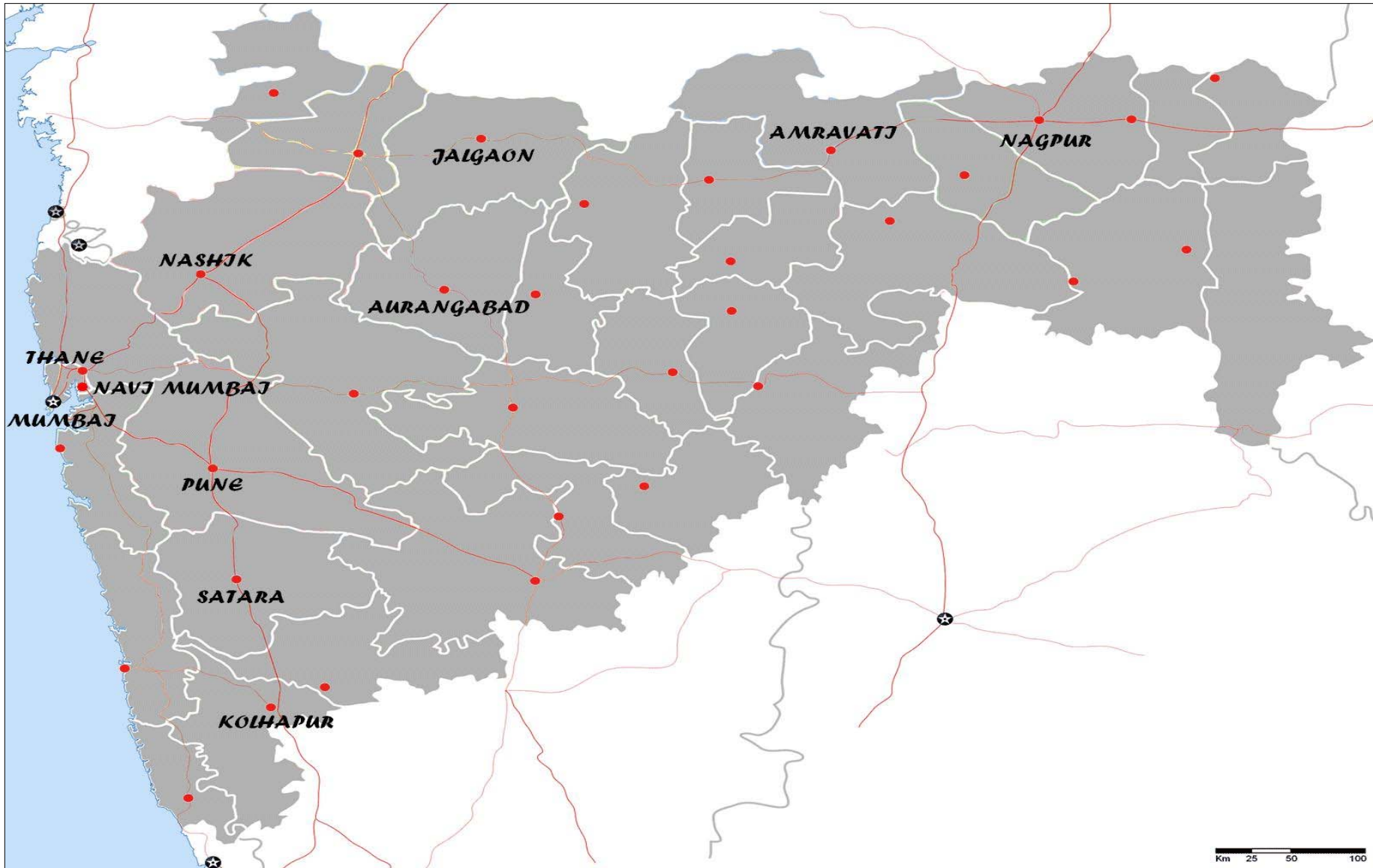


Fig.: 3.1: Areas covered during Noise Monitoring in Maharashtra

4.0 RESULTS

The study shows that the noise levels at almost all the locations crosses the threshold limits mentioned in EPA (1986) and overall noise level increased at 5th day of monitoring i.e. at 11th September, this is because of the last day (11th day) of the festival. On this day, the statue of Lord Ganesha is taken through the streets in a procession accompanied with musical instruments, Dhols, DJs and Bands to be immersed in a river or the sea symbolizing a ritual known as *Ganesh Visarjan*.

All the results are shown in L_{eq} dB(A) values. Table 4.1 shows the average maximum and minimum noise levels on each day from September 7th to 11th at all 89 locations. The following results are interpreted at different locations:

- Among all the 25 locations in Mumbai, Andheri location was found to have maximum noise level.
- In Navi Mumbai, Vashi was found to have maximum noise level.
- In Thane, among the 9 locations, higher noise levels were observed at Wagle Estate.
- In Pune, Dagdu Sheth Mandir was found to be noisier as compared to other locations.
- From results it is interpreted that in Nashik, Panchvati was found to have maximum noise level.
- In Aurangabad district, City Chowk was observed as to have maximum noise level.
- Golibar Chowk was having maximum noise level in Nagpur.
- Results show that Shivaji Chowk of Kalyan was very noisy and crossing even 100 dBA.
- Among the 3 locations of Amravati, Rajkamal square location was observed to have maximum noise level.
- In Jalgaon district, Shastri tower chowk was found to have maximum noise level all through the five days.
- In Kolhapur district, Khas Baug Maidan was observed to have maximum noise level.
- In Satara, Moti Chowk was found to have maximum noise level.

Table 4.1: Equivalent Continuous (L_{eq})dBA, Minimum (L_{min}) and Maximum (L_{max}) Noise Levels from 7th to 11th Sept., 2011 during Ganpati Fethival at different locations in Maharashtra during 18:00 hrs to 24:00 hrs.

Location	7 th Sept.			8 th Sept.			9 th Sept.			10 th Sept.			11 th Sept.		
	L_{Aeq}	L_{max}	L_{min}	L_{Aeq}	L_{max}	L_{min}	L_{Aeq}	L_{max}	L_{min}	L_{Aeq}	L_{max}	L_{min}	L_{Aeq}	L_{max}	L_{min}
MUMBAI															
Andheri	75.3	85.7	64.2	78.5	79.2	77.1	75.3	83.5	63.2	78.0	79.7	76.4	90.2	97.8	77.1
Bandra	75.9	83.4	62.1	71.7	81.4	63.1	75.8	80.0	68.5	75.3	81.2	67.4	81.5	87.3	75.8
Bhandup	71.4	85.4	60.8	62.1	74.5	52.1	68.2	78.5	58.5	70.1	78.5	64.2	78.7	87.3	65.4
Borivali	72.4	81.5	52.4	85.1	95.4	79.6	81.3	88.9	75.4	76.7	82.6	71.5	83.0	97.3	71.3
Byculla	76.1	87.3	65.9	76.7	81.3	69.2	75.9	84.5	70.6	70.1	75.6	62.3	78.1	90.3	68.0
Chembur (E)	72.6	86.3	58.8	74.2	84.4	57.9	70.9	81.1	55.8	71.3	76.7	57.3	76.7	89.9	66.3
Chembur (W)	71.8	82.3	51.9	70.0	75.5	65.4	72.0	82.9	57.1	73.9	76.8	67.5	78.8	92.4	65.4
Chinchpokali (E)	77.7	84.3	72.1	75.8	81.3	67.3	74.9	76.8	72.3	76.9	81.5	69.7	87.3	96.5	78.0
Chinchpokali (W)	72.5	85.2	59.2	72.6	78.2	56.3	71.2	79.1	59.1	73.5	80.6	57.6	78.1	87.5	56.6
Dadar (E)	67.3	79.3	55.7	68.2	75.9	61.8	70.3	81.5	55.3	65.9	71.2	59.3	70.2	77.7	64.8
Dadar (W)	67.4	82.4	53.1	70.1	78.2	60.7	68.0	77.6	55.4	69.3	78.4	57.3	71.3	78.3	64.5
Elphinstone	75.4	84.2	68.7	72.1	77.3	68.9	69.2	76.5	58.6	75.5	81.8	69.9	80.6	88.5	73.4
Ghatkopar	73.8	84.7	68.0	73.2	79.1	67.2	71.4	79.5	64.3	72.0	77.4	67.4	75.5	83.9	68.7
Girgaon Chowpati	74.8	86.1	58.3	63.0	72.2	58.3	69.1	78.6	63.5	69.3	76.8	61.8	76.0	85.6	67.2
Grant Road	76.2	84.3	68.1	75.5	84.2	68.5	75.2	78.7	71.8	75.2	79.1	69.7	84.7	89.7	76.5
Juhu Chowpati	70.6	85.3	56.8	73.3	80.0	60.5	71.3	76.7	61.5	72.7	77.2	62.4	79.3	87.5	68.9
Kandivali (E)	73.5	82.6	64.2	75.0	78.8	68.5	69.8	75.6	59.6	81.1	88.7	73.8	87.9	96.7	73.7
Kandivali (W)	70.0	81.3	62.5	71.1	74.2	66.9	72.4	78.6	68.2	74.0	81.4	68.1	74.5	86.7	67.4
Khar	64.3	70.7	53.8	77.5	82.5	69.2	68.9	75.8	59.3	69.1	78.6	58.6	72.1	76.1	60.2

	7 th Sept.			8 th Sept.			9 th Sept.			10 th Sept.			11 th Sept.		
Location	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}
Mulund	76.0	84.2	68.5	63.2	77.9	49.6	68.0	77.3	58.2	73.4	79.4	62.3	79.8	86.3	68.2
Mumbai Central	79.1	83.5	71.0	77.8	84.3	65.5	78.3	86.4	68.2	77.0	81.4	71.4	81.4	87.2	70.2
Parel	70.0	85.4	58.3	75.4	79.7	72.7	73.8	79.4	65.7	76.0	80.4	71.1	79.3	83.0	75.7
Santacruz (E)	72.9	82.5	68.1	64.9	74.5	52.4	85.1	90.8	75.5	76.7	80.4	71.7	84.7	91.2	78.2
Vikhroli	75.1	85.3	65.5	73.5	79.1	68.4	71.0	78.2	65.7	72.4	79.9	67.2	74.4	82.3	67.5
Wadala	70.3	81.3	56.9	71.4	78.4	62.9	71.1	79.2	59.3	72.2	78.2	64.2	72.4	79.1	62.3
NAVI MUMBAI															
Airoli	74.1	87.3	62.8	74.4	88.0	62.6	74.5	82.4	63.2	79.3	86.6	69.3	84.7	90.6	79.2
CBD	66.9	78.3	58.4	71.8	77.9	61.3	72.3	80.2	65.2	69.7	81.5	63.5	72.0	75.3	65.5
Kopar Khairane	76.3	87.6	58.3	73.1	75.0	71.0	71.7	72.7	70.5	71.1	73.3	69.7	76.0	83.4	70.4
Uran	79.1	89.2	58.9	78.3	86.5	65.8	87.4	96.5	80.2	81.3	87.0	76.3	80.1	86.9	73.2
Vashi	69.6	78.3	58.4	71.9	79.4	59.2	73.7	81.4	63.1	74.7	79.4	68.5	91.0	104.2	77.8
THANE															
Gokhle Road	72.0	79.7	62.2	74.5	81.1	68.3	85.2	90.8	75.5	74.4	82.5	70.2	76.4	81.4	71.2
Jambli Naka	71.3	81.6	59.7	77.8	83.6	69.6	78.0	81.4	75.4	80.4	83.4	73.8	84.9	91.1	81.1
Main Road	76.2	79.2	73.3	72.4	80.2	67.2	76.1	79.6	74.5	74.7	77.7	72.5	74.7	78.7	72.1
Pokhran Road	66.5	78.9	58.3	74.9	80.0	65.4	73.6	81.4	66.8	75.0	80.6	66.1	79.6	87.9	75.2
Wagle Estate	73.5	82.4	61.5	72.1	85.7	65.4	62.1	66.6	59.8	59.2	65.3	56.2	83.9	94.5	70.1
Court Naka	70.7	85.4	58.2	72.5	78.0	64.3	70.7	78.3	62.5	71.8	78.6	61.9	76.5	86.1	69.8
Mental Hospital	75.5	83.3	54.4	71.1	74.1	66.7	68.8	73.5	63.7	73.1	74.8	70.2	69.8	77.7	63.2
Bedekar Hospital	74.1	88.5	65.4	69.0	73.2	65.4	70.0	84.6	53.6	68.9	71.1	67.5	64.2	66.7	61.6
Kalwa-CSM Hospital	63.1	71.3	58.3	56.1	63.5	50.4	61.0	77.5	45.5	58.5	64.9	48.7	75.6	81.5	69.3

	7 th Sept.			8 th Sept.			9 th Sept.			10 th Sept.			11 th Sept.		
Location	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}
PUNE															
Shivaji Nagar	72.0	86.5	58.3	75.6	87.1	62.1	78.5	82.6	76.2	78.5	81.3	72.3	92.1	94.9	89.3
Karve Road	68.5	78.5	58.5	74.4	80.3	64.8	75.8	80.4	67.1	77.2	82.0	69.8	88.8	91.3	83.3
Swar Gate	76.8	87.4	61.0	77.3	86.6	67.1	76.4	86.4	72.5	78.4	83.0	68.8	91.9	95.9	87.8
Satara Road	65.4	71.7	56.1	78.9	88.6	68.4	79.1	89.0	66.4	80.3	85.1	70.6	88.5	94.2	81.4
Shaniwar Peth	67.4	78.9	59.9	77.6	83.3	72.9	78.5	85.7	74.1	80.6	84.2	76.3	91.2	93.7	86.9
Yerawada	70.8	86.0	59.4	77.7	81.5	74.3	74.2	77.6	70.4	79.5	84.0	73.3	88.7	93.4	85.5
Laxmi Road	70.7	80.8	61.8	79.9	87.4	74.7	81.7	83.8	79.7	82.2	85.1	78.7	92.4	97.4	83.8
Kothrud	73.4	81.9	65.2	81.9	90.6	76.0	80.9	90.6	74.7	82.8	85.9	78.8	89.7	98.1	84.9
Mahatma Phule Mandai	71.9	79.4	55.4	78.6	80.4	76.2	79.4	81.5	77.2	82.7	88.1	79.3	91.9	95.0	88.2
Sarus Baug	71.1	81.9	58.5	74.3	77.0	71.6	73.0	78.3	67.1	78.1	82.1	72.4	92.0	98.0	84.2
Hadapsar	67.6	79.8	52.4	78.0	83.7	72.5	79.5	93.4	64.6	80.4	87.7	75.9	88.7	92.9	83.9
Deccan	76.2	87.4	65.7	81.5	89.7	73.5	82.3	87.8	75.2	83.0	88.9	78.3	90.5	97.3	80.1
Dagdu Sheth Mandir	65.7	78.1	52.7	78.9	83.6	72.7	78.9	81.1	76.4	82.4	89.1	76.9	97.0	101.4	92.9
Alka Chowk	69.7	87.6	58.6	77.6	87.8	67.0	69.3	83.2	64.3	75.8	80.7	65.4	90.5	101.3	78.9
Babu Genu Chowk	72.8	83.2	64.2	77.5	79.5	75.3	80.6	81.5	78.4	82.3	87.9	78.6	96.2	101.1	90.4
Khadaki	72.8	87.3	58.4	76.2	82.6	69.3	74.8	82.1	64.6	79.1	88.4	76.3	92.7	96.5	86.1
M G Road	71.9	83.1	59.2	74.8	81.5	65.5	80.8	89.1	73.1	81.9	88.5	79.0	88.9	93.2	85.0
Chapekar Chowk	72.2	87.6	59.2	74.7	80.0	65.5	80.3	92.8	71.2	81.9	86.6	78.5	88.7	95.1	78.6
Pimprigoan	71.3	81.3	57.6	80.0	83.6	75.0	69.3	74.0	64.0	73.9	81.3	65.1	90.4	92.1	87.8
Thergaon	67.1	80.9	45.8	74.2	76.4	71.6	78.8	84.6	72.1	80.3	87.5	70.9	87.6	93.2	78.5

	7 th Sept.			8 th Sept.			9 th Sept.			10 th Sept.			11 th Sept.		
Location	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}
NASHIK															
Nashik Road	77.0	85.8	68.7	77.2	85.5	68.9	79.2	87.6	71.3	79.5	85.1	72.1	87.5	91.3	75.8
Panchvati	82.6	88.2	74.3	81.4	87.1	73.2	81.7	85.4	75.9	85.8	88.4	79.4	90.5	105.2	73.2
CIDCO	73.4	82.5	63.5	80.0	87.7	67.0	74.5	81.0	67.9	79.0	82.6	74.6	97.7	102.6	95.6
CBS	81.4	91.5	69.1	77.6	80.4	72.6	85.4	96.9	73.6	85.6	95.5	78.2	74.0	85.3	67.8
Dahi Pool	63.3	80.8	71.8	79.7	85.6	74.6	78.0	80.2	72.5	81.8	95.7	76.8	75.3	84.8	65.6
AURANGABAD															
Gulmandi	72.7	75.5	70.6	75.9	80.6	69.6	76.1	79.7	72.0	77.4	80.6	71.3	88.7	95.7	83.3
City Chowk	70.7	72.6	68.0	69.8	70.5	68.9	70.9	73.9	69.5	72.0	74.1	69.8	92.6	96.7	85.4
Kranti Chowk	75.2	77.3	73.4	74.7	77.4	69.6	75.0	78.0	70.9	76.2	79.9	72.5	76.5	80.0	70.1
CIDCO Residential	53.9	66.1	49.6	61.5	67.2	53.4	57.6	64.0	50.1	61.0	69.9	53.5	60.3	67.8	52.4
Usmanpura	66.2	71.1	59.3	67.4	69.2	64.8	67.5	70.7	63.9	69.0	72.7	63.8	77.6	86.0	69.4
NAGPUR															
Ramdaspath	69.5	78.4	51.4	63.2	70.0	49.1	69.1	88.2	50.4	67.4	92.4	47.9	64.9	72.4	49.1
Cotton Market	69.1	83.1	50.9	69.1	72.4	62.8	68.1	71.8	60.2	69.1	73.4	62.7	69.0	72.4	65.9
Golibar Chowk	69.7	76.3	61.6	67.0	71.0	60.4	70.9	72.4	69.7	71.7	73.8	70.2	88.4	92.5	81.7
Reshimbag	78.6	85.3	67.6	78.9	88.5	69.1	80.2	85.1	70.1	79.3	88.9	74.5	81.2	84.5	76.8
Gandhiputala	79.0	81.5	72.9	74.1	76.2	69.9	73.7	74.9	71.9	74.7	75.8	73.9	77.3	81.3	71.7
KALYAN															
Bhiwandi	71.0	81.0	64.2	73.4	79.0	70.6	74.5	81.5	65.3	73.2	76.6	66.8	73.2	76.7	66.8
Shivaji Chowk	75.2	77.3	73.4	83.9	94.3	77.2	79.9	83.7	75.4	81.8	84.0	79.0	104.6	107.9	99.8
Ulhasnagar Station	67.1	70.4	58.7	77.0	87.7	69.8	77.0	81.0	70.0	83.7	87.9	81.2	82.3	86.7	72.5

	7 th Sept.			8 th Sept.			9 th Sept.			10 th Sept.			11 th Sept.		
Location	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}	L _{Aeq}	L _{max}	L _{min}
AMARAVATI															
Bhudhwara	70.7	75.8	67.4	70.0	73.1	67.7	77.1	81.4	74.0	74.7	82.2	63.7	74.7	82.2	63.7
Rajkamal Square	76.1	78.1	74.2	77.3	80.6	73.9	78.1	81.3	74.5	78.0	84.8	74.2	78.0	84.8	74.2
Irvin Hospital Square	61.7	68.8	54.8	63.0	68.5	53.0	65.3	68.7	63.1	64.6	67.8	62.8	64.6	67.8	62.8
JALGAON															
Subhash Chowk	73.9	79.1	68.6	73.8	78.4	65.2	74.2	79.2	69.0	75.7	79.8	71.8	85.2	96.2	78.6
Shashtri Tower Chowk	78.2	84.4	72.0	77.7	84.0	70.0	77.6	83.6	69.8	78.6	84.8	72.4	93.0	100.3	75.9
Shanipeth Police Station	67.6	70.4	65.0	67.1	72.4	60.2	66.2	69.4	61.3	67.0	70.2	62.0	70.7	74.7	68.5
KOLHAPUR															
Rajaram Puri	66.5	78.3	58.6	66.3	79.2	54.5	77.7	82.9	74.6	79.5	83.6	74.2	85.9	90.3	79.8
Mahalaxmi Mandir	69.6	87.4	52.9	69.9	86.1	53.1	76.2	83.4	69.1	79.2	82.3	73.7	83.8	88.2	77.6
Khas Baug Maidan	68.7	84.1	56.8	69.5	82.9	59.1	74.6	81.9	67.1	78.0	84.1	69.3	84.5	90.9	78.5
SATARA															
Powai Naka	69.1	84.5	58.3	69.5	83.6	59.4	74.7	79.3	72.0	77.5	82.3	72.5	86.6	89.6	80.2
Moti Chowk	72.3	87.6	61.2	73.2	87.5	62.4	78.5	94.5	70.5	79.4	86.8	70.4	87.2	93.3	81.0
Rajwada	73.0	87.6	59.4	72.5	85.9	58.4	76.6	82.0	63.7	82.4	89.3	74.7	86.9	91.4	81.9

Mumbai: Five days noise monitoring study shows that among all the 25 locations, the maximum noise level (97.8 dBA) was observed at Andheri on 11th September, 2011 and minimum noise level (49.6 dBA) was observed at Mulund on 8th September, 2011.

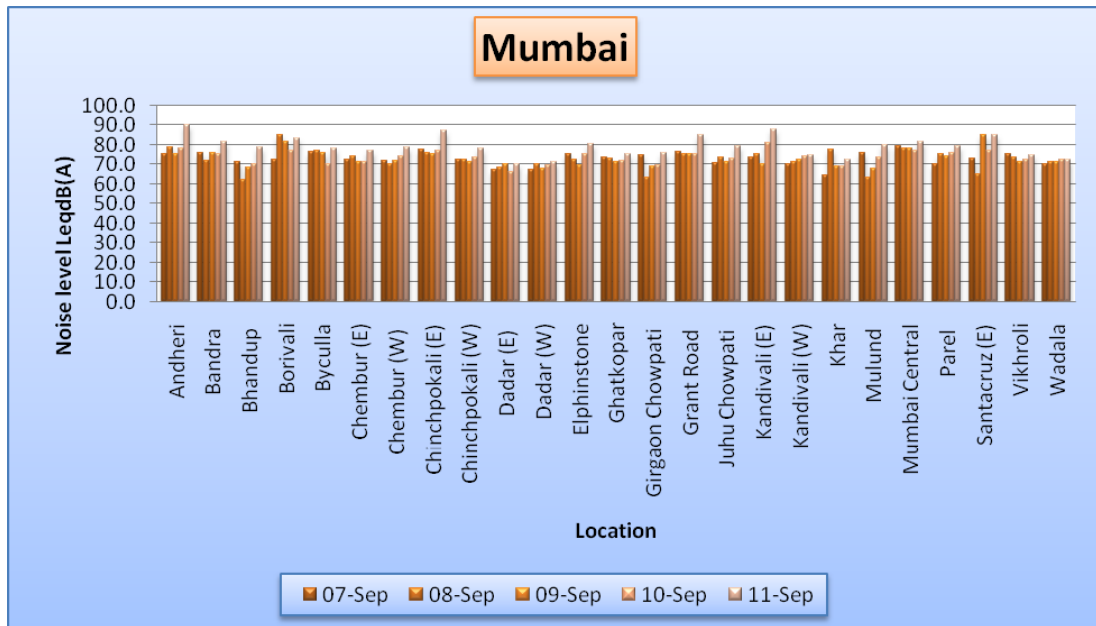


Chart 4.1: Noise levels from 7th-11th Sept., 2011 in Mumbai during 18:00 hrs to 24:00 hrs.

Navi Mumbai: In Navi Mumbai, the maximum noise level (104.2 dBA) was observed at Vashi on 11th September, 2011 and minimum noise level (58.3 dBA) was observed at Kopar Khairane on 7th September, 2011.

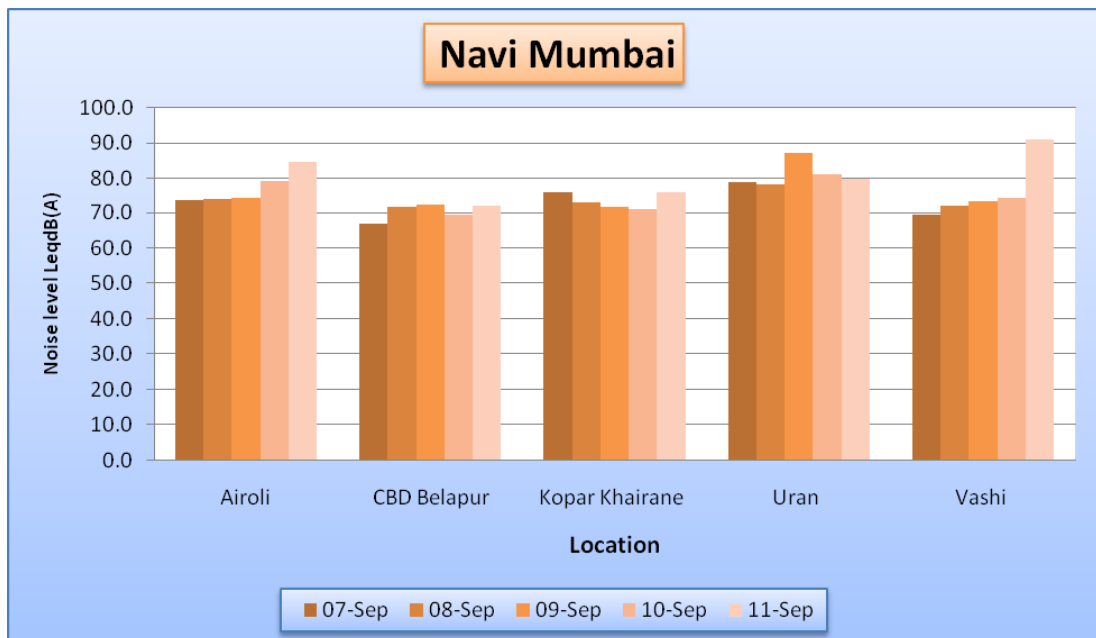


Chart 4.2: Noise levels from 7th-11th Sept., 2011 in Navi Mumbai during 18:00 hrs to 24:00 hrs.

Thane: Five days noise monitoring study shows that the maximum noise level (94.5 dBA) was at Wagle Estate location and minimum noise level (45.5 dBA) was at Kalwa-CSM Hospital on 9th September, 2011.

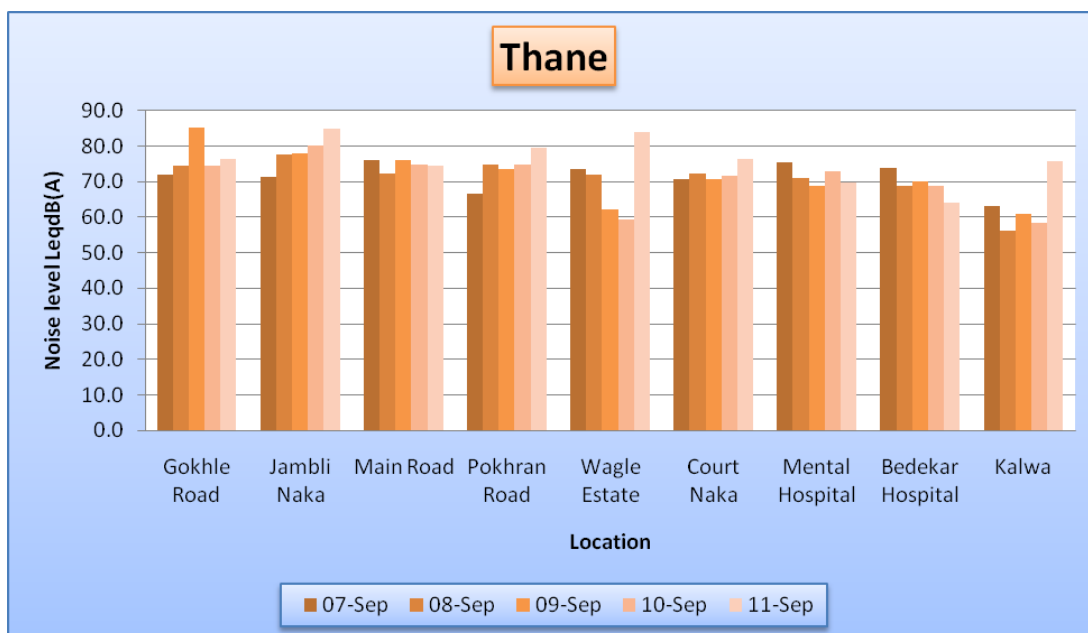


Chart 4.3: Noise levels from 7th-11th Sept., 2011 in Thane during 18:00 hrs to 24:00 hrs.

Pune: In Pune, the maximum noise level (101.4 dBA) was observed at Dagdu Sheth Mathir on 11th September, 2011 and minimum noise level (45.8 dBA) was observed at Thergaon on 7th September, 2011.

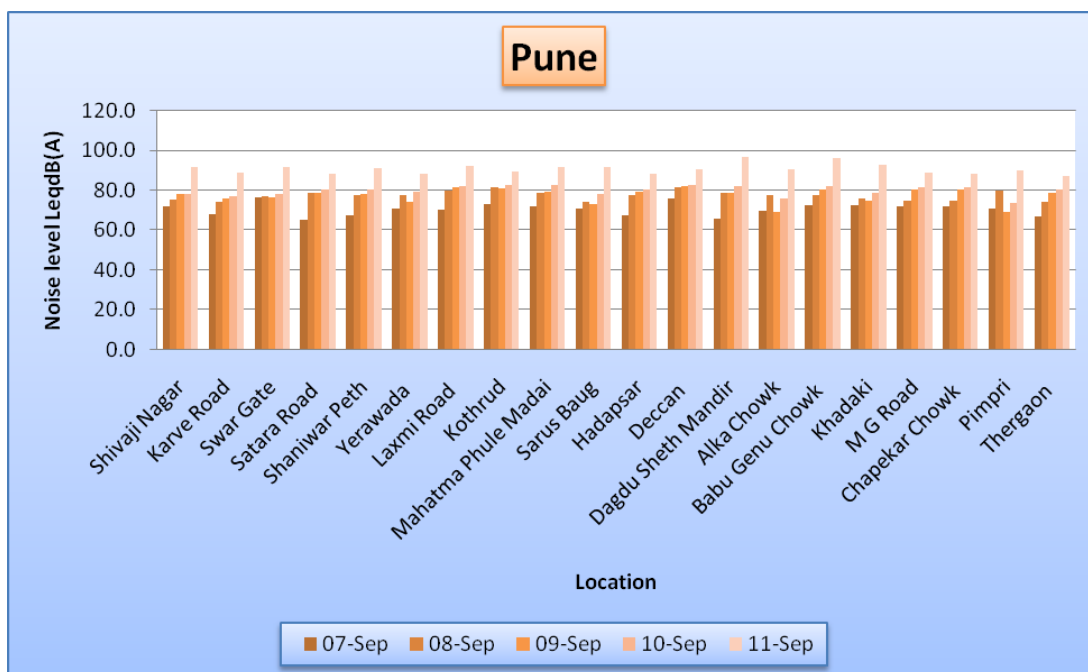


Chart 4.4: Noise levels from 7th-11th Sept., 2011 in Pune during 18:00 hrs to 24:00 hrs.

Nashik: In Nashik, the maximum noise level (105.2 dBA) was observed at Panchvati on 11th September, 2011 and minimum noise level (63.3 dBA) was observed at Dahi Pool point on 7th September, 2011.

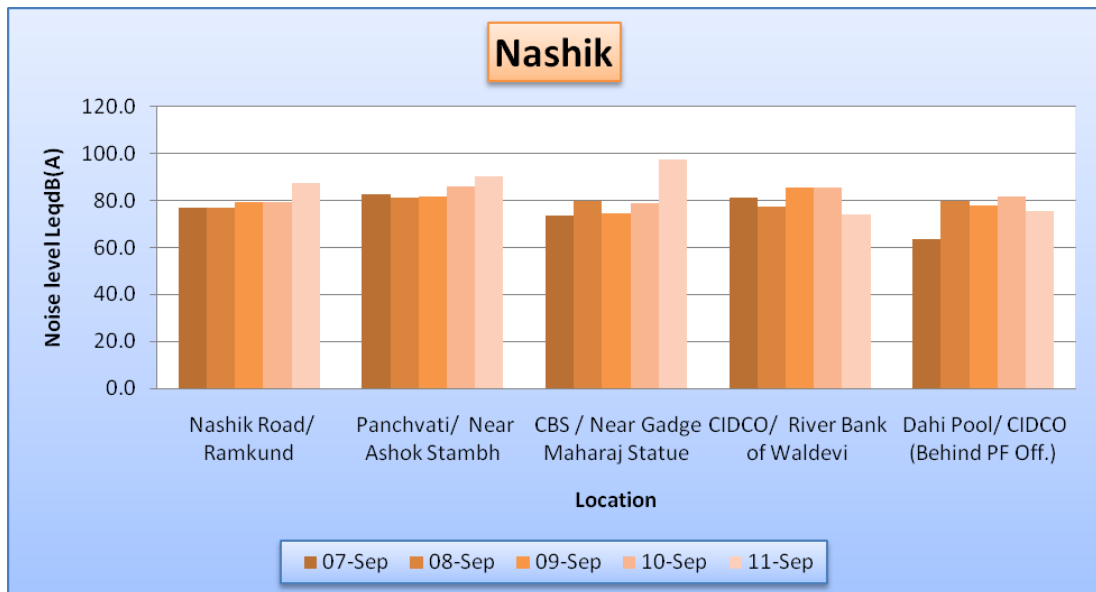


Chart 4.5: Noise levels from 7th-11th Sept., 2011 in Nashik during 18:00 hrs to 24:00 hrs.

Aurangabad: In Aurangabad, the maximum noise level (96.7 dBA) was observed at City Chowk on 11th September, 2011 and minimum noise level (49.6 dBA) was observed at CIDCO point on 7th September, 2011.

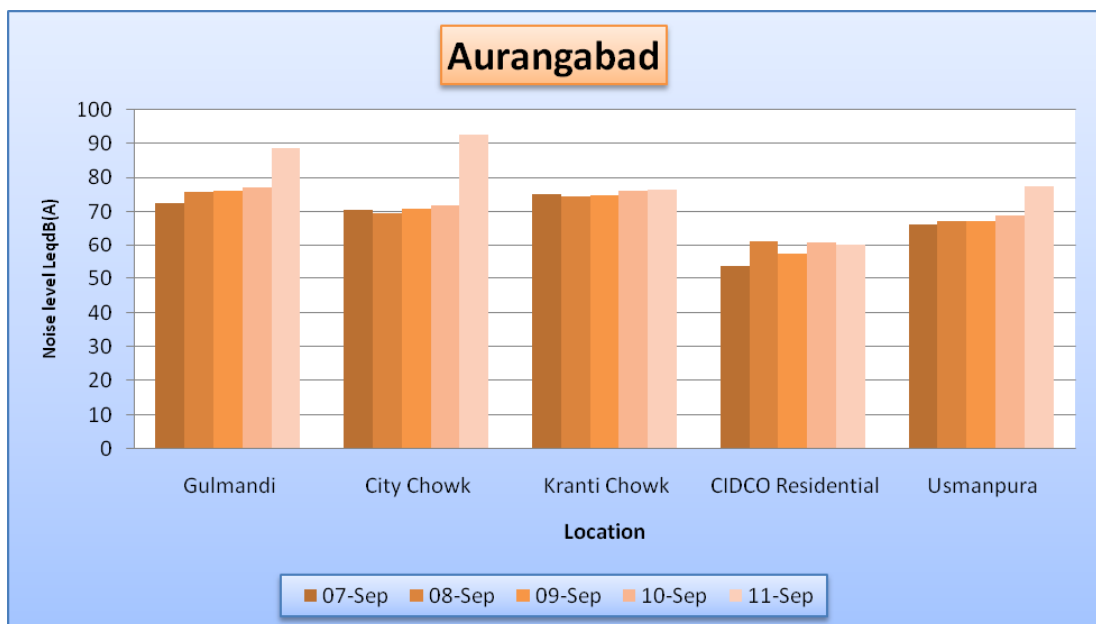


Chart 4.6: Noise levels from 7th-11th Sept., 2011 in Aurangabad during 18:00 hrs to 24:00 hrs.

Nagpur: In Nagpur, the maximum noise level (92.5 dBA) was observed at Golibar Chowk on 11th September, 2011 and minimum noise level (49.1 dBA) was observed at Ramdaspath point on 11th September, 2011.

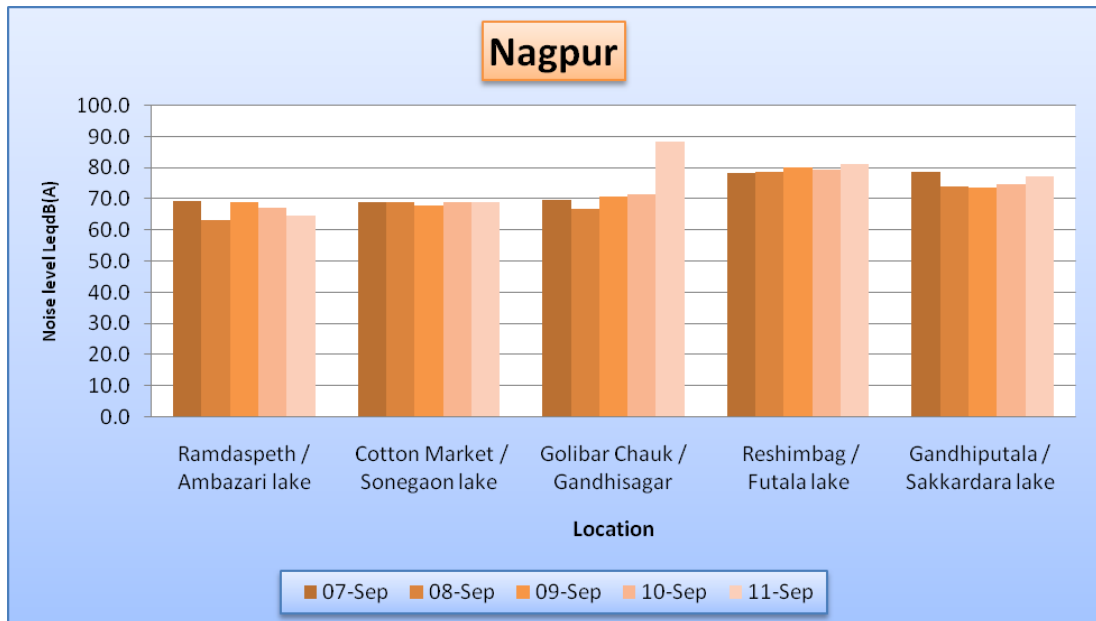


Chart 4.7: Noise levels from 7th-11th Sept., 2011 in Nagpur during 18:00 hrs to 24:00 hrs.

Kalyan: In Kalyan, the maximum noise level (107.9 dBA) was observed at Shivaji Chowk on 11th September, 2011 and minimum noise level (58.7 dBA) was observed at Ulhasnagar on 7th September, 2011.

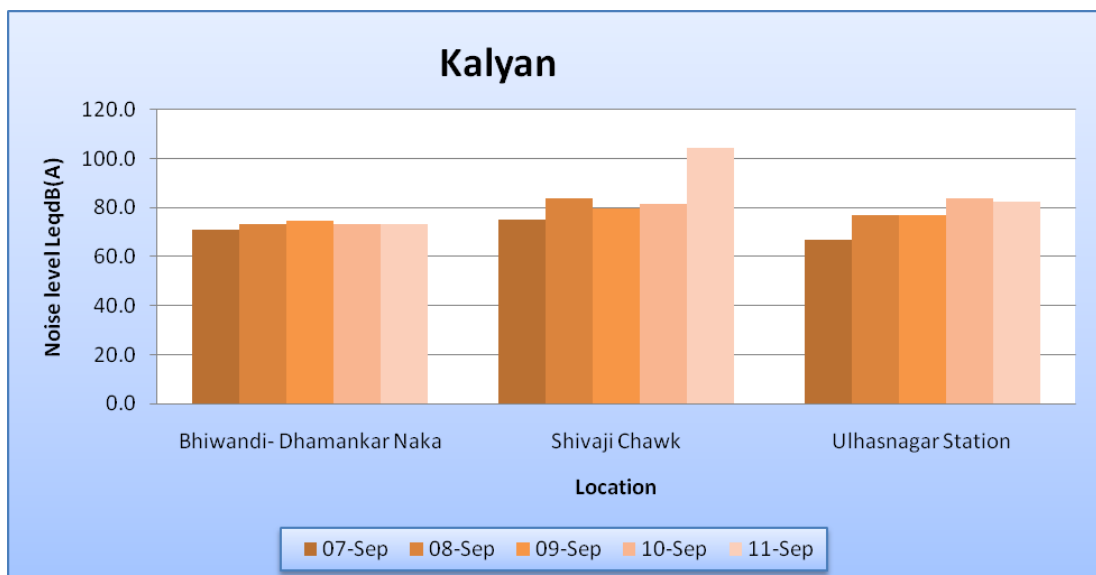


Chart 4.8: Noise levels from 7th-11th Sept., 2011 in Kalyan during 18:00 hrs to 24:00 hrs.

Amravati: In Amravati, the maximum noise level (84.8 dBA) was observed at Rajkamal Square on 10th and 11th September, 2011 and minimum noise level (53.0 dBA) was observed at Irvin Hospital on 8th September, 2011.

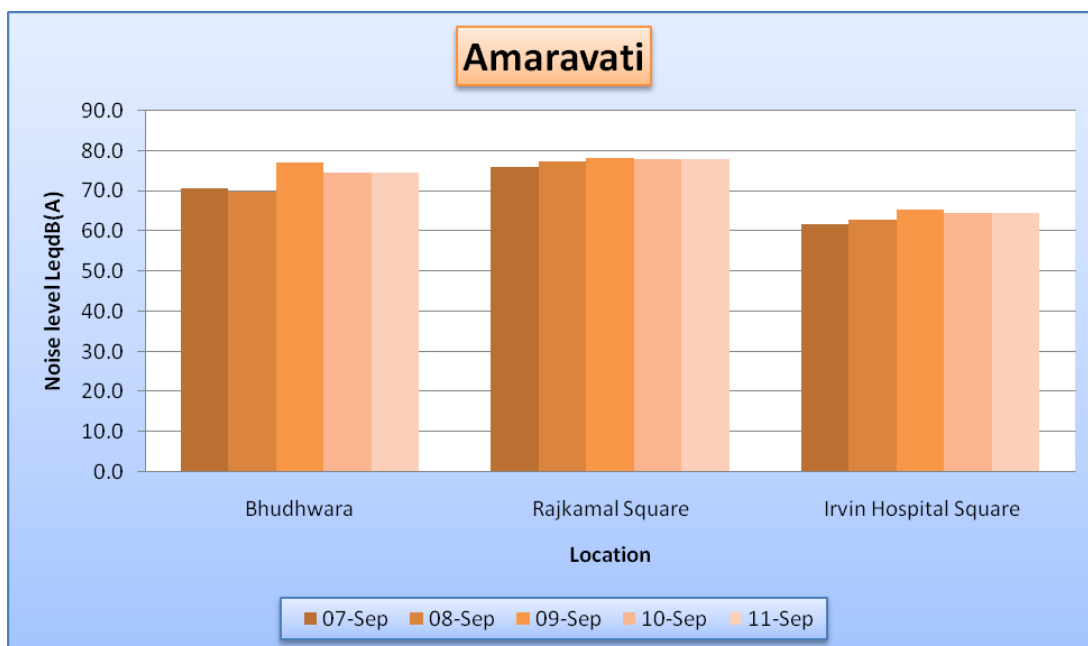


Chart 4.9: Noise levels from 7th-11th Sept., 2011 in Amravati during 18:00 hrs to 24:00 hrs.

Jalgaon: In Jalgaon, the maximum noise level (100.3 dBA) was observed at Shashtri Tower Chowk on 11th September, 2011 and minimum noise level (60.2 dBA) was observed at Shanipeth Police station on 8th September, 2011.

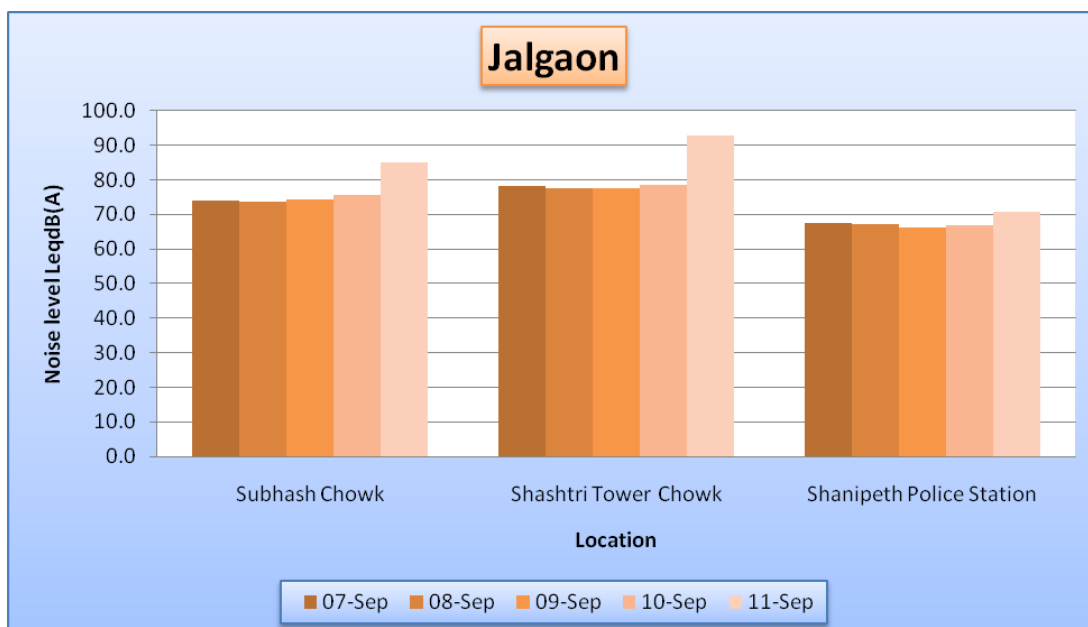


Chart 4.10: Noise levels from 7th-11th Sept., 2011 in Jalgaon during 18:00 hrs to 24:00 hrs.

Kolhapur: In Kolhapur, the maximum noise level (90.9 dBA) was observed at Khas Baug Maidan on 11th September, 2011 and minimum noise level (52.9 dBA) was observed at Mahalaxmi Mandir on 7th September, 2011.

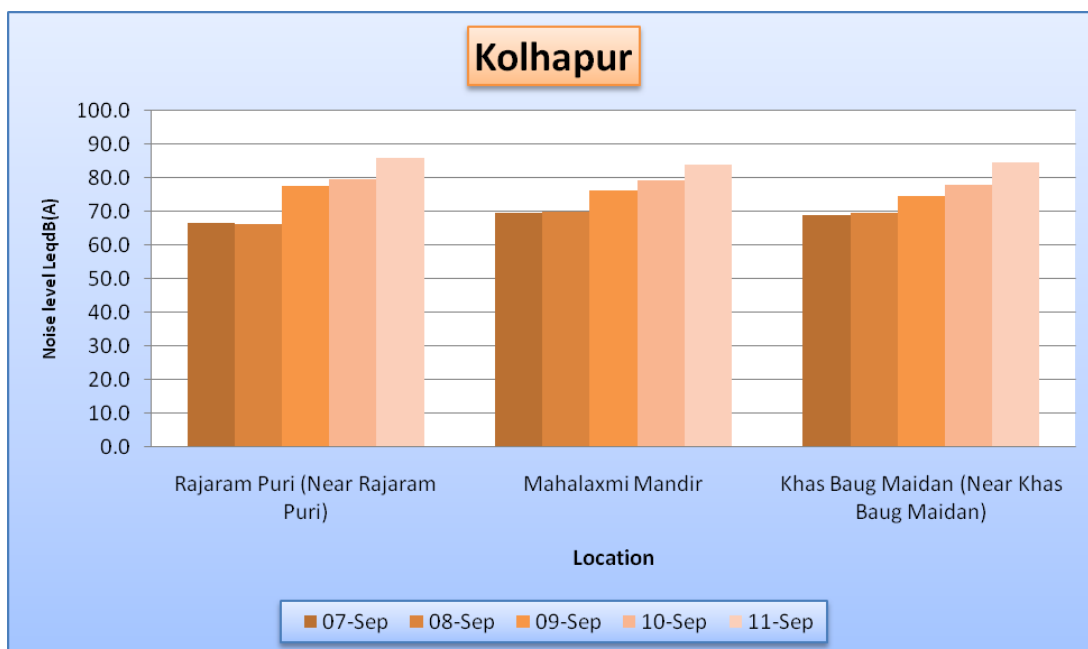


Chart 4.11: Noise levels from 7th-11th Sept., 2011 in Kolhapur during 18:00 hrs to 24:00 hrs.

Satara: In Satara, the maximum noise level (94.5 dBA) was observed at Moti Chowk on 9th September, 2011 and minimum noise level (58.3 dBA) was observed at Powai Naka on 7th September, 2011.

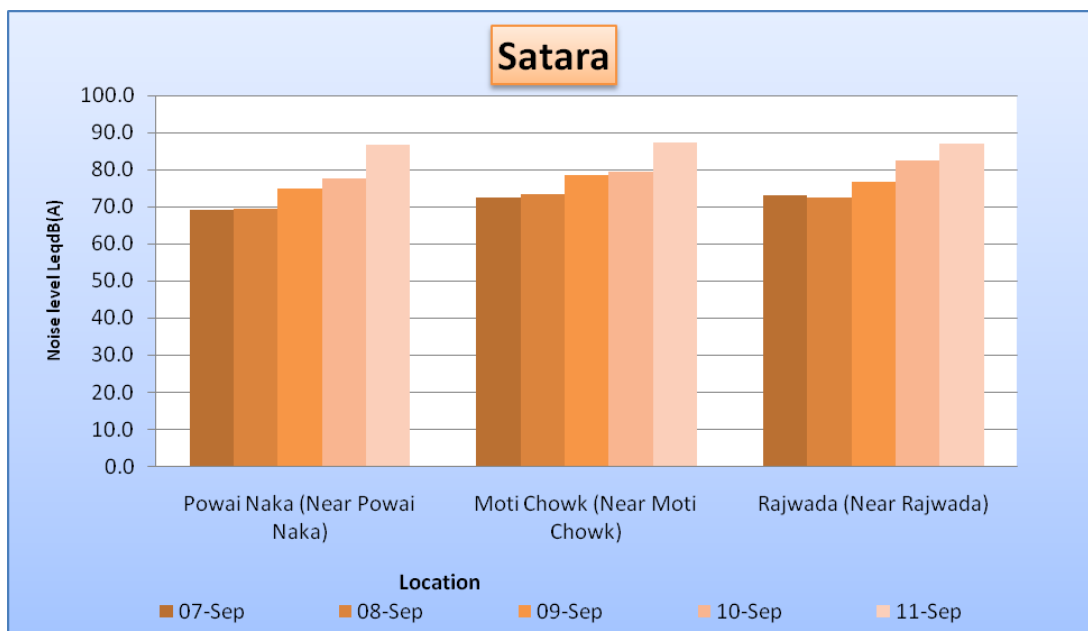


Chart 4.12: Noise levels from 7th-11th Sept., 2011 in Satara during 18:00 hrs to 24:00 hrs.

However the detailed results of all the locations are shown below. These gives the hourly equivalent continuous noise levels at each location:

Table 4.2 (a): Hourly Noise levels at various locations in Mumbai on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Andheri	72.1	81.3	69.9	85.7	78.3	64.2
Bandra	76.2	83.4	78.9	81.3	73.4	62.1
Bhandup	65.8	68.3	76.9	85.4	71.3	60.8
Borivali	74.3	78.2	81.5	78.9	69.2	52.4
Byculla	75.8	65.9	82.9	76.4	87.3	68.2
Chembur (E)	69.4	58.8	78.5	86.3	78.1	64.2
Chembur (W)	73.5	82.3	78.6	79.3	65.4	51.9
Chinchpokali (E)	79.6	74.4	79.8	84.3	76.2	72.1
Chinchpokali (W)	74.3	68.5	85.2	79.3	68.2	59.2
Dadar (E)	55.7	79.3	78.2	67.8	64.2	58.5
Dadar (W)	58.3	70.6	82.4	78.9	60.9	53.1
Elphinstone	69.2	76.5	84.2	68.7	78.6	75.4
Ghatkopar	68.0	72.3	84.7	80.3	69.2	68.1
Girgaon Chowpati	58.3	78.5	85.3	86.1	78.1	62.3
Grant Road	68.2	78.6	82.3	75.6	84.3	68.1
Juhu Chowpati	56.8	75.2	85.3	78.5	68.7	59.2
Kandivali (E)	69.2	78.2	82.6	78.3	68.7	64.2
Kandivali (W)	63.4	75.5	68.2	81.3	69.3	62.5
Khar	65.5	70.4	70.7	66.5	58.8	53.8
Mulund	78.3	84.2	79.3	68.5	75.6	69.8
Mumbai Central	83.5	83.2	82.8	81.8	72.0	71.0
Parel	58.3	69.8	85.4	79.3	68.1	59.3
Santacruz (E)	68.9	78.5	82.5	68.3	71.1	68.1
Vikhroli	69.3	85.3	79.1	65.5	82.4	69.2
Wadala	65.3	78.6	81.3	74.2	65.7	56.9

Table 4.2 (b): Hourly Noise levels at various locations in Mumbai on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Andheri	77.1	78.7	79.1	79.2	79.2	77.7
Bandra	65.8	75.8	75.2	81.4	68.9	63.1
Bhandup	67.7	74.5	67.1	52.6	52.1	58.6
Borivali	85.4	80.3	79.6	95.4	85.2	84.8
Byculla	78.1	75.4	76.8	81.3	79.2	69.2
Chembur (E)	74.2	84.4	79.6	79.3	69.5	57.9
Chembur (W)	67.3	65.4	71.8	73.4	75.5	66.7
Chinchpokali (E)	77.1	81.3	78.5	67.3	72.9	77.7
Chinchpokali (W)	77.7	76.5	76.6	70.1	78.2	56.3
Dadar (E)	61.8	74.5	70.0	64.9	75.9	61.8
Dadar (W)	78.2	72.3	69.8	63.2	76.1	60.7
Elphinstone	70.0	74.0	70.9	68.9	77.3	71.7

Ghatkopar	69.5	75.9	79.1	69.2	78.2	67.2
Girgaon Chowpati	61.5	61.2	72.2	58.3	61.4	63.2
Grant Road	68.5	74.2	84.2	79.3	72.6	74.1
Juhu Chowpati	76.0	76.2	80.0	76.9	70.3	60.5
Kandivali (E)	74.2	78.6	78.8	75.4	74.2	68.5
Kandivali (W)	73.0	74.2	71.3	71.6	69.7	66.9
Khar	78.5	79.6	82.5	78.5	76.4	69.2
Mulund	77.9	67.6	62.5	70.2	51.6	49.6
Mumbai Central	79.5	82.3	84.3	78.3	77.1	65.5
Parel	79.7	73.4	78.1	72.7	72.9	75.5
Santacruz (E)	52.4	69.5	74.5	69.5	64.2	59.1
Vikhroli	68.4	78.1	69.2	77.2	79.1	69.2
Wadala	62.9	74.5	71.3	73.2	78.4	68.2

Table 4.2 (c): Hourly Noise levels at various locations in Mumbai on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Andheri	75.3	78.5	83.5	78.8	72.5	63.2
Bandra	78.5	79.4	80.0	78.4	70.3	68.5
Bhandup	68.5	69.3	78.5	72.3	62.3	58.5
Borivali	78.8	85.3	88.9	82.3	75.4	76.8
Byculla	70.6	78.3	71.5	75.9	84.5	74.5
Chembur (E)	69.1	73.4	77.6	81.1	68.5	55.8
Chembur (W)	80.9	68.2	76.8	66.2	82.9	57.1
Chinchpokali (E)	74.8	76.8	72.3	75.6	76.7	73.4
Chinchpokali (W)	76.5	78.5	79.1	68.2	65.7	59.1
Dadar (E)	63.5	78.5	81.5	74.3	68.5	55.3
Dadar (W)	55.4	73.1	74.5	77.6	69.5	58.1
Elphinstone	74.1	76.5	70.9	69.3	65.8	58.6
Ghatkopar	68.7	73.5	79.5	72.9	69.5	64.3
Girgaon Chowpati	65.7	63.5	75.5	78.6	66.6	64.9
Grant Road	74.6	78.7	73.6	76.5	75.9	71.8
Juhu Chowpati	76.7	72.5	73.2	74.5	69.6	61.5
Kandivali (E)	70.8	75.6	72.6	69.8	70.3	59.6
Kandivali (W)	78.6	72.3	73.2	71.7	70.5	68.2
Khar	75.8	72.4	71.3	68.8	65.5	59.3
Mulund	75.2	68.5	77.3	65.9	62.7	58.2
Mumbai Central	78.3	82.7	86.4	79.3	75.0	68.2
Parel	75.6	78.3	79.4	74.3	69.5	65.7
Santacruz (E)	89.2	90.8	86.0	86.8	82.5	75.5
Vikhroli	66.3	65.7	78.2	77.3	72.3	66.1
Wadala	68.2	74.5	75.6	79.2	69.5	59.3

Table 4.2 (d): Hourly Noise levels at various locations in Mumbai on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Andheri	76.4	78.3	78.1	78.5	79.7	77.1
Bandra	75.6	81.2	79.8	75.4	72.3	67.4
Bhandup	64.2	69.7	75.4	78.5	68.4	64.3
Borivali	82.5	82.6	77.1	74.1	72.5	71.5
Byculla	64.3	72.6	75.6	72.3	73.7	62.3
Chembur (E)	75.9	76.7	74.2	76.6	67.3	57.3
Chembur (W)	76.3	76.8	75.7	73.8	73.3	67.5
Chinchpokali (E)	69.7	70.1	78.8	81.5	79.9	81.3
Chinchpokali (W)	77.2	80.6	79.8	74.9	70.9	57.6
Dadar (E)	68.5	59.8	59.3	67.3	71.2	69.4
Dadar (W)	57.3	69.7	75.4	78.4	69.7	65.2
Elphinstone	69.9	72.2	81.8	80.9	73.8	74.2
Ghatkopar	67.6	72.4	75.1	77.4	72.2	67.4
Girgaon Chowpati	62.6	72.3	76.8	72.8	69.4	61.8
Grant Road	72.4	75.8	78.4	79.1	75.6	69.7
Juhu Chowpati	77.1	74.7	77.2	74.4	70.4	62.4
Kandivali (E)	80.6	81.6	88.7	83.5	78.3	73.8
Kandivali (W)	81.4	77.7	73.4	73.7	69.7	68.1
Khar	68.2	75.3	78.6	68.7	65.2	58.6
Mulund	78.3	79.4	75.4	76.5	68.3	62.3
Mumbai Central	81.4	79.3	78.3	77.2	74.4	71.4
Parel	71.1	78.3	80.4	75.2	77.1	73.9
Santacruz (E)	75.6	78.6	80.4	79.5	74.3	71.7
Vikhroli	68.4	71.4	76.2	79.9	71.2	67.2
Wadala	65.2	72.5	78.2	77.7	75.3	64.2

Table 4.2 (e): Hourly Noise levels at various locations in Mumbai on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Andheri	87.3	97.6	95.9	97.8	85.5	77.1
Bandra	75.8	82.5	86.9	78.5	87.3	78.2
Bhandup	77.4	85.6	87.3	78.1	78.3	65.4
Borivali	78.2	85.4	97.3	78.3	87.3	71.3
Byculla	81.3	68.0	75.2	90.3	83.2	70.5
Chembur (E)	83.5	66.3	80.2	89.9	70.9	69.1
Chembur (W)	88.6	65.4	84.5	92.4	70.7	71.2
Chinchpokali (E)	78.0	81.6	83.0	96.3	96.5	88.3
Chinchpokali (W)	87.5	83.7	84.7	81.2	74.9	56.6
Dadar (E)	75.4	64.8	69.5	68.8	65.0	77.7
Dadar (W)	64.5	67.3	74.2	76.2	78.3	67.3
Elphinstone	76.6	88.5	84.2	80.8	80.3	73.4
Ghatkopar	82.1	83.9	73.3	75.1	69.7	68.7
Girgaon Chowpati	67.2	72.5	82.3	85.6	78.9	69.2
Grant Road	89.7	84.2	86.7	82.7	88.2	76.5

Juhu Chowpati	80.4	85.3	87.5	79.8	73.9	68.9
Kandivali (E)	89.8	93.6	96.7	95.6	77.9	73.7
Kandivali (W)	86.7	78.4	73.6	72.5	68.3	67.4
Khar	76.1	75.8	75.4	73.4	71.8	60.2
Mulund	78.8	84.6	86.3	84.1	76.9	68.2
Mumbai Central	87.2	84.8	86.3	81.6	78.4	70.2
Parel	76.4	75.7	81.3	79.1	80.5	83.0
Santacruz (E)	78.2	80.6	86.4	88.1	91.2	83.4
Vikhroli	68.1	74.6	78.3	82.3	75.6	67.5
Wadala	62.3	68.6	73.4	75.6	79.1	75.3

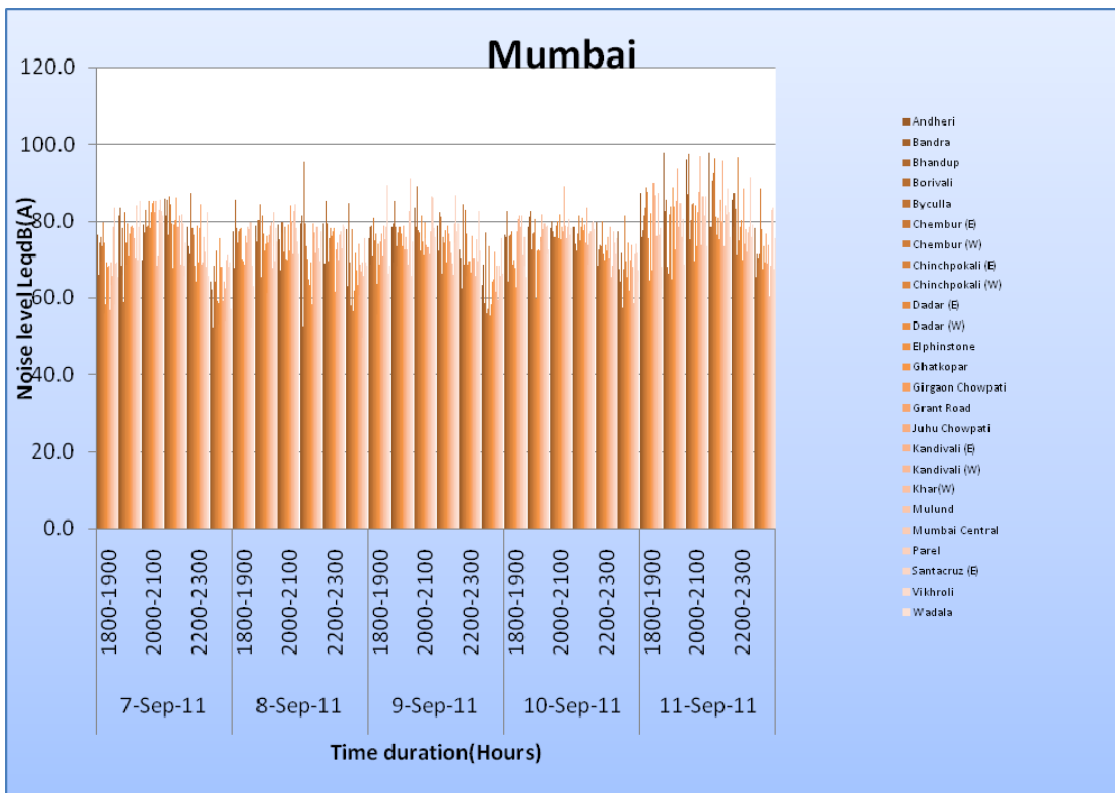


Chart 4.13: Hourly Noise levels from 7th-11th Sept., 2011 in Mumbai

Table 4.3 (a): Hourly Noise levels at various locations in Navi Mumbai on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Airoli	78.0	76.9	87.3	74.9	64.6	62.8
CBD	58.4	65.7	78.3	71.6	68.5	58.7
Kopar Khairane	68.4	78.9	85.6	87.6	78.9	58.3
Uran	58.9	78.6	85.6	89.2	87.2	75.3
Vashi	58.4	68.9	78.2	65.8	78.3	68.2

Table 4.3 (b): Hourly Noise levels at various locations in Navi Mumbai on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Airoli	88.0	78.4	78.6	75.3	63.7	62.6
CBD	77.9	74.2	70.4	77.7	69.3	61.3
Kopar Khairane	71.0	75.0	74.0	73.7	72.2	72.7
Uran	78.6	85.2	86.5	85.8	65.8	67.7
Vashi	73.2	76.7	78.8	79.4	64.2	59.2

Table 4.3 (c): Hourly Noise levels at various locations in Navi Mumbai on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Airoli	78.3	82.4	77.2	74.5	71.3	63.2
CBD	73.2	74.8	80.2	70.4	69.8	65.2
Kopar Khairane	70.9	72.7	70.5	72.3	71.9	71.8
Uran	87.3	92.3	96.5	80.2	82.4	85.9
Vashi	72.4	75.6	81.4	75.3	74.2	63.1

Table 4.3 (d): Hourly Noise levels at various locations in Navi Mumbai on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Airoli	85.7	86.6	76.7	79.7	77.6	69.3
CBD	81.5	69.6	72.5	63.8	63.5	67.1
Kopar Khairane	73.3	70.8	70.9	70.5	71.1	69.7
Uran	78.5	82.6	84.1	87.0	79.5	76.3
Vashi	75.7	76.5	74.8	73.4	79.4	68.5

Table 4.3 (e): Hourly Noise levels at various locations in Navi Mumbai on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Airoli	79.2	84.6	88.7	90.6	83.4	81.6
CBD	73.7	65.5	75.3	73.8	72.8	70.8
Kopar Khairane	76.4	81.3	83.4	73.5	71.2	70.4
Uran	78.5	84.2	86.9	79.8	77.9	73.2
Vashi	77.8	92.6	93.9	88.4	88.9	104.2

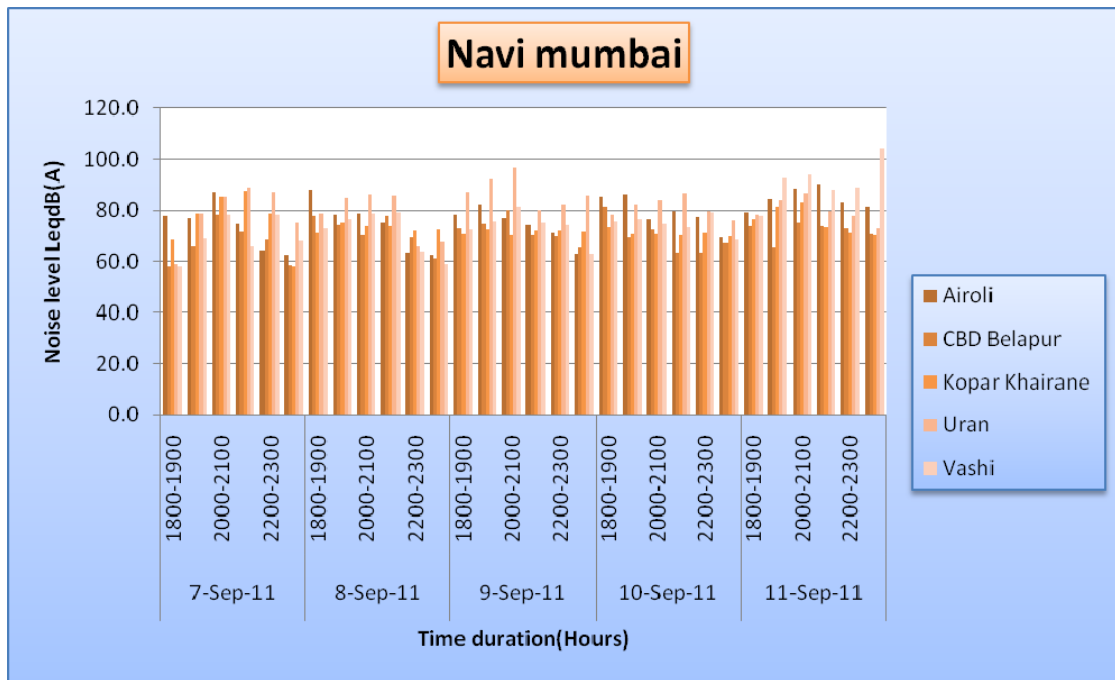


Chart 4.14: Hourly Noise levels from 7th-11th Sept., 2011 in Navi Mumbai

Table 4.4(a): Hourly Noise levels at various locations in Thane on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gokhle Road	62.2	71.9	75.0	68.0	79.7	74.9
Jambli Naka	66.2	72.4	81.6	79.5	68.2	59.7
Gaondevi Mandir	79.2	77.5	76.6	74.8	73.3	76.0
Pokhran Road	58.3	68.2	78.9	68.2	63.8	61.7
Wagle Estate	78.0	78.5	82.4	68.3	72.1	61.5
Court Naka	58.2	78.2	58.6	85.4	75.6	68.2
Mental Hospital	83.3	80.4	78.6	54.4	77.4	78.6
Bedekar Hospital	71.3	88.5	79.3	65.4	71.3	68.5
CSM Hospital, Kalwa	58.3	68.5	63.5	71.3	58.5	58.3

Table 4.4 (b): Hourly Noise levels at various locations in Thane on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gokhle Road	79.9	81.1	69.7	74.6	73.5	68.3
Jambli Naka	80.0	82.7	83.6	69.6	77.0	74.0
Gaondevi Mandir	68.2	77.4	80.2	71.2	70.4	67.2
Pokhran Road	78.7	77.6	80.0	77.4	70.3	65.4
Wagle Estate	85.7	68.4	72.3	71.2	69.5	65.4
Court Naka	75.1	76.3	64.3	78.0	67.7	73.4
Mental Hospital	74.1	66.7	72.1	70.9	73.2	69.6
Bedekar Hospital	68.3	73.2	65.4	69.1	70.3	67.6
CSM Hospital, Kalwa	63.5	62.9	55.8	53.5	50.4	50.5

Table 4.4 (c): Hourly Noise levels at various locations in Thane on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gokhle Road	89.3	90.8	86.0	86.9	82.5	75.5
Jambli Naka	76.2	77.7	81.4	78.9	78.1	75.4
Gaondevi Mandir	74.5	74.6	79.6	74.9	75.0	77.7
Pokhran Road	73.5	74.8	81.4	75.1	70.2	66.8
Wagle Estate	60.3	62.7	60.5	59.8	66.6	62.8
Court Naka	62.5	75.2	78.3	74.6	69.3	64.2
Mental Hospital	68.0	70.2	64.9	63.7	72.3	73.5
Bedekar Hospital	72.7	72.1	84.6	66.4	70.4	53.6
CSM Hospital, Kalwa	77.5	68.6	68.3	59.5	46.8	45.5

Table 4.4 (d): Hourly Noise levels at various locations in Thane on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gokhle Road	72.9	71.6	74.6	82.5	70.2	74.6
Jambli Naka	79.4	83.4	83.3	81.9	80.4	73.8
Gaondevi Mandir	75.4	77.7	75.1	74.1	73.6	72.5
Pokhran Road	80.6	80.5	79.1	75.2	66.1	68.3
Wagle Estate	65.3	59.4	57.7	58.9	57.9	56.2
Court Naka	67.2	75.4	78.6	75.3	72.1	61.9
Mental Hospital	72.9	71.5	74.6	74.8	70.2	74.6
Bedekar Hospital	70.4	71.1	68.3	68.5	67.5	67.5
CSM Hospital, Kalwa	64.9	63.6	60.7	62.8	50.4	48.7

Table 4.4 (e): Hourly Noise levels at various locations in Thane on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gokhle Road	73.6	78.5	79.2	81.4	71.2	74.6
Jambli Naka	81.2	88.5	84.4	91.1	83.1	81.1
Gaondevi Mandir	74.8	75.6	73.4	73.3	78.7	72.1
Pokhran Road	77.6	82.0	87.9	78.1	76.6	75.2
Wagle Estate	80.8	79.0	89.9	94.5	89.3	70.1
Court Naka	72.6	75.7	78.6	86.1	76.2	69.8
Mental Hospital	68.7	63.2	67.8	77.7	70.1	71.2
Bedekar Hospital	66.7	64.8	63.2	61.6	65.2	63.5
CSM Hospital, Kalwa	69.3	78.6	81.5	78.6	76.1	69.7

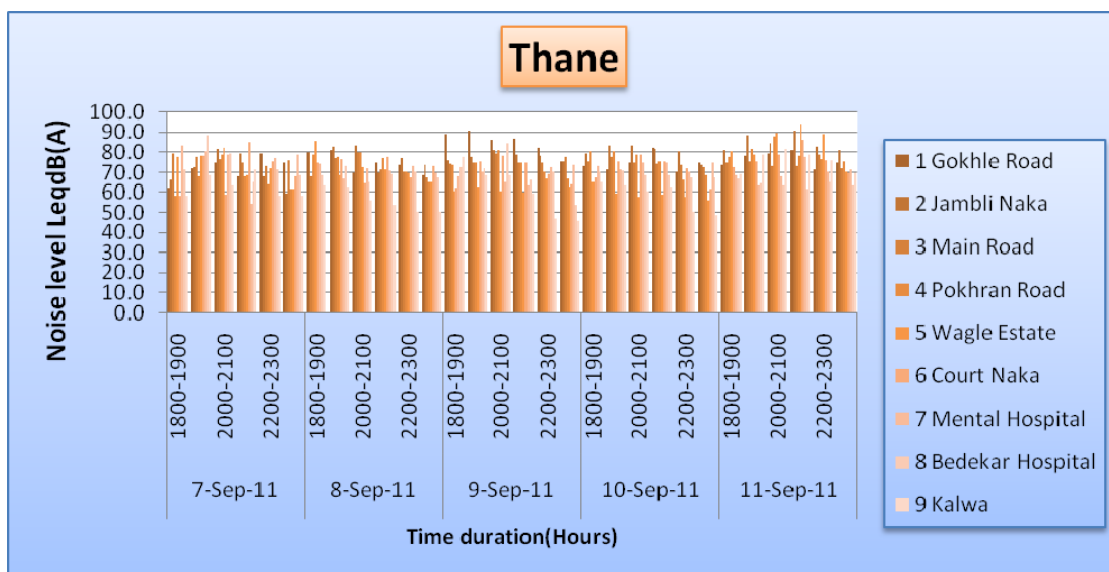


Chart 4.15: Hourly Noise levels from 7th-11th Sept., 2011 in Thane

Table 4.5(a): Hourly Noise levels at various locations in Pune on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Shivaji Nagar	58.3	86.5	78.3	81.1	67.8	60.1
Karve Road	63.5	65.5	78.5	75.8	68.9	58.5
Swargate	78.2	78.5	74.6	81.3	87.4	61.0
Satara Road	56.1	68.5	71.7	68.6	68.3	59.1
Shaniwar Peth	59.9	68.7	69.8	78.9	65.8	61.3
Yerawada	67.9	72.4	86.0	70.5	68.8	59.4
Laxmi Road	61.8	71.9	80.8	74.6	72.0	62.8
Kothrud	65.2	76.5	81.9	76.6	74.6	65.7
Mahatma Phule Mandai	55.4	71.9	76.0	74.8	74.0	79.4
Sarus Baug	58.5	68.9	79.7	72.6	81.9	65.2
Hadapsar	58.2	67.8	68.2	79.2	79.8	52.4
Deccan	65.7	85.6	78.2	87.4	72.0	68.3
Dagdu Sheth Mandir	68.5	52.7	69.3	67.2	78.1	58.2
Alka Chowk	58.6	65.2	78.3	87.6	69.2	59.5
Babu Genu Chowk	65.9	78.3	76.9	83.2	68.3	64.2
Khadaki	58.7	85.7	78.6	87.3	68.2	58.4
M G Road	59.2	69.1	78.3	83.1	74.1	67.3
Chapekar Chowk	59.2	76.3	87.6	79.6	69.1	61.2
Pimpri – Shastri Chowk	57.6	68.6	78.3	81.3	76.3	65.4
Thergaon	45.8	59.6	68.4	78.3	80.9	69.7

Table 4.5 (b): Hourly Noise levels at various locations in Pune on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Shivaji Nagar	65.3	87.1	85.1	79.9	74.1	62.1
Karve Road	75.6	79.6	80.3	79.2	67.0	64.8
Swargate	74.4	86.6	79.1	84.6	72.1	67.1
Satara Road	68.4	77.1	74.8	84.8	88.6	79.6
Shaniwar Peth	83.3	72.9	79.9	75.9	77.2	76.6
Yerawada	76.6	75.6	81.5	79.8	74.3	78.5
Laxmi Road	87.4	87.4	79.2	76.0	74.7	74.8
Kothrud	80.9	80.3	90.6	86.3	77.4	76.0
Mahatma Phule Mandai	76.2	79.9	78.3	80.4	79.1	77.8
Sarus Baug	74.8	74.3	74.0	71.6	77.0	74.3
Hadapsar	78.2	80.9	83.7	72.5	76.9	75.7
Deccan	75.1	89.7	81.9	88.4	80.4	73.5
Dagdu Sheth Mandir	76.8	72.7	83.6	80.1	80.3	80.0
Alka Chowk	87.8	67.0	77.7	76.0	78.0	79
Babu Genu Chowk	79.2	78.5	79.5	76.9	75.7	75.3
Khadaki	69.3	76.3	76.6	78.9	82.6	73.6
M G Road	65.5	74.6	77.2	81.5	76.9	72.8
Chapekar Chowk	74.2	75.5	78.0	80.0	75.0	65.5
Pimpri – Shastri Chowk	75.0	83.1	80.2	82.6	83.6	75.4
Thergaon	76.4	75.0	73.7	74.2	74.0	71.6

Table 4.5 (c): Hourly Noise levels at various locations in Pune on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Shivaji Nagar	80.2	77.6	82.6	78.1	76.6	76.2
Karve Road	75.7	79.7	80.4	79.2	67.1	72.5
Swargate	76.3	73.9	86.4	76.4	72.9	72.5
Satara Road	81.6	89.0	81.1	84.4	72.1	66.4
Shaniwar Peth	85.2	85.7	74.8	74.2	74.1	76.7
Yerawada	76.9	70.4	73.3	75.3	77.6	71.4
Laxmi Road	79.9	81.4	83.8	82.2	79.7	83.0
Kothrud	74.7	80.3	90.6	86.3	77.4	76.0
Mahatma Phule Mandai	77.2	80.5	77.6	79.7	81.5	80.0
Sarus Baug	78.3	68.0	70.3	76.2	78.3	67.1
Hadapsar	64.6	78.8	75.8	88.8	93.4	75.3
Deccan	75.2	79.6	87.8	79.6	84.8	86.7
Dagdu Sheth Mandir	78.1	76.4	81.1	80.3	78.3	79.0
Alka Chowk	68.6	83.2	70.8	64.3	64.7	64.3
Babu Genu Chowk	78.4	81.3	81.2	81.5	81.4	79.9
Khadaki	79.3	74.9	75.8	82.1	64.6	71.9

M G Road	75.4	81.3	78.6	89.1	87.5	73.1
Chapekar Chowk	75.0	77.2	77.8	92.8	87.6	71.2
Pimpri – Shastri Chowk	74.0	69.2	73.5	68.3	66.8	64.0
Thergaon	76.4	79.2	84.6	81.9	78.7	72.1

Table 4.5 (d): Hourly Noise levels at various locations in Pune on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Shivaji Nagar	79.5	81.3	80.9	79.4	77.7	72.3
Karve Road	74.6	78.9	82.0	81.2	76.6	69.8
Swargate	76.3	80.4	82.9	83.0	79.1	68.8
Satara Road	77.8	82.5	84.1	85.1	81.9	70.6
Shaniwar Peth	76.3	81.5	84.2	81.9	82.3	77.3
Yerawada	74.8	80.7	84.0	81.9	82.1	73.3
Laxmi Road	78.7	84.3	83.6	85.1	81.4	79.8
Kothrud	81.0	83.5	85.9	82.6	85.1	78.8
Mahatma Phule Mandai	80.9	81.1	86.3	88.1	80.4	79.3
Sarus Baug	75.3	79.8	80.5	82.1	78.5	72.4
Hadapsar	76.8	83.1	82.3	87.7	76.3	75.9
Deccan	80.6	83.4	88.9	85.1	81.9	78.3
Dagdu Sheth Mandir	81.6	82.3	80.3	89.1	84.3	76.9
Alka Chowk	79.1	80.7	77.8	78.8	73.1	65.4
Babu Genu Chowk	81.6	84.6	80.9	87.9	80.4	78.6
Khadaki	76.3	78.9	88.4	76.8	77.1	77.1
M G Road	79.0	81.9	80.5	88.5	82.5	79.1
Chapekar Chowk	78.5	86.6	83.3	81.5	82.9	78.7
Pimpri – Shastri Chowk	78.8	81.3	74.6	73.5	70.3	65.1
Thergaon	82.4	84.1	87.5	79.6	77.5	70.9

Table 4.5 (e): Hourly Noise levels at various locations in Pune on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Shivaji Nagar	91.1	92.4	89.3	94.9	91.5	93.7
Karve Road	87.1	90.9	89.4	90.6	91.3	83.3
Swargate	88.1	90.2	95.6	93.5	95.9	87.8
Satara Road	89.0	92.1	94.2	88.5	85.9	81.4
Shaniwar Peth	92.3	93.7	89.4	92.1	86.9	92.7
Yerawada	85.6	88.9	93.4	92.8	85.5	86.1
Laxmi Road	94.2	97.4	93.9	90.6	94.5	83.8
Kothrud	87.1	84.9	90.3	98.1	90.9	86.8
Mahatma Phule Mandai	95.0	93.4	91.9	88.5	94.1	88.2
Sarus Baug	87.7	98.0	84.2	97.0	90.4	94.8
Hadapsar	86.1	90.3	92.9	89.1	90.0	83.9

Deccan	80.1	90.7	88.5	94.2	97.3	91.9
Dagdu Sheth Mandir	92.9	101.4	98.6	97.0	94.9	97.2
Alka Chowk	78.9	101.3	88.8	90.6	83.5	99.7
Babu Genu Chowk	90.4	96.2	99.7	101.1	92.8	96.9
Khadaki	86.1	92.0	96.5	92.1	96.4	93.2
M G Road	86.1	93.2	92.1	88.0	89.1	85.0
Chapekar Chowk	78.6	92.1	89.3	86.0	90.9	95.1
Pimpri – Shastri Chowk	90.5	87.8	91.7	90.7	92.1	89.8
Thergaon	89.5	92.1	93.2	87.9	84.1	78.5

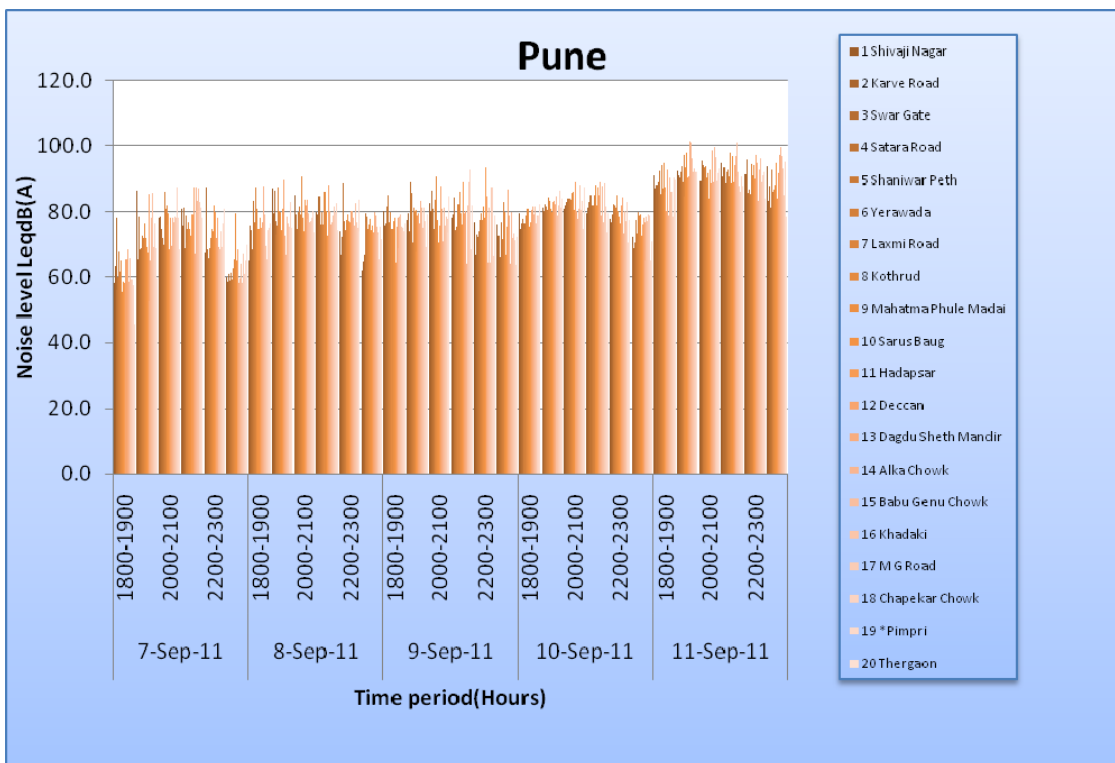


Chart 4.16: Hourly Noise levels from 7th-11th Sept., 2011 in Pune

Table 4.6 (a): Hourly Noise levels at various locations in Nashik on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Nashik Road	77.4	85.8	82.9	75.6	71.5	68.7
Panchvati	79.3	88.2	85.8	87.4	80.3	74.3
CIDCO	76.0	82.5	75.9	76.7	65.9	63.5
CBS	80.8	82.1	91.5	88.2	76.6	69.1
Dahi Pool	79.0	75.0	71.8	80.8	75.4	63.3

Table 4.6 (b): Hourly Noise levels at various locations in Nashik on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Nashik Road	75.7	77.9	85.5	83.1	71.8	68.9
Panchvati	77.0	86.3	87.1	85.0	79.7	73.2

CIDCO	85.5	81.2	85.3	87.7	73.6	67.0
CBS	77.8	79.0	79.5	80.4	76.1	72.6
Dahi Pool	80.9	79.0	81.2	85.6	77.1	74.6

Table 4.6 (c): Hourly Noise levels at various locations in Nashik on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Nashik Road	78.4	87.6	80.2	82.6	75.0	71.3
Panchvati	79.7	81.6	75.9	85.4	84.2	83.2
CIDCO	73.3	74.3	81.0	76.3	74.1	67.9
CBS	81.1	88.0	96.9	96.5	76.3	73.6
Dahi Pool	79.0	79.2	78.2	80.2	78.9	72.5

Table 4.6 (d): Hourly Noise levels at various locations in Nashik on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Nashik Road	76.6	85.1	82.2	81.5	79.5	72.1
Panchvati	79.4	85.5	87.2	86.9	88.4	87.7
CIDCO	82.6	75.5	82.4	82.3	76.4	74.6
CBS	78.2	80.2	95.5	79.7	91.7	88.6
Dahi Pool	81.1	76.8	79.5	95.7	79.5	78.0

Table 4.6 (e): Hourly Noise levels at various locations in Nashik on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Nashik Road	89.0	90.7	87.7	75.8	90.6	91.3
Panchvati	73.2	91.9	86.9	88.0	105.2	98.0
CIDCO	102.6	96.0	95.8	97.7	98.8	95.6
CBS	73.9	69.9	67.8	73.3	73.9	85.3
Dahi Pool	77.6	84.8	82.1	65.6	71.7	70.1

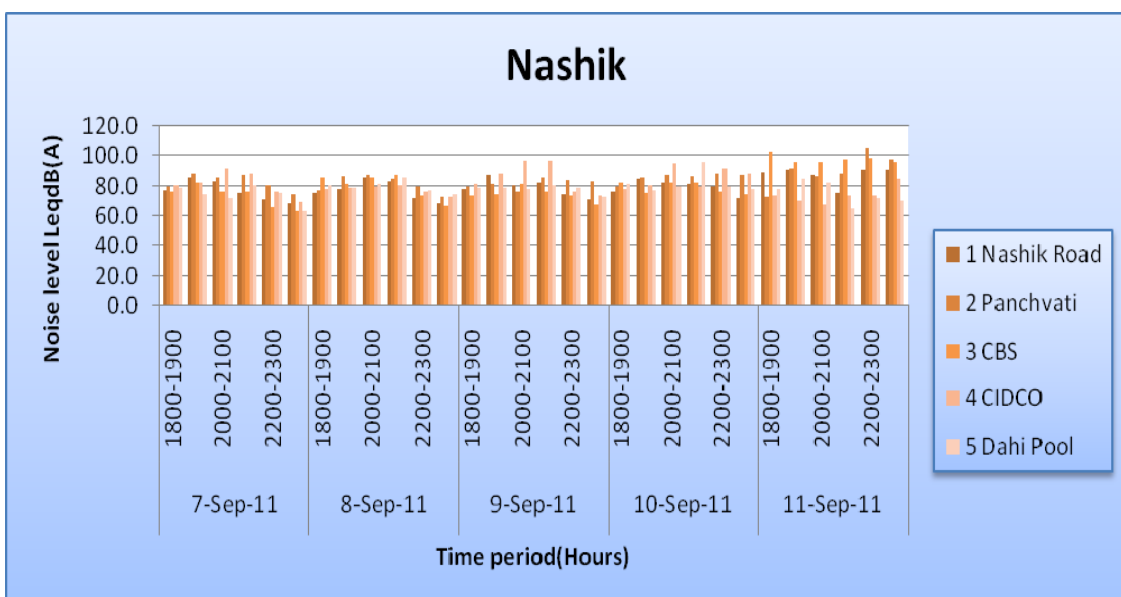


Chart 4.17: Hourly Noise levels from 7th-11th Sept., 2011 in Nashik

Table 4.7 (a): Hourly Noise levels at various locations in Aurangabad on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gulmandi	75.5	74.0	72.0	71.9	72.1	70.6
City Chowk	71.0	68.0	71.9	69.6	72.6	71.0
Kranti Chowk	77.2	75.9	73.8	73.9	77.3	73.4
CIDCO Residential	66.1	54.5	51.8	51.3	50.4	49.6
Usmanpura	65.8	59.3	67.4	71.1	68.1	65.5

Table 4.7 (b): Hourly Noise levels at various locations in Aurangabad on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gulmandi	73.8	79.2	80.6	77.3	74.9	69.6
City Chowk	70.2	69.9	70.3	70.5	69.0	68.9
Kranti Chowk	77.4	74.9	75.9	73.8	76.9	69.6
CIDCO Residential	64.6	67.2	62.5	64.2	57.6	53.4
Usmanpura	68.9	68.7	69.2	67.1	65.7	64.8

Table 4.7 (c): Hourly Noise levels at various locations in Aurangabad on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gulmandi	75.0	74.9	79.7	78.9	76.2	72.0
City Chowk	69.6	70.3	73.9	71.2	70.9	69.5
Kranti Chowk	75.3	78.0	76.2	72.8	76.6	70.9
CIDCO Residential	58.9	64.0	57.5	60.6	54.5	50.1
Usmanpura	66.3	68.1	70.7	68.3	67.5	63.9

Table 4.7 (d): Hourly Noise levels at various locations in Aurangabad on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gulmandi	76.4	78.7	80.6	79.8	77.5	71.3
City Chowk	70.1	73.9	74.1	73.1	70.7	69.8
Kranti Chowk	74.0	78.6	79.9	77.2	75.1	72.5
CIDCO Residential	69.9	65.4	62.6	58.4	55.9	53.5
Usmanpura	72.7	70.9	71.4	70.6	64.6	63.8

Table 4.7 (e): Hourly Noise levels at various locations in Aurangabad on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Gulmandi	85.8	88.4	88.2	95.7	90.8	83.3
City Chowk	91.6	95.4	96.2	96.7	90.3	85.4
Kranti Chowk	80.0	78.2	78.4	75.8	76.3	70.1
CIDCO Residential	65.3	59.5	67.8	62.4	54.6	52.4
Usmanpura	86.0	80.2	79.6	78.1	72.4	69.4

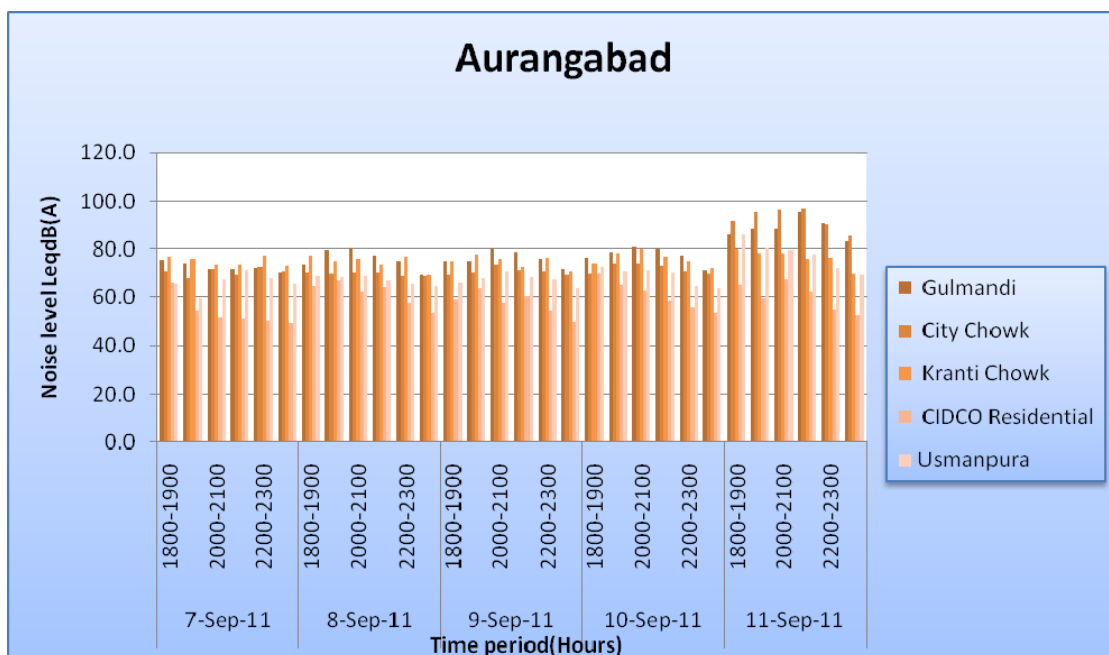


Chart 4.18: Hourly Noise levels from 7th-11th Sept., 2011 in Aurangabad

Table 4.8 (a): Hourly Noise levels at various locations in Nagpur on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Ramdaspath	65.9	69.2	76.4	78.4	75.9	51.4
Cotton Market	83.1	81	75.8	62.1	61.7	50.9
Golibar Chowk	76.3	70.5	71.5	70.5	67.8	61.6
Reshimbag	76.7	85.1	83.8	85.3	73	67.6
Gandhiputala	78.4	81.5	80.3	81.3	79.3	72.9

Table 4.8 (b): Hourly Noise levels at various locations in Nagpur on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Ramdaspath	70.0	68.8	65.6	65.0	60.5	49.1
Cotton Market	71.2	70.9	72.4	70.0	67.3	62.8
Golibar Chowk	64.4	70.9	68.9	71.0	66.2	60.4
Reshimbag	85.0	88.5	78.4	77.7	74.9	69.1
Gandhiputala	75.7	76.2	75.6	73.8	73.1	69.9

Table 4.8 (c): Hourly Noise levels at various locations in Nagpur on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Ramdaspath	67.6	70.4	88.2	75.6	62.3	50.4
Cotton Market	68.8	69.3	70.8	71.8	67.5	60.2
Golibar Chowk	69.7	72.4	71.9	70.7	70.6	70.3
Reshimbag	82.2	85.1	81.5	81.0	81.1	70.1
Gandhiputala	73.3	74.0	74.9	73.8	74.1	71.9

Table 4.8 (d): Hourly Noise levels at various locations in Nagpur on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Ramdaspath	92.4	78.9	64.0	58.7	62.6	47.9
Cotton Market	70.5	70.5	73.4	69.8	67.5	62.7
Golibar Chowk	73.8	71.3	70.2	71.1	71.1	72.9
Reshimbag	80.2	88.9	79.3	78.4	74.5	74.6
Gandhiputala	73.9	74.7	74.4	74.2	75.8	75.2

Table 4.8 (e): Hourly Noise levels at various locations in Nagpur on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Ramdaspath	71.9	71.6	72.4	66.6	57.6	49.1
Cotton Market	72.4	66.2	65.9	71.2	70.7	67.7
Golibar Chowk	81.7	88.3	91.9	92.5	86.5	89.6
Reshimbag	76.8	79.9	83.2	84.5	80.3	82.4
Gandhiputala	71.7	76.9	75.8	76.8	81.1	81.3

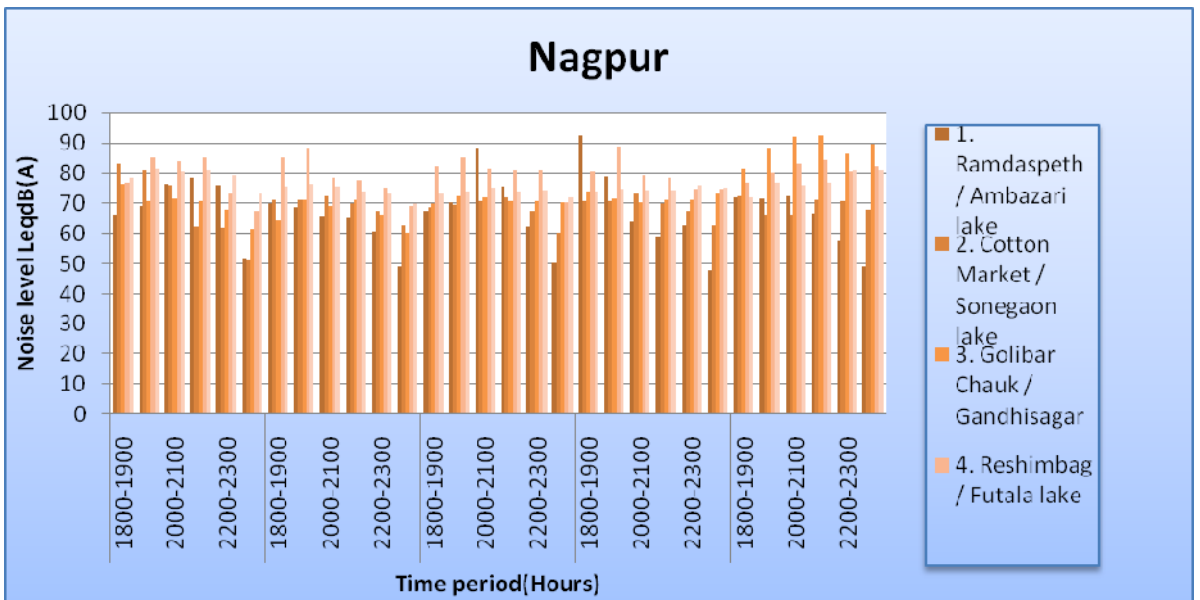


Chart 4.19: Hourly Noise levels from 7th-11th Sept., 2011 in Nagpur

Table 4.9 (a): Hourly Noise levels at various locations in Kalyan on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhiwandi – Dhamankar Naka	76.2	81.0	69.8	70.2	64.5	64.2
Shivaji Chowk	77.2	75.9	73.8	73.9	77.3	73.4
Ulhasnagar Station	67.2	69.8	70.4	68.2	68.2	58.7

Table 4.9 (b): Hourly Noise levels at various locations in Kalyan on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhiwandi – Dhamankar Naka	72.1	70.6	71.4	70.9	79.0	76.6
Shivaji Chowk	86.7	81.3	94.3	84.2	77.2	79.8
Ulhasnagar Station	84.4	87.7	76.6	73.1	70.2	69.8

Table 4.9 (c): Hourly Noise levels at various locations in Kalyan on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhiwandi – Dhamankar Naka	78.3	81.5	78.4	75.4	68.3	65.3
Shivaji Chowk	81.9	81.0	79.5	77.7	83.7	75.4
Ulhasnagar Station	76.9	78.0	76.5	81.0	70.0	79.5

Table 4.9 (d): Hourly Noise levels at various locations in Kalyan on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhiwandi – Dhamankar Naka	72.9	71.3	74.9	76.5	76.6	66.8
Shivaji Chowk	84.0	83.3	80.6	79.0	82.2	81.4
Ulhasnagar Station	82.6	87.9	81.7	83.4	81.2	85.4

Table 4.9 (e): Hourly Noise levels at various locations in Kalyan on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhiwandi – Dhamankar Naka	72.9	71.3	74.9	76.5	76.7	66.8
Shivaji Chowk	99.8	107.9	107.5	105.4	107.3	99.8
Ulhasnagar Station	72.5	83.4	81.3	85.2	86.7	84.5

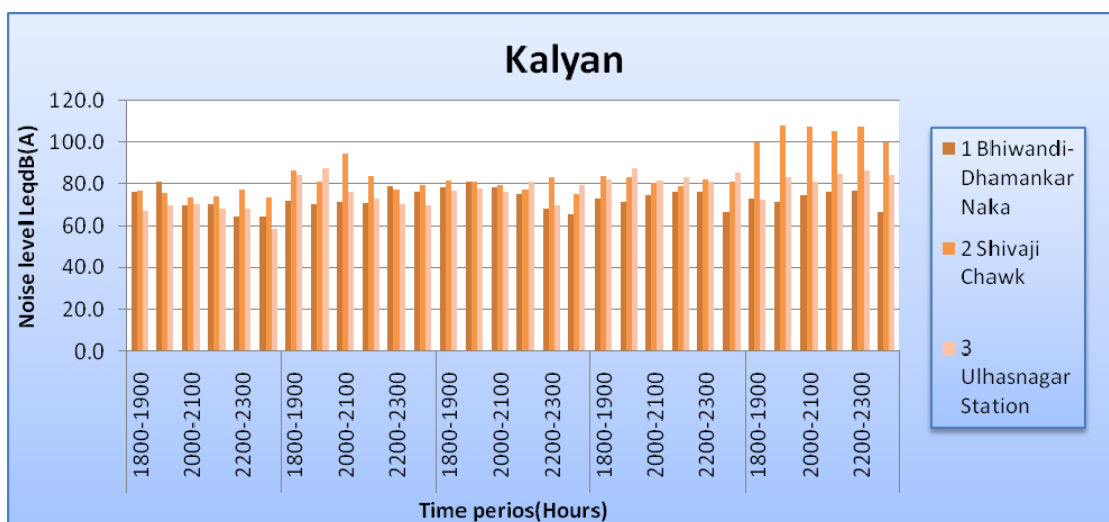


Chart 4.20: Hourly Noise levels from 7th-11th Sept., 2011 in Kalyan

Table 4.10 (a): Hourly Noise levels at various locations in Amravati on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhudhwara	67.4	67.8	68.8	70.6	73.9	75.8
Rajkamal Square	75.1	76.3	78.1	77.8	75.1	74.2
Irvin Hospital Square	59.9	60.3	68.8	68.8	57.4	54.8

Table 4.10 (b): Hourly Noise levels at various locations in Amravati on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhudhwara	73.1	68.8	69.5	71.2	69.5	67.7
Rajkamal Square	80.0	80.6	78.5	76.7	74.3	73.9
Irvin Hospital Square	64.7	66.6	68.5	65.0	60.0	53.0

Table 4.10 (c): Hourly Noise levels at various locations in Amravati on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhudhwara	74.0	75.4	80.9	81.4	77.0	74.1
Rajkamal Square	80.4	81.3	79.8	77.1	75.7	74.5
Irvin Hospital Square	68.7	63.4	65.1	68.3	63.1	63.1

Table 4.10 (d): Hourly Noise levels at various locations in Amravati on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhudhwara	80.6	75.1	82.2	72.9	73.7	63.7
Rajkamal Square	84.8	79.9	76.8	76.4	76.1	74.2
Irvin Hospital Square	62.8	63.1	67.8	66.2	63.1	64.8

Table 4.10 (e): Hourly Noise levels at various locations in Amravati on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Bhudhwara	80.6	75.1	82.2	72.9	73.7	63.7
Rajkamal Square	84.8	79.9	76.8	76.4	76.1	74.2
Irvin Hospital Square	62.8	63.1	67.8	66.2	63.1	64.8

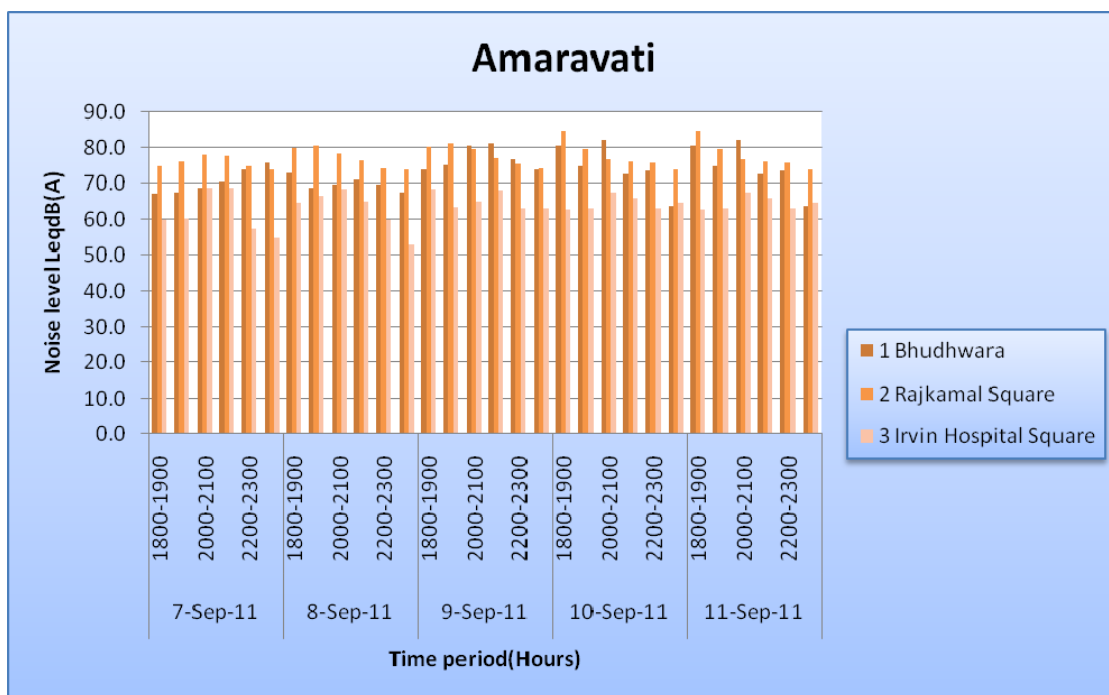


Chart 4.21: Hourly Noise levels from 7th-11th Sept., 2011 in Amravati

Table 4.11 (a): Hourly Noise levels at various locations in Jalgaon on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Subhash Chowk	72.2	74.8	79.1	76.6	72.0	68.6
Shashtri Tower Chowk	76.8	79.2	82.2	84.4	78.6	72.0
Shanipeth Police Station	67.2	69.8	70.4	68.2	65.0	65.2

Table 4.11 (b): Hourly Noise levels at various locations in Jalgaon on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Subhash Chowk	74.6	77.2	78.4	78.0	69.6	65.2
Shashtri Tower Chowk	78.9	79.8	84.0	80.6	72.8	70.0
Shanipeth Police Station	64.8	70.1	72.4	69.9	65.2	60.2

Table 4.11 (c): Hourly Noise levels at various locations in Jalgaon on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Subhash Chowk	74.1	77.5	79.2	74.6	70.9	69.0
Shashtri Tower Chowk	79.1	82.2	83.6	79.8	71.1	69.8
Shanipeth Police Station	65.2	69.4	68.4	66.9	66.0	61.3

Table 4.11 (d): Hourly Noise levels at various locations in Jalgaon on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Subhash Chowk	74.2	77.6	76.6	79.8	74.3	71.8
Shashtri Tower Chowk	78.3	76.4	82.9	84.8	76.9	72.4
Shanipeth Police Station	65.4	68.9	70.2	69.3	66.3	62.0

Table 4.11 (e): Hourly Noise levels at various locations in Jalgaon on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Subhash Chowk	79.0	86.7	96.2	88.7	82.1	78.6
Shashtri Tower Chowk	98.4	99.5	100.3	96.4	87.6	75.9
Shanipeth Police Station	71.2	74.7	70.0	71.4	68.6	68.5

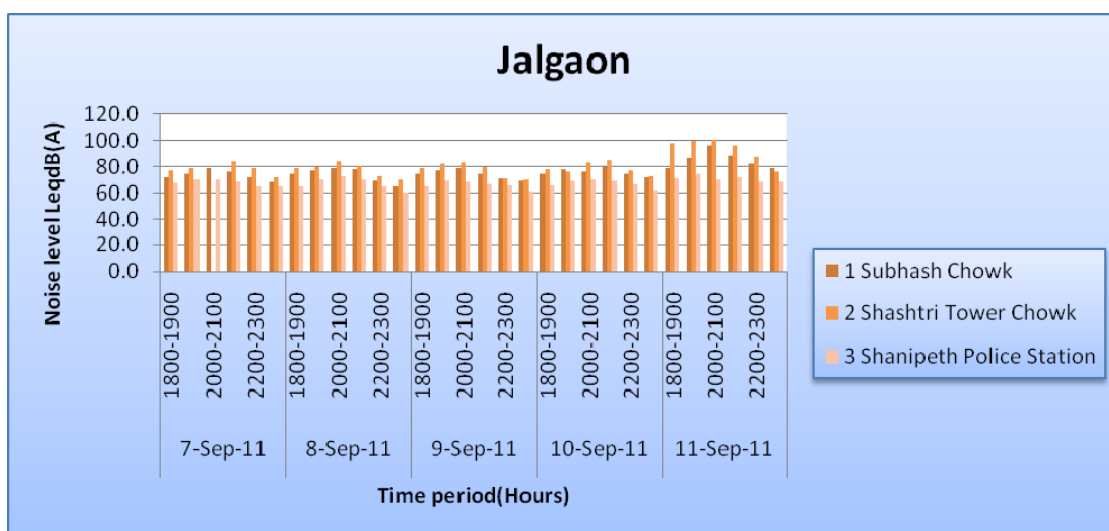


Chart 4.22: Hourly Noise levels from 7th-11th Sept., 2011 in Jalgaon

Table 4.12 (a): Hourly Noise levels at various locations in Kolhapur on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Rajaram Puri	58.6	59.2	68.9	78.3	68.7	65.2
Mahalaxmi Mandir	52.9	69.2	72.7	87.4	78.3	56.9
Khas Baug Maidan	58.3	69.8	75.2	84.1	56.8	68.2

Table 4.12 (b): Hourly Noise levels at various locations in Kolhapur on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Rajaram Puri	54.5	60.2	70.0	79.2	70.9	62.7
Mahalaxmi Mandir	53.1	70.4	71.8	86.1	80.0	58.2
Khas Baug Maidan	61.1	68.5	74.8	82.9	59.1	70.3

Table 4.12 (c): Hourly Noise levels at various locations in Kolhapur on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Rajaram Puri	77.5	74.6	82.9	77.0	79.5	74.8
Mahalaxmi Mandir	71.6	77.4	83.4	81.9	73.5	69.1
Khas Baug Maidan	73.4	79.3	81.9	74.0	71.9	67.1

Table 4.12 (d): Hourly Noise levels at various locations in Kolhapur on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Rajaram Puri	81.5	79.4	83.6	80.0	78.5	74.2
Mahalaxmi Mandir	80.9	82.3	81.5	78.1	78.9	73.7
Khas Baug Maidan	75.6	84.1	81.9	76.4	80.7	69.3

Table 4.12 (e): Hourly Noise levels at various locations in Kolhapur on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Rajaram Puri	82.9	85.0	90.3	89.6	87.5	79.8
Mahalaxmi Mandir	79.9	88.2	84.6	87.6	84.7	77.6
Khas Baug Maidan	83.0	81.9	87.6	90.9	85.3	78.5

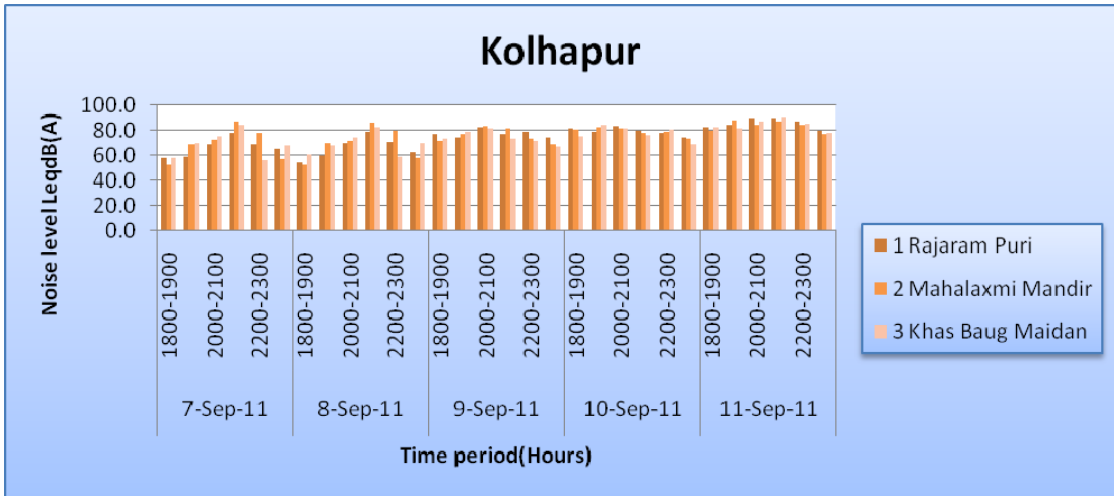


Chart 4.23: Hourly Noise levels from 7th-11th Sept., 2011 in Kolhapur

Table 4.13 (a): Hourly Noise levels at various locations in Satara on 7th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Powai Naka	65.7	75.3	84.5	68.9	62.1	58.3
Moti Chowk	68.4	78.2	87.6	76.1	62.2	61.2
Rajwada	78.3	87.6	79.2	65.2	68.2	59.4

Table 4.13 (b): Hourly Noise levels at various locations in Satara on 8th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Powai Naka	66.1	76.8	83.6	67.9	63.5	59.4
Moti Chowk	67.5	79.2	87.5	77.6	65.1	62.4
Rajwada	79.5	85.9	79.0	63.2	68.9	58.4

Table 4.13 (c): Hourly Noise levels at various locations in Satara on 9th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Powai Naka	73.3	72.0	79.3	73.4	72.9	77.2
Moti Chowk	70.5	77.8	78.3	77.6	94.5	72.3
Rajwada	63.7	79.4	82.0	80.7	77.0	76.5

Table 4.13 (d): Hourly Noise levels at various locations in Satara on 10th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Powai Naka	75.9	80.1	82.3	72.5	77.6	76.8
Moti Chowk	77.9	79.0	83.0	86.8	79.5	70.4
Rajwada	76.3	81.9	89.3	84.1	88.1	74.7

Table 4.13 (e): Hourly Noise levels at various locations in Satara on 11th Sept.

Location	1800-1900	1900-2000	2000-2100	2100-2200	2200-2300	2300-2400
	Day Time	Day Time	Day Time	Day Time	Night Time	Night Time
Powai Naka	84.9	88.0	89.6	87.8	88.9	80.2
Moti Chowk	86.9	90.2	93.3	88.4	83.9	81.0
Rajwada	82.3	91.4	90.5	88.7	86.6	81.9

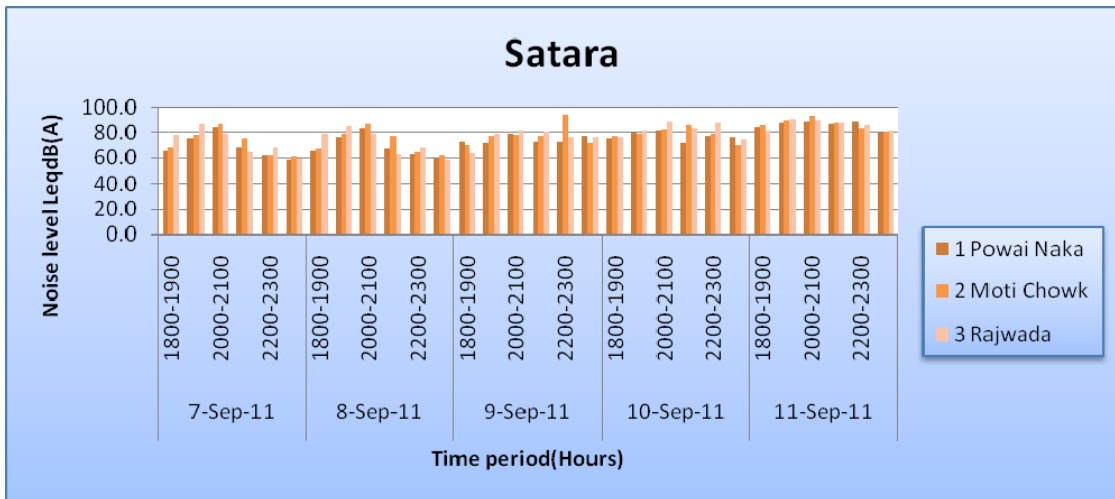


Chart 4.24: Hourly Noise levels from 7th-11th Sept., 2011 in Satara

Comparative Study of Noise levels from 2007 to 2011

Table 4.14 shows the maxima and minima noise levels in last five years during Ganesh Festival. Comparative study shows that noise levels in some of the cities decrease this year significantly, but these are still higher than the permissible limits. Maxima and minima values gives the range of noise levels measured during Ganesh Festival.

By comparing the noise levels of previous year during Ganesh Festival with this year results, we can observe that the maximum noise level came down in all the cities except Kalyan and Jalgaon, however Pune and Nashik shows the similar pattern as it was in previous year.

Although the noise level get decreased but these are still higher than the permissible limits, which is the matter of concern. Comparative study shows the following results in different cities of Maharashtra:

Mumbai: Comparative study shows decrease in noise levels this year in Mumbai as compared to last years (49-97dBA). In 2007, it was higher (63-102dBA), then decreased in 2008 (50.2-91dBA) which again got increased in 2009 (46-105dBA) and in 2010 it is increased with highest maximum value (58-111dBA).

Navi Mumbai: In Navi Mumbai there is decrease in noise levels is observed this year as compared to previous 4 years. The highest noise level was observed in the year 2010 (57-126dBA)

Thane: In Thane, minimum and maximum level of noise decreased this year(45-94dBA). In 2009, it was in the range of 60-95dBA, in 2008 it was 56-96dBA, and in 2010 it increased to 50.3-108dBA.

Pune: The maximum noise level value in Pune this year (45-11dBA) is found similar to that of 2010 (39-101dBA). In 2007 it was 56-99dBA, in 2008 it was 62-107dBA and in 2009, 53-101dBA .

Nashik: In Nashik also. the maximum noise level this year (63-105dBA) is similar to that of 2010 (46-104dBA) even though the minimum noise level increased abit.

Aurangabad: In Aurangabad, little decrease in noise levels are observed this year as compared to last year. The noise levels of 2010 fall in the range of 55-98dBA, in 2009 it was in between 41-96dBA and now in 2011 it is 49-96dBA .

Nagpur: The noise levels this year (49-92dBA) in Nagpur are increased as compared to the previous year i.e. in 2010 (51-90dBA).

Kalyan: In Kalyan, increase in maximum value of noise levels are observed this year as compared to last year. The noise levels of 2010 fall in the range of 69-98dBA, in 2009 it was in between 67-95dBA and now in 2011 it is 58-107dBA.

Amravati: Decrease in noise levels are observed in Amravati this year (53-84dBA) as compared to noise levels in year 2010 (87-92dBA).

Jalgaon: In jalgaon, the maximum and minimum noise levels this year (60-100dBA) are found to be increased as it was in previous year i.e. in 2010 (53-98dBA).

Kolhapur: As compared with the maximum and minimum noise level of Kolhapur in 2010 (66-131dBA), there is a great decrease in the noise level this year (52-

90dB(A). Also, in comparison to last three years this year noise levels decreased significantly.

Satara: In Satara also, decrease in maximum noise level is observed this year, however minimum level increased. If we consider the overall range of values, the overall decrease in noise levels is predicted this year in satara as compared to year 2010.

Table 4.14: Noise Levels during Ganesh Festival for last 5 years in different cities of Maharashtra

Sr. No.	City	2007 Noise Levels in L_{eq} dB(A)		2008 Noise Levels in L_{eq} dB(A)		2009 Noise Levels in L_{eq} dB(A)		2010 Noise Levels in L_{eq} dB(A)		2011 Noise Levels in L_{eq} dB(A)	
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	Mumbai	102.7	63.4	91.3	50.2	105.8	46.0	111.3	58.2	97.8	49.6
2	Navi Mumbai	100.6	85.9	95.8	51.3	93.3	42.1	126.3	57.4	104.2	58.3
3	Thane	92.4	59.2	96.5	56.0	95.0	60.1	108.0	50.3	94.5	45.5
4	Pune	99.3	56.8	107.0	62.0	101.8	53.3	101.3	39.1	101.4	45.8
5	Nashik	89.3	40.2	99.8	41.9	97.3	61.5	104.4	46.1	105.2	63.3
6	Aurangabad	114.1	65.2	99.5	51.3	96.5	41.3	98.0	55.6	96.7	49.6
7	Nagpur	98.3	66.2	85.9	60.7	89.6	53.0	90.6	51.4	92.5	49.1
8	Kalyan	103.8	65.4	92.7	59.6	95.7	67.8	98.4	69.3	107.9	58.7
9	Amravati	93.6	52.6	79.7	59.0	85.6	51.7	92.2	57.2	84.8	53.0
10	Jalgaon	102.9	54.0	79.0	60.0	96.3	54.5	98.0	53.1	100.3	60.2
11	Kolhapur	105.4	56.9	86.0	65.0	104.5	52.9	131.1	66.1	90.9	52.9
12	Satara	96.7	62.5	100.0	66.0	92.2	66.1	107.3	55.6	94.5	58.3

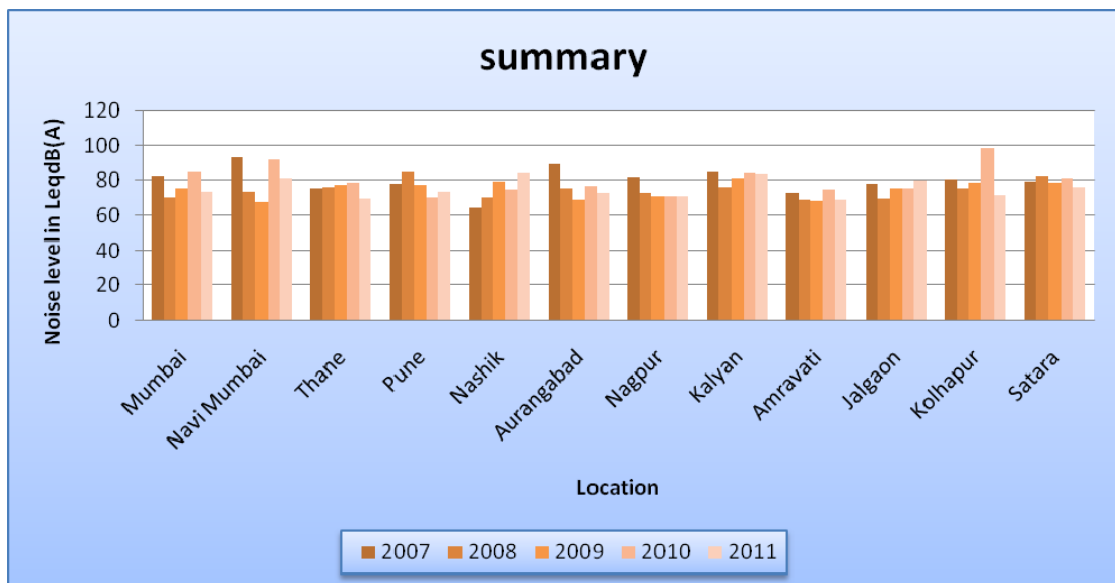


Chart 4.25: Noise Levels during Ganesh Festival for last 5 years in different cities of Maharashtra

5.0 Conclusion

In the present study, the ambient noise level monitoring has been conducted in 12 cities at 89 locations for 5 days from 7th September to 11th September 2011 on a daily basis from 6.00 p.m. to 12.00 p.m. The noise levels were found to be having a decreasing trend in cities like Kolhapur, Satara, Mumbai, Navi Mumbai, Thane, Aurangabad and Amravati over the last few years. However, some cities like Nagpur, Jalgaon have shown increasing trend in the noise levels. The other cities like Pune and Nashik have shown a comparatively constant trend in the noise levels. There is also a significant variation in the noise levels observed from the period 6.00 p.m. to 10.00 p.m. and 10.00 p.m. to 12.00 p.m. at all the locations and further some cities like Pune have shown a significant variation in noise levels on daily basis also. This is matching the field observations of the celebration activities, particularly on the last day of the Ganesh Festival.

In the present study, the ambient noise monitoring has been conducted and therefore the observed noise levels are the cumulative result of various urban sources such as traffic, house hold activities construction activities besides the festival related noise.

Though the contribution of the festival celebration is significant which is reflected in the hourly noise level variations, the exact contribution of the same is not covered under the scope of work of the present study. However, there is an over all decreasing trend which can be attributed to the public awareness activities carried out by various State Government Agencies and also improved enforcement of the noise regulations.

The ambient noise levels are exceed the standards specified under the Noise Rules, 2000 and therefore, it is necessary to continue the efforts to create more awareness about the noise pollution and also to take effective steps to reduce the noise levels through various initiatives on a long term basis. The study highlights the continual need of such initiatives in a more prioritized manner.

6.0 Definitions

A-Weighting

"A-weighting" is the frequency weighting characteristic as specified in IEC 123 or IEC 179 and intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound.

A-weighted Sound Pressure Level

The "A-weighted sound pressure level" is the sound pressure level modified by application of the A-weighting. It is measured in dBA, A-weighted, and denoted as dBA.

Decibel

The "decibel" is a dimensionless measure of sound level or sound pressure level; see sound pressure level.

Equivalent Sound Level

The "equivalent sound level" sometimes denoted L_{eq} , is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is measured in dBA.

Fast Response

"Fast response" is a dynamic characteristic setting of a sound level meter meeting the applicable specifications.

Percentile Sound Level

The "x percentile sound level", designated L_x , is the sound level exceeded x percent of a specified time period, It is measured in dBA.

Sound

"Sound" is an oscillation in pressure, stress, particle displacement or particle velocity, in a medium with internal forces (e.g. elastic, viscous), or the superposition of such propagated oscillations, which may cause an auditory sensation.

Sound Level

"Sound level" is the A-weighted sound pressure level.

Sound Level Meter

A "sound level meter" is an instrument which is sensitive to and calibrated for the measurement of sound.

Sound Pressure Level

The "sound pressure level" is twenty times the logarithm to the base 10 of the ratio of the effective pressure (p) of a sound to the reference pressure (Pr) of 20 μ Pa. Thus the sound pressure level in dB = $20 \log_{10} P/Pr$.

Glimpses of the Event



Vinod Kumar with Field Officer at Borivali, Mumbai



Datta Abhaji Jadhav with Field Officer Mr. Hemant Kulkarni at Gaodevi Mandir, Thane



Ganesh & Ashwin at Chinchpokali (W)



Ketan at Chinchpokali (E)



Devendra Harishankar Mishra with Regional Officer at Vashi, Navi Mumbai



Navanath Pawade at Sector-10, D-Mart, Kopar Khairane



**Yerawada (Near Gunjan Theatre),
Pune**



Alka Chowk, Pune



Babu Genu Chowk, Pune



**Dagdu Sheth Mandir (City Post
Chowk), Pune**



Khadaki (Near Bazar), Pune



Hadapsar (Nera Bhaji Mandai), Pune



Karve Road (Nul stop), Pune



Golibar Chowk, Nagpur



Ramdaspeth, Nagpur



Reshimbagh, Nagpur



Moti Chowk - Satara



Pawai Naka - Satara