REPORT ON
MONITORING OF NOISE AND
AIR POLLUTION DURING DIWALI, 2007

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November 12, 2007

FOREWORD

This report is based on the measurement of the noise level by the Board in 12 cities and at 121 locations during the Diwali, 2007. Air quality monitoring was done at 19 locations in 7 cities.

It was observed that noise levels were exceeding the permissible limits in all cities and almost at all locations. The emission of smoke arising out of bursting of fire crackers added into increased levels of air pollution, particularly in terms of Respirable Suspended Particulate Matter (fine dust).

(Sanjay Khandare)
Member Secretary
November12,2007.

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1. Introduction

Diwali festival is the important festival celebrated all over. This is the festival of lights and celebrated with bursting off fire crackers.

There is concern over increased noise and air pollution caused due to bursting of the fire crackers during Diwali. The fire cracker bursting cause high noise levels typically more than 100 dB. The important air pollutants generated during the fire crackers bursting are SO_2, NOx and smoke / dust containing respirable suspended particulates. The problems of pollution due to fire crackers can best be tackled by creating a public awareness. Enforcement of the rules alone would not suffice.

In order to elucidate the environmental issues concerning noise and air pollution during Diwali, noise monitoring survey was carried out in 12 cities at 121 locations in the State and air monitoring was conducted in 7 cities at 19 locations.

2. Effects of noise pollution on Human Health

Noise is undesirable sound. One measure of noise pollution is the danger it poses to health. Noise causes stress, can be the cause of illness and can create annoyance. Therefore, any form of noise can be considered pollution if it causes annoyance, sleeplessness, fright, or any other stress reaction.

Noise is transient; once the pollution stops, the environment is free of it. This is not the case for chemicals, sewage, and other pollutants introduced into the air, soil, or water. Other forms of pollution can be measured, and scientists can estimate how much material can be introduced into the environment before harm is done. We can measure individual sounds that may damage human hearing, but it is difficult to monitor cumulative exposure to noise. The response to noise pollution itself is highly subjective. To some people the roar of an engine is satisfying or thrilling; to others it is an annoyance. Loud music may be enjoyable or a torment, depending on the listener and the circumstances

3. Measurement and Standards

3.1 Noise

Noise is often measured in decibels (dBA). A symbol indicates a measurement of a logarithmic scale. In each case, the actual measurement 'a' is compared to a fixed reference level 'r' and the "decibel" value is defined to be 10 log 10 (a/r) . 'A' weighing filters out lower frequencies very severely. Fast responses closely match to the simulations of Human ear sensitivity. Fast response (125 to 200 milli-second) was selected to measure noise levels. The human response to Noise depends upon the frequency of the sound, the type of noise (continuous, intermittent or impulsive) and the time (day or night) it occurs. Noise has been recognized as ambient air pollutant. Standards in this regard are laid down under The Environment (Protection) Act, 1986 (and rules made there under) and under the Model Rules of the Factories Act, 1948 for occupational health and safety purposes.

The CentralPollution Control Board 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 equipments, which were later notified under The Environment (Protection) Act, 1986 as given below:

Area Code	Category of Area	Limits in dB(A) , Leq	
		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 in between 6 a.m and 9 p.m.
2. Night time is reckoned in between 9 p.m and 6 a.m.
3. Silence zone is referred as areas up to 100 meters around such premises 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.

Noise standards for the fire crackers

The standards for the fire crackers have been stipulated under the provisions of the Environmental (Protection) Act, 1986, which are reproduced below:

A. (i) The manufacture, sale or use of fire-crackers generating noise level exceeding 125 dB(AI) or 145 dB$(C)_{pk}$ at 4 meters distance from the point of bursting shall be prohibited.

(ii) For individual fire-cracker constituting the series (joined fire-crackers), the above mentioned limit be reduced by 5 $\log_{10}$(N) dB, where N = number of crackers joined together.

B. The broad requirements for measurement of noise from fire-crackers shall be -

(i) The measurements shall be made on a hard concrete surface of minimum 5 meter diameter or equivalent.

(ii) The measurements shall be made in free field conditions i.e., there shall not be any reflecting surface upto 15 meter distance from the point of bursting.

(iii) The measurement shall be made with an approved sound level meter.

C. The Department of Explosives shall ensure implementation of these standards.

Note: dB(AI) A-weighted impulse Sound Pressure Level in decibel $dB(C)_{pk}$ C-weighted Peak Sound Pressure Level in decibel.".

3.2 Ambient Air Quality

Ambient air quality is measured by High Volume Sampler (HVS). Air monitoring was done for measurement of SO2, NOx and Respirable Suspended Particulate Matter (RSPM). Ambient air quality is measured continuously at 19 locations in 7 cities to compare with National Ambient Air Quality Standards.

National Ambient Air Quality Standards

Sr.No	Parameter	Daily (24hr) maximum concentration in Residential area in $\mu g/m^3$
1	Sulphur dioxide (**SO_2**)	80
2	Oxides of Nitrogen (**NOx**)	80
3	Respirable Suspended Particulate Matter (**RSPM**)	100

4. The Survey

Sound level monitoring has been carried out in 12 cities in Maharashtra to measure the resultant sound levels during 7 to 10 pm and 10 pm to midnight. This time schedules have been worked out to understand the

compliance of Hon'ble Mumbai High Court's order banning bursting of the crackers after 10 pm, which violate the norms.

The noise pollution due to fire crackers is observed in most of the urban areas of the state. Considering the resources, and also to develop a data base for possible trend analysis, noise monitoring has been conducted at 12 cities. The following table illustrates the cities and the number of noise monitoring locations in each city covered during the survey:

Sr.No.	Name of the city	Total No. of Locations
1	Mumbai	45
2	Navi Mumbai	05
3	Thane	05
4	Pune	15
5	Nashik	05
6	Aurangabad	05
7	Nagpur	11
8	Kalyan (Ambernath / Dombivli / Ulhas Nagar)	12
9	Kolhapur	08
10	Amravati	03
11	Yavatmal	03
12	Akola	04
	TOTAL	**121**

Focus of the measurement was monitoring the noise levels, covering Diwali related activities (fire cracker bursting, functions, increased traffic etc.) and its effect on citizens. Measurements were carried out at each location on 9th, 10th , and 11th November, 2007. First set of readings cover 7 pm to 10 pm and the second between 10 pm to 12 midnight. Half hourly averages were taken for reporting Leq.

Min.: Minimum value observed during the measurement.

Max.: Maximum value observed during the measurement. This is due to cracker noise, vehicular traffic, etc.

Leq: Energy equivalent noise level. It is a time-averaged sound level; a single-number value that expresses the time-varying sound level for the specified period as though it were a constant sound level with the same total sound energy as the time-varying level. Its unit is the decibel (dB).

The data collected during survey is presented in the following tables and Figures.

5. Results

The results of measurements of noise levels in 12 cities and at 121 locations are presented in Table 1- 12 with graphic representation in Figure 1 to 7

Ambient air quality monitoring in terms of SO2, NOx and respirable suspended particulate matter (RSPM) was carried out specially at 7 cities round the clock at 19 locations. These results are presented in Table 13.

Table 1: Noise Levels in Mumbai

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	Mumbai						
Sr.	**Location**	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	**22 - 24 hr**	**19 - 22 hr**	**22 - 24 hr**	**19 - 22 hr**	**22–24 hr**
	Mumbai	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Colaba	**86.6**	**81.2**	**73.6**	**69.7**	**86.5**	**92.8**
2	Mantralaya	**90.2**	**76.1**	**83.3**	**70.3**	**93.1**	**89.3**
3	Mazgaon	**79.8**	**71.5**	**71.8**	**67.8**	**81.3**	**70.6**
4	Worli	**90.1**	**63.3**	**70.1**	**58.2**	**89.1**	**66.7**
5	Mahim	**75.1**	**78.5**	**72.2**	**76.6**	**78.1**	**84.1**
6	Parel	**74.5**	**88.3**	**73.2**	**70.1**	**80.2**	**80.2**
7	Byculla	**80.4**	**82.5**	**75.3**	**76.3**	**74.1**	**79.1**
8	Sion	**75.1**	**83.5**	**68.3**	**71.8**	**83.5**	**85.3**
9	Hindu Colony	**73.5**	**75.1**	**71.1**	**73.1**	**76.4**	**80.1**
10	Matunga	**74.1**	**75.5**	**72.1**	**70.2**	**82.3**	**80.3**
11	Kamathipura	**71.5**	**71.5**	**73.2**	**71.1**	**78.3**	**84.2**
12	Malabar Hill	**68.9**	**64.9**	**63.6**	**60.3**	**73.6**	**68.2**
13	Trombay	**84.3**	**85.5**	**76.4**	**72.1**	**80.5**	**81.6**

Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22- 24 hr
14	Kurla	93.5	84.2	91.3	81.5	98.5	88.4
15	Ghatkopar East	82.5	85.6	74.2	85.4	83.3	82.5
16	Mulund East	75.4	73.4	76.7	74.3	83.1	80.3
17	Mulund west	73.7	78.5	74.3	75.8	81.2	89.2
18	Powai	98.9	82.9	79.5	75.1	91.9	81.2
19	Wadala	93.1	74.3	79.9	72.2	85.7	84.8
20	Dharavi	89.4	79.9	68.5	75.1	83.1	74.3
21	Sewree	91.2	79.5	82.5	73.9	91.2	82.7
22	Kalina	89.1	87.1	81.1	78.5	76.7	72.9
23	Sahar	82.9	76.5	75.9	62.2	78.4	82.1
24	Vile Parle	85.7	88.9	81.3	60.7	77.1	69.8
25	Goregaon	85.7	83.6	83.7	80.7	85.5	83.6
26	Versova	74.4	68.3	73.1	68.8	76.5	74.6
27	Marve	70.8	68.7	69.3	66.4	73.4	71.2
28	Borivali East	75.7	78.7	79.8	74.9	80.9	79.5
29	Dindoshi	80.7	74.4	76.3	74.6	78.9	77.7
30	Juhu	86.6	88.1	72.8	61.8	88.9	69.8
31	Chembur	84.5	99.8	102.4	89.9	100.4	87.4
32	Ghatkopar West	92.3	99.4	100.6	97.1	70.0	87.9
33	Vikroli	89.2	101.3	99.5	88.5	80.7	87.6
34	Bhandup	81.4	100.0	102.4	97.6	86.3	85.7
35	Sakinaka	94.8	99.8	96.6	95.9	97.8	94.4
36	Bandra East	99.1	99.4	99.1	97.1	100.7	101.9
37	Santacruze East	100.5	101.3	97.8	96.5	100.9	102.6
38	Jogeshwari	100.6	100.1	99.6	97.6	106.2	104.7
39	Marine Drive	88.1	94.9	97.9	101.1	101.0	103.4
40	Girgaon	98.0	99.1	100.7	101.3	101.1	102.3
41	Prabhadevi	100.1	99.7	100.9	101.1	101.7	100.3
42	Dadar	100.1	99.0	100.0	99.5	101.2	99.3
43	Dahisar	91.0	***	81.5	***	81.0	***
44	Kandivali	86.0	***	84.0	***	81.0	***
45	Malad	82.5	***	83.5	***	82.0	***

Figure-1 : Sound Level- Diwali 2007- Mumbai

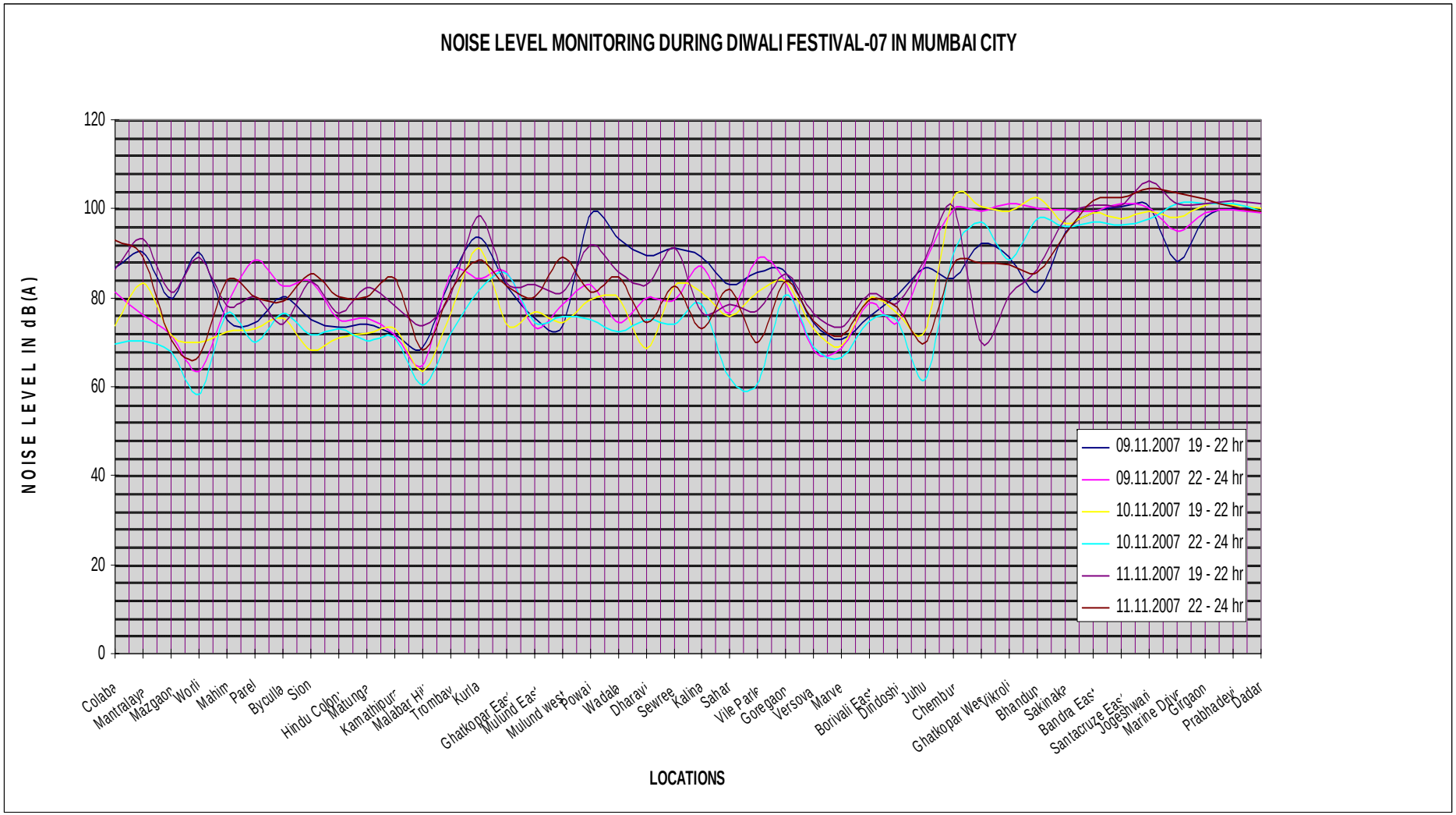

Table 2: Noise Levels in Pune

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	PUNE						
Sr. No	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	PUNE	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Kothrud	87.3	71.6	86.2	69.6	80.5	80
2	Karve Road	90.4	74.2	88.7	71.4	88.4	85.3
3	Shivaji Nagar	84.3	82.3	80.5	81.7	85.4	81.3
4	Shaniwar Peth	79.2	83.1	83.6	76.7	87.5	80.2
5	Laxmi Road	91.6	79.5	82.8	73.8	78.5	74
6	Mahatma Phule Mandai	80.4	76.2	74	74.4	76.3	71.4
7	Swargate	86.1	82.4	82.11	78.8	83.5	78.5
8	Saras Baug	76.2	77.6	82.1	73.6	79.8	70.2
9	Parvati	83.5	69.5	80.3	72.2	81.5	67.5
10	Satara Road	79.5	72.2	76.1	77	83.2	74
11	Hadapsar	85.2	65.4	84.5	64.3	86.4	78
12	Koregaon Park	76.5	68.3	72.5	73.4	73.5	64.3
13	Yerwada	82.1	70.1	81.9	74.3	86.7	75
14	Khadki	90.1	77.9	85.2	71.3	99.6	69.3
15	M.G.Raod	108.3	96.7	92.2	90.3	95.3	89

Figure-2 : Sound Level- Diwali 2007- Pune

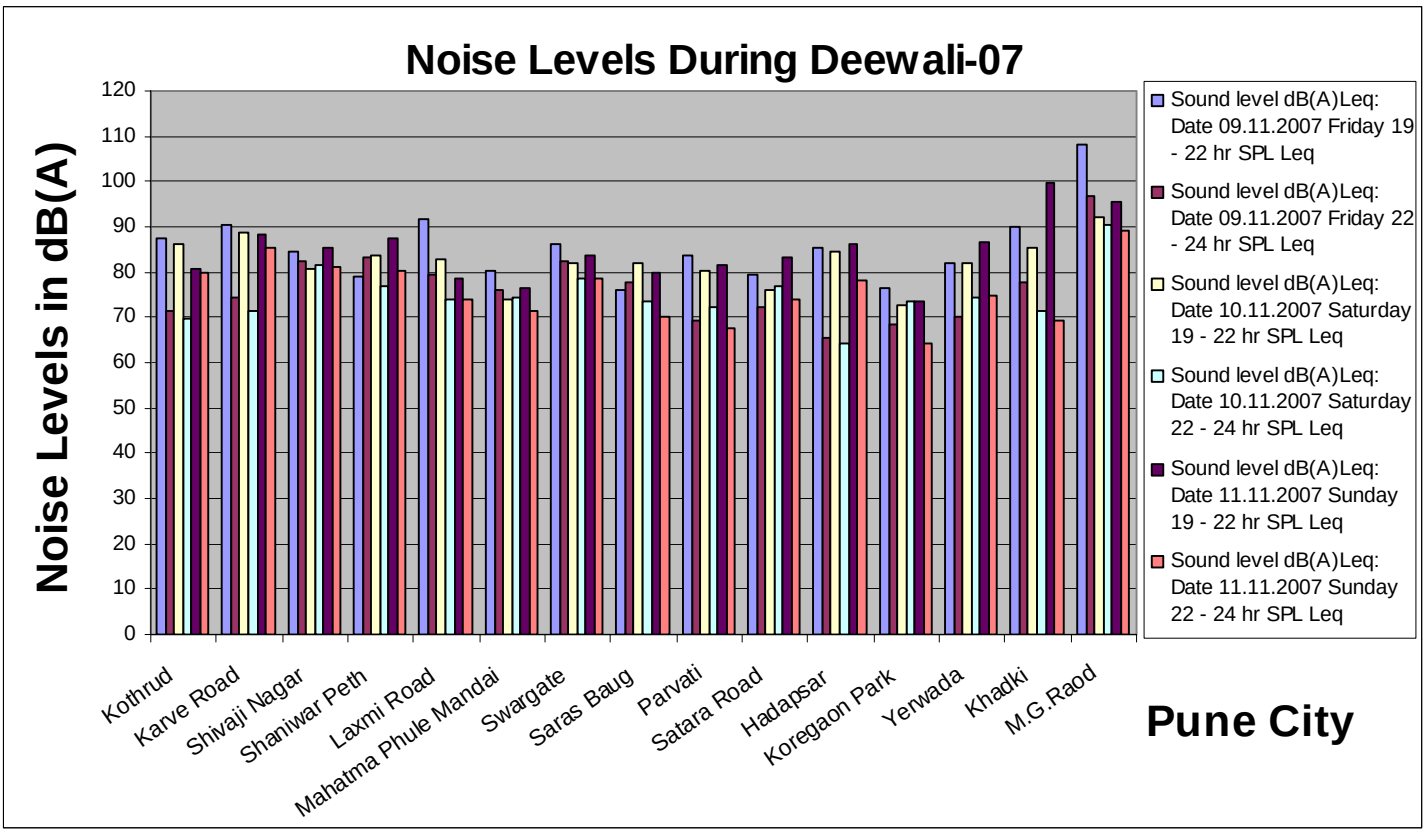

Table 3: Noise Levels in Thane

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	THANE						
Sr. No	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	THANE	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Gokahale Toad	89.1	71.8	87.2	71.4	89	82.3
2	TMC Pachpakhadi	90.2	63	85.7	65.2	88.3	71.2
3	Vrindavan Society Stop	87	66.7	86	65	86.4	70
4	Lok Hospital	84.3	61.2	85.2	63	85	62.8
5	Hiranandani Estate	88.3	66.9	88.2	67.3	86.6	65.7

Figure-3 : Sound Level- Diwali 2007- Thane

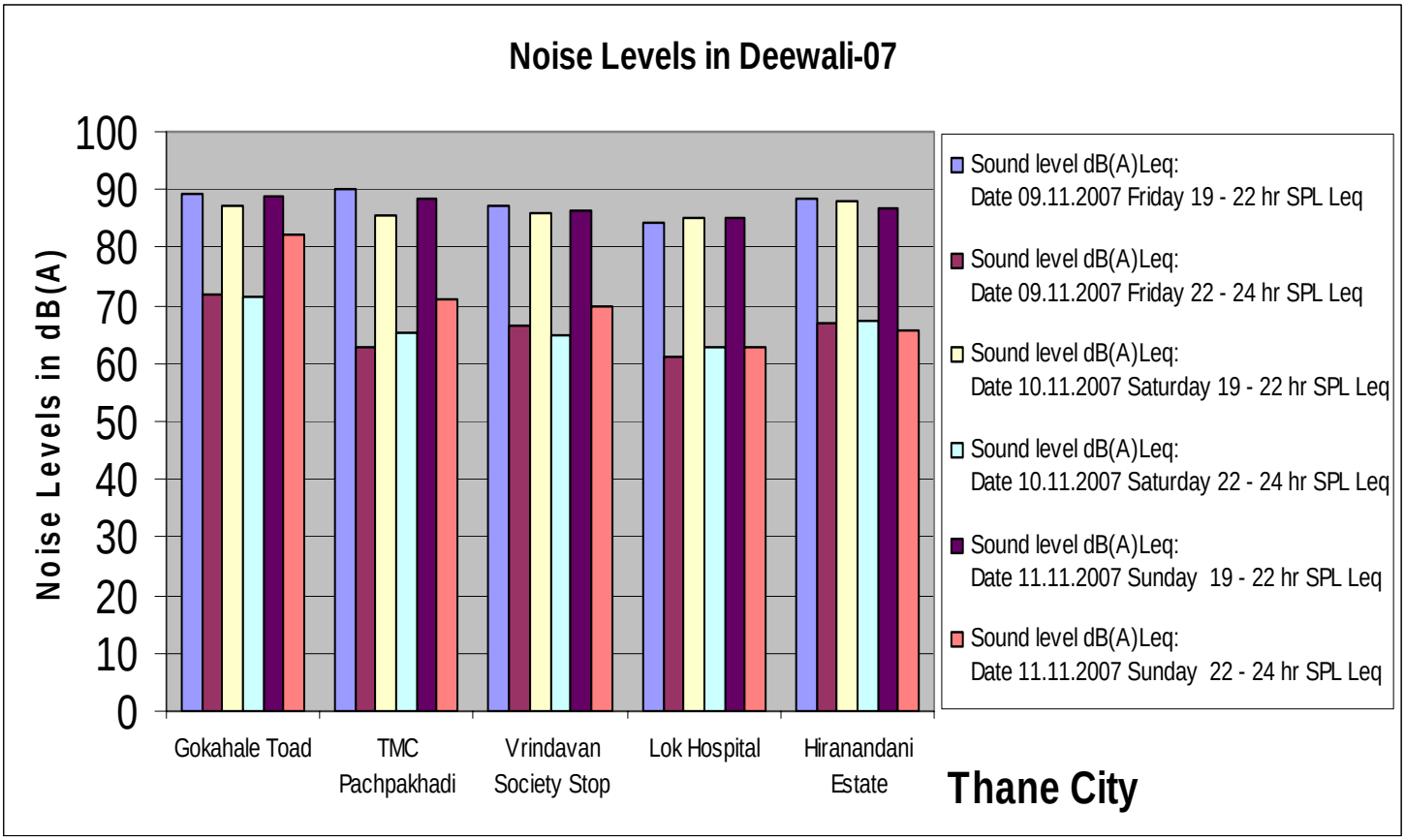

Table 4: Noise Levels in Aurangabad

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	AURANGABAD						
Sr. No	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	AURANGABAD	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Cidco Residential N3/N4	91.1	70	94.2	75.7	92.1	74
2	Gulmandi	94.8	74.6	94.6	86.5	93.6	73.8
3	City Chowk/Nirala Bazar	93.4	77.7	95.6	93.5	94.2	65
4	kranti Chowk	92.5	74.6	95.1	92.3	95.6	95.3
5	Usmanpura	89.3	70	94.5	90.5	93.1	94.4

Figure-4 : Sound Level- Diwali 2007- Aurangabad

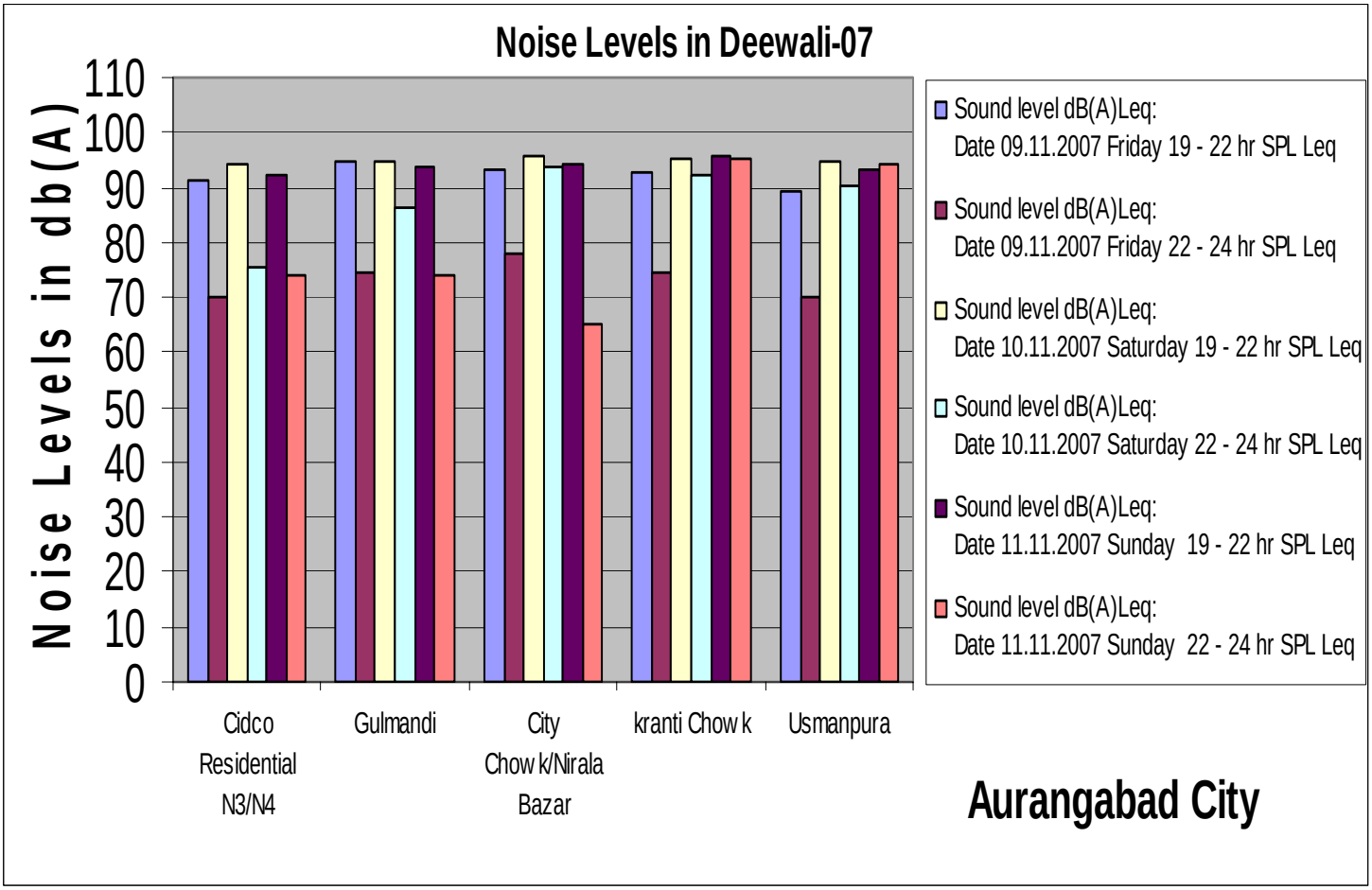

Table 5: Noise Levels in Nagpur

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	NAGPUR						
Sr. No	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	NAGPUR	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Mahal Chowk	97.6	90	95.8	88	94.8	73
2	Sadar Chowk	97.2	92.3	94	88.6	87.8	77.3
3	Shankar Nagar Chowk	97.8	90.3	97.6	92.5	86.6	73.3
4	Kalamna Chowk	97	89.6	94.3	87.3	92	77.3
5	Deshpande Layout	97.2	93	93.6	89.6	92.8	87.6
6	Ajni Chowk	89	***	85	83.5	85	81.5
7	Civil Lines	90	***	88	77	80	76
8	Dharampeth	92	82	85	74.5	81	74
9	Itwari	90	***	85	83.5	80.5	72
10	Govt.Medical College	84	81	79	77.5	78.5	73.5
11	Indira Gandhi Med. College	86	86	85.5	83.5	83	77

Figure-5 : Sound Level- Diwali 2007- Nagpur

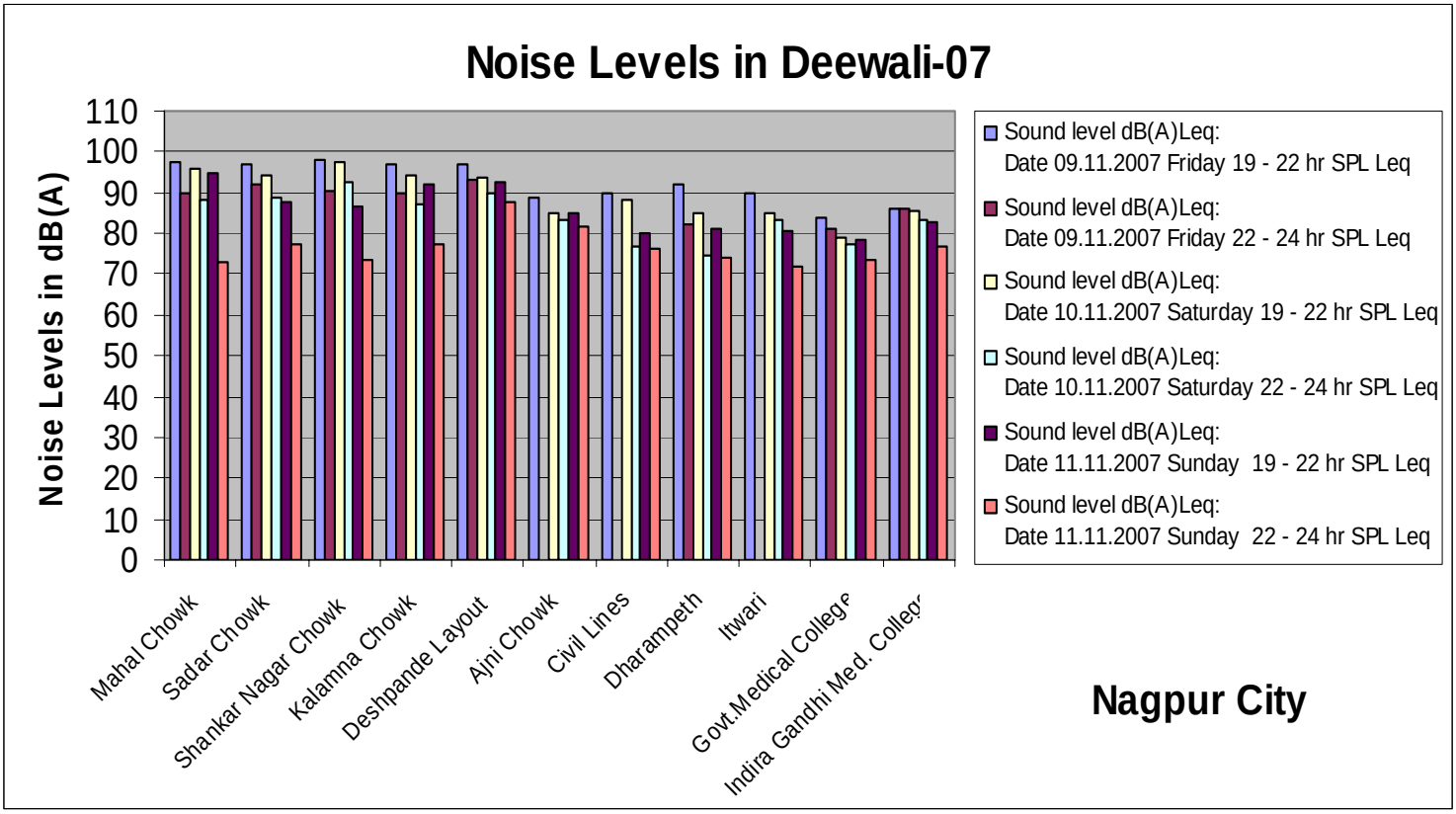

Table 6: Noise Levels in Kolhapur

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	KOLHAPUR						
Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	KOLHAPUR	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Rajarampuri	94.5	93.5	104.1	73.2	103.9	73.9
2	Tara rani chowk	103.5	83.5	103.5	73.7	103.8	73.5
3	Khas Baug Maidan	94.4	114	103.9	113.2	113.2	113.5
4	Papachi Tikati	94.6	113.8	104	123.5	113.5	103.7
5	Bindu Chowk	93.2	113.7	83.5	93.5	74.4	93.2
6	Shivaji Chowk	103.7	113.8	103.9	113.7	103.5	113.2
7	Mahalaxmi Mandir	94.3	113.7	103.8	104.3	74.8	103.7
8	Bhavani Mandap	94.4	113.7	103.8	113.2	74.7	103.7

Figure-6 : Sound Level- Diwali 2007- Kolhapur

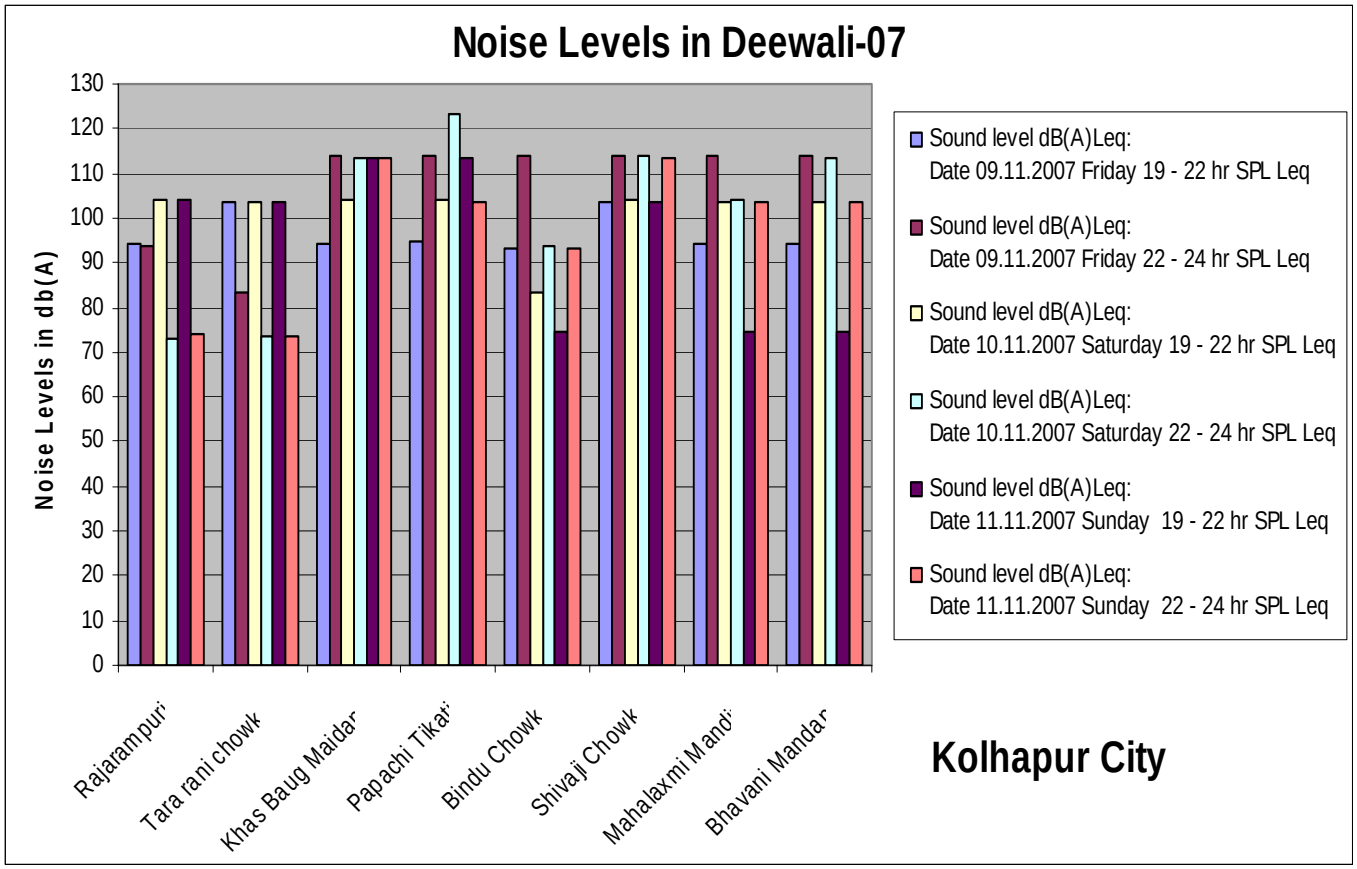

Table 7: Noise Levels in Navi Mumbai

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	NAVI MUMBAI						
Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	NAVI MUMBAI	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Airoli	89.9	91.7	89.2	82.4	87.2	80.5
2	Rabale	101.4	88.1	90.4	82.6	86.4	81.2
3	Ghansoli	98.6	83.8	89.3	83.2	85.4	83.3
4	Kopar Khairne, Balaji	99.1	87.6	88.5	84.4	83.2	83.7
5	Kopar Khairne, Sec. 10	95.6	82.4	89.4	88.3	82.2	85.2

Figure-7 : Sound Level- Diwali 2007- Navi Mumbai

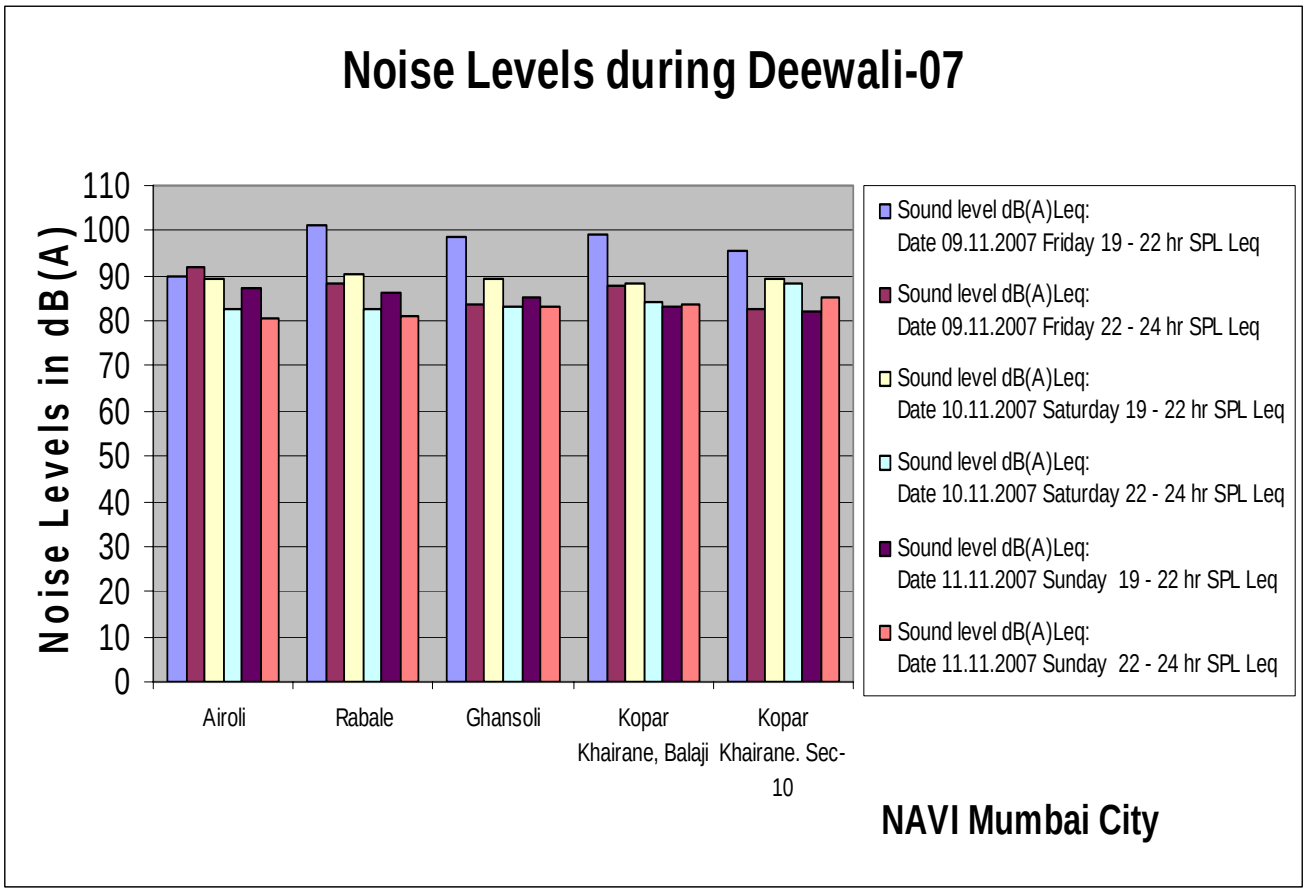

Table 8: Noise Levels in Nashik

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	NASHIK						
Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	NASHIK	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Bytco Chowk, Nashik Rd.	76.8	*****	84.8	*****	85.9	*****
2	Shalimar Chowk	93	*****	84.3	*****	80	*****
3	Gadje Mahraj Statue	*****	92.5	85.3	*****	*****	90.8
4	Ravivar Karanja	*****	91.6	*****	87.2	*****	90.3
5	Trimurti Chowk, CIDCO	*****	90	*****	61.5	*****	87.8
	***** Monitoring not done						

Table 9: Noise Levels in Kalyan

Sound level dB (A): Date 09.11.2007 - 11.11..2007.

KALYAN

Sr.	Location	Sound level dB(A): Date 09.11.2007 Friday						Sound level dB(A): Date 10.11.2007 Saturday						Sound level dB(A)Leq: Date 11.11.2007 Sunday					
		19-22 HRS			22-24HRS			19-22 HRS			22-24HRS			19-22 HRS			22-24HRS		
	KALYAN	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
1	Kansai Station,Ambernath	45	102	64	42	68	53	59	118	76	47	96	58	53	114	73	47	68	53
2	Near Rly.Station, Ambernath	53	108	72	46	82	62	47	105	62	44	72	51	56	119	76	46	102	68
3	Sai Section, Ambernath	48	96	59	42	86	52	42	86	68	45	69	49	55	104	78	42	81	59
4	Shivaji Chowk No.3, Ulhasnagar	59	103	65	48	76	58	46	117	72	42	63	53	59	107	77	48	82	63
5	Camp No.5, Bus stop, Ulhasnangar	57	112	67	49	102	59	48	104	69	44	71	51	46	104	73	42	78	56
6	Camp No.1, Gol Maidan, Ulhasnagar	52	96	72	41	78	54	52	119	72	41	76	54	52	117	77	46	82	58
7	Municipal Office, Dombivali(E)	61	101	81	67	119	84	66	119	84	66	96	81	56	121	87	63	95.2	79
8	Kopar Village, Dombivali(W)	63	102	83	64	97	79	66	119	84	63	116	84	57	120	83	66	102	79
9	Navapada, Dombivali(W)	64	123	98	65	110	81	64	93	77	65	95	80	61	116	80	65	109	88
10	Katemanivali, Kalyan(E)	45	123	94	63	93	79	69	101	84	63	102	85	63	97	77	65	94	74
11	Birla College, Kalyan (W)	63	95	84	62	102	84	64	103	88	64	102	85	62	91	77	65	111.5	81.2
12	Bail Bazar, Kalyan (W)	65	95	80	63	105	82	64	114	90	64	98	81	64	87	73	64	94	76

Table 10: Noise Levels in Amravati

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	AMRAVATI						
Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	AMRAVATI	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Rukmini Nagar	77.1	*****			67.3	*****
2	Rajkamal Square	76	*****			62.3	*****
3	Irvin Square	63	*****			61.6	*****
	***** Monitoring not done						

Table 11: Noise Levels in Yawatmal

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City	YAWATMAL						
Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 10.11.2007 Saturday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr	19 - 22 hr	22 - 24 hr
	YAVATMAL	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq	SPL Leq
1	Jaysthambha Square	*****	*****	65.9	*****	*****	*****
2	Godhani Area	*****	*****	57.5	*****	*****	*****
3	Yashvantarao Naik	*****	*****	62.5	*****	*****	*****
	Medical College						
	***** Monitoring not done						

Table 12: Noise Levels in Akola

Sound level dB (A) Leq: Date 09.11.2007 - 11.11..2007.

City **AK0LA**

Sr.	Location	Sound level dB(A)Leq: Date 09.11.2007 Friday		Sound level dB(A)Leq: Date 11.11.2007 Sunday	
		MIN	MAX	MIN	MAX
	AK0LA	**19-22 Hrs**		**19-22 Hrs**	
1	**Near Gandhi Chowk**	72.7	118.4	70.4	111.3
2	**Near SRO Office**	58.2	100.7	60.3	98.3
3	**Near Jai Hind Chowk**	63.6	115.7	60.5	110.3
4	**Raut Wadi**	58.4	101.6	55.4	95.6

Table 13: Ambient Air Quality at different cities during Diwali, 2007

Standards for SO_2 =80 µg/m^3, NOx = 80 µg/m^3 and RSPM = 100 µg/m^3

PLACE	DATE	SO_2	NOx	RSPM
MUMBAI (BANDRA)	**Pre-Diwali (08.11.07)**	19	47	227
	09.11.07	31	62	328
	10.11.07	24	42	358
	11.11.07	20	38	292
MUMBAI (SION)	**Pre-Diwali (08.11.07)**	38	160	160
	09.11.07	37	111	247
	10.11.07	36	96	220
	11.11.07	36	93	336
SOLAPUR	**Pre-Diwali (08.11.07)**	17	21	118
	09.11.07	21	33	162
	10.11.07	27	38	155
	11.11.07	21	29	132
AURANGABAD	**Pre-Diwali (08.11.07)**	39	54	125
	09.11.07	43	52	86
	10.11.07	32	48	84
	11.11.07	26	39	118
NAGPUR	**Pre-Diwali (08.11.07)**	22	35	73
	09.11.07	29	43	90
	10.11.07	23	38	66
	11.11.07	25	39	76
NAGPUR (CIVIL LINES)	**09.11.07**	44	48	352
	10.11.07	35	26	153
	11.11.07	48	27	72
NAGPUR (GANDHI NAGAR)	**09.11.07**	69	52	517
	10.11.07	54	40	372
	11.11.07	67	51	835
NAGPUR (DHANTOLI)	**09.11.07**	90	64	593
	10.11.07	66	47	303
	11.11.07	30	47	115
NAGPUR (SEMINARY HILL)	**09.11.07**	36	26	182
	10.11.07	54	22	--

PLACE	DATE	SO_2	NOx	RSPM
AURANGABAD (BIBI-KA-MAQBARA)	**Pre-Diwali (08.11.07)**	07	18	116
	09.11.07	09	21	290
	10.11.07	06	18	251
AURANGABAD (C.A.D.A.OFFICE)	**Pre-Diwali (08.11.07)**	07	21	331
	09.11.07	11	24	414
	10.11.07	08	22	312
AURANGABAD (S.B.E.S.COLLEGE)	**Pre-Diwali (08.11.07)**	07	21	263
	09.11.07	10	22	402
	10.11.07	07	21	319
PUNE (KARVE ROAD)	**Pre-Diwali (08.11.07)**	20	43	110
	09.11.07	24	54	114
	10.11.07	21	47	218
	11.11.07	19	39	288
PUNE (PIMPRI-CHINCHWAD)	**Pre-Diwali (08.11.07)**	17	49	82
	09.11.07	27	57	118
	10.11.07	25	51	180
	11.11.07	19	42	210
NAVI MUMBAI (VASHI)	**Pre-Diwali (08.11.07)**	52	58	95
	09.11.07	82	82	150
	10.11.07	56	67	186
	11.11.07	65	60	121
NASHIK (UDYOG BHAVAN)	**09.11.07**	24	31	124
	10.11.07	20	27	86
	11.11.07	19	26	117
NASHIK (Rajiv Gandhi Bhavan)	**09.11.07**	27	45	116
	10.11.07	26	47	151
	11.11.07	24	46	152
NASHIK (Old NMC)	**09.11.07**	33	47	135
	10.11.07	32	46	186
	11.11.07	27	43	141
NASHIK	**Pre-Diwali (08.11.07)**	17	23	105
	09.11.07	24	31	124
	10.11.07	20	27	86
	11.11.07	19	25	117

6. Observations:

- The ambient noise levels in Mumbai and all other cities in the State during the monitoring period at all time were above specified ambient noise standards.

- The fire cracker bursting and traffic are two important contributors of ambient noise.
- Cracker noise was marginally lower in some areas, but mostly found exceeding the stipulated limits.
- Residential areas were affected significantly by higher noise levels.
- The noise readings show a significant variation from the last year. The Leq values recorded were more than last year. However, there is need to consider traffic noise contribution also.
- The emission of smoke arising out of bursting of fire crackers added into increased levels of air pollution, particularly in terms of Nitrogen Oxides (NOx) and Respirable Suspended Particulate Matter (fine dust).
- In Mumbai 45 locations were monitored and Sound level dB(A) Leq in all the locations were above the permissible limit prescribed under The Environment (Protection) Act, 1986, and it ranged from 63.6 dBA to 106.2 dBA. and 58.2 dBA to 104.7 dBA during evening and night respectively.(In 2006 the noise level ranged from 55.8 dBA to 88.1 dBA and 56.2 dBA to 95.6 dBA during evening and night respectively).
- In Pune 15 locations were monitored and Sound level dB(A) Leq ranged from 72.5 dBA to 108.3 dBA. and 64.3 dBA to 96.7 dBA during evening and

night respectively.(In 2006 the noise level ranged from 67.0 dBA to 83.0 dBA and 67.8 dBA to 79.1 dBA during evening and night respectively).

- In Thane 5 locations were monitored and Sound level dB(A) Leq ranged from 85.0 dBA to 90.2 dBA. and 61.2 dBA to 82.3 dBA during evening and night respectively.(In 2006 the noise level ranged from 66.1 dBA to 73.7 dBA and 61.1 dBA to 73.1 dBA during evening and night respectively).
- In Aurangabad 5 locations were monitored and Sound level dB(A) Leq ranged from 89.3 dBA to 95.6 dBA. and 65.0 dBA to 95.3 dBA during evening and night respectively.(In 2006 the noise level ranged from 68.0 dBA to 89.0 dBA and 62.4 dBA to 75.0 dBA during evening and night respectively).
- In Nagpur 11 locations were monitored and Sound level dB(A) Leq ranged from 78.5 dBA to 97.8 dBA. and 72.0 dBA to 93.0 dBA during evening and night respectively.(In 2006 the noise level ranged from 59.3 dBA to 83.1 dBA and 49.4 dBA to 92.2 dBA during evening and night respectively).
- In Kolhapur 8 locations were monitored and Sound level dB(A) Leq ranged from 74.4 dBA to 113.5 dBA. and 73.2 dBA to 123.5 dBA during evening and night respectively.(In 2006 the noise level ranged from 68.5 dBA to 77.8 dBA and 54.2 dBA to 71.5 dBA during evening and night respectively).

- In Nashik 5 locations were monitored and Sound level dB(A) Leq ranged from 76.8 dBA to 93.0 dBA. and 61.5 dBA to 92.5 dBA during evening and night respectively.(In 2006 the noise level ranged from 63.9 dBA to 79.1 dBA and 51.3 dBA to 75.3 dBA during evening and night respectively).
- In Navi Mumbai 5 locations were monitored and Sound level dB(A) Leq ranged from 82.2 dBA to 101.4 dBA. and 80.5 dBA to 91.7 dBA during evening and night respectively.(In 2006 the noise level ranged from 54.8 dBA to 76.4 dBA and 53.9 dBA to 72.2 dBA during evening and night respectively).
- In Kalyan region (including Ulhas nagar, Dombivali & Ambernath) 12 locations were monitored and Sound level dB(A) Average ranged from 59.0 dBA to 94.3 dBA. and 49.0 dBA to 87.6 dBA during evening and night respectively.(In 2006 the noise level ranged from 67.8 dBA to 85.7 dBA and 62.5 dBA to 90.5 dBA during evening and night respectively).
- In Amravati 3 locations were monitored and Sound level dB(A) Leq ranged from 61.6 dBA to 77.1 dBA. during evening(Day time).

- In Yawatmal 3 locations were monitored and Sound level dB(A) Leq ranged from 57.5 dBA to 65.9 dBA. during evening (Day time).
- In Akola 4 locations were monitored and Sound level dB(A) minimum-maximum values ranged from 55.4 dBA to 118.4 dBA. during evening(Day time).
    - The emission of smoke arising out of bursting of fire crackers added into increased levels of air pollution, particularly in terms of Nitrogen Oxides (NOx) and Respirable Suspended Particulate Matter (RSPM).

7.0 Conclusion

It may be seen from the results that noise levels were exceeding the permissible limit during the Diwali festival in November, 2007 at all locations covered during the survey. Compared to last year's Diwali Festival noise monitoring survey, this year's observations were on the higher side in almost all the cities in Maharashtra.

In spite of legal standards in place and efforts of regulatory agencies, the noise levels could not be checked and controlled up to the desired levels. In order to make people aware of the noise pollution and its adverse effects on environment and health, a social mission supported by capacity building in the regulatory agencies for effective implementation of the noise standards is required.

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