

REPORT ON AMBIENT NOISE MONITORING IN METROPOLITAN CITES, 2020-21



MAHARASHTRA POLLUTION CONTROL BOARD

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Foreword

Noise pollution is an invisible danger. Noise pollution impacts millions of people on a daily basis. Sound pollution has created an urgent need for general awareness about its sources, effects and measures to prevent noise pollution. The high level of sound should be stopped at places like workplace, educational institution, residential area, hospital etc. Young children and students, such as fast-moving activities; On any occasion, the use of fast-moving devices and equipment should be encouraged to not be included in etc. In order to assess the impact of noise pollution, an Ambient Noise Level Monitoring Program is being initiated by Maharashtra Pollution Control Board in 27 Municipal Corporation across the state in 102 locations for a period of 24 hours. The survey is being conducted on 21st and 22nd February 2021 considering a working and a non-working day), as per CPCB protocol. It is also aimed at generating long term ambient noise level data and trend, at the identified locations, by repeating the monitoring survey every year, since 2007.

This report contains the methodology and observations made during the study. Results are reported as L_{eq} day time, L_{eq} night time, L_{10} , L_{50} , L_{90} , L_{max} , L_{min} in dB(A) and are compared with ambient noise standards for the areas as well as with previous year's results.

Field monitoring of this study was conducted by M/s Mahabal Enviro Engineers Pvt. Ltd., Thane and was supported by all Regional offices of the Board, in the field. The entire study work including planning, co-ordination and report preparation was done at PAMS division of the Board, The contributions of Dr. Vidyanand Motghare, Joint Director (Air), Shri. S.C. Kollur and Shri. Salil Save are appreciated.

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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

Introduction

Noise pollution or sound pollution refers to the dangerous and unwanted level of disturbance caused by noise. Noise is measured in decibels or dB. A sound more than 85db is said to be a damaging level of sound that, over time, can causing hearing loss. Noise pollution is a problem faced all over the world. There are numerous sources of noise pollution. One of the primary causes is industrialization, especially in urban areas. Industries use heavy equipment such as generators, compressors, mills, etc. that make high pitched sounds that are very unpleasant and cause a disturbance. Road traffic is another major contributor to noise pollution. Increased transport of cars, motorcycles, trucks, etc. have to lead to increased noise disturbance on the road. Construction of roads, buildings, apartments, highways, etc. uses heavy equipment such as excavators, compressors, hammers, etc. These create a lot of noise, causing disturbance to its surroundings.

Maharashtra Pollution Control Board have been carrying out study of the ambient noise levels at Metropolitan cities in the state of Maharashtra for more than 10 years as a continuous process. Noise monitoring was carried out at 102 locations from 27 Municipal Corporation of Maharashtra for 2 days in the month of February on 21st (non-working day) and 22nd (working day) 2021 for 24 hours for each location which comprise of residential, commercial and silence zone.

A Review of Noise Descriptors

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 = $20 \log_{10} P/Pr$.

In most cases, the sound and noise 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 (Leq) is the sound pressure level of a steady sound that has, over a given period, the same energy as a fluctuating sound in question.

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 2.1: 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.

State GR/ Notification: Implementation Authority for Noise Rules in Maharashtra is enclosed at **Annexure - III**

Methodology of the project

The ambient noise monitoring was carried out at Metropolitan cities in the state of Maharashtra for 102 locations which is covered under 27 Municipal Corporation all over Maharashtra. The monitoring was carried out for 2 days considering the noise that generate for non-working day i.e. on 21st February and working day on 22nd February for 24 hours. The noise monitoring was carried out using calibrated Sound Level Meters (Type-I).

The details of number noise monitoring locations in different Municipal Corporation all over Maharashtra as provided in **Table 3.1** below:

Table 3.1: Noise Monitoring Locations at Metropolitan Cities in Maharashtra: 2020-21.

| Sr. | Municipal Corporation | Number of locations |
|------------------------------|-----------------------|---------------------|
| 1. | Mumbai South | 15 |
| 2. | Navi Mumbai | 03 |
| 3. | Thane | 05 |
| 4. | Pune | 05 |
| 5. | Nashik | 05 |
| 6. | Aurangabad | 03 |
| 7. | Nagpur | 05 |
| 8. | Kalyan | 03 |
| 9. | Amravati | 03 |
| 10. | Jalgaon | 03 |
| 11. | Kolhapur | 04 |
| 12. | Sangli | 03 |
| 13. | Mira – Bhyander | 03 |
| 14. | Vasai – Virar | 03 |
| 15. | Ulhas nagar | 03 |
| 16. | Bhiwandi – Nizampur | 03 |
| 17. | Chandrapur | 03 |
| 18. | Nanded – Waghala | 03 |
| 19. | Ahmednagar | 03 |
| 20. | Dhule | 03 |
| 21. | Malegaon | 03 |
| 22. | Pimpri – Chinchwad | 03 |
| 23. | Parbhani | 03 |
| 24. | Latur | 03 |
| 25. | Akola | 03 |
| 26. | Solapur | 03 |
| 27. | Panvel | 03 |
| Total No. of stations | | 102 |

The detailed list of locations is given in **Annexure I**.

Results

Hourly Noise Levels on 21st and 22nd February 2021 at Metropolitan cities at different locations in Maharashtra is given in **Annexure IV**. The equivalent steady sound level of a noise energy-averaged over time was calculated represented as L_{eq} based on which the impact of noise created during the festival is measured. The formula for calculating L_{eq} is as given below:

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

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.

1. Mumbai

In Mumbai a total of 15 locations were monitored. The highest noise level during day time on 21st and 22nd February 2021 was observed with 76.8 dB(A) at Santacruz Airport and 77.9 dB(A) at Goregaon East respectively. During night time the highest noise level on 21st February was observed at Antop Hill with 65.0 dB(A) and on 22nd February was observed at Santacruz Airport with 69.7 dB(A).

Table 4.1: Noise Levels in Mumbai

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|------------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Backside of High Court | 21.02.2021 | 72.6 | 53.6 | 77.7 | 75.8 | 70.5 | 60.2 |
| Mumbadevi Temple | 21.02.2021 | 74.1 | 65.5 | 82.7 | 75.7 | 71.1 | 66.1 |
| Borivali National Park | 21.02.2021 | 73.8 | 54.3 | 77.0 | 76.6 | 74.0 | 65.6 |
| Antop Hill | 21.02.2021 | 73.9 | 58.6 | 81.9 | 77.5 | 69.8 | 61.4 |
| Shivaji Park, Dadar | 21.02.2021 | 75.2 | 62.6 | 80.5 | 79.3 | 72.2 | 69.3 |
| Santacruz Airport | 21.02.2021 | 76.8 | 56.3 | 81.3 | 80.3 | 75.5 | 65.5 |
| Ghatkopar (W) | 21.02.2021 | 73.8 | 54.3 | 77.0 | 76.6 | 74.0 | 65.6 |
| Vashi Naka, Chembur | 21.02.2021 | 69.5 | 60.2 | 75.4 | 71.5 | 68.4 | 63.1 |
| Goregaon (E) | 21.02.2021 | 75.8 | 60.7 | 81.7 | 79.1 | 75.3 | 64.8 |
| Charkop, Kandivali | 21.02.2021 | 71.8 | 60.3 | 77.2 | 75.2 | 68.7 | 62.1 |
| Sion | 21.02.2021 | 70.7 | 66.3 | 74.4 | 73.2 | 70.2 | 66.8 |
| Hindu Colony | 21.02.2021 | 64.7 | 41.0 | 71.5 | 68.6 | 61.8 | 55.6 |
| Matunga | 21.02.2021 | 62.7 | 52.8 | 69.9 | 64.4 | 61.6 | 55.7 |
| Kamathipura | 21.02.2021 | 70.0 | 57.1 | 76.9 | 73.3 | 66.6 | 61.5 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Malabar Hills | 21.02.2021 | 62.8 | 54.4 | 70.6 | 66.8 | 56.3 | 54.8 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Backside of High Court | 21.02.2021 | 59.1 | 45.9 | 66.3 | 61.1 | 53.7 | 46.1 |
| Mumbadevi Temple | 21.02.2021 | 59.5 | 46.7 | 65.8 | 62.7 | 54.5 | 47.3 |
| Borivali National Park | 21.02.2021 | 60.0 | 47.3 | 66.3 | 63.5 | 56.2 | 48.2 |
| Antop Hill | 21.02.2021 | 65.0 | 48.6 | 72.8 | 66.5 | 58.9 | 54.7 |
| Shivaji Park, Dadar | 21.02.2021 | 53.3 | 43.4 | 60.4 | 55.8 | 47.0 | 44.0 |
| Santacruz Airport | 21.02.2021 | 55.7 | 49.9 | 59.9 | 59.8 | 52.7 | 50.0 |
| Ghatkopar (W) | 21.02.2021 | 55.4 | 45.2 | 59.7 | 59.6 | 50.9 | 46.7 |
| Vashi Naka, Chembur | 21.02.2021 | 58.6 | 50.7 | 60.7 | 60.7 | 58.8 | 51.5 |
| Goregaon (E) | 21.02.2021 | 54.5 | 45.8 | 59.6 | 58.6 | 51.5 | 46.6 |
| Charkop, Kandivali | 21.02.2021 | 56.3 | 46.2 | 60.1 | 59.3 | 54.5 | 48.4 |
| Sion | 21.02.2021 | 56.5 | 45.7 | 61.7 | 60.8 | 50.5 | 46.8 |
| Hindu Colony | 21.02.2021 | 58.7 | 52.4 | 62.3 | 61.2 | 57.9 | 53.3 |
| Matunga | 21.02.2021 | 60.4 | 50.0 | 65.0 | 63.8 | 57.3 | 52.3 |

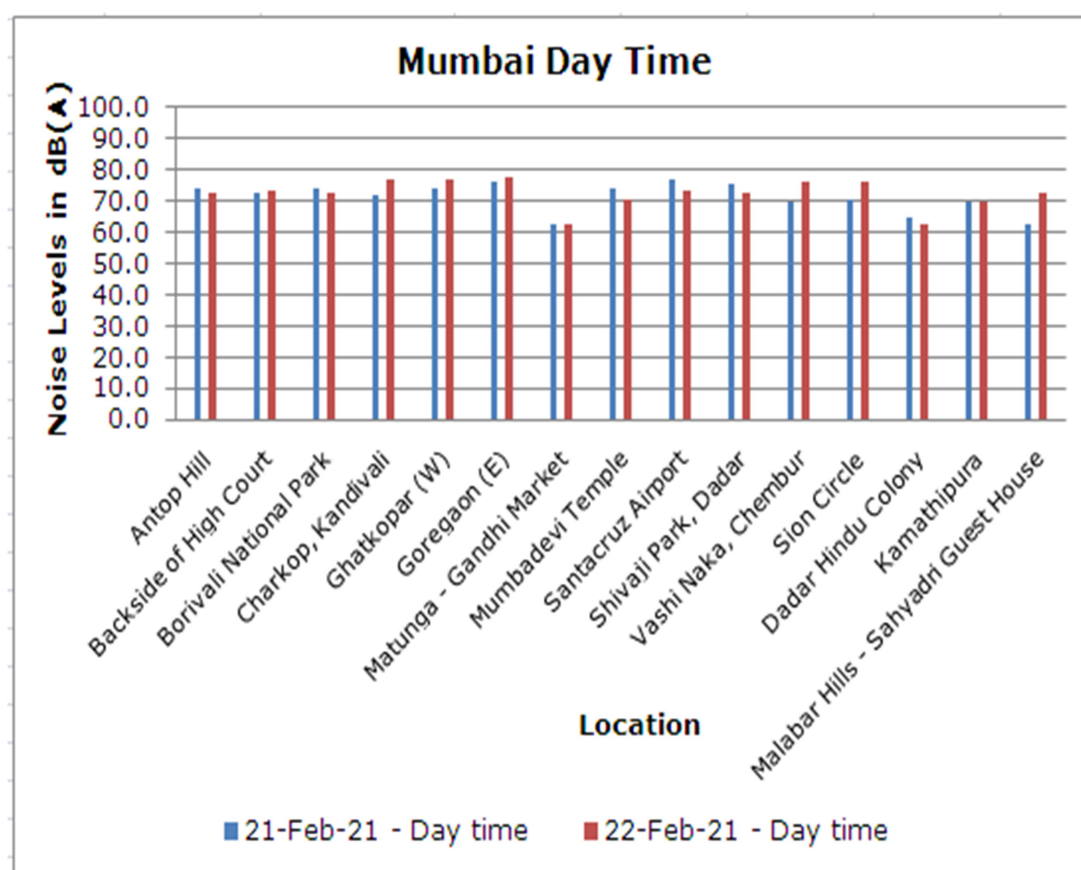
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Kamathipura | 21.02.2021 | 55.1 | 48.2 | 58.6 | 58.6 | 53.6 | 50.4 |
| Malabar Hills | 21.02.2021 | 54.5 | 43.8 | 58.5 | 57.0 | 53.7 | 49.1 |

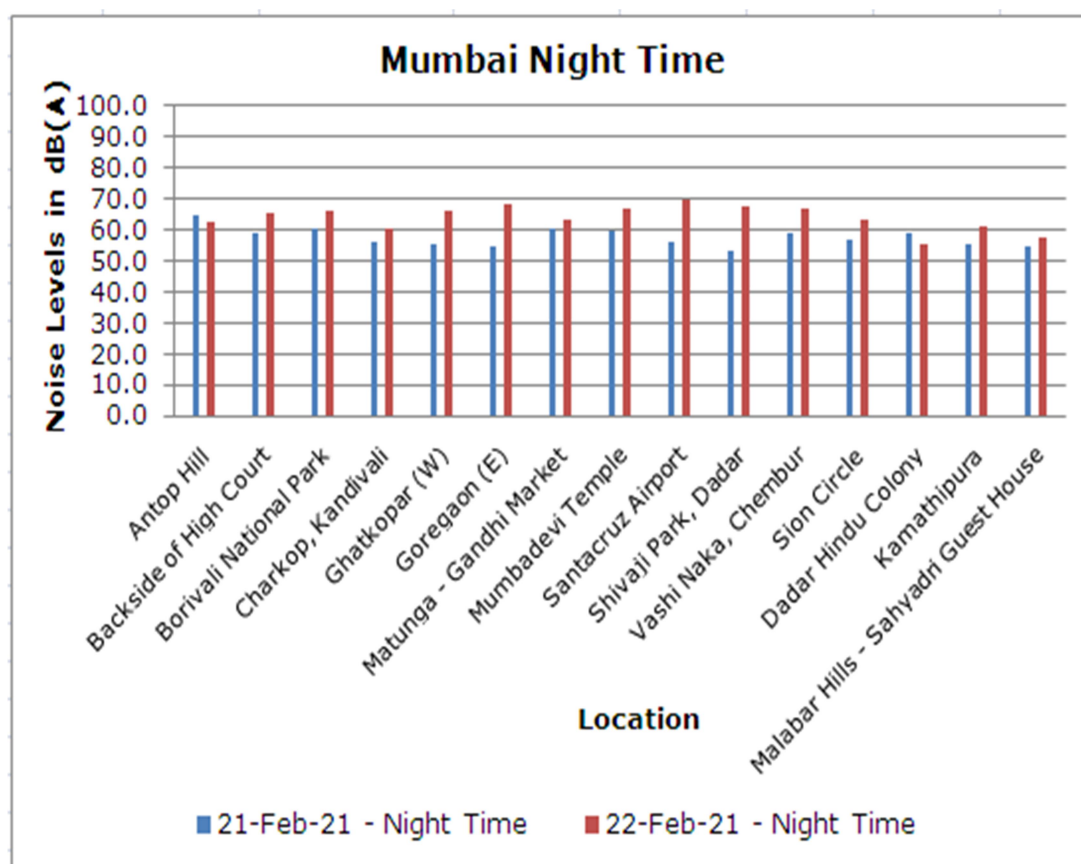
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|------------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Backside of High Court | 22.02.2021 | 73.0 | 60.3 | 78.7 | 76.5 | 70.3 | 68.6 |
| Mumbadevi Temple | 22.02.2021 | 70.5 | 59.5 | 76.3 | 73.7 | 68.4 | 64.5 |
| Borivali National Park | 22.02.2021 | 72.6 | 64.3 | 80.0 | 75.2 | 69.7 | 64.8 |
| Antop Hill | 22.02.2021 | 72.6 | 60.3 | 79.4 | 76.0 | 68.8 | 62.3 |
| Shivaji Park, Dadar | 22.02.2021 | 72.2 | 60.5 | 76.7 | 75.2 | 70.4 | 64.4 |
| Santacruz Airport | 22.02.2021 | 73.6 | 63.6 | 79.1 | 76.3 | 70.9 | 65.9 |
| Ghatkopar (W) | 22.02.2021 | 76.5 | 3.0 | 81.6 | 79.5 | 75.5 | 66.1 |
| Vashi Naka, Chembur | 22.02.2021 | 76.3 | 50.9 | 79.9 | 79.6 | 75.3 | 66.2 |
| Goregaon (E) | 22.02.2021 | 77.9 | 60.4 | 84.6 | 82.4 | 73.6 | 64.6 |
| Charkop, Kandivali | 22.02.2021 | 76.9 | 61.2 | 85.0 | 81.2 | 72.0 | 65.7 |
| Sion | 22.02.2021 | 76.1 | 69.9 | 80.4 | 78.8 | 74.9 | 71.2 |
| Hindu Colony | 22.02.2021 | 62.7 | 48.9 | 67.4 | 65.8 | 62.5 | 53.9 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Matunga | 22.02.2021 | 62.6 | 49.8 | 68.0 | 65.6 | 61.0 | 55.4 |
| Kamathipura | 22.02.2021 | 69.3 | 42.2 | 76.2 | 75.7 | 61.1 | 50.9 |
| Malabar Hills | 22.02.2021 | 72.5 | 57.8 | 77.4 | 76.1 | 71.4 | 65.5 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Backside of High Court | 22.02.2021 | 65.4 | 51.4 | 67.8 | 67.1 | 65.6 | 60.1 |
| Mumbadevi Temple | 22.02.2021 | 66.8 | 58.2 | 70.8 | 69.3 | 66.4 | 60.5 |
| Borivali National Park | 22.02.2021 | 65.9 | 57.3 | 69.3 | 68.8 | 65.2 | 57.4 |
| Antop Hill | 22.02.2021 | 62.3 | 52.2 | 68.0 | 64.6 | 59.9 | 55.8 |
| Shivaji Park, Dadar | 22.02.2021 | 67.4 | 53.8 | 74.8 | 70.0 | 60.7 | 57.2 |
| Santacruz Airport | 22.02.2021 | 69.7 | 43.8 | 78.2 | 69.5 | 57.8 | 49.8 |
| Ghatkopar (W) | 22.02.2021 | 65.7 | 42.4 | 73.8 | 66.5 | 58.1 | 49.6 |
| Vashi Naka, Chembur | 22.02.2021 | 66.9 | 52.1 | 72.9 | 70.4 | 61.2 | 53.6 |
| Goregaon (E) | 22.02.2021 | 68.4 | 49.7 | 77.2 | 66.8 | 55.1 | 50.1 |
| Charkop, Kandivali | 22.02.2021 | 60.6 | 52.2 | 64.7 | 64.4 | 57.5 | 52.3 |
| Sion | 22.02.2021 | 63.2 | 51.3 | 68.3 | 66.2 | 61.9 | 52.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Hindu Colony | 22.02.2021 | 55.1 | 52.6 | 56.6 | 56.4 | 55.1 | 53.3 |
| Matunga | 22.02.2021 | 63.5 | 45.2 | 69.8 | 68.5 | 56.6 | 49.5 |
| Kamathipura | 22.02.2021 | 61.0 | 56.2 | 66.3 | 64.8 | 57.4 | 56.3 |
| Malabar Hills | 22.02.2021 | 57.2 | 49.7 | 63.2 | 60.5 | 54.5 | 50.1 |

Chart 4.1: Noise Levels in Mumbai





2. Navi Mumbai

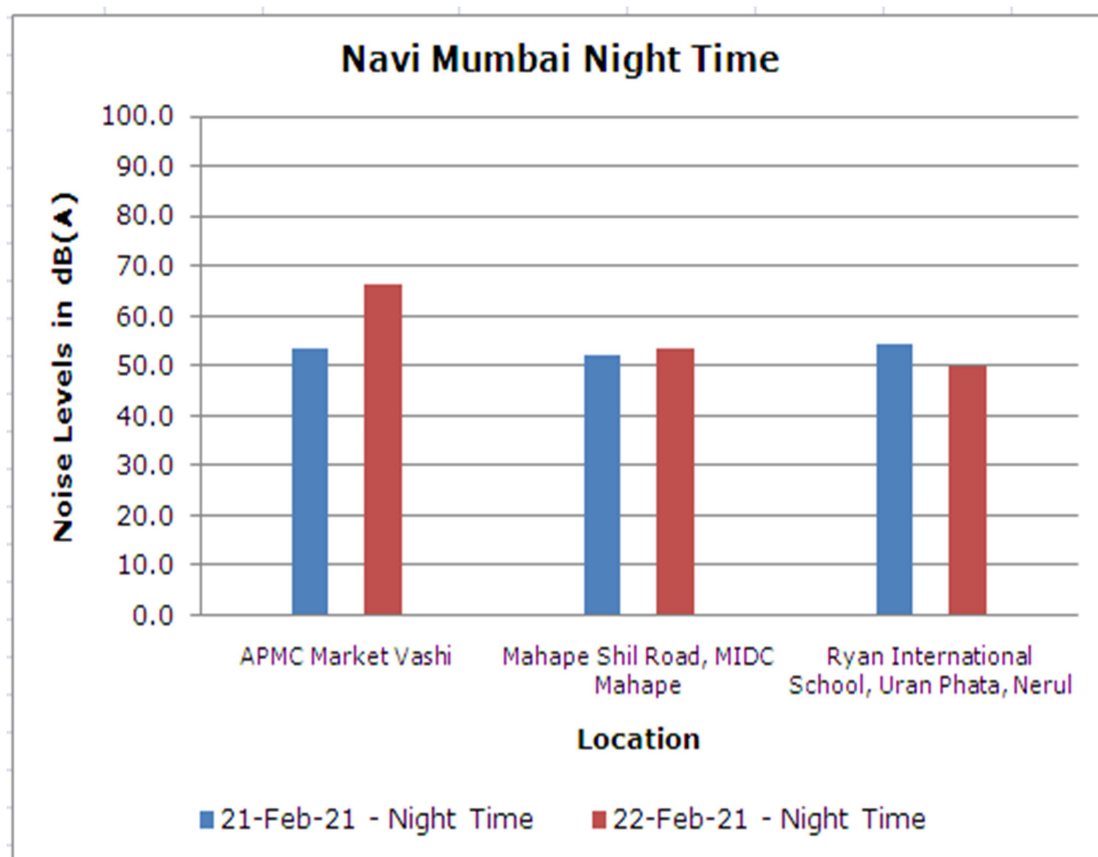
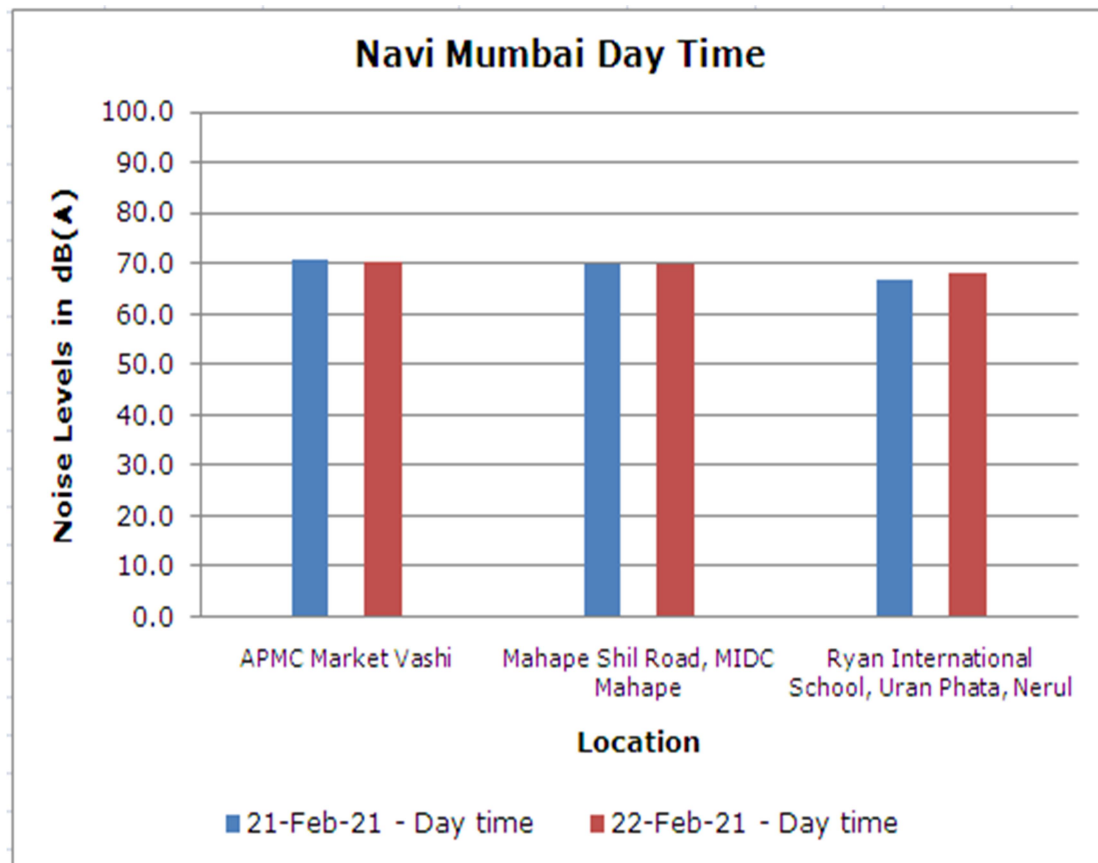
In Navi Mumbai a total of 3 locations were monitored. The highest noise level during day time on 21st and 22nd February 2021 was observed with 70.8dB(A) and 70.5dB(A) both at APMC Market Vashi. During night time the highest noise level on 21st February was observed at Ryan International School, Uran Phata, Nerul with 54.4 dB(A) and on 22nd February was observed at APMC Market Vashi with 66.3 dB(A).

Table 4.2: Noise Levels in Navi Mumbai

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mahape Shil Road | 21.02.2021 | 62.7 | 52.8 | 69.9 | 64.4 | 61.6 | 55.7 |
| APMC Market Vashi | 21.02.2021 | 70.0 | 57.1 | 76.9 | 73.3 | 66.6 | 61.5 |
| Ryan International School | 21.02.2021 | 62.8 | 54.4 | 70.6 | 66.8 | 56.3 | 54.8 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mahape Shil Road | 21.02.2021 | 60.4 | 50.0 | 65.0 | 63.8 | 57.3 | 52.3 |
| APMC Market Vashi | 21.02.2021 | 55.1 | 48.2 | 58.6 | 58.6 | 53.6 | 50.4 |
| Ryan International School | 21.02.2021 | 54.5 | 43.8 | 58.5 | 57.0 | 53.7 | 49.1 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mahape Shil Road | 22.02.2021 | 69.9 | 58.9 | 73.5 | 72.5 | 69.8 | 61.0 |
| APMC Market Vashi | 22.02.2021 | 70.5 | 57.4 | 74.9 | 73.8 | 69.8 | 60.2 |
| Ryan International School | 22.02.2021 | 68.0 | 55.7 | 73.8 | 72.1 | 65.8 | 59.8 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mahape Shil Road | 22.02.2021 | 53.4 | 45.9 | 57.5 | 56.9 | 51.6 | 46.0 |
| APMC Market Vashi | 22.02.2021 | 66.3 | 58.3 | 71.4 | 70.6 | 63.5 | 58.4 |
| Ryan International School | 22.02.2021 | 49.9 | 37.9 | 56.2 | 52.6 | 48.2 | 38.0 |

Chart 4.2: Noise Levels in Navi Mumbai



3. Thane

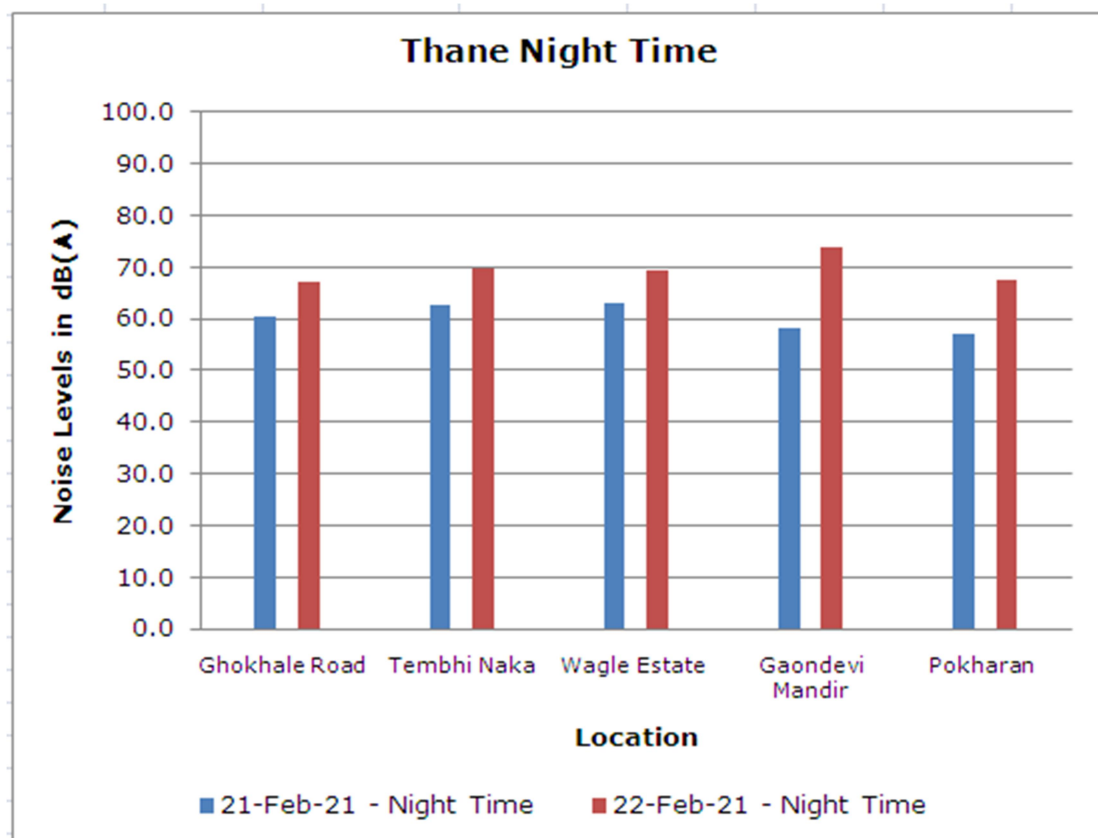
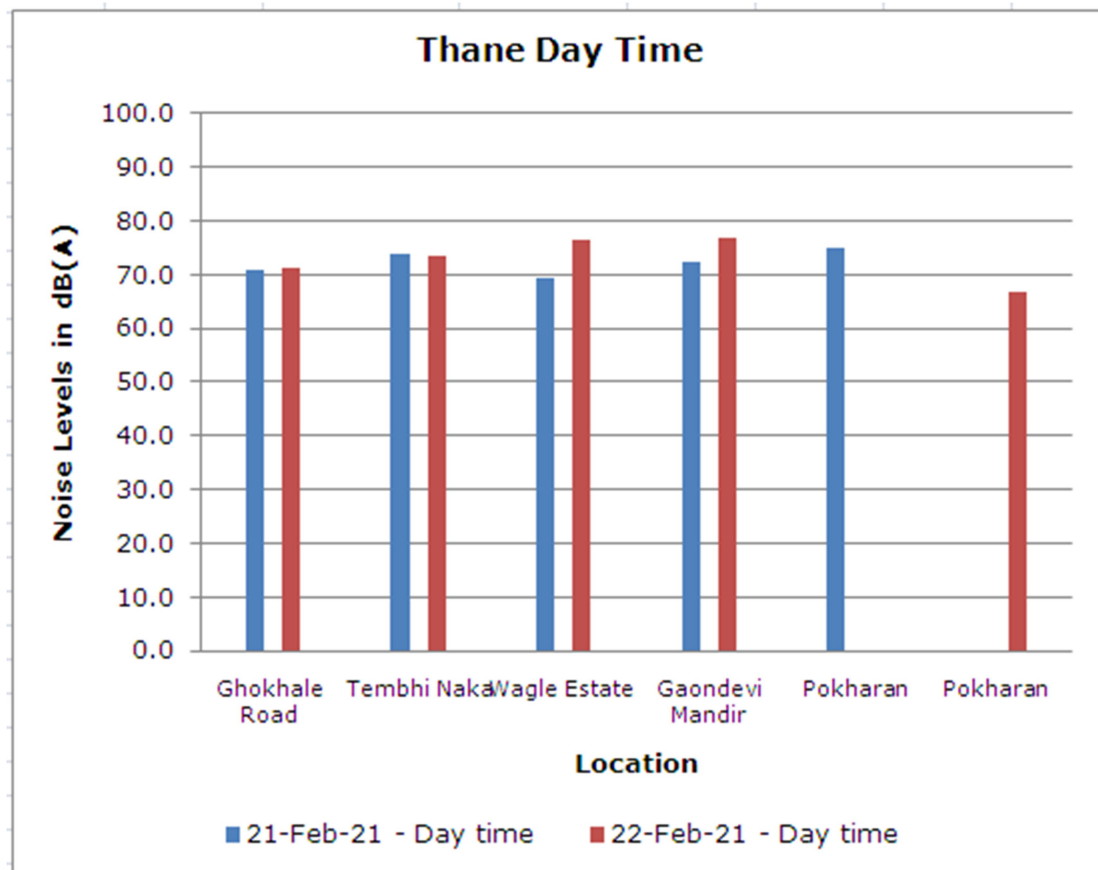
In Thane a total of 5 locations were monitored. The highest noise level during day time on 21st and 22nd February 2021 with 75.1 dB(A) at Pokharan and 76.9 dB(A) at Main Road- Gaondevi Mandir respectively and during night time the highest noise level on both days was observed at Wagle Estate with 62.9 dB(A) and at Main Road- Gaondevi Mandir, Naupada with 74.0 dB(A).

Table 4.3: Noise Levels in Thane

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Main Road- Gaondevi Mandir | 21.02.2021 | 72.6 | 55.6 | 79.6 | 77.7 | 68.1 | 59.9 |
| Tembhi Naka | 21.02.2021 | 73.8 | 58.2 | 76.6 | 76.0 | 73.5 | 69.1 |
| Ghokhale Road | 21.02.2021 | 70.9 | 65.1 | 76.0 | 72.8 | 70.4 | 66.5 |
| Pokharan | 21.02.2021 | 75.1 | 57.7 | 82.4 | 77.5 | 73.6 | 64.4 |
| Wagle Estate | 21.02.2021 | 69.4 | 59.5 | 75.8 | 71.2 | 68.0 | 64.5 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Main Road- Gaondevi Mandir | 21.02.2021 | 58.3 | 49.5 | 62.3 | 61.5 | 57.2 | 52.0 |
| Tembhi Naka | 21.02.2021 | 62.7 | 59.5 | 64.3 | 64.2 | 63.1 | 60.0 |
| Ghokhale Road | 21.02.2021 | 60.6 | 51.9 | 64.6 | 63.8 | 59.7 | 53.4 |
| Pokharan | 21.02.2021 | 57.2 | 52.0 | 60.7 | 59.7 | 56.6 | 52.9 |
| Wagle Estate | 21.02.2021 | 62.9 | 51.3 | 68.6 | 67.0 | 57.9 | 52.0 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Main Road-Gaondevi Mandir | 22.02.2021 | 76.9 | 57.6 | 80.8 | 79.9 | 76.6 | 60.6 |
| Tembhi Naka | 22.02.2021 | 73.4 | 56.3 | 78.1 | 77.7 | 71.3 | 60.9 |
| Ghokhale Road | 22.02.2021 | 71.2 | 61.4 | 73.8 | 73.3 | 71.0 | 66.4 |
| Pokharan | 22.02.2021 | 66.6 | 58.1 | 72.2 | 70.2 | 65.4 | 59.9 |
| Wagle Estate | 22.02.2021 | 76.5 | 53.4 | 83.3 | 81.7 | 66.1 | 58.4 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Main Road-Gaondevi Mandir | 22.02.2021 | 74.0 | 68.4 | 78.2 | 77.6 | 71.2 | 69.2 |
| Tembhi Naka | 22.02.2021 | 69.9 | 64.2 | 74.3 | 73.0 | 68.5 | 64.9 |
| Ghokhale Road | 22.02.2021 | 67.1 | 62.4 | 69.8 | 69.6 | 66.1 | 63.1 |
| Pokharan | 22.02.2021 | 67.6 | 62.7 | 71.4 | 70.3 | 66.4 | 63.2 |
| Wagle Estate | 22.02.2021 | 69.4 | 66.2 | 72.5 | 71.0 | 68.6 | 67.4 |

Chart 4.3: Noise Levels in Thane



4. Pune

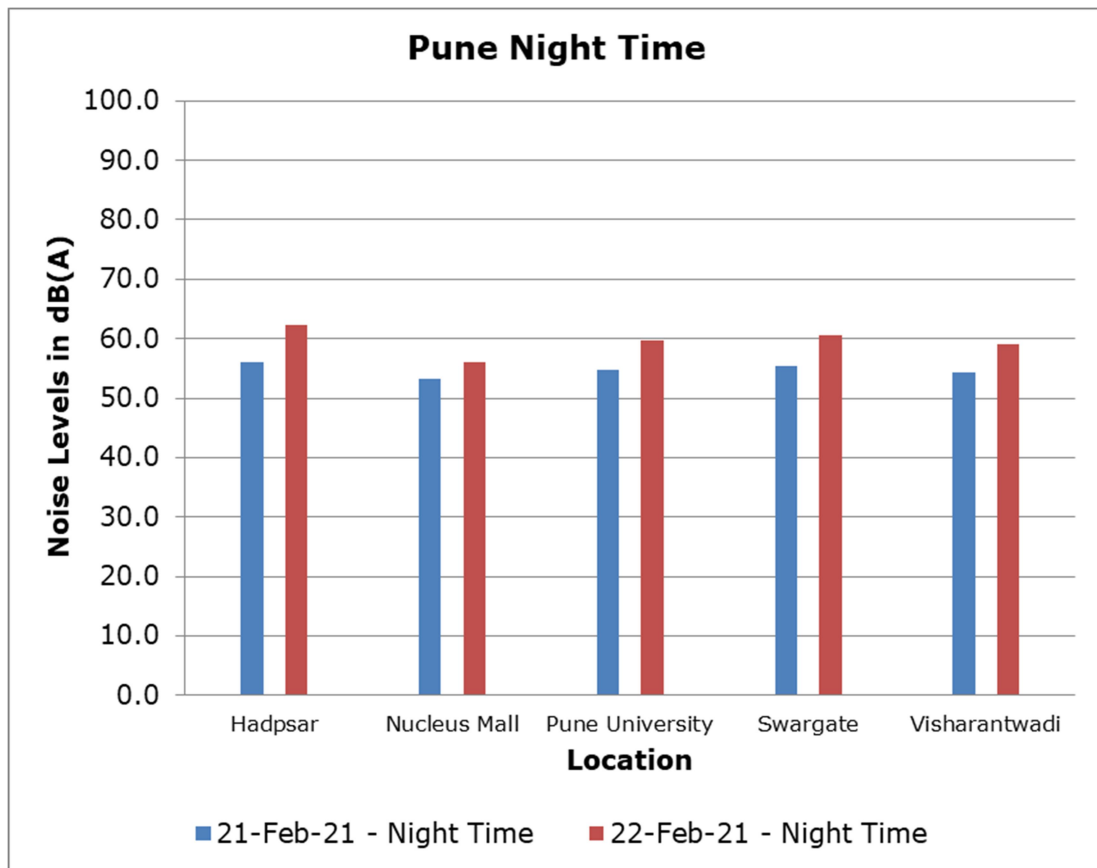
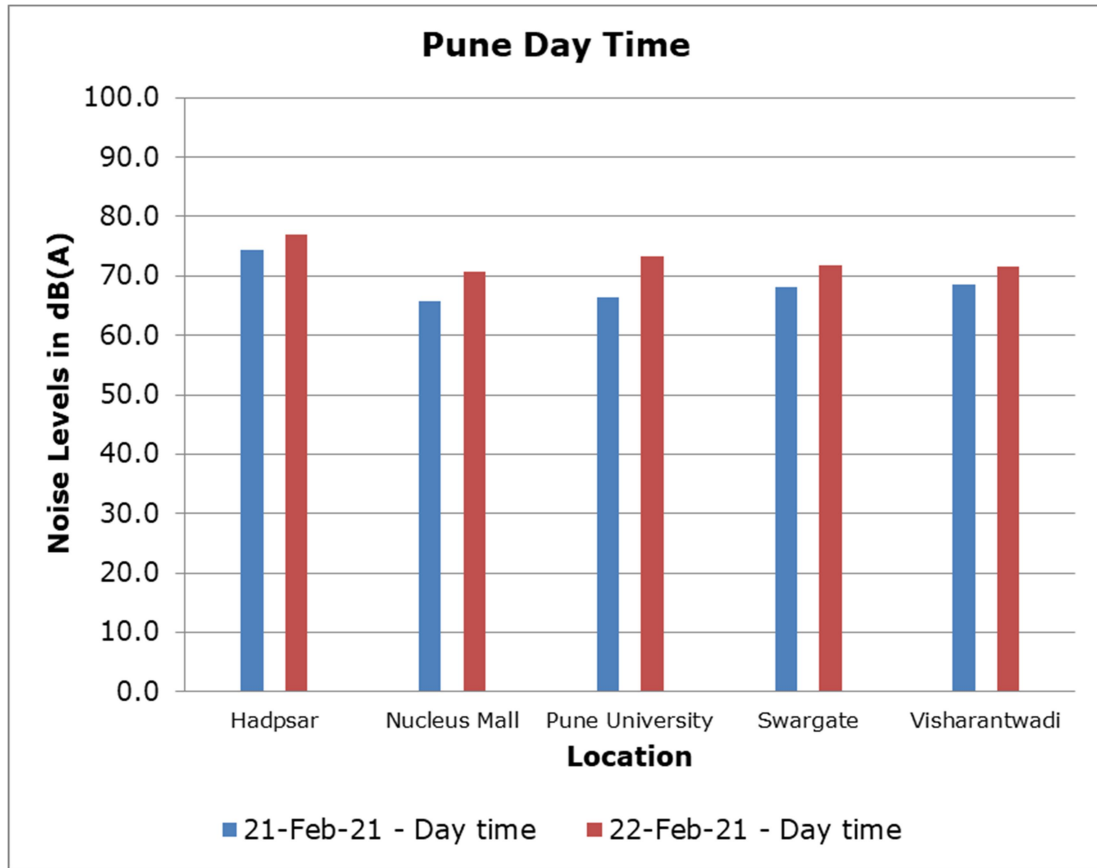
Fivelocations were monitored in Pune region. On 21st and 22nd February, the highest noise level at both day time and night time was observed atHadpsar.

Table 4.4: Noise Levels in Pune

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-----------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Nucleus Mall | 21.02.2021 | 65.7 | 52.4 | 69.1 | 68.7 | 64.7 | 56.0 |
| Pune University | 21.02.2021 | 66.5 | 57.1 | 70.3 | 69.2 | 66.8 | 60.4 |
| Swargate | 21.02.2021 | 68.1 | 54.7 | 73.4 | 70.2 | 67.4 | 62.9 |
| Hadpsar | 21.02.2021 | 74.4 | 60.3 | 79.3 | 78.6 | 71.8 | 62.8 |
| Visharantwadi | 21.02.2021 | 68.6 | 58.1 | 75.6 | 71.6 | 66.6 | 60.9 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Nucleus Mall | 21.02.2021 | 53.2 | 40.9 | 58.6 | 57.6 | 46.7 | 41.1 |
| Pune University | 21.02.2021 | 54.7 | 41.6 | 60.1 | 59.3 | 50.2 | 43.1 |
| Swargate | 21.02.2021 | 55.3 | 43.2 | 60.1 | 59.3 | 51.5 | 44.0 |
| Hadpsar | 21.02.2021 | 56.1 | 45.6 | 61.2 | 59.7 | 51.8 | 46.0 |
| Visharantwadi | 21.02.2021 | 54.4 | 43.8 | 59.7 | 58.1 | 51.3 | 44.9 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Nucleus Mall | 22.02.2021 | 70.8 | 59.1 | 74.6 | 74.0 | 70.0 | 63.8 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-----------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Pune University | 22.02.2021 | 73.3 | 59.4 | 77.6 | 76.7 | 72.8 | 64.2 |
| Swargate | 22.02.2021 | 71.7 | 62.5 | 76.4 | 75.3 | 69.7 | 63.1 |
| Hadpsar | 22.02.2021 | 76.9 | 67.3 | 81.3 | 79.3 | 76.9 | 69.5 |
| Visharantwadi | 22.02.2021 | 71.6 | 57.3 | 77.8 | 75.4 | 69.3 | 61.6 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Nucleus Mall | 22.02.2021 | 56.2 | 42.3 | 62.4 | 60.5 | 50.7 | 43.6 |
| Pune University | 22.02.2021 | 59.8 | 43.8 | 67.3 | 63.2 | 50.5 | 44.4 |
| Swargate | 22.02.2021 | 60.6 | 44.5 | 66.2 | 64.2 | 53.7 | 46.7 |
| Hadpsar | 22.02.2021 | 62.2 | 46.1 | 69.8 | 64.8 | 54.7 | 46.4 |
| Visharantwadi | 22.02.2021 | 59.1 | 43.1 | 65.7 | 63.3 | 49.6 | 43.9 |

Chart 4.4: Noise Levels in Pune



5. Nashik

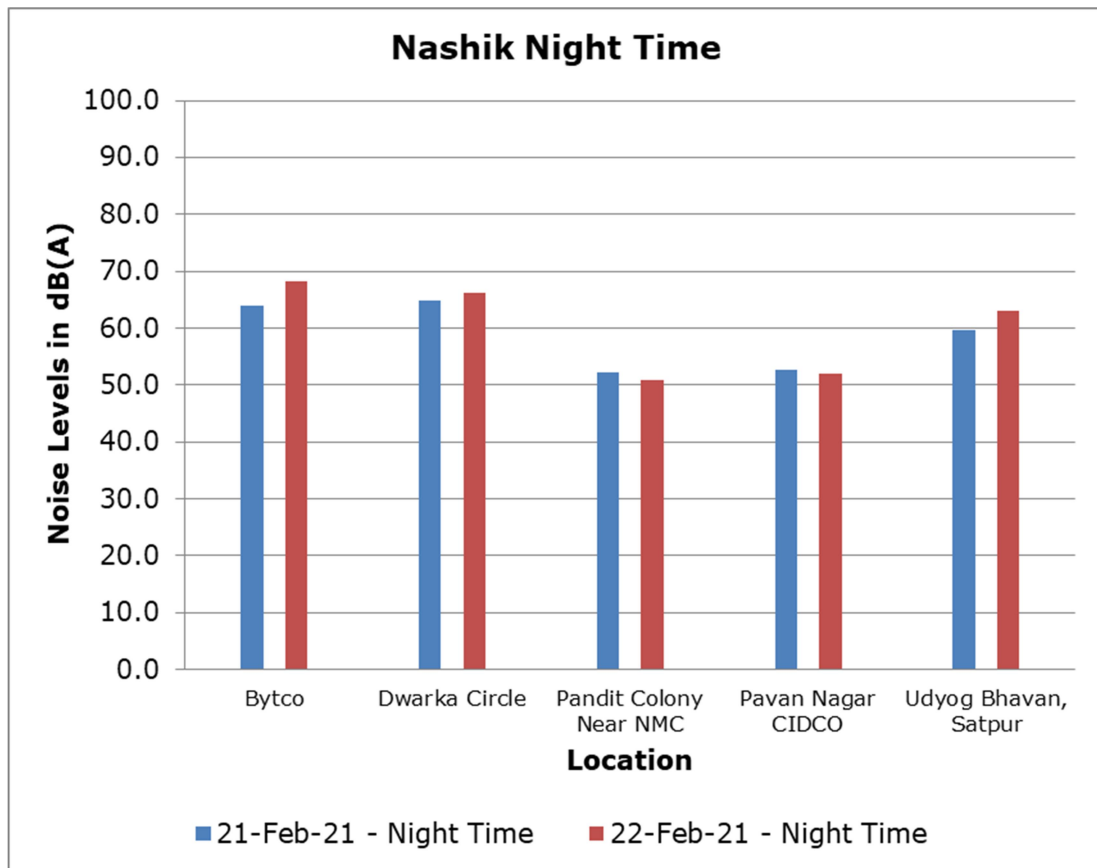
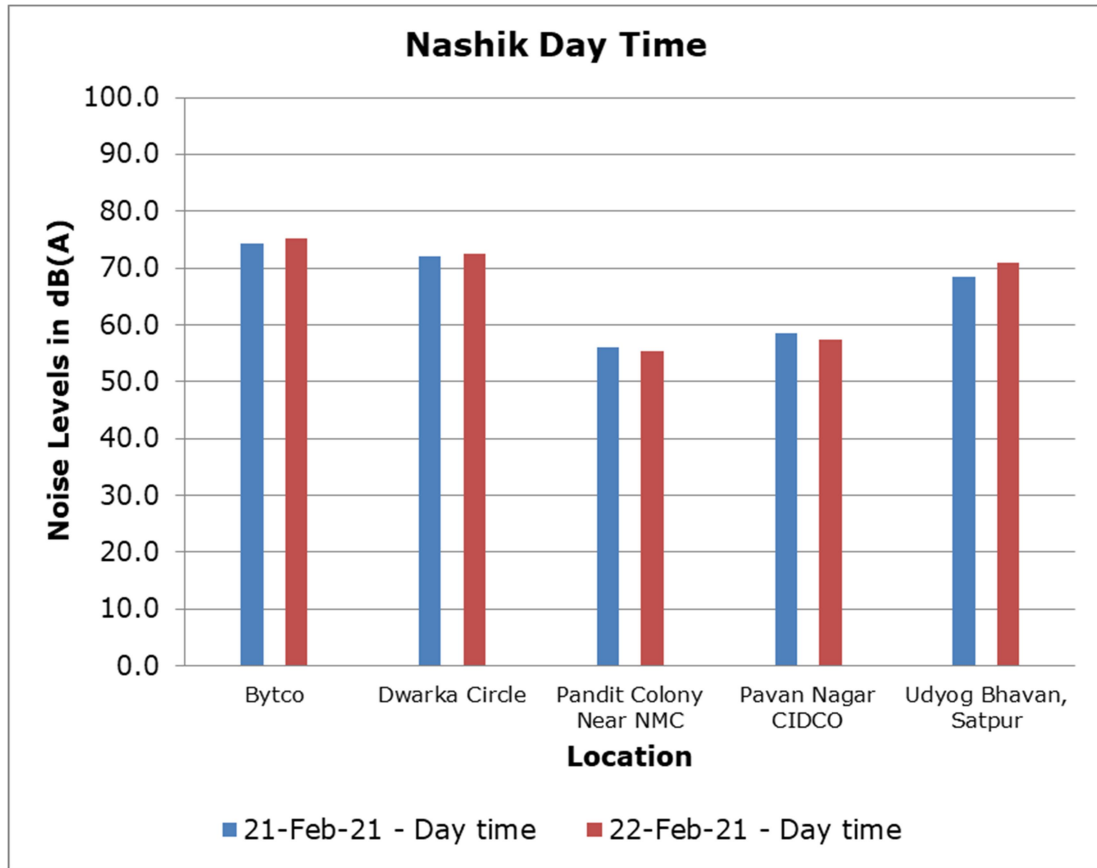
Five locations were monitored in Nashik region also. The highest noise level during day time on 21st and 22nd February 2021 was observed with 74.2dB(A) and 75.2dB(A) both at Bytco. During night time the highest noise level on 21st February was observed at Dwarka Circle, with 64.8 dB(A) and on 22nd February was observed at Bytco with 68.2 dB(A).

Table 4.5: Noise Levels in Nashik

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dwarka Circle | 21.02.2021 | 72.1 | 65.2 | 76.1 | 75.2 | 70.9 | 65.9 |
| Pandit Colony Near NMC | 21.02.2021 | 56.0 | 45.2 | 60.1 | 59.3 | 55.4 | 46.2 |
| Pavan Nagar CIDCO | 21.02.2021 | 58.5 | 46.3 | 64.3 | 61.9 | 57.8 | 47.7 |
| Bytco | 21.02.2021 | 74.2 | 69.5 | 76.4 | 75.9 | 74.5 | 70.7 |
| Udyog Bhavan, Satpur | 21.02.2021 | 68.5 | 65.2 | 70.8 | 70.3 | 68.5 | 65.9 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dwarka Circle | 21.02.2021 | 64.8 | 63.4 | 65.4 | 65.3 | 65.0 | 64.0 |
| Pandit Colony Near NMC | 21.02.2021 | 52.1 | 45.1 | 55.6 | 54.6 | 51.2 | 45.9 |
| Pavan Nagar CIDCO | 21.02.2021 | 52.6 | 44.2 | 57.2 | 56.6 | 49.3 | 45.6 |
| Bytco | 21.02.2021 | 63.9 | 57.6 | 68.2 | 66.9 | 61.2 | 58.9 |
| Udyog Bhavan, Satpur | 21.02.2021 | 59.6 | 54.2 | 64.2 | 63.7 | 55.9 | 54.2 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dwarka Circle | 22.02.2021 | 72.6 | 65.4 | 77.5 | 75.8 | 70.9 | 68.2 |
| Pandit Colony Near NMC | 22.02.2021 | 55.4 | 45.2 | 58.2 | 57.5 | 56.0 | 46.7 |
| Pavan Nagar CIDCO | 22.02.2021 | 57.5 | 46.2 | 61.2 | 60.4 | 57.5 | 48.8 |
| Bytco | 22.02.2021 | 75.2 | 72.6 | 76.4 | 76.4 | 75.4 | 73.0 |
| Udyog Bhavan, Satpur | 22.02.2021 | 71.0 | 67.2 | 73.5 | 73.5 | 70.5 | 68.2 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dwarka Circle | 22.02.2021 | 66.3 | 63.5 | 69.2 | 67.8 | 65.8 | 64.1 |
| Pandit Colony Near NMC | 22.02.2021 | 51.0 | 48.5 | 55.2 | 52.0 | 50.0 | 49.0 |
| Pavan Nagar CIDCO | 22.02.2021 | 52.0 | 46.2 | 57.2 | 55.7 | 48.7 | 47.5 |
| Bytco | 22.02.2021 | 68.2 | 62.5 | 72.4 | 71.4 | 66.2 | 63.1 |
| Udyog Bhavan, Satpur | 22.02.2021 | 63.0 | 60.2 | 65.5 | 64.8 | 62.8 | 60.5 |

Chart 4.5: Noise Levels in Nashik



6. Aurangabad

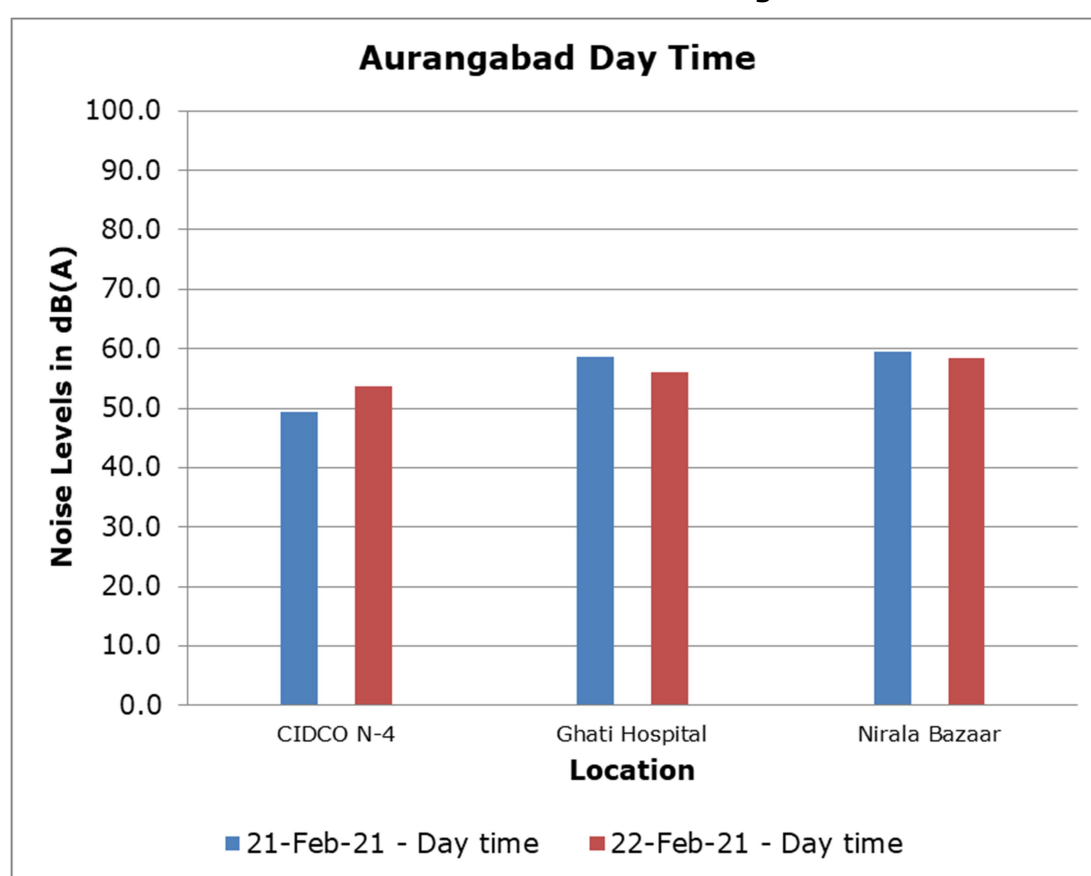
Five locations were monitored for Aurangabad region. The highest noise level on 21st February both during day time and night time was observed at Nirala Bazaar. On 22nd February the highest noise level during day time was observed at Nirala Bazaar with 58.4 dB(A) and during night time the highest noise level was observed at Ghati Hospital 46.7 dB(A).

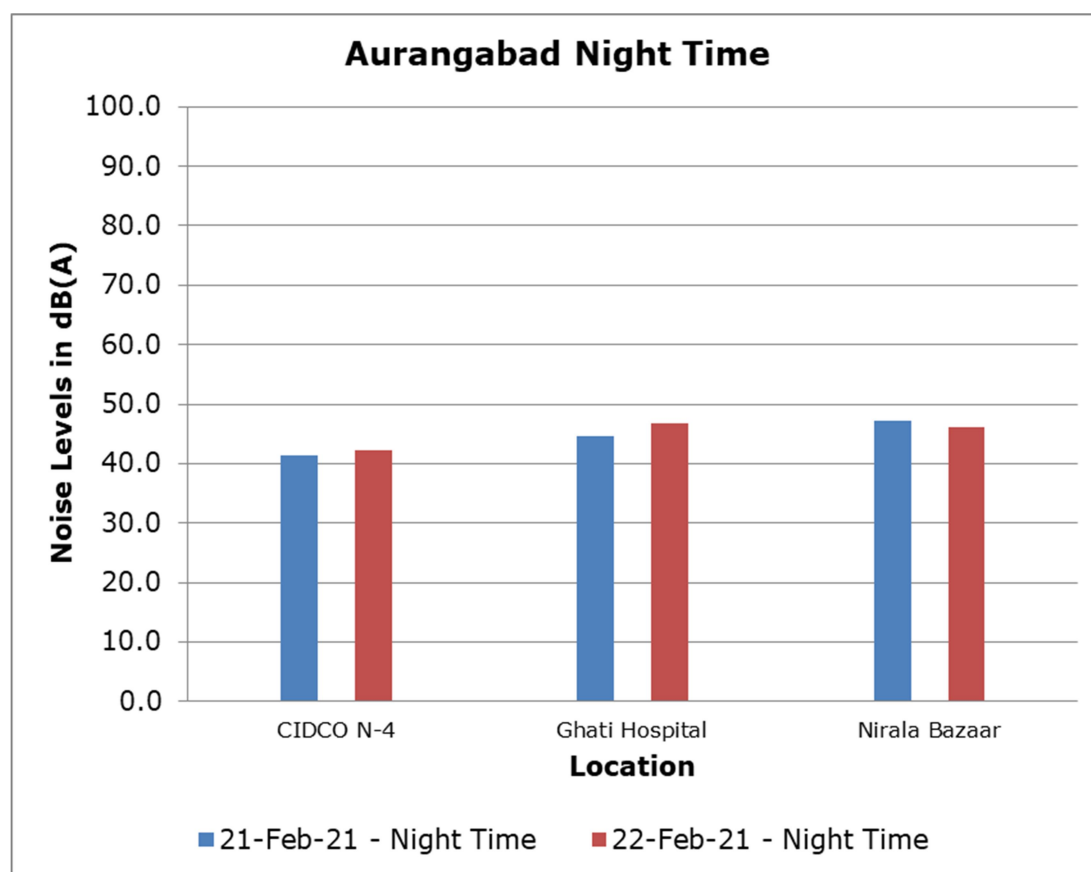
Table 4.6: Noise Levels in Aurangabad

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ghati Hospital | 21.02.2021 | 58.7 | 50.0 | 62.0 | 61.5 | 58.0 | 50.5 |
| Nirala Bazaar | 21.02.2021 | 59.4 | 49.0 | 64.0 | 62.5 | 57.5 | 51.0 |
| CIDCO N-9 | 21.02.2021 | 49.3 | 43.0 | 53.0 | 51.5 | 48.0 | 45.0 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ghati Hospital | 21.02.2021 | 44.7 | 37.0 | 48.0 | 47.3 | 43.5 | 39.1 |
| Nirala Bazaar | 21.02.2021 | 47.3 | 37.0 | 52.0 | 51.3 | 41.0 | 37.0 |
| CIDCO N-9 | 21.02.2021 | 41.4 | 36.0 | 46.0 | 43.2 | 40.5 | 36.7 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ghati Hospital | 22.02.2021 | 56.0 | 51.0 | 60.0 | 58.5 | 55.0 | 52.0 |
| Nirala Bazaar | 22.02.2021 | 58.4 | 53.0 | 62.0 | 60.0 | 58.0 | 55.0 |
| CIDCO N-9 | 22.02.2021 | 53.6 | 50.0 | 56.0 | 55.5 | 53.5 | 51.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|----------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Ghati Hospital | 22.02.2021 | 46.7 | 38.0 | 52.0 | 51.3 | 41.5 | 38.7 |
| Nirala Bazaar | 22.02.2021 | 46.2 | 37.0 | 53.0 | 48.8 | 41.5 | 38.4 |
| CIDCO N-9 | 22.02.2021 | 42.3 | 36.0 | 48.0 | 44.5 | 40.0 | 36.7 |

Chart 4.6: Noise Levels in Aurangabad





7. Nagpur

In Nagpur region 5 loactions was monitored. On 21st and 22nd February, the highest noise level during daytime were observed at Sitabardi Police Station with 71.4 dB(A) and at Shivaji Nagar with 73 dB(A). On both days at night time, the highest noise level was observed at Sitabardi Police Station.

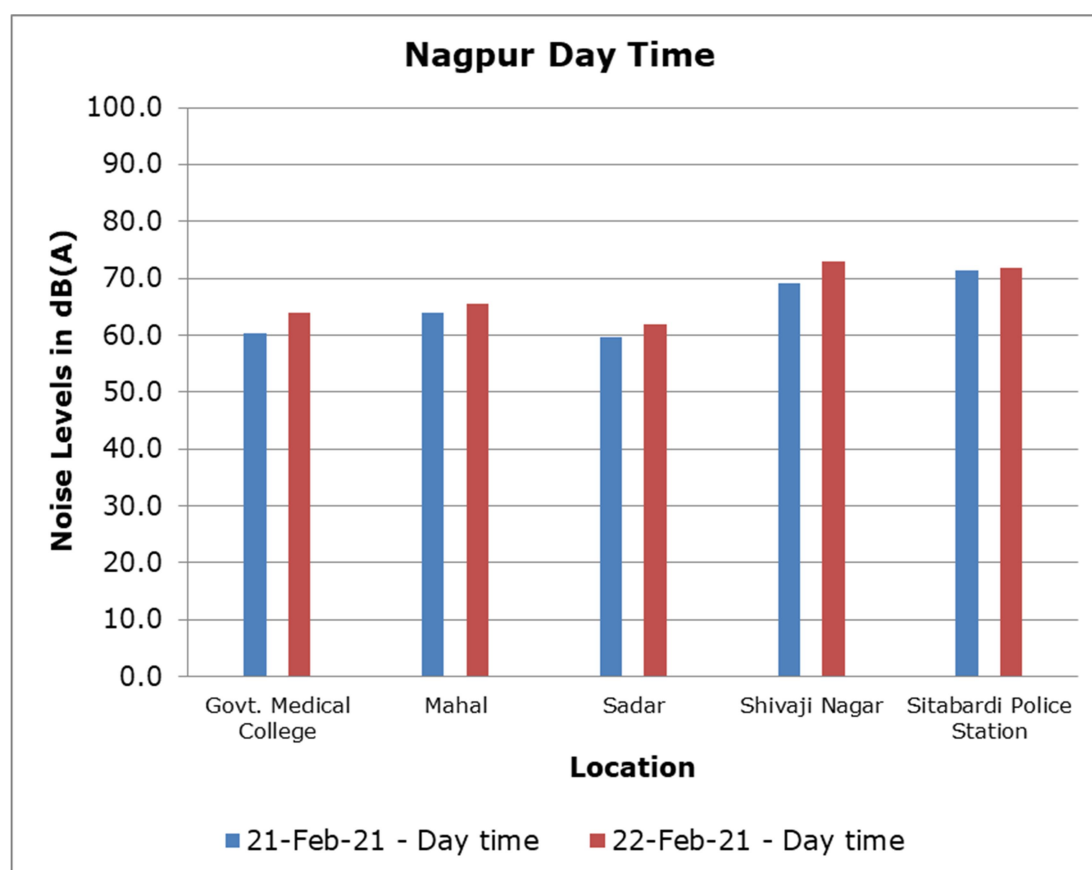
Table 4.7: Noise Levels in Nagpur

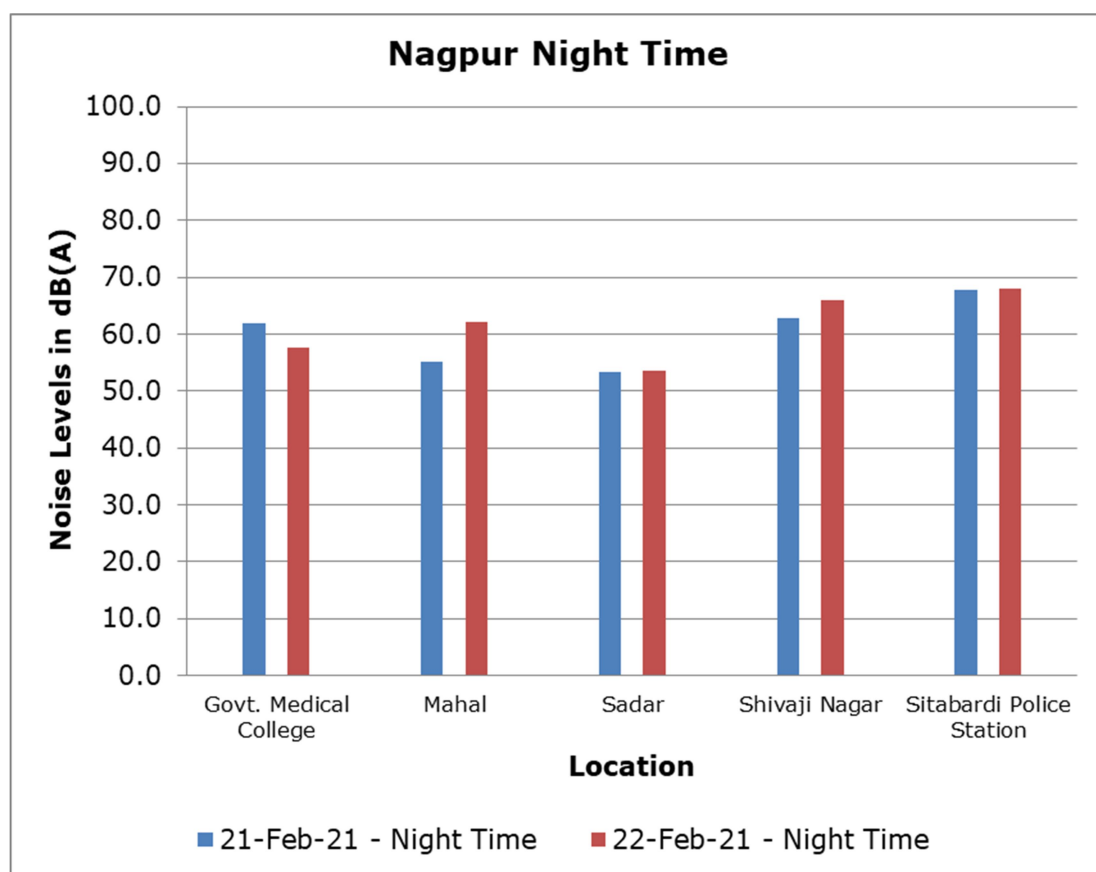
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--------------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Govt. Medical College | 21.02.2021 | 60.3 | 55.1 | 63.6 | 62.5 | 60.3 | 56.0 |
| Sitabardi Police Station | 21.02.2021 | 71.4 | 64.8 | 77.2 | 73.3 | 70.1 | 68.8 |
| Shivaji Nagar | 21.02.2021 | 69.2 | 58.6 | 72.3 | 71.9 | 68.4 | 62.0 |
| Mahal | 21.02.2021 | 63.9 | 56.3 | 67.4 | 65.9 | 63.3 | 60.6 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Sadar | 21.02.2021 | 59.7 | 45.9 | 62.6 | 61.9 | 59.6 | 54.9 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Govt. Medical College | 21.02.2021 | 61.9 | 59.9 | 63.6 | 63.2 | 61.8 | 60.4 |
| Sitabardi Police Station | 21.02.2021 | 67.7 | 64.0 | 69.5 | 69.4 | 67.6 | 64.2 |
| Shivaji Nagar | 21.02.2021 | 62.8 | 40.2 | 69.9 | 66.0 | 54.9 | 46.3 |
| Mahal | 21.02.2021 | 55.2 | 43.8 | 60.1 | 57.5 | 54.9 | 46.4 |
| Sadar | 21.02.2021 | 53.3 | 47.9 | 58.7 | 55.6 | 50.8 | 48.6 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Govt. Medical College | 22.02.2021 | 63.9 | 56.9 | 69.0 | 66.7 | 62.7 | 59.9 |
| Sitabardi Police Station | 22.02.2021 | 71.9 | 68.3 | 76.7 | 75.5 | 70.4 | 68.7 |
| Shivaji Nagar | 22.02.2021 | 73.0 | 57.9 | 76.4 | 75.4 | 73.7 | 60.7 |
| Mahal | 22.02.2021 | 65.5 | 53.6 | 70.5 | 70.2 | 62.2 | 57.5 |
| Sadar | 22.02.2021 | 62.0 | 40.2 | 67.5 | 64.6 | 61.4 | 47.7 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Govt. Medical College | 22.02.2021 | 57.7 | 50.7 | 62.7 | 61.9 | 52.7 | 50.8 |
| Sitabardi Police Station | 22.02.2021 | 68.1 | 65.1 | 71.0 | 70.0 | 67.5 | 65.7 |
| Shivaji Nagar | 22.02.2021 | 65.9 | 50.5 | 73.3 | 68.0 | 59.5 | 51.7 |
| Mahal | 22.02.2021 | 62.2 | 49.2 | 68.3 | 67.1 | 56.2 | 51.5 |
| Sadar | 22.02.2021 | 53.6 | 45.8 | 60.2 | 57.0 | 49.1 | 45.9 |

Chart 4.7: Noise Levels in Nagpur





8. Kalyan

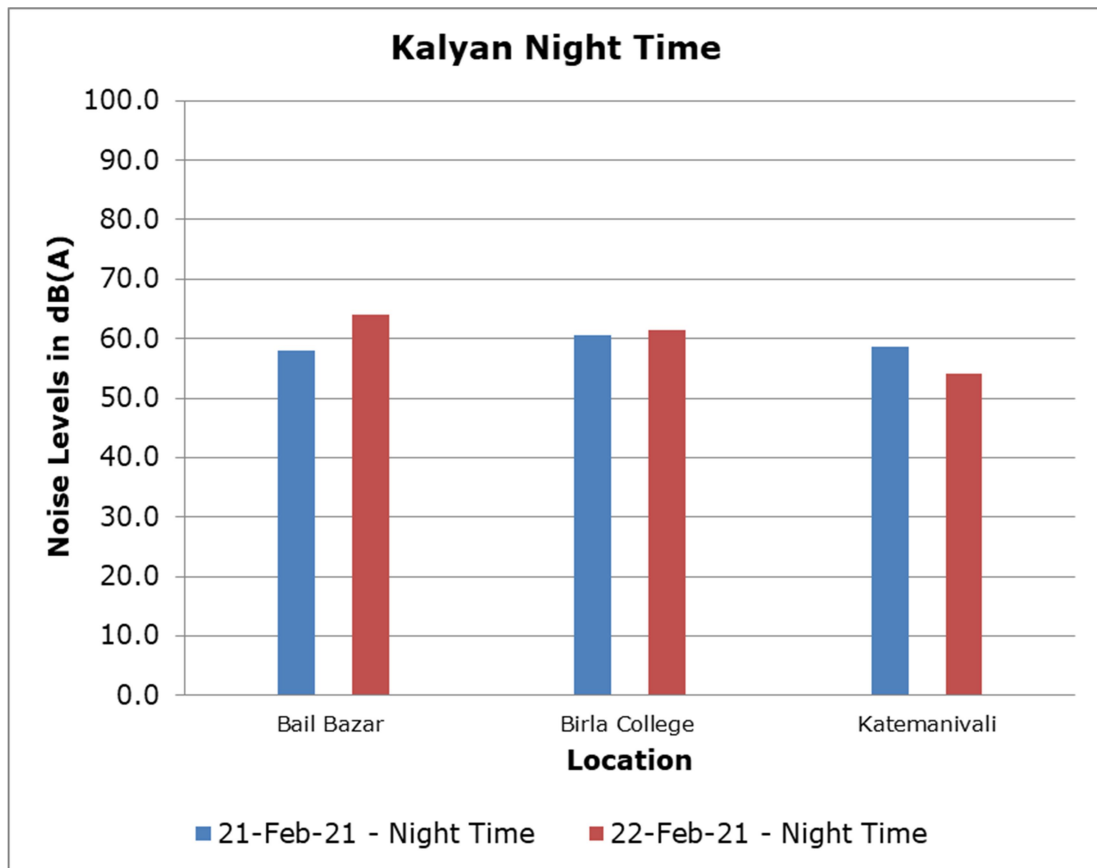
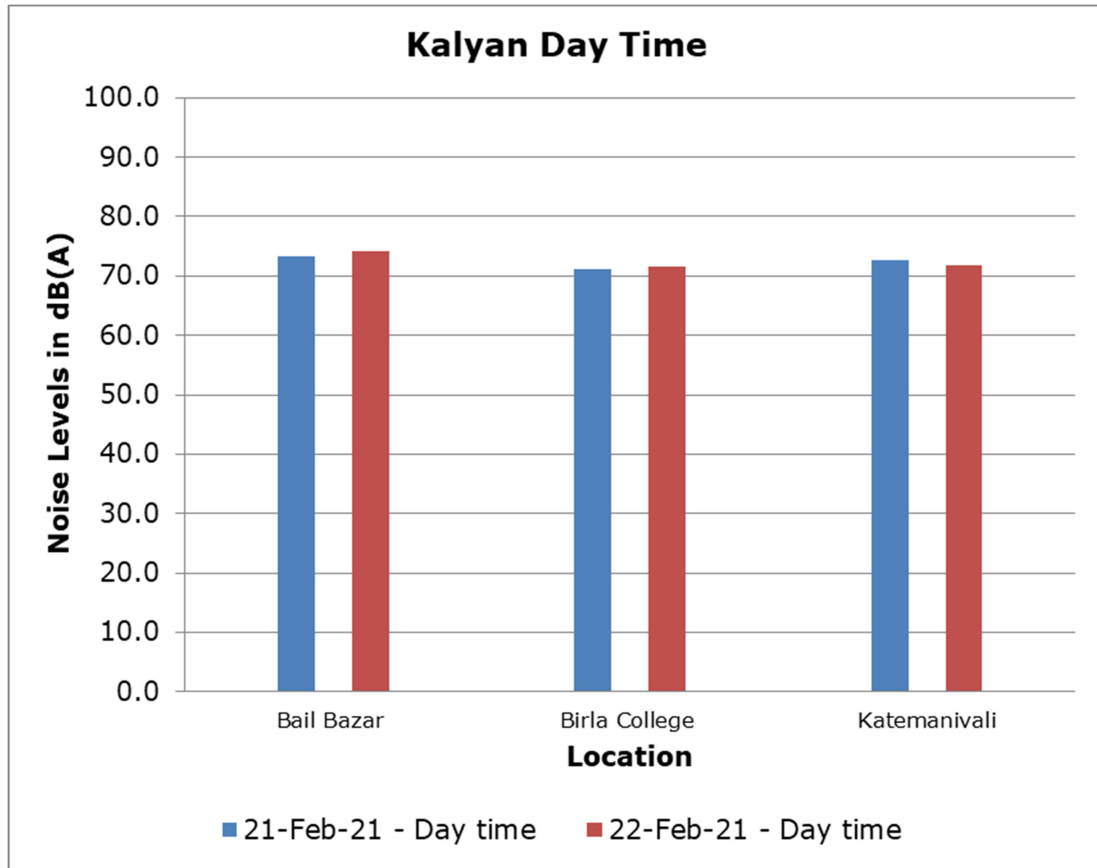
Three locations were monitored in Kalyan region. On 21st and 22nd February the highest noise level both during day time was observed at Bail Bazar and during night time the highest noise level was observed at Birla College with 60.5 dB(A) and at Bail Bazar with 63.9 dB(A).

Table 4.8: Noise Levels in Kalyan

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Katemanivali | 21.02.2021 | 72.7 | 65.8 | 79.7 | 75.0 | 71.6 | 67.0 |
| Birla College | 21.02.2021 | 71.2 | 58.4 | 78.9 | 74.8 | 65.9 | 61.7 |
| Bail Bazar | 21.02.2021 | 73.4 | 56.8 | 78.6 | 77.6 | 71.0 | 65.5 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Katemanivali | 21.02.2021 | 58.6 | 52.8 | 61.4 | 61.1 | 58.2 | 53.6 |
| Birla College | 21.02.2021 | 60.5 | 50.9 | 67.1 | 63.6 | 54.5 | 53.2 |
| Bail Bazar | 21.02.2021 | 58.1 | 38.8 | 65.3 | 61.4 | 50.9 | 40.1 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Katemanivali | 22.02.2021 | 71.7 | 58.4 | 78.9 | 76.4 | 65.8 | 61.6 |
| Birla College | 22.02.2021 | 71.6 | 62.7 | 76.7 | 75.8 | 70.0 | 63.9 |
| Bail Bazar | 22.02.2021 | 74.1 | 63.9 | 79.2 | 78.6 | 72.7 | 65.8 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Katemanivali | 22.02.2021 | 54.2 | 41.4 | 61.5 | 57.5 | 47.5 | 43.1 |
| Birla College | 22.02.2021 | 61.4 | 42.2 | 69.5 | 64.7 | 47.4 | 43.3 |
| Bail Bazar | 22.02.2021 | 63.9 | 42.5 | 71.5 | 68.4 | 48.9 | 43.9 |

Chart 4.8: Noise Levels in Kalyan



9. Amaravati

Three locations were monitored for Amravati region. On 21st and 22nd February the highest noise level during day time was observed at Budhwara with 60.1 dB(A) and at Rajkamal Chowk with 74 dB(A). During night time at both days the highest noise level was observed at Rajkamal Chowk.

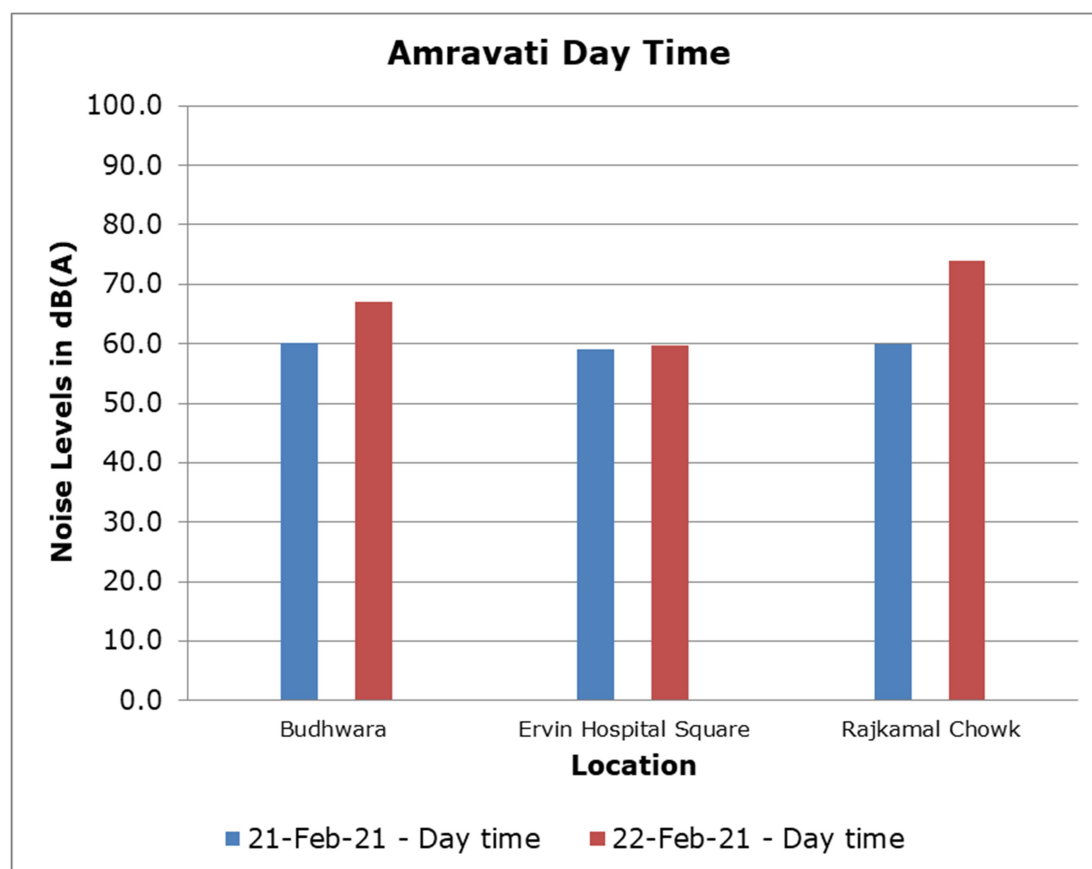
Table 4.9: Noise Levels in Amaravati

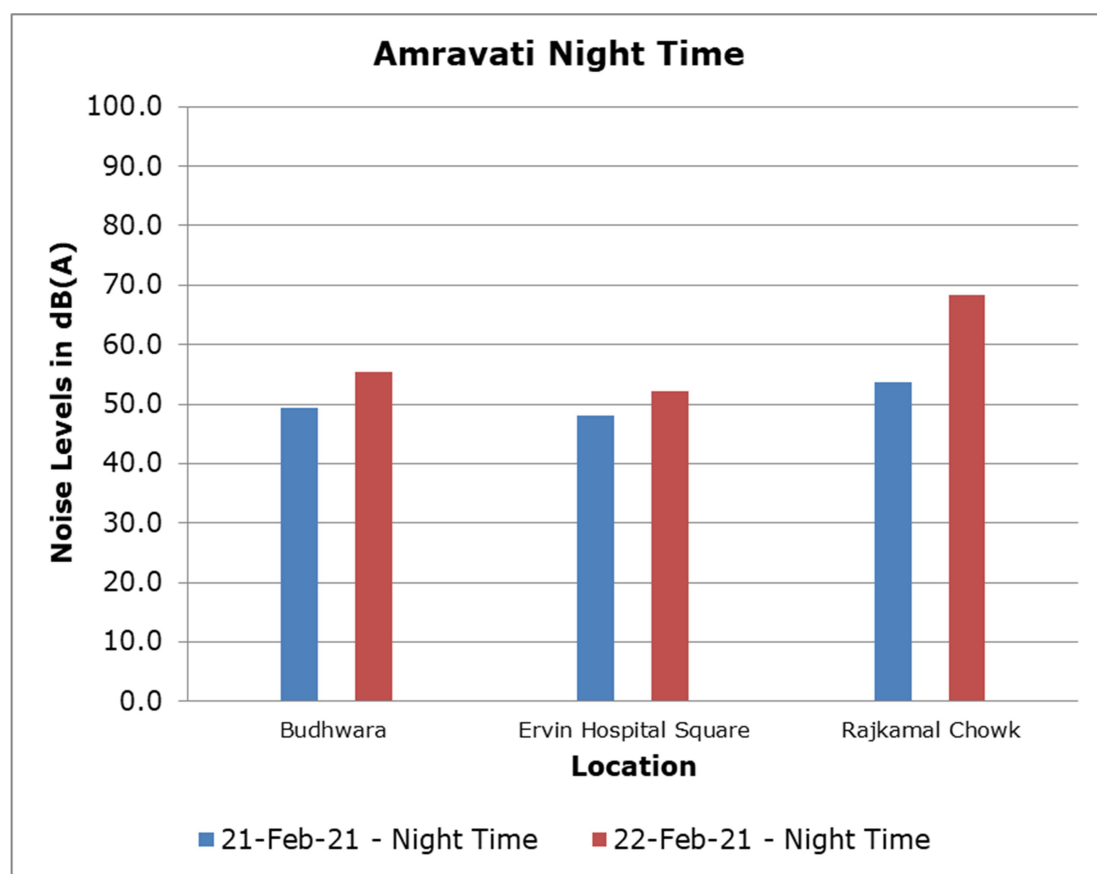
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-----------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ervin Hospital Square | 21.02.2021 | 59.0 | 52.2 | 62.5 | 61.7 | 58.4 | 53.6 |
| Budhwara | 21.02.2021 | 60.1 | 51.4 | 65.0 | 63.5 | 58.7 | 52.4 |
| Rajkamal Chowk | 21.02.2021 | 59.9 | 55.5 | 62.8 | 62.1 | 59.3 | 56.8 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ervin Hospital Square | 21.02.2021 | 48.1 | 45.0 | 50.9 | 50.0 | 47.6 | 45.8 |
| Budhwara | 21.02.2021 | 49.3 | 38.4 | 54.9 | 52.9 | 45.6 | 41.1 |
| Rajkamal Chowk | 21.02.2021 | 53.6 | 46.6 | 56.9 | 56.8 | 53.2 | 47.0 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ervin Hospital Square | 22.02.2021 | 59.7 | 54.1 | 63.1 | 61.7 | 59.3 | 55.7 |
| Budhwara | 22.02.2021 | 67.0 | 55.7 | 73.2 | 70.4 | 64.3 | 58.9 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajkamal Chowk | 22.02.2021 | 74.0 | 65.8 | 76.5 | 76.1 | 74.1 | 70.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|-----------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Ervin Hospital Square | 22.02.2021 | 52.1 | 46.7 | 58.0 | 55.2 | 49.3 | 47.0 |
| Budhwara | 22.02.2021 | 55.4 | 46.0 | 60.1 | 58.4 | 53.5 | 47.3 |
| Rajkamal Chowk | 22.02.2021 | 68.4 | 55.7 | 75.0 | 72.5 | 63.8 | 57.5 |

Chart 4.9: Noise Levels in Amaravati





10. Jalgaon

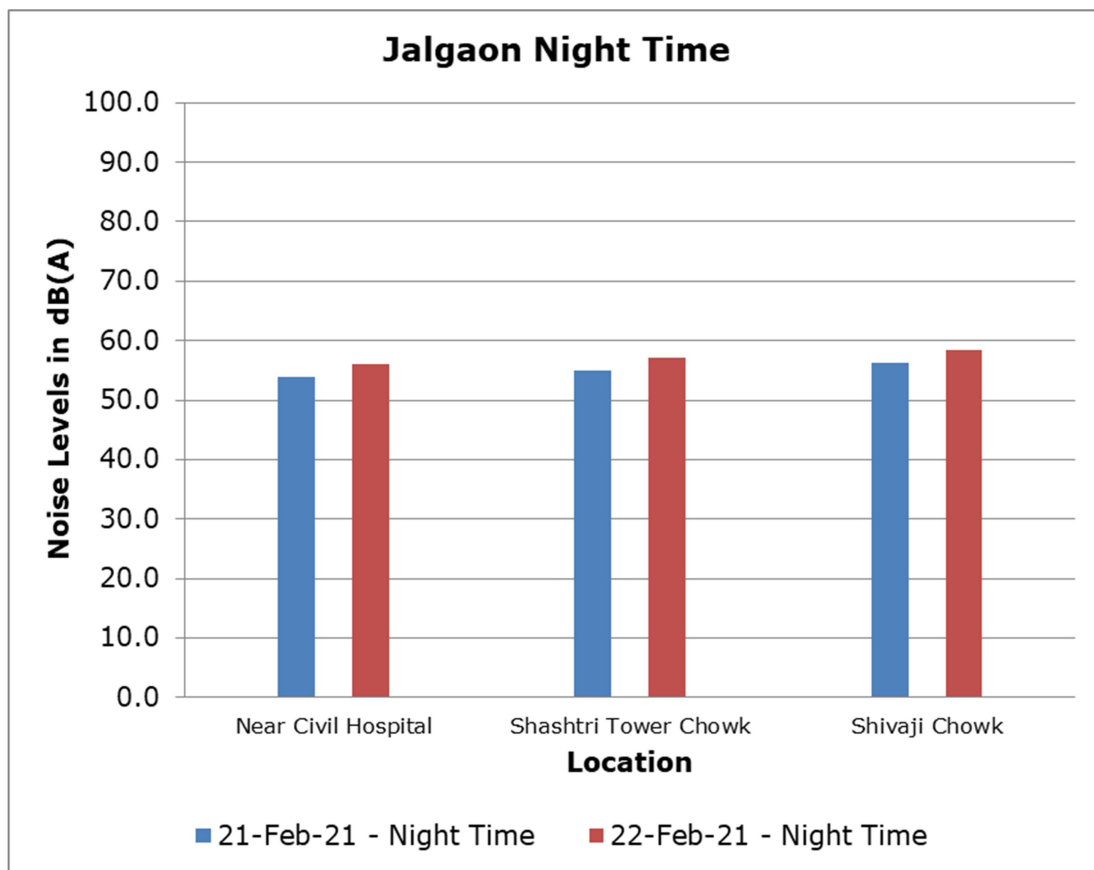
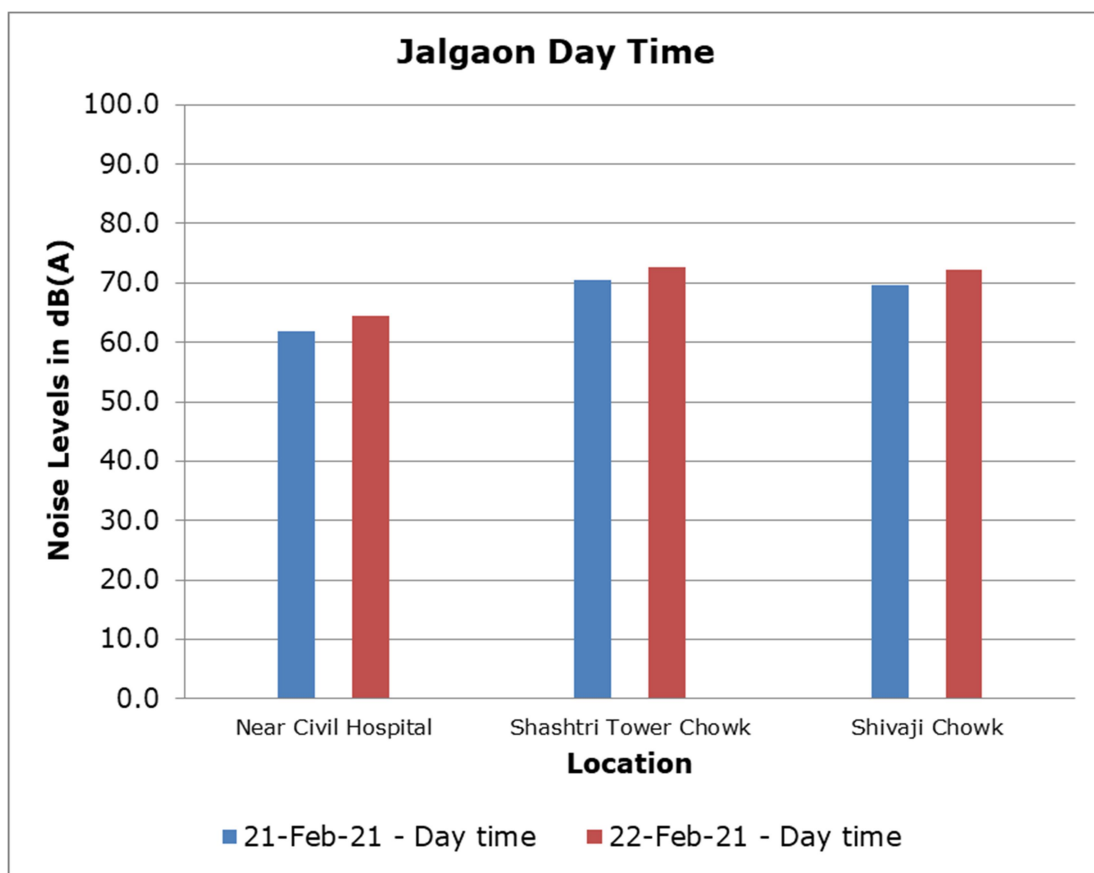
In Jalgaon region also three locations were monitored. On both the days of monitoring, the highest noise level both during day time was observed at Shashtri Tower Chowk and during night time was observed at Shivaji Chowk.

Table 4.10: Noise Levels in Jalgaon

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Near Civil Hospital | 21.02.2021 | 61.9 | 50.2 | 64.7 | 63.4 | 61.9 | 58.6 |
| Shivaji Chowk | 21.02.2021 | 69.6 | 55.4 | 72.8 | 72.5 | 68.7 | 63.2 |
| Shashtri Tower Chowk | 21.02.2021 | 70.5 | 57.7 | 73.6 | 73.1 | 70.3 | 65.9 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|----------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Near Civil Hospital | 21.02.2021 | 54.0 | 47.7 | 59.1 | 57.9 | 50.7 | 48.2 |
| Shivaji Chowk | 21.02.2021 | 56.3 | 46.9 | 63.2 | 59.9 | 50.1 | 48.7 |
| Shashtri Tower Chowk | 21.02.2021 | 55.0 | 49.2 | 61.0 | 57.6 | 52.1 | 49.6 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Near Civil Hospital | 22.02.2021 | 64.6 | 51.4 | 69.8 | 65.9 | 63.9 | 61.0 |
| Shivaji Chowk | 22.02.2021 | 72.1 | 57.6 | 77.1 | 75.0 | 70.3 | 65.7 |
| Shashtri Tower Chowk | 22.02.2021 | 72.6 | 60.2 | 76.8 | 74.9 | 72.3 | 69.1 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Near Civil Hospital | 22.02.2021 | 56.0 | 49.7 | 61.1 | 59.9 | 52.7 | 50.2 |
| Shivaji Chowk | 22.02.2021 | 58.5 | 50.9 | 65.3 | 61.9 | 53.1 | 51.4 |
| Shashtri Tower Chowk | 22.02.2021 | 57.0 | 49.2 | 63.7 | 58.5 | 54.2 | 51.0 |

Chart 4.10: Noise Levels in Jalgaon



11. Kolhapur

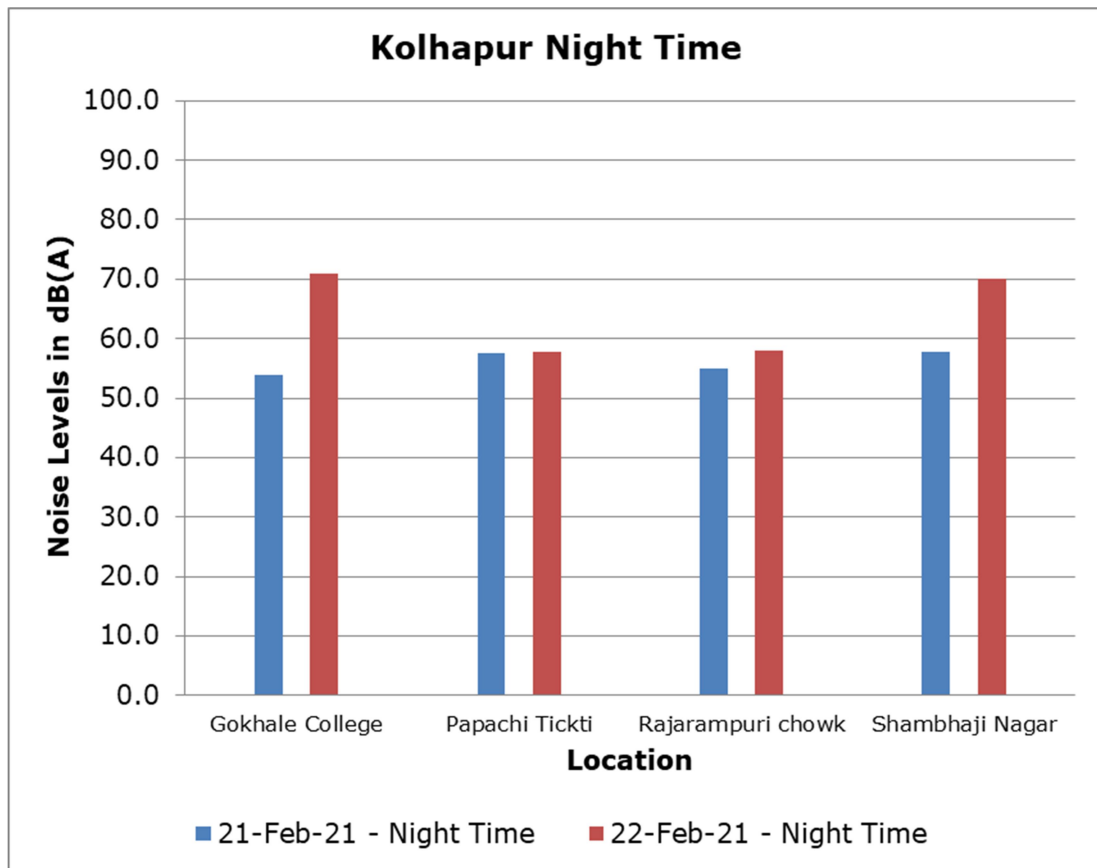
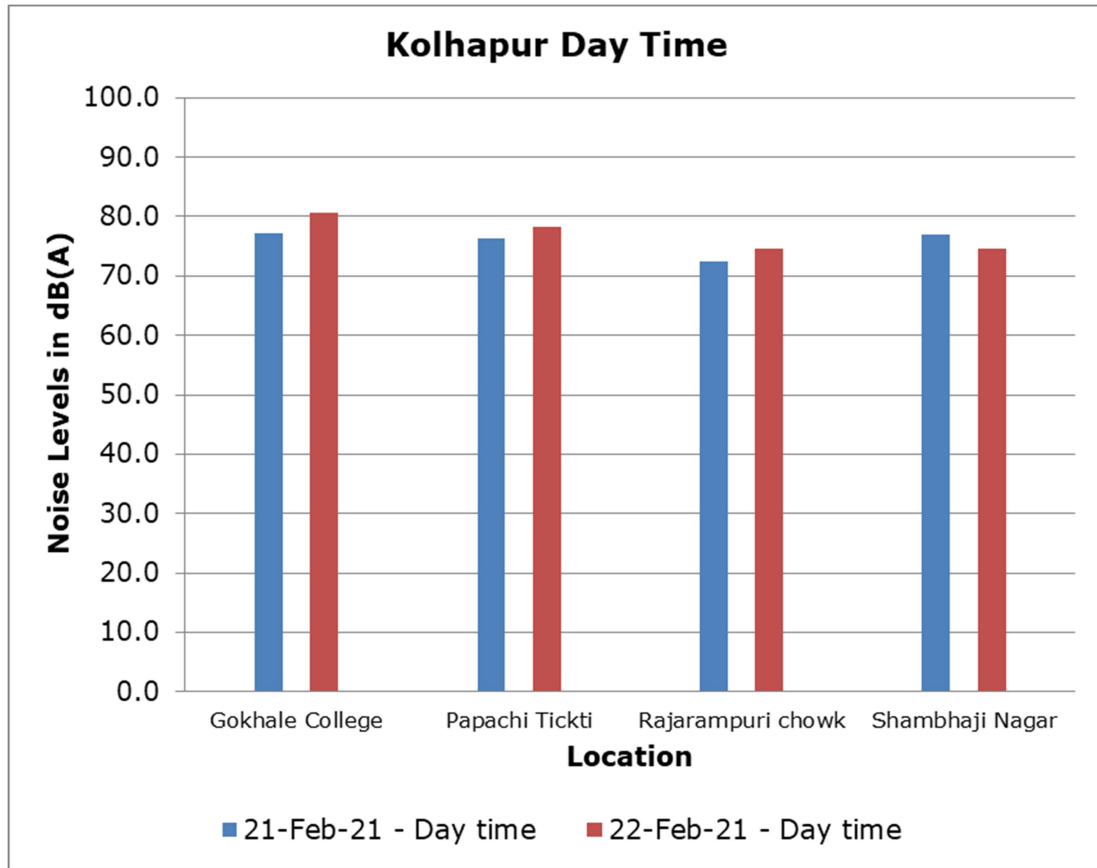
In Kolhapur region four locations were monitored. On both the days of monitoring, the highest noise level both during day time was observed at Gokhale College with 77.1 dB(A) and 80.7 dB(A). During night time was observed at Shambhaji Nagar with 57.8 dB(A) and at Gokhale College with 71 dB(A).

Table 4.11: Noise Levels in Kolhapur

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajarampuri chowk | 21.02.2021 | 72.4 | 47.2 | 78.4 | 78.3 | 68.3 | 60.7 |
| Papachi Tickti | 21.02.2021 | 76.9 | 45.4 | 83.7 | 82.7 | 71.2 | 58.1 |
| Gokhale College | 21.02.2021 | 76.4 | 46.2 | 84.2 | 80.3 | 71.3 | 54.2 |
| Dabhorakar Corner | 21.02.2021 | 77.1 | 52.6 | 82.8 | 81.2 | 72.8 | 58.2 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajarampuri chowk | 21.02.2021 | 54.9 | 41.5 | 61.4 | 59.9 | 46.5 | 41.9 |
| Papachi Tickti | 21.02.2021 | 57.8 | 44.6 | 63.4 | 61.9 | 53.1 | 45.2 |
| Gokhale College | 21.02.2021 | 57.6 | 43.8 | 63.2 | 61.7 | 51.0 | 44.9 |
| Dabhorakar Corner | 21.02.2021 | 54.0 | 42.8 | 61.2 | 57.4 | 46.3 | 44.9 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajarampuri chowk | 22.02.2021 | 74.5 | 51.3 | 80.3 | 79.2 | 70.9 | 60.7 |
| Papachi Tickti | 22.02.2021 | 74.6 | 46.9 | 80.7 | 78.1 | 72.1 | 59.9 |
| Gokhale College | 22.02.2021 | 78.3 | 52.8 | 84.8 | 81.6 | 77.0 | 59.3 |
| Dabhorakar Corner | 22.02.2021 | 80.7 | 53.6 | 83.7 | 83.5 | 80.7 | 59.6 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajarampuri chowk | 22.02.2021 | 58.0 | 44.9 | 63.1 | 61.2 | 55.7 | 47.9 |
| Papachi Tickti | 22.02.2021 | 70.0 | 44.9 | 78.6 | 70.7 | 55.0 | 46.4 |
| Gokhale College | 22.02.2021 | 57.8 | 42.5 | 65.4 | 60.4 | 48.8 | 44.5 |
| Dabhorakar Corner | 22.02.2021 | 71.0 | 47.3 | 78.3 | 75.6 | 59.2 | 49.1 |

Chart 4.11: Noise Levels in Kolhapur



12. Sangli

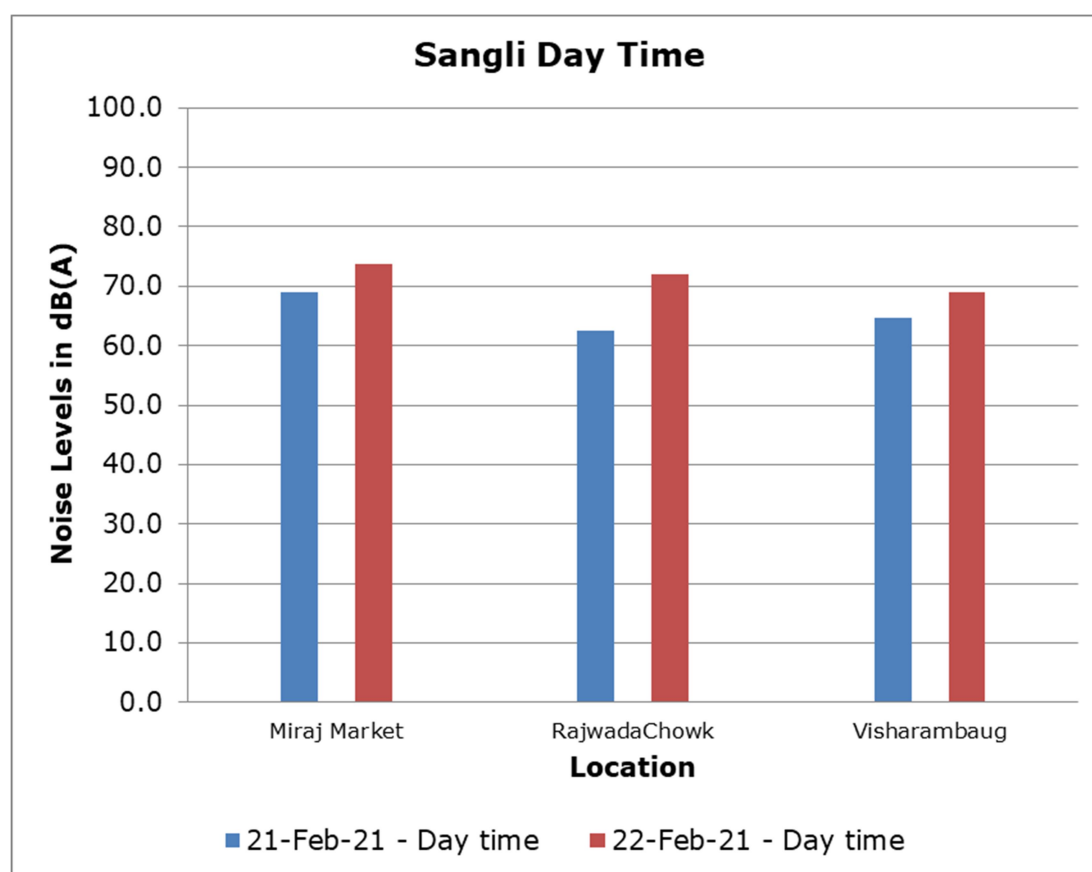
Out of the three locations monitored in Sangli region, On 21st and 22nd February, the highest noise level on both days during daytime was observed at Miraj Market. On 21st February during night time the highest noise level was observed at Visharambaug with 52.7 dB(A) and on 22nd February, it was at Miraj Market with 54.9 dB(A).

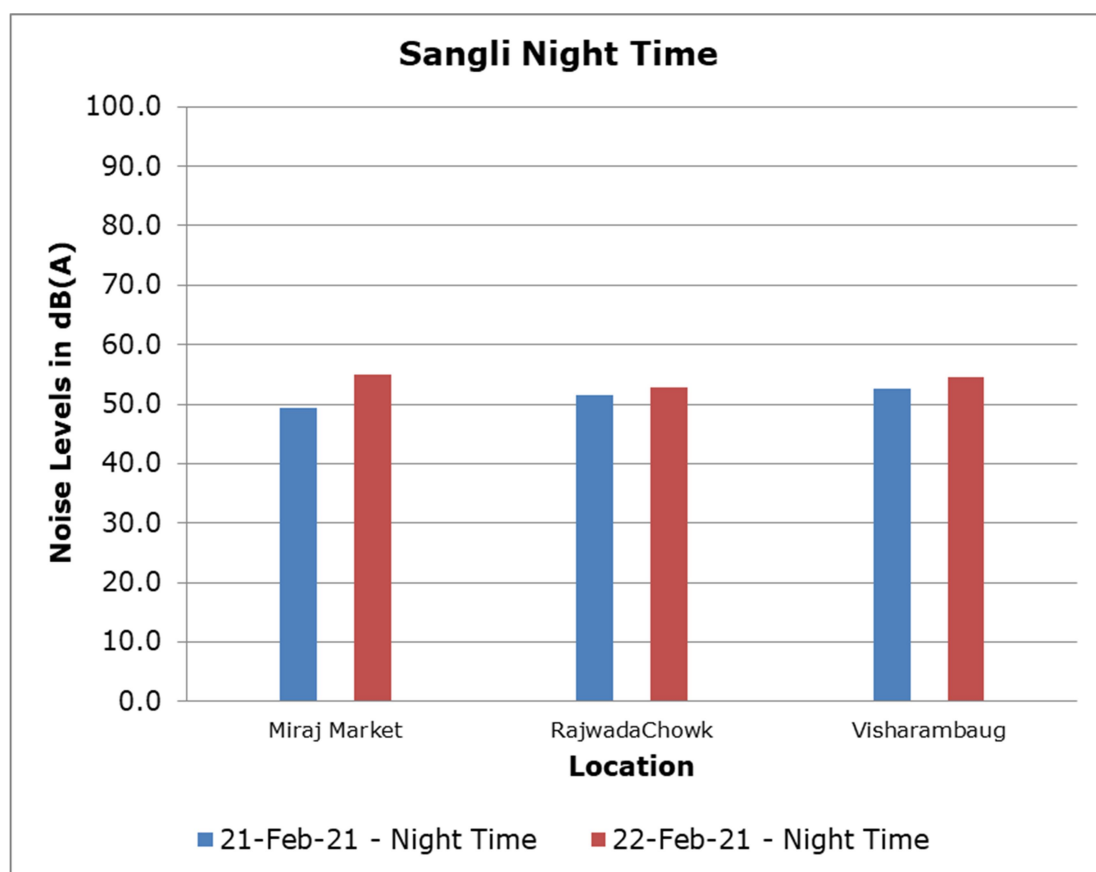
Table 4.12: Noise Levels in Sangli

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajwada Chowk | 21.02.2021 | 62.5 | 51.9 | 68.2 | 64.6 | 62.0 | 54.8 |
| Visharambaug | 21.02.2021 | 64.7 | 58.3 | 69.1 | 67.6 | 63.4 | 58.9 |
| Miraj Market | 21.02.2021 | 69.0 | 56.9 | 74.6 | 72.5 | 67.4 | 59.9 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajwada Chowk | 21.02.2021 | 51.6 | 43.4 | 58.4 | 54.1 | 45.3 | 43.5 |
| Visharambaug | 21.02.2021 | 52.7 | 43.2 | 59.6 | 56.8 | 45.3 | 43.2 |
| Miraj Market | 21.02.2021 | 49.4 | 41.9 | 56.2 | 52.6 | 43.8 | 42.0 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Rajwada Chowk | 22.02.2021 | 71.9 | 53.7 | 79.6 | 73.3 | 70.0 | 62.3 |
| Visharambaug | 22.02.2021 | 69.1 | 52.4 | 72.9 | 72.4 | 68.8 | 57.7 |
| Miraj Market | 22.02.2021 | 73.7 | 58.9 | 77.8 | 76.5 | 73.5 | 65.4 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Rajwada Chowk | 22.02.2021 | 52.9 | 44.1 | 59.1 | 56.4 | 47.8 | 44.2 |
| Visharambaug | 22.02.2021 | 54.5 | 42.3 | 61.3 | 59.2 | 46.2 | 43.5 |
| Miraj Market | 22.02.2021 | 54.9 | 42.2 | 62.3 | 57.9 | 47.8 | 42.7 |

Chart 4.12: Noise Levels in Sangli





13. Mira-Bhayander

In Mira-Bhayander also three locations were monitored. On 21st and 22nd February the highest noise level during day time was observed at Shivaji Chak Kashi meera with 74.4 dB(A) and at Golden police Chowki with 74.8 dB(A). During both days the highest noise level at night time was observed at Shivaji Chowk Kashi meera.

Table 4.13: Noise Levels in Mira-Bhayander

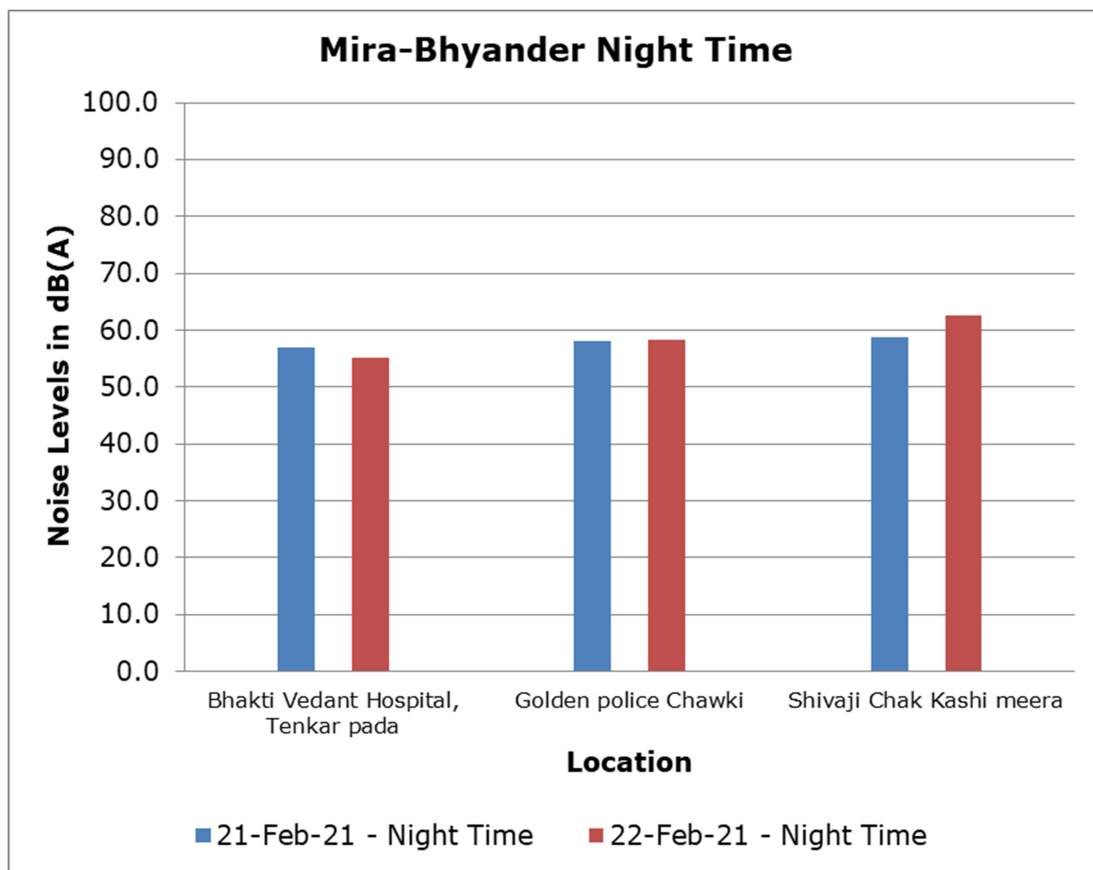
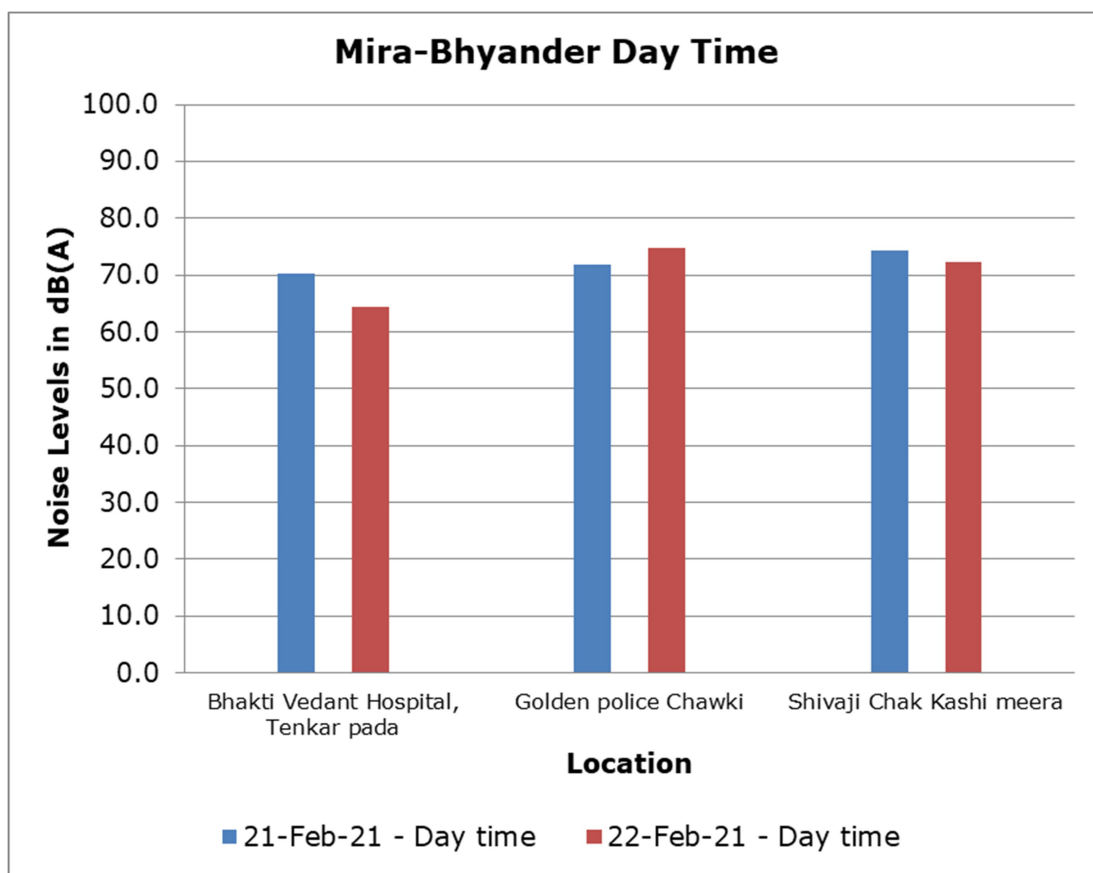
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Bhakti Vedant Hospital | 21.02.2021 | 70.3 | 65.9 | 73.8 | 73.2 | 69.3 | 66.1 |
| Golden police Chowki | 21.02.2021 | 71.8 | 65.3 | 76.3 | 74.8 | 70.8 | 65.8 |
| Shivaji Chowk Kashi meera | 21.02.2021 | 74.4 | 62.8 | 79.3 | 78.3 | 72.1 | 63.5 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Bhakti Vedant Hospital | 21.02.2021 | 57.0 | 51.3 | 59.9 | 59.6 | 56.6 | 51.6 |
| Golden police Chowki | 21.02.2021 | 58.1 | 48.6 | 65.3 | 59.7 | 53.8 | 51.2 |
| Shivaji Chowk Kashi meera | 21.02.2021 | 58.7 | 51.4 | 63.3 | 62.3 | 56.9 | 52.2 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Bhakti Vedant Hospital | 22.02.2021 | 64.5 | 57.6 | 71.8 | 67.2 | 61.4 | 58.8 |
| Golden police Chowki | 22.02.2021 | 74.8 | 57.3 | 79.7 | 78.4 | 73.3 | 66.2 |
| Shivaji Chowk Kashi meera | 22.02.2021 | 72.3 | 67.2 | 78.2 | 75.3 | 70.6 | 67.7 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Bhakti Vedant Hospital | 22.02.2021 | 55.2 | 43.2 | 61.8 | 59.5 | 47.9 | 43.6 |
| Golden police Chowki | 22.02.2021 | 58.2 | 45.3 | 62.3 | 61.6 | 56.4 | 50.2 |
| Shivaji Chowk Kashi meera | 22.02.2021 | 62.6 | 43.2 | 69.3 | 67.6 | 53.7 | 48.0 |

Chart 4.13: Noise Levels in Mira-Bhayander



14. Vasai-Virar

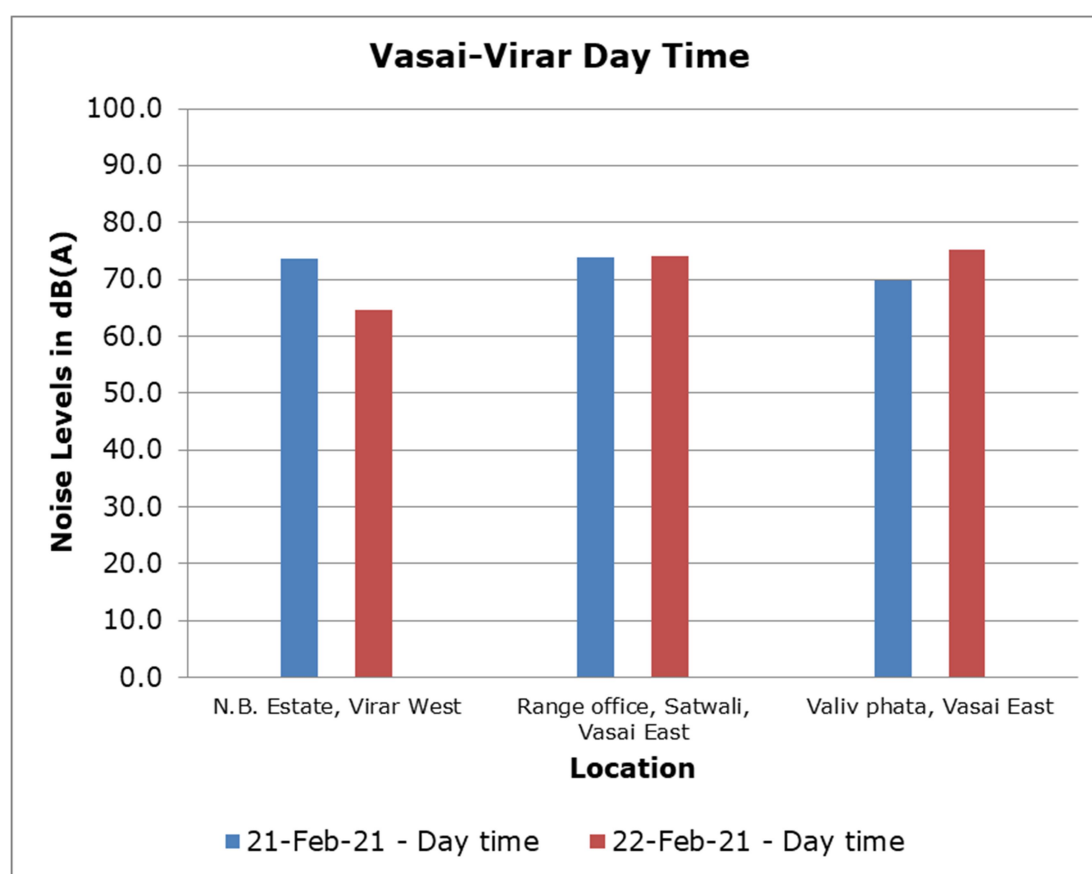
At Vasai-Virar also three locations were monitored for checking the noise level. During the day time the highest noise level on 21st and 22nd February, was observed at Range office, Satwali, Vasai East with 73.9 dB(A) and at Valiv phata, Vasai East with 75.2 dB(A). During the night time on both days, the highest noise level was observed at N.B. Estate, Virar West with 59.5 dB(A) and at Range office, Satwali, Vasai East with 65.9 dB(A) respectively.

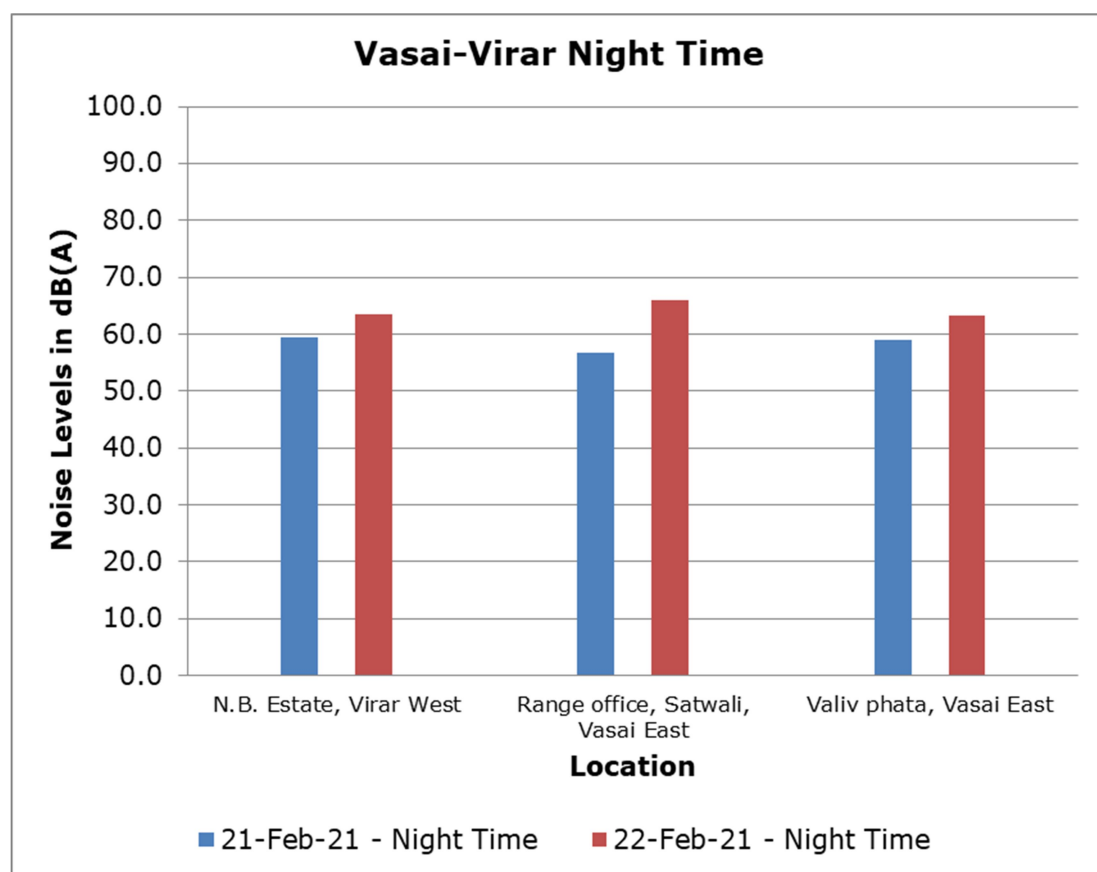
Table 4.14: Noise Levels in Vasai-Virar

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Range office | 21.02.2021 | 73.9 | 65.3 | 80.2 | 77.8 | 70.9 | 67.2 |
| Valiv phata | 21.02.2021 | 69.8 | 60.4 | 73.2 | 72.6 | 69.0 | 63.5 |
| N.B. Estate | 21.02.2021 | 73.6 | 60.4 | 77.9 | 76.4 | 73.3 | 61.9 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Range office | 21.02.2021 | 56.7 | 42.6 | 62.3 | 61.0 | 49.5 | 42.7 |
| Valiv phata | 21.02.2021 | 59.0 | 48.3 | 61.9 | 61.4 | 59.3 | 52.1 |
| N.B. Estate | 21.02.2021 | 59.5 | 48.6 | 64.3 | 62.3 | 58.2 | 49.7 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Range office | 22.02.2021 | 74.0 | 59.7 | 81.3 | 78.0 | 69.4 | 60.3 |
| Valiv phata | 22.02.2021 | 75.2 | 60.1 | 80.4 | 79.2 | 72.7 | 62.5 |
| N.B. Estate | 22.02.2021 | 64.7 | 59.7 | 70.3 | 69.1 | 62.1 | 60.1 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Range office | 22.02.2021 | 65.9 | 50.7 | 72.5 | 69.8 | 60.0 | 52.9 |
| Valiv phata | 22.02.2021 | 63.3 | 49.8 | 70.6 | 67.0 | 56.5 | 52.2 |
| N.B. Estate | 22.02.2021 | 63.4 | 50.2 | 69.2 | 67.0 | 60.1 | 53.8 |

Chart 4.14: Noise Levels in Vasai-Virar





15. Ulhasnagar

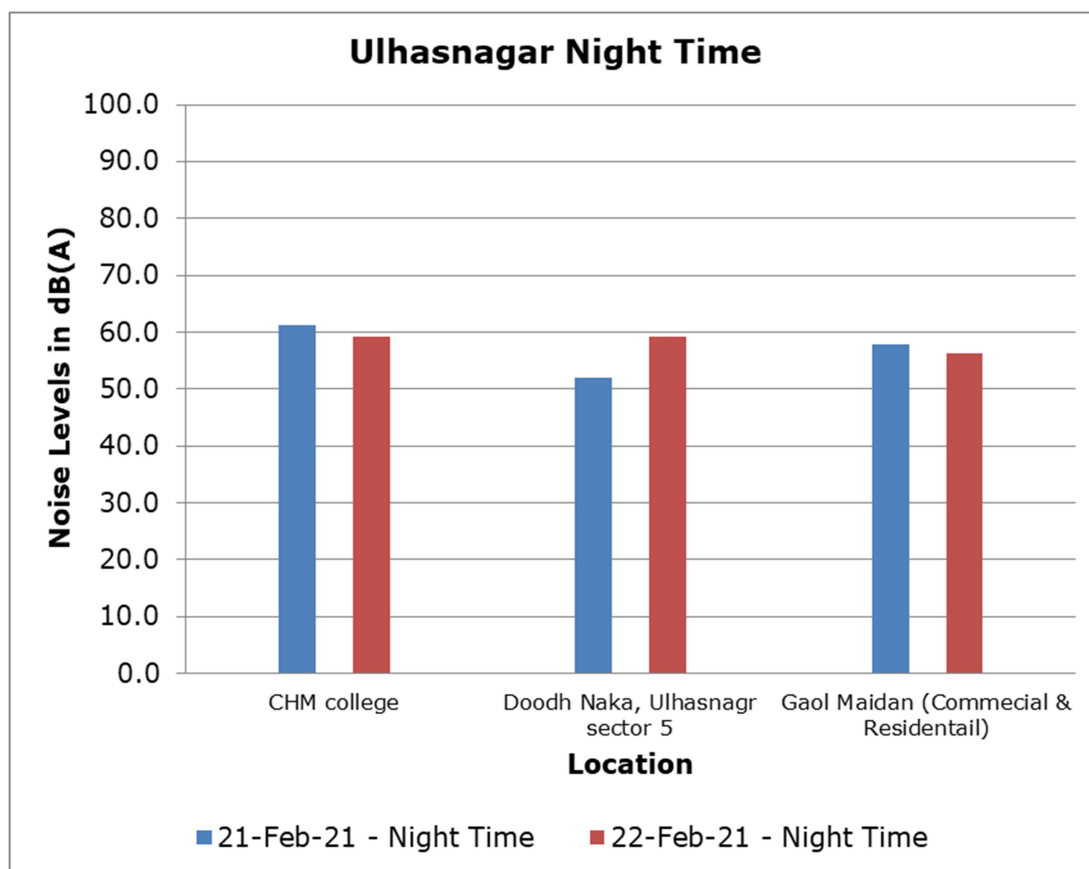
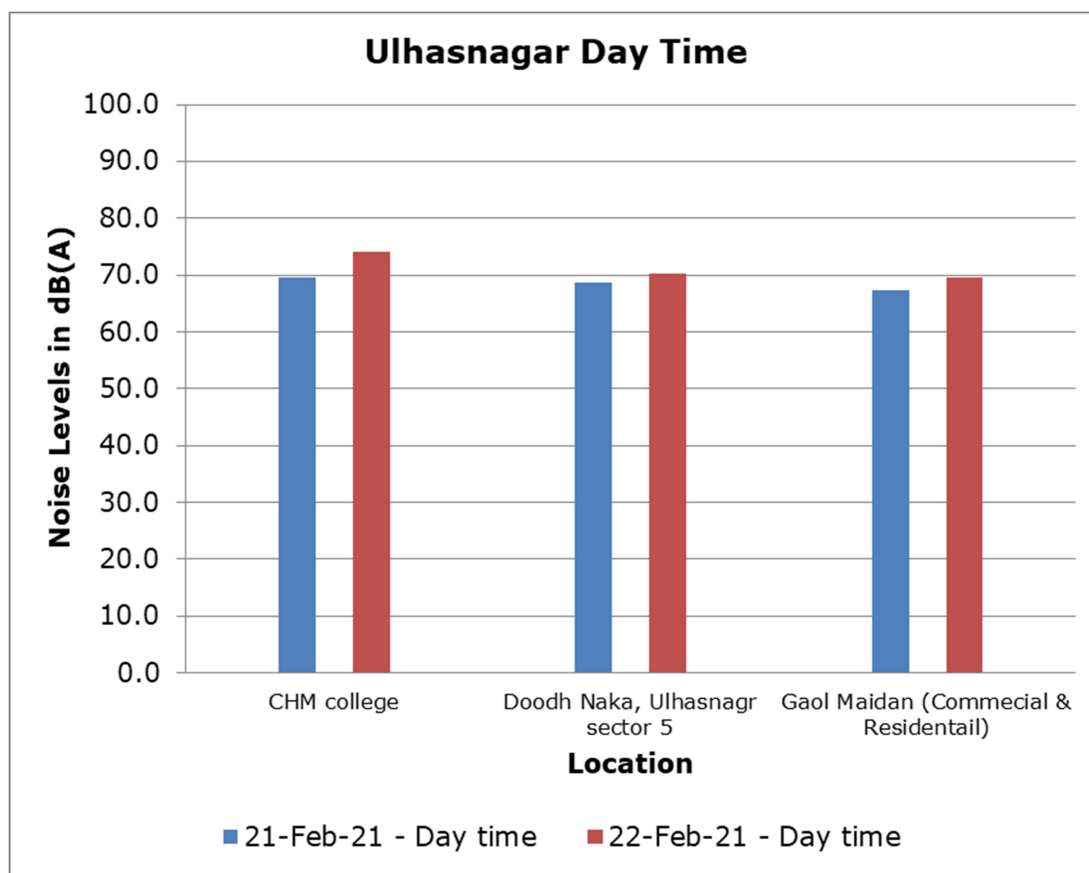
At Ulhasnagar three locations were monitored for noise levels. During 21st and 22nd February on both day and night time, the highest noise level was observed at CHM college.

Table 4.15: Noise Levels in Ulhasnagar

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gaol Maidan | 21.02.2021 | 67.3 | 60.5 | 72.9 | 69.6 | 65.8 | 62.2 |
| Doodh Naka | 21.02.2021 | 68.8 | 64.1 | 72.1 | 70.5 | 68.8 | 65.1 |
| CHM college | 21.02.2021 | 69.6 | 65.4 | 73.5 | 72.3 | 68.8 | 65.8 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|-------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gaol Maidan | 21.02.2021 | 57.9 | 46.2 | 65.5 | 60.3 | 50.7 | 47.1 |
| Doodh Naka | 21.02.2021 | 52.1 | 45.9 | 58.8 | 53.8 | 49.1 | 45.9 |
| CHM college | 21.02.2021 | 61.2 | 56.2 | 64.1 | 63.0 | 61.3 | 57.5 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gaol Maidan | 22.02.2021 | 69.6 | 57.4 | 74.9 | 71.8 | 69.3 | 59.6 |
| Doodh Naka | 22.02.2021 | 70.3 | 55.9 | 75.3 | 75.0 | 68.4 | 57.2 |
| CHM college | 22.02.2021 | 74.2 | 64.3 | 79.5 | 77.4 | 71.8 | 69.5 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gaol Maidan | 22.02.2021 | 56.2 | 38.3 | 64.3 | 59.4 | 45.0 | 39.4 |
| Doodh Naka | 22.02.2021 | 59.2 | 39.4 | 65.4 | 64.6 | 48.7 | 40.7 |
| CHM college | 22.02.2021 | 59.2 | 40.6 | 67.6 | 59.3 | 47.8 | 43.5 |

Chart 4.15: Noise Levels in Ulhasnagar



16. Bhiwandi-Nizampur

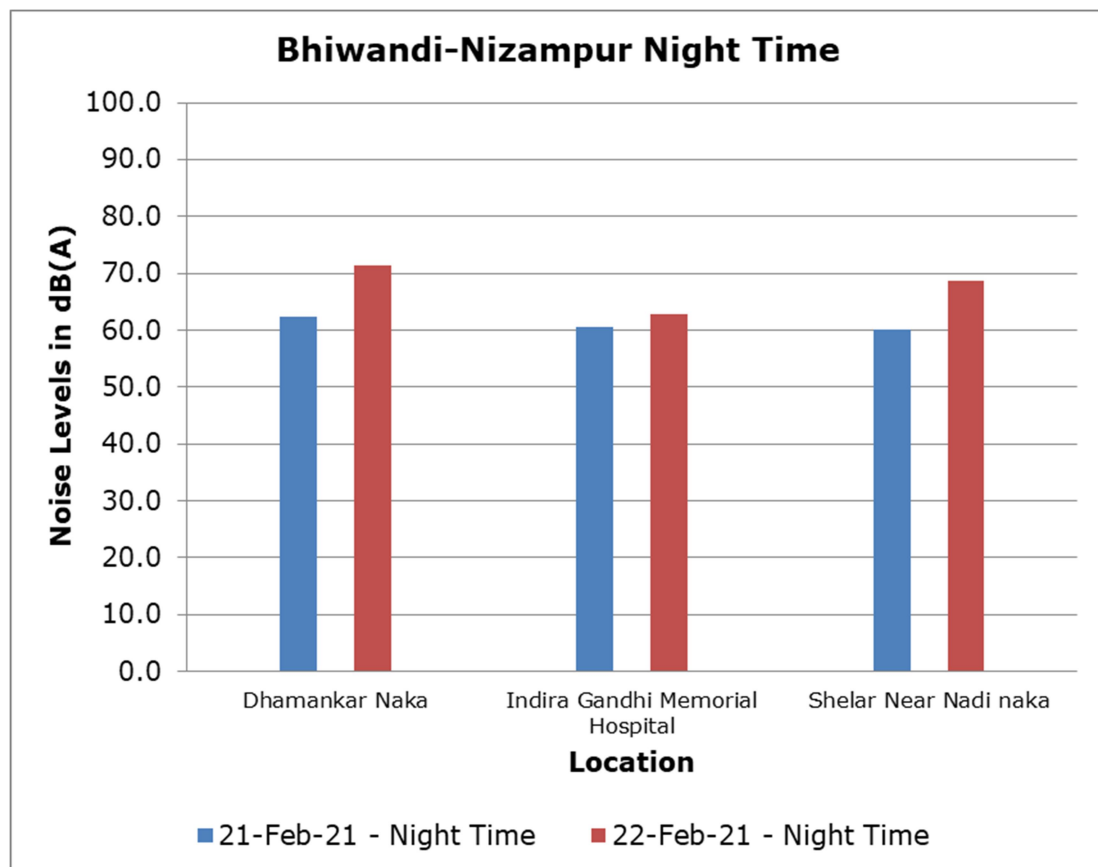
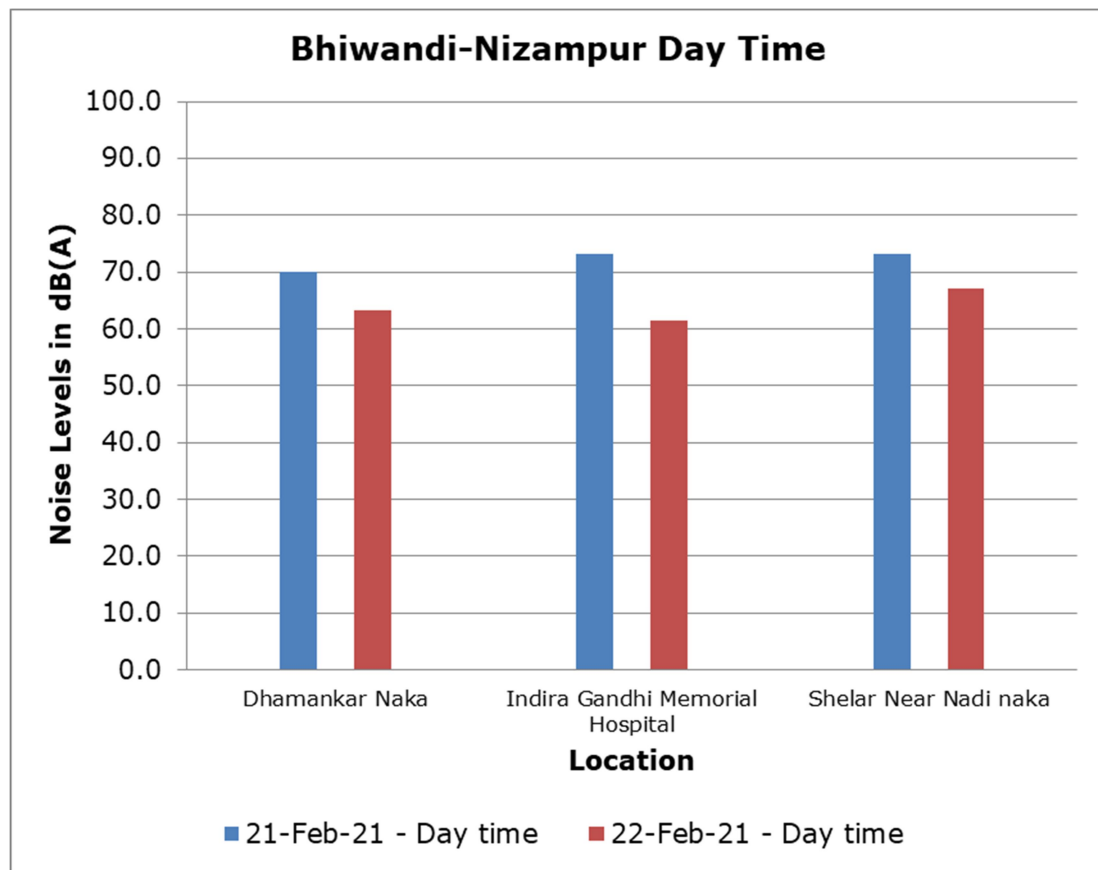
In Bhiwandi-Nizampur also 3 locations were monitored. On 21st and 22nd February, during day time on both days, the highest noise level was observed at Shelar Near Nadi naka and during night time, on both days it was observed at Dhamankar Naka.

Table 4.16: Noise Levels in Bhiwandi-Nizampur

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dhamankar Naka | 21.02.2021 | 70.1 | 52.5 | 78.6 | 74.3 | 63.8 | 58.1 |
| Indira Gandhi Memorial Hospital | 21.02.2021 | 73.3 | 49.3 | 82.4 | 77.0 | 60.7 | 56.3 |
| Shelar Near Nadi naka | 21.02.2021 | 73.3 | 56.8 | 81.7 | 79.1 | 60.5 | 57.6 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dhamankar Naka | 21.02.2021 | 62.5 | 49.3 | 69.3 | 66.7 | 55.8 | 50.7 |
| Indira Gandhi Memorial Hospital | 21.02.2021 | 60.5 | 55.6 | 64.8 | 63.1 | 59.3 | 56.7 |
| Shelar Near Nadi naka | 21.02.2021 | 60.1 | 49.2 | 65.3 | 63.8 | 54.5 | 50.0 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dhamankar Naka | 22.02.2021 | 63.3 | 49.5 | 66.2 | 65.9 | 63.4 | 56.6 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Indira Gandhi Memorial Hospital | 22.02.2021 | 61.4 | 53.6 | 66.4 | 63.5 | 60.9 | 54.6 |
| Shelar Near Nadi naka | 22.02.2021 | 67.1 | 44.1 | 74.0 | 71.9 | 60.8 | 51.7 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dhamankar Naka | 22.02.2021 | 71.4 | 53.2 | 77.6 | 76.1 | 65.1 | 53.4 |
| Indira Gandhi Memorial Hospital | 22.02.2021 | 62.8 | 49.1 | 69.5 | 67.0 | 56.0 | 50.8 |
| Shelar Near Nadi naka | 22.02.2021 | 68.7 | 51.3 | 74.4 | 73.1 | 62.4 | 52.4 |

Chart 4.16: Noise Levels in Bhiwandi-Nizampur



17. Chandrapur

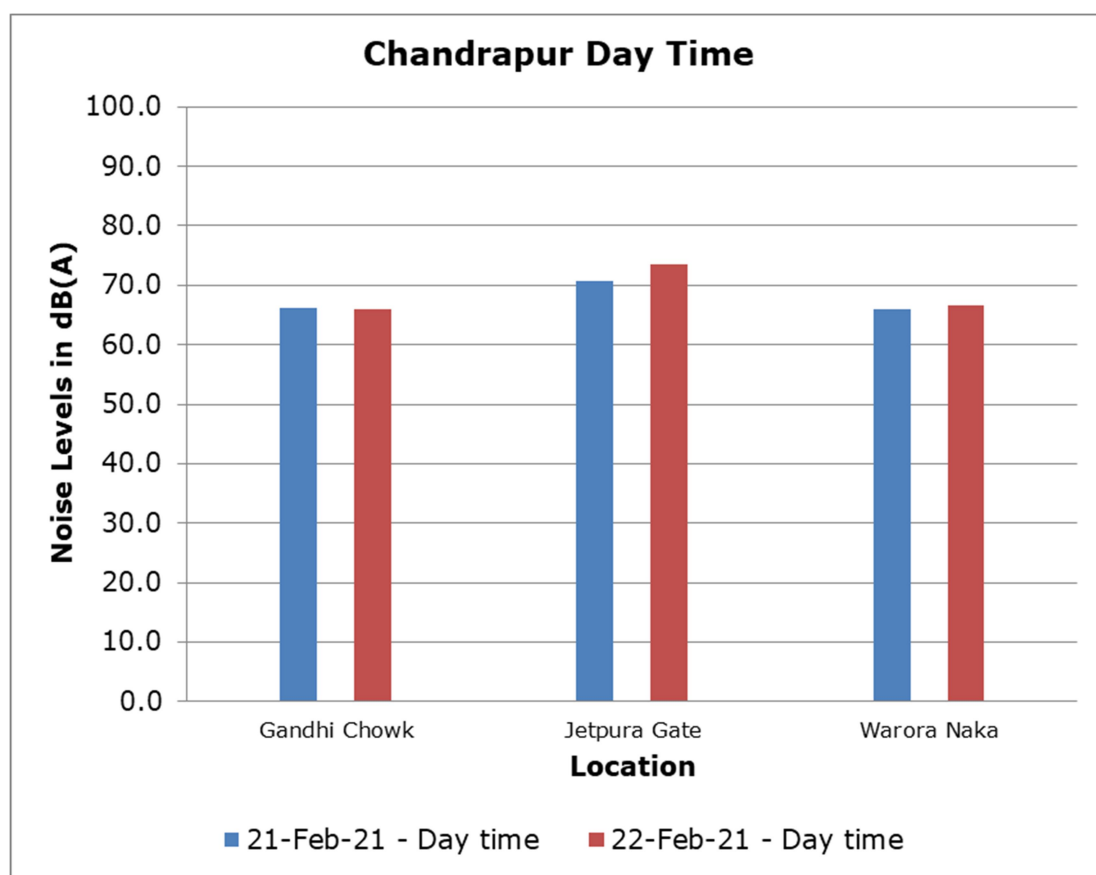
In Chandrapur region also three locations were monitored. During both 21st and 22nd February, the highest noise level on both day and night time was observed at Jetpura Gate.

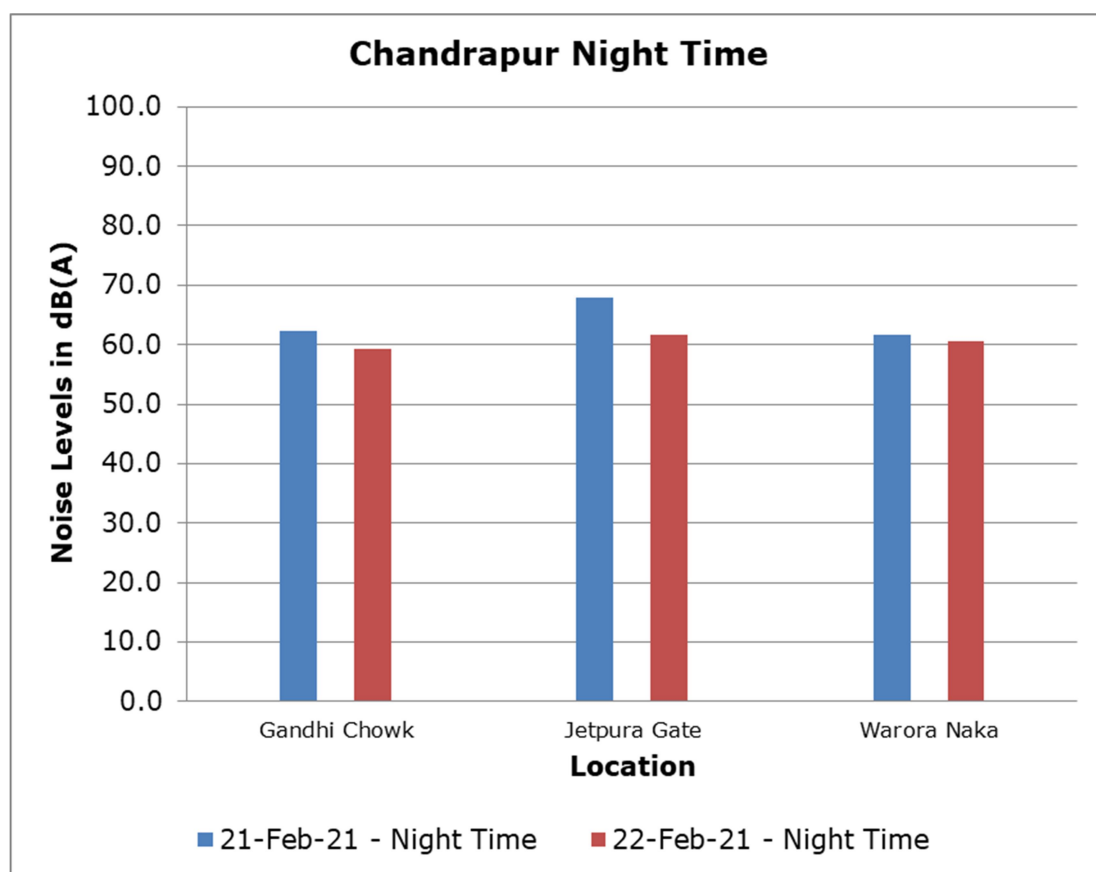
Table 4.17: Noise Levels in Chandrapur

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gandhi Chowk | 21.02.2021 | 66.0 | 53.2 | 70.4 | 69.0 | 65.6 | 61.5 |
| Jatpura Gate | 21.02.2021 | 70.7 | 63.4 | 72.5 | 71.6 | 70.8 | 70.0 |
| Warora Naka | 21.02.2021 | 66.1 | 60.1 | 70.7 | 68.4 | 64.9 | 63.1 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gandhi Chowk | 21.02.2021 | 61.6 | 54.7 | 66.5 | 64.4 | 60.4 | 55.8 |
| Jatpura Gate | 21.02.2021 | 67.9 | 64.0 | 69.9 | 69.6 | 67.6 | 65.3 |
| Warora Naka | 21.02.2021 | 62.3 | 58.4 | 66.3 | 64.5 | 60.7 | 58.6 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Gandhi Chowk | 22.02.2021 | 66.5 | 60.2 | 71.5 | 70.7 | 64.9 | 61.1 |
| Jatpura Gate | 22.02.2021 | 73.5 | 67.5 | 76.2 | 75.8 | 73.7 | 69.1 |
| Warora Naka | 22.02.2021 | 65.9 | 63.3 | 69.7 | 68.5 | 64.9 | 63.8 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Gandhi Chowk | 22.02.2021 | 60.7 | 55.8 | 66.3 | 62.5 | 58.6 | 56.9 |
| Jatpura Gate | 22.02.2021 | 61.7 | 47.7 | 67.5 | 65.1 | 58.7 | 48.4 |
| Warora Naka | 22.02.2021 | 59.4 | 54.7 | 62.5 | 61.2 | 58.9 | 56.2 |

Chart 4.17: Noise Levels in Chandrapur





18. Nanded-Waghala

At Nanded-Waghala also 3 location were monitored. On 21st February, the highest noise level during day time and night time was observed at Govt. Polytechnic College with 55.5 dB(A) and 43.8 dB(A) respectively. On 22nd February, the highest noise level was observed at Dr. Shankarao Chavan Govt. Medical College & Hospital with 59.5 dB(A) and 48.6 dB(A) respectively.

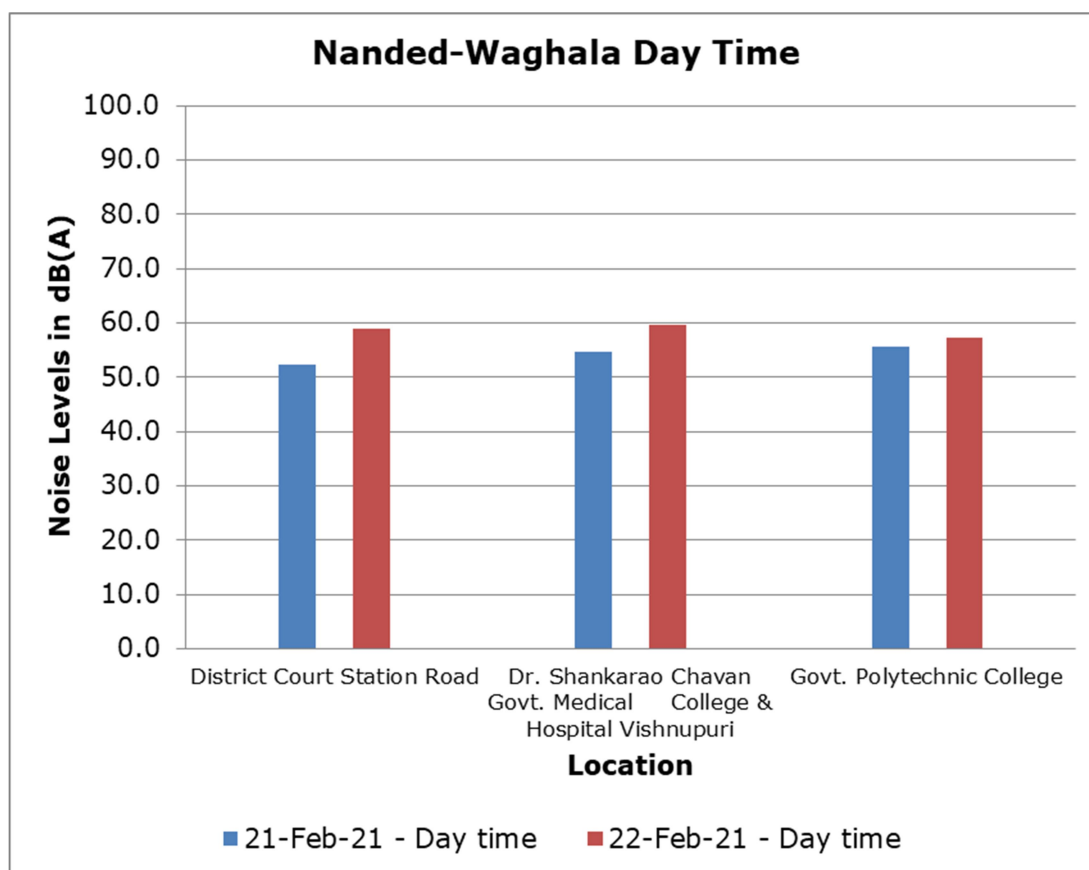
Table 4.18: Noise Levels in Nanded-Waghala

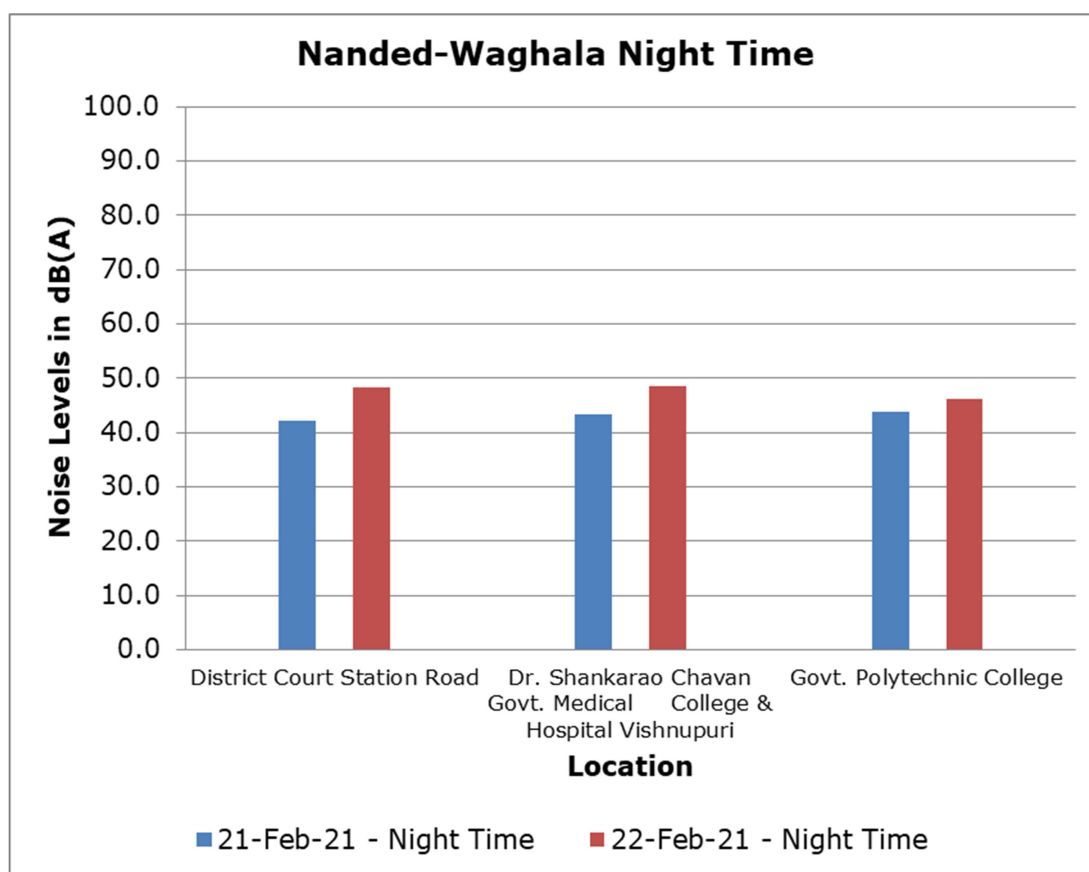
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dr. Shankarao Chavan Govt. Medical College & Hospital Vishnupuri | 21.02.2021 | 54.8 | 47.0 | 60.0 | 58.0 | 52.5 | 48.5 |
| District Court Station Road | 21.02.2021 | 52.4 | 45.0 | 58.0 | 54.5 | 51.0 | 48.0 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Govt. Polytechnic College | 21.02.2021 | 55.5 | 44.0 | 60.0 | 59.0 | 54.0 | 49.0 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dr. Shankarao Chavan Govt. Medical College & Hospital Vishnupuri | 21.02.2021 | 43.2 | 38.0 | 47.0 | 45.6 | 42.5 | 39.4 |
| District Court Station Road | 21.02.2021 | 42.3 | 36.0 | 46.0 | 45.3 | 40.5 | 36.7 |
| Govt. Polytechnic College | 21.02.2021 | 43.8 | 37.0 | 48.0 | 46.6 | 42.0 | 37.7 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dr. Shankarao Chavan Govt. Medical College & Hospital Vishnupuri | 22.02.2021 | 59.5 | 53.0 | 63.0 | 61.5 | 59.0 | 55.0 |
| District Court Station Road | 22.02.2021 | 58.9 | 51.0 | 62.0 | 61.5 | 59.0 | 54.0 |
| Govt. Polytechnic College | 22.02.2021 | 57.3 | 50.0 | 62.0 | 60.5 | 56.0 | 50.5 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Dr. Shankarao Chavan Govt. Medical College & Hospital Vishnupuri | 22.02.2021 | 48.6 | 41.0 | 54.0 | 51.9 | 46.0 | 42.4 |
| District Court Station Road | 22.02.2021 | 48.3 | 38.0 | 53.0 | 52.3 | 44.0 | 39.4 |
| Govt. Polytechnic College | 22.02.2021 | 46.2 | 39.0 | 51.0 | 49.6 | 44.0 | 40.4 |

Chart 4.18: Noise Levels in Nanded-Waghala





19. Ahmednagar

At Ahmednagar also 3 location were monitored. On 21st and 22nd February, during the day time on both days the highest noise level was observed at Chitale Road. During the night time on 21st February the highest noise level was observed at Old Bus Stand with 62.2 dB(A). On 22nd February, during the night time the highest noise level was monitored at Kotala Chowk with 63.8 dB(A).

Table 4.19: Noise Levels in Ahmednagar

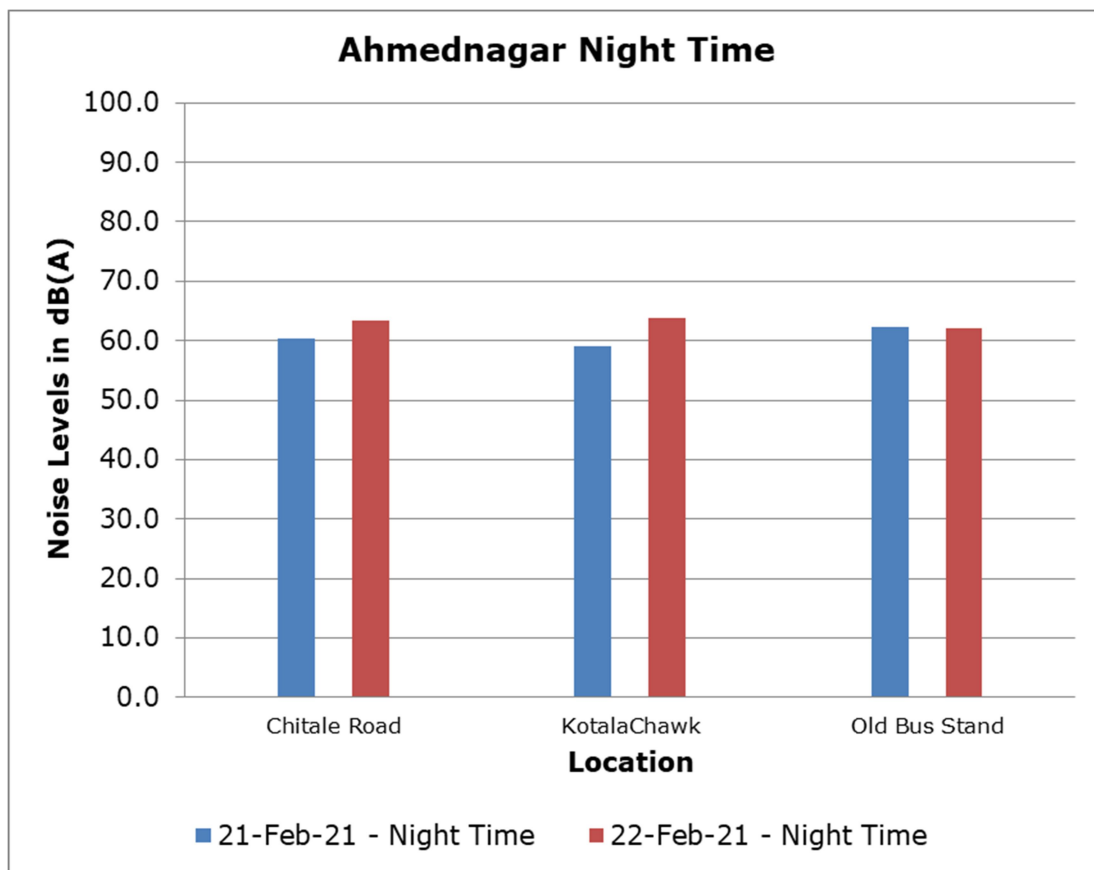
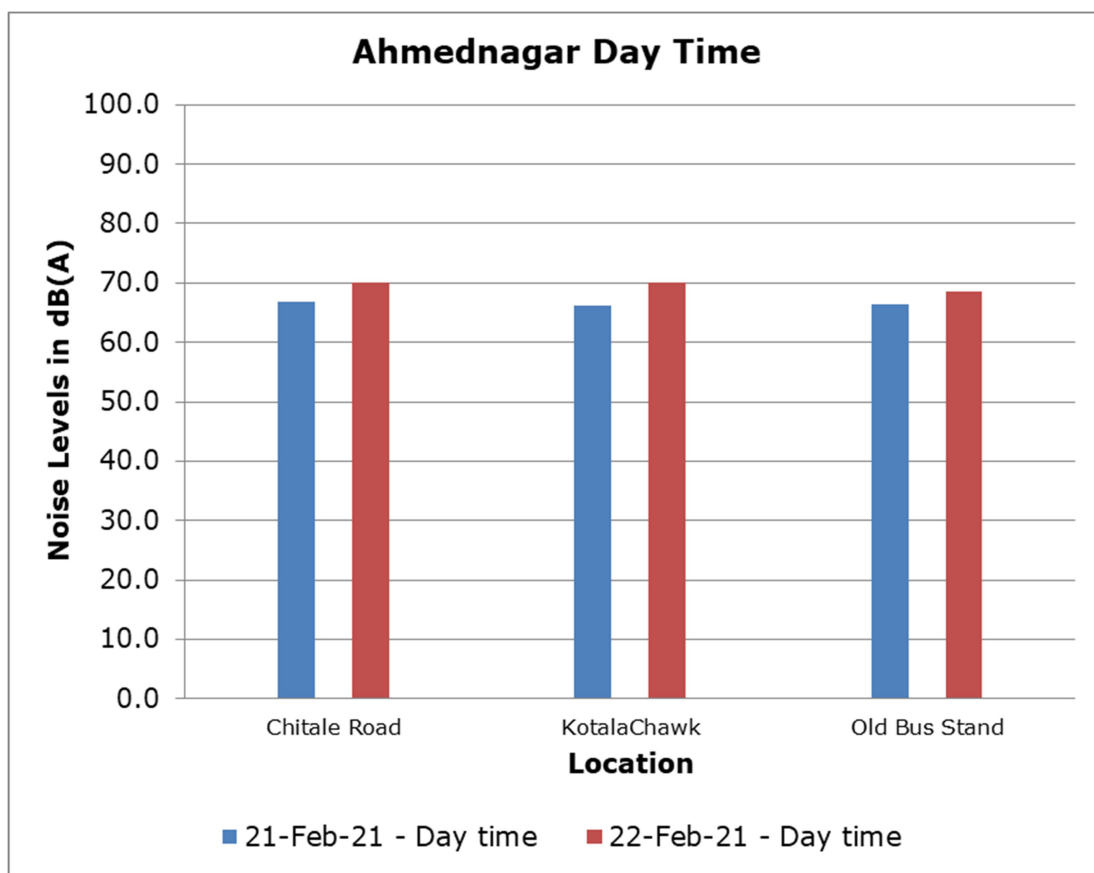
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Kotala Chowk | 21.02.2021 | 66.1 | 61.2 | 69.2 | 67.9 | 65.8 | 63.4 |
| Chitale Road | 21.02.2021 | 66.8 | 63.1 | 68.5 | 68.4 | 66.5 | 64.5 |
| Old Bus Stand | 21.02.2021 | 66.3 | 60.4 | 70.4 | 68.5 | 65.9 | 62.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Kotala Chowk | 21.02.2021 | 59.0 | 54.3 | 63.1 | 61.8 | 57.7 | 54.9 |
| Chitale Road | 21.02.2021 | 60.4 | 53.4 | 64.3 | 63.7 | 59.2 | 54.9 |
| Old Bus Stand | 21.02.2021 | 62.2 | 59.8 | 65.4 | 64.0 | 61.4 | 60.2 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Kotala Chowk | 22.02.2021 | 70.0 | 63.5 | 74.4 | 71.9 | 69.9 | 65.8 |
| Chitale Road | 22.02.2021 | 70.1 | 64.2 | 73.4 | 72.9 | 69.8 | 65.9 |
| Old Bus Stand | 22.02.2021 | 68.5 | 60.2 | 72.6 | 70.9 | 68.2 | 63.4 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Kotala Chowk | 22.02.2021 | 63.8 | 60.5 | 67.4 | 65.9 | 63.0 | 60.6 |
| Chitale Road | 22.02.2021 | 63.4 | 61.6 | 65.5 | 64.8 | 62.9 | 62.2 |
| Old Bus Stand | 22.02.2021 | 62.2 | 57.6 | 65.2 | 64.5 | 61.3 | 58.0 |

Chart 4.19: Noise Levels in Ahmednagar



20. Dhule

At Dhule also three locations were monitored. On 21st and 22nd February, the highest noise level during day time was observed at Santoshi Mata Chawk with 66.4 dB(A) and Fulwala Chowk with 70.9 dB(A) and during night time the highest noise level was observed at Fulwala Chowk with 62.3dB(A) and Santoshi Mata Chowk with 66.2 dB(A).

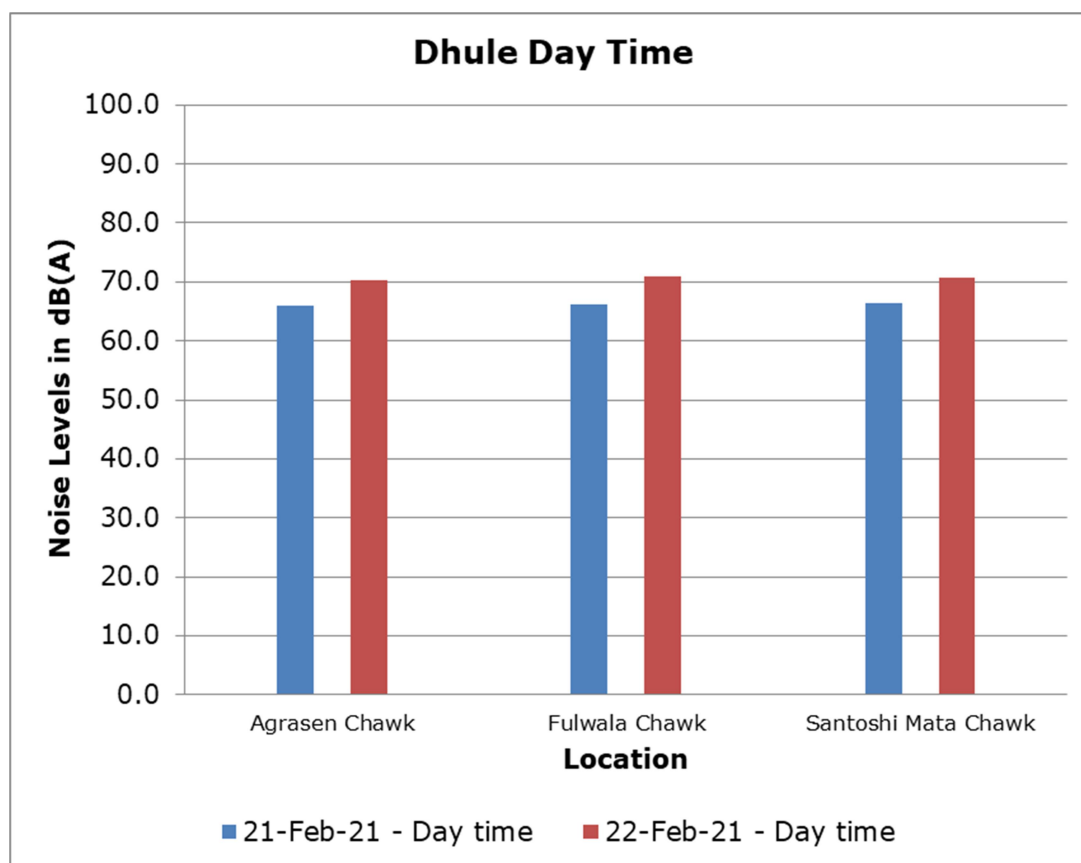
Table 4.20: Noise Levels in Dhule

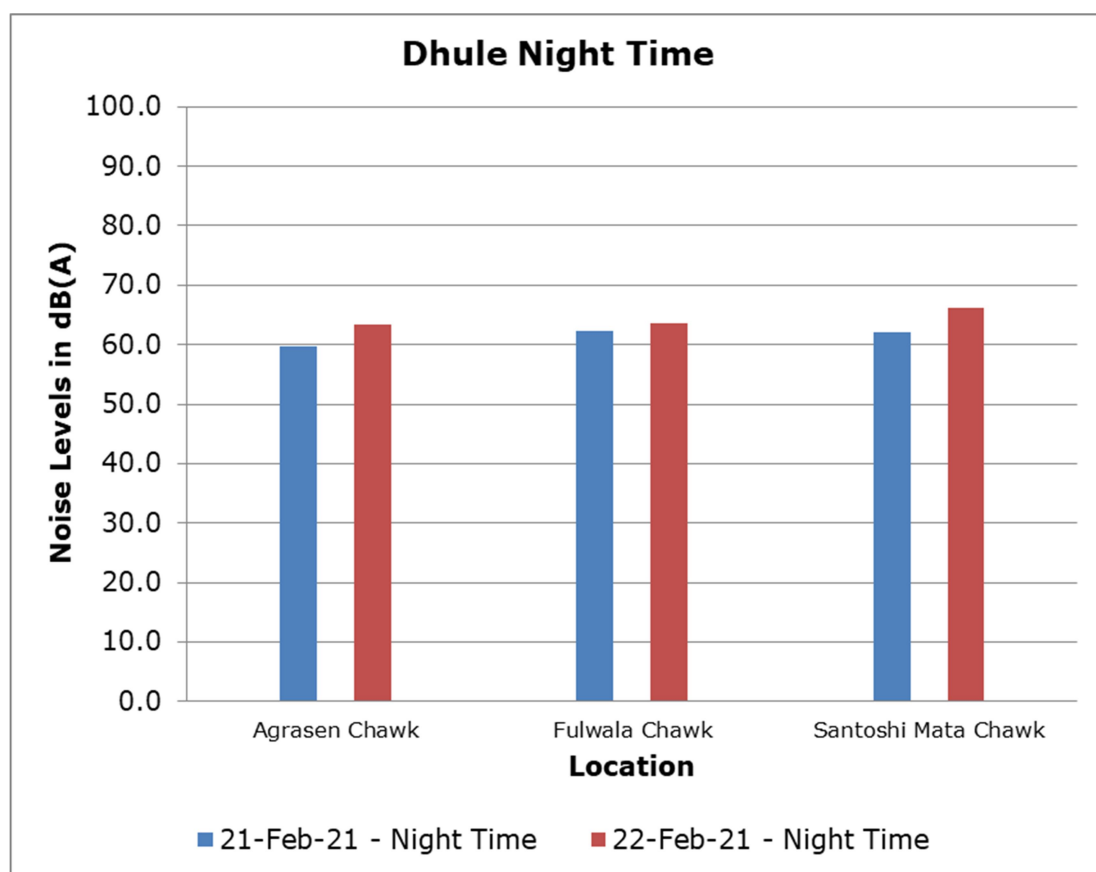
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Agrasen Chowk | 21.02.2021 | 66.0 | 59.1 | 68.2 | 68.0 | 66.4 | 60.8 |
| Fulwala Chowk | 21.02.2021 | 66.3 | 55.4 | 70.2 | 69.6 | 65.6 | 58.5 |
| Santoshi Mata Chowk | 21.02.2021 | 66.4 | 59.4 | 70.4 | 69.6 | 64.6 | 59.8 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Agrasen Chowk | 21.02.2021 | 59.7 | 56.4 | 62.5 | 61.7 | 58.8 | 57.2 |
| Fulwala Chowk | 21.02.2021 | 62.3 | 57.4 | 66.4 | 64.9 | 60.3 | 58.2 |
| Santoshi Mata Chowk | 21.02.2021 | 62.1 | 57.6 | 65.4 | 64.8 | 60.0 | 58.0 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Agrasen Chowk | 22.02.2021 | 70.2 | 64.1 | 73.1 | 72.1 | 70.2 | 65.8 |
| Fulwala Chowk | 22.02.2021 | 70.9 | 63.1 | 74.6 | 73.5 | 70.5 | 64.7 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Santoshi Mata Chowk | 22.02.2021 | 70.8 | 6.1 | 74.5 | 73.0 | 70.5 | 65.2 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Agrasen Chowk | 22.02.2021 | 63.3 | 61.2 | 66.4 | 64.9 | 62.8 | 61.2 |
| Fulwala Chowk | 22.02.2021 | 63.6 | 58.1 | 67.2 | 66.6 | 61.6 | 58.8 |
| Santoshi Mata Chowk | 22.02.2021 | 66.2 | 61.4 | 69.1 | 68.4 | 65.9 | 62.1 |

Chart 4.20: Noise Levels in Dhule





21. Malegaon

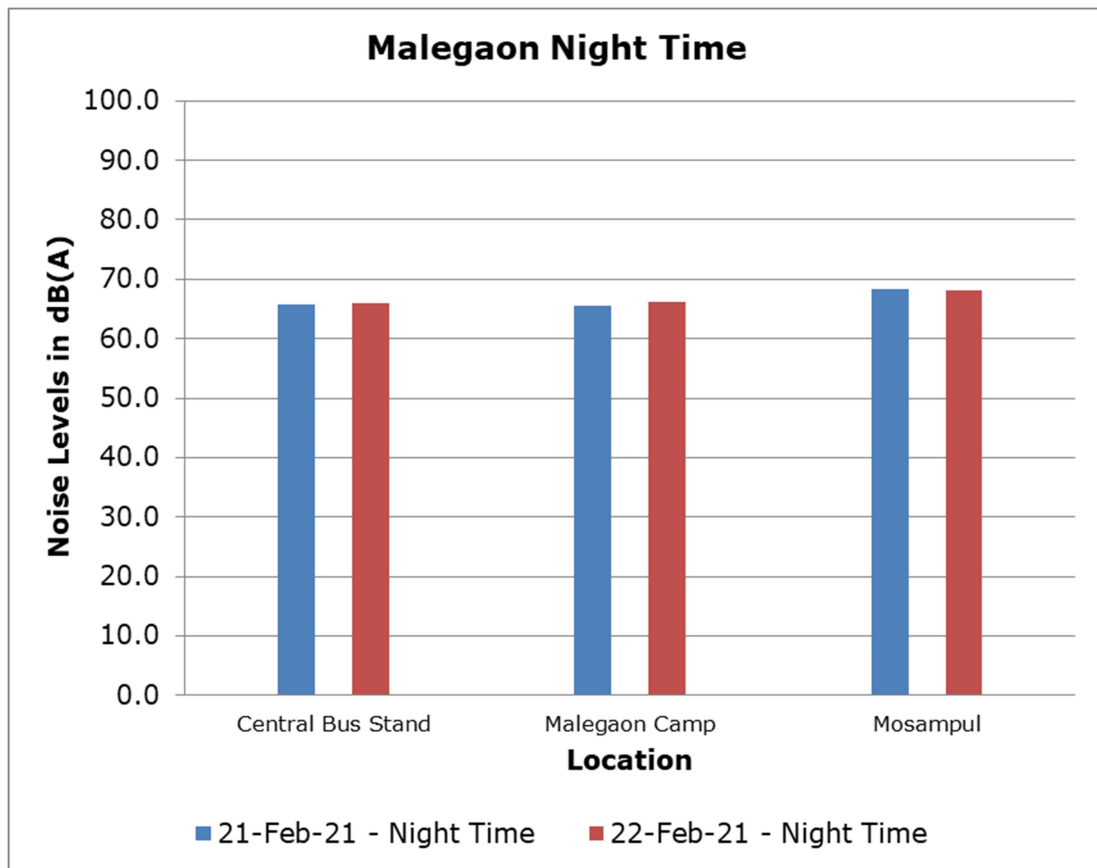
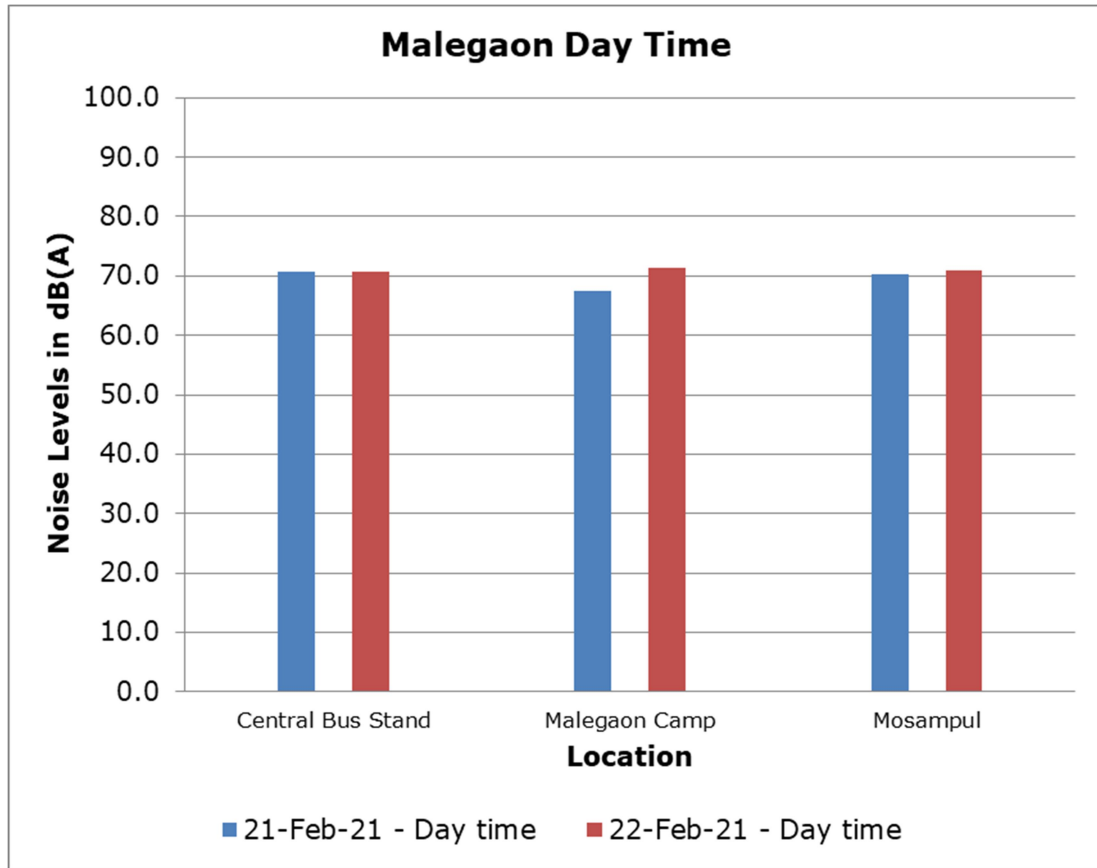
On 21st and 22nd February, the highest noise level during day time was observed at Mosampul with 70.3 dB(A) and at Malegaon Camp with 71.4 dB(A). On both days, during night time the highest noise level was observed at Mosampul.

Table 4.21: Noise Levels in Malegaon

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mosampul | 21.02.2021 | 70.3 | 61.4 | 75.4 | 72.9 | 69.4 | 64.4 |
| Central Bus Stand | 21.02.2021 | 70.7 | 64.2 | 74.6 | 72.5 | 70.5 | 66.0 |
| Malegaon Camp | 21.02.2021 | 67.5 | 61.5 | 71.4 | 69.7 | 66.9 | 63.3 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|-------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mosampul | 21.02.2021 | 68.4 | 63.4 | 72.1 | 71.6 | 66.8 | 64.2 |
| Central Bus Stand | 21.02.2021 | 65.8 | 62.4 | 69.1 | 67.2 | 65.4 | 63.1 |
| Malegaon Camp | 21.02.2021 | 65.6 | 62.6 | 68.2 | 66.9 | 65.1 | 63.2 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mosampul | 22.02.2021 | 71.0 | 66.4 | 73.5 | 72.6 | 70.7 | 68.4 |
| Central Bus Stand | 22.02.2021 | 70.7 | 67.1 | 73.5 | 72.4 | 70.1 | 67.7 |
| Malegaon Camp | 22.02.2021 | 71.4 | 65.1 | 76.1 | 74.0 | 70.6 | 66.8 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Mosampul | 22.02.2021 | 68.2 | 66.5 | 70.2 | 69.0 | 68.2 | 67.0 |
| Central Bus Stand | 22.02.2021 | 66.1 | 63.4 | 68.2 | 67.5 | 66.0 | 64.0 |
| Malegaon Camp | 22.02.2021 | 66.1 | 61.6 | 70.6 | 68.3 | 65.1 | 62.2 |

Chart 4.21: Noise Levels in Malegaon



22. Pimpri-Chinchwad

In Pimpri-Chinchwad also three locations were monitored. On 21st and 22nd February, during the days the highest noise level during day time was observed at Dange Chowk. The highest night time was observed at Dange Chowk with 55.7 dB(A) and Bhosari with 61.8 dB(A) respectively.

Table 4.22: Noise Levels in Pimpri-Chinchwad

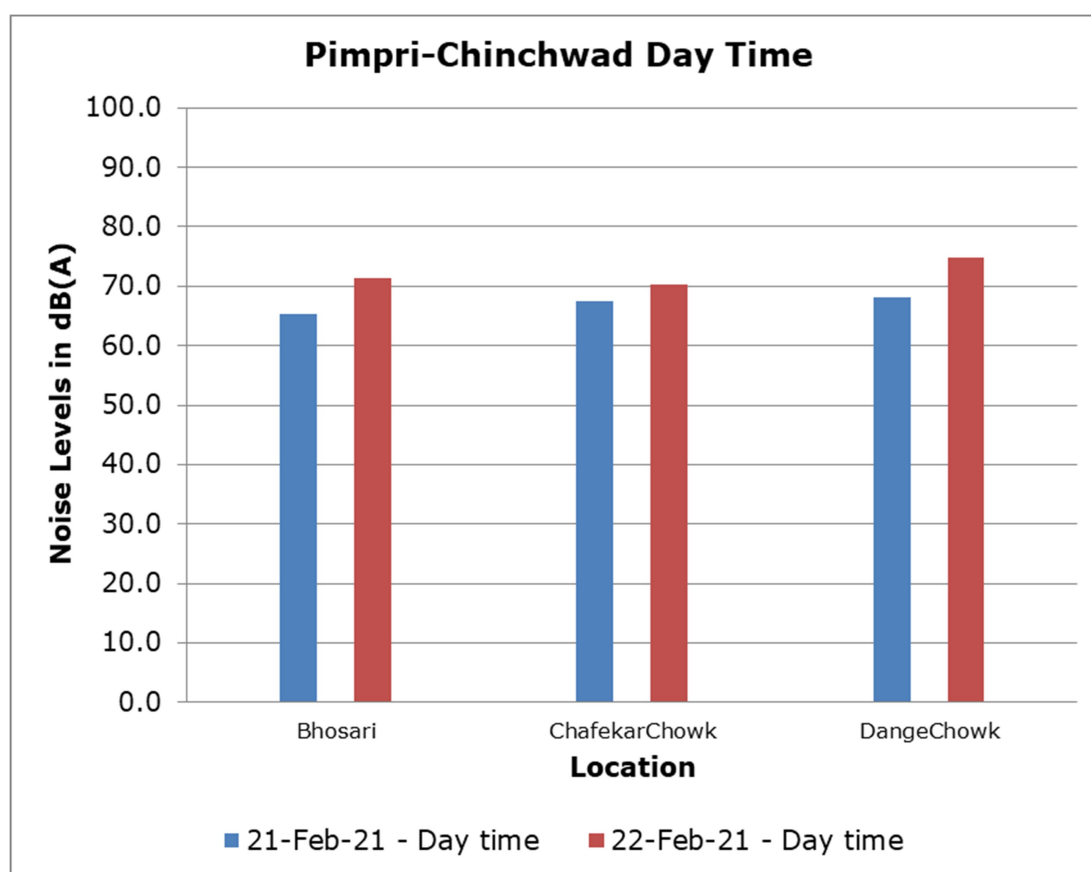
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Chafekar Chowk | 21.02.2021 | 67.4 | 58.3 | 72.6 | 71.4 | 66.3 | 60.7 |
| Dange Chowk | 21.02.2021 | 68.2 | 61.3 | 71.4 | 71.3 | 67.4 | 62.0 |
| Bhosari | 21.02.2021 | 65.4 | 56.3 | 69.1 | 68.4 | 64.2 | 61.7 |

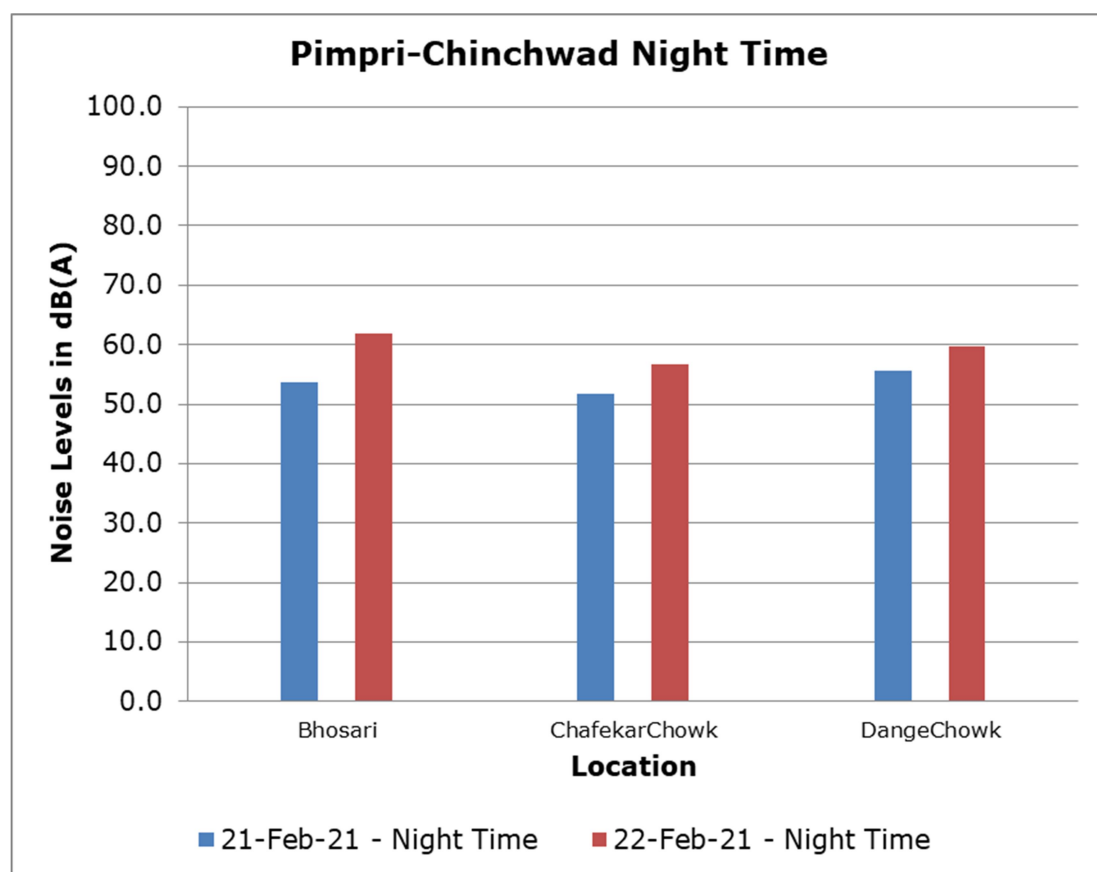
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|----------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Chafekar Chowk | 21.02.2021 | 51.7 | 42.8 | 58.4 | 55.5 | 46.2 | 43.4 |
| Dange Chowk | 21.02.2021 | 55.7 | 44.7 | 62.1 | 59.9 | 49.0 | 44.8 |
| Bhosari | 21.02.2021 | 53.6 | 42.4 | 58.7 | 58.6 | 47.8 | 43.2 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Chafekar Chowk | 22.02.2021 | 70.3 | 59.1 | 74.9 | 73.9 | 69.6 | 61.9 |
| Dange Chowk | 22.02.2021 | 74.8 | 62.4 | 79.2 | 78.7 | 74.0 | 65.3 |
| Bhosari | 22.02.2021 | 71.4 | 61.3 | 76.4 | 74.5 | 69.4 | 63.5 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|----------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Chafekar Chowk | 22.02.2021 | 56.6 | 44.7 | 62.3 | 60.5 | 48.5 | 45.5 |
| Dange Chowk | 22.02.2021 | 59.7 | 45.2 | 67.4 | 61.7 | 51.0 | 45.9 |
| Bhosari | 22.02.2021 | 61.8 | 41.3 | 69.4 | 64.4 | 51.7 | 43.0 |

Chart 4.22: Noise Levels in Pimpri-Chinchwad





23. Parbhani

The highest noise level in Parbhani on 21st and 22nd February, the highest noise level during day time was observed at Railway Station Court with 56.4 dB(A) and at Civil Hospital with 59.4 dB(A). During the night time on both days was observed near Civil hospital with 45 dB(A) and Shaniwar Bazar with 47.5 dB(A) respectively.

Table 4.23: Noise Levels in Parbhani

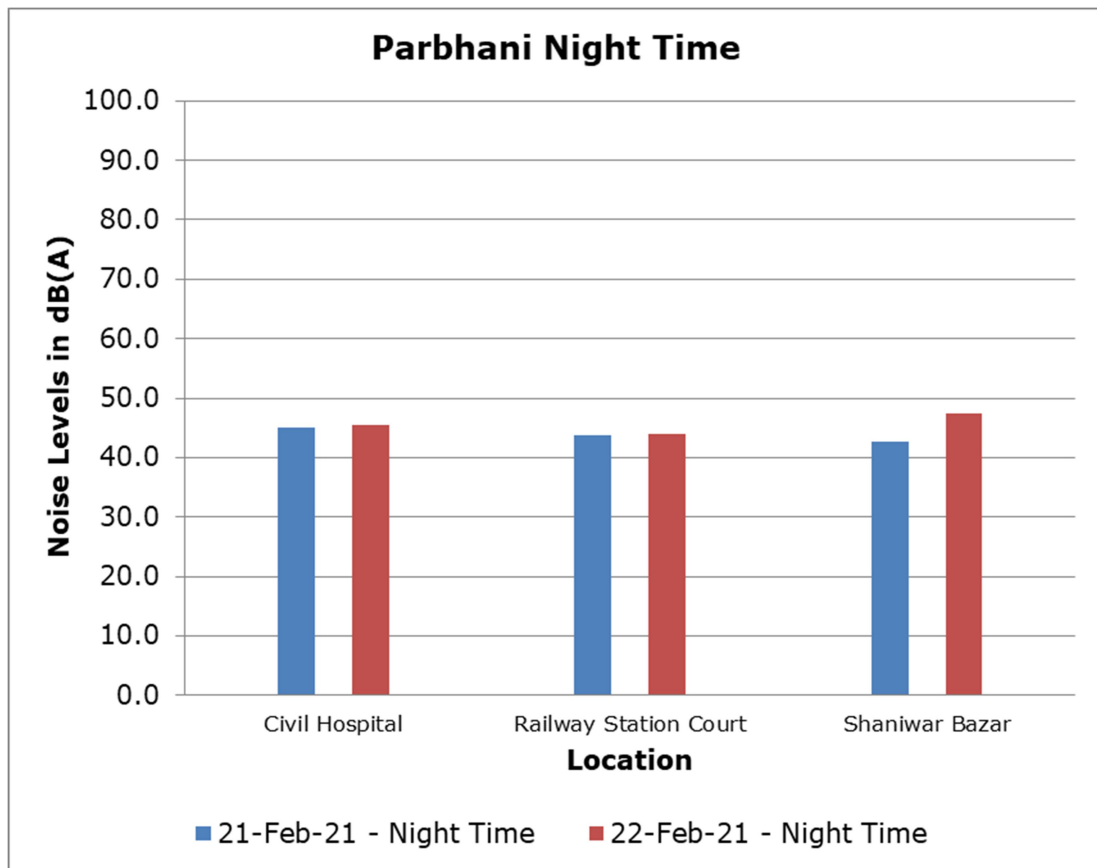
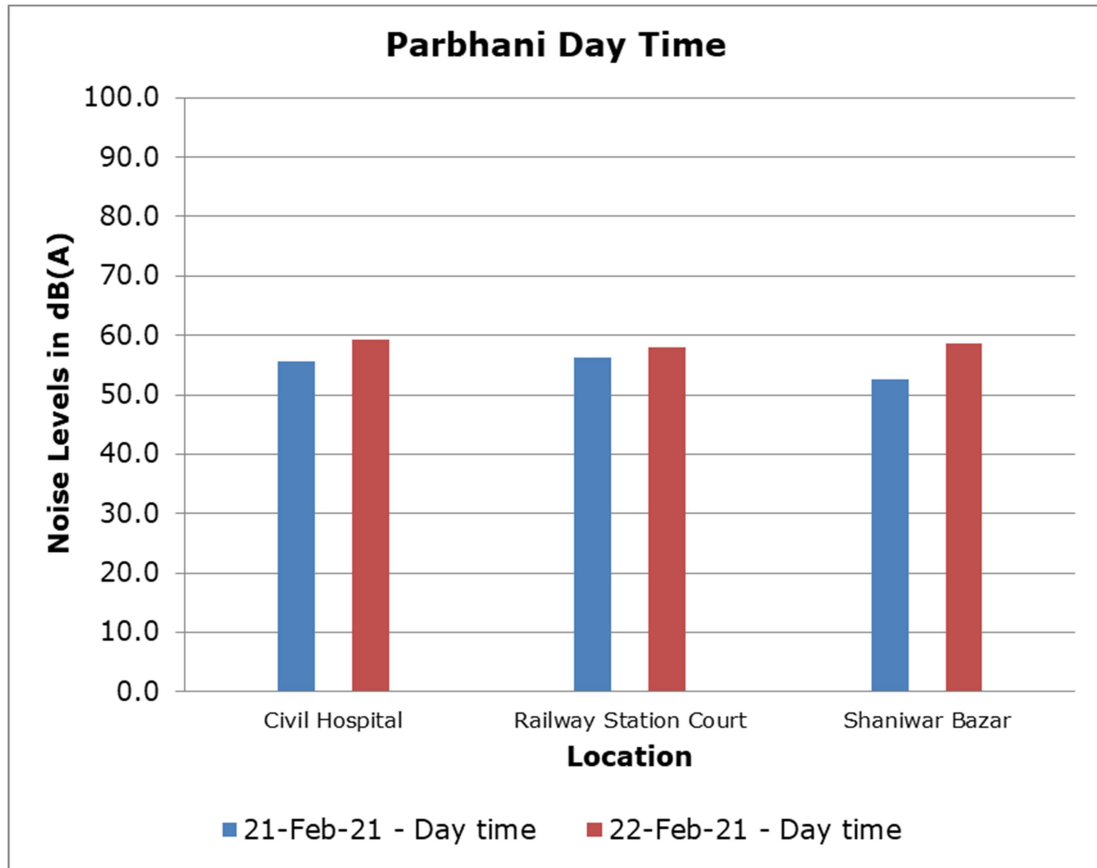
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-----------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shaniwar Bazar | 21.02.2021 | 52.6 | 47.0 | 57.0 | 55.0 | 51.5 | 49.0 |
| Railway Station Court | 21.02.2021 | 56.4 | 50.0 | 62.0 | 60.0 | 55.0 | 51.5 |
| Civil Hospital | 21.02.2021 | 55.5 | 49.0 | 60.0 | 59.0 | 54.5 | 50.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|-----------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shaniwar Bazar | 21.02.2021 | 42.6 | 35.0 | 48.0 | 45.2 | 41.0 | 35.7 |
| Railway Station Court | 21.02.2021 | 43.7 | 37.0 | 49.0 | 46.9 | 41.0 | 37.7 |
| Civil Hospital | 21.02.2021 | 45.0 | 36.0 | 50.0 | 47.9 | 43.5 | 38.1 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|-----------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shaniwar Bazar | 22.02.2021 | 58.7 | 54.0 | 62.0 | 60.5 | 58.5 | 55.5 |
| Railway Station Court | 22.02.2021 | 58.1 | 53.0 | 60.0 | 60.0 | 58.0 | 55.0 |
| Civil Hospital | 22.02.2021 | 59.4 | 52.0 | 63.0 | 62.0 | 59.5 | 53.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|-----------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shaniwar Bazar | 22.02.2021 | 47.5 | 41.0 | 52.0 | 50.6 | 45.5 | 41.7 |
| Railway Station Court | 22.02.2021 | 43.9 | 37.0 | 47.0 | 47.0 | 43.0 | 39.8 |
| Civil Hospital | 22.02.2021 | 45.5 | 38.0 | 50.0 | 48.6 | 43.5 | 40.1 |

Chart 4.23: Noise Levels in Parbhani



24. Latur

At latur also 3 locations was monitored. On 21st February the highest noise level during day time and night time was observed at Civil Hospital. On 22nd February the highest noise level both during day time and night time was observed at Shahu College.

Table 4.24: Noise Levels in Latur

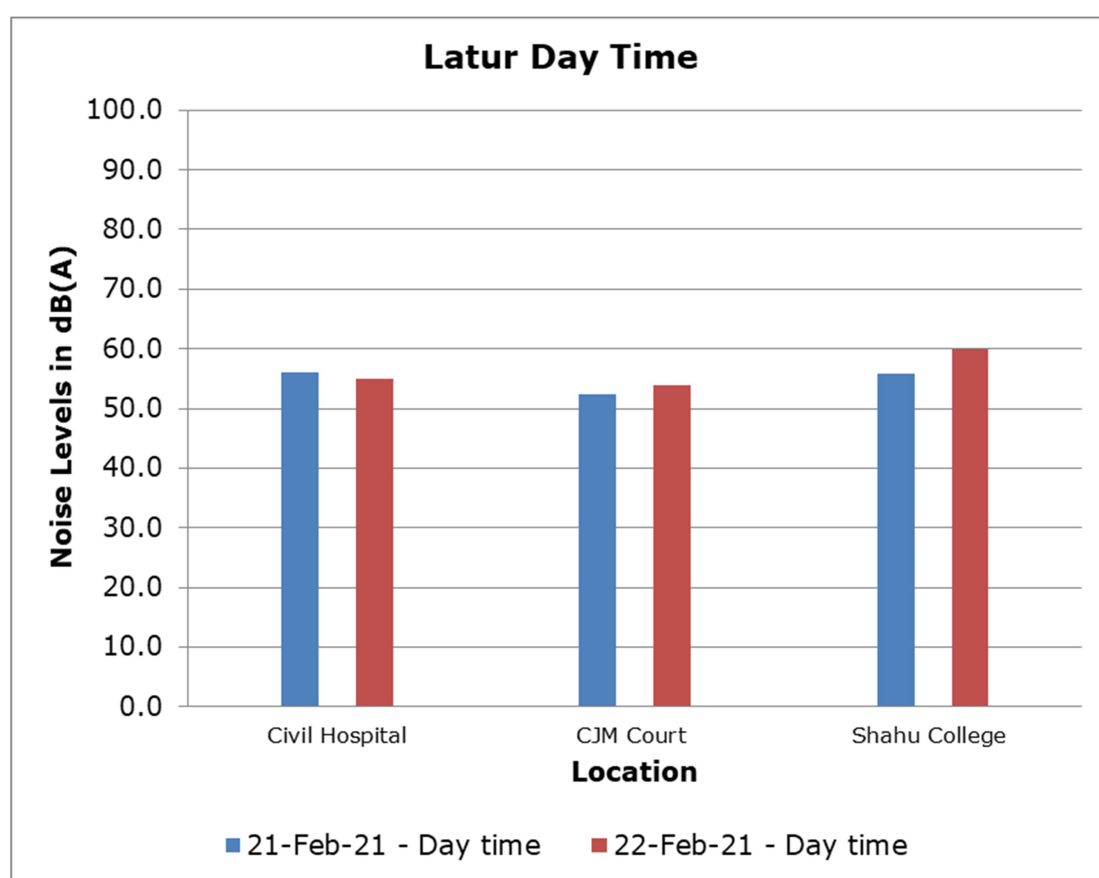
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shahu College | 21.02.2021 | 55.8 | 47.0 | 60.0 | 59.5 | 54.5 | 48.5 |
| Civil Hospital | 21.02.2021 | 56.1 | 48.0 | 60.0 | 59.5 | 55.0 | 50.5 |
| CJM Court | 21.02.2021 | 52.3 | 46.0 | 57.0 | 54.5 | 51.5 | 48.5 |

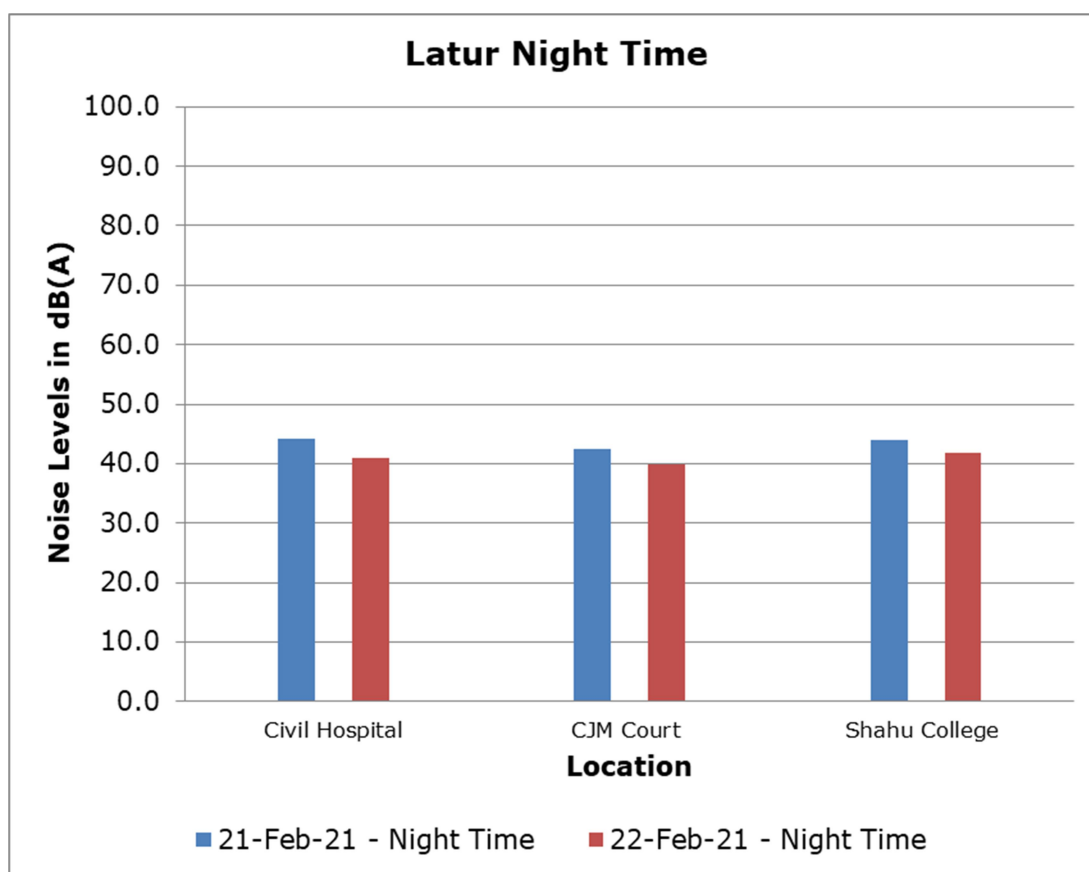
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|----------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shahu College | 21.02.2021 | 44.0 | 38.0 | 48.0 | 47.3 | 40.5 | 38.7 |
| Civil Hospital | 21.02.2021 | 44.2 | 37.0 | 49.0 | 47.6 | 40.5 | 37.0 |
| CJM Court | 21.02.2021 | 42.5 | 36.0 | 46.0 | 45.3 | 42.0 | 36.7 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|----------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Shahu College | 22.02.2021 | 59.9 | 50.0 | 64.0 | 63.0 | 58.5 | 53.0 |
| Civil Hospital | 22.02.2021 | 55.1 | 49.0 | 59.0 | 57.0 | 55.0 | 52.0 |
| CJM Court | 22.02.2021 | 53.9 | 48.0 | 58.0 | 56.5 | 53.5 | 50.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|----------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Shahu College | 22.02.2021 | 41.8 | 38.0 | 45.0 | 44.3 | 41.0 | 38.7 |
| Civil Hospital | 22.02.2021 | 41.0 | 36.0 | 46.0 | 42.5 | 40.0 | 36.7 |
| CJM Court | 22.02.2021 | 39.9 | 36.0 | 44.0 | 41.9 | 39.0 | 36.7 |

Chart 4.24: Noise Levels in Latur





25. Akola

In Akola also three location was monitored. On both 21st and 22nd February, all the high noise levels were observed at City Kotawali Chowk near police station.

Table 4.25: Noise Levels in Akola

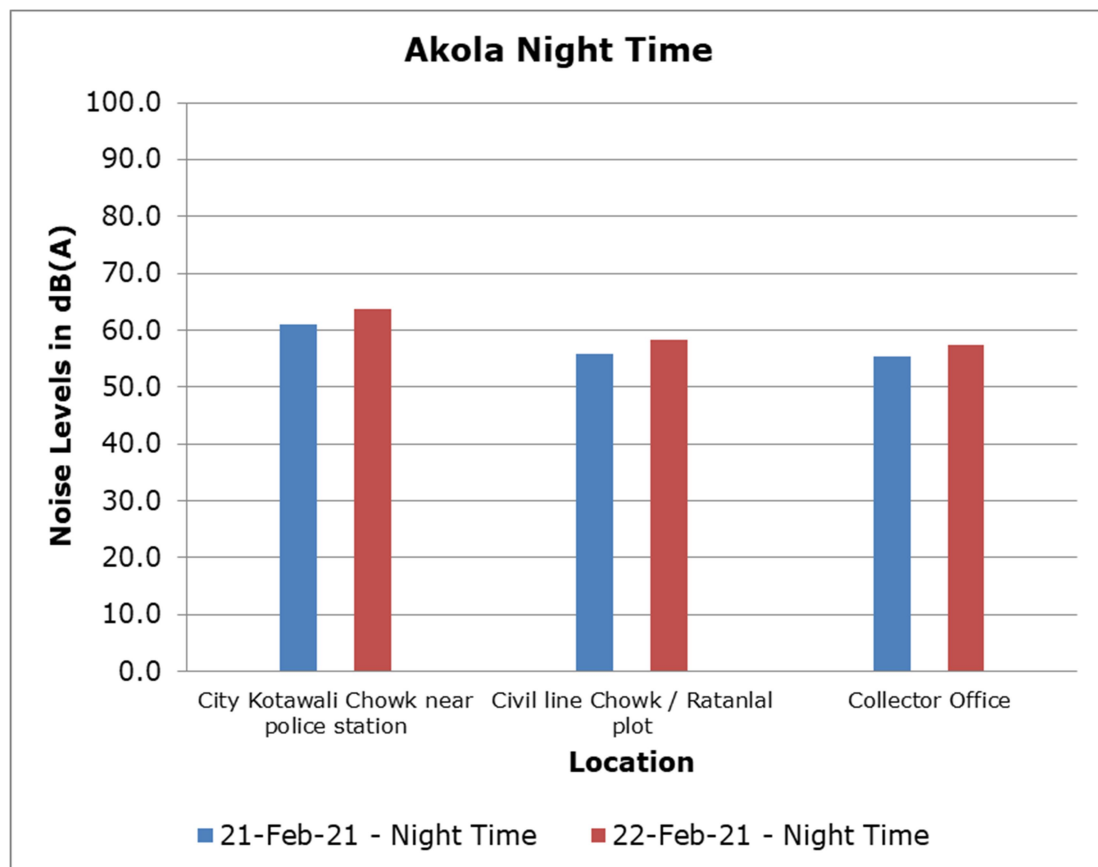
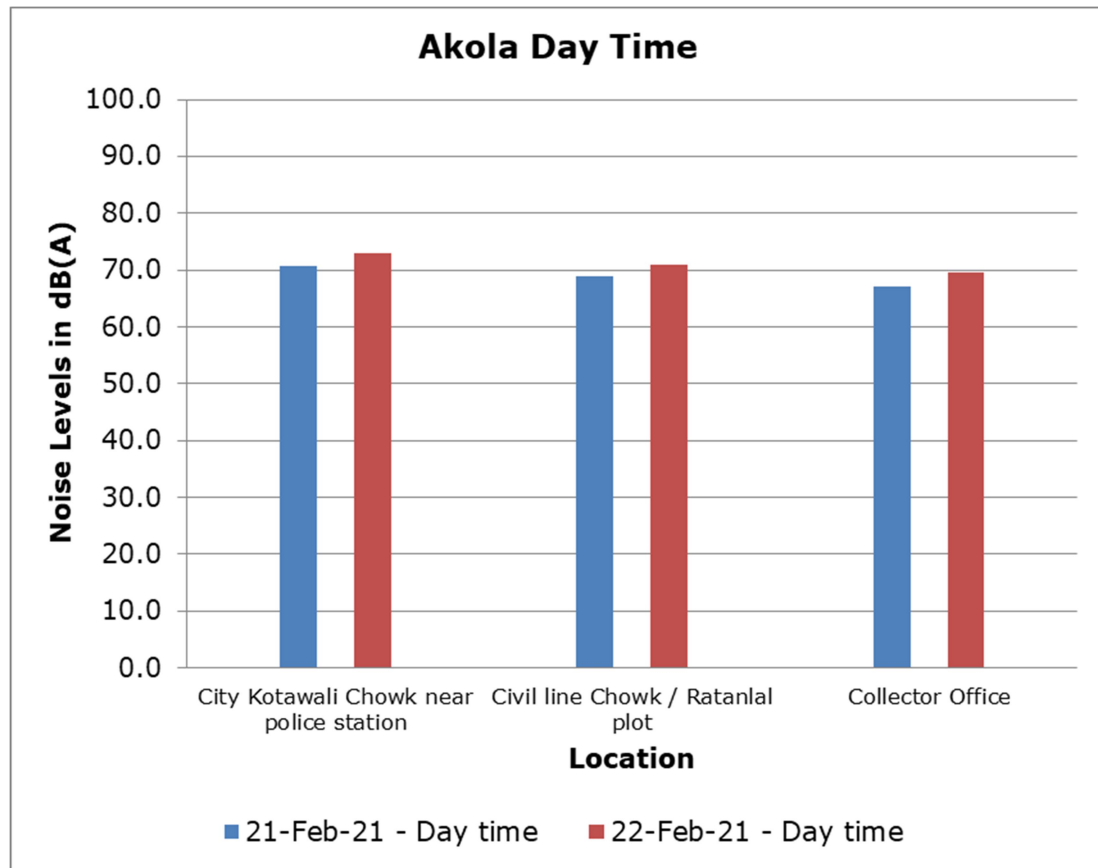
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Collector Office | 21.02.2021 | 67.2 | 52.7 | 70.5 | 70.1 | 67.3 | 56.8 |
| Civil line Chowk | 21.02.2021 | 68.8 | 55.3 | 71.6 | 71.1 | 69.5 | 59.6 |
| City Kotawali Chowk | 21.02.2021 | 70.6 | 60.0 | 73.6 | 72.9 | 70.9 | 61.7 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Collector Office | 21.02.2021 | 55.4 | 44.9 | 60.2 | 59.1 | 51.8 | 45.1 |
| Civil line Chowk | 21.02.2021 | 55.9 | 48.1 | 61.4 | 59.0 | 52.4 | 49.3 |
| City Kotawali Chowk | 21.02.2021 | 61.0 | 45.5 | 66.5 | 64.9 | 54.9 | 48.4 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---------------------|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Collector Office | 22.02.2021 | 69.5 | 54.0 | 72.6 | 72.3 | 69.9 | 59.0 |
| Civil line Chowk | 22.02.2021 | 70.9 | 57.3 | 73.6 | 73.1 | 71.6 | 61.6 |
| City Kotawali Chowk | 22.02.2021 | 73.0 | 62.4 | 75.9 | 75.2 | 73.2 | 64.3 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|---------------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Collector Office | 22.02.2021 | 57.4 | 45.4 | 62.2 | 61.1 | 53.7 | 48.9 |
| Civil line Chowk | 22.02.2021 | 58.4 | 50.1 | 64.4 | 61.3 | 54.5 | 51.3 |
| City Kotawali Chowk | 22.02.2021 | 63.7 | 46.5 | 69.6 | 67.2 | 58.9 | 50.1 |

Chart 4.25: Noise Levels in Akola



26. Solapur

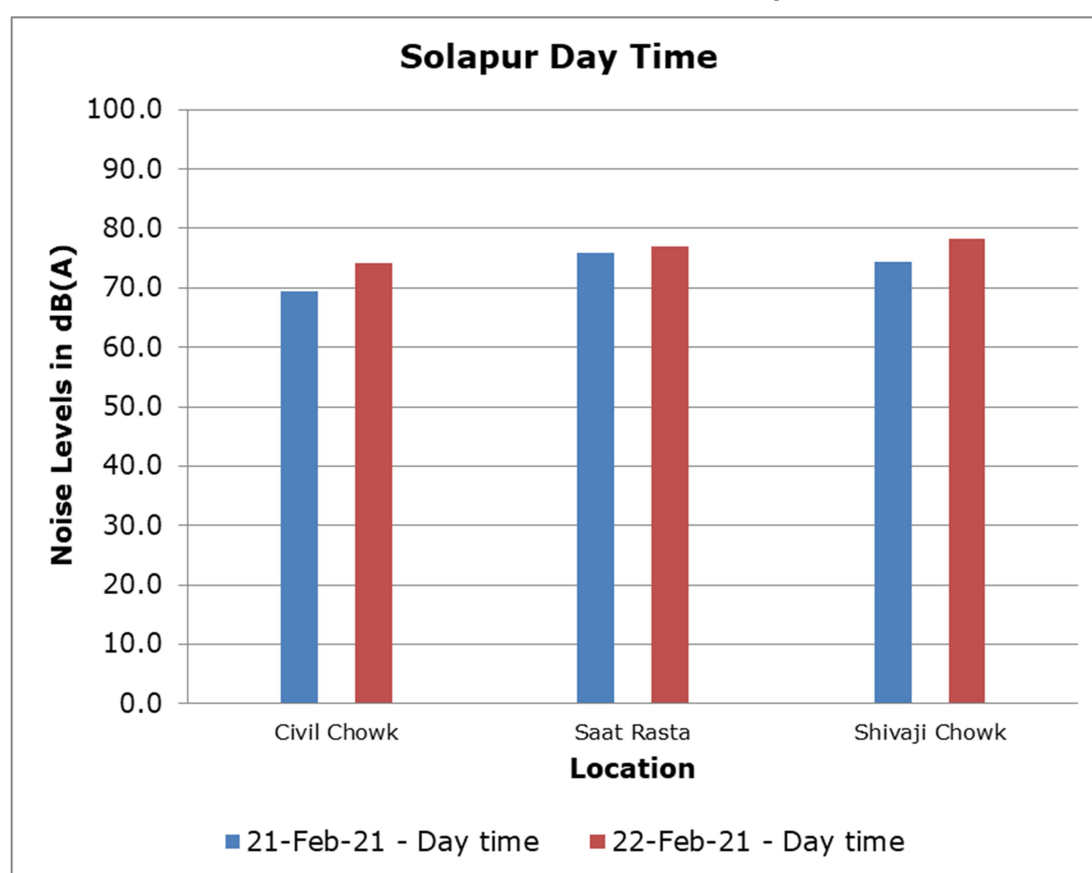
In Solapur, three location was monitored for noise level. On 21st and 22nd February, the highest noise level during day time was observed at Saat Rastawith 75.8 dB(A) and at Shivaji Chowk with 78.4 dB(A) respectively. During night time the highest noise level were observed at Shivaji Chowkwith 59 dB(A) and at Saat Rasta with 71.7 dB(A) respectively.

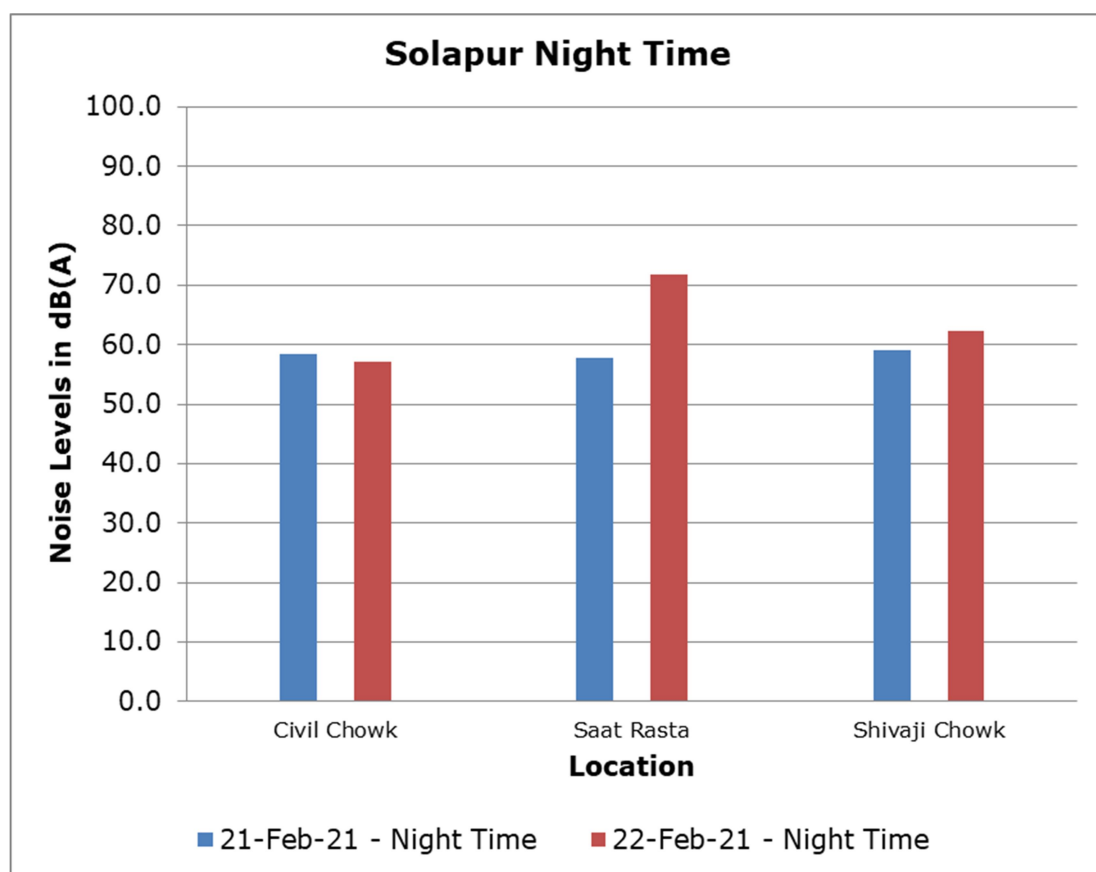
Table 4.26: Noise Levels in Solapur

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--------------|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Balives | 21.02.2021 | 74.4 | 58.7 | 78.5 | 78.0 | 73.1 | 64.7 |
| Bijapur Road | 21.02.2021 | 69.5 | 55.0 | 75.3 | 72.3 | 67.0 | 58.3 |
| Ashok Chowk | 21.02.2021 | 75.8 | 56.2 | 80.7 | 79.3 | 74.6 | 61.0 |
| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Balives | 21.02.2021 | 59.0 | 45.9 | 66.3 | 62.8 | 50.8 | 45.9 |
| Bijapur Road | 21.02.2021 | 58.5 | 46.7 | 63.8 | 63.7 | 51.3 | 46.7 |
| Ashok Chowk | 21.02.2021 | 57.7 | 45.5 | 63.3 | 61.7 | 53.5 | 46.4 |
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Balives | 22.02.2021 | 78.4 | 54.0 | 82.4 | 81.6 | 78.5 | 61.8 |
| Bijapur Road | 22.02.2021 | 74.1 | 56.6 | 78.3 | 78.0 | 73.4 | 58.0 |
| Ashok Chowk | 22.02.2021 | 77.1 | 54.3 | 84.6 | 81.6 | 71.1 | 58.3 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--------------|------------|---------------------------------------|-----------|-----------|----------|----------|----------|
| | | L_{eq} | L_{max} | L_{min} | L_{10} | L_{50} | L_{90} |
| Balives | 22.02.2021 | 62.3 | 47.5 | 69.2 | 66.1 | 56.9 | 51.3 |
| Bijapur Road | 22.02.2021 | 57.2 | 45.6 | 63.5 | 60.5 | 51.0 | 46.2 |
| Ashok Chowk | 22.02.2021 | 71.7 | 50.3 | 80.2 | 71.9 | 60.1 | 50.8 |

Chart 4.26: Noise Levels in Solapur





27. Panvel

Three locations were monitored from Panvel Municipal Corporation. On 21st and 22nd February, the highest noise level during day time was observed at Khanda Colony with 74 dB(A) and at Utsav Chowk, Kharghar with 75 dB(A). During night time on both days, the highest noise level was observed at Utsav Chowk, Kharghar.

Table 4.27: Noise Levels in Panvel

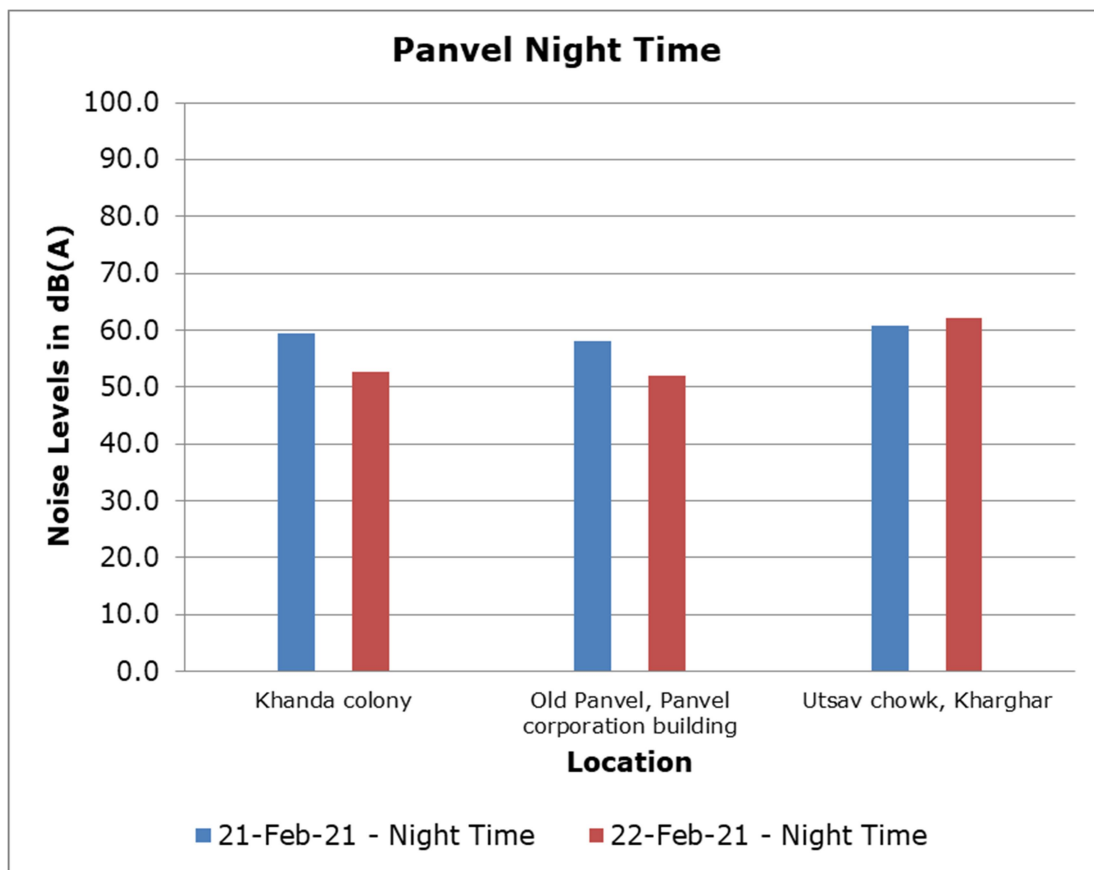
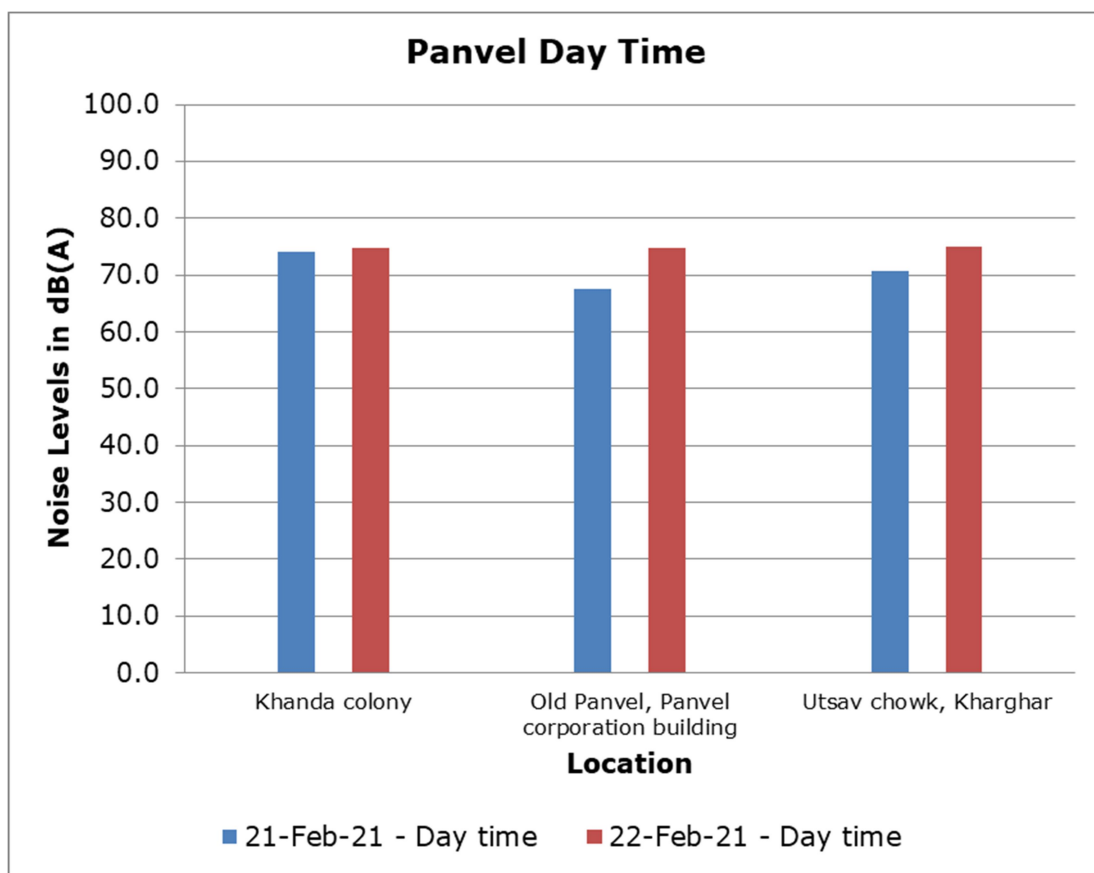
| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|---|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Old Panvel, Panvel corporation building | 21.02.2021 | 67.5 | 62.2 | 73.2 | 70.8 | 65.2 | 62.6 |
| Khanda colony | 21.02.2021 | 74.0 | 67.1 | 78.2 | 77.1 | 73.1 | 70.3 |
| Utsav chowk, Kharghar | 21.02.2021 | 70.8 | 59.8 | 77.6 | 75.0 | 63.8 | 60.0 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Old Panvel, Panvel corporation building | 21.02.2021 | 58.1 | 43.5 | 64.1 | 62.4 | 54.8 | 45.2 |
| Khanda colony | 21.02.2021 | 59.5 | 54.3 | 62.3 | 62.3 | 58.6 | 55.8 |
| Utsav chowk, Kharghar | 21.02.2021 | 60.7 | 45.1 | 68.7 | 63.1 | 52.8 | 45.6 |

| Location | Date | Day Time (6AM-10PM) values in dB(A) | | | | | |
|--|------------|-------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Old Panvel, Panvel corporation building | 22.02.2021 | 74.8 | 52.7 | 80.4 | 79.0 | 73.1 | 64.6 |
| Khanda colony | 22.02.2021 | 74.8 | 65.3 | 80.5 | 79.6 | 70.5 | 67.7 |
| Utsav chowk, Kharghar | 22.02.2021 | 75.0 | 58.9 | 82.1 | 80.4 | 68.5 | 60.3 |

| Location | Date | Night Time (10PM-6AM) values in dB(A) | | | | | |
|--|------------|---------------------------------------|------------------|------------------|-----------------|-----------------|-----------------|
| | | L _{eq} | L _{max} | L _{min} | L ₁₀ | L ₅₀ | L ₉₀ |
| Old Panvel, Panvel corporation building | 22.02.2021 | 52.1 | 38.1 | 58.0 | 55.8 | 49.3 | 38.2 |
| Khanda colony | 22.02.2021 | 52.7 | 48.6 | 57.6 | 54.6 | 51.1 | 48.7 |
| Utsav chowk, Kharghar | 22.02.2021 | 62.1 | 43.1 | 70.5 | 63.6 | 51.1 | 43.9 |

Chart 4.27: Noise Levels in Panvel



Conclusion

Maharashtra Pollution Control Board have carried out Noise monitoring at 104 locations from 27 Municipal Corporation of Maharashtra for 2 days period including one working and one non-working day i.e. on 21st (Non-working day) and 22nd (Working day) February 2021 for 24 hours for each location which comprise of residential, commercial and silence zone.

The study reveals comparing the laid down noise norms for respective zones (Industrial, Commercial, Residential or Silence) the noise levels are exceeded at many locations. The ever-increasing use of automobiles is a major cause of this pollution. People honk unnecessarily in the traffic and listen to loud music on the way which creates high levels of noise.

Noise pollution is the most common problem faced by humans, thanks to various reasons that pushes many people to face health issues. Following standard measures can be helpful in the long term for both humans and the environment. The ultimate aim is to bring down the noise pollution for a better environment.

There are many measures taken by the government and people to reduce the effect of noise pollution. Soundproof walls and windows are now being installed in many houses. Many flyovers in cities have soundproof walls to bring down the noise level to a nearby resident from vehicles running. As a responsible citizen, we must contribute towards bringing down the noise pollution. Needless honking should be stopped and officials should fine people doing it heavily. Hospitals and schools are build in silent zone.

There should be rules to avoid noise in residential and sensitive areas. It is important for people to be aware of health Hazard from noise pollution. One of the best ways to bring down the noise pollution is by planting more and more plants. This process of planting trees can help to reduce the travelling of noise from one place to another.

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 levelmeter 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 (P_r) of 20 μ Pa. Thus the sound pressure level in dB = $20 \log_{10} P/P_r$.

ANNEXURE I

Annexure I - Detailed list of locations

| Sr. No. | City | Location name (details) |
|---------|-------------|--|
| 1. | Mumbai | Backside of High Court |
| | | Mumbadevi Temple |
| | | Borivali National Park |
| | | Antop Hill |
| | | Shivaji Park, Dadar |
| | | Santacruz Airport |
| | | Ghatkopar (W) |
| | | Vashi Naka, Chembur |
| | | Goregaon (E) |
| | | Charkop, Kandivali |
| | | Sion - Sion Circle |
| | | Hindu Colony - Dadar Hindu Colony |
| | | Matunga - Gandhi Market |
| | | Kamathipura - Kamathipura |
| | | Malabar Hills - Sahyadri Guest House/ 3 Batti/ Bangaunga |
| 2. | Navi Mumbai | Mahape Shil Road, MIDC Mahape |
| | | APMC Market Vashi |
| | | Ryan International School, Uran Phata, Nerul |

| Sr. No. | City | Location name (details) |
|---------|------------|-------------------------------------|
| 3. | Thane | Main Road- Gaondevi Mandir, Naupada |
| | | Tembhi Naka |
| | | Ghokhale Road |
| | | Pokharan - Vartak Nagar |
| | | Wagle Estate |
| 4. | Pune | Nucleus Mall |
| | | Pune University |
| | | Swargate |
| | | Hadpsar |
| | | Visharantwadi |
| 5. | Nashik | Dwarka Circle |
| | | Pandit Colony Near NMC |
| | | Pavan Nagar CIDCO |
| | | Bytco |
| | | Udyog Bhavan, Satpur |
| 6. | Aurangabad | Ghati Hospital |
| | | Nirala Bazaar |
| | | CIDCO N-9 |

| Sr. No. | City | Location name (details) |
|---------|-----------|----------------------------|
| 7. | Nagpur | Govt. Medical College |
| | | Sitabardi Police Station |
| | | Shivaji Nagar |
| | | Mahal |
| | | Sadar |
| 8. | Kalyan | Katemanivali |
| | | Birla College |
| | | Bail Bazar |
| 9. | Amravathi | Ervin Hospital Square |
| | | Budhwara |
| | | Rajkamal Chowk |
| 10. | Jalgaon | Near Civil Hospital |
| | | Shivaji Chowk (Near Court) |
| | | Shashtri Tower Chowk |
| 11. | Kolhapur | Rajarampuri chowk |
| | | Papachi Tickti |
| | | Gokhale College |
| | | Dabhorakar Corner |

| Sr. No. | City | Location name (details) |
|----------------|--------------------------|--------------------------------------|
| 12. | Sangli | Rajwada Chowk |
| | | Visharambaug |
| | | Miraj Market |
| 13. | Mira-Bhayander | Bhakti Vedant Hospital, Tenkar pada |
| | | Golden police Chawki |
| | | Shivaji Chak Kashi meera |
| 14. | Vasai-Virar | Range office, Satwali, Vasai East |
| | | Valiv phata, Vasai East |
| | | N.B. Estate, Virar West |
| 15. | Ulhasnagar | Shivaji Chowk No. 3 - Near the Chowk |
| | | Camp No. 5 Bus Stop - Bus Stop |
| | | Camp No. 1 Gol Maidan - Gol Maidan |
| 16. | Bhiwandi-Nizampur | Dhamankar Naka |
| | | Indira Gandhi Memorial Hospital |
| | | Shelar Near Nadi naka |
| 17. | Chandrapur | Gandhi Chowk |
| | | Jatpura Gate |
| | | Warora Naka |

| Sr. No. | City | Location name (details) |
|---------|------------------|--|
| 18. | Nanded-Waghala | Dr. Shankarao Chavan Govt. Medical College & Hospital Vishnupuri |
| | | District Court Station Road |
| | | Govt. Polytechnic College |
| 19. | Ahmednagar | Kotala Chawk |
| | | Chitale Road |
| | | Old Bus Stand |
| 20. | Dhule | Agrasen Chawk |
| | | Fulwala Chawk |
| | | Santoshi Mata Chawk |
| 21. | Malegaon | Mosampul |
| | | Central Bus Stand |
| | | Malegaon Camp |
| 22. | Pimpri-Chinchwad | Chafekar Chowk |
| | | Dange Chowk |
| | | Bhosari |
| 23. | Parbhani | Shaniwar Bazar |
| | | Railway Station Court |
| | | Civil Hospital |

| Sr. No. | City | Location name (details) |
|---------|---------|---|
| 24. | Latur | Shahu College |
| | | Civil Hospital |
| | | CJM Court |
| 25. | Akola | Collector Office |
| | | Civil line Chawk / Ratanlal plot |
| | | City Kotawali Chawk near police station |
| 26. | Solapur | Balives |
| | | Bijapur Road |
| | | Ashok Chowk |
| 27. | Panvel | Old Panvel, Panvel corporation building |
| | | Khanda colony |
| | | Utsav chowk, Kharghar |

ANNEXURE II

Annexure II - Noise Pollution (R & C) Rules, 2000 amendment dt. 21st April 2009

ध्वनी प्रदूषण (नियंत्रण व नियमन) नियम, २०००
ची प्रभावीपणे अंमलबजावणी करण्यासाठी
प्राधिकरणाची नियुक्ती करण्याबाबत

महाराष्ट्र शासन

पर्यावरण विभाग, मंत्रालय,

शासन निर्णय क्रमांक : ध्वनीप्र-२००९/प्र.क्र.९५/तांक-१

नविन प्रशासन भवन, १५ वा मजला, मादाम कामा रोड, मुंबई - ४०० ०३२

दिनांक: २१ एप्रिल, २००९

- वाचा - १) शासन निर्णय क्रमांक : ध्वनीप्र-२०००/प्र.क्र.२४/तांक ३, दिनांक १६ ऑगस्ट, २००० आणि दिनांक १५ जून, २००१
- २) मे. उच्च न्यायालयाच्या मुंबई खंडपीठामध्ये दाखल करण्यात आलेल्या सार्वजनिक हिताच्या याचिका क्र. (१) २०५३/२००३, (२) ७४/२००७, (३) ८५/२००७ आणि (४) १/२००९ मधील दिनांक २६/२/२००९ चे आदेश

प्रस्तावना :-

पर्यावरण विभाग, शासन निर्णय क्र. एन.पी./२०००/२४/क्र.३, दिनांक १६/८/२००० व दिनांक १५/०६/२००१ रोजी ध्वनी प्रदूषण (नियंत्रण व नियमन) नियम, २००० च्या २ (क) नुसार, राज्यातील पोलीस आयुक्त असलेल्या शहरामध्ये पोलीस उप आयुक्त व इतर ठिकाणी जिल्हा पोलीस अधिक्षक यांना एक सदस्य प्राधिकरण म्हणून ध्वनी प्रदूषण नियमाची अंमलबजावणी करण्यासाठी नियुक्ती करण्यात आली आहे.

मा. उच्च न्यायालय, मुंबई खंडपीठाने वरील याचिकांमध्ये महाराष्ट्र शासन व इतर विभागांनी ध्वनी प्रदूषण (नियंत्रण व नियमन) नियम, २००० ची प्रभावी अंमलबजावणी करण्याकरीता दिनांक २६/२/२००९ रोजी ठराविक निर्देश दिलेले आहेत. त्यानुसार स्थानिक स्वराज्य संस्थांनी शहरी भागात शांतता झोन जाहीर करणे आवश्यक आहे.

शासन निर्णय :-

१) मा. उच्च न्यायालयाच्या आदेशानुसार तसेच ध्वनी प्रदूषण (नियंत्रण व नियमन) नियम, २००० च्या कलम ३ (५) नुसार स्थानिक स्वराज्य संस्थांनी शहरी भागात शांतता झोन त्वरीत जाहीर करून योग्य ते आदेश काढावेत. तसेच शहरात शांतता झोनचे फलक लावून आदेशाची प्रभावी अंमलबजावणी करण्यासाठी योग्य ती प्रसिध्दी करावी.

- १) शैक्षणिक संस्थांच्या सभोवताली १०० मीटर क्षेत्र
- २) सर्व न्यायालयाच्या सभोवतीली १०० मीटर क्षेत्र
- ३) रुग्णालयाच्या सभोवताली १०० मीटर क्षेत्र

२) ध्वनी प्रदूषणाची वाढती पातळी व निरनिराळे प्रदूषण स्रोत विचारात घेता, शासनाच्या निरनिराळ्या विभागांनी सद्यःस्थितीत ते राबवीत असलेल्या नियमाद्वारे ध्वनी प्रदूषण नियंत्रण व नियमनाची अंमलबजावणी करावी. त्याकरिता परिशिष्ट १ मध्ये नमूद केल्याप्रमाणे, शासनाच्या संबंधित विभागांच्या अधिपत्याखालील संस्थांच्या अधिकाऱ्यांना पदनाम प्राधिकरण म्हणून जाहीर करण्यात येत आहे. याबाबत संबंधीत

रौटा/इच-०१००[४००-४-२००९]-१

विभागांनी स्वतंत्र आदेश निर्गमित करावेत. सदर प्राधिकरण, ते राबवित असलेल्या नियमांच्या तरतुदीनुसार तसेर ध्वनी प्रदूषण (नियंत्रण व नियमन) नियम, २००० च्या तरतुदीनुसार ध्वनी प्रदूषण नियंत्रण व नियमनाची कार्यवाही करण्यास सक्षम असेल.

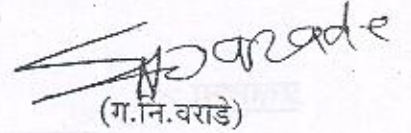
A.

३) ध्वनी प्रदूषण करणारे उपकरणे / स्रोत जसे D.G. Sets (15-500 KVA); Coal Washeries ; Fire Crackers Generator Sets with Diesel (upto 1000 KVA) manufactured on or after 1st July, 2003 ; Vehicles at manufacturing stage from the year, 2003 and 1st April, 2005 respectively as well as Noise Limits for Automobiles and Domestic appliances and construction equipments at the manufacturing stage laid down under the provisions of the Environment (Protection) Act, 1986 and Rules made there under इत्यादींची, सभोवतालच्या हवेतील ध्वनी प्रदूषण गुणवत्तेच्या विहित मर्यादा परिशिष्ट २ मध्ये नमूद केल्याप्रमाणे असेल.

४) या शासन निर्णयान्वये, पर्यावरण विभागाने यापूर्वी दिनांक १६ ऑगस्ट, २००० आणि दिनांक १५ जून, २००१ रोजी या विषयाबाबत निर्गमित केलेला शासन निर्णय खारीज करण्यात येत आहे. हा शासन निर्णय निर्गमित झाल्याच्या दिनांकापासून लागू राहील.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने.

B.


(ग.नि.वराडे)

संचालक (पर्यावरण)

प्रत माहितीसाठी :-

मा.मुख्यमंत्र्यांचे प्रधान सचिव

मा.उपमुख्यमंत्र्यांचे प्रधान सचिव

मा. मुख्यसचिव

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मा. राज्यमंत्री (पर्यावरण), यांचे खाजगी सचिव,

सर्व मा. मंत्री / राज्यमंत्री यांचे खाजगी सचिव

सर्व जिल्हाधिकारी

सर्व पोलीस आयुक्त / उप आयुक्त

सर्व जिल्हा पोलीस अधिक्षक / उप अधिक्षक

पर्यावरण विभाग सर्व अधिकारी / कार्यासन / निवडनस्ती - तांक १

परिशिष्ट - १

एच-०१०० -१३

ध्वनी प्रदूषण व नियमन व नियंत्रणाची अंमलबजावणी करण्यासाठी शासनाच्या अधिपत्याखाली असलेल्या संस्थांमधील संबंधित अधिका-याची पदनाम प्राधिकरण म्हणून नियुक्ती

| Sr. No | Officer /Agency | Concerned Department | Duties |
|--------|--|--|--|
| 1. | District Magistrate, Sub-Divisional Magistrate, | Revenue | Corresponding Rules for the enforcement of the Noise Pollution Control measures within their respective jurisdiction. |
| 2. | Police Commissioner or any other officer not below the rank of the Deputy Superintendent of Police designated for the maintenance of Ambient Air Quality Standards, as mentioned in the Rule 2(c) of Noise Pollution(Regulation and Control) Rules, 2000. | Home | The Police Authorities will be responsible for initiating further legal actions in respect of the violations.. |
| 3. | Municipal Commissioner, Additional/Deputy Municipal Commissioner/ Chief Officer of Municipal Council/Committee Govt. of Maharashtra not below the rank of the Deputy Superintendent of Police. | Urban Development | <p>Corresponding Rules for the enforcement of noise standards laid down under the Environment (Protection) Rules, 1986 at source for construction projects, utilities for buildings (ACs, DG sets etc.), domestic appliances, development and other activities in their jurisdiction.</p> <p>The urban local bodies shall be responsible for demarcation of the silent zones as per the Noise Rules, 2000 and displaying the same adequately.</p> <p>The urban local bodies shall include an Action Plan for noise control in the Environmental Status Report submitted by them annually, including noise monitoring and noise mapping studies.</p> <p>The Local Body and Urban Development Deptt., Govt. of Maharashtra will not grant any permissions for development activities in consistent with or in conflict with the categorization of zone. In case of overlapping zones, stringent standards will prevail over in that particular area.</p> |
| 4. | Registrar /Head Master of the Educational Institutions duly approved by the concerned Government not below the rank of the Deputy Superintendent of Police | Higher & Technical Education/ School Education | Corresponding Rules for the enforcement and maintenance of the Ambient Noise Standards laid down for domestic appliances, automobiles etc. in respect of any activity in its jurisdiction. |
| 5. | Dean/Superintendent of the Government Hospitals not below the rank of the Deputy Superintendent of Police | Public Health | Corresponding Rules for the enforcement and maintenance of the Ambient Noise Standards laid down for domestic appliances, automobiles etc. in respect of any activity in its |

| | | | |
|----|---|-----------------------------|--|
| 6. | Head of M.M.R.D.A., M.S.R.D.C., C.I.D.C.O., having local jurisdiction constituted under various Laws and Public Works Department. | Urban Development | <p>jurisdiction.</p> <p>Corresponding Rules for the enforcement and maintenance of Noise Standards laid down under the Environment (Protection) Rules, 1986 at source for construction projects, utilities for buildings (ACs, DG sets etc.), domestic appliances, development and other activities in their jurisdiction</p> <p>These Developmental Authorities should include adequate noise abatement measures in their project activities such as noise barriers to the bridges and flyovers, tree plantation for roads etc.</p> |
| 7. | Member Secretary and any officer Maharashtra Pollution Control Board not below the rank of the Deputy Superintendent of Police | Environment Department | <p>(i) Monitoring of Ambient Noise Levels in case of specific requests from other authorities referred in the table and communicating the results to the respective Authorities for further necessary action at their end.</p> <p>(ii) For the enforcement of Noise Pollution Control Measures and Standards in industrial areas.</p> |
| 8. | <p>(i) Any officer from the State Transport Department / Deputy Regional Transport Officer in their respective jurisdiction not below the rank of the Deputy Superintendent of Police</p> <p>(ii) Head of Maharashtra State Road Transport Corporation or any officer/ Depot Manager not below the rank of the Deputy Superintendent of Police.</p> <p>(iii) Traffic Police Authorities not below the rank of the Deputy Superintendent of Police</p> | Home Department (Transport) | <p>Enforcement and maintenance of the Noise Standards laid down under Environment (Protection) Rules, 1986 and Motor Vehicles Act, 1939 for the new and operating vehicles within their respective jurisdiction.</p> <p>The noise levels generated by the in-use vehicles should be monitored while grant of Pollution Under Control Certificate.</p> |

परिशिष्ट- २

Schedule
(Under rule 3(1) and 4(1)) of Noise Pollution (Control and Regulation) Rules, 1999

Ambient Air Quality Standards in respect of Noise

| Area Code | Category of Area/Zone | 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 |

- i. Day time shall mean from 6.00 a.m. to 10.00 p.m.
- ii. Night time shall mean from 10.00 p.m. to 6.00 a.m.
- iii. Silence Zone is defined as an area comprising not less than 100 meters around hospitals, educational institutions and courts. The silence zones are zones which are declared as such by the competent authority.
- iv. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq : It is an energy mean of the noise level, over a specified period.

2. Standards / Guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) Sets.

(A) Noise Standards for DG sets (15-500 KVA)

The total sound power level, L_w of a DG set should be less than, $94 + 10 \log_{10} (KVA)$, dB(A), at the manufacturing stage, where, KVA is the nominal power rating of a DG set. This level should fall by 5 dB(A) every five years, till 2007, i.e. in 2002 and then in 2007

(B) Mandatory acoustic enclosure/acoustic treatment of room for stationary DG sets (5KVA and above).

Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.

The acoustic enclosure / acoustic treatment of the room should be designed for minimum 25 dB (A) Insertion Loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances, the performance may be checked for noise reduction upto actual ambient noise level, preferably in the night time). The measurement for Insertion Loss may be done at different points at 0.5 m from the acoustic enclosure/room, and then averaged.

The DG set should also be provided with proper exhaust muffler with insertion loss of minimum 25dB (A).

- A. (C) **Guidelines for the manufacturers/users of DG sets (5 KVA and above).**
01. The manufacturer should offer to the user a standard acoustic enclosure of 25 dB(A) Insertion Loss and also a suitable exhaust muffler, with Insertion Loss of 25 dB(A).
 02. The user should make efforts to bring down the noise levels due to the D.G. set, outside his premises, within the ambient noise requirements by proper siting and control measures.
 03. The manufacturer should furnish noise power levels of the unsilenced DG sets as per standards prescribed under (A).
 04. The total sound power level of a D.G. set, at the user's end, shall be within 2 dB(A) of the total sound power level of the DG set, at the manufacturing stage as prescribed under (A).
 05. Installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer.
 06. A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer, which would help to prevent noise levels of the DG set from deteriorating with use.

3. Noise Level Standards for Coal Washeries

Operational / Working Zone -- not to exceed 85 dB(A) Leq for 8 hours exposure.

The Ambient Air Quality Standards in respect of noise as notified under Environment (Protection) Rules, 1986 shall be followed at the boundary line of the coal washery.

Code of Practice of Coal Washery

Water or Water mixed chemical shall be sprayed at all strategic coal transfer points such as conveyors, loading/unloading points etc. As far as practically possible conveyors, transfer points etc. shall be provided with enclosures.

- * The crushers/pulverizers of the coal washeries shall be provided with enclosures, fitted with suitable air pollution control measures and finally emitted through a stack of minimum height of 30m, conforming particulate matter emission standards of 150 mg/Nm³ or provided with adequate water sprinkling arrangement.
- * Water sprinkling by using fine atomizer nozzles arrangement shall be provided on the coal heaps and on land around the crushers/pulverisers.
- * Area, in and around the coal washery shall be pucca either asphalted or concreted.
- * Water consumption in the coal washery shall not exceed 1.5 cubic meter per tonne of coal.
- * The efficiency of the settling ponds of the waste water treatment system of the coal washery shall not be less than 90%.
- * Green belt shall be developed along the road side, coal handling plants, residential complex, office building and all around the boundary line of the coal washery.
- * Storage bunkers, hoppers, rubber decks in chutes and centrifugal chutes shall be provided with proper rubber linings.

- * Vehicles movement in the coal washery area shall be regulated effectively to avoid traffic congestion. High pressure horn shall be prohibited. Smoke emission from heavy duty vehicle operating in the coal washeries should conform the standards prescribed under Motor Vehicle Rules, 1989.

4. Noise Standards for fire-crackers

- A.(i) The manufacturer, sale or use of fire-crackers generating noise level exceeding 125 dB(A) 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 measurement 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.

5. Noise Limits for Generator Sets run with diesel

Noise limit for diesel generator sets (upto 1000 KVA) manufactured on or after 1st July, 2003

The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity upto 1000 KVA, manufactured on or after the 1st July, 2003 shall be 75 dB(A) at 1 meter from the enclosure surface.

The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.

The implementation of noise limit for these diesel generator sets shall be regulated as given in below mentioned paragraph.

Requirement of certification

Every manufacturer of engine or every importer of engine or product must have valid certificates of Type Approval and certificates of Conformity of Production for each year, for all engine models being manufactured or for all engines or product models being imported, after the effective date with the emission limit as specified in earlier paragraph.

6. (1) Noise limits for vehicles applicable at manufacturing stage
from the year, 2003.

| Sr.No. | Type of Vehicle | Noise Limits dB(A) | Date Implementation of |
|--------|--|--------------------|-------------------------------|
| (1) | (2) | (3) | (4) |
| 1. | Two Wheeler | | 1 st January, 2003 |
| | Displacement upto 80 cm ³ | 75 | |
| | Displacement more than 80 cm ³ but upto 175 cm ³ | 77 | |
| | Displacement more than 175 cm ³ | 89 | |
| 2. | Three Wheeler | | 1 st January, 2003 |
| | Displacement upto 175 cm ³ | 77 | |
| | Displacement more than 175 cm ³ | 80 | |
| 3. | Passenger Car | 75 | 1 st January, 2003 |
| 4. | Passenger or Commercial Vehicles | | 1 st July, 2003 |
| | Gross vehicle weight upto 4 tonnes | 80 | |
| | Gross vehicle weight more than 4 tonnes but upto 12 tonnes | 83 | |
| | Gross vehicle weight more than 12 tonnes | 85 | |

(2) Noise Limits for vehicles at manufacturing stage applicable on and from 1st April, 2005

| Sr.No. | Type of vehicles | Noise Limits |
|--------|--|--------------|
| 1.0 | Two Wheelers | |
| 1.1 | Displacement upto 80 cc | 75 |
| 1.2 | Displacement more than 80 cc but upto 175 cc | 77 |
| 1.3 | Displacement more than 175 cc | 80 |
| 2.1 | Three Wheelers | |
| 2.1 | Displacement upto 175 cc | 77 |
| 2.2 | Displacement more than 175 cc | 80 |
| 3.0 | Vehicles used for the carriage of passengers and capable of having not more than nine seats, including the driver's seat | 74 |
| 4.0 | Vehicles used for the carriage of passengers having more than nine seats including the driver's seat and a maximum Gross Vehicle Weight (GVW) of more than tonnes | |
| 4.1 | With an engine power less than 150KW | 78 |
| 4.2 | With an engine power of 150 KW or above | 80 |
| 5.0 | Vehicles used for the carriage of passengers having more than nine seats including the driver's seat: Vehicle used for the carriage of goods. | |
| 5.1 | With a maximum GVW not exceeding 2 tonnes | 76 |
| 5.2 | With a maximum GVW greater than 3 tonnes but not exceeding 3.5 tonnes | 77 |
| 6.0 | Vehicles used for the transport of goods with a maximum GVW exceeding 3.5 tonnes | |
| 6.1 | With an engine power less than 75 KW | 77 |
| 6.2 | With an engine power of 75 KW or above but less than 150KW | 78 |
| 6.3 | With an engine power of 150 KW or above | 80 |

7. Noise Standards Part E:-

A. Noise limits for Automobiles (Free Field Distance at 7.5 meter in dB(A) at the manufacturing stage.

| | | |
|-----|---|----|
| (a) | Motorcycle, Scooters and Three Wheelers | 80 |
| (b) | Passenger Cars | 82 |
| (c) | Passenger or Commercial vehicles upto 4 MT | 85 |
| (d) | Passenger or Commercial vehicles above 4 MT and Upto 12 MT | 89 |
| (e) | Passenger or Commercial vehicles exceeding 12 MT | 91 |

B. Domestic appliances and construction equipments at the manufacturing stage to be achieved by 31st December, 1993.

| | | |
|-----|--|-------|
| (a) | Window Air Conditioners of 1 ton to 1.5 ton | 68 |
| (b) | Air Coolers | 60 |
| (c) | Refrigerators | 46 |
| (d) | Diesel generator of domestic purposes | 85-90 |
| (e) | Compactors (rollers), Front Loaders, Concrete Mixers, Cranes (moveable), Vibrators and Saws | 75 |
