

# **Report on Ambient Air Quality & Noise on Deepawali - 2019**



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# Deepawali Monitoring

Like every year, CPCB has planned for air quality and noise level monitoring on selected pre-Deepawali day (21.10.2019) and on Deepawali day (27.10.2019) in Delhi. Ambient Noise was monitored at 16 locations (06 manual and 10 real-time noise monitoring). Ambient Air Quality was monitored at 37 operational Real-time monitoring stations. Noise Level and air quality data on Pre-Deepawali day (October 21, 2019) and Deepawali day (October 27, 2019) are presented in this report for assessment of impact of Diwali celebration.

## Observations:

### 1. Noise Level

#### (A) Manual Monitoring Data: 06.00 p.m. to 12.00 a.m. (Night)

The Pre-Deepawali noise monitoring was conducted on 21<sup>st</sup> October, 2019. Past five year's data are given in the Table 1a, for comparison of noise level on selected pre-deepawali monitoring day, which is almost a week before Deepawali. This year marginal increase in noise level was observed at four out of six locations monitored on Pre-Deepawali; however, Mayur vihar and Okhla recorded slight decline in noise level. The highest Leq dB (A) was recorded at Mayur Vihar and Lajpat Nagar this year on pre-deepawali day. Pre-deepawali day's values are only indicative background when noise making activities (Fireworks) are not affecting ambient noise level.

Table 1a: Ambient Noise Level data on **Pre-Deepawali Day (2015-2019)**

| S.No. | Monitoring Stations      | Pre-Deepawali Day |          |          |            |            |
|-------|--------------------------|-------------------|----------|----------|------------|------------|
|       |                          | 05.11.15          | 24.10.16 | 12.10.17 | 01.11.2018 | 21.10.2019 |
| 1     | Lajpat Nagar (R)         | 61                | 55       | 62       | 62         | 63↑        |
| 2     | Mayur Vihar Phase-II (R) | 60                | 59       | 62       | 68         | 63↓        |
| 3     | Pitam Pura (R)           | 55                | 43       | 55       | 43         | 49↑        |
| 4     | Kamla Nagar (R)          | 61                | 60       | 61       | 59         | 62↑        |
| 5     | Janakpuri (R)            | 58                | 59       | 59       | 55         | 57↑        |
| 6     | Okhla (I)                | 66                | 74       | 76       | 61         | 59↓        |

Note : All values are in Leq dB(A)

The values reported in Table 1a should not be compared with prescribed noise level standards for designated areas as the values collected can't be matched with time period (Day time 06 a.m to 10 p. m. and Night time 10 p.m. to 6 a.m.) as prescribed in standards

Noise level monitored at six locations for the last five years on Deepawali day are given in the Table 1b. The Deepawali monitoring (2019) data

reveals that at five out of six locations noise level decreased on Deepawali night compared to 2018 and only at Lajpat Nagar the noise level remained at same. There is a clear indication of lesser fireworks this year.

Table 1b: Ambient Noise Level data on **Deepawali Days (2015-2019)**

| S.No. | Monitoring Stations      | Deepawali Day |          |          |            |            |
|-------|--------------------------|---------------|----------|----------|------------|------------|
|       |                          | 11.11.15      | 30.10.16 | 19.10.17 | 07.11.2018 | 27.10.2019 |
| 1     | Lajpat Nagar (R)         | 76            | 76       | 74       | 69 ↓       | 69=        |
| 2     | Mayur Vihar Phase-II (R) | 79            | 80       | 75       | 74 ↓       | 68↓        |
| 3     | Pitam Pura (R)           | 74            | ID       | 69       | 75 ↑       | 68↓        |
| 4     | Kamla Nagar (R)          | 86            | 74       | 69       | 74 ↑       | 70↓        |
| 5     | Janakpuri (R)            | 79            | 75       | 67       | 75 ↑       | 71↓        |
| 6     | Okhla (I)                | 86            | 86       | 83       | 68 ↓       | 66↓        |

Note : All values are in Leq dB(A), ID = indicates Insufficient data  
The values reported in Table 1b should not be compared with prescribed noise level standards for designated areas as the values collected can't be matched with time period (Day time 06 a.m to 10 p. m. and Night time 10 p.m. to 6 a.m.) as prescribed in standards

### (B) Real-time Noise Monitoring Data:

CPCB is conducting round the clock noise level monitoring at ten locations in Delhi. The data of selected pre-Deepawali days for five years is presented in Table 2a. The data shows increasing trend at seven out of ten stations as compared to 2018. Only NSIT Dwarka and ITO stations have recorded slight decline in both day time and night time noise level on 21.10.2019. DCE, Dilshad Garden and Anand vihar recorded increase in both day and night time noise as observed on 21<sup>st</sup> October 2019 compared to selected Pre-Deepawali day in 2018. Increase in night time noise compared to day time at R. K. Puram was also noted on 21<sup>st</sup> October 2019.

Table 2(a): Online Ambient Noise Level data on **Pre-Deepawali Days (2015-2019)**

| S. No. | Monitoring Stations | Pre-Deepawali Day (All values are in Leq dB(A)) |            |            |            |            |            |            |            |            |            |
|--------|---------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|        |                     | 05.11.2015                                      |            | 24.10.2016 |            | 12.10.2017 |            | 01.11.2018 |            | 21.10.2019 |            |
|        |                     | Day Time  | Night Time | Day Time   | Night Time | Day Time   | Night Time | Day Time   | Night Time | Day Time   | Night Time |
| 1      | Anand Vihar (C)     | 68  | 63         | 66         | 62         | 68         | 64         | 64         | 61         | 66↑        | 63↑        |
| 2      | Punjabi Bagh (R)    | 60  | 55         | 59         | 49         | 60         | 59         | 59         | 52         | 60↑        | 50↓        |
| 3      | CPCB HQ (C)         | 67  | 57         | 66         | 57         | 66         | 56         | 63         | 59         | 67↑        | 59=        |
| 4      | Civil Lines (C)     | 62  | 60         | 61         | 59         | 61         | 57         | 61         | 58         | 62↑        | 58=        |
| 5      | DCE, Bawana (S)     | 77  | 80         | 54         | 50         | 55         | 50         | 57         | 53         | 60↑        | 58↑        |
| 6      | Dilshad Garden(S)   | 53  | 48         | 54         | 49         | 53         | 53         | 62         | 62         | 85↑        | 79↑        |

| S. No. | Monitoring Stations | Pre-Deepawali Day (All values are in Leq dB(A)) |            |            |            |            |            |            |            |            |            |
|--------|---------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|        |                     | 05.11.2015                                      |            | 24.10.2016 |            | 12.10.2017 |            | 01.11.2018 |            | 21.10.2019 |            |
|        |                     | Day Time  | Night Time | Day Time   | Night Time | Day Time   | Night Time | Day Time   | Night Time | Day Time   | Night Time |
| 7      | ITO (C)             | 74  | 68         | 71         | 66         | 73         | 68         | 74         | 71         | 73↓        | 70↓        |
| 8      | Mandir Marg (S)     | 60  | 46         | 60         | 45         | 55         | 46         | 62         | 57         | 70↑        | 53↓        |
| 9      | NSIT, Dwarka (S)    | 56  | 52         | 57         | 53         | 57         | 54         | 57         | 56         | 56↓        | 55↓        |
| 10     | R.K. Puram (S)      | 63  | 52         | 61         | 51         | 60         | 52         | 64         | 56         | 62↓        | 66↑        |

Notes : Day Time - 0600 hrs to 2200 hrs and Night time - 2200 hrs to 0600 hours  
Area Designation (C) - Commercial, (R) - Residential, (S) - Sensitive  
Standards: (C) - 65 (Day time) 55 (night time); (R) - 55 (Day time) 45 (night time) and (S) - 50 (Day time) 40 (night time)

The noise level data of five years recorded at real-time monitoring stations in Delhi on Deepawali days is presented in Table: 2b. The data shows that at 50% stations noise level have declined and at one station it remained same on Deepawali night. Four stations have recorded increase in night time noise on Deepawali day compared to last year Deepawali day. Day time noise at 6 locations recorded decline and one remained same.

Table 2(b): Online Ambient Noise Level data during **Deepawali Days (2015-2019)**

| S.No. | Monitoring Stations | Deepawali Day (All values are in Leq dB(A)) |            |            |            |            |            |            |            |            |            |
|-------|---------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|       |                     | 11.11.2015                                  |            | 30.10.2016 |            | 19.10.2017 |            | 07.11.2018 |            | 27.10.2019 |            |
|       |                     | Day Time                                    | Night Time | Day Time   | Night Time | Day Time   | Night Time | Day Time   | Night Time | Day Time   | Night Time |
| 1     | Anand Vihar (C)     | 69  | 70         | 68         | 68         | 68         | 68         | 64         | 66         | 67↑        | 65↓        |
| 2     | Punjabi Bagh (R)    | 66  | 71         | 60         | 58         | 56         | 54         | 57         | 57         | 56↓        | 55↓        |
| 3     | CPCB HQ (C)         | 67  | 68         | 64         | 61         | 64         | 59         | 64         | 62         | 65↑        | 63↑        |
| 4     | Civil Lines (C)     | 64  | 66         | 61         | 62         | 59         | 60         | 60         | 60         | 60=        | 60=        |
| 5     | DCE, Bawana (S)     | 66  | 71         | 56         | 55         | 53         | 52         | 55         | 57         | 60↑        | 58↑        |
| 6     | Dilshad Garden (S)  | 65  | 67         | 57         | 55         | 53         | 53         | 62         | 62         | 75↑        | 76↑        |
| 7     | ITO (C)             | 73  | 70         | 70         | 67         | 71         | 68         | 72         | 70         | 71↓        | 69↓        |
| 8     | Mandir Marg (S)     | 60  | 60         | 54         | 51         | 51         | 48         | 68         | 50         | 57↓        | 55↑        |
| 9     | NSIT, Dwarka (S)    | 63  | 62         | 58         | 57         | 57         | 57         | 58         | 70         | 56↓        | 58↓        |
| 10    | R.K. Puram (S)      | 67  | 65         | 61         | 57         | 59         | 53         | 77         | 61         | 76↓        | 60↓        |

Area Designation (C) - Commercial, (R) - Residential, (S) - Sensitive  
Standards: (C) - 65 (Day time) 55 (night time); (R) - 55 (Day time) 45 (night time) and (S) - 50 (Day time) 40 (night time)  
Day Time - 0600 hrs to 2200 hrs and Night time - 2200 hrs to 0600 hours

### SUMMARY OF AIR QUALITY STATUS DURING DEEPAWALI - 2019

In addition to decline in night time noise in majority of monitoring stations compared to Deepawali Day of 2018, the city level average PM<sub>2.5</sub> was also reported lower (284 µg/m<sup>3</sup>). Anand Vihar station has recorded highest 24 hourly average 415 µg/m<sup>3</sup> followed by R.K. Puram, Ashok

Nagar, Nehru Nagar and Vivek Vihar. PM<sub>2.5</sub> (average of 37 locations) on Deepawali day was found lower by 40 µg/m<sup>3</sup> and PM<sub>10</sub> was also found lower by 41 µg/m<sup>3</sup> in 2019 as compared to 2018 Deepawali day.

Overall, this year Deepawali has observed less pollution in terms of both gaseous and particulate matter. This may be attributed to cumulative effects of ground level actions and introduction of Green Crackers in market and favourable meteorological conditions.