Report of Ambient Air Quality & Noise Levels during Diwali Festival (2019 & 2020)
Air quality monitoring
<table>
<thead>
<tr>
<th>Name of the city</th>
<th>Name of the monitoring locations</th>
<th>Parameters monitored</th>
<th>Monitoring Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucknow</td>
<td>1. Chowk 2. Aliganj 3. Talkatora</td>
<td>$PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_2$, Metals in $PM_{10}$ (Pb, Ni &amp; As) and Metals in $PM_{2.5}$ (Ba, Al &amp; Fe)</td>
<td>UPPCB (Central Lab) and ITRC (Ba &amp; Al)</td>
</tr>
<tr>
<td>Kanpur</td>
<td>1. Awas Vikas 2. Jareeb Chowki</td>
<td>$PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_2$, Metals in $PM_{2.5}$ (Ba, Al &amp; Fe)</td>
<td>UPPCB and IIT Kanpur (Ba &amp; Al)</td>
</tr>
<tr>
<td>Noida</td>
<td>1. Golf Course 2. Subros</td>
<td>$PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_2$, Metals in $PM_{2.5}$ (Ba &amp; Al)</td>
<td>Outsourced agency</td>
</tr>
<tr>
<td>Greater Noida</td>
<td>1. Holland 2. Honda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baghpat</td>
<td>1. Sarvodaya Hospital 2. Weavetex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghaziabad</td>
<td>1. Khora 2. Vinoba bhave Park</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muzaffarnagar</td>
<td>1. Lekhpal bhawan 2. Sahara Parivar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Details of monitoring

<table>
<thead>
<tr>
<th>Name of the city</th>
<th>Name of the monitoring locations</th>
<th>Parameters monitored</th>
<th>Monitoring Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agra</td>
<td>1. RO office Bodla 2. IA Nunhai</td>
<td>PM$<em>{10}$, PM$</em>{2.5}$, SO$_2$ &amp; NO$_2$</td>
<td>RO Office UPPCB</td>
</tr>
<tr>
<td>Jhansi</td>
<td>1. Manik Chowk 2. Veerangana Nagar</td>
<td>PM$_{10}$, SO$_2$ &amp; NO$_2$</td>
<td>RO Office UPPCB</td>
</tr>
<tr>
<td>Gajraula</td>
<td>1. Indira Chowk 2. Raunaq Auto</td>
<td></td>
<td>RO Office UPPCB</td>
</tr>
</tbody>
</table>
A decreasing trend in PM$_{10}$ concentration from pre-Diwali to post-Diwali during 2020.

Increase in pre-Diwali PM$_{10}$ concentration from 2019 to 2020

Decreasing trend from 2019 to 2020 in PM10 concentration during post-Diwali

*National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 μg/m$^3$*
PM$_{2.5}$ concentration increased on the day of Diwali as compared to pre-Diwali days decreasing again during post-Diwali.

Increase in pre-Diwali PM$_{2.5}$ concentration from 2019 to 2020

Decreasing trend from 2019 to 2020 in PM$_{2.5}$ concentration during post-Diwali

*National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ – 60 μg/m$^3$*
SO₂ concentration (μg/m³) during Diwali season in Lucknow (Central Lab) (2019-2020)

SO₂ concentration showed a decreasing trend from pre-diwali to post Diwali during 2020.

Prediwalı SO₂ concentration during 2020 is higher than 2019 while Diwali and post-Diwali SO₂ concentration is lower in 2020 as compared to 2019

National Ambient Air Quality standard (24-hour average) : SO₂ – 80 μg/m³
NO$_2$ concentration (μg/m$^3$) during Diwali season in Lucknow (Central Lab) (2019-2020)

NO$_2$ concentration showed a decreasing trend from pre-Diwali to post Diwali during 2020 at Chowk and Aliganj.

At Talkatora there was an increase on the day of Diwali which further decreased during Post-Diwali days.

Pre-Diwali NO$_2$ concentration during 2020 is higher than 2019 while Diwali and Post-Diwali NO$_2$ concentration is lower in 2020 as compared to 2019.

*National Ambient Air Quality standard (24-hour average) : NO$_2$ – 80 μg/m$^3$*
The concentration values for Ni and Pb were found within the limits during 2019 and 2020.

Ni and Pb concentration values showed a decreasing trend in 2020 as compared to 2019.

Arsenic (As) concentration values were below detection limit in 2019 as well as 2020.
Ba, Al and Fe concentration (μg/m³) in PM$_{2.5}$ during Diwali season in Lucknow (ITRC) (2019-2020)

The concentration values for Ba, Al and Fe is found below detection limits (BDL*) which is indicative of the reduction in bursting of firecrackers during this Diwali season in the Lucknow city. This can be attributed to the following factors:

✓ Public awareness & support
✓ Strict Ban on sale and use of firecrackers
✓ Strict compliance of directions of NGT order OA no. 249/2020 dated 05.11.2020 by the concerned departments like District administration, Uttar Pradesh Pollution Control Board (UPPCB), Police departments, Urban development department etc.

*BDL values (Source-ITRC)  
Ba – 20 ppt(parts per trillion)  
Al- 677 ppt  
Fe – 0.05 mg/L

Standard Ambient Air Quality Concentration Values (24-hour average)  
Ba - 4 μg/m³  
Al – 40 μg/m³
PM$_{10}$ concentration ($\mu$g/m$^3$) trend during Diwali season in Kanpur (2019-2020)

Decrease in PM$_{10}$ concentration values on the day of Diwali in 2020 from their respective values in 2019.

Increase in pre-Diwali PM$_{10}$ concentration from 2019 to 2020

*National Ambient Air Quality standard (24-hour average): PM$_{10}$ – 100 $\mu$g/m$^3$*
SO\textsubscript{2} concentration (μg/m\textsuperscript{3}) trend during Diwali season in Kanpur (2019-2020)

SO\textsubscript{2} concentration increased from pre-diwali to Diwali during 2020.

Prediwal SO\textsubscript{2} concentration during 2020 is lesser than their respective values in 2019 at both the locations while Diwali concentration is higher at Jareeb Chowki in 2020 as compared to 2019.

*National Ambient Air Quality standard (24-hour average) : SO\textsubscript{2} – 80 μg/m\textsuperscript{3}*
NO₂ concentration (μg/m³) trend during Diwali season in Kanpur (2019-2020)

<table>
<thead>
<tr>
<th></th>
<th>Prediwalı</th>
<th>Diwali</th>
<th>Postdiwali</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>63.4</td>
<td>72.8</td>
<td>84.2</td>
</tr>
<tr>
<td>2020</td>
<td>74.9</td>
<td>84.2</td>
<td></td>
</tr>
</tbody>
</table>

NO₂ concentration showed an overall increase from pre-Diwali to post Diwali during 2020 at both the stations.

<table>
<thead>
<tr>
<th></th>
<th>Prediwalı</th>
<th>Diwali</th>
<th>Postdiwali</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>59.8</td>
<td>70.8</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>77.6</td>
<td>103.2</td>
<td></td>
</tr>
</tbody>
</table>

The concentration values of NO2 are comparatively higher than the values in 2019.

National Ambient Air Quality standard (24-hour average) : NO₂ – 80 μg/m³
The concentrations of all the three ions (Fe, Al and Ba) were found well below the standard limits.

There is a slight increase on the day of Diwali in overall concentration of metals on the day of Diwali which reduces back post-diwali.

**Standard Critical Ambient Air Quality Concentration Values (CAAQCV) (24-hour average)**
- Ba - 4 μg/m³
- Al - 40 μg/m³
- Fe - 40 μg/m³
NCR Cities

Noida
Greater Noida
Ghaziabad
Baghpat
Muzaffar Nagar
**PM$_{10}$ concentration (μg/m$^3$) trend during Diwali season In Noida (2019-2020)**

A considerable decrease (>50%) in PM$_{10}$ concentration from pre-Diwali to post-Diwali during 2020 at both the locations.

**Pre-Diwali PM$_{10}$ concentration increased in 2020 at both the locations**

**Post-Diwali PM$_{10}$ concentration decreased in 2020 as compared to 2019**

*National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 μg/m$^3$*
PM$_{2.5}$ concentration (μg/m$^3$) trend during Diwali season in Noida (2019-2020)

During 2020 PM$_{2.5}$ concentration increased on the day of Diwali as compared to prediwali days at Subros decreasing again during post-Diwali.

Prediwali PM$_{2.5}$ concentration during 2020 is higher as compared to 2019 at both the locations

Post-Diwali PM$_{2.5}$ concentration was significantly lesser during 2020 than in 2019

*National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ – 60 μg/m$^3$*
**SO₂ concentration (μg/m³) trend during Diwali season in Noida (2019-2020)**

SO₂ concentration showed a decreasing trend from pre-Diwali to post-Diwali during 2020.

**Significant reduction in both Pre-Diwali (~25%) and Post-Diwali (~40%) SO₂ concentration during 2020 compared to 2019**

National Ambient Air Quality standard (24-hour average): SO₂ - 80 μg/m³
Nitrogen Dioxide (NO$_2$) concentration ($\mu$g/m$^3$) trend during Diwali season in Noida (2019-2020)

NO$_2$ concentration showed a decreasing trend from pre-Diwali to post-Diwali during 2020 at both the locations.

Reduction in NO$_2$ concentration at both the locations during pre-Diwali and post-Diwali in 2020 as compared from 2019.

National Ambient Air Quality standard (24-hour average) : NO$_2$ – 80 $\mu$g/m$^3$
PM$_{10}$ concentration reduced by almost 55% from pre-Diwali to post-Diwali during 2020.

Pre-Diwali PM$_{10}$ concentration at both the locations was significantly higher (~140%) in 2020 as compared to 2019 while post-Diwali trend was opposite with a notable reduction of almost (~140%)

A sudden peak (almost 100%) in PM10 concentration on the day of Diwali at Honda Greater Noida.

*National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 µg/m3*
PM$_{2.5}$ concentration increased on the day of Diwali as compared to prediwiali days at Honda Greater Noida decreasing significantly during post-Diwali.

Prediwiali PM$_{2.5}$ concentration during 2020 were higher as compared to 2019

PM$_{2.5}$ concentration significantly decreased during post-Diwali in 2020 compared to 2019.

National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ – 60 μg/m$^3$
Remarkable reduction in SO$_2$ concentration from 2019 to 2020 during the whole period with an average decrease of 50-60%.

Slight increase in SO$_2$ concentration on Diwali day at Honda during 2020 reducing back during post-Diwali. However in 2019 SO$_2$ concentration during post-Diwali was higher than pre-Diwali.

*National Ambient Air Quality standard (24-hour average) : SO$_2$ – 80 μg/m$^3$*
**NO2 concentration (μg/m3) trend during Diwali season in Greater Noida (2019-2020)**

<table>
<thead>
<tr>
<th></th>
<th>Prediwalı</th>
<th>Diwalı</th>
<th>Postdiwalı</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2019</strong></td>
<td>58.2</td>
<td>0.0</td>
<td>86.6</td>
</tr>
<tr>
<td><strong>2020</strong></td>
<td>71.0</td>
<td>0.0</td>
<td>51.7</td>
</tr>
</tbody>
</table>

**Holland Gr. Noida (NO2)**

<table>
<thead>
<tr>
<th></th>
<th>Prediwalı</th>
<th>Diwalı</th>
<th>Postdiwalı</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2019</strong></td>
<td>57.9</td>
<td>0.0</td>
<td>85.7</td>
</tr>
<tr>
<td><strong>2020</strong></td>
<td>69.1</td>
<td>60.8</td>
<td>53.9</td>
</tr>
</tbody>
</table>

**Honda Greater Noida (NO2)**

NO₂ concentration showed a decreasing trend from pre-Diwali to post Diwali during 2020 at both the stations.

Pre-Diwali NO₂ concentration during 2020 is higher than 2019 while Post-Diwali NO₂ concentration is lower in 2020 as compared to 2019 at both the stations.

*National Ambient Air Quality standard (24-hour average) : NO₂ – 80 μg/m3*
**PM$_{10}$ concentration (μg/m3) trend during Diwali season In Ghaziabad (2019-2020)**

Pre-Diwali PM$_{10}$ concentration during 2020 is higher than 2019 while Post-Diwali PM$_{10}$ concentration is lower in 2020 as compared to 2019 at both the stations.

IN 2020, there is a significant reduction in PM10 concentration during post-Diwali.

At Vinoba Bhave Park sudden rise in the PM10 concentration on the day of Diwali.

*National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 μg/m3*
PM2.5 concentration ($\mu$g/m$^3$) trend during Diwali season in Ghaziabad (2019-2020)

In 2020, there is a significant reduction in PM2.5 concentration during post-Diwali.

At Vinoba Bhave Park sudden rise in the PM2.5 concentration on the day of Diwali.

National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ - 60 $\mu$g/m$^3$
SO₂ concentration showed an overall decreasing trend from pre-diwali to post Diwali during 2020 with a slight increase on the day of Diwali at Vinoba Bhave Park.

Both Prediwali & post-Diwali SO₂ concentrations are lesser in 2020 as compared to 2019

National Ambient Air Quality standard (24-hour average) : SO₂ - 80 μg/m³
NO$_2$ concentration (μg/m$^3$) trend during Diwali season in Ghaziabad (2019-2020)

**Khora Ghaziabad (NO$_2$)**

<table>
<thead>
<tr>
<th></th>
<th>PreDiwali</th>
<th>Diwali</th>
<th>Postdiwali</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>63.9</td>
<td>0.0</td>
<td>85.2</td>
</tr>
<tr>
<td>2020</td>
<td>69.7</td>
<td>0.0</td>
<td>51.3</td>
</tr>
</tbody>
</table>

**Vinoba Bhave Park (NO$_2$)**

<table>
<thead>
<tr>
<th></th>
<th>PreDiwali</th>
<th>Diwali</th>
<th>Postdiwali</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>63.3</td>
<td>0.0</td>
<td>81.9</td>
</tr>
<tr>
<td>2020</td>
<td>67.3</td>
<td>50.9</td>
<td>47.9</td>
</tr>
</tbody>
</table>

NO$_2$ concentration showed a decreasing trend from pre-Diwali to post Diwali during 2020 at both the stations.

Pre-Diwali NO$_2$ concentration during 2020 is higher than 2019 while Post-Diwali NO$_2$ concentration is lower in 2020 as compared to 2019

*National Ambient Air Quality standard (24-hour average) : NO$_2$ – 80 μg/m$^3$*
PM10 concentration (μg/m3) trend during Diwali season in Baghpat (2019-2020)

Overall reduction (~65%) in PM$_{10}$ concentration from pre-Diwali to post-Diwali during 2020.

*National Ambient Air Quality standard (24-hour average): PM$_{10}$ – 100 μg/m3*
An overall decrease of ~70% in PM$_{2.5}$ concentration from prediwal to post-Diwali during 2020.

Prediwal PM$_{2.5}$ concentration in 2020 was higher than in 2019 while the trend became opposite during post-Diwali.

*National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ – 60 µg/m$^3$*
SO2 concentration (μg/m3) trend during Diwali season in Baghpat (2019-2020)

Almost no change in SO2 concentration from pre-Diwali to post Diwali except for a sudden rise on the day of Diwali at Weavetex monitoring station.

Significant reduction in SO2 concentration during the Diwali season from 2019 to 2020

National Ambient Air Quality standard (24-hour average) : SO2 – 80 μg/m3
NO₂ concentration showed a decreasing trend from pre-Diwali to post Diwali during 2020 at both the stations.

Overall reduction in NO₂ concentration during the Diwali season from 2019 to 2020

National Ambient Air Quality standard (24-hour average) : NO₂ – 80 μg/m³
A decreasing trend in PM$_{10}$ concentration from pre-Diwali to post-Diwali during 2020 with sudden peak on the day of Diwali.

An overall increase in PM$_{10}$ concentration from 2019 to 2020 at all the respective days (Pre-Diwali, Diwali and Post-Diwali)

National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 μg/m$^3$
PM2.5 concentration (μg/m³) trend during Diwali season in Muzaffarnagar (2019-2020)

A decreasing trend in PM$_{2.5}$ concentration from pre-Diwali to post-Diwali during 2020 with sudden peak on the day of Diwali.

An overall increase in PM$_{2.5}$ concentration from 2019 to 2020 at all the respective days (Pre-Diwali, Diwali and Post-Diwali)

National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ – 60 μg/m³
SO$_2$ concentration (μg/m$^3$) trend during Diwali season in Muzaffarnagar (2019-2020)

SO$_2$ concentration is comparatively higher in 2020 during pre-Diwali, Diwali and post-Diwali at both the locations.

Slight reduction in SO$_2$ concentration from Pre-Diwali to post-Diwali in 2020

National Ambient Air Quality standard (24-hour average): SO$_2$ – 80 μg/m$^3$
NO2 concentration (μg/m3) trend during Diwali season in Muzaffar Nagar (2019-2020)

<table>
<thead>
<tr>
<th></th>
<th>Prediwalı</th>
<th>Diwali</th>
<th>Postdiwali</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2019</strong></td>
<td>25.3</td>
<td>38.7</td>
<td>29.8</td>
</tr>
<tr>
<td><strong>2020</strong></td>
<td>13.9</td>
<td>0.0</td>
<td>33.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Prediwalı</th>
<th>Diwali</th>
<th>Postdiwali</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2019</strong></td>
<td>27.0</td>
<td>40.8</td>
<td>30.4</td>
</tr>
<tr>
<td><strong>2020</strong></td>
<td>14.0</td>
<td>61.7</td>
<td>30.1</td>
</tr>
</tbody>
</table>

NO2 concentration is comparatively higher in 2020 during pre-Diwali, Diwali and post-Diwali at both the locations.

AN overall increase in NO2 concentration from Pre-Diwali to post-Diwali in 2020

National Ambient Air Quality standard (24-hour average) : NO2 – 80 μg/m3
Contribution of elements Al & Ba (concentration in $\mu$g/m$^3$) in PM$_{2.5}$ during Diwali season (2020) in NCR cities

<table>
<thead>
<tr>
<th>Location</th>
<th>Pre-Diwali</th>
<th>Diwali</th>
<th>Post-Diwali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Limited, Noida</td>
<td>0.19</td>
<td>1.16</td>
<td>0.26</td>
</tr>
<tr>
<td>Honda Power, Gr. Noida</td>
<td>0.82</td>
<td>1.12</td>
<td>0.02</td>
</tr>
<tr>
<td>Weavetex Overseas, Baghpat</td>
<td>0.06</td>
<td>1.16</td>
<td>0</td>
</tr>
<tr>
<td>Vinoba Bhave Park, Ghaziabad</td>
<td>0.22</td>
<td>1.16</td>
<td>0.17</td>
</tr>
<tr>
<td>Sahara Parivar Office, Muzaffarnagar</td>
<td>0.72</td>
<td>1.15</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Both Al and Barium concentration values were found under the standard limits.

Standard Ambient Air Quality Concentration Values (24-hour average)
Ba - 4 $\mu$g/m$^3$, Al - 40 $\mu$g/m$^3$
PM10 concentration ($\mu g/m^3$) trend during Diwali season in Jhansi (2019-2020)

In 2020 there is almost no change in PM$_{10}$ concentration from pre-Diwali to post-Diwali except for a sudden increase on the day of Diwali at both the stations.

An overall increase in PM$_{10}$ concentration from 2019 to 2020 at all the respective days (Pre-Diwali, Diwali and Post-Diwali)

**National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 $\mu g/m^3$**
SO2 concentration (μg/m3) trend during Diwali season in Jhansi (2019-2020)

Slight change in SO2 concentration from Pre-Diwali to post-Diwali in 2020 with a sudden peak on the Diwali day.

National Ambient Air Quality standard (24-hour average) : SO2 – 80 μg/m3
NO2 concentration (μg/m3) trend during Diwali season in Jhansi (2019-2020)

Slight change in NO2 concentration from Pre-Diwali to post-Diwali in 2020 with a sudden peak on the Diwali day.

NO2 concentration values are almost similar during 2019 and 2020 for both the stations.

National Ambient Air Quality standard (24-hour average) : NO2 – 80 μg/m3
PM$_{10}$ concentration decreased pre-Diwali to Diwali during 2020 by almost 56% at IA Nunhai and by 25% at RO office Bodla.

National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 µg/m$^3$
A decreasing trend in PM$_{2.5}$ concentration from pre-Diwali to Diwali during 2020

An overall increase in PM$_{2.5}$ concentration from 2019 to 2020 at all the respective days (Pre-Diwali & Diwali)

**National Ambient Air Quality standard (24-hour average) : PM$_{2.5}$ – 60 μg/m$^3$**
SO$_2$ concentration is comparatively lower in 2020 as compared to 2019 on the day of Diwali at both the locations.

Slight reduction in SO$_2$ concentration from Pre-Diwali to Diwali in 2020

National Ambient Air Quality standard (24-hour average): SO$_2$ - 80 μg/m$^3$
NO2 concentration ($\mu g/m^3$) trend during Diwali season in Agra (2019-2020)

NO$_2$ concentration is comparatively higher in 2020 than in 2019 during pre-Diwali and Diwali at both the locations.

An overall decrease in NO$_2$ concentration from Pre-Diwali to Diwali in 2020

**National Ambient Air Quality standard (24-hour average) : NO$_2$ – 80 $\mu g/m^3$**
PM$_{10}$ concentration (μg/m$^3$) trend during Diwali season in Gajraula (2019-2020)

PM$_{10}$ concentration increased from Pre-Diwali to Diwali by almost 120% at Indra Chowk and by almost 156% at Raunaq auto monitoring station.

National Ambient Air Quality standard (24-hour average): PM$_{10}$ – 100 μg/m$^3$
SO₂ concentration (μg/m³) trend during Diwali season in Gajraula (2019-2020)

SO₂ concentration increased from pre-Diwali to Diwali by almost 78% at Indra Chowk and by almost 64% at Raunaq Auto monitoring station.

Overall increase in SO₂ concentration from Pre-Diwali to post-Diwali is almost 11% at Indra Chowk and 35% at Raunaq Auto monitoring location.

National Ambient Air Quality standard (24-hour average) : SO₂ – 80 μg/m³
NO₂ concentration (μg/m³) trend during Diwali season in Gajraula (2019-2020)

NO₂ concentration increased from pre-Diwali to Diwali by almost 65% at Indra Chowk and by almost 61% at Raunaq Auto monitoring station.

Overall increase in NO₂ concentration from Pre-Diwali to post-Diwali is almost 4% at Indra Chowk and 27% at Raunaq Auto monitoring location.

National Ambient Air Quality standard (24-hour average) : NO₂ – 80 μg/m³
PM$_{10}$ concentration ($\mu$g/m$^3$) trend during Diwali season In Prayagraj (2019-2020)

**National Ambient Air Quality standard (24-hour average) : PM$_{10}$ – 100 $\mu$g/m$^3$**

PM$_{10}$ concentration values reduced during 2020 from their respective values in 2019
SO\textsubscript{2} concentration (\(\mu\text{g/m}\text{3}\)) trend during Diwali season in Prayagraj (2019-2020)

SO\textsubscript{2} concentration on the Diwali day is comparatively lower in 2020 than their respective values in 2019 at all the locations.

Slight or no change in SO\textsubscript{2} concentration from Pre-Diwali to post-Diwali in 2020

National Ambient Air Quality standard (24-hour average): SO\textsubscript{2} – 80 \(\mu\text{g/m}\text{3}\)
NO$_2$ concentration (μg/m$^3$) trend during Diwali season in Prayagraj (2019-2020)

- NO$_2$ concentration is comparatively higher in 2020 during pre-Diwali, Diwali and post-Diwali at all the locations.

- Slight or no change in NO$_2$ concentration from Pre-Diwali to post-Diwali in 2020.

National Ambient Air Quality standard (24-hour average): NO$_2$ – 80 μg/m$^3$
Noise monitoring
## Details of Noise Monitoring

<table>
<thead>
<tr>
<th>Name of the city</th>
<th>Number of the monitoring locations</th>
<th>Names of Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucknow</td>
<td>10 (real time monitoring stations)</td>
<td>IT College, Aliganj, CCS Airport, Chinhat, Lohia Hospital, Hazratganj, Indira Nagar, SGPGI, Talkatora, UPPCB HQ</td>
</tr>
<tr>
<td>Kanpur</td>
<td>2</td>
<td>Awas Vikas, Jareeb Chowki</td>
</tr>
<tr>
<td>Noida</td>
<td>1</td>
<td>Sector 1</td>
</tr>
<tr>
<td>Meerut</td>
<td>8</td>
<td>Cantt. Hospital, Collectorate, Railway Road, Begum Bridge, Thapar Nagar, Shastri Nagar, Cantonment board</td>
</tr>
<tr>
<td>Ghaziabad</td>
<td>2</td>
<td>Vasundhara Sec 16, Model Town</td>
</tr>
<tr>
<td>Muzaffarnagar</td>
<td>6</td>
<td>Kamla Colony, Shiv Chowk, Sri Shadi Lal Hospital, Gandhi Colony, Mahavir Chowk, District Hospital</td>
</tr>
<tr>
<td>Moradabad</td>
<td>2</td>
<td>Kashi Ram Colony, UPPCB Budhhi Vihar</td>
</tr>
<tr>
<td>Firozabad</td>
<td>3</td>
<td>Sadar Bazaar, Suhag Nagar, Nagla Bhau</td>
</tr>
<tr>
<td>Unnao</td>
<td>1</td>
<td>Krishna Nagar</td>
</tr>
</tbody>
</table>
## Ambient Noise standards

**SCHEDULE (see rule 3(1) and 4(1))**

Ambient Air Quality Standards in respect of Noise

<table>
<thead>
<tr>
<th>Area code</th>
<th>Category of area /zone</th>
<th>Limits in dB(A) Leq</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Day time</td>
</tr>
<tr>
<td>A</td>
<td>Industrial Area</td>
<td>75</td>
</tr>
<tr>
<td>B</td>
<td>Commercial Area</td>
<td>65</td>
</tr>
<tr>
<td>C</td>
<td>Residential Area</td>
<td>55</td>
</tr>
<tr>
<td>D</td>
<td>Silence Zone</td>
<td>50</td>
</tr>
</tbody>
</table>

*Day time shall mean from 6.00 a.m. to 10.00 p.m*

*Night time shall mean from 10.00 p.m. to 6.00 a.m*
Comparative analysis of Noise monitoring in Lucknow (2019-2020)

- Average noise level has decreased at 7 out of 10 locations
- Average noise level has increased at 3 locations
• Average noise level has increased at all the locations on Diwali and is found to be exceeding the prescribed standard limits
Comparative analysis of Noise monitoring during Preediwali & Diwali (2020)

- Average noise level has increased at all the locations on Diwali
- Preediwali noise levels are found to be exceeding the standard limits except in Unnao and Moadabad (UPPCB Buddhi Vihar)

<table>
<thead>
<tr>
<th>Location</th>
<th>Preediwali</th>
<th>Diwali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanpur Awas Vikas</td>
<td>58.9</td>
<td>68.3</td>
</tr>
<tr>
<td>Unnao Jareeb Chowki</td>
<td>61.3</td>
<td>64.8</td>
</tr>
<tr>
<td>Moradabad Kashi Ram Colony</td>
<td>44.3</td>
<td>60.8</td>
</tr>
<tr>
<td>UPPCB Buddhhi Vihar</td>
<td>62.6</td>
<td>63.0</td>
</tr>
<tr>
<td>Sadar Bazaar UPPCB Buddhi Vihar</td>
<td>32.5</td>
<td>53.2</td>
</tr>
<tr>
<td>Suhag Nagar Firozabad</td>
<td>64.5</td>
<td>70.1</td>
</tr>
<tr>
<td>Nagla Bhau Firozabad</td>
<td>61.6</td>
<td>67.1</td>
</tr>
<tr>
<td>Nagla Bhau Firozabad</td>
<td>66.2</td>
<td>62.0</td>
</tr>
</tbody>
</table>