

Post-Diwali Air Quality Report

Mumbai, Pune, and Nagpur See Over 50% Spike in PM2.5 Levels as Pollution Peaks in Key Areas

Tier II Cities such as Dhule, Nanded, and Pimpri Chinchwad Top Polluted Zones in the State, marking Air Pollution Extends Beyond Major Urban Zones, Maharashtra's Analysis shows

As part of Respirer Living Sciences' [AtlasAQ platform](#), this report analyses air quality data for Mumbai, Pune, and Nagpur before, during, and after Diwali 2024. Using air quality monitoring data from October 30 (pre-Diwali), October 31 (Diwali), and November 1 (post-Diwali), this analysis examines the impact of festival-related pollution on particulate matter levels (PM2.5 and PM10).

Each city recorded substantial increases in pollution, with PM2.5 levels spiking by over 50% on average, and some localities seeing even sharper rises. The report underscores festive pollution's environmental and public health implications, calling for the need for targeted air quality management during such events.

This analysis covers data from multiple monitoring locations across Maharashtra, including top cities such as Mumbai, Pune, and Nagpur. Data is sourced from Central Pollution Control Board (CPCB) monitors and analysed using the *AtlasAQ* platform by [Respirer Living Sciences Pvt Ltd.](#) The analysis compares data across three key days: Day 1 (October 30, a day before Diwali), Day 2 (October 31, Diwali day), and November 1 (post-Diwali) to identify pollution trends and assess the impact of Diwali festivities on air quality throughout the state.

QUOTE

“Post-Diwali air quality data across Maharashtra, particularly in cities like Dhule, Nanded, and Pimpri-Chinchwad ranking as the most polluted, reveals severe PM2.5 spikes that surpass even larger urban centers like Mumbai and Pune. This trend underscores the widespread impact of festival-related pollution beyond metropolitan areas, with PM2.5 increases over 50% in some regions. Such concentrated pollution peaks not only exacerbate respiratory issues for vulnerable groups but also signify a growing need for proactive air quality measures and public awareness across Maharashtra. These steps are essential to safeguard health during

high-emission periods and ensure cleaner air for all residents, from large cities to smaller towns,” said Ronak Sutaria, CEO and Founder, Respirer Living Sciences.

Mumbai

Mumbai's PM2.5 Levels Surge Over 50%, With Sewri and Malad West Showing Steepest Rises

- **Citywide PM2.5 Trends:** Mumbai recorded a 50.3% increase in PM2.5 levels from October 30 to November 1, rising from 57.46 $\mu\text{g}/\text{m}^3$ to 86.39 $\mu\text{g}/\text{m}^3$.
 - **Sewri:** This locality experienced the highest PM2.5 increase in Mumbai, with levels jumping 105.8% from October 30 to October 31 (Diwali day) and a further 5.4% by November 1, reflecting a cumulative rise of 116.9%.
 - **Malad West:** PM2.5 levels in Malad West surged by 67.9% on Diwali day and rose another 65.0% post-Diwali, resulting in a total increase of 177.2%.
 - **Kandivali West:** PM2.5 in Kandivali West increased by 89.6% on Diwali, peaking further by 3.9% on November 1, totaling a 97.0% increase across the three days.
 - **Other Locations:** Notable increases were also observed in Byculla (36.4%), Chembur (51.2%), and Deonar (67.2%).
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Pune

Pune Sees PM2.5 Rise Over 55% in Key Locations, With Hadapsar and Revenue Colony Impacted Most

- **Citywide PM2.5 and PM10 Trends:** Pune's PM2.5 rose by 19.7%, while PM10 levels increased by 14.3% between October 30 and November 1.
 - **Revenue Colony-Shivajinagar:** This area recorded a sharp increase, with PM2.5 levels rising by 55.6% post-Diwali, resulting in a total three-day increase of 58.3%.
 - **Hadapsar:** PM2.5 levels in Hadapsar climbed by 56.3% on November 1, marking a significant post-Diwali increase.
 - **Alandi:** Alandi experienced a 44.9% spike in PM2.5 post-Diwali, with total three-day levels increasing by 26.6%.
 - **Savitribai Phule Pune University:** This area showed a 56.7% increase in PM2.5 by November 1, with PM10 levels also rising by 35.9%.
 - **Other Noteworthy Rises:** Bhumkar Nagar saw a 40.2% increase in PM2.5, while Katraj Dairy observed a notable decline of 34.7%.
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Nagpur

Nagpur Registers Over 80% Increase in PM2.5 in Key Areas, With Mahal and Ram Nagar Affected Most

- **Citywide PM2.5 and PM10 Trends:** PM2.5 levels in Nagpur rose by 53.5% post-Diwali, with PM10 increasing by 43.1%.
- **Mahal:** Mahal saw a notable 80.9% rise in PM2.5 from pre- to post-Diwali, while PM10 levels surged by 79.6%.
- **Ram Nagar:** This area recorded an 82.7% increase in PM2.5 by November 1, showing a significant post-Diwali spike.
- **Ambazari:** Despite a drop on Diwali, PM2.5 levels in Ambazari surged 52.5% post-Diwali, totaling a three-day increase of 13.2%.
- **Opposite GPO Civil Lines:** PM2.5 rose by 42.1% post-Diwali, while PM10 increased by 37.1%.
- **Additional Increases:** The overall trend shows substantial air quality degradation, with multiple areas surpassing safe limits for PM2.5 and PM10.

Dhule Tops Maharashtra’s Most Polluted Cities List Post-Diwali, Mumbai Ranks 20th as PM2.5 Levels Spike Across the State

On November 1, 2024, Dhule recorded the highest PM2.5 level among cities in Maharashtra, reaching 137.25 $\mu\text{g}/\text{m}^3$, highlighting significant air quality concerns. Nanded and Pimpri-Chinchwad followed with PM2.5 levels of 129.90 $\mu\text{g}/\text{m}^3$ and 125.62 $\mu\text{g}/\text{m}^3$, respectively, while cities like Ahmednagar (123.73 $\mu\text{g}/\text{m}^3$) and Parbhani (122.67 $\mu\text{g}/\text{m}^3$) also reported high particulate concentrations.

Mumbai, often under scrutiny for its air quality, ranked 20th on this list, with a relatively lower PM2.5 concentration of 86.39 $\mu\text{g}/\text{m}^3$ than other cities. Despite varying levels across the state, these readings indicate elevated pollution post-Diwali across many urban centres, underlining the need for continuous air quality monitoring and mitigation efforts.

Rank	City	PM2.5 on 1st Nov 2024
1	Dhule	137.25
2	Nanded	129.90
3	Pimpri-Chinchwad	125.62
4	Ahmednagar	123.73
5	Parbhani	122.67
6	Malegaon	120.47
7	Akola	115.99
8	Nashik	113.15
9	Jalna	110.65

10	Nagpur	109.09
11	Amravati	105.87
12	Ulhasnagar	104.64
13	Badlapur	102.13
14	Mira-Bhayandar	101.05
15	Jalgaon	97.55
16	Kolhapur	96.74
17	Bhiwandi	94.72
18	Thane	93.63
19	Virar	88.94
20	Mumbai	86.39
21	Mahad	85.32
22	Chandrapur	85.18
23	Latur	79.63
24	Navi Mumbai	74.62
25	Boisar	72.54
26	Aurangabad	71.39
27	Pune	69.90
28	Belapur	69.30
29	Solapur	57.22
30	Kalyan	44.13
31	Sangli	37.30

Year-on-Year Post-Diwali Air Quality Analysis for Mumbai, Pune, and Nagpur

Mumbai

In Mumbai, post-Diwali PM2.5 levels showed a mixed trend across various locations in 2024 compared to previous years. Malad West saw a significant increase in PM2.5, rising by 50.5% compared to 2023, reaching 194.54 µg/m³ in 2024. In contrast, other locations such as Powai and Deonar showed reductions in PM2.5 levels. Powai experienced a notable decrease of 44.6%, and Deonar saw a modest drop of 3.8% compared to 2023. These trends highlight local variations in air quality improvement and deterioration within Mumbai, influenced by multiple factors like local emissions and seasonal weather changes.

Location	PM2.5 on 25th Oct 2022	PM2.5 on 13th Nov 2023	% Change 2022-2023	PM2.5 on 1st Nov 2024	% Change 2023-2024
Bandra Kurla Complex, Mumbai - IITM	109.4	112.38	2.7%		

Bandra Kurla Complex, Mumbai - MPCB		125.24		103.42	-17.4%
Bandra, Mumbai - MPCB					
Borivali East, Mumbai - IITM		102.41		76.04	-25.7%
Borivali East, Mumbai - MPCB	58.1	58.79	1.2%		
Byculla, Mumbai - BMC		147.99		97.29	-34.3%
Chakala-Andheri East, Mumbai - IITM	175.19	70.73	-59.6%		
Chembur, Mumbai - MPCB		166.44		96.23	-42.2%
Chhatrapati Shivaji Intl. Airport (T2), Mumbai - MPCB	127.06	93.43	-26.5%	24.49	-73.8%
Colaba, Mumbai - MPCB	83.81	93.25	11.3%	38.37	-58.9%
Deonar, Mumbai - IITM	136.26	134.2	-1.5%	129.15	-3.8%
Ghatkopar, Mumbai - BMC				76.96	
Kandivali East, Mumbai - MPCB	122.68	76.13	-37.9%	49.72	-34.7%
Kandivali West, Mumbai - BMC				142.64	
Kherwadi_Bandra East, Mumbai - MPCB		184.15		107.03	-41.9%
Khindipada-Bhandup West, Mumbai - IITM	84.93	75.43	-11.2%	29.80	-60.5%
Kurla, Mumbai - MPCB	75.65	46.7	-38.3%	56.04	20.0%
Malad West, Mumbai - IITM	13.22	129.27	877.8%	194.54	50.5%
Mazgaon, Mumbai - IITM	146.2	100.09	-31.5%	67.25	-32.8%
Mindspace-Malad West, Mumbai - MPCB		224.26		167.05	-25.5%
Mulund West, Mumbai - MPCB	113.66	82.43	-27.5%	68.51	-16.9%
Navy Nagar-Colaba, Mumbai - IITM	153.23	85.99	-43.9%	77.38	-10.0%
Powai, Mumbai - MPCB	98.88	94.33	-4.6%	52.22	-44.6%
Sewri, Mumbai - BMC				184.44	
Shivaji Nagar, Mumbai - BMC					
Siddharth Nagar-Worli, Mumbai - IITM	29.98	62.28	107.7%	62.90	1.0%
Sion, Mumbai - MPCB	112.03	82.51	-26.4%	59.57	-27.8%
Vasai West, Mumbai - MPCB	49.23	49.23	0.0%	66.75	35.6%
Vile Parle West, Mumbai - MPCB	119.23	75.28	-36.9%	62.18	-17.4%
Worli, Mumbai - MPCB	115	22.05	-80.8%	69.78	216.5%

Pune

Pune’s post-Diwali air quality also reflected a mix of increases and decreases in PM2.5 levels across various monitoring sites. At Karve Road, PM2.5 levels rose by 35.7% from 2023, reaching 90.29 µg/m³ in 2024, while Alandi saw a decrease of 35.2% compared to the previous year. Revenue Colony-Shivajinagar recorded a significant reduction in PM2.5, dropping by 57.5% from 2023. Such disparities in PM2.5 concentrations indicate differences in pollution control effectiveness and festive activities across Pune.

Location	PM2.5 on 25th Oct 2022	PM2.5 on 13th Nov 2023	% Change 2022-2023	PM2.5 on 1st Nov 2024	% Change 2023-2024
Alandi, Pune - IITM		116.1		75.23	-35.2%
Bhosari, Pune - IITM		232.54			
Bhumkar Nagar, Pune - IITM				81.15	
Hadapsar, Pune - IITM				56.17	
Karve Road, Pune - MPCB	44.57	66.53	49.3%	90.29	35.7%
Katraj Dairy, Pune - MPCB		118.86		75.94	-36.1%
Mhada Colony, Pune - IITM		201.33		48.49	-75.9%
MIT-Kothrud, Pune - IITM					
Panchawati_Pashan, Pune - IITM				31.25	
Revenue Colony-Shivajinagar, Pune - IITM		177		75.26	-57.5%
Savitribai Phule Pune University, Pune - MPCB		159.91		111.02	-30.6%
Transport Nagar-Nigdi, Pune - IITM		171.55		54.15	-68.4%

Nagpur

In Nagpur, Ram Nagar and Ambazari showed increases in PM2.5 post-Diwali compared to previous years. Ram Nagar’s PM2.5 levels rose by 33.0% from 2023, reaching 132.05 µg/m³ in 2024, indicating higher pollution levels post-festivities. Ambazari recorded a 23.3% increase, reaching 106.66 µg/m³. However, Mahal observed a 17.3% reduction in PM2.5 from 2023. The overall upward trend in some areas reflects lingering pollution sources and emissions, possibly from firecrackers and other festive activities, impacting air quality in Nagpur.

Location	PM2.5 on 25th Oct 2022	PM2.5 on 13th Nov 2023	% Change 2022-2023	PM2.5 on 1st Nov 2024	% Change 2023-2024
Ambazari, Nagpur - MPCB		86.51		106.66	23.3%

Mahal, Nagpur - MPCB		136.67		113.03	-17.3%
Opp GPO Civil Lines, Nagpur - MPCB	94.25	95.54	1.4%	84.61	-11.4%
Ram Nagar, Nagpur - MPCB		99.29		132.05	33.0%

About Respirer Living Sciences Pvt. Ltd.



Respirer Living Sciences Pvt. Ltd. is a leading climate-tech startup in India, dedicated to achieving cleaner air and accelerating the transition to cleaner energy. Established in 2017, Respirer provides scientifically validated, scalable air quality monitoring devices and real-time air pollution analytics platforms. These solutions deliver accurate and actionable data to governments, industries, and citizens, empowering them to address air pollution and methane emissions effectively. Respirer’s network includes over 2,500 air quality devices deployed across more than 25 Indian cities and several international

locations. The company collaborates with prestigious institutions such as IIT Kanpur and Duke University and is part of the Centre of Excellence ATMAN on Clean Air Technologies, supported by the Government of India. For more details, visit the [Respirer](#)

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ANNEXURE 1

Percentage Analysis for PM2.5 and PM10 levels for Mumbai, Pune and Nagpur can be accessed here:

https://docs.google.com/document/d/1_GT7FXK0psNoi2eO_PWDp3yL2rKZv-8c/edit

ANNEXURE 2

CITY-SPECIFIC PM2.5 CONCENTRATION AS ON NOVEMBER 1, 2024 (Post-Diwali readings) - all figures are in microgrammes per cubic metre ($\mu\text{g}/\text{m}^3$)

Pune

Rank	Location	PM2.5 on 1st Nov 2024
1	Savitribai Phule Pune University, Pune - MPCB	111.02
2	Karve Road, Pune - MPCB	90.29
3	Bhumkar Nagar, Pune - IITM	81.15
4	Katraj Dairy, Pune - MPCB	75.94
5	Revenue Colony-Shivajinagar, Pune - IITM	75.26
6	Alandi, Pune - IITM	75.23
7	Hadapsar, Pune - IITM	56.17
8	Transport Nagar-Nigdi, Pune - IITM	54.15
9	Mhada Colony, Pune - IITM	48.49
10	Panchawati_Pashan, Pune - IITM	31.25

Mumbai

Rank	Location	PM2.5 on 1st Nov 2024
1	Malad West, Mumbai - IITM	194.54
2	Sewri, Mumbai - BMC	184.44
3	Mindspace-Malad West, Mumbai - MPCB	167.05
4	Kandivali West, Mumbai - BMC	142.64
5	Deonar, Mumbai - IITM	129.15
6	Kherwadi_Bandra East, Mumbai - MPCB	107.03
7	Bandra Kurla Complex, Mumbai - MPCB	103.42
8	Byculla, Mumbai - BMC	97.29
9	Chembur, Mumbai - MPCB	96.23
10	Navy Nagar-Colaba, Mumbai - IITM	77.38
11	Ghatkopar, Mumbai - BMC	76.96
12	Borivali East, Mumbai - IITM	76.04
13	Worli, Mumbai - MPCB	69.78
14	Mulund West, Mumbai - MPCB	68.51
15	Mazgaon, Mumbai - IITM	67.25
16	Vasai West, Mumbai - MPCB	66.75
17	Siddharth Nagar-Worli, Mumbai - IITM	62.90
18	Vile Parle West, Mumbai - MPCB	62.18
19	Sion, Mumbai - MPCB	59.57
20	Kurla, Mumbai - MPCB	56.04
21	Powai, Mumbai - MPCB	52.22
22	Kandivali East, Mumbai - MPCB	49.72
23	Colaba, Mumbai - MPCB	38.37

24	Khindipada-Bhandup West, Mumbai - IITM	29.80
25	Chhatrapati Shivaji Intl. Airport (T2), Mumbai - MPCB	24.49
26	Bandra, Mumbai - MPCB	-
27	Borivali East, Mumbai - MPCB	-
28	Bandra Kurla Complex, Mumbai - IITM	-
29	Chakala-Andheri East, Mumbai - IITM	-
30	Shivaji Nagar, Mumbai - BMC	-

Nagpur

Rank	Location	PM2.5 on 1st Nov 2024
1	Ram Nagar, Nagpur - MPCB	132.05
2	Mahal, Nagpur - MPCB	113.03
3	Ambazari, Nagpur - MPCB	106.66
4	Opp GPO Civil Lines, Nagpur - MPCB	84.61