Air quality trends in Uttar Pradesh and the way forward

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Executive Summary

Uttar Pradesh is India's fourth largest state but has the highest population at around 200 million. However, its rapid industrialisation, high population and booming housing construction market among other factors, has resulted in very poor air quality. With the onset of winter, UP's Air Quality Index (AQI) values dip to as low as 250 – 350, which is at least six times more than levels which are considered good. Prolonged exposure to such poor air quality can cause respiratory illness and other serious medical conditions, such as the elevated risk of hypertension and diabetes. In Uttar Pradesh in 2019, as many over 3.4 lakh[1] deaths were attributable to air pollution. The primary sources of air pollution in UP are vehicular and industrial emissions, construction work and stubble burning.

Tackling air pollution must be a priority for the state, but it has not yet garnered the seriousness that it calls for, despite the worsening severity of the issue. For instance, the Control Board (CPCB) only has 44 continuously operated monitoring stations (CAAQMS) across 17 UP cities at present. The distribution is inadequate and uneven, as major centres like Bareilly, Ayodhya, Faizabad, Balia are not monitored at all, while Lucknow has seven monitoring sites and Ghaziabad, NOIDA, Kanpur have four each. This is despite the CPCB guidelines specifying that there should be at least one station for every one million population; Class 1 cities should have a minimum of three stations each; mega cities about nine each; industrial areas about six and capital cities six each.

The aim of this study was to:

1. Present the data on average monthly PM 2.5 concentrations from the state's 27 continuous air quality (CAAQMS) monitoring stations for January 2017 – July 2021
2. Provide a snapshot of UP's air quality monitoring network
3. Suggest the interventions needed to improve the air quality in the state

The study covers 10 cities: Hapur, Varanasi, Ghaziabad, Lucknow, Meerut, Kanpur, Moradabad, Agra, Noida and Greater Noida. Of these, Varanasi, Ghaziabad, Lucknow, Kanpur, Moradabad, Agra and Noida are also classified as Non-Attainment Cities (NACs) under the National Clean Air Program (NCAP), which was launched in January 2019[2].

[1] Health and economic impact of air pollution in the states of India: The Global Burden of Disease Study 2019

[2] They did not meet the National Ambient Air Quality Standards (NAAQS) for PM 10 (Particulate matter that is 10 microns or less in diameter) or NO2 (Nitrogen Dioxide) in the last 5 years

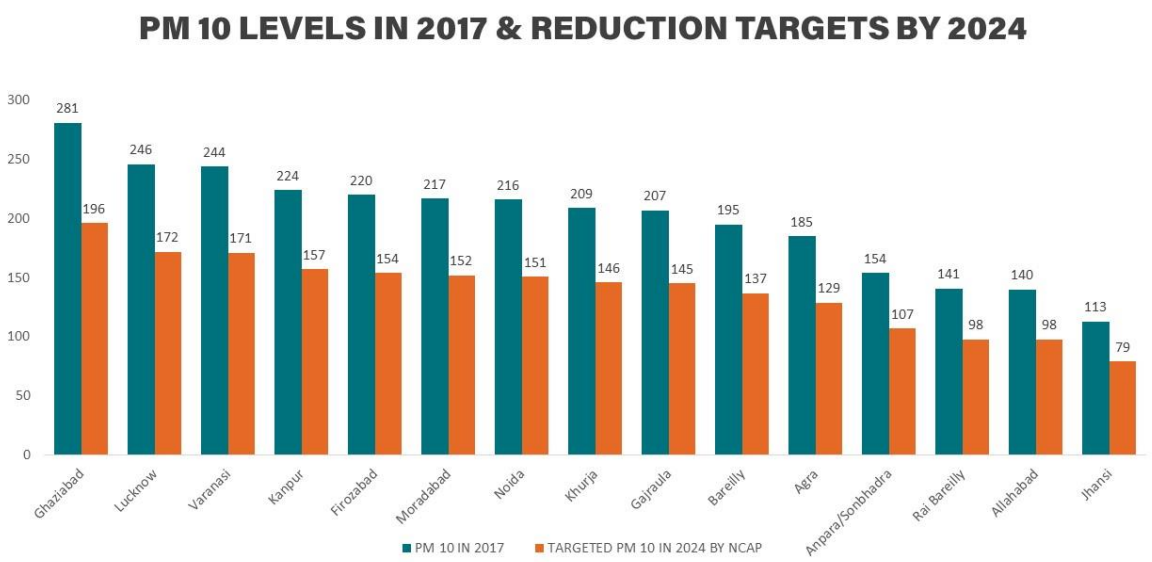


Fig 1. PM 10[3] levels in 2017 and reduction targets by 2024 under NCAP

The analysis finds that:

1. UP lacks enough monitoring stations to quantify the air pollution crisis in the state, despite its large population, number of urban centres and its growing economic output
2. The state's air quality worsens every winter, but even during March to June the average PM2.5 levels stayed above the Central Pollution Control Board's (CPCB) safety limit of 40 ug/m3 for Continuous Ambient Air Quality Monitoring Stations (CAAQMS).
3. Air quality monitoring is not just inadequate in UP, but data collection from the installed monitors is also sporadic. The maximum deficit in data was observed in Nishat Ganj, Pallavpuram Phase - 2, Jai Bhim Nagar, and Ganga Nagar in the city of Lucknow and Meerut respectively.

[3] PM 2.5 levels in 2017 were available only for Agra and Lucknow

Air Quality Monitoring status across Uttar Pradesh

In 2017, there were 10 CAAQMS in Uttar Pradesh. This increased to 25 by December 2019 and presently there are 44 stations in the state.

Based on CPCB records, we can see that air quality monitoring data has been sporadic. across the years. Data is available for some months and for some stations but with gaps. The data gaps in each year at every station have been outlined in the figure below.

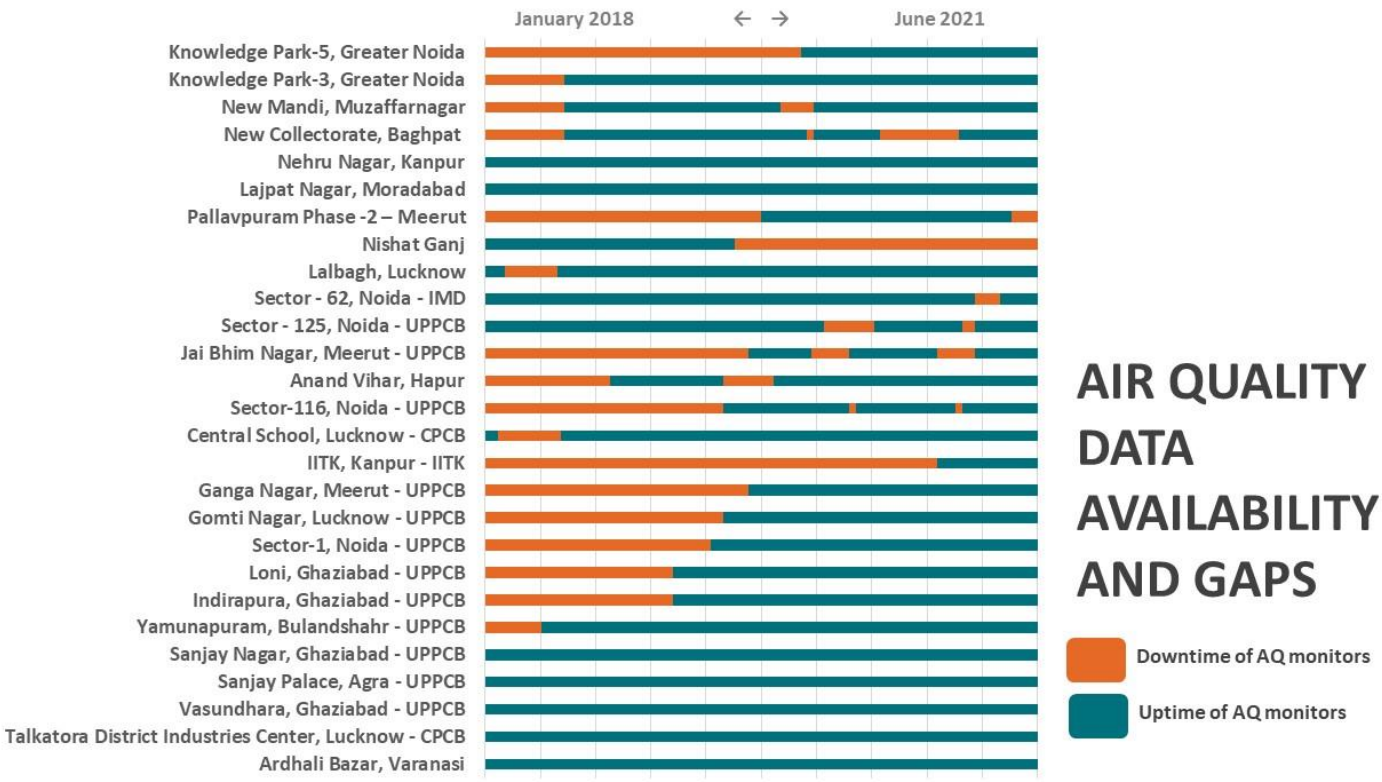


Fig 2. Availability and gaps in data at 27 selected CAAQMS stations in UP

PM 2.5 trends over the years

The graph shows the average PM2.5 concentrations from 2017 to 2020. We can see a clear increase (1.94%) in values during 2017-18 while subsequent decrease in the consecutive year from 2018 to 2020. Overall change in PM2.5 values during 2017-2019 is about -7.47%. There was more decline in the last year that is 2019-20, predictably because of the lock down.

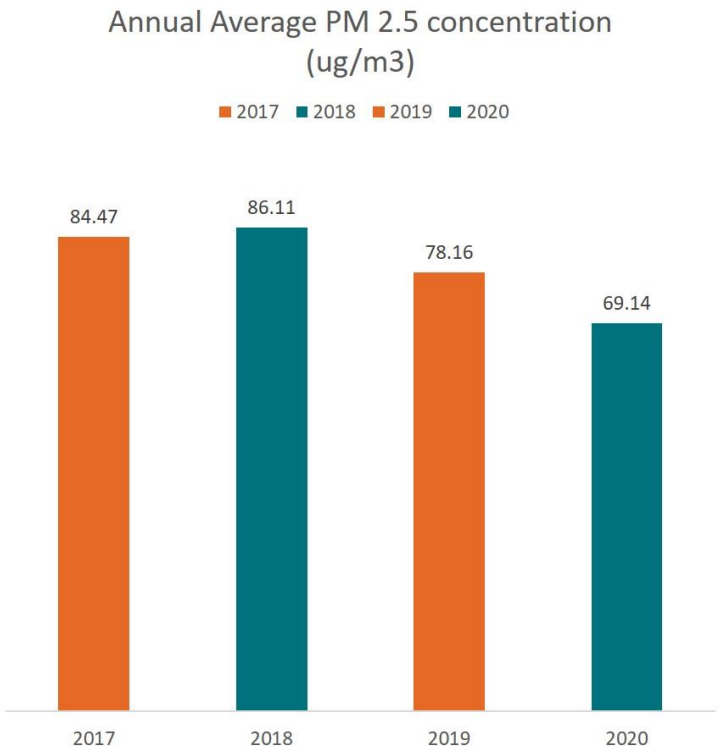


Fig 3. Annual average PM 2.5 concentration from 2017 to 2020

We recommend that:

Air quality monitoring in UP must be urgently scaled up with the help of low cost, sensor-based, regulatory grade monitors, since the country itself has merely 200 CAAQMS monitors when it needs at least 4,000.

Since air pollution is both a regional as well as a hyper local issue, robust monitoring is necessary. Combining affordable technologies like low-cost monitors along with reference monitors should be deployed for evidence-based methods to deal with air quality management.

Setting up of monitors is an exercise which should be done with scientific understanding. Setting up more stations should be considered based on where most people live, the pollutants they are exposed to and the need for a daily alert system. Hotspots of air pollution should be considered while setting up monitors.

Efforts to regulate the sources of pollution, based on the severity of AQI at any given point, must take top priority in the interest of public health.

Rural areas have no record of any pollutant concentrations but their inhabitants are exposed to high levels of particulate matter and other pollutants due to their reliance on firewood and coal for day-to-day activities. UP's air quality monitoring network must be expanded beyond its cities to improve air quality in its rural areas as well.

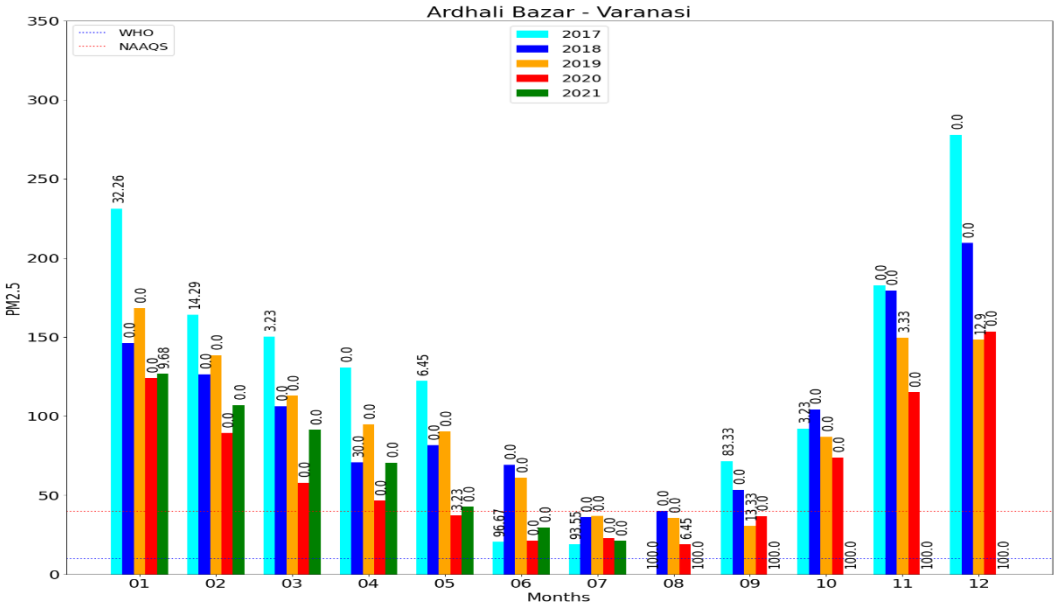
UP must adopt a regional airshed approach to its air pollution woes, with the extent of the airshed scientifically identified, as areas having common air flow to control polluting sources beyond city boundaries. This is essential to be able to find long term answers to better air quality management for the state.

Monitoring Station Wise analysis

This is CPCB CAAQMS data, compiled for 27 stations selected based on the Quality Check (QC) data availability for UP state. The data is presented from January 2017 to June 2021; however, the monitoring stations were started at different time periods so all stations do not have data from 2017, this is highlighted in the Fig 1. The figures show average monthly data over the years. The values over the bars in the figures represent the number of missing data points, so zero means no data gap.

Ardhali Bazar, Varanasi

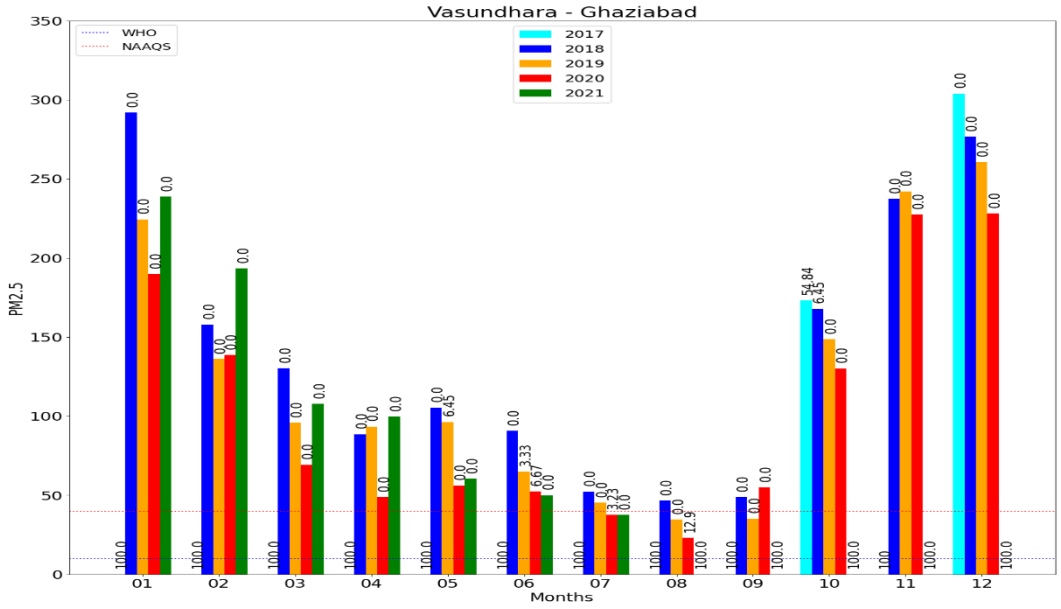
- Ardhali Bazar is primarily a commercial site with busy markets and heavy footfall.
- PM 2.5 levels at Ardhali Bazaar are considerably lower in June and July 2017 compared to corresponding periods in subsequent years, when it crossed 270 ug/m3 (microgrammes per cubic metre). However, levels in December 2019 and December 2020 still remained four times that of CPCB's safe limits of 40ug/m3.
- While levels consistently dropped in 2020 in comparison to 2019 levels, 2021 ironically witnessed levels above 2020. Levels remained above CPCB's safety limits during March to May 2021, despite re-imposed lockdowns due to COVID-19 second wave.



Vasundhara, Ghaziabad

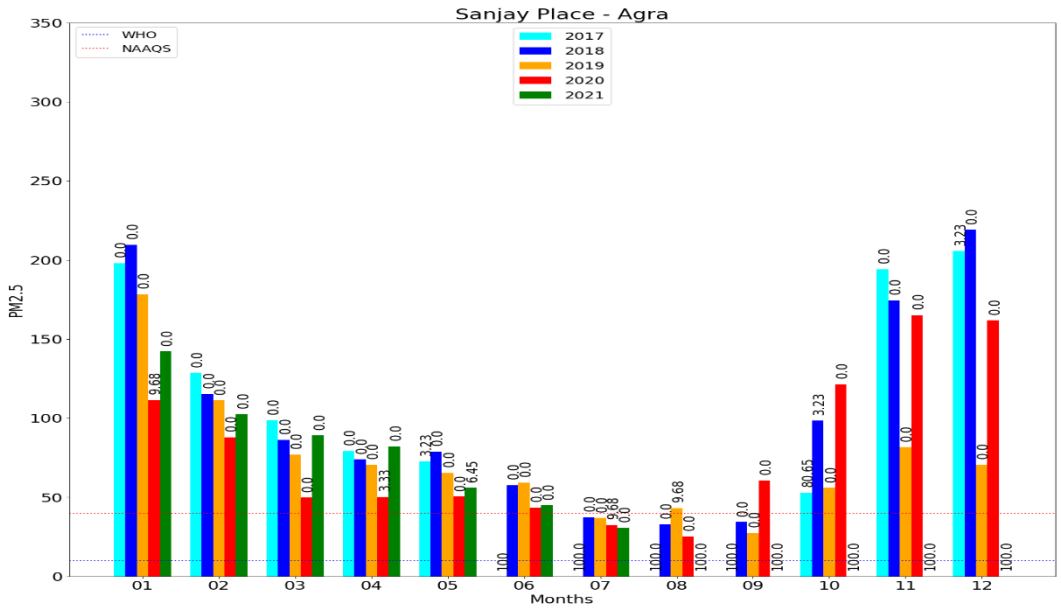
- Vasundhara is one of the biggest and developed localities of Ghaziabad in terms of residential facilities. Since it has a close proximity to Delhi it is one of the sought-after places in Ghaziabad.
- PM2.5 levels in Vasundhara, Ghaziabad, have remained considerably high during winter months staying well 200 ug/m3 from November to January in all years from 2017 to 2021.

- PM2.5 levels in January to May 2021 were higher compared to levels in 2020 for the same months. January 2021 witnessed levels above 240 ug/m3 which dipped to approximately 195 ug/m3 in February 2021.



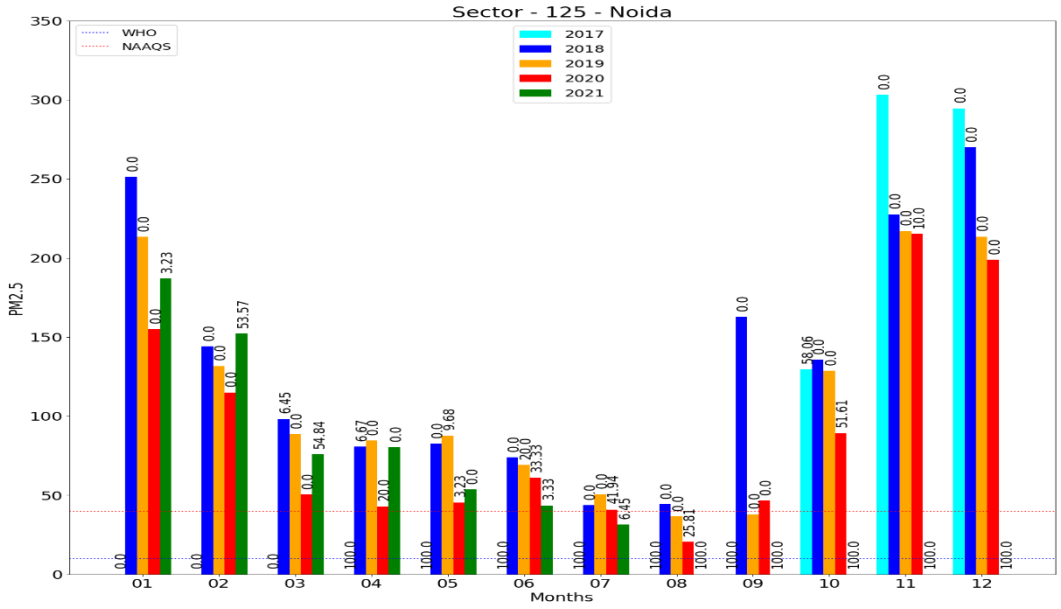
Sanjay Place, Agra

- Located in the center of Agra, Sanjay Place is a huge commercial site with busy markets and roads.
- While levels in 2019 saw a consistent drop month-on-month in comparison to PM2.5 levels in 2017 and 2018, levels between September to December 2020 started rising and remained double of the monthly values in the same month in the previous year, 2019. For example, November 2019 levels were approximately 90 ug/m3, while it approximately 170 ug/m3 in November 2020. There is no gap for monitoring data availability for the respective months.



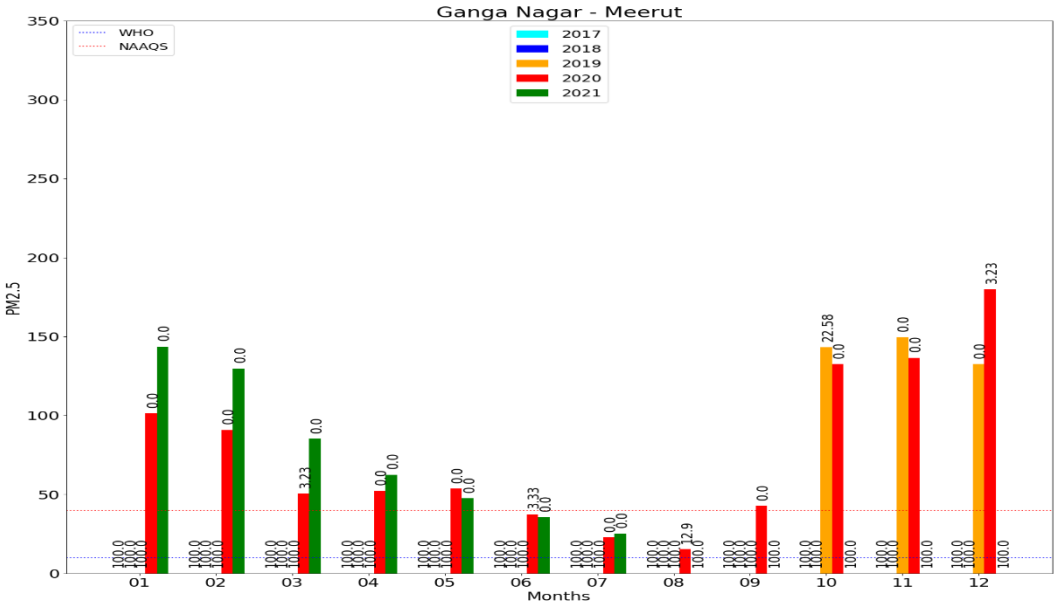
Sector 125, Noida

- Sector 125 is a popular locality in Noida for its residential facilities
- Sector 125, Noida has experienced extremely high PM2.5 levels in winter months. From approximately 300 ug/m3 in November and December, levels have reduced year-on-year although they still remain above 210 ug/m3.
- Despite significant data gaps from January to March 2021, PM2.5 levels in these months have remained way higher than those in 2020.



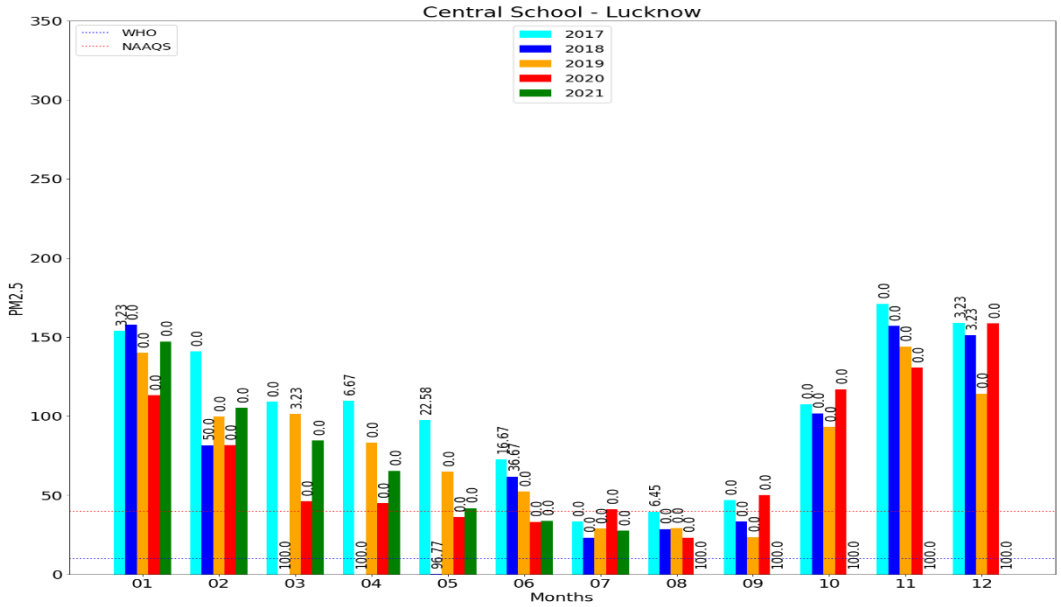
Ganga Nagar, Meerut

- Ganga Nagar is located in the north-east part of Meerut and is primarily a residential site.
- Many educational institutions have come up in this area too
- CAAQMS monitoring at this site started in October 2019. While October and November 2020 witnessed a small improvement in comparison to the same months in 2019, levels in 2021 January to April shot above 2020 levels from Jan-April.



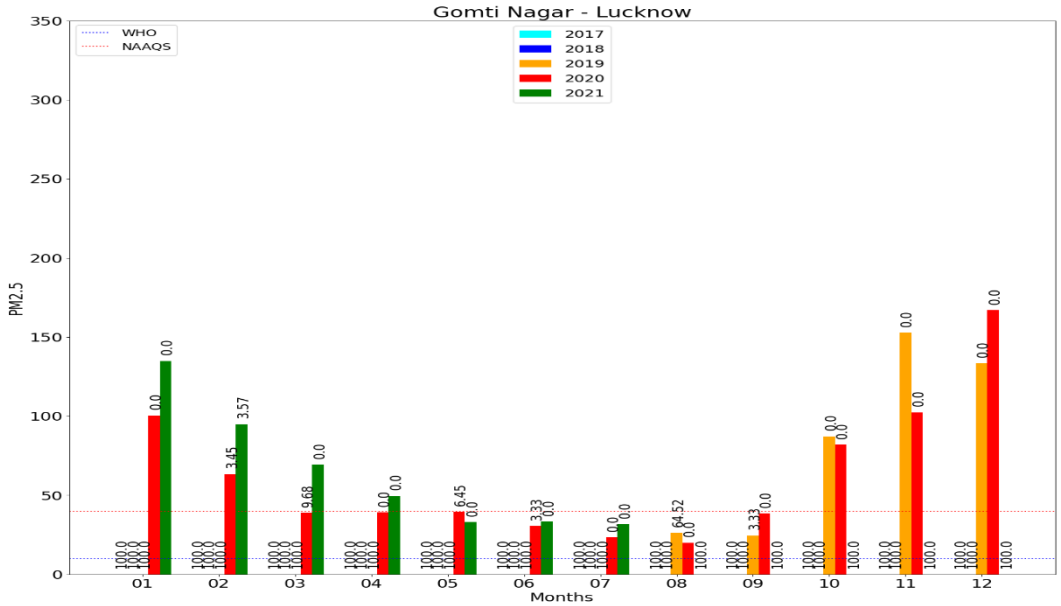
Central School, Lucknow

- Levels in winter months like November, December and January have ranged between 160 and 110 ug/m3 for this site between 2017 to 2020. Children are among the most vulnerable to PM2.5 exposure. WHO's study, 'Air Pollution and Child Health: Prescribing Clean Air,' in 2018 found that 93% of children under 15 years of age around the world breathe toxic air daily and air pollution contributed to respiratory tract infections which ultimately killed approximately 543,000 children under 5 years old in 2016.
- This site has also witnessed an increase in PM2.5 levels in 2021 January to May in comparison to the same months in 2020. There is no data gap recorded for both years in the same months.



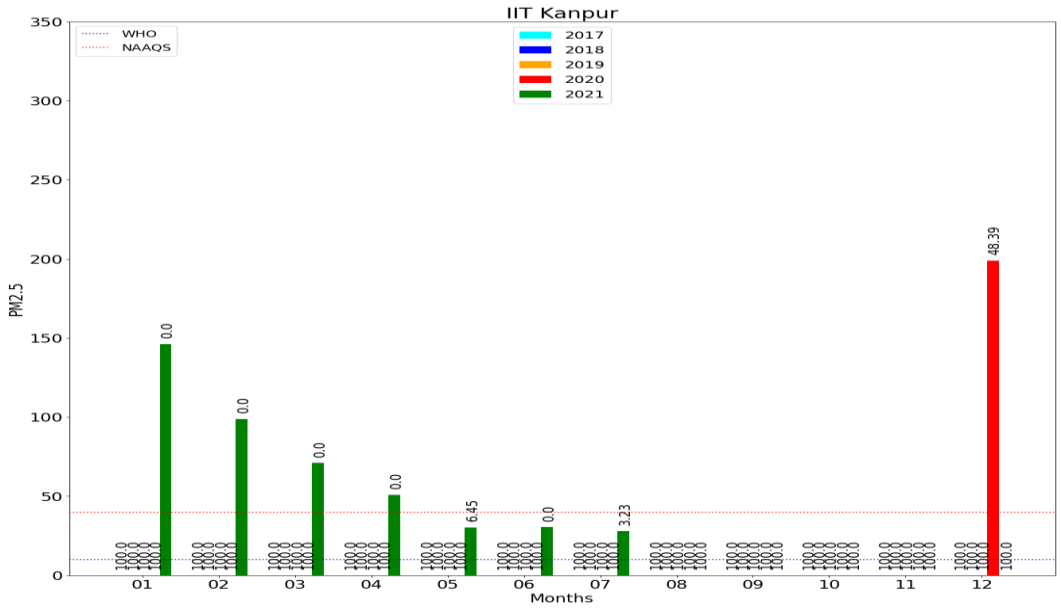
Gomti Nagar, Lucknow

- Gomti Nagar is home to both residential and non-residential projects.
- It is one of the fastest developing commercial and IT hubs of Lucknow
- CAAQMS monitoring initiated from August 2019 at this site. Nov-Dec levels fluctuated around 150 in 2019-2020, however like other CAAQMS monitoring sites in UP, Gomti Nagar also witnessed a rise in PM2.5 levels from January to April 2021 in comparison to the same months in 2020.



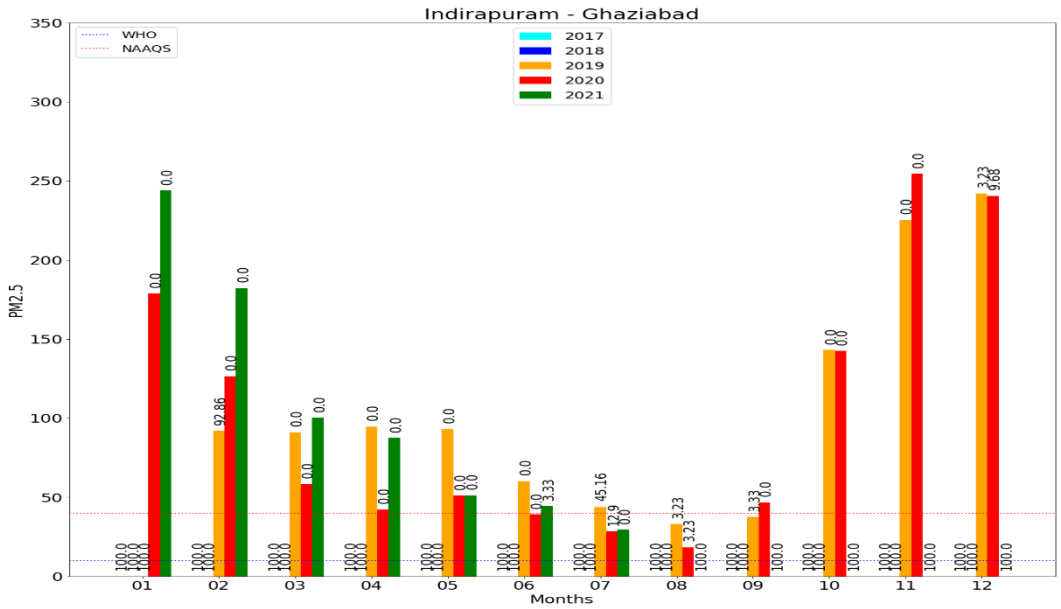
IIT Kanpur

- IIT Kanpur is located in Kalyanpur, on the outskirts of Kanpur on the Grand Trunk Road and measures close to 420 hectares
- CAAQMS monitoring site at IIT Kanpur came up in December 2020. While there was close to 50% data gap in that month, levels in Jan 2021 dropped considerably at approximately 150 ug/m3, while Dec 2020 levels touched 200 despite only about 50% data availability for the month.



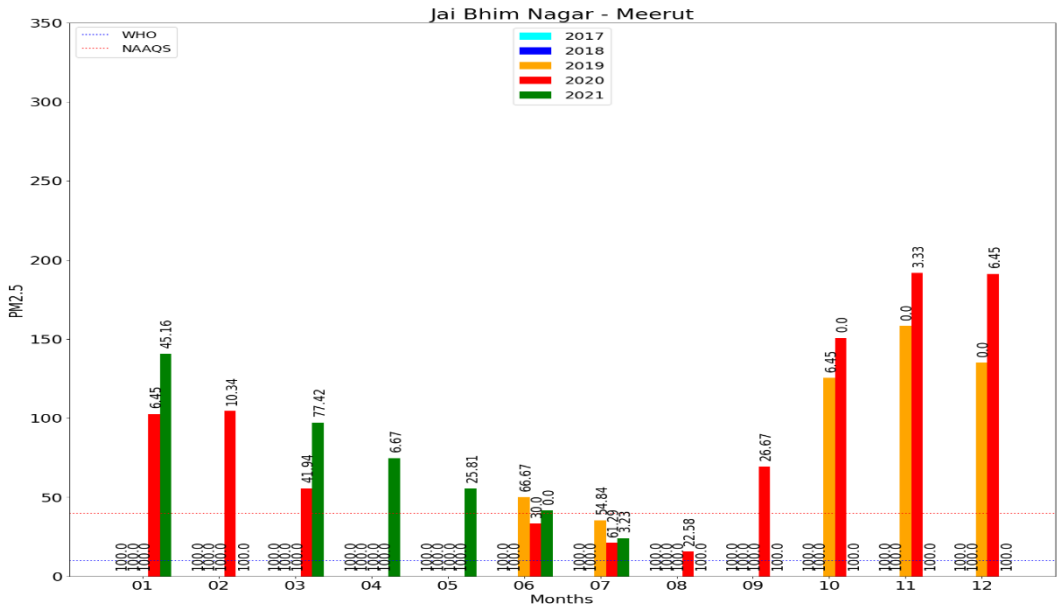
Indirapuram, Ghaziabad

- With its close proximity to Delhi, Indirapuram is a sought-after residential area as well as for retail development
- The CAAQMS station came up at this site in February 2019. Levels in winter have touched 250 in 2020 and Jan 2021. Even during summer months from March to June PM2.5 levels have ranged between 40 and 100, staying on the border or well above the CPCB safe limit. Levels in March to July 2021 were higher in comparison to the same months in 2020, with the only exception being May 2021 when levels were almost same as May 2020.



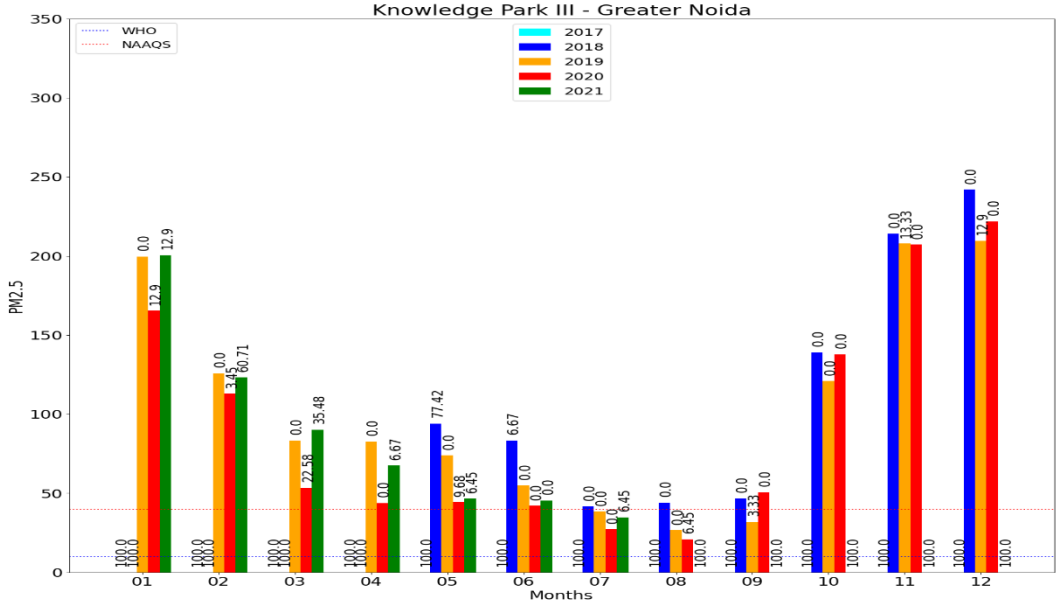
Jai Bhim Nagar, Meerut

- The locality Jai Bhim Nagar is a residential site in the Meerut district with a population 24411
- According to the data graph, CAAQMS monitoring at this site started from June 2019, however data remained patchy for the first two months and completely missing for August and September.
- While levels in October to December 2020 were higher than those in 2019 for the same months, touching almost 200 ug/m3 in November and December 2020. Drawing comparisons for 2020 and 2021 first half of the year is difficult at this site since data is missing for one year or the other in many months. There is no monitoring data available for February 2021, however there is none for April and May 2020. January and March when data for both years for respective months is given, levels in 2021 have gone above those in 2020 touching almost 140 u/m3 in Jan 2021.



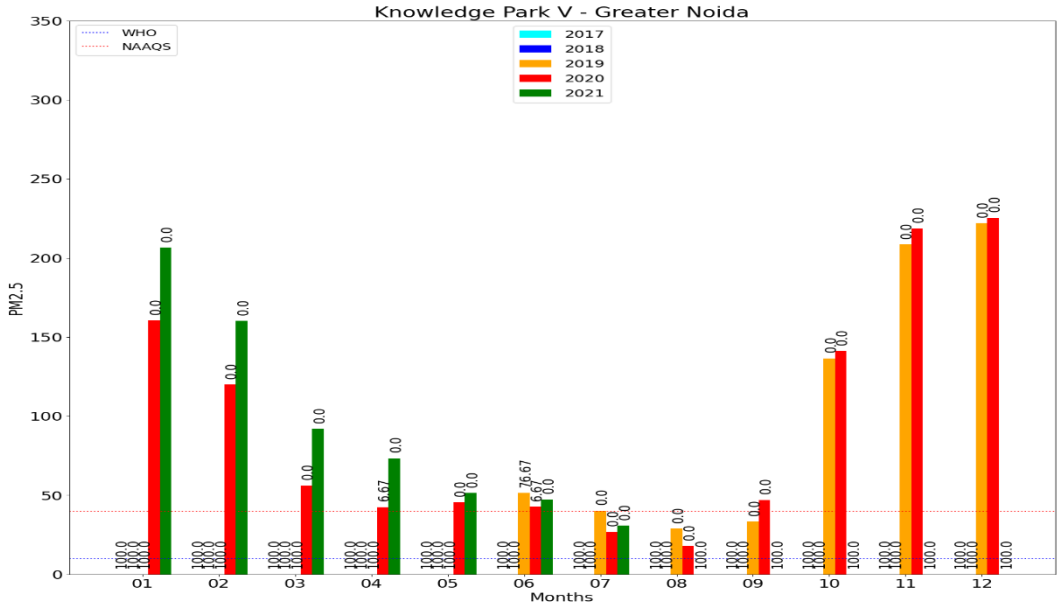
Knowledge Park III, Greater Noida

- Knowledge Park III is a hotspot for upcoming and fully developed projects.
- It is a popular residential site in the city of Greater Noida.
- CAAQMS monitoring started from May 2018 at this site. Levels in winter months at this site have bordered around 200 ug/m3. PM2.5 in summer months from March to June has also remained above CPCB's safe limits of 40 ug/m3.
- Despite monitoring data gaps, levels in 2021 from January to June remained higher in comparison to the same months in 2020.



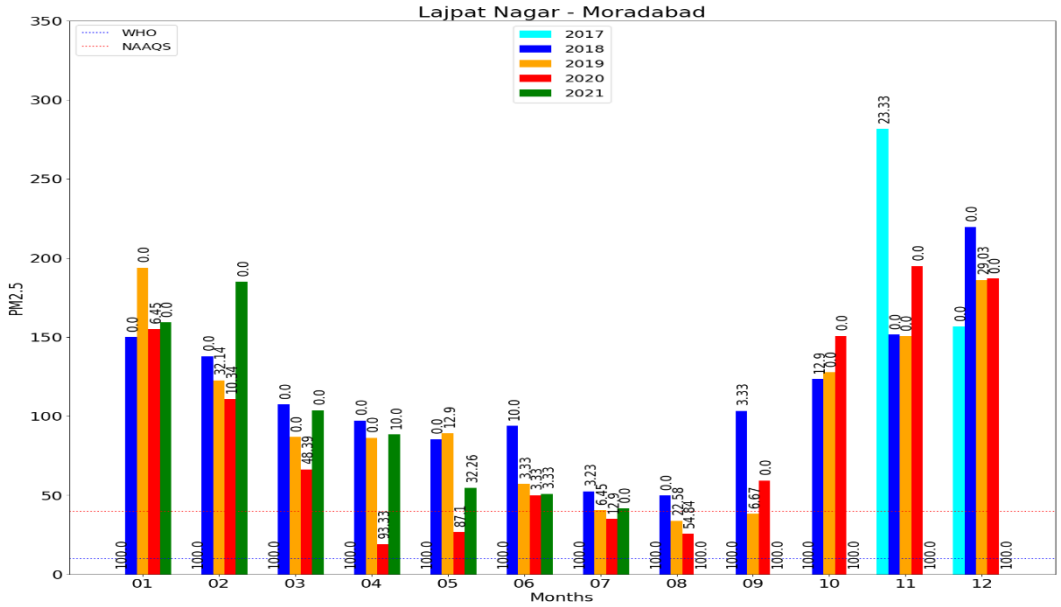
Knowledge Park V, Greater Noida

- Knowledge Park V is a large residential and commercial site in Greater Noida real estate region
- CAAQMS monitoring started in June 2019 at this site. Winter PM2.5 levels have ranged between 200 and 250 ug/m3 in 2019, 2020 and 2021, with the only exception being January 2020 when levels were around 160 ug/m3. While 2021 consistently month-on-month has seen levels higher than 2020 at this site and summer months in 2021 from March to June have remained above the CPCB safe limits, ranging from 90-50 ug/m3.



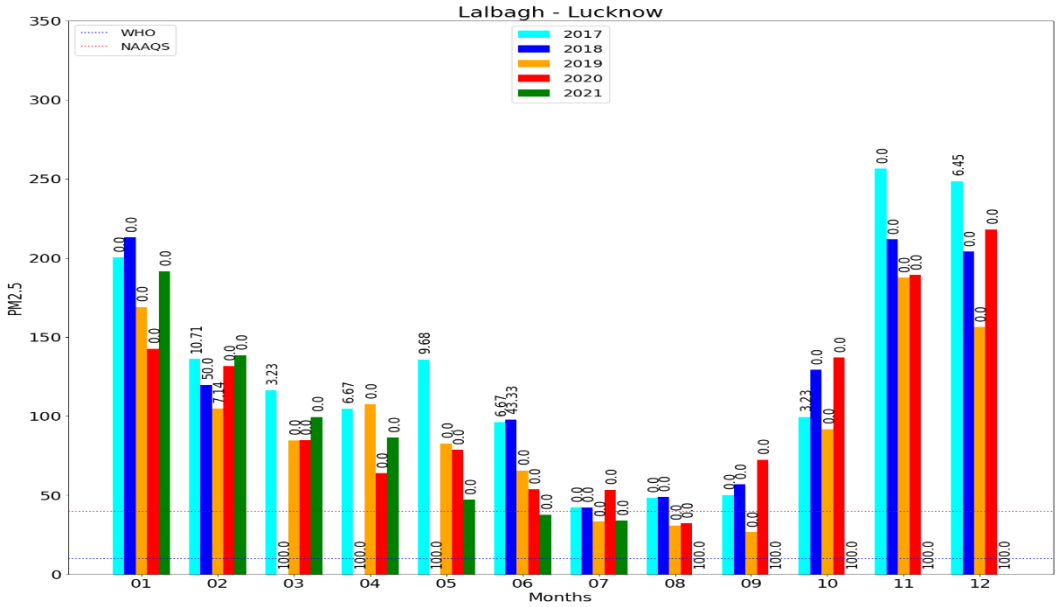
Lajpat Nagar, Moradabad

- This site has had CAAQMS monitoring since November 2017 allowing observation of a longer time scale of monthly and annual variations.
- Levels in winter months from October to January year-on-year have remained around 150 ug/m3. while there was a marked improvement in levels in 2020 in comparison to 2019, 2021 January onwards has seen a rise in PM2.5 levels in comparison to the same months in 2020.



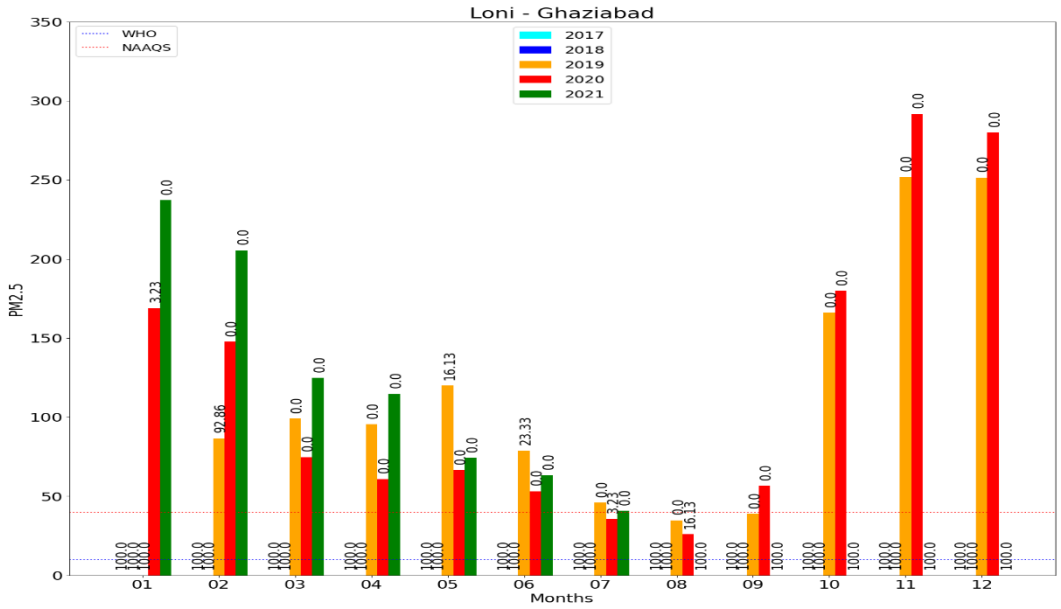
Lalbagh, Lucknow

- Lalbagh is one of the historic and primary commercial hubs of Lucknow city
- Lalbagh has had CAAQMS monitoring since the start of 2017. PM2.5 levels at this site have ranged above 150 and crossing 200 ug/m3 in winter months from November to January. While May to July 2021 saw a drop in levels in comparison to the same months in 2020, January to April 2021 witnessed a consistent monthly rise in comparison to PM2.5 levels in 2020 for the same months.



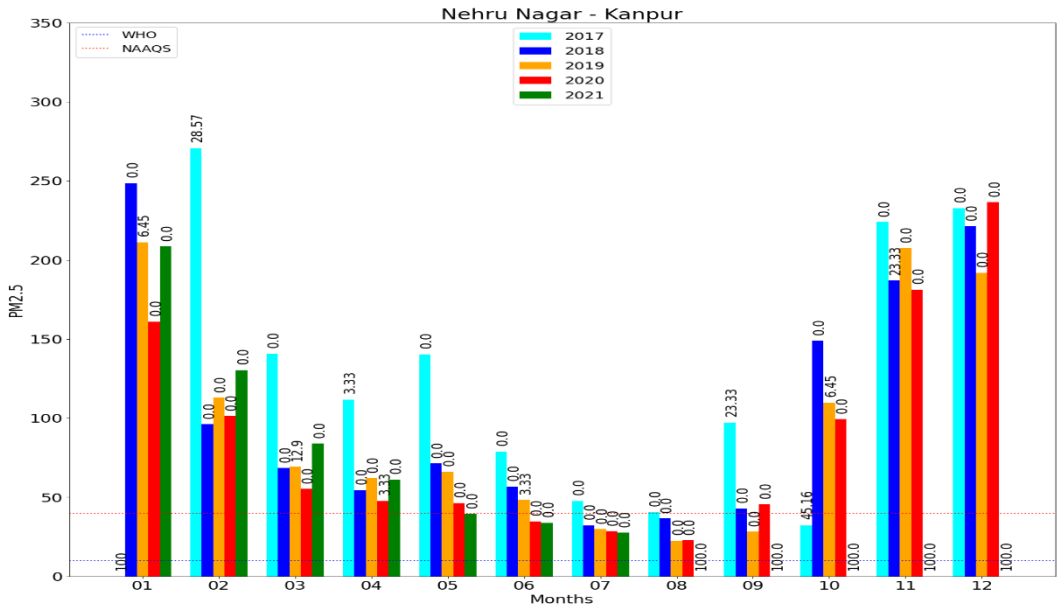
Loni, Ghaziabad

- Loni is located towards the north east region of Ghaziabad with total population of the area is 516,082 and famous for the world's longest LPG gas pipeline starting from Gujarat to Loni.
- While CAAQMS monitoring was setup in February 2019 at Loni, PM2.5 levels in November-December of 2019 and 2020 ranged between 250-300 ug/m3 and levels increased in 2020 in comparison to 2019 in the same months. A similar trend was observed where levels from January to July 2021 were above levels in 2020 for the same months. While levels in January 2020 ranged around 170 ug/m3, in January 2021 they were approximately 240 ug/m3.
- Levels in summer months from March to June have also remained higher than CPCB's safe limits. Levels in March and April 2021 stayed between 100-150 ug/m3 mark despite the Covid-19 restrictions.



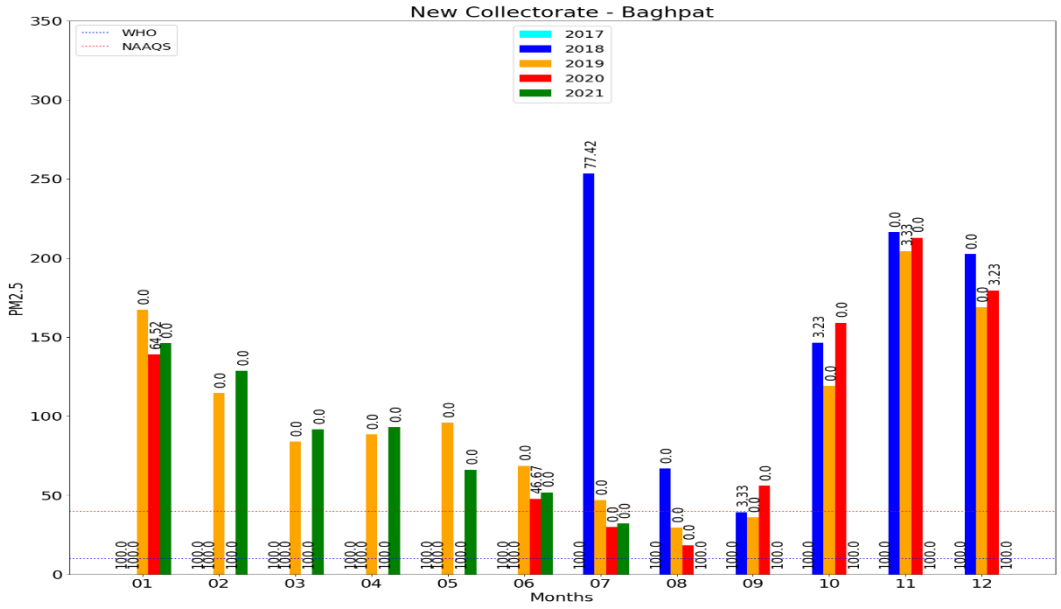
Nehru Nagar, Kanpur

- The CAAQMS site at Nehru Nagar in Kanpur was set up in February 2017 as per the data availability.
- PM2.5 levels have ranged above the 200 mark in winter months from November to January with few exceptions like Jan 2020 when levels were little above 150 ug/m3, however Jan 2021 levels again crossed above 200 ug/m3.
- The similar trend was observed at this site where levels in 2021 starting from January till April were higher in comparison to the same months in 2020.



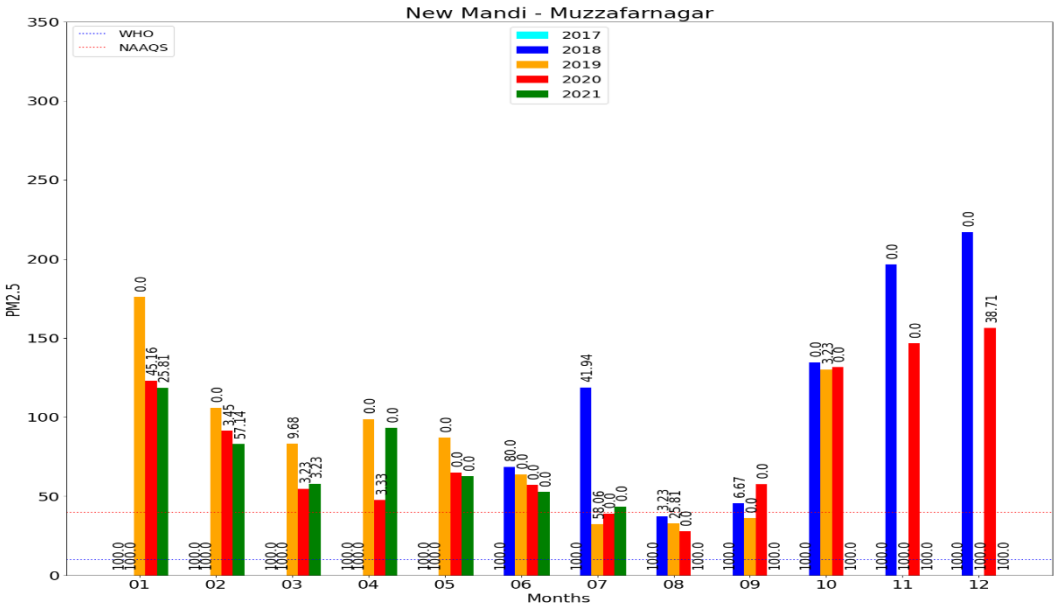
New Collectorate, Baghpat

- CAAQMS monitoring started at New Collectorate in Baghpat from July 2018 as per the data availability. However, there is no data available for the site from February to May 2020 and only about 60% of data for January and June 2020. Therefore, drawing a comparison between 2020 and 2021 levels will be inaccurate.
- However, January 2021 is higher in comparison to January 2020 and also higher in comparison to February-April 2019 where there is full data confidence for the same months for both years.



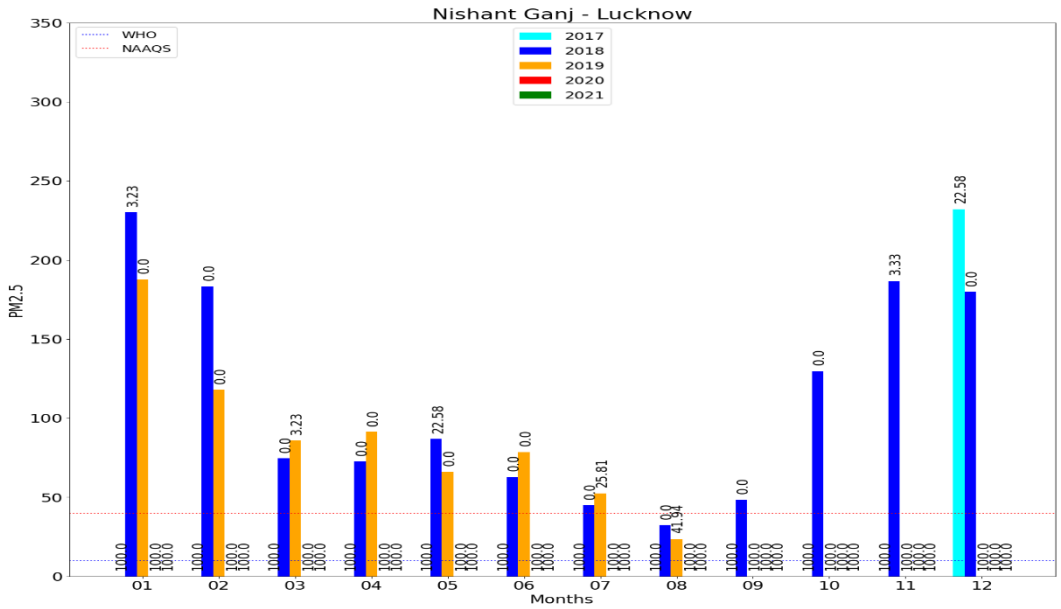
New Mandi, Muzaffarnagar

- CAAQMS monitoring came up in June 2018 at this site, however the quality of data has been erratic. While there is no data available for November to December 2019, there is 38% data available for Dec 2020, 45% for January 2020, 25% for January 2021 and 57% for Feb 2021.
- Since data is not available consistently, drawing monthly y-o-y comparisons for the site will be inaccurate. However, even with the limited data available, the site witnessed high winter levels ranging between 100-150 ug/m3 and summer months from March to June remaining above CPCB's safe limits, ranging from 50-100 ug/m3.



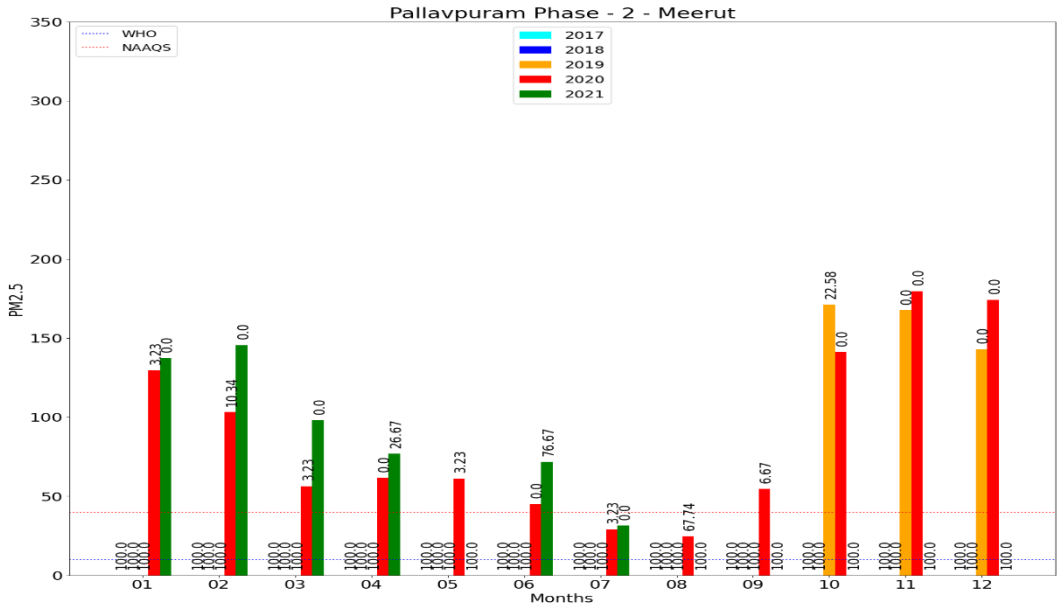
Nishat Ganj, Lucknow

- Nishat Ganj is a residential and commercial site of the city
- Despite CAAQMS monitoring data showing from December 2017, there is no further data available after August 2019 at Nishat Ganj. Like most other stations in Lucknow, the trends remained the same for winter and summer months. However, with no data available for last two years, no recent observations can be made for this site.



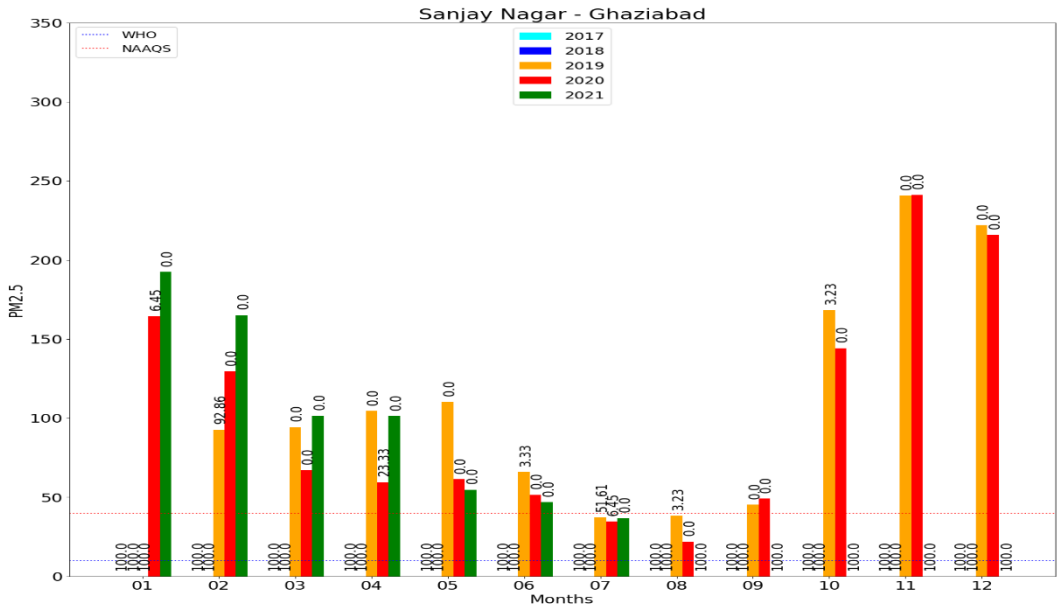
Pallavpuram Phase – 2, Meerut

- CAAQMS monitoring started from October 2019 at this site. PM2.5 levels from October to December, 2019 and 2020, ranged between 150-200 ug/m3.
- While there are small data gaps of 3-10% in Jan-Feb 2019, levels in 2021 from Jan to July are higher in comparison to respective months in 2020. However, there is no monitoring data available for May 2021.



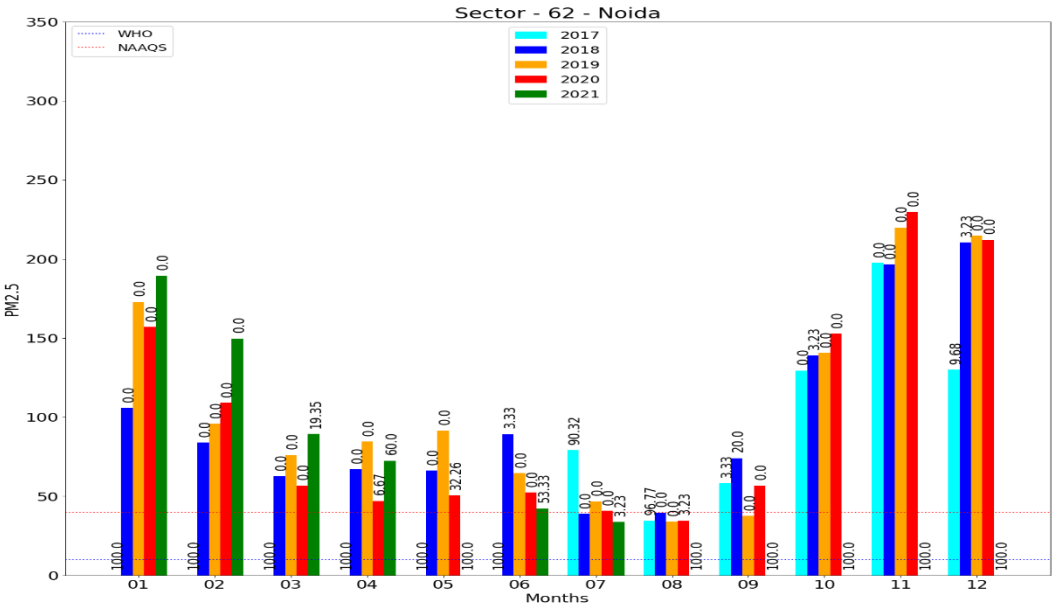
Sanjay Nagar, Ghaziabad

- The CAAQMS site came up in February 2019. PM2.5 levels from October to January ranged between 150-250 for 2019, 2020 and 2021. While there was improvement in PM2.5 levels in some months in 2020 in comparison to 2019 levels, Jan to April 2021 witnessed consistent increase in levels in comparison to those in 2020 for the same months.



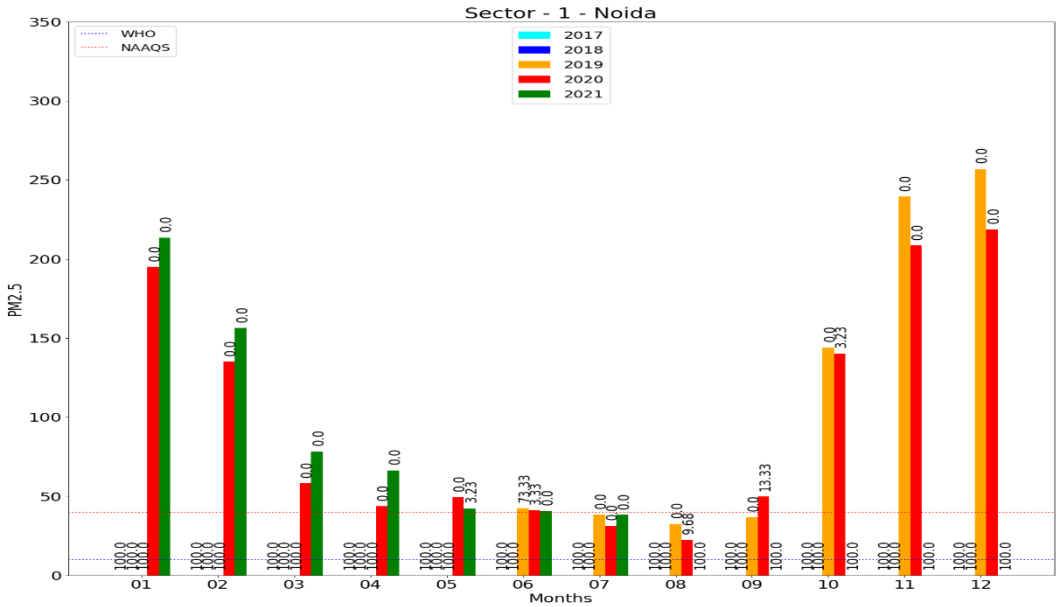
Sector 62, Noida

- The CAAQMS monitoring at Sector 62 Noida was setup in July 2017. Like most monitoring sites in Uttar Pradesh, PM2.5 levels in winter months from November to January at this location ranged between 150-250 ug/m3.
- Data confidence since 2019 at this site has mostly been consistent and high. PM2.5 levels in October and November 2020 saw a slight increase in comparison to 2019 levels for the same months. January to April 2021 levels were consistently higher in comparison to levels in 2020 and there is no data available for May 2020.
- Summer trends from March to June remained above CPCB's safe limits year on year.



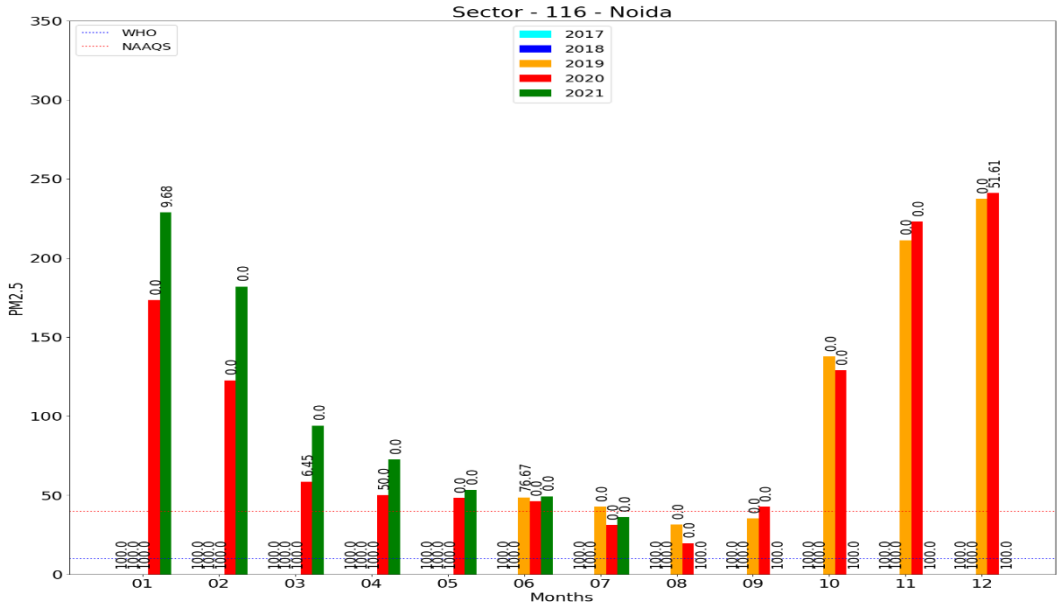
Sector 1, Noida

- CAAQMS monitoring came up from June 2019 at this site as per data availability from the CPCB site. Levels from November to January 2019-2021, with the slight exception in January 2020, have remained above 200 ug/m3.
- Data confidence from January to April 2020 and 2021 is 100% and levels in 2021 have consistently increased in these months in comparison to those in 2020.



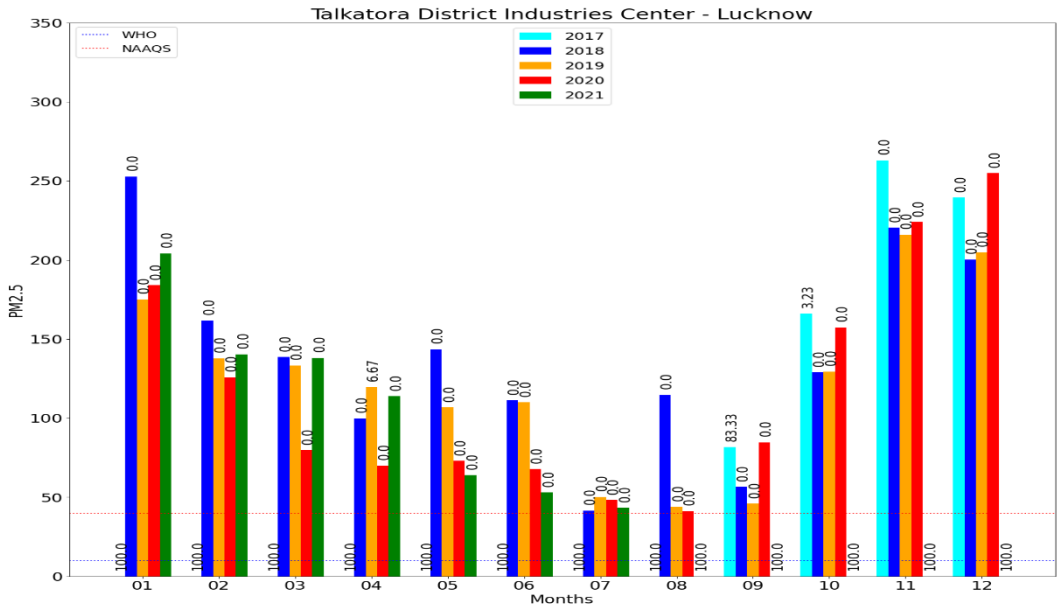
Sector 116, Noida

- Sector 116 is a popular residential site in the Noida city
- As per data availability, CAAQMS monitoring started from June 2019 at this site. PM2.5 trends from November to January remained between 200-250 ug/m3. Levels in January to April 2021 were higher in comparison to the same months in 2020. While January 2020 observed around 175 ug/m3 PM2.5 concentration, January 2021 touched close to 230 ug/m3, February 2020 was above 120 ug/m3, while Feb 2021 was around 180 ug/m3.



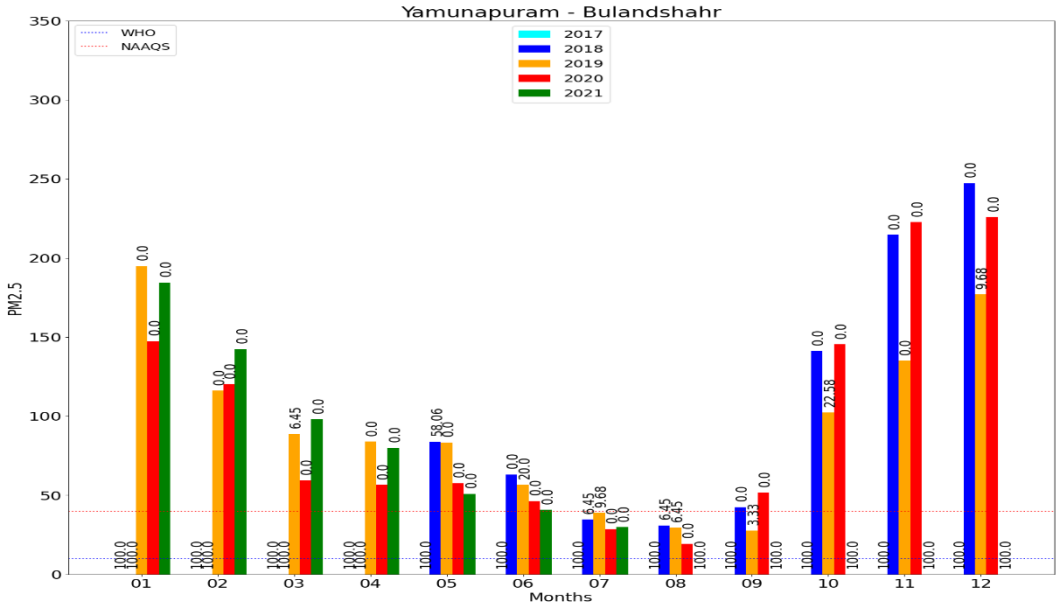
Talkatora District Industries Centre, Lucknow

- As an industrial site, Talkatora District Industries Centre in Lucknow has clocked winter levels in November and December ranging between 210-260 ug/m3. CAAQMS monitoring started from September 2017. While February to August 2020 saw an improvement from 2019 levels, January and September to December observed an increase from 2019 levels. Similarly, January to April 2021 levels were higher in comparison to 2020 levels for the same months.



Yamunapuram - Bulandshahr

- CAAQMS station at this site started recording data from May 2018. Winter levels from November to January ranged between 150-250 ug/m3. September to December 2020 witnessed levels increasing in comparison to levels in 2019 for the same year. While January to April 2021 levels were higher in comparison to 2020 for the same months, data confidence was 100% for these months in both years.



Findings

A significant data gap was observed in many of the monitoring sites of the state. The maximum deficit in data was observed in Nishat Ganj in Lucknow and Pallavpuram Phase - 2, Jai Bhim Nagar, and Ganga Nagar in Meerut. IIT Kanpur monitoring site became functional in December 2020, hence there is no data prior to that. In each of these monitoring sites, PM2.5 data was gathered only for one or two years. While the stations, Nehru Nagar in Kanpur, Lalbagh and Central School in Lucknow, Sanjay Place in Agra, and Sector - 125 in Noida reported PM2.5 concentrations for the maximum number of days in the last 5 years.

The particulate matter had reached alarming levels in most of the cities as the mercury levels dropped. The burning of stubble, vehicular emission, construction work, roadside dust, and emissions from power plants are the primary source of particulate as well as gaseous pollutants in these regions. Vasundhara in Ghaziabad, located in the western part of the state recorded the highest monthly average of PM 2.5 i.e. 303.93 µg/m3 in December without any absence of data for the whole month. It is followed by Sector - 125 in Noida, Loni in Ghaziabad, Lajpat Nagar in Moradabad, and Ardhali Bazar in Varanasi each recording severe PM 2.5 levels of 303.07 µg/m3, 291.65 µg/m3, 281.51 µg/m3, and 277.89 µg/m3 respectively.

Most of the sites that recorded lower concentrations of PM2.5 in comparison to others recorded huge data gaps as well. Gomti Nagar and Central School in Lucknow, Ganga Nagar, Pallavpuram Phase 2 and Jai Bhim Nagar in Meerut reported lower concentrations of about 166.89 µg/m3, 170.92 µg/m3, 179.83 µg/m3, 179.64 µg/m3, and 191.64 µg/m3 respectively, which still exceeded the safe levels of air quality in high numbers. The rising streak of this pollutant was observed in the months of November and December.

PM2.5 levels saw a great fall in the months of July and August. In all the stations, the concentration was reduced to about 30 - 40 µg/m3 in these months. In all these years, 2020 had the least value of the pollutant during summer season owing to the lockdown during the pandemic period.

Some of the stations that covered the data for all these years also saw a modest decrease in PM2.5 levels. In monitoring sites like Ardhali Bazar, PM2.5 levels reduced from 231.23 µg/m3 to 126.78 µg/m3 in the month of January and 164.26 µg/m3 to 106.94 µg/m3 in the month of February from 2017 to 2020. Sanjay Place in Agra also recorded a decrease in the PM 2.5 concentration since 2017. However, the decline in PM2.5 levels in these months was still higher than the safety standards of CPCB in India. The PM2.5 levels were much higher consistently and have posed a major threat to the health of each and every individual of this state.

A note on the airshed approach

Uttar Pradesh needs to work on a new framework which will focus on reducing air pollution in an Airshed approach, i.e. the entire area having a common flow of air over which the pollutants disperse due to meteorological and geographical factors. As air quality of a city is not a localised phenomenon and mostly influenced by external factors, it's time for scientific assessment and planning to focus on a new approach through airshed management.

City-specific mitigation measures under the ongoing National Clean Air Programme should continue, regional airshed will be scientifically identified under the new approach to control polluting sources beyond city boundaries and enable policy-makers to deal with the issue in a holistic manner. Such airshed-based air quality management has been successfully tried in many places across the world, especially in California, United States and also in states/regions like Delhi or NCR in India.

Recently, the central government approved the setting up of the Commission for Air Quality management in the National Capital Region and the Adjoining Areas Bill 2021 that for the first time formally considers air pollution on 'airshed' basis. The Commission will include members from various ministries, secretaries from Delhi, Punjab, Haryana, Rajasthan and Uttar Pradesh among several others.

Appendix

Table 1: PM 2.5 data for the following 27 stations have been analyzed in the study

1. Anand Vihar – Hapur
2. Ardhali Bazar - Varanasi
3. Central School – Lucknow
4. Ganga Nagar - Meerut
5. Gomti Nagar – Lucknow
6. IIT Kanpur – Kanpur
7. Indirapuram - Ghaziabad
8. Jai Bhim Nagar - Meerut
9. Knowledge Park – III – Greater Noida
10. Knowledge Park – V – Greater Noida
11. Lajpat Nagar – Moradabad
12. Nishat Ganj - Lucknow
13. Pallavpuram Phase - 2 – Meerut
14. Talkatora District Industries Centre - Lucknow
15. Vasundhara – Ghaziabad
16. Yamunapuram - Bulandshahr
17. Sector – 1 – Noida
18. Sector – 62 – Noida
19. Sector – 116 – Noida
20. Sector – 125 – Noida
21. Lalbagh – Lucknow
22. Loni – Ghaziabad
23. Nehru Nagar – Kanpur
24. New Collectorate – Baghpat
25. New Mandi – Muzzafarnagar
26. Sanjay Nagar – Ghaziabad
27. Sanjay Place – Agra

Table 2: List of stations and gaps in the data availability since 2018 till June 2021

Stations	2018	2019	2020	2021
Anand Vihar, Hapur	Data available from October to December	Data available from January to May and October to December	Data available for all months	Data available for all months
Ardhali Bazar, Varanasi	Data available for all months	Data available for all months	Data available for all months	Data available for all months
Central School, Lucknow - CPCB	Data available from January and June to December	Data available for all months	Data available for all months	Data available for all months
Ganga Nagar, Meerut - UPPCB	No Data available for all months	Data available from October to December	Data available for all months	Data available for all months
Gomti Nagar, Lucknow - UPPCB	No Data available for all months	Data available from August to December	Data available for all months	Data available for all months
IITK, Kanpur - IITK	No Data available for all months	No Data available for all months	No Data available for all months	Data available for all months

Indirapuram, Ghaziabad - UPPCB	No Data available for all months	Data available from March	Data available for all months	Data available for all months
Jai Bhim Nagar, Meerut - UPPCB	No Data available for all months	Data available from October to December	Data available for January, February and June to December	Data available from April to December
Sector-1, Noida - UPPCB	No Data available for all months	Data available from July	Data available for all months	Data available for all months
Sector - 62, Noida - IMD	Data available for all months	Data available for all months	Data available for all months	Data available for January to March and June to December
Sector-116, Noida - UPPCB	No Data available for all months	Data available from July	Data available for January to March, May to November and 50% in April, and December	Data available for all months
Sector - 125, Noida - UPPCB	Data available for all months	Data available for all months	Data available for January to March, August to December and 50% in April to July	Data available for January, February, May to December and 50% in March and April
Talkatora District Industries Center, Lucknow - CPCB	Data available for all months	Data available for all months	Data available for all months	Data available for all months
Vasundhara, Ghaziabad - UPPCB	Data available for all months	Data available for all months	Data available for all months	Data available for all months
Yamunapuram, Bulandshahr - UPPCB	Data available from Mid-May	Data available for all months	Data available for all months	Data available for all months
Sanjay Place, Agra - UPPCB	Data available for all months	Data available for all months	Data available for all months	Data available for all months
Sanjay Nagar, Ghaziabad - UPPCB	Data available for all months	Data available for all months	Data available for all months	Data available for all months

Loni, Ghaziabad - UPPCB	No Data available in all months	Data available from March	Data available for all months	Data available for all months
Lalbagh, Lucknow	Data available in Jan, 50% in Feb, 50% in June and then from July onwards all months	Data available for all months	Data available for all months	Data available for all months
Nishat Ganj	Data available for all months	Data available up to July	No Data available in all months	No Data available in all months
Pallavpuram Phase -2 – Meerut	No data available in all months	Data available from October to December	Data available for all months	Data available up to April
Lajpat Nagar, Moradabad	Data available for all months	Data available for all months	Data available for all months	Data available for all months
Nehru Nagar, Kanpur	Data available for all months	Data available for all months	Data available for all months	Data available for all months
New Collectorate, Baghpat	Data available from July to December	Data available for all months	50% data available in January and full data available from February to June	Data available for all months
New Mandi, Muzaffarnagar	Data available from July to December	Data available up to October	50% data available in January and full data available for the rest of the year	Data available for all months
Knowledge Park-3, Greater Noida	Data available from July to December	Data available for all months	Data available for all months	Data available for all months
Knowledge Park-5, Greater Noida	No data available in all months	No data available in all months	Data available for all months	Data available for all months