

NATIONAL AMBIENT AIR QUALITY MONITORING  
NAAQMS/45/2019-2020

# NATIONAL AMBIENT AIR QUALITY STATUS & TRENDS 2019



**CENTRAL POLLUTION CONTROL BOARD**

Ministry of Environment, Forest & Climate Change

GOVERNMENT OF INDIA

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## FOREWORD

Central Pollution Control Board (CPCB) implements the National Ambient Air Quality Monitoring Programme (NAMP) through a network comprising 804 ambient air quality monitoring stations covering 344 cities/towns in 28 states and 6 union territories of the country as per the mandate under the Air (Prevention and Control of Pollution) Act, 1981 to collect, compile and disseminate information on air quality.

Under the programme, ambient air quality is monitored in collaboration with State Pollution Control Boards (SPCBs), Pollution Control Committees (PCCs), and National Environmental Engineering Research Institute (NEERI). The data, thus generated, is transmitted to CPCB for scrutiny, analysis, compilation and its publication. The present report contains ambient air quality data for the calendar year 2019 and its analysis has been carried out in terms of exceedance in comparison to National Ambient Air Quality Standards. The concentration values for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> & PM<sub>2.5</sub> is also analysed and presented separately for zones, coastal towns, industrial cities, million plus cities, non-attainment cities, ecologically sensitive areas etc.

The contribution made by my colleagues Sh. V. K. Shukla, Additional Director, Sh. Tarun Darbari, Scientist 'D', Sh. S. K. Sharma, Scientist 'D' and Sh. Fasiur Rehman, Scientist 'C' in preparing the report under the supervision of Dr. Prashant Gargava, Member Secretary is appreciated. Cooperation extended by SPCBs and PCCs, other collaborating agencies, and Regional Directorates of CPCB are gratefully acknowledged.

Hope the report shall be of use to all concerned.

  
(Shiv Das Meena)

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## ABBREVIATION

Abbreviation	Full Form
AAQMS	Ambient Air Quality Monitoring Stations
AD	Adequate Data ( <i>locations where <math>\geq 50</math> days of monitoring was done in a year</i> )
As	Arsenic
AQI	Air Quality Index
B(a)P	Benzo (a) Pyrene
C	Critical pollution category
C <sub>6</sub> H <sub>6</sub>	Benzene
CNG	Compressed Natural Gas
CO	Carbon monoxide
CPA	Critically Polluted Area
CPCB	Central Pollution Control Board
CPCB RD	CPCB Regional Directorate
E	Exceeding NAAQS
EAQDES	Environmental Air Quality Data Entry System
EDB	Environmental Data Bank
ESA	Ecologically Sensitive Area
EF	Exceedence Factor
GRAP	Graded Response Action Plan
H	High pollution category
H <sub>2</sub> S	Hydrogen Sulphide
ID	Inadequate Data ( <i>locations &lt; 50 days of monitoring was done in a year</i> )
L	Low pollution category
LPG	Liquefied Petroleum Gas
M	Moderate pollution category
NAAQS	National Ambient Air Quality Standards
NAMP	National Air Quality Monitoring Programme
NCR	National Capital Region
ND	No Data ( <i>Monitoring not done or data not received for the particular parameter</i> )
NEERI	National Environmental Engineering Research Institute
NH <sub>3</sub>	Ammonia
NHAI	National Highways Authority of India
Ni	Nickel
NM	No Monitoring
NO <sub>2</sub>	Nitrogen Dioxide
O <sub>3</sub>	Ozone
OG	Outgrowth
PAHs	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PCCs	Pollution Control Committees
PUC	Pollution Under Control
PM <sub>10</sub>	Particulate Matter of size $\leq 10\mu\text{m}$
PM <sub>2.5</sub>	Particulate Matter of size $\leq 2.5\mu\text{m}$
QA/QC	Quality Assurance / Quality Control
R/I/Ru/O	Residential / Industrial / Rural / Other areas
RSPM	Respiratory Suspended Particulate Matter
SO <sub>2</sub>	Sulphur Dioxide
SPCB	State Pollution Control Boards
SUVs	Sport Utility Vehicles
UA	Urban Agglomeration
USEPA	United States Environmental Protection Agency
UTs	Union Territories
VOCs	Volatile Organic Compounds

## 1.0 INTRODUCTION

### 1.1 Importance of good air quality

Air quality is a measure of the suitability of air for breathing by people, plants and animals. On average, a person inhales about 14,000 litres of air every day. Therefore, poor air quality may affect the quality of life now and for future generations by affecting the health, the environment, the economy and the city's livability.

Good outdoor air quality is fundamental to our well-being. A healthy environment is therefore, an essential aspect of the right to life, not only for human beings but also for other animals on the planet. Violation, therefore, of the right to healthy environment is potentially a violation of the basic right to life.

### 1.2 Air pollution

The **atmosphere** of Earth is a layer of gases surrounding the planet Earth that is retained by Earth's gravity. The atmosphere protects life on Earth by absorbing ultraviolet solar radiation, warming the surface through heat retention (greenhouse effect), and reducing temperature extremes between day and night (diurnal temperature variation). The common name given to the atmospheric gases used in breathing and photosynthesis is air. By volume, dry air contains 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide, and small

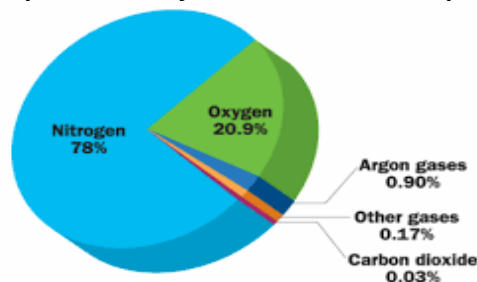
amounts of other gases. (Figure 1.1). Rapid urbanization and industrialization has added other elements/compounds to the pure air and thus caused the increase in pollution. In order to prevent, control and abate air pollution, the Air (Prevention and Control of Pollution) Act was enacted in 1981. According to Section 2(b) of Air (Prevention and control of pollution) Act, 1981 '**air pollution**' has been defined as 'the presence in the atmosphere of any air pollutant.' As per Section 2(a) of Air (Prevention and control of pollution) Act, 1981 '**air pollutant**' has been defined as 'any solid, liquid or gaseous substance [(including noise)] present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment'. Therefore, **ambient air quality standard** is developed as a policy guideline that regulates the effect of human activity upon the environment so that pollutant emission into the air can be regulated. Standards may specify a desired state or limit alterations.

Air pollution has been defined as the presence in the atmosphere of any air pollutant. Air pollutant is any solid liquid or gaseous substance present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The highest air pollution exposure occurs in the indoor environment. Toxicity can be defined as the relative ability of a substance to cause adverse effects in living organism. The concentration of pollutants in the air, water & soil that results from these emissions influences the magnitude of human exposures through organs such as the nose, mouth & skin.

CPCB initiated the National Ambient Air Quality Monitoring Programme in 1984 and notified the revised National Ambient Air Quality Standards in 2009. Presently, there are 804 stations covering 344 cities/towns/villages in 28 states & 6 UT. Under NAMP, three air pollutants viz: SO<sub>2</sub>, NO<sub>2</sub> & PM<sub>10</sub> are monitored regularly at all location. Monitoring is being carried out with the help of SPCBs, PCCs, NEERI & CPCB Head Office & its Regional Directorates. The policy decision in the country related to air pollution are being taken based on the results obtained by CPCB through its air quality monitoring programme.

Figure 1.1: Composition of dry air in the lower atmosphere of the Earth



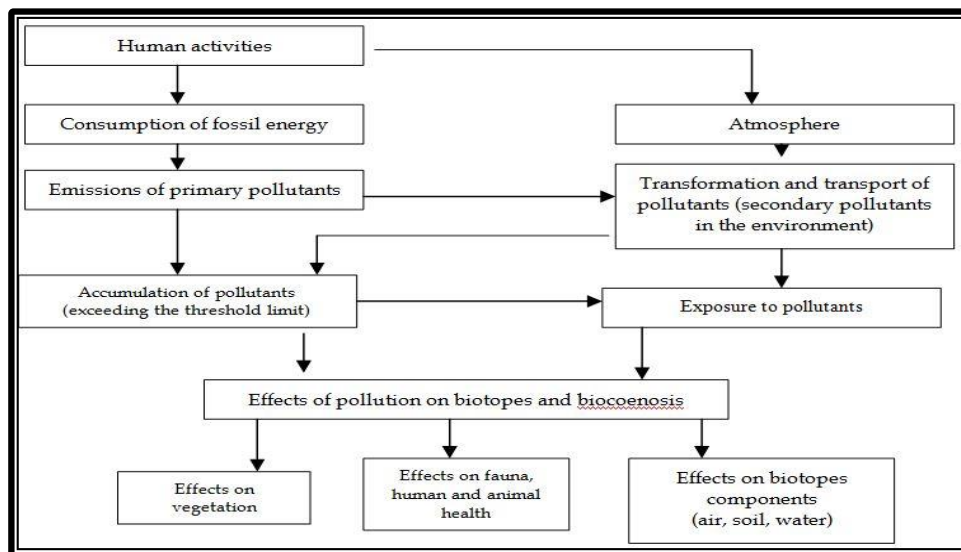
### 1.3 Air Pollution and Health

Air pollution is a major environmental health problem affecting the developing and the developed countries alike. The effects of air pollution on health are very complex as there are many different sources and their individual effects are synergistic and additive. It is not only the ambient air quality in the cities but also the indoor air quality in the rural and the urban areas that are causing concern. In fact, in the developing world the highest air pollution exposures occur in the indoor environment. Air pollutants that are inhaled have serious impact on human health affecting the lungs and the respiratory system; they are also taken up by the blood and circulated in the body. These pollutants are also deposited on soil, plants, and in the water, further contributing to human exposure. The sources and effects of some air pollutants is given in **Annexure 1**. Toxicity can be defined as the relative ability of a substance to cause adverse effects in living organisms. This relative ability is dependent upon several conditions.

- Route of entry
- Quantity or the dose of the substance determines whether the effects of the chemical are toxic, nontoxic or beneficial.
- Duration and frequency of exposure
- Concentrations that are actually measured in the environment
- Variations between different species (interspecies) and variations among members of the same species (intra species)

To understand and control the effect of pollutants effectively, it is necessary to understand the pathway from source to effect as measurement and control can occur at any of the places along the pathway. However, effective control measurement can be taken only at the source.

**Figure 1.2: Flow of atmospheric pollutants**



The environmental exposure pathway provides an analytical framework to describe, in broad terms, the connections between pollutant sources and human health outcomes. This framework begins with the emission source, in this case a well pad and associated infrastructure, which emit a variety of contaminants into the air, water, and soil. The concentrations of pollutants in the air, water, and soil that result from these emissions influence the magnitude of human exposures through organs such as the nose, mouth, and skin. Once the level of exposure is identified, it is then possible to estimate the dose, or how much of the pollutant is ingested in a given period of time. The dose, in turn, determines the health outcome.



## 1.4 National Ambient Air Quality Standards (NAAQS)

The objectives of air quality standards are:

- To indicate the levels of air quality necessary with an adequate margin of safety to protect the public health, vegetation and property;
- To assist in establishing priorities for abatement and control of pollutant level;
- To provide uniform yardstick for assessing air quality at national level;
- To indicate the need and extent of monitoring programme.

In order to combat air pollution, it is required to identify the pollutants, its source of emission and investigate the effects of living and the environment. The Central Pollution Control Board has notified the revised National Ambient Air Quality Standards Gazette of India, Extra-ordinary Part-II Section 3, sub section (ii), dated Nov 18, 2009. The revised National Ambient Air Quality Standards is depicted in **Annexure 2**.

## 1.5 National Air Quality Monitoring Programme (N.A.M.P.)

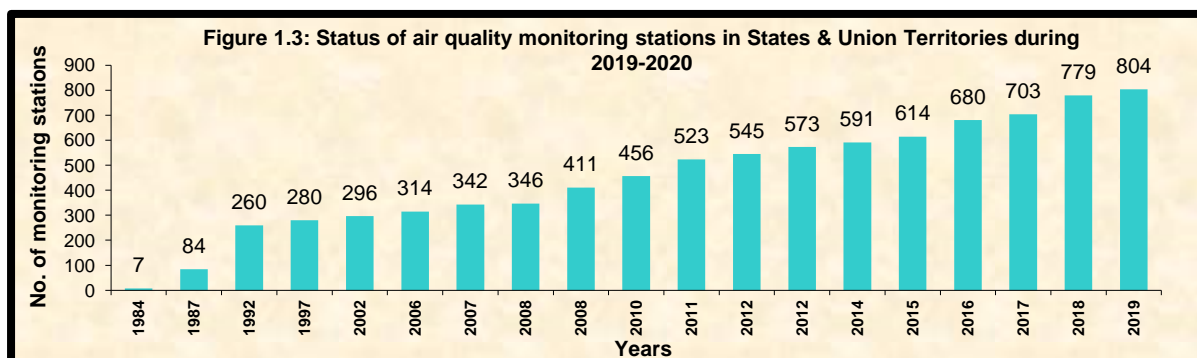
### 1.5.1 Importance of air quality monitoring

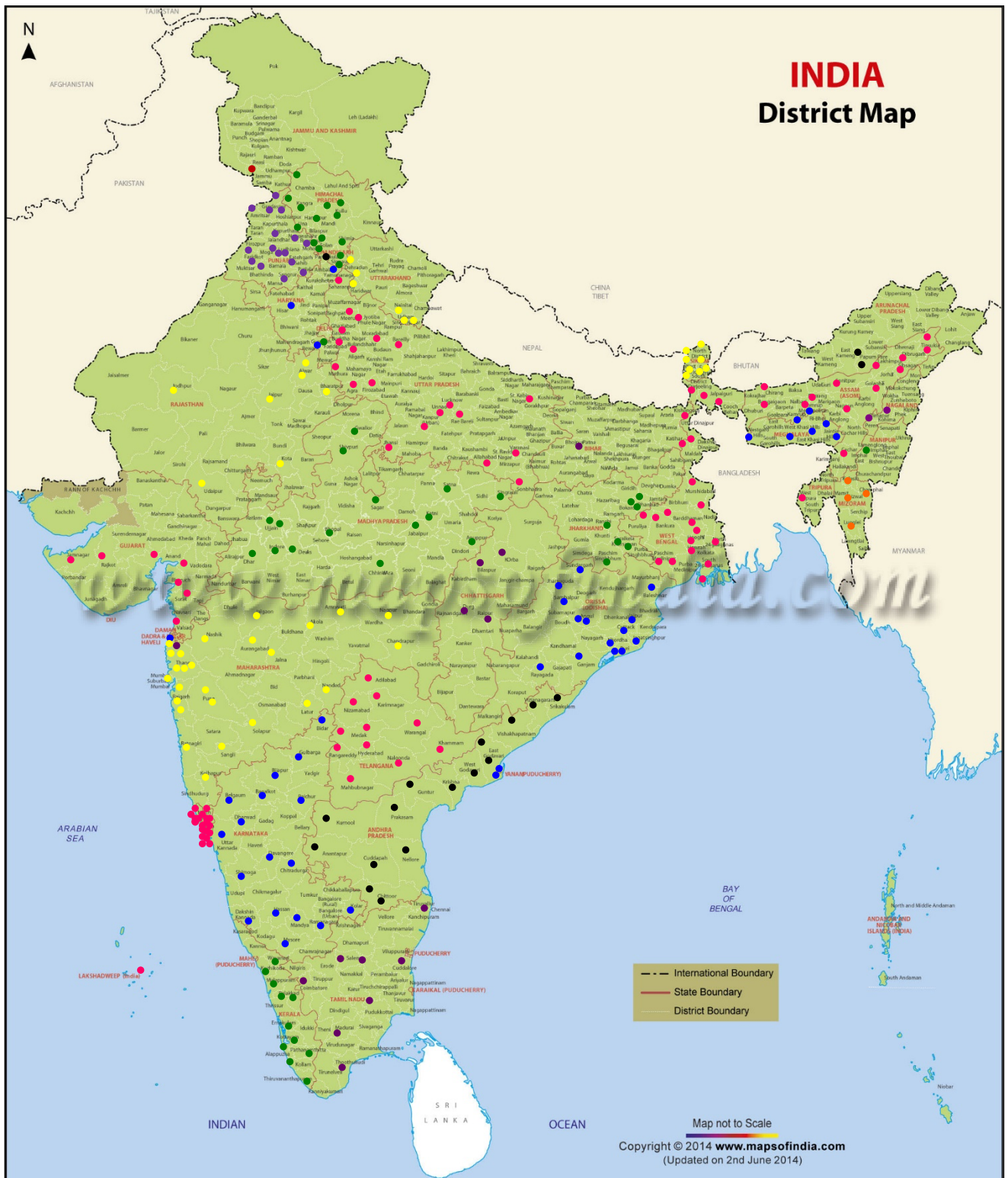
Air pollutant, both indoor and outdoor, cause significant harm to health. Therefore, monitoring of pollutants is important for effective air quality management. The Government monitors air quality in different areas to find out how much pollution is in the air and make sure pollutant levels are meeting health - based air quality standards. Knowing how much pollution is in the air in a certain area helps air quality agencies know when and how to take action to protect public health. The Government uses its air monitoring data to:

- Determine if air quality is meeting national standards
- Determine the highest pollutant concentrations
- Understand how pollutants behave and their relationship with the weather.
- validate pollution modelling, used to test 'what if' scenarios.
- Forecast air quality
- Evaluate the effectiveness of air pollution control programs
- Evaluate the effects of air pollution on public health
- Track the progress of plans for meeting air quality standard
- Determine air quality trends
- Develop responsible and cost-effective pollution control strategies and policy decisions

### 1.5.2 Present status of NAMP

Central Pollution Control Board initiated National Ambient Air Quality Monitoring (NAAQM) programme in the year 1984 with 7 stations at Agra and Anpara. Subsequently the programme was renamed as National Air Quality Monitoring Programme (NAMP). Steadily the air quality monitoring network got strengthened, in year 2019 the number of stations was raised to **804 covering 344 cities/towns/villages in 28 states and 6 Union Territories as on 31<sup>st</sup> December 2019** (Annexure). The growth in number of stations under operation is given in Figure 1.3. Figure 1.4 shows the distribution of cities with ambient air quality monitoring stations under NAMP.





Source of base map: District Maps of India, State Wise Districts of India. mapsofindia.com. <https://in.pinterest.com/pin/223983781438626362/>

● The different coloured dots represent the approximate distribution of cities with manual ambient air quality stations under NAMP

### 1.5.3 Objectives of NAMP

The objectives of the NAMP are as follows:

- To determine status and trends of ambient air quality;
- To ascertain whether the prescribed ambient air quality standards are violated;
- To Identify Non-Attainment Cities;
- To obtain the knowledge and understanding necessary for developing preventive and corrective measures;
- To understand the natural cleansing process undergoing in the environment through pollution dilution, dispersion, wind based movement, dry deposition, precipitation and chemical transformation of pollutants generated.

### 1.5.4 Parameters monitored under NAMP

To check air quality of the country, Central Pollution Control Board initiated National Air Quality Monitoring Programme (NAMP) under which three air pollutants viz., Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter size equal to or less than 10 micron (PM<sub>10</sub>), have been monitored regularly at all the locations. Other parameters like PM<sub>2.5</sub> (Particulate Matter having an aerodynamic diameter less than or equal to 2.5 µm), Carbon monoxide (CO), Ammonia (NH<sub>3</sub>), Lead (Pb), Ozone (O<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo(a)pyrene (BaP), Arsenic (As) and Nickel (Ni) are being monitored at selected locations and are slowly being added to the monitoring network under NAMP.

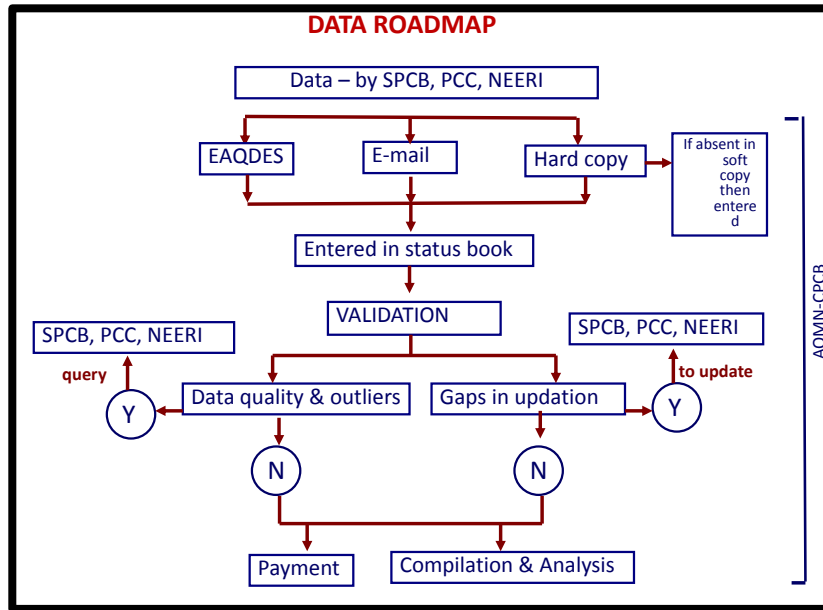
The monitoring of meteorological parameters such as wind speed and direction, relative humidity and temperature were also integrated with the monitoring of air quality and are monitored at selected locations. The monitoring of regular parameters is carried out for 24 hours (4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) with a frequency of twice a week, to have 104 observations in a year.

The monitoring under the NAMP is being carried out with the help of State Pollution Control Boards (SPCB), Pollution Control Committees (PCC), National Environmental Engineering Research Institute (NEERI), Nagpur and Central Pollution Control Board (CPCB) Head Office and its Regional Directorates. CPCB co-ordinates with these agencies to ensure uniformity, consistency of air quality data and provides technical and financial support to them for operating the monitoring station.

### 1.5.5 Data Analysis, Processing and Limitations

The samples collected at the monitoring stations, following the guidelines of NAMP, are then analyzed in the laboratories of the State Boards and different agencies as per the methods of measurement given in the NAAQS. The data generated are entered into an online system of CPCB known as Environment Air Quality Data Entry System (EAQDES) by respective SPCBs and PCCs. The data is then scrutinized for outliers and gaps in input of data by CPCB. In case of any gaps, the matter is discussed with the respective agencies and later the data is checked, scrutinized, compiled, processed and analyzed statistically to get the information on the annual mean, standard deviation etc. of the pollutants and payment is also made to the respective agencies. Figure 1.5 shows the data flow in NAMP.

Figure 1.5: Data flow in NAMP



As NAMP is being operated through various monitoring agencies, a large number of personnel and equipments are involved in the sampling, chemical analyses, data reporting etc. This increases the probability of personal biases reflecting in the data. Hence, it is pertinent to mention that this document be referred keeping in view the above facts and the data be considered more as indicative rather than absolute. The data presented in this report is average over the entire year as available.

### 1.5.6 Quality Assurance/Quality Control of Data and Management

The policy decisions in the country related to air pollution are being taken based on the results obtained by CPCB through its air quality monitoring programme. It is therefore, of utmost important to keep a quality check on the data generated so that the data is of acceptable quality. In order to ensure the quality of data, CPCB is carrying out various exercises as follows:

**Evaluation of Ambient Air Quality Monitoring Stations:** Officials from CPCB Regional Directorates regularly visit monitoring stations and monitoring laboratories to ensure proper methodology for sampling and analysis. The findings of the inspection report are communicated to respective monitoring agencies for implementation

**Review Meetings:** CPCB conducts review meetings with monitoring agencies to discuss various problems related to monitoring activities and sort out the remedial measures

**Training Program on Ambient Air Quality Monitoring and data entry:** CPCB carries out training program on ambient air quality monitoring and data entry in the Environmental Air Quality Data Entry System (EAQDES) with an objective to improve quality of data generated under National Air Quality Monitoring Programme (NAMP).

## 2.0 Major Findings

Air Quality Assessment and major findings of the ambient air quality monitoring carried out countrywide during the calendar year 2019 is presented in this chapter. The air quality of different cities/towns has been compared with the respective NAAQS.

### 2.1 Assessment of ambient air quality of the country for 2019 with respect to annual and 24-hourly averages.

This report represents the air quality scenario with air quality data from **January – December 2019** of 787 ambient air quality monitoring stations / locations from residential

Ambient air quality data from January to December, 2019 of 804 monitoring sites in 344 cities across the country and air quality scenario of PM<sub>2.5</sub> of 317 locations across 147 cities.

/ commercial / industrial / rural area and 17 stations from ecologically sensitive area {List of Ecologically Sensitive Area Notified by Ministry of Environment and Forests under Section 3(2)(V) of Environment (Protection) Act, 1986 and Rule 5(3)(d) of Environment (Protection) Rules, 1986} ie a **total of 804 manual stations covering 344 cities, 28 states and 6 UTs**. However, **PM<sub>2.5</sub> is monitored in 317 manual stations covering 147 cities in 20 states and 4 UTs**. The detail of data generated as per the notification under NAMP is given in Table 2.1 and 2.2.

Out of 787 air quality monitoring stations from residential / industrial / rural and other area, adequate data on annual average concentration (with 50 and more days of monitoring) was received from 717 stations for SO<sub>2</sub> and 718 stations for NO<sub>2</sub> and 731 stations for PM<sub>10</sub> and 197 stations for PM<sub>2.5</sub>. In case of Ecologically Sensitive Area, out of a total of 17 stations, adequate data was received from 17 stations for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> and 4 stations for PM<sub>2.5</sub>.

The detail of number of stations for which data was adequate or inadequate is given in Table 2.1.

**Table 2.1: Details of data generated in monitoring stations / locations (Annual)**

Data type	Number of monitoring stations							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Adequate data (AD); (≥50 days mon)</b>	717	718	731	197	17	17	17	4
<b>Inadequate data (ID ); (&lt;50 days mon)</b>	41	32	27	114	0	0	0	2
<b>No data (ND)</b>	29	37	29	0	0	0	0	0
<b>Total monitoring stations (AD+ID+ND)</b>	787	787	787	311	17	17	17	6

Key: Adequate data (taken for calculation), annual: locations where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): locations < 50 days of monitoring were done in a year;

Out of 339 cities monitoring ambient air quality from residential / industrial / rural and other area, adequate data on annual average concentration (with 50 and more observations of monitoring) was received from 309 cities for SO<sub>2</sub> and 310 cities for NO<sub>2</sub> and 316 cities for PM<sub>10</sub> and 116 cities for PM<sub>2.5</sub>. In case of Ecologically Sensitive Area out of a total of 5 cities, adequate data was received from all 5 cities for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> and 1 city for PM<sub>2.5</sub>. The detail of number of cities for which data was adequate or inadequate is given in Table 2.2.

**Table 2.2: Details of data generated in monitoring cities (Annual)**

Data type	Number of cities							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Adequate data (AD)	309	310	316	116	5	5	5	1
Inadequate data (ID)	15	14	11	30	0	0	0	0
No data (ND)	15	15	12	0	0	0	0	0
<b>Total monitored cities (AD+ID+ND)</b>	<b>339</b>	<b>339</b>	<b>339</b>	<b>146</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>1</b>

Key: Adequate data (taken for calculation), annual: cities where  $\geq 50$  days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;

### 2.1.1 Locations / monitoring stations exceeding the NAAQS

Number of monitoring stations / locations exceeding NAAQS on the basis of annual average data is presented in Table 2.3, Figure 2.1. In residential/industrial/rural area, 91 (13%) stations for NO<sub>2</sub>, 577 (79%) stations for PM<sub>10</sub> and 72 (37%) stations for PM<sub>2.5</sub> exceed NAAQS. In ecologically sensitive area, 3 (18%) stations for SO<sub>2</sub>, 5 (29%) stations for NO<sub>2</sub>, 17 (100%) stations for PM<sub>10</sub>, and 4 (100%) stations for PM<sub>2.5</sub> exceed NAAQS.

In 2019, SO<sub>2</sub> was within the NAAQS in all the location except for 3 locations. NO<sub>2</sub>, exceeded in 96 locations, PM<sub>10</sub> in 594 cities and PM<sub>2.5</sub> in 76 locations.

Taking cities into consideration, SO<sub>2</sub> was within the NAAQS in all the cities except for one city. NO<sub>2</sub>, exceeded in 30 cities, PM<sub>10</sub> in 251 cities and PM<sub>2.5</sub> in 40 cities.

**Table 2.3. Number of sampling sites exceeding the annual NAAQS (Based on annual average concentration)**

Data type	Number of monitoring stations / locations							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Not exceeding NAAQS (NE)	717	627	154	125	14	12	0	0
Exceeding NAAQS (E)	0	91	577	72	3	5	17	4
Inadequate data (ID)	41	32	27	114	0	0	0	2
No data (ND)	29	37	29	0	0	0	0	0
<b>Total monitoring stations (NE, E, ID &amp; ND)</b>	<b>787</b>	<b>787</b>	<b>787</b>	<b>311</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>6</b>

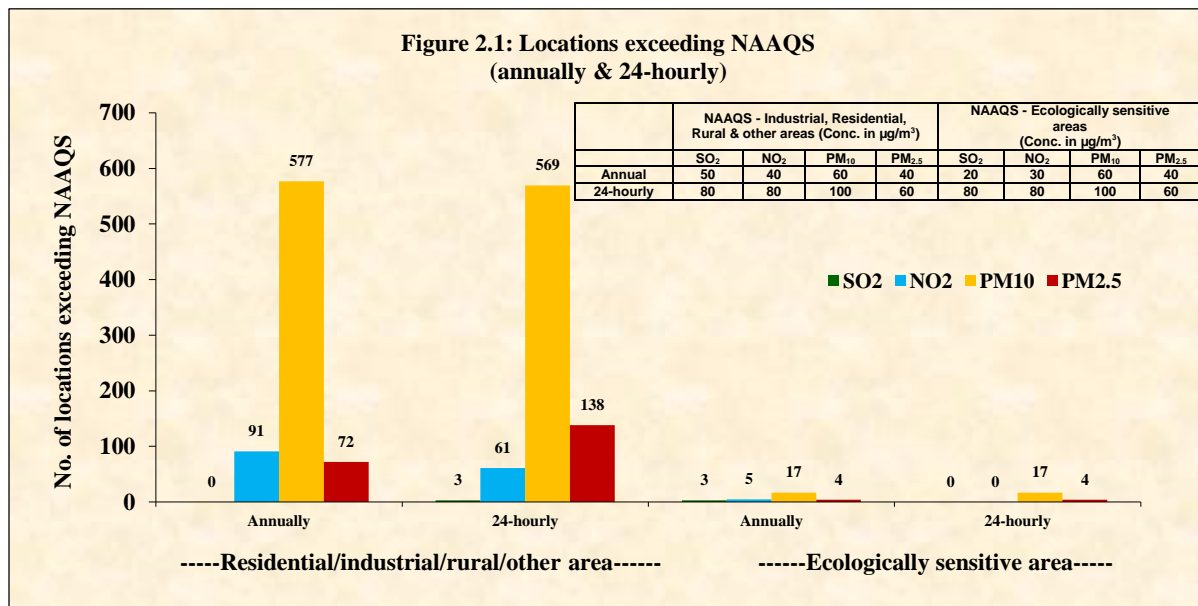
NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Ecologically sensitive area); Adequate data (taken for calculation), annual: locations where  $\geq 50$  days of monitoring was done in a year; Inadequate data (taken for calculation): locations < 50 days of monitoring were done in a year;

Number of monitoring stations / locations exceeding NAAQS on the basis of 24-hourly average data is presented in Table 2.4 and Figure 2.1. In residential/industrial/rural area, 3 (0.4 %) stations for SO<sub>2</sub>, 61 (8%) stations for NO<sub>2</sub>, 569 (78%) stations for PM<sub>10</sub> and 138 (70%) stations for PM<sub>2.5</sub> exceed NAAQS. In ecologically sensitive area 17 (100%) stations for PM<sub>10</sub> and 4 (100%) stations for PM<sub>2.5</sub> exceed NAAQS.

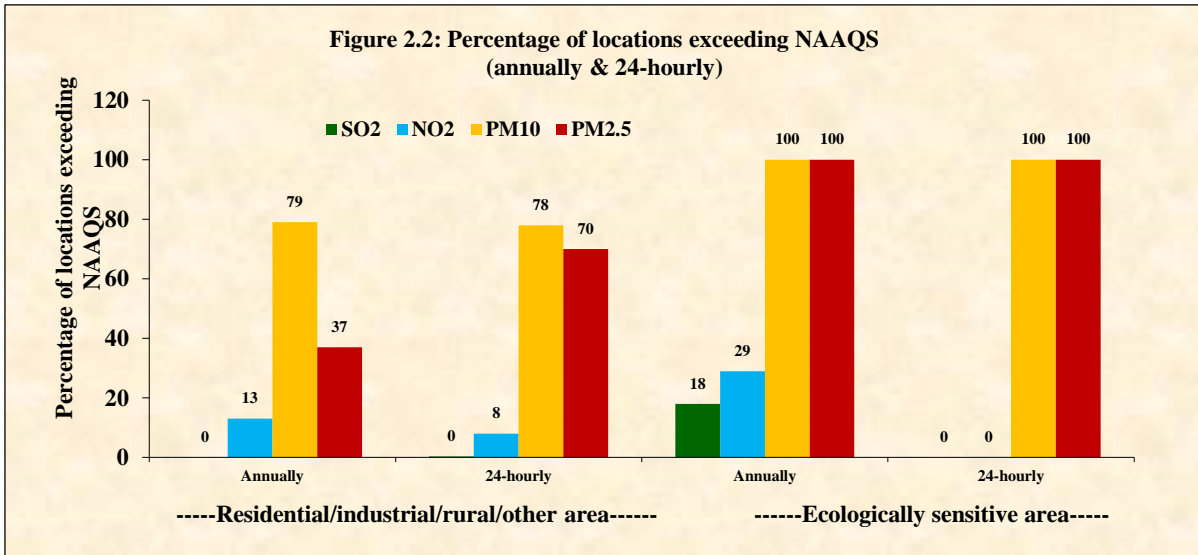
**Table 2.4. Number of sampling sites exceeding the 24-hourly NAAQS  
(Based on 24-hourly average concentration)**

Data type	Number of monitoring stations / locations							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Not exceeding NAAQS (NE)	714	657	162	59	17	17	0	0
Exceeding NAAQS (E)	3	61	569	138	0	0	17	4
Inadequate data (ID)	41	32	27	114	0	0	0	2
No data (ND)	29	37	29	0	0	0	0	0
<b>Total monitoring stations (NE, E, ID &amp; ND)</b>	<b>787</b>	<b>787</b>	<b>787</b>	<b>311</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>6</b>

NAAQS (24-Hourly): SO<sub>2</sub>=80 µg/m<sup>3</sup>, NO<sub>2</sub>=80 µg/m<sup>3</sup>, PM<sub>10</sub>=100 µg/m<sup>3</sup>, PM<sub>2.5</sub>=60 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and (Ecologically sensitive area). Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;



The percentage of locations exceeding national standards with respect to NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> is depicted in Figure 2.2. On the basis of annual average data, percentage of monitoring stations / locations exceeding NAAQS with respect to NO<sub>2</sub> is 13%, PM<sub>10</sub> is 79% and PM<sub>2.5</sub> is 37% (Residential/Industrial/Rural area) and SO<sub>2</sub> is 18%, NO<sub>2</sub> is 29%, PM<sub>10</sub> and PM<sub>2.5</sub> is 100% (Ecologically sensitive area). On the basis of 24-hourly average data, percentage of monitoring stations / locations exceeding NAAQS with respect to SO<sub>2</sub> is 0.4%, NO<sub>2</sub> is 8%, PM<sub>10</sub> is 78% and PM<sub>2.5</sub> is 70% (Residential/Industrial/Rural area) and PM<sub>10</sub> and PM<sub>2.5</sub> is 100% (Ecologically sensitive area).



### 2.1.2 Cities exceeding NAAQS

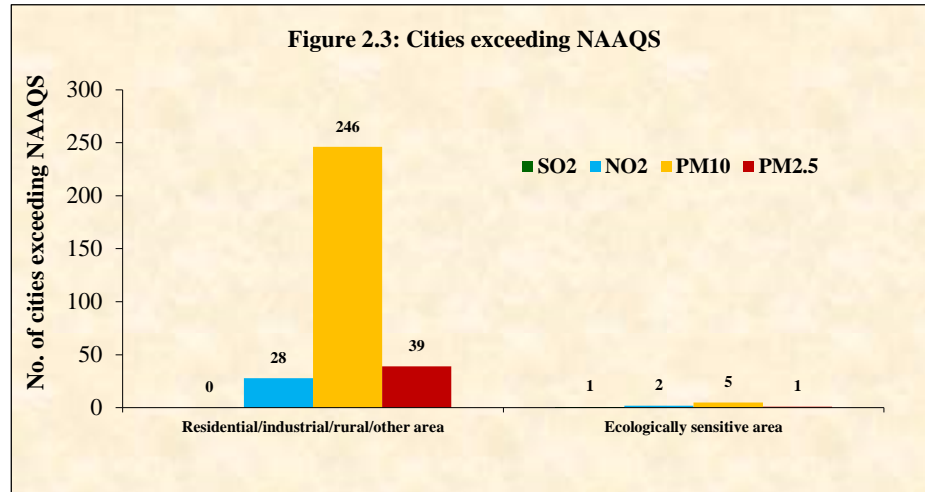
Number of cities exceeding NAAQS on the basis of annual average data is presented in Table 2.5 and Figure 2.3. In residential/industrial/rural area, 28 cities for NO<sub>2</sub>, 246 cities (for PM<sub>10</sub>) and 39 cities for PM<sub>2.5</sub> exceed NAAQS. In ecologically sensitive area, 1 city for SO<sub>2</sub>, 2 cities for NO<sub>2</sub>, 5 cities (for PM<sub>10</sub>) and 1 city for PM<sub>2.5</sub> exceed NAAQS.

**Table 2.5. Number of cities exceeding the NAAQS (Based on annual average concentration)**

Data type	Number of cities							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Not exceeding NAAQS (NE)	309	282	70	77	4	3	0	0
Exceeding NAAQS (E)	0	28	246	39	1	2	5	1
Inadequate data (ID)	15	14	11	30	0	0	0	0
No data (ND)	15	15	12	0	0	0	0	0
<b>Total monitored cities (NE, E, ID &amp; ND)</b>	<b>339</b>	<b>339</b>	<b>339</b>	<b>146</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>1</b>

NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Ecologically sensitive area) Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;



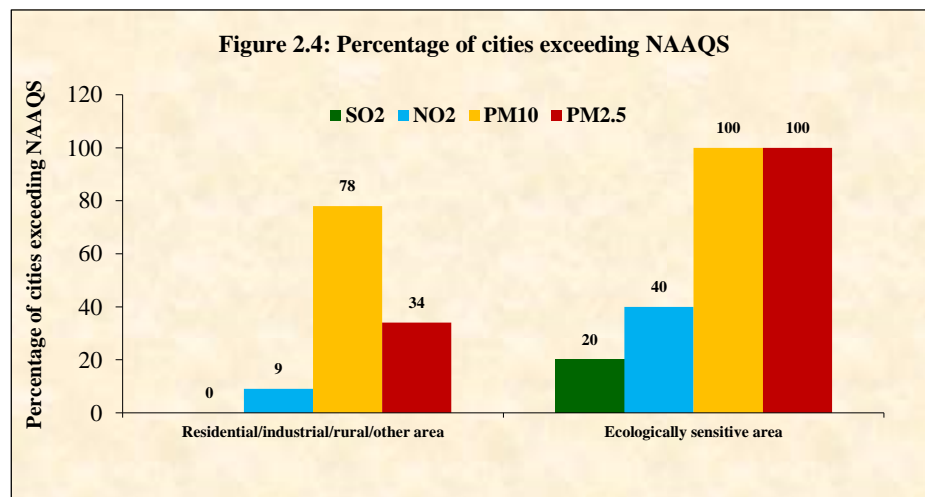


The percentage of cities exceeding national standards with respect to NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> is depicted in Table 2.6 and Figure 2.4. On the basis of annual average data, percentage of cities exceeding NAAQS with respect to NO<sub>2</sub> is 9%, PM<sub>10</sub> is 77% and PM<sub>2.5</sub> is 33% (Residential/Industrial/Rural area) and SO<sub>2</sub> is 20%, NO<sub>2</sub> is 40%, PM<sub>10</sub> and PM<sub>2.5</sub> is 100% (Ecologically sensitive area).

**Table 2.6. Percentage of cities exceeding the NAAQS (Based on annual average concentration)**

Data type	Number of cities							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Not exceeding NAAQS (NE)	100	91	22	66	80	60	0	0
Exceeding NAAQS (E)	0	9	78	34	20	40	100	100

NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Ecologically sensitive area) Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;



The annual minimum values, maximum values and average in each city and the exceedance of 24-hourly average for different pollutant is given below:

Table 2.7: Ambient air quality in cities of the country during 2019

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AAQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Andhra Pradesh	Anantapur	S	Anantapur				NAC	4	4	15	5	427	0	9	26	15	427	0	16	138	67	429	51
	Chittoor	S	Chittoor				NAC	5	2	19	5	516	0	9	105	19	517	2	17	117	54	519	6
	Eluru	S	West Godavari				NAC	4	4	6	5	432	0	15	30	19	432	0	41	102	63	432	1
	Guntur	S	Guntur				NAC	4	4	6	5	402	0	16	25	19	402	0	29	192	53	403	3
	Kadapa	S	YS Rajshekhara Reddy/Kadapa/Cuddapah				NAC	5	4	19	5	537	0	9	27	15	537	0	17	142	53	537	2
	Kakinada	S	East Godavari	Co				4	4	13	8	418	0	9	29	19	418	0	14	221	61	422	66
	Kurnool	S	Kurnool				NAC	4	4	14	5	431	0	9	36	15	431	0	16	119	61	432	20
	Nellore	S	Sri Potti Sriramulu Nellore	Co			NAC	4	4	6	5	428	0	15	27	19	428	0	38	80	66	428	0
	Ongole	S	Prakasam	Co			NAC	4	4	6	5	422	0	15	26	19	422	0	27	76	59	421	0
	Rajahmundry	S	East Godavari	Co			NAC	4	4	16	8	404	0	10	29	18	404	0	15	221	62	408	75
	Srikakulam	S	Srikakulam	Co			NAC	4	5	15	8	404	0	11	29	19	404	0	23	205	67	405	24
	Tirupati	S	Chittoor	Co				4	4	8	5	421	0	10	29	15	421	0	12	99	53	425	0
	Vijaywada	S	Krishna		IA	MP	NAC	9	4	11	5	947	0	13	32	19	948	0	31	104	73	952	1
	Vishakhapatnam	S	Visakhapatnam	Co	CPA	MP	NAC	9	5	15	8	929	0	10	38	19	929	0	25	270	76	932	181
Vizianagaram	S	Vizianagaram	Co			NAC	4	5	14	8	401	0	11	29	19	401	0	33	113	67	402	3	
Arunachal Pradesh	Itnagar	NE	Papum Pare					1	2	10	3	43	0	5	17	7	43	0	10	228	97	48	18
	Naharlagun	NE	Papum Pare					1	2	6	3	34	0	5	14	7	35	0	9	187	74	41	11
Assam	Bongaigaon	NE	Bongaigaon					2	3	12	4	156	0	10	20	12	156	0	21	112	44	156	1
	Daranga	NE	Chirang					1	4	11	7	94	0	10	21	14	94	0	17	134	53	94	11
	Dibrugarh	NE	Dibrugarh					1	4	9	5	89	0	9	18	11	89	0	15	125	36	89	1
	Golaghat	NE	Golaghat					1	4	8	6	80	0	9	16	12	80	0	17	85	45	80	0
	Guwahati	NE	Kamrup Metropolitan				NAC	6	5	24	8	744	0	9	36	15	744	0	16	323	97	744	271

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AAQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
	Margherita	NE	Tinsukia					1	4	9	6	91	0	9	18	12	91	0	16	93	48	91	0
	Nagaon	NE	Nagaon				NAC	1	5	10	7	97	0	11	20	15	97	0	35	269	105	97	42
	Nalbari	NE	Nalbari				NAC	1	4	10	7	77	0	11	18	14	77	0	37	184	87	77	25
	North Lakhimpur	NE	Lakhimpur					1	5	10	7	86	0	11	17	14	86	0	18	131	56	86	12
	Silchar	NE	Sibsagar				NAC	2	5	9	7	149	0	8	14	11	149	0	32	58	46	149	0
	Sivasagar	NE	Cachar				NAC	2	4	9	6	205	0	9	18	13	205	0	16	116	55	205	2
	Tezpur	NE	Sonitpur					1	6	10	7	86	0	11	20	15	86	0	24	189	98	86	41
Tinsukia	NE	Tinsukia					3	4	9	6	290	0	6	18	12	290	0	15	100	45	290	0	
Bihar	Begusarai	E	Begusarai					1	9	19	12	104	0	16	39	22	104	0	37	164	117	104	77
	Darbhanga	E	Darbhanga					1	12	22	15	105	0	18	32	24	105	0	35	267	123	105	67
	Gaya	E	Gaya				NAC	1	6	15	11	104	0	15	34	21	104	0	13	145	71	104	21
	Muzaffarpur	E	Muzaffarpur				NAC	1	10	22	14	104	0	19	49	31	104	0	40	414	152	104	67
	Patna	E	Patna			MP	NAC	2	2	14	3	134	0	13	121	51	134	18	37	746	237	134	112
	Rajgir	E	Nalanda					1	5	15	10	104	0	16	30	21	104	0	12	136	69	104	19
Sasaram	E	Rohtas					1	6	13	10	105	0	16	27	20	105	0	12	116	61	105	7	
Chandigarh			Chandigarh			MP	NAC	5	2	2	2	749	0	5	85	19	748	1	15	444	97	748	279
Chhattisgarh	Bilaspur	C	Bilaspur					1	4	7	6	91	0	10	14	12	91	0	28	64	47	91	0
	Durg-Bhillainagar	C	Durg		IA	MP	NAC	4	3	11	7	325	0	8	25	17	325	0	49	99	79	324	0
	Korba	C	Korba		CPA		NAC	3	5	13	8	300	0	16	30	18	300	0	33	95	58	300	0
	Raigarh	C	Raigarh					3											26	90	64	228	0
	Raipur	C	Raipur		IA	MP	NAC	2	11	25	16	107	0	19	42	30	107	0	37	98	69	185	0
Dadra & Nagar Haveli and Daman & Diu	Baldevi (Dadra & Nagar Haveli)	W	Dadara & Nagar Haveli	Co				1	8	25	16	97	0	9	24	17	97	0	22	87	65	97	0
	Daman	W	Dadara & Nagar Haveli	Co				2	8	39	22	196	0	8	39	24	196	0	23	143	95	196	92
	Patlra (Daman)	W	Daman	Co				1	8	25	15	100	0	9	28	17	100	0	27	91	63	100	0
	Silvassa	W	Daman	Co				2	10	41	25	199	0	10	45	27	199	0	50	164	105	199	102

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AAQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Delhi	Delhi	N	Delhi		CPA	MP	NAC	10	2	23	5	962	0	11	209	70	962	276	20	836	199	961	741
Goa	Amona	W	North Goa	Co				1	9	12	11	105	0	13	16	14	105	0	32	166	72	105	26
	Assanora	W	North Goa	Co				1	9	12	11	104	0	13	16	14	104	0	22	129	57	104	5
	Bicholim	W	North Goa	Co				1	9	12	11	103	0	13	17	14	103	0	32	169	63	103	12
	Codli	W	North Goa	Co				1	9	12	10	103	0	11	17	14	103	0	30	160	60	103	7
	Cuncolim	W	South Goa	Co				1	9	13	11	102	0	13	17	14	102	0	32	182	80	102	31
	Honda	W	North Goa	Co				1	9	12	11	104	0	13	16	14	104	0	30	112	63	104	3
	Kundaim	W	North Goa	Co				1	9	13	11	104	0	13	17	14	104	0	21	138	62	104	12
	Mapusa	W	North Goa	Co				1	2	7	3	90	0	5	31	10	90	0	14	268	72	90	13
	Margao	W	South Goa	Co				1	9	13	11	102	0	13	16	14	102	0	31	198	59	102	9
	Mormugao	W	South Goa	Co				1	2	8	3	68	0	5	45	13	68	0	16	437	100	68	24
	Panaji	W	North Goa	Co				1	2	17	3	77	0	5	31	13	77	0	14	518	87	78	23
	Ponda	W	North Goa	Co				1	9	12	11	105	0	13	16	14	105	0	31	203	66	105	14
	Sanguem	W	South Goa	Co				1	9	12	11	103	0	13	17	14	103	0	32	145	57	103	6
	Tilamol	W	South Goa	Co				1	10	13	11	102	0	13	16	14	102	0	29	139	67	102	16
	Tuem	W	North Goa	Co				1	9	13	11	104	0	13	17	14	104	0	33	154	57	104	6
Usgao	W	North Goa	Co				1	9	12	11	96	0	13	17	14	96	0	32	152	64	96	8	
Vasco	W	South Goa	Co				1	2	11	3	88	0	5	29	13	88	0	16	377	81	81	23	
Gujarat	Ahmedabad	W	Ahmedabad		CPA	MP	NAC	9	11	39	20	783	0	16	57	25	783	0	66	422	135	783	519
	Anklesvar	W	Bharuch	Co	CPA			2	12	36	19	176	0	16	46	25	176	0	55	239	115	176	90
	Jamnagar	W	Jamnagar	Co				1	11	39	19	87	0	14	43	25	87	0	57	267	123	87	48
	Rajkot	W	Rajkot	Co		MP		2	12	40	20	174	0	16	51	25	174	0	56	332	127	174	95
	Surat	W	Surat	Co	IA	MP	NAC	3	9	46	23	258	0	13	52	27	258	0	57	356	128	255	146
	Vadodara	W	Vadodara		IA	MP	NAC	5	11	46	20	434	0	14	60	26	434	0	47	378	131	434	182
	Vapi	W	Valsad	Co	CPA			2	9	38	20	173	0	10	58	25	173	0	44	316	119	173	84
Himachal Pradesh	Baddi	N	Solan		IA		NAC	3	2	2	2	285	0	19	49	31	281	0	49	327	148	277	239
	Damtal	N	Kangra				NAC	2	2	2	2	234	0	5	12	9	232	0	17	94	49	249	0
	Dharamshala	N	Kangra					2	2	2	2	207	0	5	14	6	208	0	16	114	37	220	1
	Gulaba	N	Kullu					1	2	3	2	19	0	5	7	5	19	0	8	62	37	19	0
	Kala Amb	N	Sirmaur		IA		NAC	2	2	8	3	327	0	9	36	14	327	0	18	233	101	339	182
	Manali	N	Kullu					2	2	4	2	160	0	5	16	8	160	0	19	217	64	184	24

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	Marhi	N	Chamba					1	2	2	2	12	0	5	11	5	12	0	18	60	35	12	0
	Nalagarh	N	Solan				NAC	1	2	2	2	113	0	18	56	25	114	0	68	251	125	120	86
	Paonta Sahib	N	Sirmaur				NAC	2	2	8	3	285	0	9	21	14	285	0	17	188	83	284	69
	Parwanoo	N	Solan		IA		NAC	2	2	4	2	254	0	5	34	6	255	0	29	192	64	269	2
	Shimla	N	Shimla					2	2	7	2	203	0	11	34	26	202	0	19	137	59	213	5
	Sunder Nagar	N	Mandi				NAC	2	2	2	2	250	0	5	26	9	250	0	5	193	72	251	30
	Una	N	Una					2	2	3	2	17	0	7	8	7	17	0	30	79	61	261	0
Vashisht	N	Kullu					1	2	4	2	44	0	5	11	5	44	0	26	96	48	44	0	
Jammu & Kashmir	Jammu	N	Jammu				NAC	3	2	5	3	201	0	6	26	17	201	0	70	186	139	272	262
	Pulwama	N	Pulwama					1											43	269	120	58	32
	Srinagar	N	Srinagar			MP	NAC	3											42	858	132	160	95
Jharkhand	Barajamda	E	West Singhbhum		IA			1	13	35	17	91	0	18	28	23	91	0	50	98	76	91	0
	Dhanbad	E	Dhanbad		CPA	MP	NAC	3	10	18	14	277	0	28	44	35	277	0	73	437	237	278	255
	Jamshedpur	E	East Singhbhum		IA	MP		2	30	44	38	184	0	37	54	47	184	0	61	197	138	184	164
	Jharia	E	Dhanbad					1	12	17	14	105	0	29	41	35	105	0	109	427	302	105	105
	Ranchi	E	Ranchi			MP		1	11	27	18	96	0	35	121	37	96	1	73	168	109	96	94
	Saraikela	E	Saraikela Kharsawan		IA			1	30	43	37	91	0	39	53	46	91	0	66	236	135	91	80
	Sindri	E	Dhanbad					1	10	16	13	73	0	24	40	33	73	0	24	204	137	75	52
Karnataka	Bagalkote	S	Bagalkot					1	2	2	2	85	0	8	32	17	85	0	16	117	45	85	2
	Bangalore	S	Bengaluru Urban			MP	NAC	9	2	12	3	736	0	9	41	25	736	0	11	186	74	702	157
	Belgaum	S	Belagavi					1	2	9	2	52	0	9	27	16	52	0	18	169	87	52	20
	Bidar	S	Bidar		IA			1	2	4	2	52	0	5	16	9	59	0	14	155	71	60	13
	Bijapur	S	Vijayapura					1	2	2	2	38	0	9	33	17	36	0	32	208	93	38	13
	Chitradurga	S	Chitradurga					1	2	20	6	105	0	5	11	6	105	0	18	98	52	105	0
	Devanagere	S	Davanagere				NAC	3	2	30	10	276	0	5	41	11	276	0	17	212	70	276	55
	Gulbarga	S	Kalaburagi				NAC	1	2	4	3	50	0	8	28	13	58	0	32	240	87	58	19
	Hassan	S	Hassan					1	2	5	3	104	0	14	27	20	104	0	27	49	37	104	0
	Hubli-Dharwad	S	Dharwad				NAC	2	4	6	5	209	0	13	26	19	209	0	47	91	69	209	0
	Kolar	S	Kolar					1	2	2	2	98	0	17	40	27	98	0	60	152	109	98	58
Mandya	S	Mandya					1	2	9	2	107	0	11	27	14	107	0	34	81	43	106	0	

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	Mangalore	S	Dakshina Kannada	Co	CPA			1	5	9	7	92	0	9	11	10	92	0	23	80	47	92	0
	Mysore	S	Mysuru					2	2	12	6	112	0	11	34	13	112	0	30	70	52	110	0
	Raichur	S	Raichur		IA			1	2	7	2	77	0	5	27	11	77	0	17	186	74	77	16
	Shimoga	S	Shivamogga					1	3	50	24	100	0	5	14	6	100	0	11	79	33	100	0
	Timukuru	S	Tumakuru					1	2	2	2	103	0	17	42	27	103	0	41	145	75	103	7
Kerala	Alappuzha	S	Alappuzha	Co				3	2	5	2	203	0	5	10	5	203	0	23	84	56	203	0
	Kochi	S	Ernakulam	Co	CPA	MP		8	2	12	3	734	0	5	43	14	734	0	11	181	46	729	10
	Kollam	S	Kollam	Co		MP		2	2	5	3	220	0	5	9	6	220	0	32	55	45	220	0
	Kottayam	S	Kottayam	Co				2	2	4	3	238	0	12	14	13	238	0	21	52	35	238	0
	Kozhikode	S	Kozhikode	Co		MP		2	2	2	2	172	0	5	13	5	170	0	12	119	44	170	10
	Malapuram	S	Malappuram	Co		MP		2	2	2	2	107	0	9	21	15	107	0	21	70	35	107	0
	Palakkad	S	Palakkad					1	2	10	2	98	0	5	28	7	98	0	11	144	51	98	4
	Pathanamthitta	S	Pathanamthitta	Co				1	2	2	2	100	0	14	19	17	100	0	31	37	34	100	0
	Thiruvananthapuram	S	Thiruvananthapuram	Co		MP		4	3	28	9	420	0	7	40	16	420	0	22	82	42	420	0
	Thissur	S	Thrissur	Co		MP		2	2	12	3	178	0	5	20	5	178	0	22	70	38	178	0
Wayanad	S	Wayanad	Co				2	2	2	2	183	0	5	5	5	183	0	14	41	27	183	0	
Madhya Pradesh	Amlai	C	Anuppur					2	9	19	13	129	0	14	26	20	129	0	54	118	85	129	27
	Bhopal	C	Bhopal			MP	NAC	8	2	28	8	564	0	5	56	17	569	0	53	420	161	569	525
	Chhindwara	C	Chhindwara					2	2	6	3	183	0	7	21	14	184	0	29	138	78	184	10
	Dewas	C	Dewas		IA		NAC	3	9	33	19	283	0	13	35	26	283	0	45	98	79	283	0
	Gwalior	C	Gwalior		IA	MP	NAC	2	2	32	13	183	0	8	46	24	183	0	41	382	139	183	152
	Indore	C	Indore		CPA	MP	NAC	3	3	20	9	321	0	7	67	18	321	0	22	132	77	294	28
	Jabalpur	C	Jabalpur			MP		2	2	16	7	202	0	11	22	16	202	0	49	128	84	202	6
	Katni	C	Katni					2	7	18	10	168	0	17	36	28	168	0	80	172	98	168	59
	Nagda	C	Ujjain		IA			3	4	26	11	234	0	7	25	13	234	0	30	93	53	230	0
	Prithampur	C	Dhar		IA			2	6	14	10	206	0	11	24	18	206	0	46	115	86	206	15
	Sagar	C	Sagar				NAC	2	2	6	3	135	0	5	32	13	197	0	19	123	72	198	4
	Satna	C	Satna					2	2	6	4	152	0	5	34	10	148	0	8	185	123	150	137
	Singrauli	C	Singrauli		CPA			3	13	64	31	251	0	19	112	48	251	21	30	492	192	250	204
	Ujjain	C	Ujjain				NAC	4	7	15	11	242	0	8	21	12	241	0	37	115	78	240	69

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Maharashtra	Akola	W	Akola				NAC	3	11	18	14	427	0	12	19	14	427	0	60	81	68	427	0
	Ambarnath	W	Thane	Co				1	12	47	27	131	0	21	129	66	131	33	26	330	118	131	69
	Amravati	W	Amravati				NAC	3	8	24	14	461	0	9	25	15	461	0	54	136	89	461	145
	Aurangabad	W	Aurangabad		CPA	MP	NAC	4	6	24	13	362	0	10	68	36	362	0	43	104	74	350	1
	Badlapur	W	Thane	Co			NAC	1	11	58	27	187	0	19	120	60	187	32	17	319	108	187	81
	Bhiwandi	W	Thane	Co				3	22	44	32	503	0	31	69	44	503	0	21	85	69	503	0
	Chandrapur	W	Chandrapur		CPA		NAC	6	3	7	4	651	0	10	85	29	651	1	23	357	133	651	398
	Dombivali	W	Thane	Co	CPA			1	11	54	27	190	0	20	120	60	190	29	17	295	106	190	89
	Jalgaon	W	Jalgaon				NAC	3	9	16	12	461	0	27	38	33	461	0	46	93	60	420	0
	Jalna	W	Jalna				NAC	2	8	12	10	276	0	33	52	40	276	0	75	120	97	276	64
	Kolhapur	W	Kolhapur				NAC	3	7	41	19	430	0	10	82	32	430	2	36	158	85	431	167
	Latur	W	Latur				NAC	3	4	7	5	515	0	18	27	21	515	0	54	152	86	515	86
	Mumbai	W	Mumbai City	Co		MP	NAC	3	2	5	2	259	0	5	73	27	259	0	21	591	125	259	153
	Nagpur	W	Nagpur			MP	NAC	7	2	24	10	852	0	5	83	32	852	1	3	898	101	852	281
	Nashik	W	Nashik		IA	MP	NAC	4	2	30	10	781	0	6	72	22	781	0	23	312	63	781	96
	Navi Mumbai	W	Raigad	Co	CPA		NAC	6	12	25	17	1000	0	17	75	47	1000	0	31	83	54	1000	0
	Pimpri-Chinchwad	W	Pune		IA			1	6	75	28	199	0	23	176	78	199	77	13	219	76	199	49
	Pune	W	Pune			MP	NAC	3	6	90	37	208	3	21	254	87	208	107	14	331	143	208	141
	Sangli	W	Sangli				NAC	3	6	21	9	488	0	10	102	39	488	34	14	203	67	488	121
Solapur	W	Solapur				NAC	2	11	21	16	246	0	31	39	35	246	0	54	89	74	246	0	
Thane	W	Thane	Co		MP	NAC	3	13	31	20	146	0	32	45	37	146	0	47	232	128	145	81	
Ulhasnagar	W	Thane	Co			NAC	2	11	48	24	206	0	18	110	56	206	16	17	319	94	206	65	
Manipur		NE	Imphal West					1	3	18	9	32	0	5	52	21	57	0	38	180	109	58	36
Meghalaya	Byrnihat	NE	Ri-Bhoi		IA		NAC	1	2	28	15	121	0	5	18	13	121	0	17	199	103	121	80
	Dawki	NE	West Jaintia Hills					1	2	24	7	121	0	5	18	13	121	0	16	167	53	121	27
	Khliehriat	NE	East Jaintia Hills					1	2	4	3	122	0	5	15	11	122	0	17	55	43	122	0
	Nongstoin	NE	West Khasi Hills					1	2	8	2	121	0	5	21	13	121	0	8	36	30	121	0
	Shillong	NE	East Khasi Hills					4	2	9	3	463	0	5	26	12	463	0	12	69	36	462	0

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	Tura	NE	West Garo Hills					1	2	4	3	116	0	5	16	12	116	0	14	40	31	116	0
	Umiam / Umsning	NE	East Khasi Hills					1	2	6	3	120	0	5	15	12	120	0	17	136	94	120	66
Mizoram	Aizawl	NE	Aizawl					5	2	2	2	506	0	5	21	8	507	0	10	211	48	507	39
	Champhai	NE	Champhai					2	2	2	2	202	0	5	5	5	202	0	13	37	25	202	0
	Kolasib	NE	Kolasib					2	2	2	2	202	0	5	5	5	202	0	3	141	23	202	1
	Lunglei	NE	Lunglei					2	2	2	2	192	1	5	5	5	192	1	3	21	8	192	0
Nagaland	Dimapur	NE	Dimapur				NAC	7	2	2	2	610	0	5	32	7	610	0	15	247	77	610	174
	Kohima	NE	Kohima				NAC	2	2	2	2	259	0	5	12	5	259	0	21	299	94	259	94
Odisha	Angul	E	Anugul		CPA		NAC	2	6	19	11	204	0	18	34	26	204	0	34	223	99	204	98
	Balasore	E	Balasore (Baleswar)	Co			NAC	3	2	9	4	313	0	10	14	11	312	0	26	115	86	313	4
	Berhampur	E	Ganjam	Co				1	2	11	4	107	0	13	46	19	107	0	33	151	65	107	8
	Bhubneshwar	E	Khordha				NAC	6	2	7	2	553	0	10	51	16	552	0	38	244	99	554	227
	Bonaigarh	E	Sundargarh					1	5	17	9	104	0	11	26	16	104	0	58	209	118	104	62
	Cuttack	E	Cuttack				NAC	3	2	35	6	265	0	13	38	20	266	0	51	362	106	266	91
	Jharsuguda	E	Jharsuguda		CPA			3	5	29	8	214	0	11	43	16	214	0	79	394	106	214	143
	Kalinga Nagar	E	Jajapur (Jajpur)				NAC	3	2	2	2	132	0	11	27	18	132	0	27	438	118	132	83
	Konark	E	Puri	Co				1	2	3	2	101	0	11	16	13	101	0	50	102	72	101	2
	Paradeep	E	Jagatsinghapur	Co	IA			3	9	30	19	285	0	6	20	10	285	0	69	343	144	285	232
	Puri	E	Puri	Co				2	2	6	2	121	0	13	22	15	121	0	87	163	112	121	83
	Rajgangpur	E	Sundargarh					1	6	23	12	103	0	11	37	19	103	0	73	272	150	103	79
	Rayagada	E	Rayagada					2	2	12	4	205	0	11	22	17	205	0	15	118	64	205	5
	Rourkela	E	Sundargarh (Sundargarh)				NAC	4	4	16	8	416	0	8	26	14	416	0	52	242	123	416	197
	Sambalpur	E	Sambalpur					1	4	36	6	105	0	19	46	24	105	0	29	266	92	105	44
	Talcher	E	Anugul		CPA		NAC	2	6	14	10	208	0	23	35	28	208	0	35	209	106	208	109



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Puducherry	Karaikal	S	Karaikal	Co				3	2	3	2	262	0	5	11	5	261	0	17	118	41	261	1
	Puducherry	S	Puducherry	Co				3	2	6	4	264	0	6	17	12	264	0	15	87	44	267	0
Punjab	Aligarh (Jagraon)	N	Ludhiana					1	4	12	6	103	0	9	37	17	103	0	22	199	73	106	19
	Amritsar	N	Amritsar			MP	NAC	2	11	19	13	122	0	25	46	34	122	0	46	366	170	122	111
	Aspal Khurd (Tapa)	N	Barnala					1	4	8	5	123	0	9	18	12	124	0	64	213	107	127	69
	Bara Pind (Goraya)	N	Jalandhar					1	4	11	7	83	0	10	26	20	83	0	53	338	150	85	60
	Bhatinda	N	Bathinda					1	2	8	5	81	0	5	21	13	84	0	53	194	106	90	47
	Binjon (Garshankar)	N	Hoshiarpur					1	4	24	7	80	0	9	19	14	80	0	23	249	102	80	39
	Bishanpura (Payal)	N	Ludhiana					1	4	20	10	93	0	9	39	21	93	0	19	374	137	100	65
	Changal (Sangrur)	N	Sangrur					1	4	7	5	107	0	6	26	13	106	0	53	240	105	122	52
	Chowkimann (Jagraon)	N	Ludhiana					1	4	12	7	102	0	9	32	19	102	0	20	170	68	108	16
	Dera Baba Nanak	N	Pathankot					1	3	9	7	68	0	11	17	13	67	0	25	199	70	68	7
	Dera Bassi	N	Ajitgarh/Sahibzad a Ajit Singh Nagar					2	4	8	6	220	0	9	26	13	221	0	41	174	97	220	83
	Fatehpur (Samana)	N	Patiala					1	4	7	5	38	0	10	13	11	38	0	79	107	95	38	11
	Gobindgarh	N	Fatehgarh Sahib		CPA		NAC	3	5	9	7	389	0	13	98	36	389	1	84	238	142	391	364
	Guru Ki Dhab (Kotkapura)	N	Faridkot					1	2	8	5	22	0	7	26	13	22	0	74	212	124	22	17
	Jaito Sarja (Batala)	N	Gurdaspur					1	4	7	6	37	0	11	18	14	37	0	21	109	60	37	3
	Jalandhar	N	Jalandhar			IA		4	5	24	11	276	0	12	49	24	275	0	35	329	137	276	201
Khanna	N	Ludhiana					2	5	64	11	229	0	7	73	26	228	0	45	368	165	231	200	

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Punjab	Kharaori (Sirhind)	N	Fatehgarh Sahib					1	4	8	6	126	0	10	29	13	126	0	68	190	100	128	45
	Kotladooam (Ajnala)	N	Amritsar					1	5	8	7	62	0	11	18	13	62	0	49	395	128	62	35
	Lakho ke Behram (Ferozpur)	N	Ferozpur					1	3	6	4	11	0	5	12	8	11	0	73	169	114	11	7
	Ludhiana	N	Ludhiana		CPA	MP	NAC	4	5	64	12	511	0	5	86	26	514	1	33	498	153	522	407
	Mrar Kalan (Muktsar)	N	Muktsar					1	4	9	5	40	0	10	26	14	42	0	55	228	111	66	35
	Mukandpur (Nawashahar)	N	Nawashahar / Shahid Bhagat Singh Nagar					1	5	12	8	78	0	13	26	17	78	0	58	247	134	78	57
	Mureedke (Batala)	N	Gurdaspur					1	4	10	7	98	0	8	18	12	98	0	21	142	87	98	45
	Naudhrani (Malerkotla)	N	Sangrur					1	4	8	5	106	0	9	25	13	104	0	55	198	108	127	69
	Naya Nangal	N	Ropar/Rupnagar				NAC	2	4	8	6	196	0	9	23	12	203	0	39	159	90	201	57
	Patiala	N	Patiala				NAC	2	4	8	5	264	0	9	30	12	260	0	74	197	102	263	85
	Peer Mohammad (Jalalabad)	N	Fazilka					1	4	6	5	26	0	10	13	12	23	0	69	133	102	41	23
	Poohli (Bhatinda)	N	Bathinda					1	4	7	5	21	0	10	26	15	23	0	64	337	114	57	29
	Qila Bharian (Sangrur)	N	Sangrur					1	4	8	5	112	0	10	27	13	112	0	49	178	104	135	69
	Rakhra (Patiala)	N	Patiala					1	5	7	5	53	0	11	13	12	53	0	64	129	98	53	24
	Rohila (Samrala)	N	Ludhiana					1	5	19	10	120	0	9	42	20	120	0	21	575	159	123	94
Tirathpur (Amritsar I)	N	Amritsar					1	5	8	7	58	0	10	14	13	58	0	25	202	93	58	18	
Rajasthan	Alwar	W	Alwar				NAC	3	6	18	12	306	0	22	45	34	306	0	72	349	172	306	286
	Bharatpur	W	Bharatpur					3	6	12	8	300	0	5	38	26	298	0	61	561	200	296	278
	Bhiwadi	W	Alwar		CPA			3	6	63	26	236	0	12	79	46	236	0	101	442	255	238	238
	Chittorgarh	W	Chittorgarh					3	4	20	7	296	0	14	91	26	296	3	31	311	142	292	207
	Jaipur	W	Jaipur		IA	MP	NAC	9	4	31	7	933	0	5	72	27	933	0	34	498	141	933	739
	Jodhpur	W	Jodhpur		CPA	MP	NAC	9	3	23	7	650	0	10	58	26	650	0	46	973	240	644	588
	Kota	W	Kota			MP	NAC	6	5	13	7	626	0	18	45	24	626	0	19	382	129	626	421

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
	Udaipur	W	Udaipur				NAC	3	3	26	11	312	0	11	53	31	312	0	55	258	156	312	268
Sikkim	Chungthang	NE	North Sikkim					1	3	10	5	90	0	5	5	5	90	0	16	47	28	90	0
	Gangtok	NE	East Sikkim					2	4	10	6	77	0	5	25	10	77	0	21	83	49	75	0
	Mangan	NE	North Sikkim					1	3	7	5	101	0	5	8	5	101	0	13	62	34	101	0
	Namchi	NE	South Sikkim					1	4	7	6	99	0	5	8	5	99	0	22	856	41	98	1
	Pelling	NE	Pelling					1	2	11	5	94	0	5	11	5	93	0	9	77	28	89	0
	Rangpo	NE	East Sikkim					1	3	16	8	94	0	5	18	8	94	0	30	100	64	94	0
	Ravangla	NE	South Sikkim					1	2	28	5	99	0	5	8	5	98	0	13	38	25	95	0
Singtam	NE	East Sikkim					1	4	8	6	93	0	5	8	6	93	0	33	70	54	93	0	
Tamilnadu	Chennai	S	Chennai	Co		MP		11	2	50	9	749	0	5	68	19	740	0	11	231	73	767	109
	Coimbatore	S	Coimbatore			MP		3	4	72	7	232	0	14	25	18	232	0	13	204	57	227	16
	Cuddalore	S	Cuddalore	Co	CPA			3	9	18	13	251	0	15	25	19	250	0	41	280	55	250	2
	Madurai	S	Madurai			MP		3	9	16	13	212	0	13	23	18	212	0	31	144	79	212	38
	Mettur	S	Salem		IA			2	5	10	6	156	0	17	36	22	156	0	17	244	55	155	19
	Salem	S	Salem					1	4	26	7	77	0	8	42	21	77	0	21	183	50	77	2
	Trichy	S	Tiruchirappalli			MP	NAC	5	8	19	13	351	0	12	24	18	351	0	18	148	73	350	78
Tuticorin	S	Thoothukudi	Co			NAC	3	6	16	11	221	0	7	22	11	221	0	41	127	86	220	31	
Telangana	Adilabad	S	Adilabad					1	4	7	5	108	0	23	27	25	108	0	50	85	74	108	0
	Hyderabad	S	Hyderabad			MP	NAC	10	2	13	5	1043	0	5	141	37	1074	23	3	386	99	1091	489
	Karimnagar	S	Karimnagar					1	6	14	9	87	0	45	68	55	86	0	87	140	106	95	73
	Khammam	S	Khammam					2	6	14	9	202	0	28	74	52	203	0	72	118	91	203	29
	Kothur	S	Mahabubnagar					1	7	13	9	104	0	47	67	59	104	0	92	141	111	105	97
	Nalgonda	S	Nalgonda				NAC	2	3	7	5	198	0	23	29	25	198	0	48	75	59	198	0
	Nizamabad	S	Nizamabad					1	4	6	5	99	0	23	27	25	99	0	53	72	63	99	0
	Patancheru	S	Medak		CPA		NAC	1	4	7	5	93	0	22	28	25	93	0	45	106	83	96	9
	Ramagundam	S	Karimnagar					1	7	13	9	98	0	45	65	55	97	0	61	144	107	100	81
Sangareddy	S	Sangareddy				NAC	3	2	52	6	315	0	7	109	30	301	4	12	381	87	313	66	
Warangal	S	Warangal (Urban)					2	6	11	9	197	0	33	66	52	197	0	57	110	88	209	7	

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AAQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Tripura	Agartala	NE	West Tripura					2	2	6	4	166	0	8	16	11	166	0	28	125	77	166	62
Uttar Pradesh	Agra	N	Agra		CPA	MP	NAC	6	2	35	4	805	0	5	71	24	863	0	13	509	186	850	613
	Allahabad	N	Allahabad			MP	NAC	5	2	19	5	425	0	7	88	42	490	1	80	488	222	490	481
	Anpara	N	Sonbhadra				NAC	2	10	22	17	192	0	19	32	29	192	0	41	287	171	204	189
	Baghpat	N	Baghpat					2	6	37	11	189	0	10	57	21	187	0	73	480	171	188	182
	Bareilly	N	Bareilly				NAC	2	10	62	27	214	0	18	65	32	214	0	79	679	200	214	193
	Firozabad	N	Firozabad		IA		NAC	3	6	12	8	311	0	17	42	31	311	0	54	488	214	309	267
	Gajraula	N	Amroha				NAC	2	8	50	25	185	0	14	67	38	186	0	96	421	229	183	182
	Ghaziabad	N	Ghaziabad		CPA	MP	NAC	4	5	35	13	351	0	10	85	35	351	2	46	694	208	351	324
	Gorakhpur	N	Gorakhpur					3	2	62	22	286	0	10	80	35	286	1	103	443	294	286	286
	Greater Noida	N	Gautam Buddha Nagar					2	6	48	12	176	0	9	87	26	176	2	91	501	190	176	173
	Hapur	N	Hapur					2	5	28	15	159	0	13	42	25	159	0	51	577	228	159	138
	Jhansi	N	Jhansi				NAC	2	3	20	6	234	0	9	33	18	233	0	24	237	96	234	109
	Kanpur	N	Kanpur Nagar		CPA	MP	NAC	9	2	20	6	773	0	7	75	40	890	0	11	746	198	822	704
	Khurja	N	Bulandshahr		IA		NAC	2	19	26	21	187	0	18	24	20	187	0	19	401	195	195	162
	Lucknow	N	Lucknow			MP	NAC	8	2	19	7	1819	0	16	70	31	1831	0	29	464	208	1831	1622
	Mathura	N	Mathura		IA			2	8	17	12	164	0	17	40	27	164	0	110	191	161	163	163
	Meerut	N	Meerut		IA	MP		2	7	12	9	118	0	40	85	63	118	25	189	237	213	118	118
	Moradabad	N	Moradabad		IA		NAC	2	5	60	26	181	0	11	83	42	181	2	61	464	240	181	180
	Muzaffarnagar	N	Muzaffarnagar					2	6	15	8	194	0	14	51	34	194	0	47	417	190	194	173
	Noida	N	Gautam Buddha Nagar		CPA		NAC	4	5	39	13	375	0	10	147	44	375	45	47	1073	212	375	341
Raebareli	N	Raebareli				NAC	3	7	16	11	162	0	13	21	17	162	0	80	394	163	162	150	
Saharanpur	N	Saharanpur					2	9	25	16	183	0	18	27	24	183	0	50	344	166	183	162	
Unnao	N	Unnao					2	7	11	9	148	0	24	30	27	148	0	79	185	135	176	138	
Varanasi	N	Varanasi		CPA	MP	NAC	5	3	16	9	561	0	7	84	35	561	5	41	388	184	561	478	

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AAQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Uttarakhand	Dehradun	N	Dehradun				NAC	3	21	28	25	206	0	26	32	29	207	0	93	260	167	207	205
	Haldwani	N	Nainital					1	5	32	8	103	0	21	46	28	103	0	92	218	111	103	97
	Haridwar	N	Haridwar		IA			1	16	23	20	66	0	20	27	24	66	0	104	161	131	78	78
	Kashipur	N	Udham Singh Nagar				NAC	1	13	24	14	97	0	22	31	23	97	0	109	236	132	70	70
	Rishikesh	N	Dehradun				NAC	1	19	25	22	78	0	25	29	27	78	0	99	215	137	82	80
	Rudrapur	N	Udham Singh Nagar					1	12	23	14	87	0	21	30	23	87	0	110	277	132	72	72
West Bengal	Alipurduar	E	Alipurduar					3	2	13	7	309	0	13	50	33	309	0	43	210	80	309	52
	Amtala	E	South 24 Parganas					1	2	12	7	104	0	26	53	40	104	0	33	254	84	104	28
	Asansol	E	Paschim Bardhaman		CPA	MP	NAC	3	7	19	15	312	0	23	55	44	312	0	84	262	184	312	307
	Baharampur	E	Murshidabad					1	2	22	7	104	0	16	49	25	104	0	67	455	107	104	52
	Balurghat	E	Dakshin Dinajpur					1	2	12	6	104	0	13	50	33	104	0	47	217	89	104	24
	Bankura	E	Bankura					1	2	14	2	104	0	14	32	20	104	0	61	141	99	104	46
	Barasat	E	North 24 Parganas					1	2	20	8	103	0	11	50	27	103	0	57	567	118	103	69
	Bardhaman	E	Purba Bardhaman					1	2	14	2	104	0	15	33	20	104	0	63	136	103	104	64
	Barrackpore	E	North 24 Parganas				NAC	3	2	21	8	310	0	15	53	28	310	0	69	445	115	310	224
	Baruipur	E	South 24 Parganas					1	2	16	7	104	0	28	58	40	104	0	28	270	87	104	31
	Bolpur	E	Birbhum					1	2	15	2	104	0	15	33	20	104	0	62	140	98	104	49
	Chinsura	E	Hooghly					1	2	18	7	104	0	15	47	26	104	0	53	324	112	104	61
	Coochbehar	E	Cooch Behar					2	2	14	7	208	0	13	49	33	208	0	44	179	79	208	37
	Dankuni	E	Hooghly					1	2	18	7	104	0	13	44	25	104	0	58	349	107	104	56
	Darjeeling	E	Darjeeling					1	2	10	5	104	0	13	45	30	104	0	42	85	57	104	0
	Durgapur	E	Paschim Bardhaman		IA		NAC	4	2	22	14	415	0	20	56	41	415	0	87	272	173	415	410
	Ghatal	E	Paschim Medinipore					1	2	22	10	107	0	30	48	39	107	0	39	278	93	107	35
Haldia	E	Purba Medinipore	Co	CPA		NAC	4	2	22	9	424	0	28	50	38	424	0	33	280	86	424	119	

States / UTs	City / town / village	Zones	District	Coastal city	Industrial cities	Million plus cities	Non-attainment cities	No. of AQM stations	SO <sub>2</sub>					NO <sub>2</sub>					PM <sub>10</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year		Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
	Howrah	E	Howrah		CPA		NAC	4	3	26	12	420	0	30	57	40	420	0	44	453	174	420	297
	Jalpaiguri	E	Jalpaiguri					1	2	12	6	106	0	14	49	33	106	0	50	131	76	106	0
	Jhargram	E	Jhargram					1	3	19	9	105	0	29	48	37	105	0	36	169	79	105	25
	Kalimpong	E	Kalimpong					1	2	10	6	104	0	13	47	31	104	0	42	95	58	104	0
	Kalyani	E	Nadia					1	2	20	7	104	0	15	49	26	104	0	75	534	113	104	62
	Kharagpur	E	Paschim Medinipore					1	5	24	13	106	0	31	52	41	106	0	46	651	194	106	95
	Kolkata	E	Kolkata			MP	NAC	21	2	37	8	2115	0	5	206	42	2118	36	14	610	104	2115	803
	Krishnanagar	E	Nadia					1	2	15	7	104	0	15	44	26	104	0	72	316	107	104	55
	Madhyamgram	E	North 24 Parganas					1	2	20	8	103	0	11	50	27	103	0	57	567	118	103	69
	Malda	E	Malda					1	2	13	7	103	0	14	49	34	105	0	54	218	101	105	37
	Medinipur	E	Paschim Medinipore	Co				1	4	18	9	107	0	30	47	38	107	0	35	181	80	107	20
	Purulia	E	Purulia					1	2	13	2	104	0	14	32	20	104	0	55	135	95	104	42
	Raigunj	E	Uttar Dinajpur					1	2	28	7	104	0	13	48	32	104	0	46	160	78	104	16
	Rampurhat	E	Birbhum					1	2	12	2	104	0	15	33	20	104	0	58	158	102	104	53
	Ranaghat	E	Nadia					1	2	17	7	104	0	15	57	26	104	0	65	409	112	104	58
	Raniganj	E	Uttar Dinajpur				NAC	3	7	20	15	312	0	19	54	44	312	0	78	263	186	312	308
	Rishra	E	Hooghly					1	2	21	8	104	0	11	51	27	104	0	51	574	118	104	71
	Sankrail	E	Howrah					4	2	34	10	418	0	29	50	38	418	0	31	339	110	418	177
	Siliguri	E	Darjeeling					1	2	13	6	105	0	17	46	33	104	0	46	198	80	105	21
	Suri	E	Birbhum					1	2	15	2	104	0	15	34	20	104	0	62	140	98	104	47
	Tamluk	E	Purba Medinipore	Co				1	3	23	10	106	0	30	59	38	106	0	43	431	108	106	37
	Tribeni	E	Hooghly					1	2	16	7	104	0	12	43	25	104	0	43	506	114	104	62
	Uluberia	E	Howrah					1	3	23	10	104	0	30	50	39	104	0	36	255	94	104	37

NB. Alwar in Rajasthan (Aravali Hills), Agra, Firozabad, Mathura in Uttar Pradesh (Taj-Trapezium), Dehradun in Uttarakhand (Doon valley) are cities in Ecologically sensitive area. The rest fall under Residential / industrial / rural / other areas; NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub> = 40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub> = 40 µg/m<sup>3</sup> (Ecologically sensitive area)

NAAQS (24-hourly): SO<sub>2</sub>=80 µg/m<sup>3</sup>, NO<sub>2</sub>=80 µg/m<sup>3</sup>, PM<sub>10</sub>=100 µg/m<sup>3</sup>, PM<sub>2.5</sub> = 60 µg/m<sup>3</sup> (Residential / industrial / rural / other areas and Ecologically sensitive area)

RIRuO-Residential / industrial / rural / other areas, ESA- Ecologically sensitive area, N-North, E-East, W-West, S-South, NE-North East, C-Central, Co-Coastal cities, I-industrial, MP-million plus cities, NAC- Non attainment cities on the basis of 2014- 18 data. SO<sub>2</sub>-Sulphur Dioxide, NO<sub>2</sub>-Nitrogen Dioxide, PM<sub>10</sub>-Particulate matter of aerodynamic size ≤10 micrometer in diameter, Min-Minimum 24-hourly average concentration in the year, Max-Maximum 24-hourly average concentration in the year. Names within parentheses are the tehsils of the rural areas.

**Table 2.8: Ambient air quality in cities with respect to PM<sub>2.5</sub> during 2019**

State	City / town / village	Zones	District	Coastal city	Industrial (CEPI)	Million plus	NAC	No. of AAQM stations	PM <sub>2.5</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Andhra Pradesh	Anantapur	S	Anantapur				NAC	4	10	65	30	206	1
	Chittoor	S	Chittoor				NAC	3	7	66	26	238	1
	Eluru	S	West Godavari				NAC	2	12	33	19	84	0
	Guntur	S	Guntur				NAC	4	11	48	23	250	0
	Kadapa	S	YS Rajshekara Reddy/Kadapa/Cuddapah				NAC	3	8	69	26	205	1
	Kakinada	S	East Godavari	Co				4	6	107	20	165	6
	Kurnool	S	Kurnool				NAC	4	9	58	30	230	0
	Nellore	S	Sri Potti Sriramulu Nellore	Co			NAC	2	26	38	32	113	0
	Ongole	S	Prakasam	Co			NAC	3	8	40	24	81	0
	Rajahmundry	S	East Godavari	Co			NAC	1	8	118	34	70	11
	Srikakulam	S	Srikakulam	Co			NAC	1	10	95	36	64	2
	Tirupati	S	Chittoor	Co				3	9	46	27	100	0
	Vijaywada	S	Krishna		IA	MP	NAC	3	15	43	27	261	0
Vishakhapatnam	S	Visakhapatnam	Co	CPA	MP	NAC	9	7	127	33	568	40	
Vizianagaram	S	Vizianagaram	Co			NAC	1	8	58	35	50	0	
Assam	Guwahati	NE	Kamrup Metropolitan				NAC	3	10	51	27	70	0
Bihar	Begusarai	E	Begusarai					1	19	114	55	104	36
	Muzaffarpur	E	Muzaffarpur				NAC	1	19	304	101	104	65
Chandigarh	Chandigarh	N	Chandigarh			MP	NAC	5	7	323	63	582	244
Chhattisgarh	Bilaspur	C	Bilaspur					1	13	38	27	91	0
	Durg-Bhillainagar	C	Durg		IA	MP	NAC	4	20	61	42	290	2
	Korba	C	Korba		CPA		NAC	3	12	49	30	296	0
	Raigarh	C	Raigarh					3	8	40	24	214	0
Dadra & Nagar Haveli and	Baldevi (Dadra & Nagar Haveli)	W	Dadara & Nagar Haveli	Co				1	10	43	25	97	0
	Daman	W	Dadara & Nagar Haveli	Co				2	11	59	36	196	0
	Patlora (Daman)	W	Daman	Co				1	10	39	23	100	0
	Silvassa	W	Daman	Co				2	17	60	39	199	0
Delhi	Delhi	N	Delhi		CPA	MP	NAC	4	11	590	141	329	209
Goa	Amona	W	North Goa	Co				1	16	120	38	105	18
	Assanora	W	North Goa	Co				1	13	61	30	104	1
	Bicholim	W	North Goa	Co				1	12	63	31	103	3

State	City / town / village	Zones	District	Coastal city	Industrial (CEPI)	Million plus	NAC	No. of AAQM stations	PM <sub>2.5</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Goa	Codli	W	North Goa	Co				1	14	81	32	103	7
	Cuncochim	W	South Goa	Co				1	15	77	38	102	13
	Honda	W	North Goa	Co				1	15	69	32	104	7
	Kundaim	W	North Goa	Co				1	12	83	31	104	8
	Margao	W	South Goa	Co				1	15	78	30	102	7
	Panaji	W	North Goa	Co				1	4	166	50	60	15
	Ponda	W	North Goa	Co				1	16	85	33	105	9
	Sanguem	W	South Goa	Co				1	15	68	29	103	3
	Tilamol	W	South Goa	Co				1	15	90	35	102	9
	Tuem	W	North Goa	Co				1	14	68	29	104	3
	Usgao	W	North Goa	Co				1	17	99	33	96	3
Vasco	W	South Goa	Co				1	5	114	41	53	8	
Gujarat	Ahmedabad	W	Ahmedabad		CPA	MP	NAC	9	16	130	37	783	134
	Anklesvar	W	Bharuch	Co	CPA			2	21	70	36	176	11
	Jamnagar	W	Jamnagar	Co				1	14	85	34	87	12
	Rajkot	W	Rajkot	Co		MP		2	14	98	35	174	21
	Surat	W	Surat	Co	IA	MP	NAC	3	13	109	40	258	28
	Vadodara	W	Vadodara		IA	MP	NAC	5	17	112	37	434	49
	Vapi	W	Valsad	Co	CPA			2	12	98	40	173	28
Himachal Pradesh	Damtal	N	Kangra				NAC	2	6	52	20	196	0
	Dharamshala	N	Kangra					2	7	82	15	147	1
	Kala Amb	N	Sirmaur		IA		NAC	2	14	113	69	48	29
	Manali	N	Kullu					2	3	76	22	149	3
	Paonta Sahib	N	Sirmaur				NAC	1	8	63	39	49	2
	Parwanoo	N	Solan		IA		NAC	2	6	56	18	248	0
	Shimla	N	Shimla					1	5	56	26	118	0
	Sunder Nagar	N	Mandi				NAC	2	6	86	38	71	7
Jammu & Kashmir	Jammu		Jammu				NAC	3	12	63	36	73	1
Karnataka	Bagalkote	S	Bagalkot					1	10	68	29	40	2
	Bangalore	S	Bengaluru Urban			MP	NAC	8	10	74	32	467	8
	Belgaum	S	Belagavi					1	7	90	38	50	9
	Bidar	S	Bidar		IA			1	5	89	39	51	9
	Bijapur	S	Vijayapura					1	15	76	41	16	2
	Devanagere	S	Davanagere				NAC	1	3	35	16	85	0
	Gulbarga	S	Kalaburagi				NAC	1	23	102	46	35	9
	Hassan	S	Hassan					1	18	36	25	78	0
	Hubli-Dharwad	S	Dharwad				NAC	2	12	38	22	209	0
	Kolar	S	Kolar					1	12	53	28	31	0
	Mangalore	S	Dakshina Kannada	Co	CPA			1	15	59	42	14	0
	Mysore	S	Mysuru					1	18	41	26	108	0
	Raichur	S	Raichur		IA			1	3	34	14	43	0
Shimoga	S	Shivamogga					1	3	24	12	62	0	



State	City / town / village	Zones	District	Coastal city	Industrial (CEPI)	Million plus	NAC	No. of AAQM stations	PM <sub>2.5</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Kerala	Kochi	S	Ernakulam	Co	CPA	MP		1	4	61	32	43	2
	Kozhikode	S	Kozhikode	Co		MP		2	3	56	14	172	0
Madhya Pradesh	Bhopal	C	Bhopal			MP	NAC	6	12	125	69	102	51
	Chhindwara	C	Chhindwara					2	12	60	36	184	0
	Dewas	C	Dewas		IA		NAC	3	25	86	46	91	61
	Gwalior	C	Gwalior		IA	MP	NAC	2	13	175	58	182	94
	Indore	C	Indore		CPA	MP	NAC	3	11	68	37	294	9
	Katni	C	Katni					2	20	37	27	3	0
	Nagda	C	Ujjain		IA			2	25	48	35	37	14
	Prithampur	C	Dhar		IA			2	17	65	32	156	1
	Sagar	C	Sagar				NAC	2	6	44	19	51	0
	Singrauli	C	Singrauli		CPA			3	8	222	67	112	63
Maharashtra	Mumbai	W	Mumbai City	Co		MP	NAC	1	4	174	40	94	17
	Nagpur	W	Nagpur			MP	NAC	1	5	84	39	78	12
Manipur	Imphal	NE	Imphal West					1	37	71	56	6	0
Meghalaya	Byrnihat	NE	Ri-Bhoi		IA		NAC	1	3	10	7	36	0
	Dawki	NE	West Jaintia Hills					1	3	10	7	36	0
	Khliehriat	NE	East Jaintia Hills					1	3	10	7	36	0
	Nongstoin	NE	West Khasi Hills					1	3	10	7	36	0
	Shillong	NE	East Khasi Hills					4	3	17	8	214	0
	Tura	NE	West Garo Hills					1	3	10	7	36	0
	Umiyam / Umsning	NE	East Khasi Hills					1	3	10	7	36	0
Odisha	Angul	E	Anugul		CPA		NAC	2	15	87	48	204	43
	Balasore	E	Balasore (Baleswar )	Co			NAC	3	30	75	46	312	7
	Berhampur	E	Ganjam	Co				1	13	70	26	107	1
	Bhubneshwar	E	Khordha				NAC	6	7	129	29	348	10
	Bonaigarh	E	Sundargarh					1	24	89	51	104	0
	Cuttack	E	Cuttack				NAC	3	18	113	47	202	38
	Jharsuguda	E	Jharsuguda		CPA			2	29	93	45	214	22
	Paradeep	E	Jagatsinghapur	Co	IA			1	23	169	55	76	14
	Puri	E	Puri	Co				1	12	91	21	38	1
	Rajgangpur	E	Sundargarh					1	31	93	58	103	39
	Rayagada	E	Rayagada					2	9	91	33	205	4
	Rourkela	E	Sundargarh (Sundargarh)				NAC	4	17	93	47	416	79
	Sambalpur	E	Sambalpur					1	19	164	48	105	17
Talcher	E	Anugul		CPA		NAC	2	12	125	47	208	58	

State	City / town / village	Zones	District	Coastal city	Industrial (CEPI)	Million plus	NAC	No. of AAQM stations	PM <sub>2.5</sub>				
									Concentration in µg/m <sup>3</sup>			No. of observations in the year	
									Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS
Tamilnadu	Chennai	S	Chennai	Co		MP		7	10	76	36	257	1
	Coimbatore	S	Coimbatore			MP		3	9	122	37	81	5
	Cuddalore	S	Cuddalore	Co	CPA			3	24	38	32	112	0
	Madurai	S	Madurai			MP		3	12	62	26	46	1
	Mettur	S	Salem		IA			2	15	71	37	30	2
	Salem	S	Salem					1	13	80	40	14	2
	Trichy	S	Tiruchirappalli			MP	NAC	5	19	82	46	167	37
	Tuticorin	S	Thoothukudi	Co			NAC	3	13	44	23	95	0
Telangana	Adilabad	S	Adilabad					1	40	50	45	90	0
	Hyderabad	S	Hyderabad			MP	NAC	8	4	148	40	558	103
	Khammam	S	Khammam					1	34	56	45	24	0
	Nalgonda	S	Nalgonda				NAC	1	28	47	39	16	0
	Nizamabad	S	Nizamabad					1	33	46	41	45	0
	Patencheru	S	Medak		CPA		NAC	1	21	56	41	58	0
	Sangareddy	S	Sangareddy				NAC	3	4	131	44	207	28
	Warangal	S	Warangal (Urban)					1	32	36		2	0
Tripura	Agartala	NE	West Tripura					2	13	69	42	166	59
Uttar Pradesh	Agra	N	Agra		CPA	MP	NAC	6	6	405	110	530	321
	Baghpat	N	Baghpat					2	42	265	92	194	178
	Bareilly	N	Bareilly				NAC	2	24	32	27	36	0
	Ghaziabad	N	Ghaziabad		CPA	MP	NAC	4	3	457	102	297	219
	Greater Noida	N	Gautam Buddha Nagar					2	48	293	94	192	169
	Hapur	N	Hapur					2	16	398	111	146	95
	Kanpur	N	Kanpur Nagar		CPA	MP	NAC	1	3	259	66	88	38
	Muzaffarnagar	N	Muzaffarnagar					2	11	170	87	194	133
	Noida	N	Gautam Buddha Nagar		CPA		NAC	4	12	462	105	387	317
West Bengal	Asansol	E	Paschim Bardhaman		CPA	MP	NAC	1	46	141	81	104	98
	Barrackpore	E	North 24 Parganas				NAC	1	47	114	66	104	60
	Darjeeling	E	Darjeeling					1	13	43	24	104	0
	Durgapur	E	Paschim Bardhaman		IA		NAC	1	53	127	73	103	91
	Haldia	E	Purba Medinipore	Co	CPA		NAC	1	10	121	35	106	17
	Howrah	E	Howrah		CPA		NAC	2	20	177	68	209	82
	Kalyani	E	Nadia					1	43	121	60	104	39
	Kolkata	E	Kolkata			MP	NAC	4	13	181	56	416	144
	Sankrail	E	Howrah					1	21	51	31	10	0
Siliguri	E	Darjeeling					1	11	68	32	105	2	

Note:

- Alwar in Rajasthan (Aravali Hills), Agra, Firozabad, Mathura in Uttar Pradesh (Taj-Trapezium), Dehradun in Uttarakhand (Doon valley) are cities in Ecologically sensitive area. The rest fall under Residential / industrial / rural / other areas; NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub> = 40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub> = 40 µg/m<sup>3</sup> (Ecologically sensitive area); NAAQS (24-hourly): SO<sub>2</sub>=80 µg/m<sup>3</sup>, NO<sub>2</sub>=80 µg/m<sup>3</sup>, PM<sub>10</sub>=100 µg/m<sup>3</sup>, PM<sub>2.5</sub> = 60 µg/m<sup>3</sup> (Residential / industrial / rural / other areas and Ecologically sensitive area)
- RIRuO-Residential / industrial / rural / other areas, ESA- Ecologically sensitive area, N-North, E-East, W-West, S-South, NE-North East, C-Central, Co-Coastal cities, I-industrial, MP-million plus cities, NAC- Non attainment cities on the basis of 2014- 18 data. PM<sub>2.5</sub>-Particulate matter of aerodynamic size ≤ 2.5 micrometer in diameter; Names within parentheses are the tehsils of the rural areas.

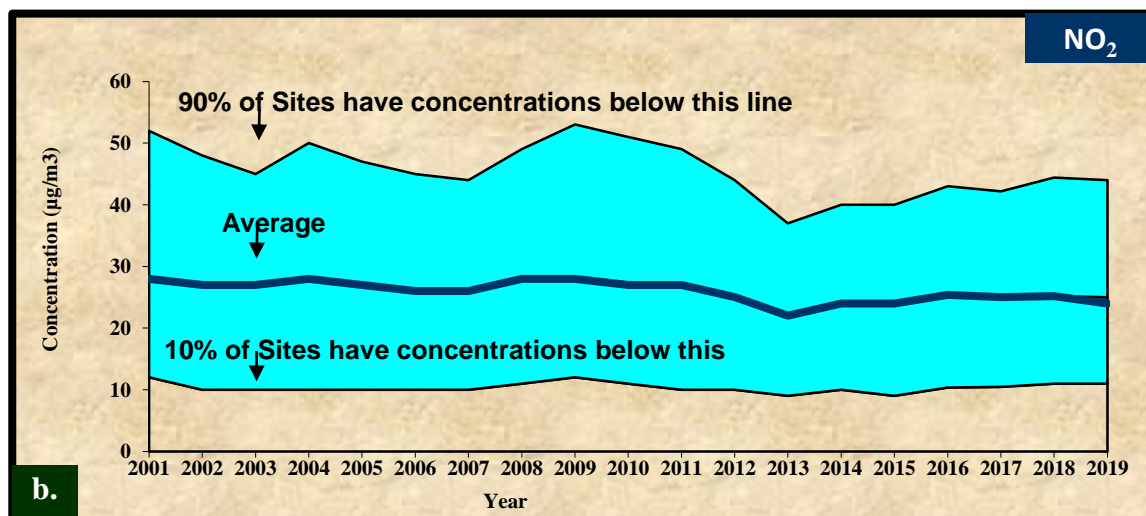
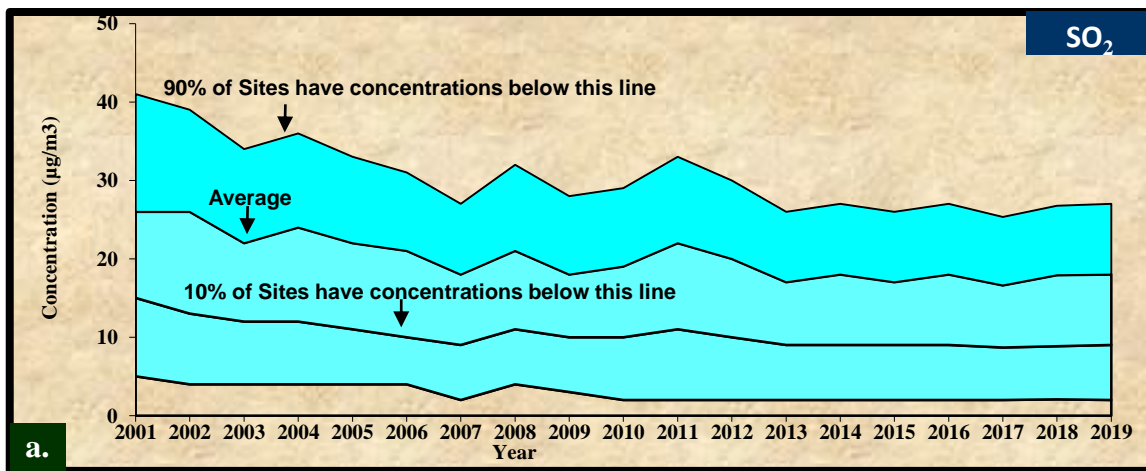
## 2.2 National Average Concentration of regularly monitored pollutants

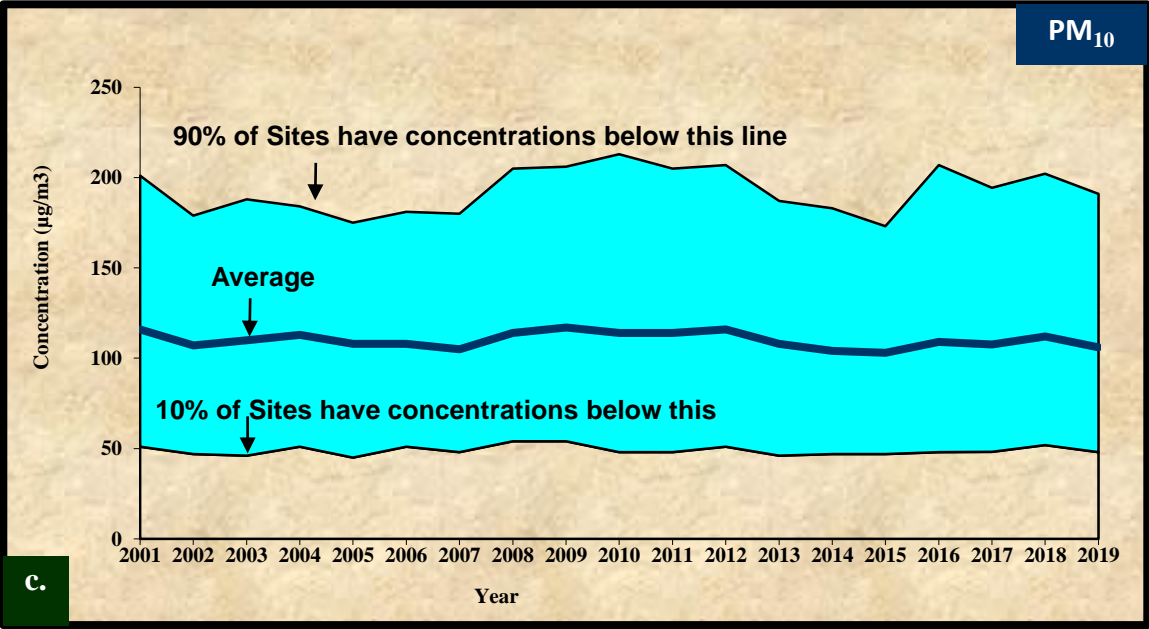
National average concentration with 90<sup>th</sup> percentile and 10<sup>th</sup> percentile for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> is depicted in Figure 2.5. National average of SO<sub>2</sub> concentration has decreased over the years indicating that there has been a decline in SO<sub>2</sub> levels (Figure 2.5a). Decreasing trend may be due to various interventions that have taken place in recent years such as reduction in sulphur in diesel, use of cleaner fuel such as CNG in metro cities, change in domestic fuel from coal to LPG etc. National average of NO<sub>2</sub> concentration has remained stable over the years with a slight decrease in last three years despite increase in sources like vehicles (Figure 2.5b).

National average concentration with 90<sup>th</sup> percentile & 10<sup>th</sup> percentile for SO<sub>2</sub>, NO<sub>2</sub> & PM<sub>10</sub> indicated that SO<sub>2</sub> concentration has decreased over the years; NO<sub>2</sub> concentration remained stable over the years with a slight decrease in last few years despite increase in sources like vehicles. PM<sub>10</sub> concentration revealed a fluctuating trend and a stable trend was observed in PM<sub>2.5</sub>.

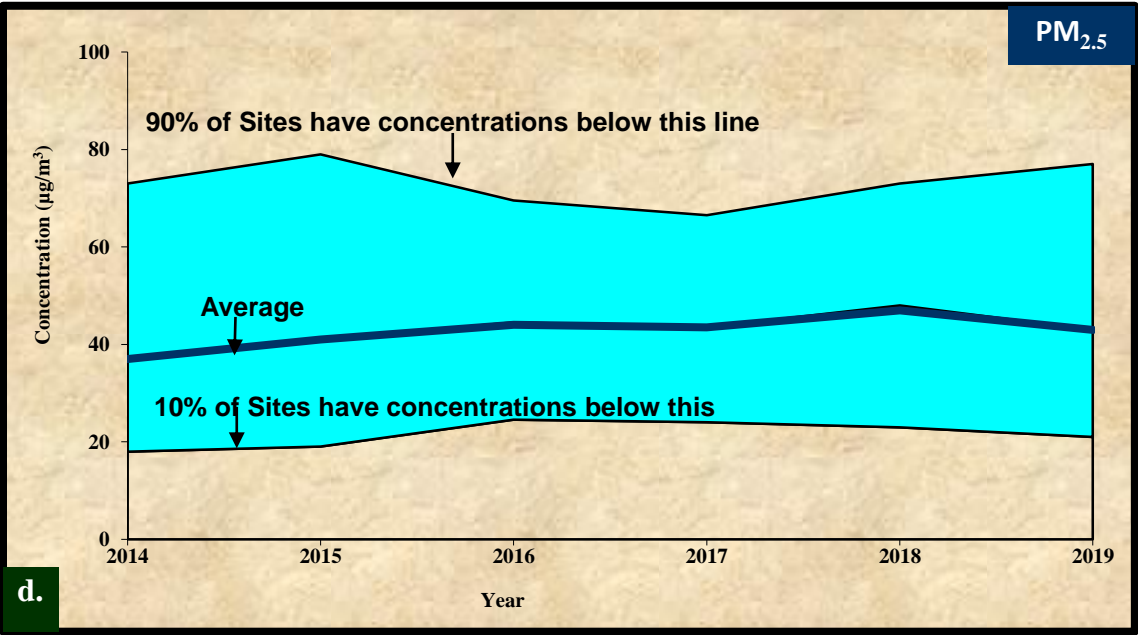
The reason for this may be various intervention measures that have taken place such as improvement in vehicle technology and other vehicular pollution control measures like alternate fuel etc. National average of PM<sub>10</sub> concentration shows fluctuating trend exceeding the NAAQS (Figure 2.5c). The reasons being emission from gensets, small scale industries, biomass incineration, suspension of traffic dust, natural dust, commercial and domestic use of fuel and vehicular emission etc. PM<sub>2.5</sub> revealed a stable trend with decline in 2019 (Figure 2.5d).

**Figure 2.5: National mean concentration of different locations that fall under 10<sup>th</sup> and 90<sup>th</sup> Percentile for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>**





S



### 3.0 Sulphur dioxide (SO<sub>2</sub>)

Sulphur dioxide (SO<sub>2</sub>) is a colourless, soluble gas with a characteristic pungent smell. It is the chemical compound produced by volcanoes and in various industrial processes and is a precursor to particulates in the atmosphere. Its natural source is volcanic eruptions (67%) and anthropogenic sources are combustion of fossil fuel (coal, heavy fuel oil in thermal power plants, office, factories), paper Industry, excavation & distribution of fossil fuels, smelting of metals (sulfide ores to produce copper, lead and zinc), petroleum refining, combustion process in diesel, petrol, natural gas driven vehicles. SO<sub>2</sub> in ambient air can also affect human health, particularly in those suffering from asthma and chronic lung diseases and exacerbates respiratory symptoms and impaired breathing in sensitive individuals. It also causes visibility impairment. It is considered more harmful when particulate and other pollution concentrations are high. SO<sub>2</sub> also causes acid rain and aesthetic damage. A compilation of sources and effects of SO<sub>2</sub> are given in **Annexure 1**.

#### Status of SO<sub>2</sub> in 2019

SO<sub>2</sub> is a colourless, soluble gas with a characteristic pungent smell. SO<sub>2</sub> in ambient air can also affect human health, particularly in those suffering from asthma and chronic lung diseases and exacerbates respiratory symptoms and impaired breathing in sensitive individuals.

Air quality of different zones (Central, East, North, NE, South, West) reveals that the central, south & NE zones have lower concentration of SO<sub>2</sub>, as compared to East, North & West zones. Almost all the cities are within the standard.

The coastal cities, industrial & million plus cities are within NAAQS. The non-attainment cities are within the standard except for one city in the Ecologically Sensitive Area.

In this chapter, a detailed comparison of locations and cities with respect to SO<sub>2</sub> levels in the country has been depicted.

#### 3.1 Locations and cities exceeding the NAAQS

Table 3.1 shows the number of locations and cities exceeding the NAAQS with respect to SO<sub>2</sub> during 2019. During 2019 in residential / Industrial / Rural area no location exceeded NAAQS of 50 µg/m<sup>3</sup> and 3 locations in ecologically sensitive area exceeded NAAQS of 20 µg/m<sup>3</sup>. Taking cities into consideration, no city exceeded the NAAQS with respect to SO<sub>2</sub> and 1 city in ecologically sensitive area exceeded NAAQS of 20 µg/m<sup>3</sup>.

**Table 3.1. Number of locations and cities exceeding the NAAQS with respect to SO<sub>2</sub>  
(Based on annual average data in µg/m<sup>3</sup>)**

	No. of locations		Number of cities	
	Residential / Industrial / Rural area	Ecologically Sensitive area	Residential / Industrial / Rural area	Ecologically Sensitive area
	NAAQS >50	NAAQS >20	NAAQS >50	NAAQS >20
Not exceeding NAAQS (NE)	717	14	309	4
Exceeding NAAQS (E)	0	3	0	1
Inadequate data (ID)	41	0	15	0
No data (ND)	29	0	15	0
Total monitoring stations / cities (NE & E & ID & ND)	787	17	339	5

#### Locations:

No location exceeded NAAQS for SO<sub>2</sub> in Residential / Industrial / Rural area. The location with highest level of SO<sub>2</sub> (annual average) during 2019 is Himalaya Drug Co. near ISBT, Dehradun, Uttarakhand with 26 µg/m<sup>3</sup> in Ecologically Sensitive area.

**City:**

Ambient air quality data with respect to SO<sub>2</sub> is given in **Annexure 3**. No city exceeded NAAQS for SO<sub>2</sub> in Residential / Industrial / Rural area. One city, Dehradun, Uttarakhand exceeded NAAQS with respect to SO<sub>2</sub> in 2019 in Ecologically Sensitive area with 25 µg/m<sup>3</sup>.

**3.2 SO<sub>2</sub> in cities in different zones of the country**

In this section, an attempt has been made to analyze air quality with respect to different zones and geo-climatic area of the country as given in the Table 3.2:

**Table 3.2 States in different zones of the country**

Sl. No.	Zone	State	Union Territory
1.	Central	Madhya Pradesh	
		Chhattisgarh	
2.	East	Bihar	Andaman and Nicobar Islands
		Jharkhand	
		Orissa	
		West Bengal.	
3.	North	Haryana	Chandigarh
		Himachal Pradesh	Delhi
		Punjab	Jammu and Kashmir
		Uttar Pradesh	Ladakh
		Uttarakhand	
4.	North East	Arunachal Pradesh	
		Assam	
		Manipur	
		Meghalaya	
		Mizoram	
		Nagaland	
		Sikkim	
		Tripura	
5.	South	Andhra Pradesh	Lakshwadeep
		Karnataka	Puducherry
		Kerala	
		Tamilnadu	
		Telangana	
6.	West	Goa	Dadra & Nagar Haveli and Daman & Diu
		Gujarat	
		Maharashtra	
		Rajasthan	

The Central Zone comprises of Madhya Pradesh and Chhattisgarh. Being a plateau region, it is rich in minerals and is also home to many famous wildlife sanctuaries, national parks and bio-reserve. This area experience moderate temperatures during both summer and winter months. The monsoons fall between July and September which brings heavy downpour.

The East Zone is comprised of states of Andaman and Nicobar Islands, Bihar, Jharkhand, Orissa, and West Bengal. The bulk of the region lies on the east coast of India by the Bay of Bengal, and on the Indo-Gangetic plain. Jharkhand, on the Chhota Nagpur plateau, is a hilly and a heavily forested state rich in mineral wealth. Odisha is also a mineral rich state of India. The region lies in the humid-subtropical zone, and experiences hot summers from March to June, the monsoon from July to October and mild winters from November to February. The interior states have a drier climate and slightly more extreme climate, especially during the winters and summers, but the whole region receives heavy, sustained rainfall during the monsoon months. Snowfall occurs in the extreme northern regions of West Bengal.

North zone comprises of Chandigarh, Delhi, Haryana. Himachal Pradesh, Jammu and Kashmir, Ladakh, Punjab, Uttar Pradesh and Uttarakhand. The predominant geographical features of North India are the Indo-Gangetic plain, the Himalayas and the Thar Desert. North India lies mainly in the North Temperate

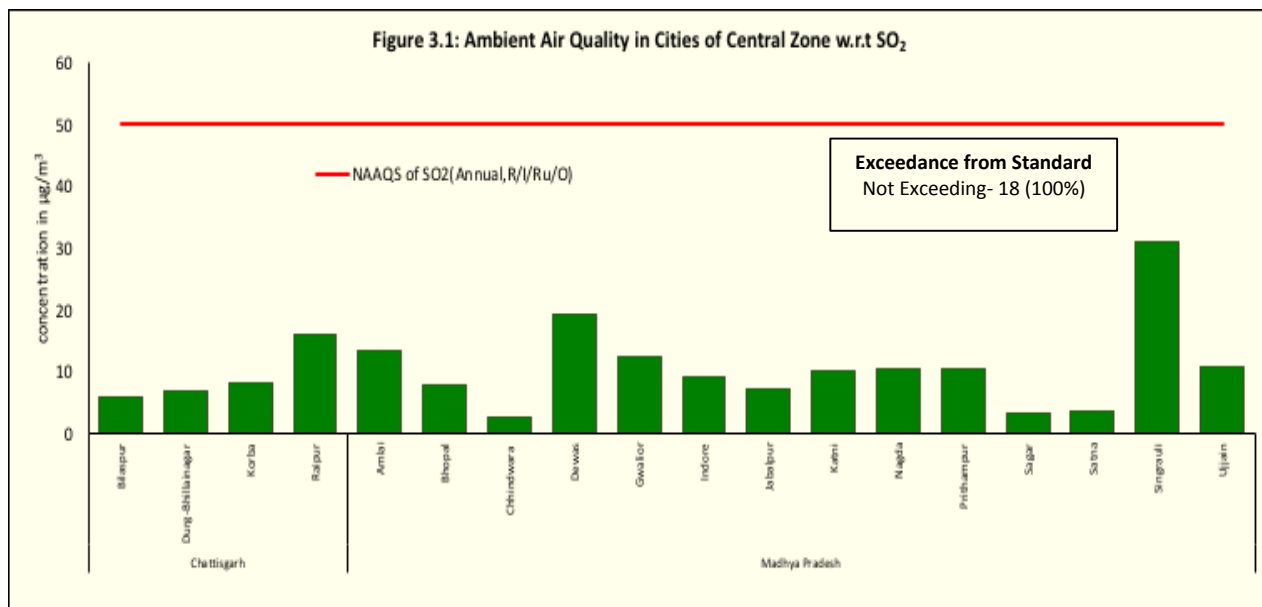
Zone with though cool or cold winters, hot summers and moderate monsoons. Heavy to moderate snowfall occurs in Himachal Pradesh, J&K and Uttarakhand and much of North India is notorious for heavy fog during winters. The region receives rain and snow precipitation through two primary weather patterns, the Indian Monsoon and the Western Disturbances.

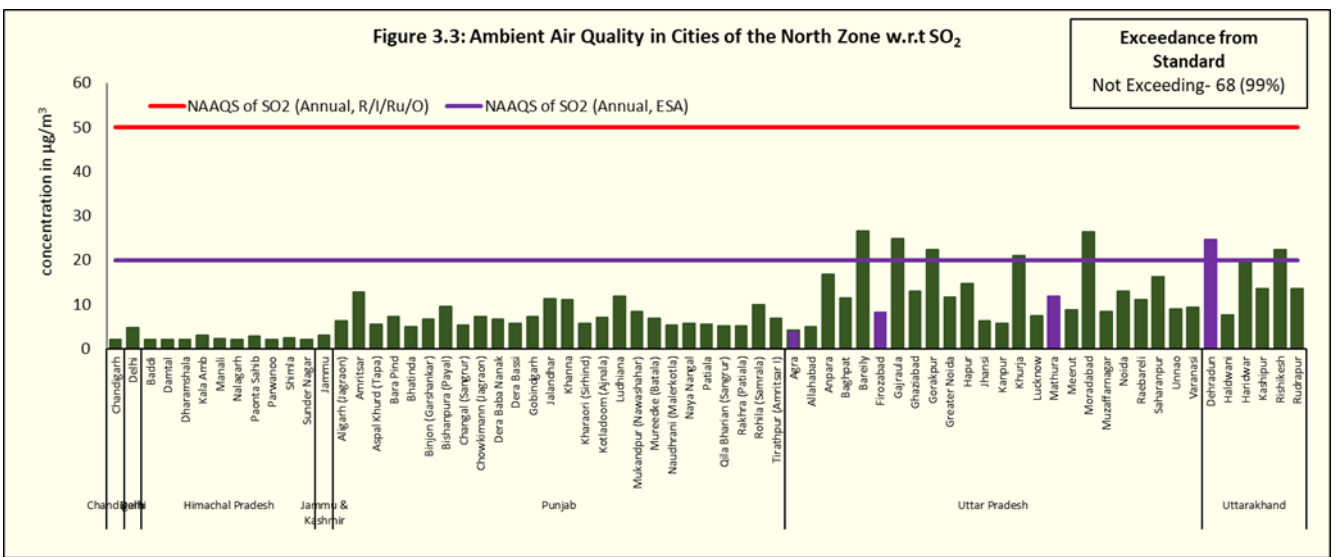
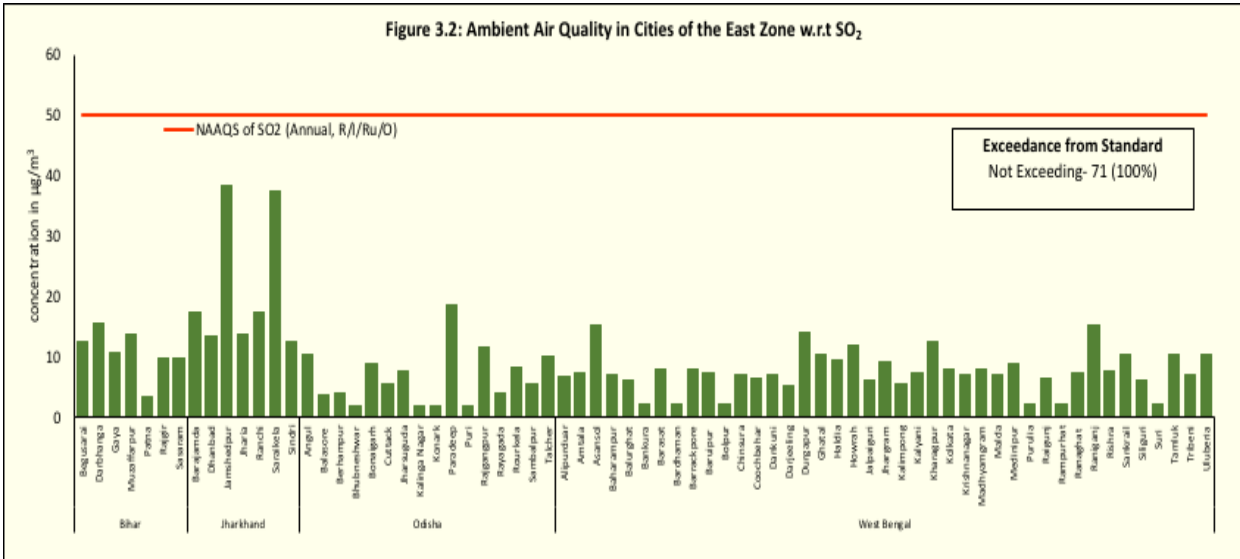
North East Zone houses the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The region shares more than 4,500 kilometres of international border with Tibet in the north, Myanmar in the east, Bangladesh in the southwest and Bhutan to the northwest. The Northeast region can be physiographically categorised into the Eastern Himalaya, the Patkai and the Brahmaputra and the Barak valley plains. It has a predominantly humid sub-tropical climate with hot, humid summers, severe monsoons, and mild winters. Along with the west coast of India, this region has some of the Indian sub-continent's last remaining rain forests.

South Zone contains Andhra Pradesh, Karnataka, Kerala, Lakshwadeep, Puducherry, Tamilnadu and Telangana occupy the South Zone on India. South India is a peninsula in the shape of an inverted triangle bound by the Arabian Sea on the west, by the Bay of Bengal on the east and Vindhya and Satpura ranges on the north. The Western Ghats run parallel along the western coast. The region has a tropical climate and depends on monsoons for rainfall.

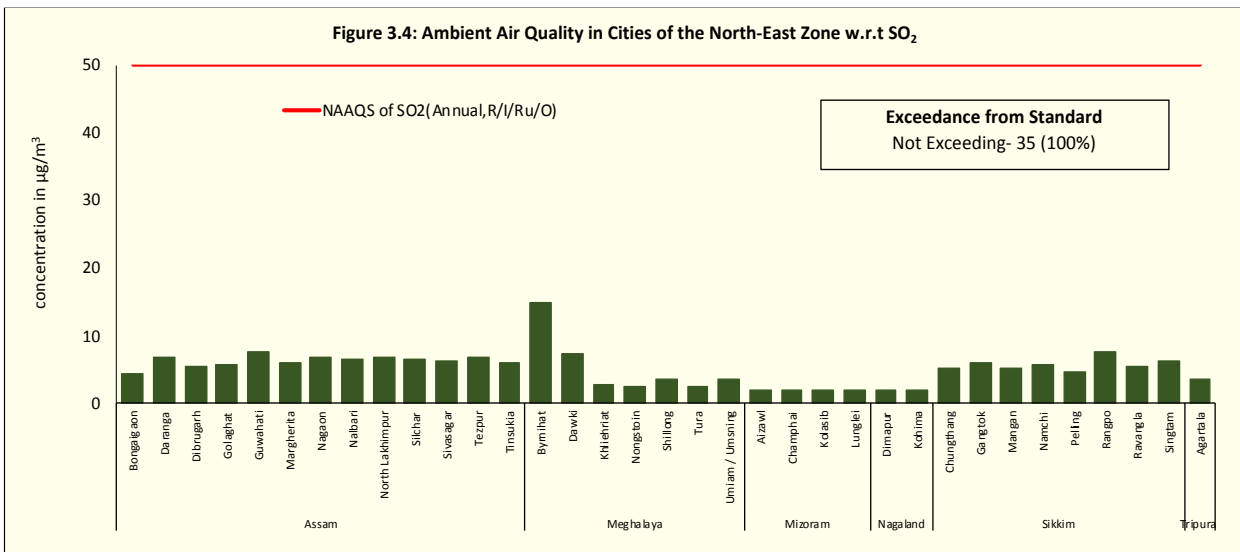
West Zone houses the states and UTs of Dadra & Nagar Haveli and Daman & Diu, Goa, Gujarat Maharashtra and Rajasthan. Goa and many places in Maharashtra are located in the western coasts. The region consists of the predominantly arid to semi-arid region of Saurashtra and Kutch in the North. The climate varies between tropical wet, tropical wet and dry, and semi arid. The vegetation varies from tropical rainforests along the Konkan coast to thorny bushes and shrubs in northern Gujarat. The rivers of this region are Mahi, Narmada, Tapi, Godavari, Zuari, Mandovi, Krishna, Ghaggar, Chambal and many other smaller tributaries of other rivers.

The graphs below compares the ambient air quality with respect to SO<sub>2</sub> in different zones of the county. SO<sub>2</sub> in all the cities of the zones are within the National Standard except for Dehradun. It can be seen that the central, south and north-east zones have lower concentration compared to east, north and west zones (Figure 3.1 to Figure 3.6).

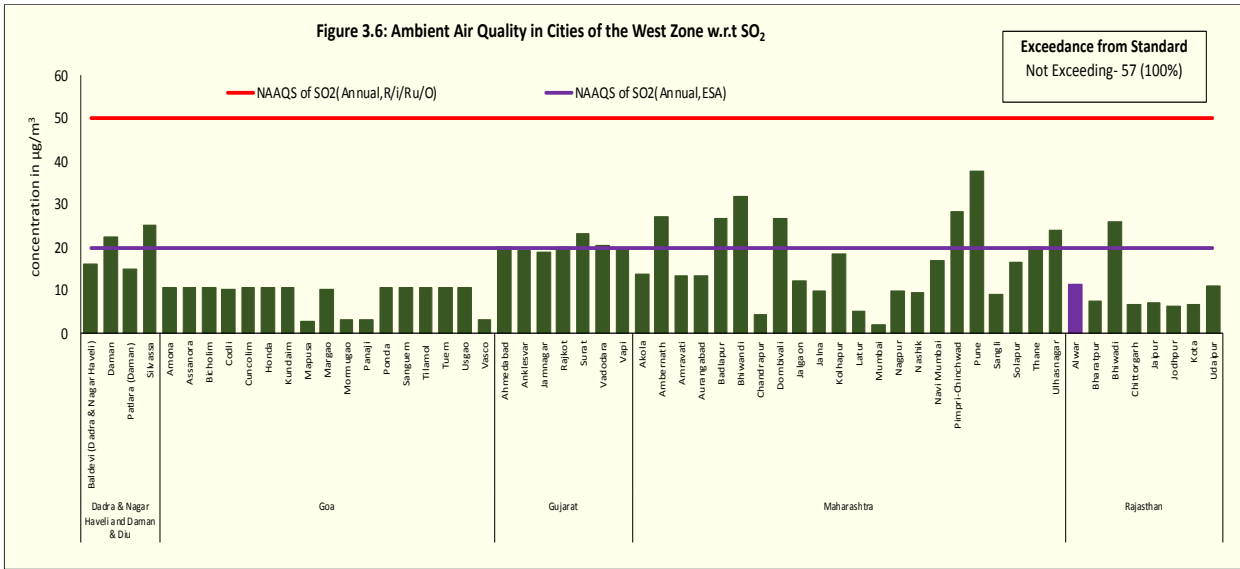
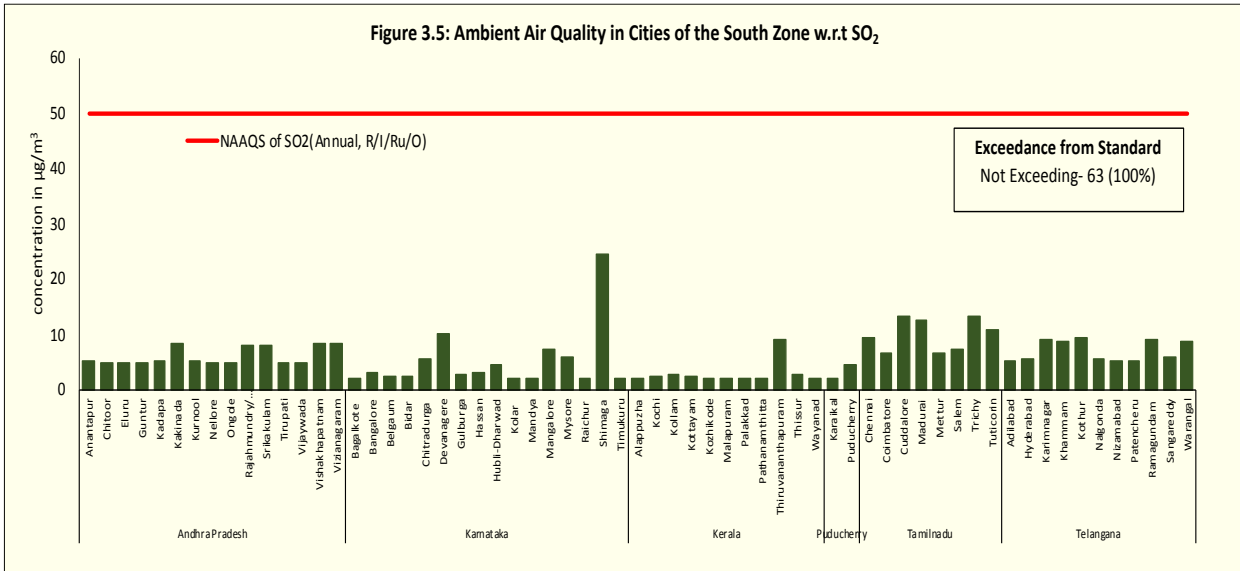




City in ecological sensitive area





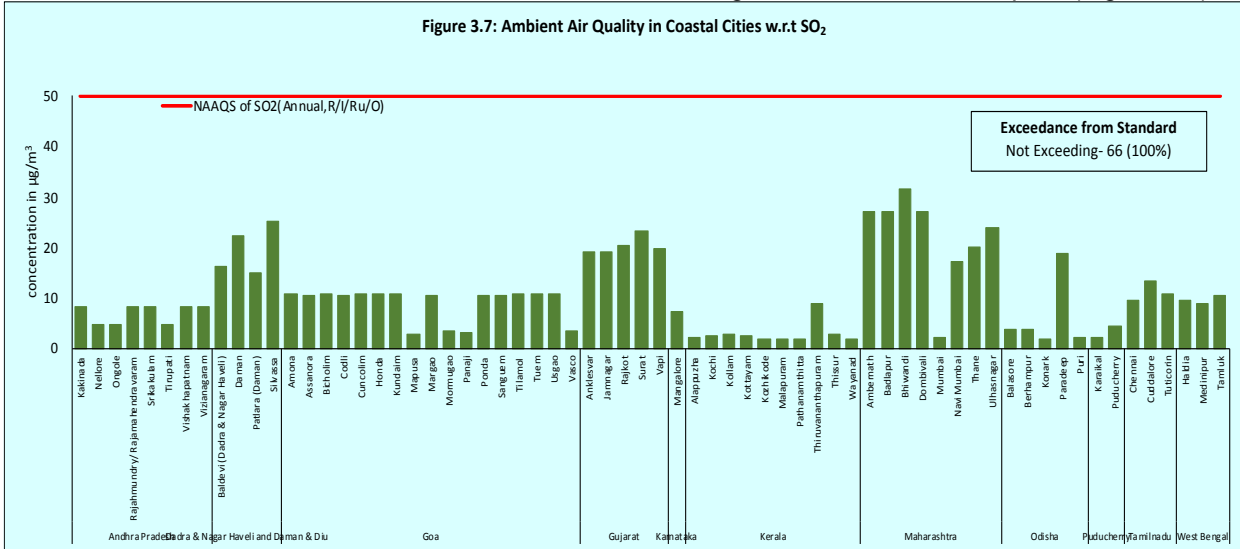


City in ecological sensitive area

### 3.3 SO<sub>2</sub> in the coastal cities of the country

The definitions of ‘near-coastal zone’ is "contiguous area along the coast that is less than 10 meters above sea level" (McGranahan et. al. 2007) and ‘within 100 km of a shoreline and 100 m of sea level’ (Small & Nicholls, 2003).

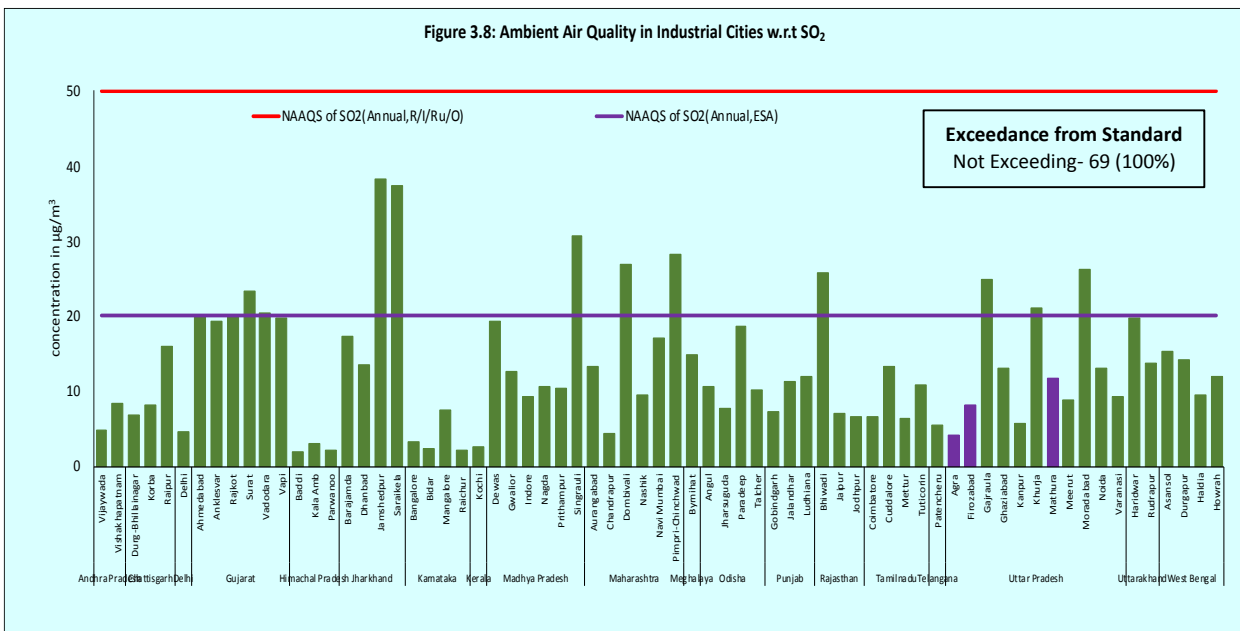
The level of SO<sub>2</sub> in the coastal cities is within NAAQS including the coastal cities with ports (Figure 3.7).



### 3.4 SO<sub>2</sub> in the industrial cities of the country

The industrial cities in this report have been selected on the basis of the 100 industrial areas or clusters selected by CPCB & MoEF&CC for application of Comprehensive Environmental Pollution Index (CEPI) in respect of Air Pollution.

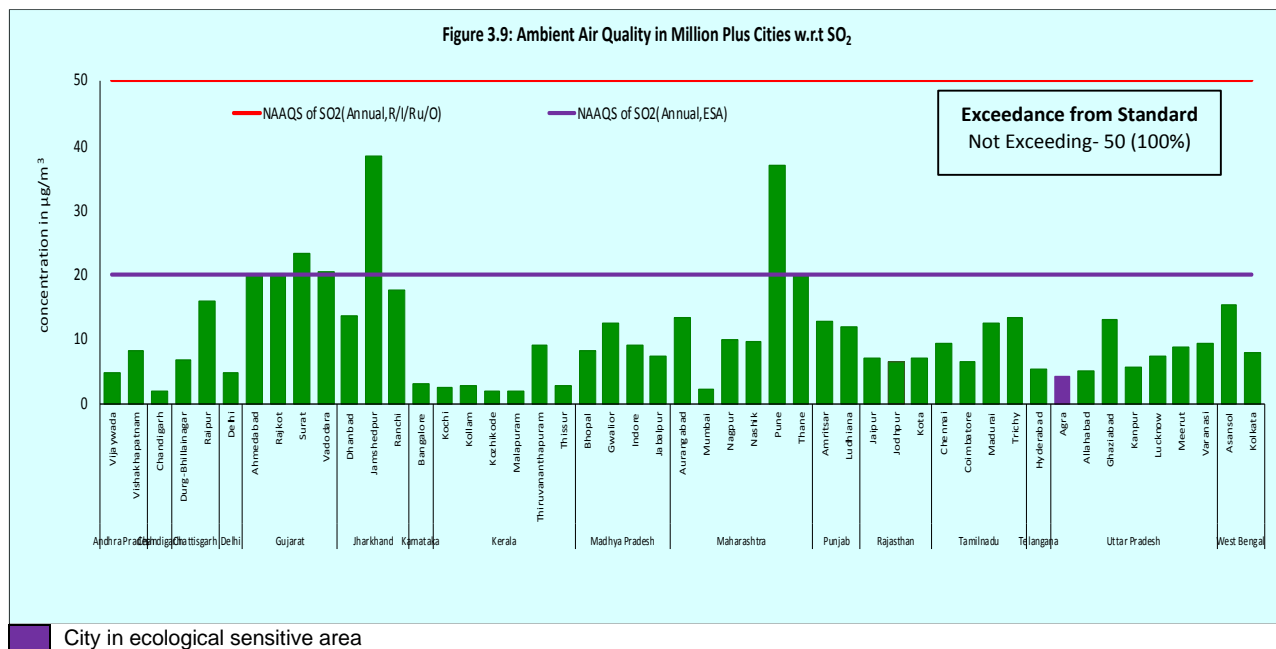
The SO<sub>2</sub> levels are within NAAQS in the industrial cities [cities identified by CPCB as industrial clusters and comprehensive environmental pollution index (CEPI) calculated accordingly] were within NAAQS in both for residential / industrial and other areas (Figure 3.8).



### 3.5 SO<sub>2</sub> in the million plus cities (population > 10 lakhs) of the country

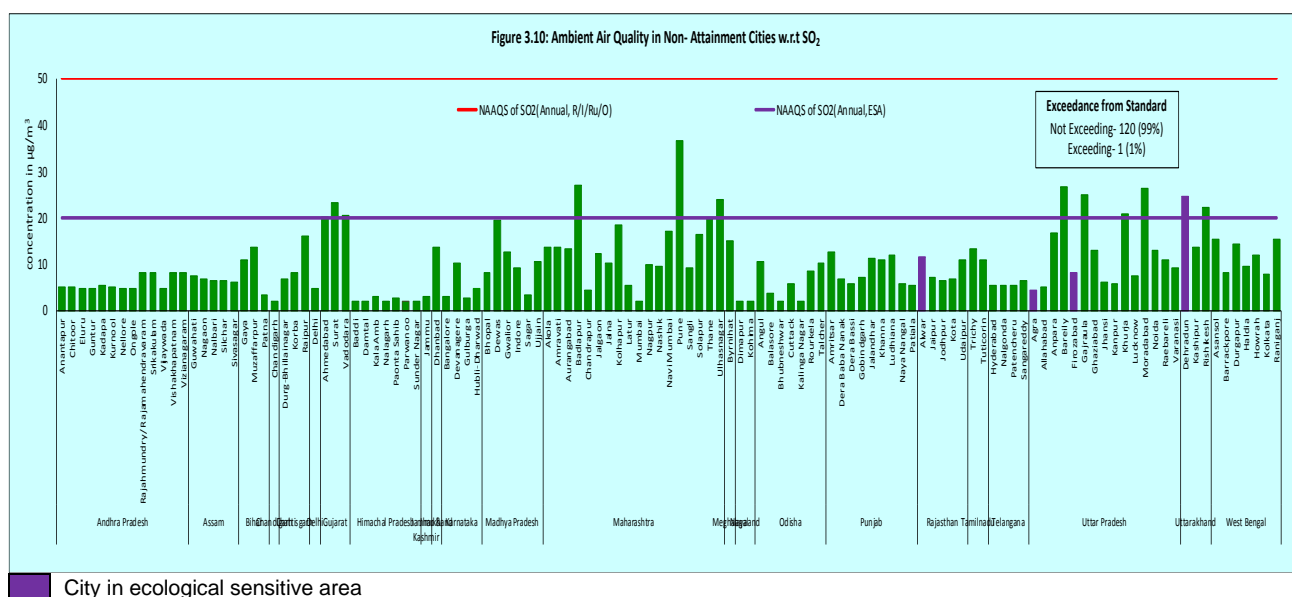
According to Census of India 2011, 53 million plus cities (population ≥ 10 lakh or 1 million) have been recorded.

The level of SO<sub>2</sub> in the million plus cities is within NAAQS both for residential / industrial and other areas and ecologically sensitive area (Figure 3.9).



### 3.6 SO<sub>2</sub> in the Non- attainment cities of the country

On the basis of 2014 - 2018 ambient air quality data, 122 non- attainment cities (cities exceeding the national standard for consecutive five years) have been identified. The level of SO<sub>2</sub> in the non- attainment cities is within NAAQS for residential / industrial and other areas except for one city in ecologically area (Figure 3.10).



## 4.0 Nitrogen dioxide (NO<sub>2</sub>)

Oxides of nitrogen are a generic term for a group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Oxides of nitrogen are formed during combustion processes at high temperatures from the oxidation of nitrogen in air. NO<sub>x</sub> are emitted as nitrogen oxide (NO) which is rapidly oxidized to nitrogen dioxide (NO<sub>2</sub>). Nitrogen dioxide (NO<sub>2</sub>) is a reddish-brown toxic gas with a characteristic sharp, biting odor and is a prominent air pollutant. Sources of nitrogen oxides include lightning, forest fires, bacterial activity of soil as natural source and vehicles, industrial processes that burn, high temperature combustion (internal combustion engines, fossil fuel-fired power stations, industrial, burning of bio-mass and fossil fuels are anthropogenic sources. NO<sub>2</sub> irritates the nose and throat increase susceptibility to respiratory infections. In addition, NO<sub>x</sub> is a potent and selective vasodilator in pulmonary arterial hypertension. Oxides of nitrogen react with Volatile Organic Compounds (VOCs) to form ground level ozone. They also react to form nitrates, acid aerosols. Almost all NO<sub>x</sub> is emitted as NO, which is rapidly oxidized to non toxic NO<sub>2</sub>.

### Status of NO<sub>2</sub> in 2019

Nitrogen dioxide (NO<sub>2</sub>) is a reddish-brown toxic gas and is a prominent air pollutant. NO<sub>2</sub> irritates the nose and throat increase susceptibility to respiratory infections. It is a potent and selective vasodilator in pulmonary arterial hypertension.

Air quality of different zones reveals that the north-east is within the NAAQS. Both central and north-east zones and have lower concentration than south, east, north and west zones.

The coastal cities are almost within NAAQS except for 6 of the cities of Maharashtra. Among the 69 industrial cities under NAMP, 13 cities exceed the NAAQS. 8 cities among the million plus cities exceed the national standard and among the 122 non-attainment cities, 15 cities exceed the standard.

In this chapter, a detailed comparison of locations and cities with respect to NO<sub>2</sub> levels in the country has been depicted.

### 4.1 Locations and cities exceeding the NAAQS

Table 4.1 shows the number of locations and cities exceeding the NAAQS with respect to NO<sub>2</sub> during 2019. During 2019 in residential / Industrial / Rural area 91 locations exceed NAAQS of 40 µg/m<sup>3</sup> and 5 locations exceed NAAQS of 30 µg/m<sup>3</sup>. Taking cities into consideration, in residential / Industrial / Rural area 28 cities exceed NAAQS of 40 µg/m<sup>3</sup> and 2 cities exceeded the NAAQS of 30 µg/m<sup>3</sup> in Ecologically Sensitive area.

**Table 4.1. Number of locations and cities exceeding the NAAQS with respect to NO<sub>2</sub> (Based on annual average data in µg/m<sup>3</sup>)**

	No. of locations		Number of cities	
	Residential / Industrial / Rural area	Ecologically Sensitive area	Residential / Industrial / Rural area	Ecologically Sensitive area
	NAAQS >40	NAAQS >30	NAAQS >40	NAAQS >30
Not exceeding NAAQS (NE)	627	12	282	3
Exceeding NAAQS (E)	91	5	28	2
Inadequate data (ID)	32	0	14	0
No data (ND)	37	0	15	0
Total monitoring stations / cities (NE & E & ID & ND)	787	17	339	5

#### Locations:

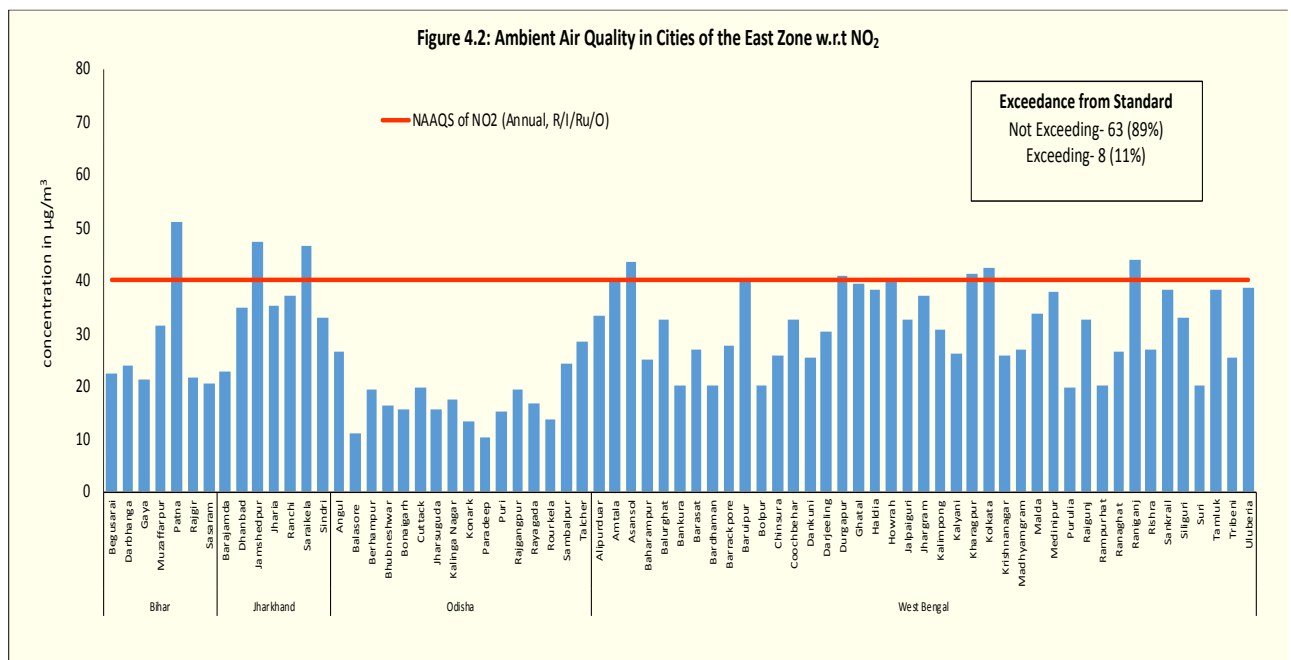
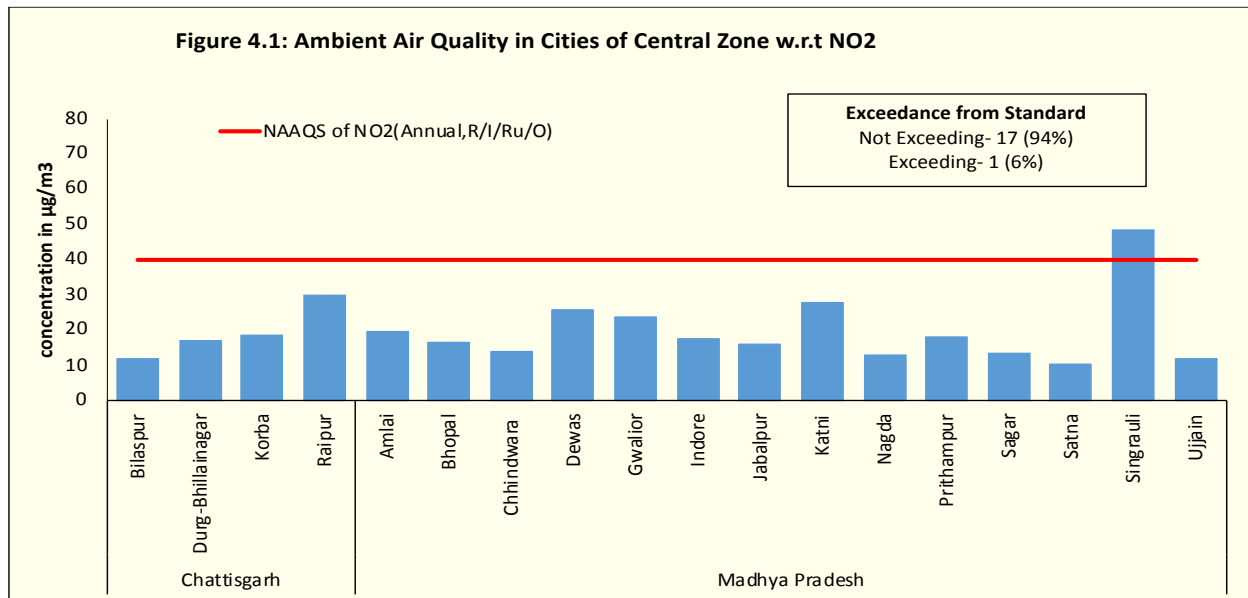
The location with highest level of NO<sub>2</sub> (annual average) during 2019 is Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi with 117 µg/m<sup>3</sup> in Residential / Industrial / Rural area and Gaurav Solvex Ltd. MIA, Alwar, Rajasthan with 37 µg/m<sup>3</sup> in Ecologically Sensitive area

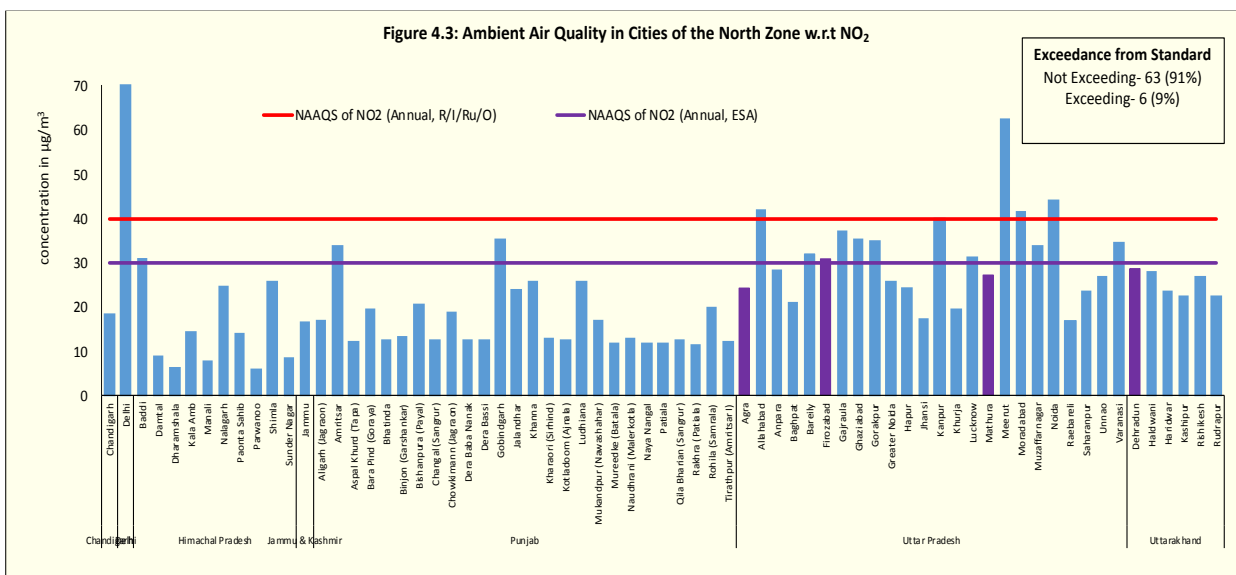
**City:**

Ambient air quality data with respect to NO<sub>2</sub> is given in **Annexure 4**. The city (Residential / Industrial / Rural area) with highest level of NO<sub>2</sub> (annual average) during 2019 is Pune, Maharashtra with 87 µg/m<sup>3</sup> and Alwar, Rajasthan (Ecologically Sensitive area) with 34 µg/m<sup>3</sup>.

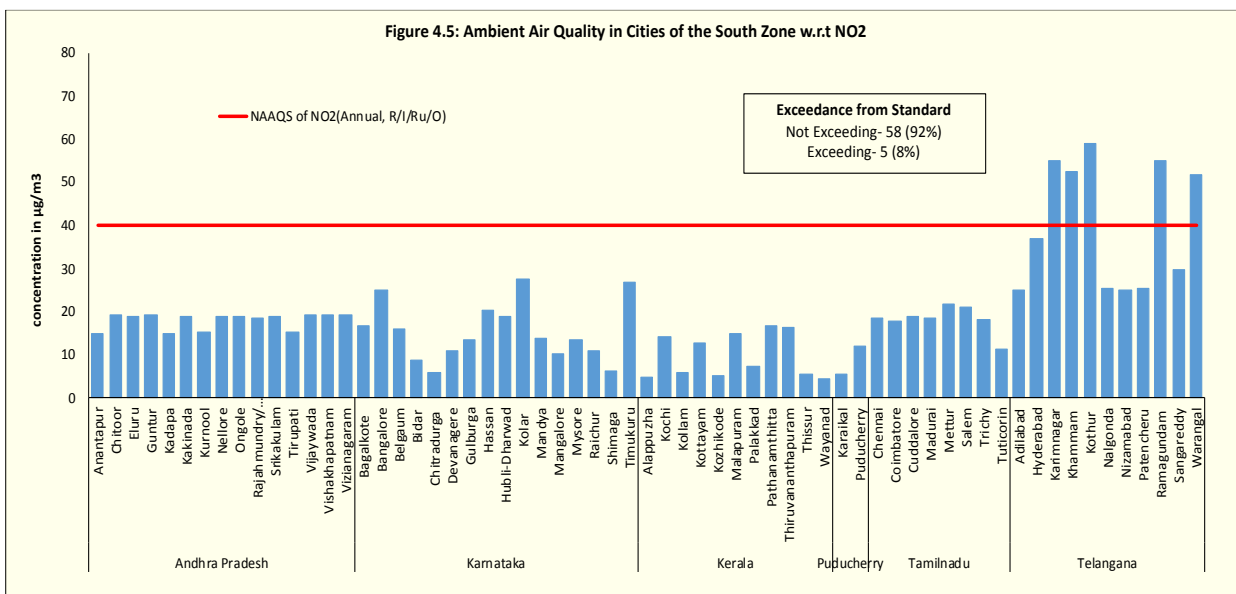
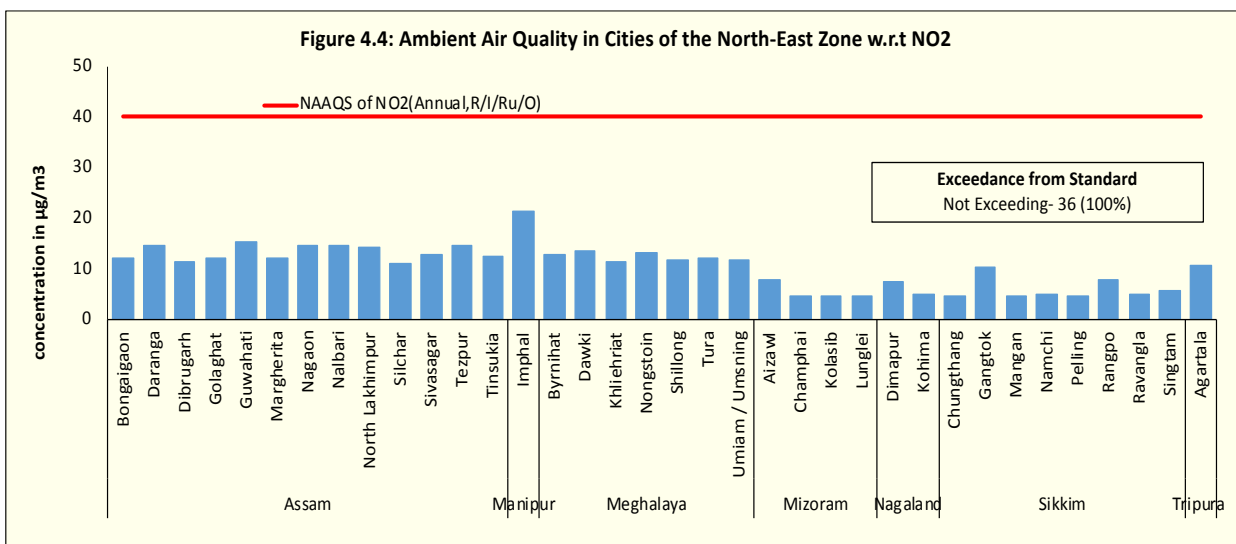
**4.2 NO<sub>2</sub> in different zones of the country**

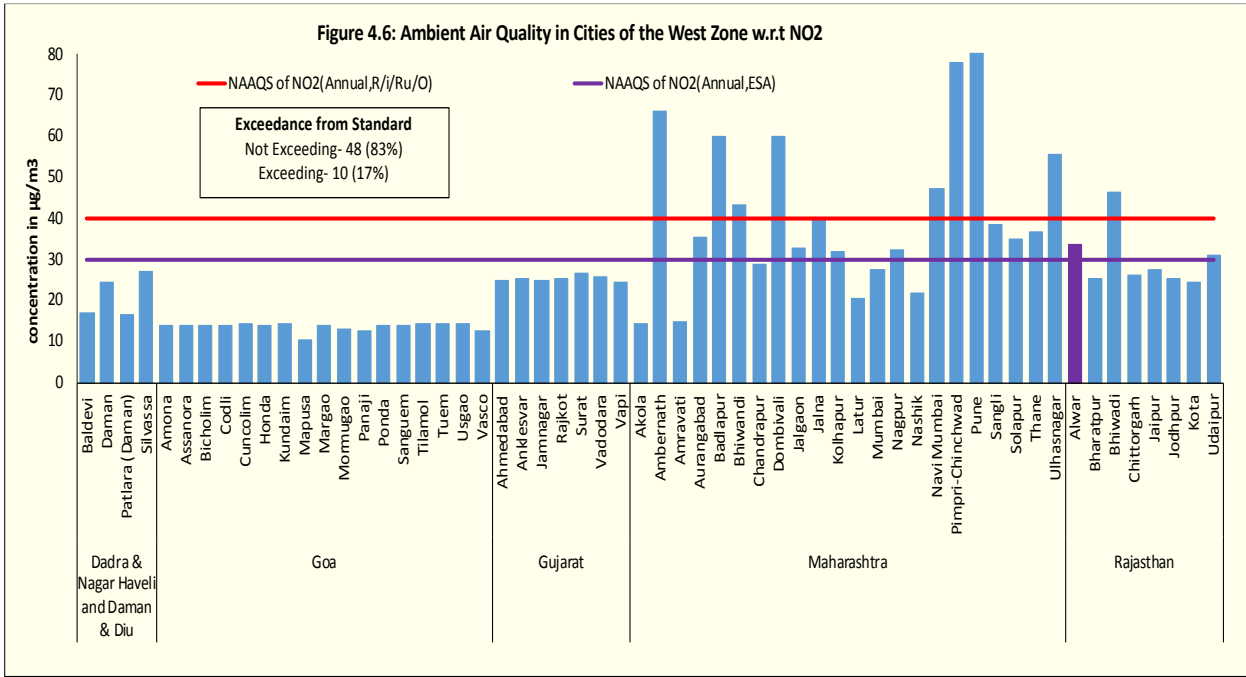
The graphs below compare the ambient air quality with respect to NO<sub>2</sub> in different zones of the county. It can be seen that the north-east is within the NAAQS. Both central and north-east zones and have lower concentration than south, east, north and west zones (Figure 4.1 to Figure 4.6).





City in ecological sensitive area

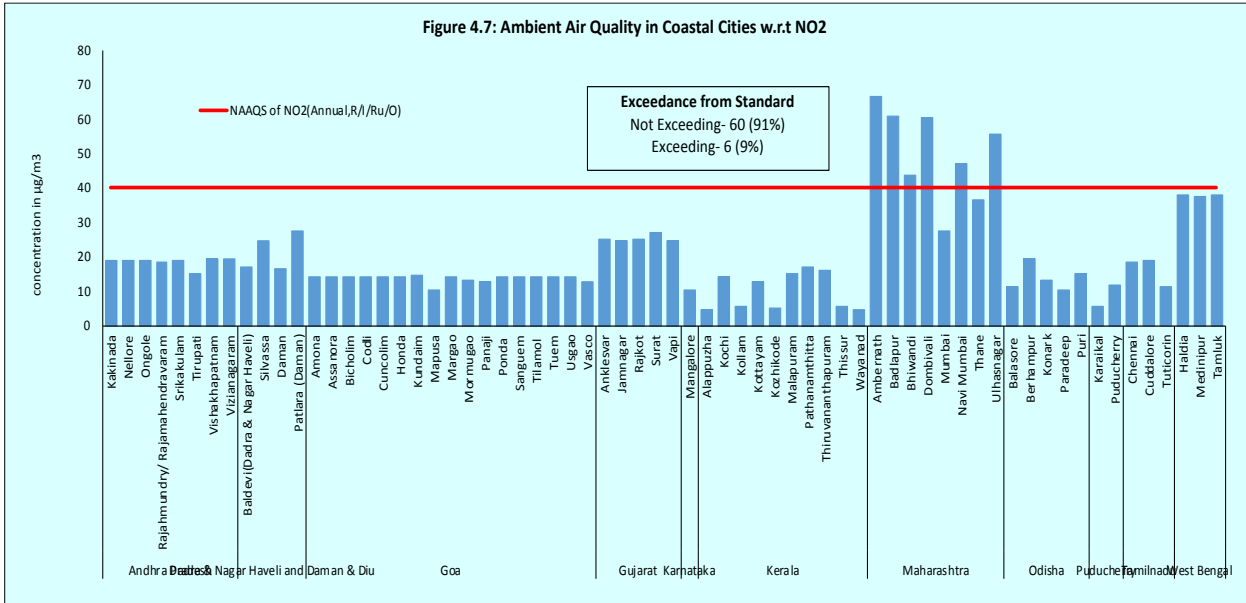




City in ecological sensitive area

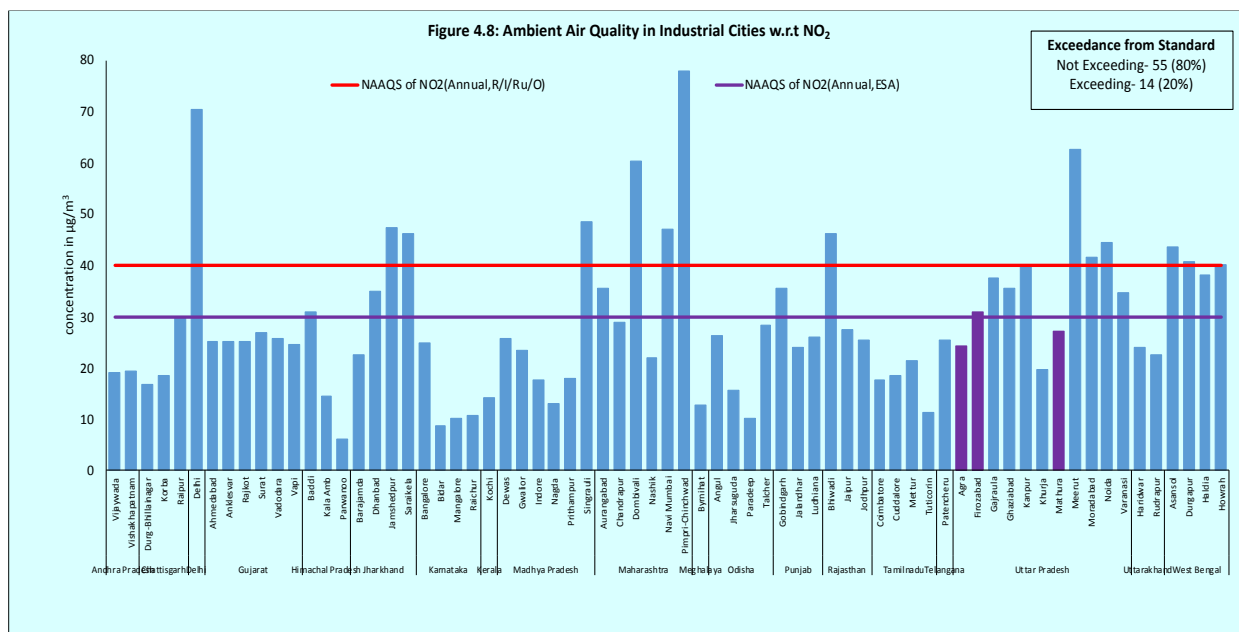
4.3 NO<sub>2</sub> in the coastal cities of the country

The level of NO<sub>2</sub> in the coastal cities are almost within NAAQS including the coastal cities with ports except for 6 of the cities of Maharashtra (Figure 4.7).



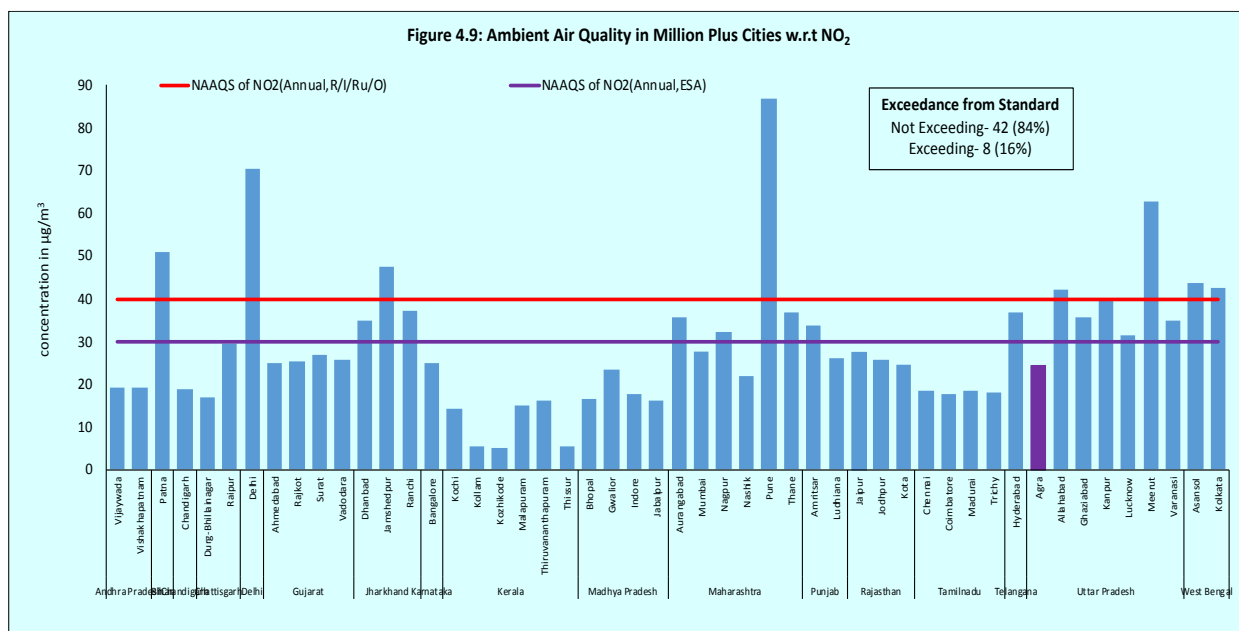
#### 4.4 NO<sub>2</sub> in the industrial cities of the country

Among the 69 industrial cities under NAMP, 12 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the industrial / residential and other area and 1 city exceed the NAAQS of 30 µg/m<sup>3</sup> in the ecologically sensitive area. (Figure 4.8).



#### 4.5 NO<sub>2</sub> in the million plus cities (population >10 lakhs) of the country

Among the 53 million plus cities, 8 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the residential / industrial and other areas. (Figure 4.9).

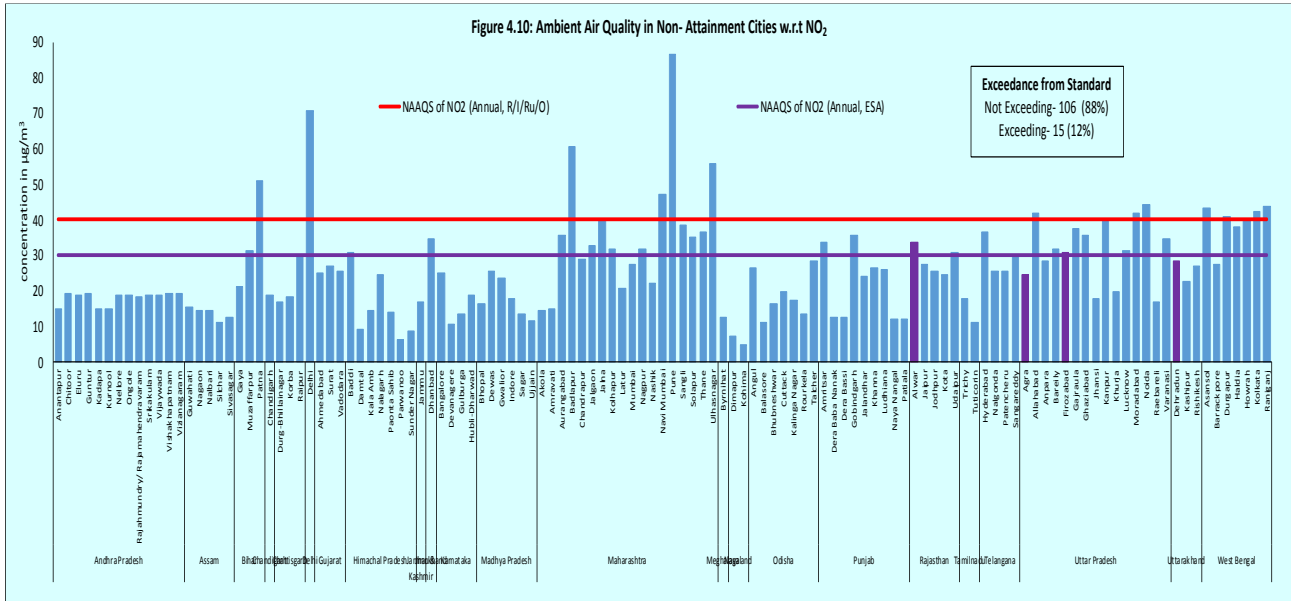


City in ecological sensitive area



4.5 NO<sub>2</sub> in the Non- attainment cities of the country

Among the 122 non- attainment cities, 14 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the residential / industrial and other areas and 1 cities exceed the NAAQS of 30 µg/m<sup>3</sup> in the ecologically area (Figure 4.10).



## 5.0 Particulate Matter (PM<sub>10</sub>)

Particulate matter is a complex mixture of suspended solid and liquid particle in semi equilibrium with surrounding gases. It is classified in different ways:

- a. Classification on emission:
  - Primary PM: Particulate Matter is called primary if it is in the same chemical term in which it is emitted into the atmosphere. The primary particulate matter includes wind blown dust such as road dust, fly ash, soot etc.
  - Secondary PM: Particulate matter is called secondary if it is formed by chemical reactions in the atmosphere. Secondary particulate matter include sulphates, nitrates etc.
- b. Classification on size: Table 5.1 and Figure 5.1 shows the classification and size of particulate matter

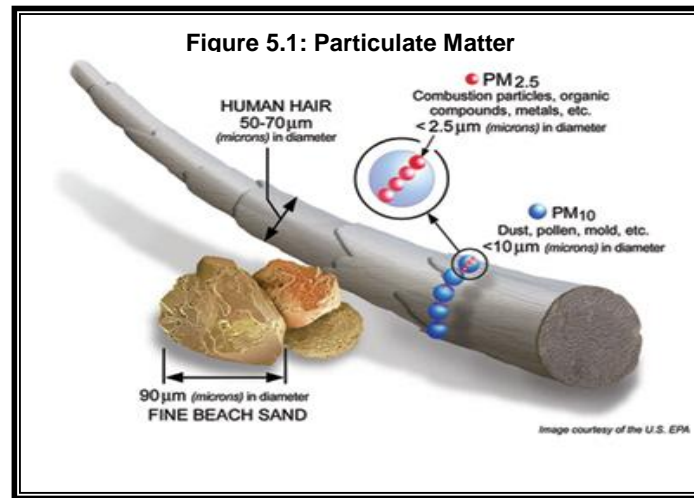
### Status of PM<sub>10</sub> in 2019

Particulate matter is a complex mixture of suspended solid & liquid particles in semi equilibrium with surrounding gases. PM<sub>10</sub>, size  $\leq 10\mu\text{m}$ . The major constituents are organic and elemental carbon, metals/elements like silicon, magnesium, iron, ions like sulphates, nitrates, ammonium etc. It can settle in the bronchi and lungs and cause health problems

The central, north-east and south zones have comparatively lower level of PM<sub>10</sub> than east, north and west zones. Among the 73 coastal cities under NAMP, 44 cities exceed the NAAQS. 62 industrial cities and 44 million plus cities exceed the national standard. Among the 122 non - attainment cities, 111 cities exceed national standard.

Table 5.1 Classification of particulate matter

Fraction	Size range
Respirable Suspended Particulate Matter (RSPM) or PM <sub>10</sub> (thoracic fraction)	<ul style="list-style-type: none"> <li>• <math>\leq 10\ \mu\text{m}</math> diameter</li> <li>• produced by mechanical attrition of dusts</li> <li>• lung deposition principally by impaction</li> <li>• <math>2.5\ \mu\text{m} - 10\ \mu\text{m}</math> is called coarse fraction</li> </ul>
Accumulation mode or Fine particles or PM <sub>2.5</sub> (respirable fraction)	<ul style="list-style-type: none"> <li>• <math>\leq 2.5\ \mu\text{m}</math> in diameter</li> <li>• composed mainly of carbonaceous materials (organic and elemental), inorganic compounds (sulfate, nitrate, and ammonium), and trace metal compounds (iron, aluminium, nickel, copper, zinc, and lead)</li> <li>• penetrates deeper into the lungs</li> <li>• increases respiratory symptoms, causes irritation of the airways, coughing, or difficulty breathing, decreases lung function; aggravates asthma, chronic bronchitis, irregular heartbeat, nonfatal heart attacks, premature death in people with heart or lung disease</li> </ul>
Ultrafine Particles (UFP)	<ul style="list-style-type: none"> <li>• <math>\leq 0.1\ \mu\text{m}</math> large surface area to mass ratio</li> <li>• making them potential carriers of harmful gaseous compounds</li> <li>• cause severe pulmonary inflammation and hemorrhage, high degree of alveolar and interstitial edema, disruption of epithelial and endothelial cell layers and even death</li> </ul>



- a. Based on the generation mechanism, PM are categorized into
- Dispersion Originated- the particulate originated from wind generated movement in nature as well as manmade or from the breakdown from liquid or solid bulk materials, i.e. by grinding, atomization, natural dispersion, wind erosion etc. Eg. Dust (Dispersion Originated) is produced by subdivision of solid material through mechanical actions or in nature. Anthropogenic emissions are generated during grinding or milling of materials, during transfer of finely divided material as well as from agriculture, forestry and construction activities. The larger the particle diameter, they tend to settle faster. The rate of settling also depends on density and shape of particles. Particles larger than 50  $\mu\text{m}$  settle rapidly.
  - Condensation Originated - build up from molecular dimension after heating and cooling. Eg. Fumes (Condensation Originated) are produced from hot solid substances by vaporization and condensation usually industrial process originated, combustion originated or from metallurgical processes.
- Mist (Dispersion & Condensation Originated) is generated from liquid by mechanical actions, evaporation and/or condensation of vapors generated from Industrial processes, spraying, electroplating etc.

Respirable Suspended Particulate Matter or PM<sub>10</sub> are the particles with upper size limited by a 50% cut at 10  $\mu\text{m}$  aerodynamic diameter (USEPA, 1996). They consist of particles with a diameter up to 10  $\mu\text{m}$ . The major constituents of PM<sub>10</sub> are organic and elemental carbon, metals/elements like silicon, magnesium, iron, ions like sulphates, nitrates, ammonium etc. PM<sub>10</sub> can be formed by physical processes of crushing, grinding and abrasion of surfaces. Mining and agricultural activities are some of the sources of large size particles. The anthropogenic source are mechanical break-up of larger solid particles, wind blown dust such as road dust, fly ash, soot, agricultural processes, physical processes of crushing, grinding and abrasion of surfaces, photo chemically produced particles, such as those found in urban haze, pollen grains, mould spores, and plant and insect parts, combustion of fossil fuel (coal, heavy fuel oil in thermal power plants, office, factories), paper Industry, extraction & distribution of fossil fuels, smelting of metals (sulfide ores to produce copper, lead and zinc), petroleum refining, combustion process in diesel, petrol, natural gas driven vehicles. PM<sub>10</sub> can settle in the bronchi and lungs and cause health problems like respiratory illness, visibility impairment, aggravate existing heart and lung diseases. It also causes visibility reduction. A compilation of sources and effects of PM<sub>10</sub> are given in Annexure 1.

In this chapter, a detailed comparison of locations and cities with respect to PM<sub>10</sub> levels in the country has been.

### 5.1 Locations and cities exceeding the NAAQS

Table 5.2 shows the number of locations and cities exceeding the NAAQS with respect to PM<sub>10</sub> during 2019. During 2019 in residential / Industrial / Rural area 577 location exceed NAAQS of 60  $\mu\text{g}/\text{m}^3$  and in ecologically Sensitive area 17 locations exceed NAAQS of 60  $\mu\text{g}/\text{m}^3$ . Taking cities into consideration, in

residential / Industrial / Rural area 246 cities exceed NAAQS of 60 µg/m<sup>3</sup> and in ecologically Sensitive area 5 cities exceed NAAQS of 60 µg/m<sup>3</sup>.

**Table 5.2. Number of locations and cities exceeding the NAAQS with respect to PM<sub>10</sub> (Based on annual average data in µg/m<sup>3</sup>)**

	No. of locations		Number of cities	
	Residential / Industrial / Rural area	Ecologically Sensitive area	Residential / Industrial / Rural area	Ecologically Sensitive area
	NAAQS >60	NAAQS >60	NAAQS >60	NAAQS >60
Not exceeding NAAQS (NE)	154	0	70	0
Exceeding NAAQS (E)	577	17	246	5
Inadequate data (ID)	27	0	11	0
No data (ND)	29	0	12	0
<b>Total monitoring stations / cities (NE &amp; E &amp; ID &amp; ND)</b>	<b>787</b>	<b>17</b>	<b>339</b>	<b>5</b>

**Locations:**

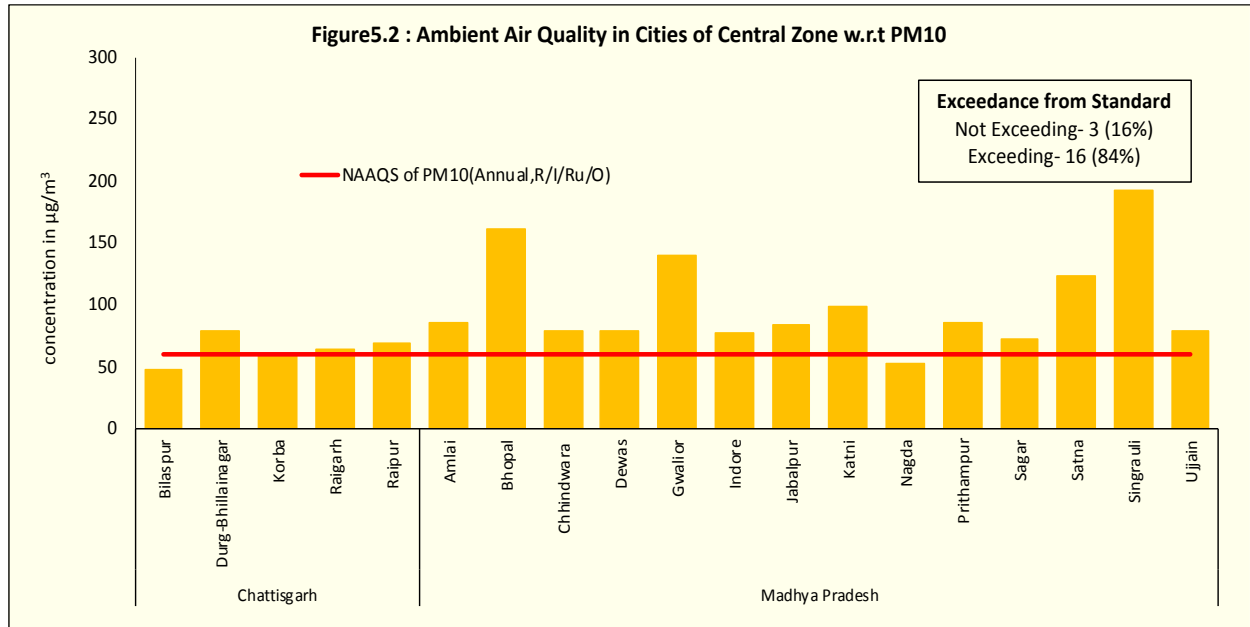
The location with highest level of PM<sub>10</sub> (annual average) during 2019 is India Glycol Ltd. Gida, Gorakhpur, Uttar Pradesh with 351 µg/m<sup>3</sup> in Residential / Industrial / Rural area and Nunhai, Agra, Uttar Pradesh with 228 µg/m<sup>3</sup> in Ecologically Sensitive area.

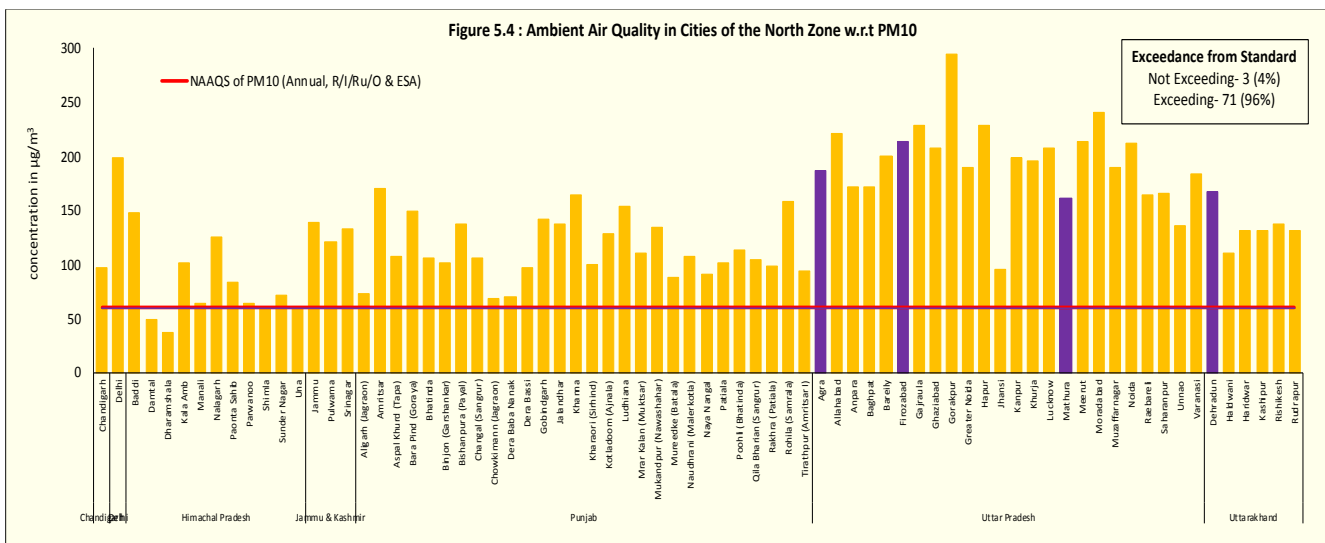
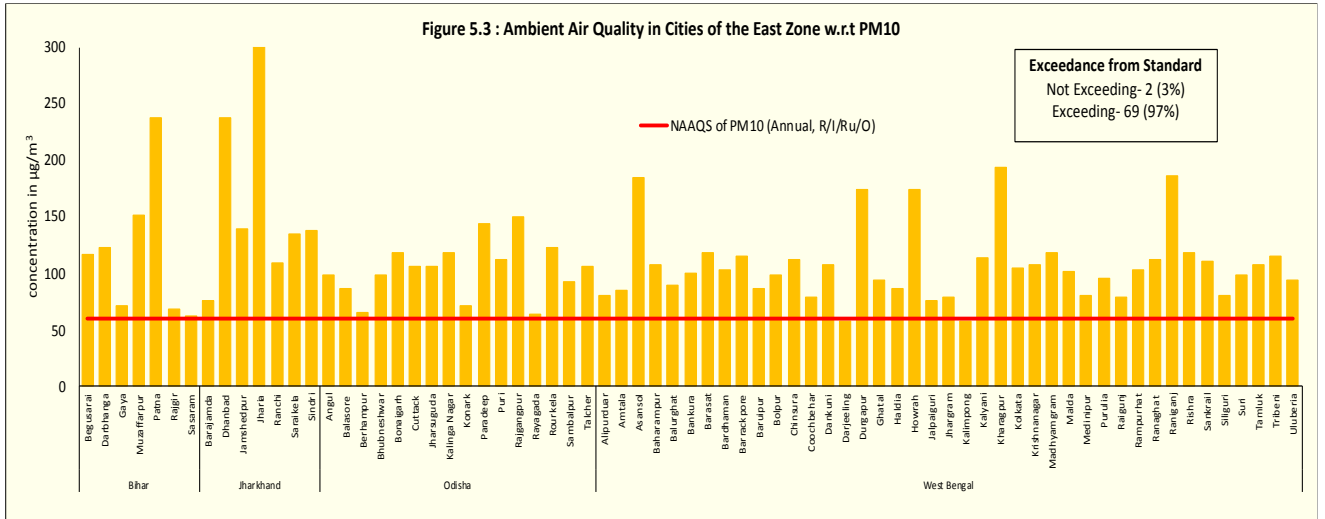
**City:**

Ambient air quality data with respect to PM<sub>10</sub> is given in **Annexure 5**. The city (Residential / Industrial / Rural area) with highest level of PM<sub>10</sub> (annual average) during 2019 is Jharia, Jharkhand with 302 µg/m<sup>3</sup> and Firozabad, Uttar Pradesh (Ecologically Sensitive area) with 214 µg/m<sup>3</sup>.

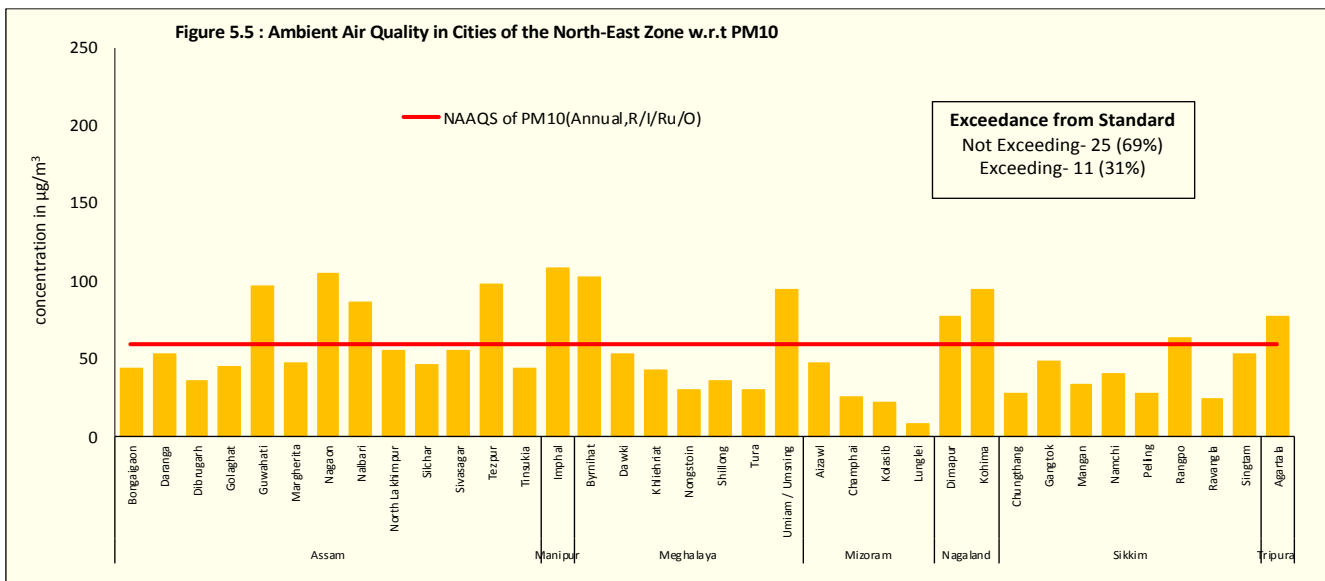
**5.2 PM<sub>10</sub> in different zones of the country**

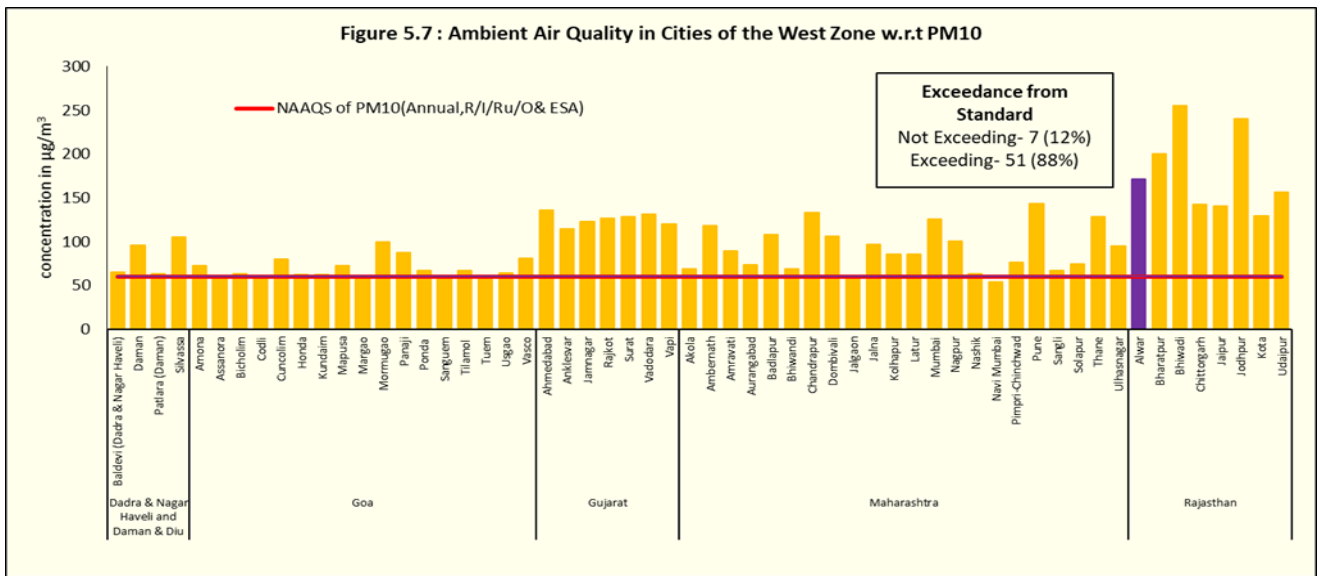
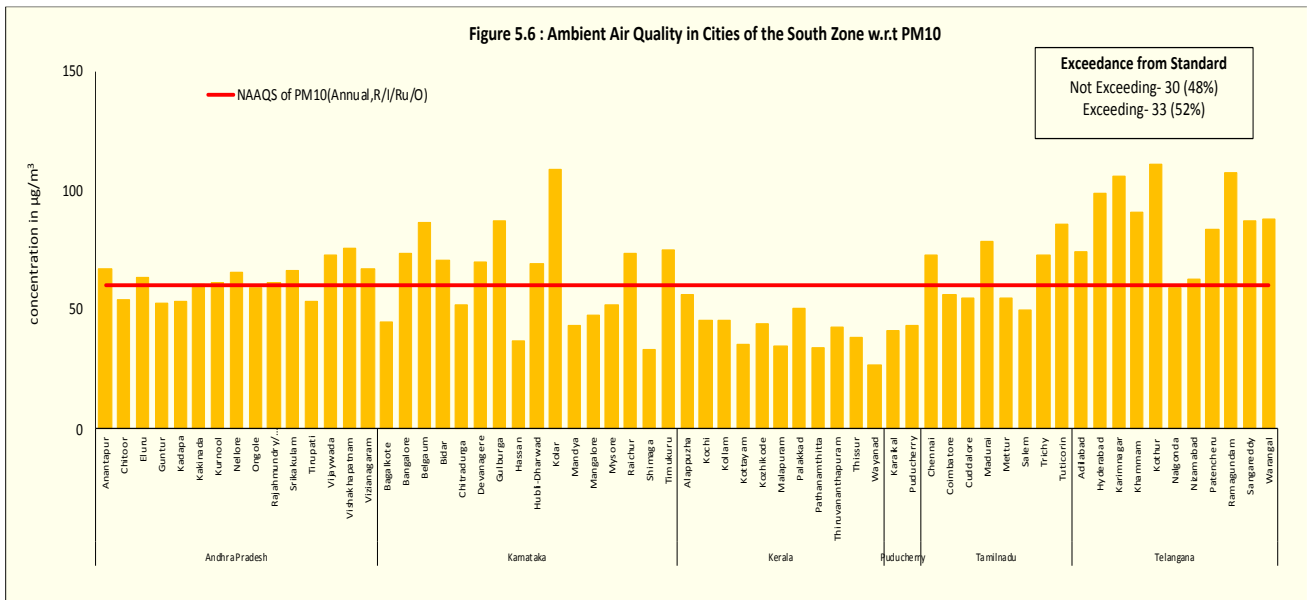
The graphs below compares the ambient air quality with respect to PM<sub>10</sub> in different zones of the county. It can be seen that the central, north-east and south zones have comparatively lower level of PM<sub>10</sub> than east, north and west zones (Figure 5.2 to 5.7).





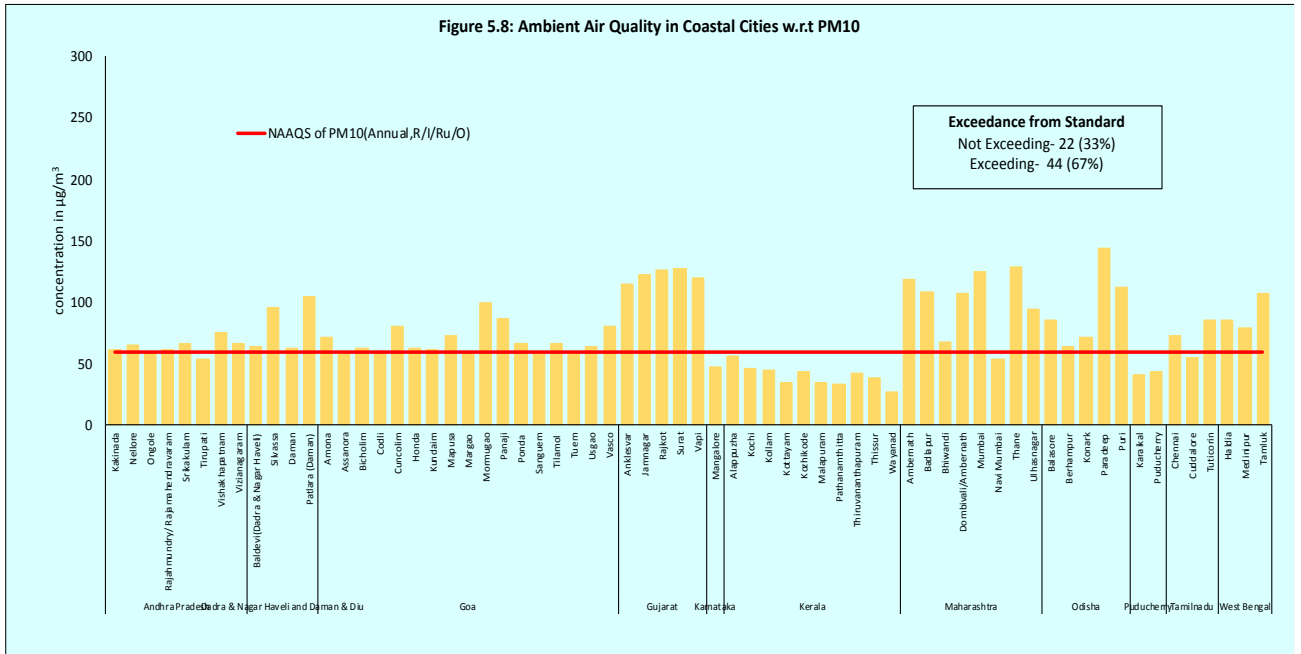
City in ecological sensitive area





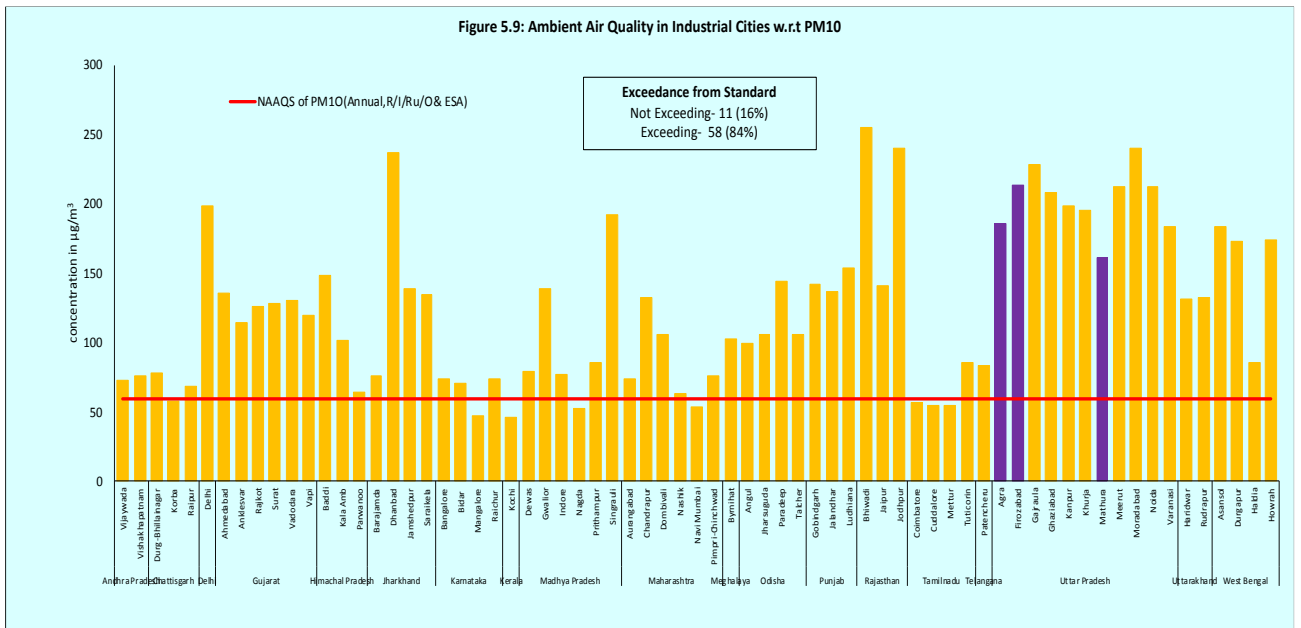
### 5.3 PM<sub>10</sub> in the coastal cities of the country

Among the 73 coastal cities under NAMP, 44 cities exceed the NAAQS of 60  $\mu\text{g}/\text{m}^3$  in the industrial / residential and out of which 13 cities have a port (Figure 5.8).



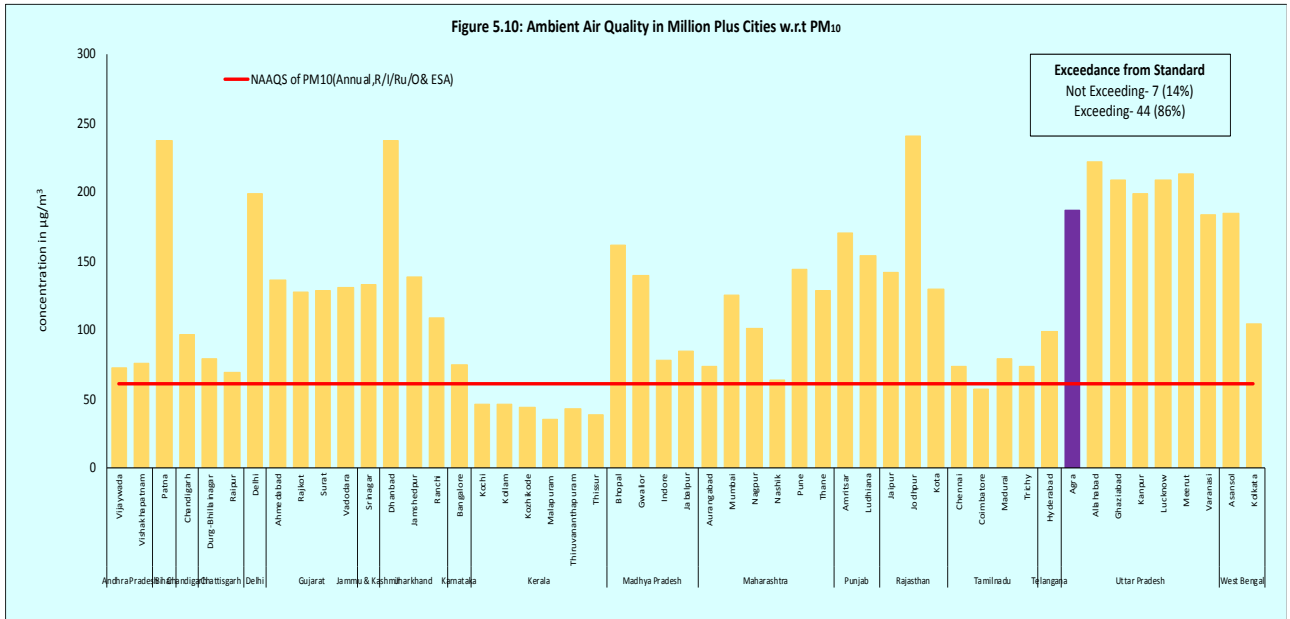
### 5.4 PM<sub>10</sub> in the industrial cities of the country

Among the 69 industrial cities under NAMP, 62 cities in the industrial / residential exceed and ecologically sensitive area exceed the NAAQS of 60 µg/m<sup>3</sup> (Figure 5.9).



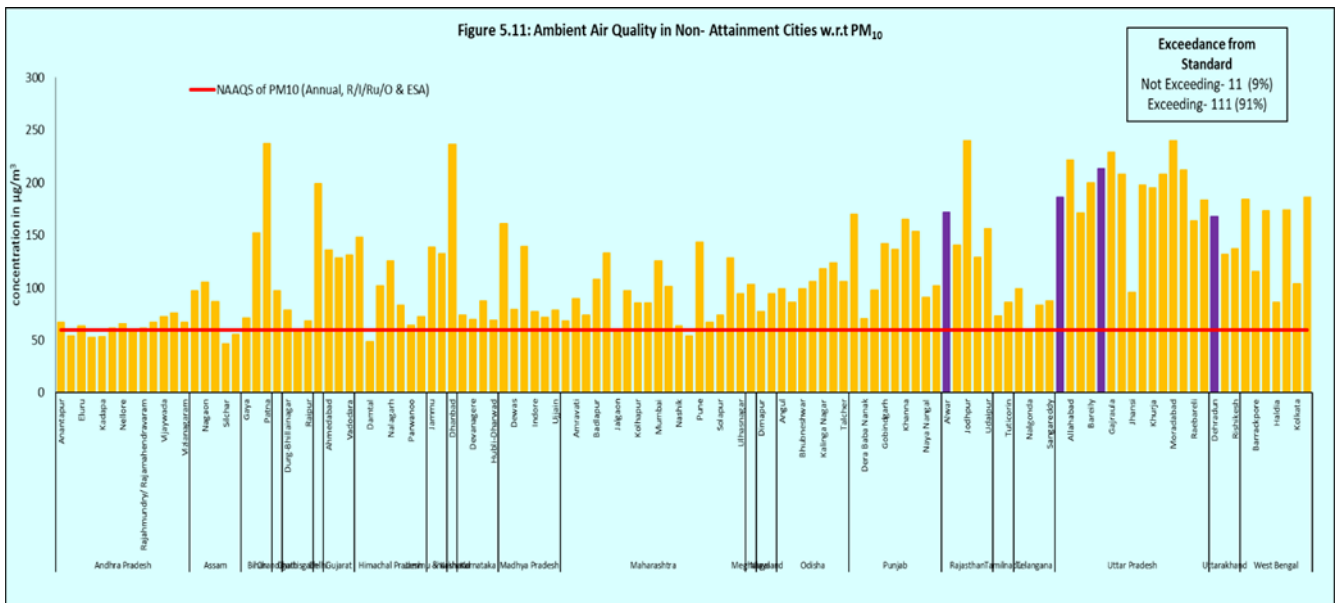
### 5.5 PM<sub>10</sub> in the million plus cities of the country

Among the 53 million plus cities, 43 cities in the industrial / residential and 1 city in the ecologically sensitive area exceed the NAAQS of 60 µg/m<sup>3</sup> (Figure 5.10). Out of the million plus cities 23 cities are industrial cities.



### 5.6 PM<sub>10</sub> in the Non- attainment cities of the country

Among the 122 non - attainment cities, 107 cities in the industrial / residential and 4 cities in the ecologically sensitive area exceed the NAAQS of 60 µg/m<sup>3</sup> (Figure 5.11).





## 6.0 Particulate Matter (PM<sub>2.5</sub>)

PM<sub>2.5</sub> describes fine inhalable particles, with diameters 2.5 micrometers and smaller. It can only be seen with an electron microscope. PM<sub>10</sub> is particulate matter 10 micrometers or less in diameter, PM<sub>2.5</sub> is particulate matter 2.5 micrometers or less in diameter. PM<sub>2.5</sub> is generally described as fine particles. By way of comparison, a human hair is about 100 micrometres, so roughly 40 fine particles could be placed on its width (Figure 6.1). There are outdoor and indoor sources of fine particles. Outside, fine particles primarily come from car, truck, bus and off-road vehicle (e.g., construction equipment, snowmobile, locomotive) exhausts, other operations that involve the burning of fuels such as wood, heating oil or coal and natural sources such as forest and grass fires. Fine particles are also formed from the reaction of gases or droplets in the atmosphere from sources such as power plants. These chemical reactions can occur miles from the original source of the emission.

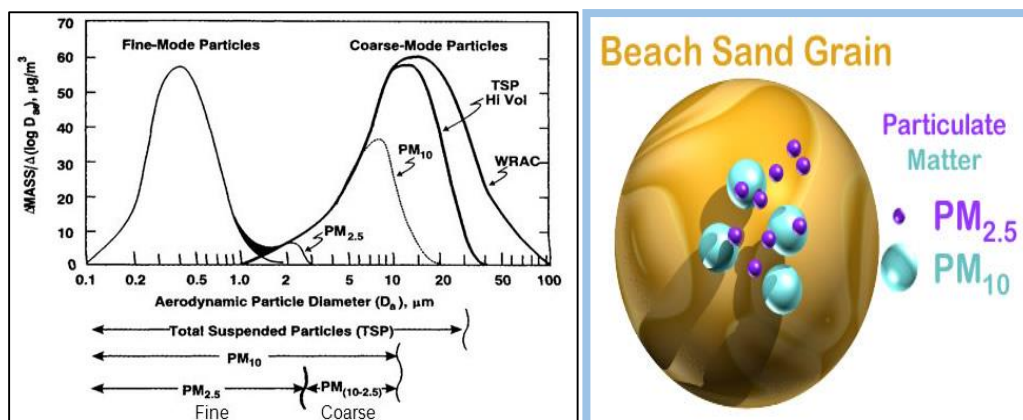
### Status of PM<sub>2.5</sub> in 2019

Particulate Matter 2.5 (PM<sub>2.5</sub>, size  $\leq 2.5\mu\text{m}$ ), are composed mainly of carbonaceous materials, inorganic compounds trace metal compounds. Penetrate into the gas exchange regions of the lung, and very small particles ( $< 100$  nanometers) may pass through the lungs to affect other organs and the smallest particles can get into the bloodstream and affect the cardiovascular system.

The central, south and north-east zones have lower concentration compared to east, north and west zones. Among the 73 coastal cities under NAMP, 5 cities exceed the NAAQS. 17 industrial cities and 11 million plus cities exceed the national standard. Among the 122 non-attainment cities, 24 cities exceed national standard.

Because fine particles can be carried long distances from their source, events such as wildfires or volcanic eruptions can raise fine particle concentrations hundreds of miles from the event. PM<sub>2.5</sub> can penetrate deep into the lung, irritate and corrode the alveolar wall, and consequently impair lung function. Though it has small diameter, large surface areas maybe capable of carrying various toxic stuffs, passing through the filtration of nose hair, reaching the end of the respiratory tract with airflow and accumulate there by diffusion, damaging other parts of the body through air exchange in the lungs.

Figure 6.1: Particulate matter



Source: Husar, 1999

In this chapter a detailed comparison of locations and cities with respect to PM<sub>2.5</sub> levels in the country has been.

### 6.1 Locations and cities exceeding the NAAQS

Table 6.1 shows the number of locations and cities exceeding the NAAQS with respect to PM<sub>2.5</sub> during 2019. During 2019 in residential / Industrial / Rural area 72 locations exceed NAAQS of 40  $\mu\text{g}/\text{m}^3$  and 4 locations exceed the NAAQS of 40  $\mu\text{g}/\text{m}^3$  in Ecologically sensitive area. Taking cities into consideration, in residential / Industrial / Rural area 39 cities exceed NAAQS of 40  $\mu\text{g}/\text{m}^3$  and 1 city exceed the NAAQS of 40  $\mu\text{g}/\text{m}^3$  in Ecologically sensitive area.

**Table 6.1. Number of locations and cities exceeding the NAAQS with respect to PM<sub>2.5</sub> (Based on annual average data in µg/m<sup>3</sup>)**

	No. of locations		Number of cities	
	Residential / Industrial / Rural area	Ecologically Sensitive area	Residential / Industrial / Rural area	Ecologically Sensitive area
	NAAQS >40	NAAQS >40	NAAQS >40	NAAQS >40
Not exceeding NAAQS (NE)	125	0	77	0
Exceeding NAAQS (E)	72	4	39	1
Inadequate data (ID)	114	2	30	0
No data (ND)	0	0	0	0
<b>Total monitoring stations / cities (NE &amp; E &amp; ID &amp; ND)</b>	<b>311</b>	<b>6</b>	<b>146</b>	<b>1</b>

**Locations:**

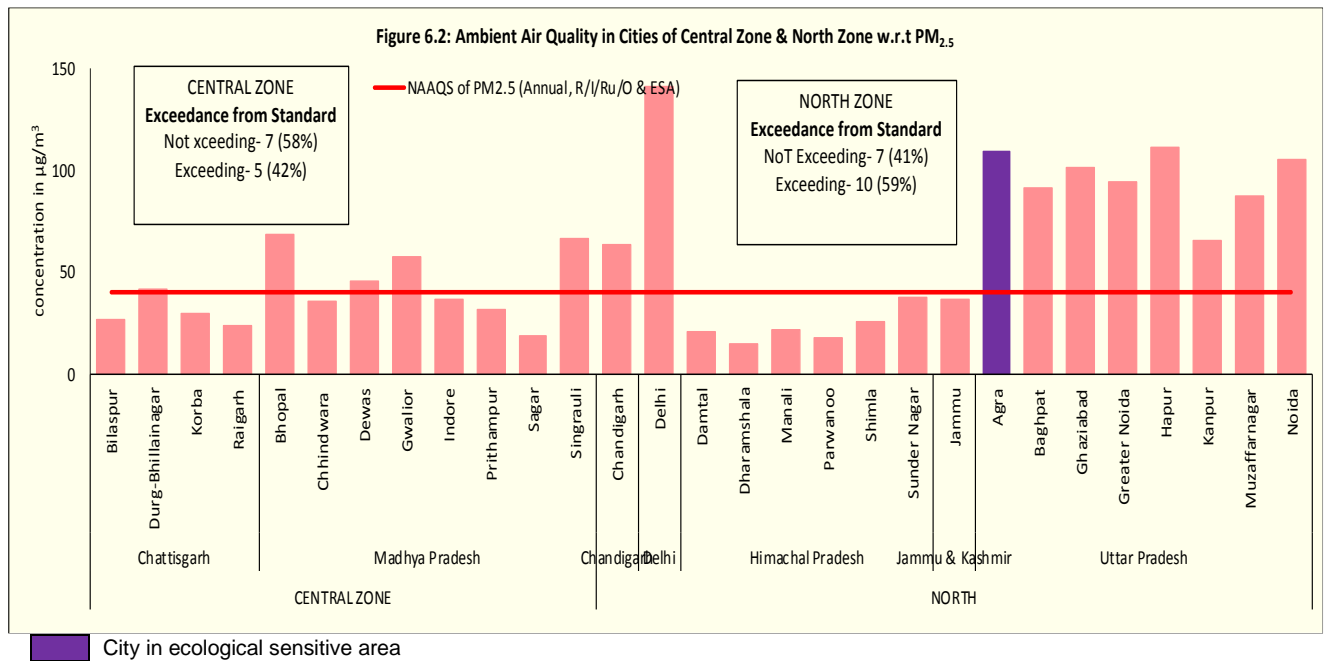
The location (Residential / Industrial / Rural area) with highest level of PM<sub>2.5</sub> (annual average) during 2019 is Pritampura, Delhi with 128 µg/m<sup>3</sup> and Etmad-uddaulah, Agra, Uttar Pradesh (Ecologically sensitive area) with 135 µg/m<sup>3</sup>.

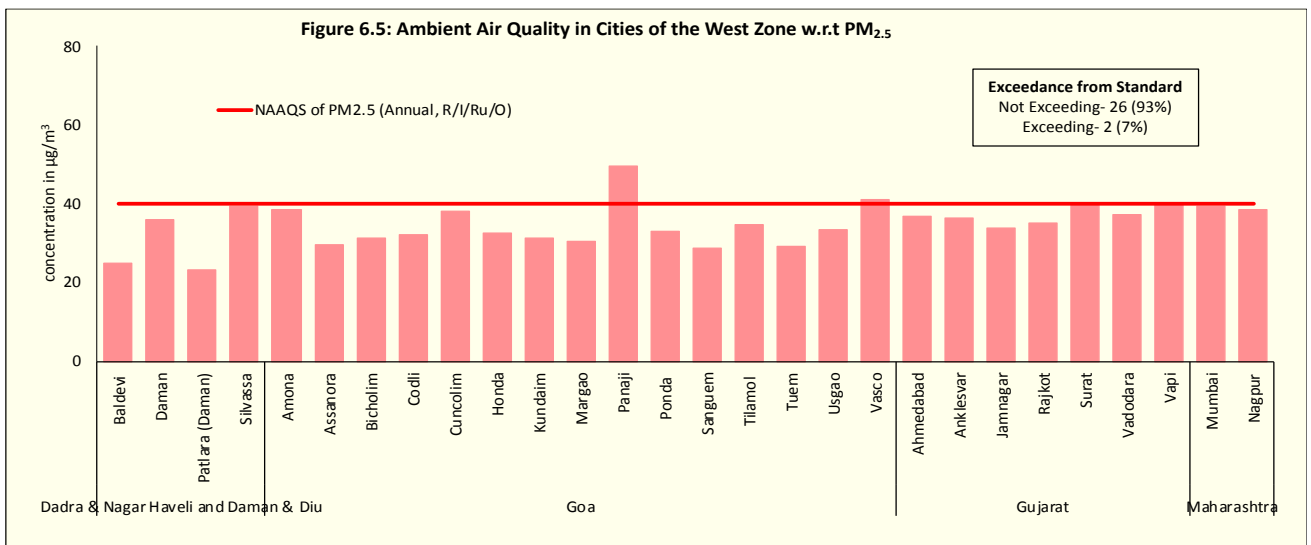
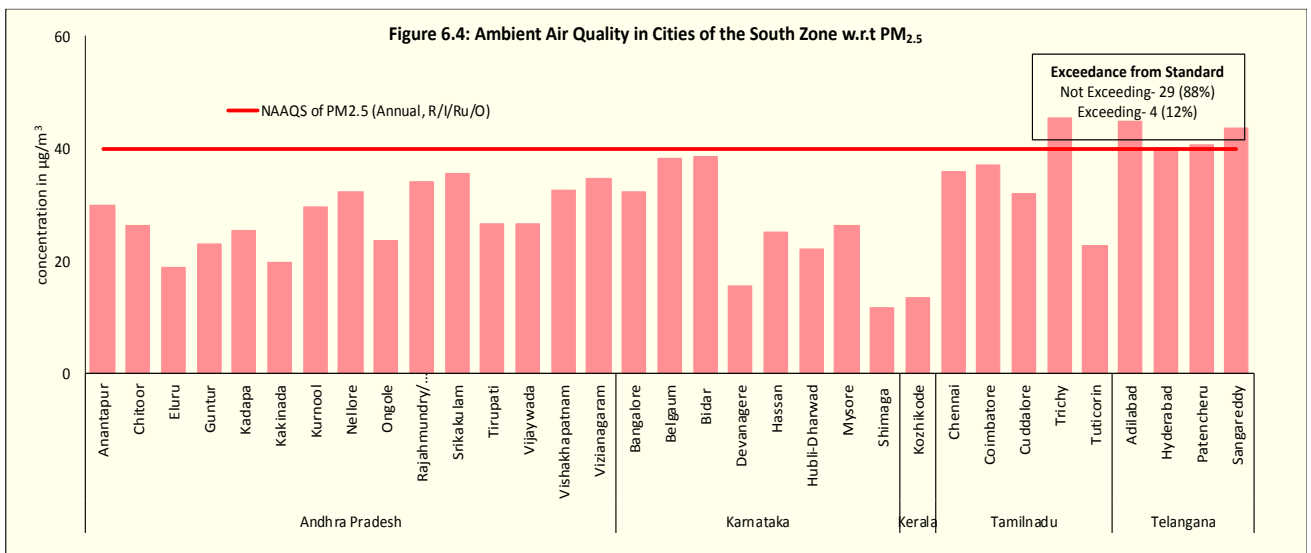
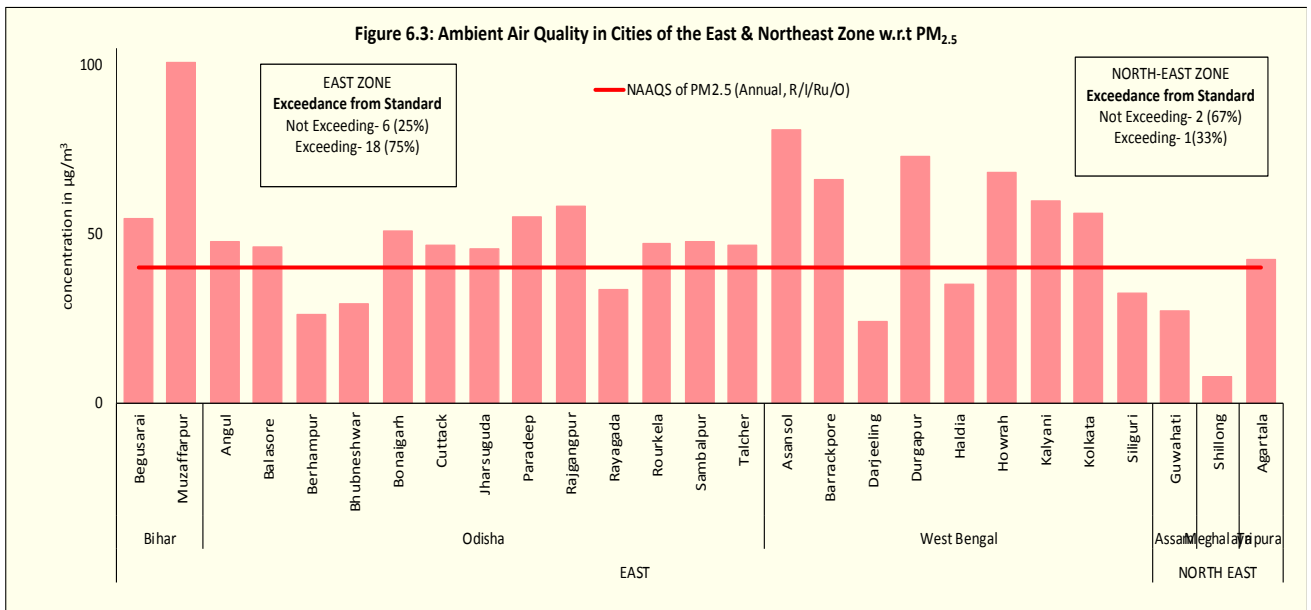
**City:**

Ambient air quality data with respect to PM<sub>2.5</sub> is given in **Annexure 6**. The city (Residential / Industrial / Rural area) with highest level of PM<sub>2.5</sub> (annual average) during 2019 is Delhi with 141 µg/m<sup>3</sup> and Agra, Uttar Pradesh (Ecologically sensitive area) with 110 µg/m<sup>3</sup>.

**6.2 PM<sub>2.5</sub> in different zones of the country**

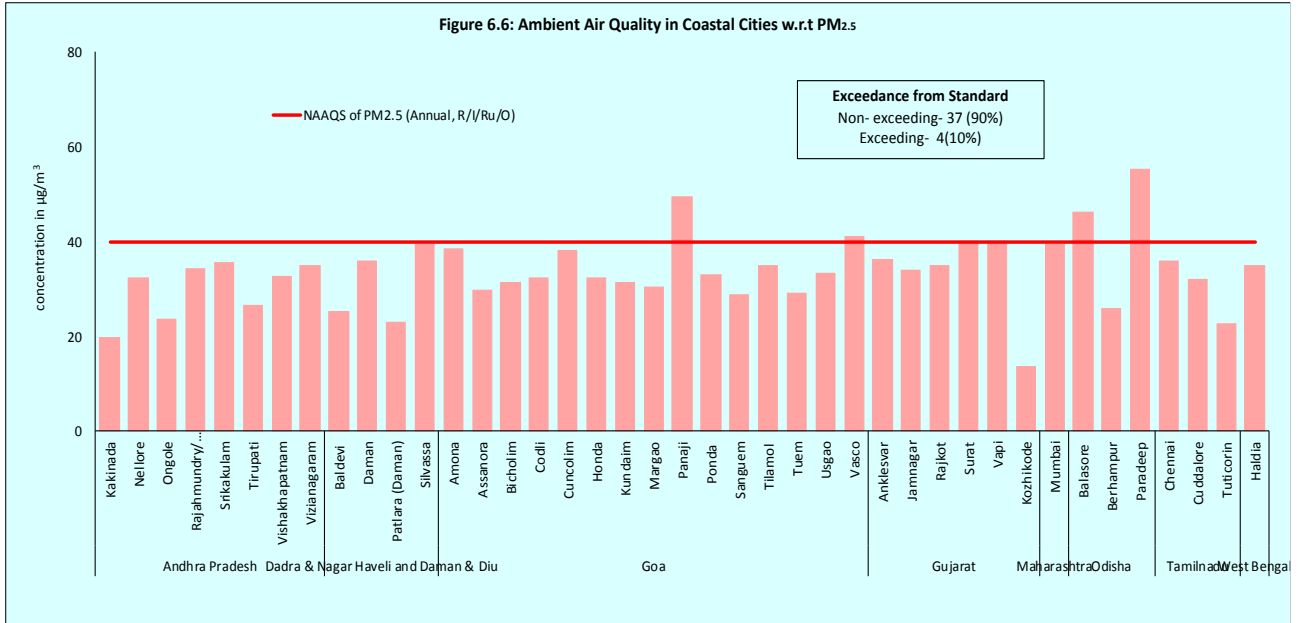
The graphs below compares the ambient air quality with respect to PM<sub>2.5</sub> in different zones of the county. It can be seen that the central, south and north-east zones have lower concentration compared to east, north and west zones (Figure 6.2 to 6.5).





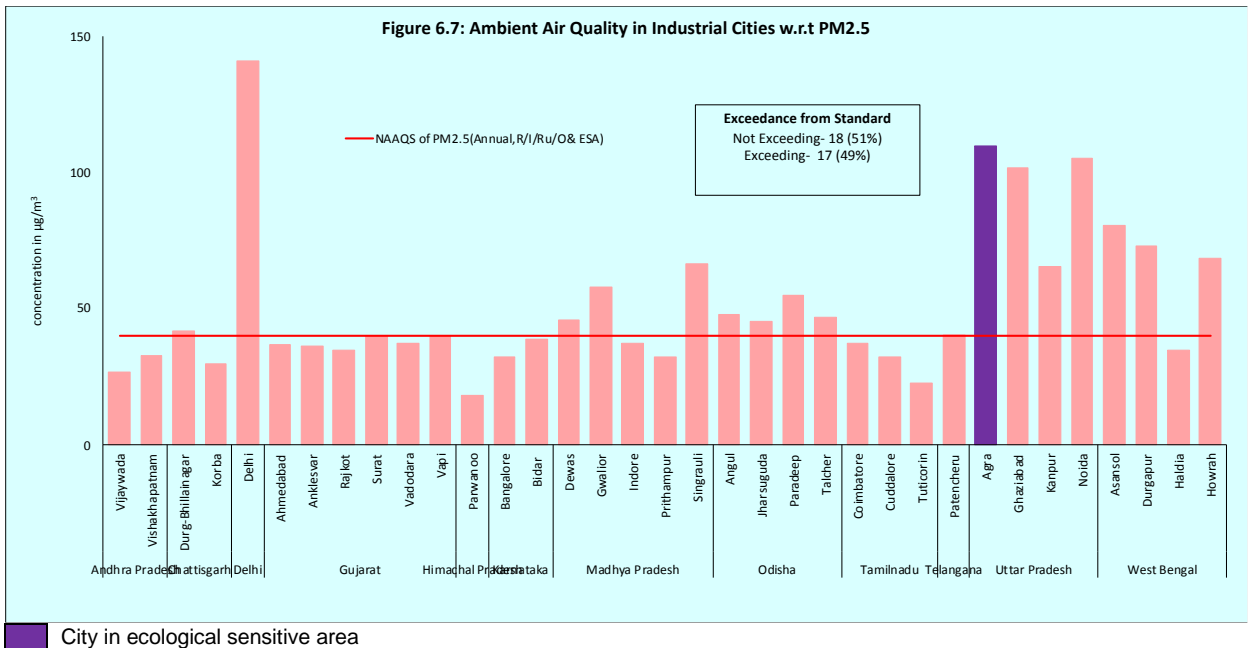
### 6.3 PM<sub>2.5</sub> in the coastal cities of the country

Among the 73 coastal cities under NAMP, PM<sub>2.5</sub> is monitored at 44 cities and among these 5 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the industrial / residential and out of which 2 cities have a port (Figure 6.6).



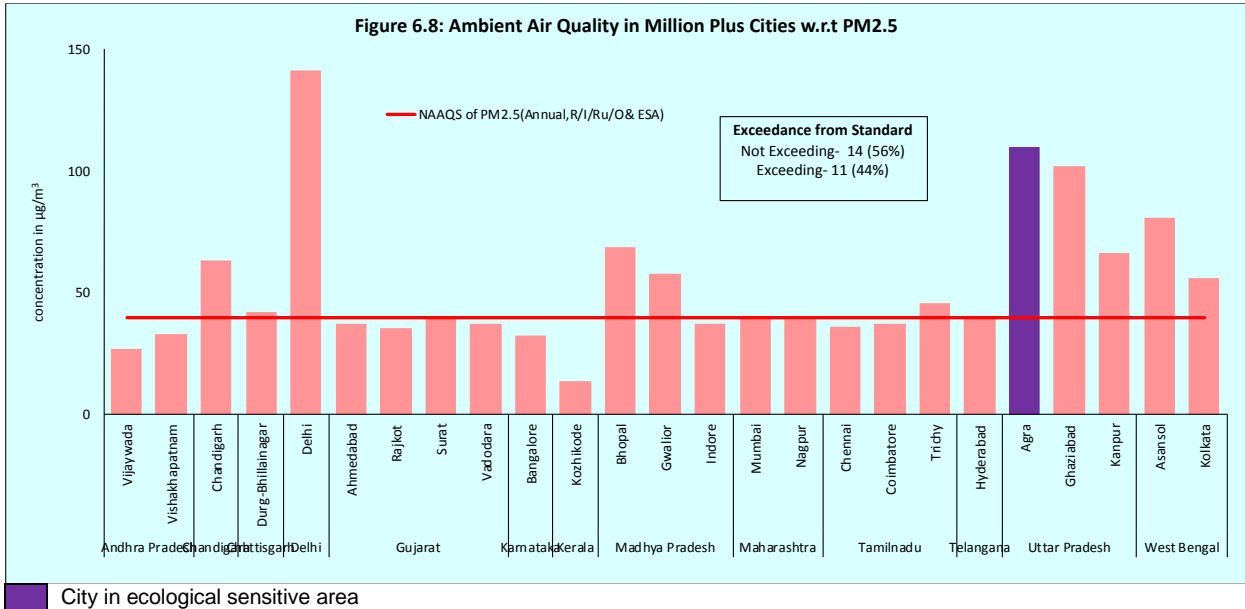
### 6.4 PM<sub>2.5</sub> in the industrial cities of the country

Among the 69 industrial cities under NAMP, PM<sub>2.5</sub> is monitored at 35 cities and among these 17 cities in the industrial / residential exceed the NAAQS of 40 µg/m<sup>3</sup> (Figure 6.7).



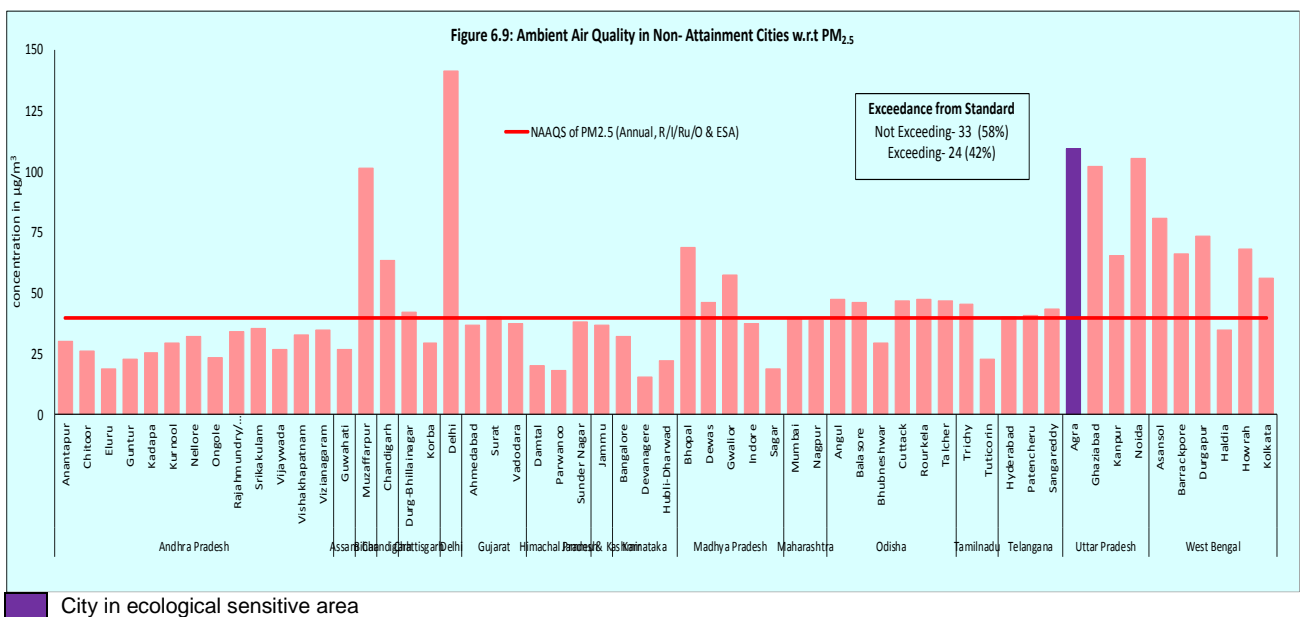
### 6.5 PM<sub>2.5</sub> in the million plus cities of the country

Among the 53 million plus cities, PM<sub>2.5</sub> is monitored at 28 cities and among these 10 cities in the industrial / residential and 1 city in ecologically sensitive area exceed the NAAQS of 40 µg/m<sup>3</sup> (Figure 6.8). Out of these million plus cities 7 cities are industrial cities.



### 6.6 PM<sub>2.5</sub> in the Non- attainment cities of the country

Among the 122 Non- attainment cities, PM<sub>2.5</sub> is monitored at 57 cities and among these 23 cities in the industrial / residential and 1 city in ecologically sensitive area exceed the NAAQS of 40 µg/m<sup>3</sup> (Figure 6.9). Out of these million plus cities 7 cities are industrial cities.



## 7.0 Million-plus cities

A **metropolitan area**, sometimes referred to as a **metro area** or **metro or million plus city**, is a region consisting of a densely populated urban core and its less-populated surrounding territories, sharing industry, infrastructure and housing. A metropolitan area usually comprises multiple jurisdictions and municipalities: neighborhoods, townships, cities, exurbs, counties, districts and even states. As social, economic and political institutions have changed, metropolitan areas have become key economic and political regions. Metropolitan areas include one or more urban areas, as well as satellite cities, towns and intervening rural areas that are socio-economically tied to the urban core, typically measured by commuting patterns.

In India as per Census of India 2011 **urban area or town** is defined as; 1. All places with a municipality, corporation, cantonment board or notified town area committee, etc. 2. All other places which satisfied the following criteria: *i) A minimum population of 5,000; ii) At least 75 per cent of the male main working population engaged in non-agricultural pursuits; and iii) A density of population of at least 400 persons per sq. km.*

The first category of urban units is known as **Statutory Towns**. These towns are notified under law by the concerned State/UT Government and have local bodies like municipal corporations, municipalities, municipal committees, etc., irrespective of their demographic characteristics as reckoned on 31st December 2009. Examples: Vadodara (M Corp.), Shimla (M Corp.) etc. The second category of Towns (as in item 2 above) is known as Census Town. These were identified on the basis of Census 2001 data.

In India as per Census 2011 an **Urban Agglomeration** (UA) is a continuous urban spread constituting a town and its adjoining outgrowths (OGs), or two or more physically contiguous towns together with or without outgrowths of such towns. An Urban Agglomeration must consist of at least a statutory town and its total population (i.e. all the constituents put together) should not be less than 20,000 as per the 2001 Census. In varying local conditions, there were similar other combinations which have been treated as urban agglomerations satisfying the basic condition of contiguity. Examples: Greater Mumbai UA, Delhi UA, etc.

An **Out Growth** (OG) is a viable unit such as a village or a hamlet or an enumeration block made up of such village or hamlet and clearly identifiable in terms of its boundaries and location. Some of the examples are railway colony, university campus, port area, military camps, etc., which have come up near a statutory town outside its statutory limits but within the revenue limits of a village or villages contiguous to the town. While determining the outgrowth of a town, it has been ensured that it possesses the urban features in terms of infrastructure and amenities such as pucca roads, electricity, taps, drainage system for disposal of waste water etc. educational institutions, post offices, medical facilities, banks etc. and physically contiguous with the core town of the UA. Examples: Central Railway Colony (OG), Triveni Nagar (N.E.C.S.W.) (OG), etc. Each such town together with its outgrowth(s) is treated as an integrated urban area and is designated as an 'urban agglomeration'. In the 2011 Census, 475 places with 981 OGs have been identified as Urban Agglomerations as against 384 UAs with 962 OGs in 2001 Census.

The constant growth and industrialization leads to increase in pollution. An inventory of air pollutants is a necessary first step towards control of air pollution. Air pollutants can be natural or may be the result of various anthropogenic activities like industrial emissions. Further the air pollutants can be primary or secondary depending upon their formation mechanism. Primary pollutants are directly emitted from the source and secondary pollutants are formed in the atmosphere. Meteorological factors play a critical role in ambient concentrations of air pollutants. Even though the total discharge of air pollutants into the atmosphere may remain constant, the ambient concentrations of air pollutants may vary depending upon the meteorological conditions. According to Census of India, 2011 conducted by the office of the Register General and Census Commissioner, India under Ministry of Home Affairs, Government of India the total urban population in the country is more than 377 million constituting 31.16% of the total population.

The cities are classified accordingly:

**Class I UAs/Towns** are the UAs/Towns which have **at least 1,00,000** persons as population. At the Census 2011, there are 468 such UAs/Towns. The corresponding number in Census 2001 was 394.

**Million Plus/UAs/Towns have One million or above** population which are the major urban centres in the country. 160.7 million persons (or 42.6% of the urban population) live in these Million Plus UAs/Cities.

In the above cities ambient air quality monitoring is required to determine the existing quality of air, evaluation of the effectiveness of control programme and to identify areas in need of restoration and their prioritization. This chapter gives an insight into the trends of air pollutants for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> in the 53 million plus cities (population ≥ 10 lakh or 1 million; Census 2011). An analysis of five years data reveals a stable trend of SO<sub>2</sub> within the NAAQS. This may be attributed to various interventions that have taken place in recent years such as reduction in sulphur in diesel, use of cleaner fuel such as CNG in metro cities, change in domestic fuel from coal to LPG etc. NO<sub>2</sub> concentration has remained more or less stable in most of the cities over the years despite increase in sources like vehicles. The reason for this may be various intervention measures that have taken place such as improvement in vehicle technology and other vehicular pollution control measures like alternate fuel etc. PM<sub>10</sub> concentration shows fluctuating trend. Vehicular emission is a major source of PM<sub>10</sub>. Increasing number of vehicles may be a reason for this trend. The other reasons being emission from gensets, small scale industries, biomass incineration, suspension of traffic dust, natural dust, commercial and domestic use of fuel etc.

### 7.1 Ambient air quality stations in million-plus cities under NAMP during 2019

There are of 264 stations in million plus cities during 2019 (258 in Residential / industrial / rural / commercial areas and 6 in ecologically sensitive area. The analysis of air quality in metropolitan cities / million plus cities with respect to SO<sub>2</sub> reveals all the cities are within the NAAQS. With respect to NO<sub>2</sub>, 8 cities, PM<sub>10</sub>, 44 cities and PM<sub>2.5</sub> 10 cities exceed the NAAQS (Table 7.1). The air quality status in the metropolitan cities is given in Table 7.2.

Table 7.1: Status of Million plus (53 cities) during 2019

Data type	Number of cities							
	Residential / industrial / rural / other areas				Ecologically sensitive area			
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Not exceeding NAAQS (NE)	49	41	7	14	1	1	0	0
Exceeding NAAQS (E)	0	8	43	10	0	0	1	1
No data (ND)	2	2	1	0	0	0	0	0
Inadequate data (ID)	0	0	0	3	0	0	0	0
<b>Total monitoring stations (NE &amp; E &amp; ND)</b>	51	51	51	27	1	1	1	1

Key: No data: Monitoring not done or data not received for the particular parameter

Table 7.2 Air quality in million plus cities during 2019

State	City/Town	District	Zones	Coastal city	Indo-Gangetic plain	Industrial	NAC	No. of Station	Annual Average Concentration in $\mu\text{g}/\text{m}^3$			
									SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Andhra Pradesh	Vijaywada	Krishna	S			IA	NAC	9	5	19	73	27
	Vishakhapatnam	Visakhapatnam	S	Co		IA	NAC	9	8	19	76	33
Bihar	Patna	Patna	E		GB		NAC	2	3	51	237	
Chandigarh	Chandigarh	Chandigarh	N		IB		NAC	5	2	19	97	63
Chhattisgarh	Durg-Bhillainagar	Durg	C		GB	IA	NAC	4	7	17	79	42
	Raipur	Raipur	C		GB	IA	NAC	2	16	30	69	
Delhi	Delhi	Delhi	N		GB	IA	NAC	10	5	70	199	141
Gujarat	Ahmedabad	Ahmedabad	W			IA	NAC	9	20	25	135	37
	Rajkot	Rajkot	W	Co				2	20	25	127	35
	Surat	Surat	W	Co		IA	NAC	3	23	27	128	40
	Vadodara	Vadodara	W			IA	NAC	5	20	26	131	37
Haryana	Faridabad	Faridabad	N		IB+GB	IA		2				
Jammu & Kashmir	Srinagar	Srinagar	N		IB		NAC	3			132	
Jharkhand	Dhanbad	Dhanbad	E		GB	IA	NAC	3	14	35	237	
	Jamshedpur	East Singhbhum	E		GB	IA		2	38	47	138	
	Ranchi	Ranchi	E		GB			1	18	37	109	
Karnataka	Bangalore	Bengaluru Urban	S				NAC	9	3	25	74	32
Kerala	Kochi	Ernakulam	S	Co		IA		8	3	14	46	32
	Kollam	Kollam	S	Co				2	3	6	45	
	Kozhikode	Kozhikode	S	Co				2	2	5	44	14
	Malapuram	Malappuram	S	Co				2	2	15	35	
	Thiruvananthapuram	Thiruvananthapuram	S	Co				4	9	16	42	
	Thissur	Thrissur	S	Co				2	3	5	38	
Madhya Pradesh	Bhopal	Bhopal	C		GB		NAC	8	8	17	161	69
	Gwalior	Gwalior	C		GB	IA	NAC	2	13	24	139	58
	Indore	Indore	C		GB	IA	NAC	3	9	18	77	37
	Jabalpur	Jabalpur	C		GB			2	7	16	84	
Maharashtra	Aurangabad	Aurangabad	W			IA	NAC	4	13	36	74	
	Mumbai	Mumbai City	W	Co			NAC	3	2	27	125	40
	Nagpur	Nagpur	W				NAC	7	10	32	101	39
	Nashik	Nashik	W			IA	NAC	4	10	22	63	
	Pune	Pune	W				NAC	3	37	87	143	
	Thane	Thane	W	Co			NAC	3	20	37	128	
Punjab	Amritsar	Amritsar	N		IB		NAC	2	13	34	170	
	Ludhiana	Ludhiana	N		IB	IA	NAC	4	12	26	153	
Rajasthan	Jaipur	Jaipur	W		IB+GB	IA	NAC	9	7	27	141	
	Jodhpur	Jodhpur	W		IB+GB	IA	NAC	9	7	26	240	



## Chapter 7 : Air quality trend in million-plus cities

State	City/Town	District	Zones	Coastal city	Indo-Gangetic plain	Industrial	NAC	No. of Station	Annual Average Concentration in $\mu\text{g}/\text{m}^3$			
									SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	Kota	Kota	W		IB+GB		NAC	6	7	24	129	
Tamilnadu	Chennai	Chennai	S	Co				11	9	19	73	36
	Coimbatore	Coimbatore	S					3	7	18	57	37
	Madurai	Madurai	S					3	13	18	79	26
	Trichy	Tiruchirappalli	S				NAC	5	13	18	73	46
Telangana	Hyderabad	Hyderabad	S				NAC	10	5	37	99	40
Uttar Pradesh	Agra	Agra	N		GB	IA	NAC	6	4	24	186	110
	Allahabad	Allahabad	N		GB		NAC	5	5	42	222	
	Ghaziabad	Ghaziabad	N		GB	IA	NAC	4	13	35	208	102
	Kanpur	Kanpur Nagar	N		GB	IA	NAC	9	6	40	198	66
	Lucknow	Lucknow	N		GB		NAC	8	7	31	208	
	Meerut	Meerut	N		GB	IA		2	9	63	213	
	Varanasi	Varanasi	N		GB	IA	NAC	5	9	35	184	
West Bengal	Asansol	Paschim Bardhaman	E		GB+BB	IA	NAC	3	15	44	184	81
	Kolkata	Kolkata	E		GB+BB		NAC	21	8	42	104	56

NB. Agra (Taj-Trapezium) is in Ecologically sensitive area. The rest fall under Residential / industrial / rural / other areas

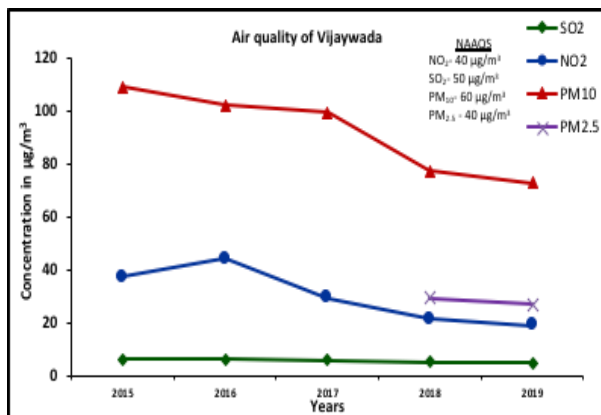
NAAQS (annual): SO<sub>2</sub>=50  $\mu\text{g}/\text{m}^3$ , NO<sub>2</sub>=40  $\mu\text{g}/\text{m}^3$ , PM<sub>10</sub>=60  $\mu\text{g}/\text{m}^3$ , PM<sub>2.5</sub> = 40  $\mu\text{g}/\text{m}^3$  (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20  $\mu\text{g}/\text{m}^3$ , NO<sub>2</sub>=30  $\mu\text{g}/\text{m}^3$ , PM<sub>10</sub>=60  $\mu\text{g}/\text{m}^3$ , PM<sub>2.5</sub> = 40  $\mu\text{g}/\text{m}^3$  (Ecologically sensitive area)

RIRuO-Residential / industrial / rural / other areas, ESA- Ecologically sensitive area, N-North, E-East, W-West, S-South, NE-North East, C-Central, Co-Coastal cities, I-industrial, MP-million plus cities, NAC- Non attainment cities on the basis of 2014- 18 data. SO<sub>2</sub>-Sulphur Dioxide, NO<sub>2</sub>-Nitrogen Dioxide, PM<sub>10</sub>-Particulate matter of aerodynamic size  $\leq 10$  micrometer in diameter,

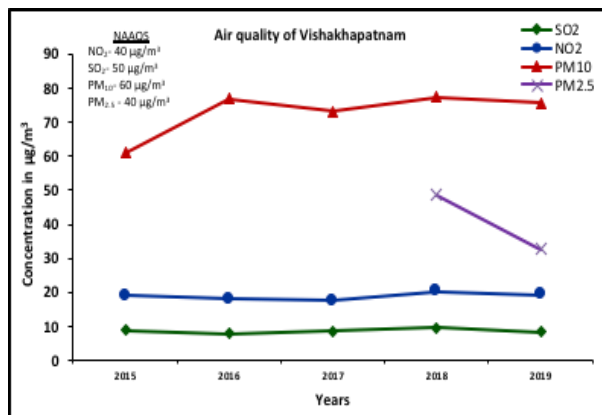
## 7.2 Air quality trend in million plus cities

### 7.3.1 ANDHRA PRADESH

#### Vijaywada

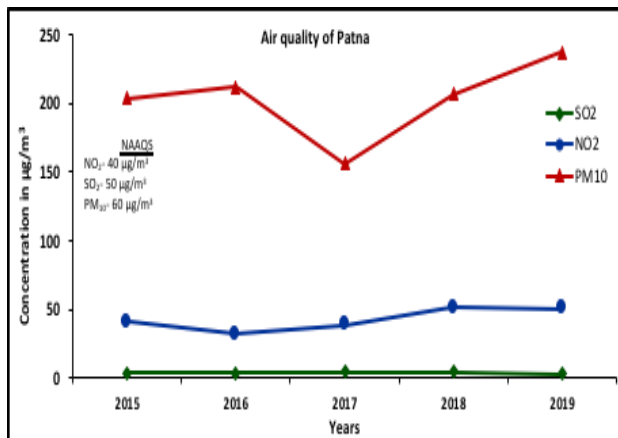


#### Vishakhapatnam



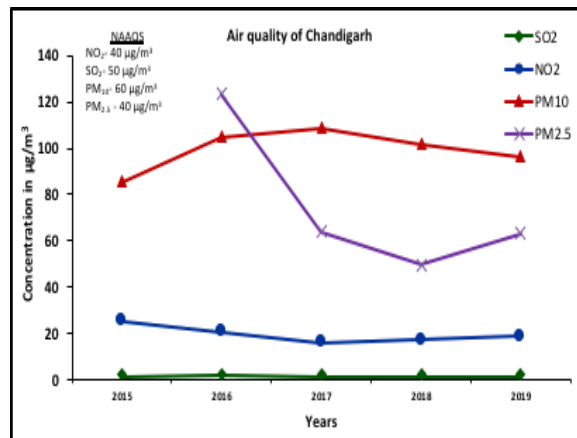
### 7.3.2 BIHAR

#### Patna



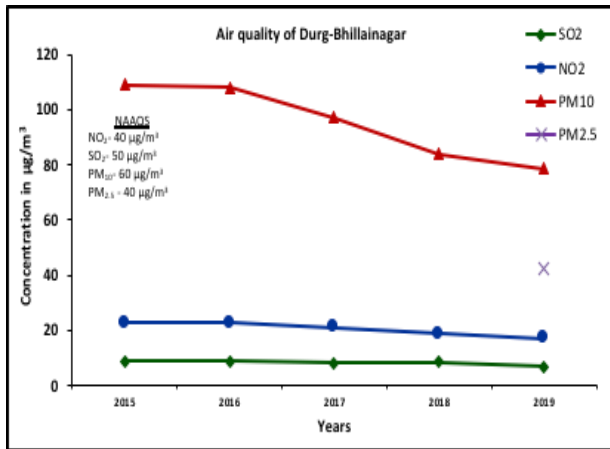
### 7.3.3 CHANDIGARH

#### Chandigarh

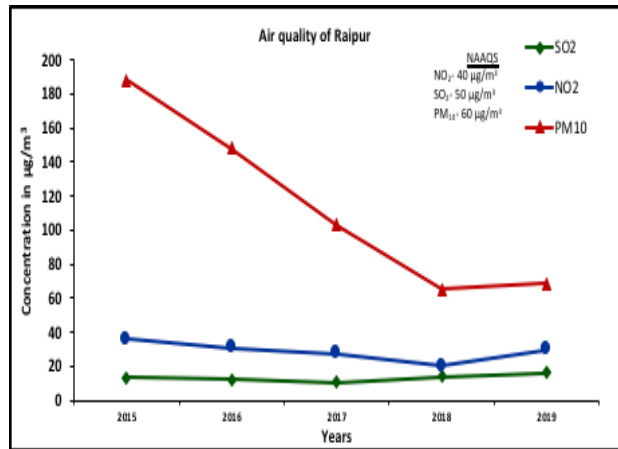


### 7.3.4 CHATTISGARH

#### Durg-Bhillainagar

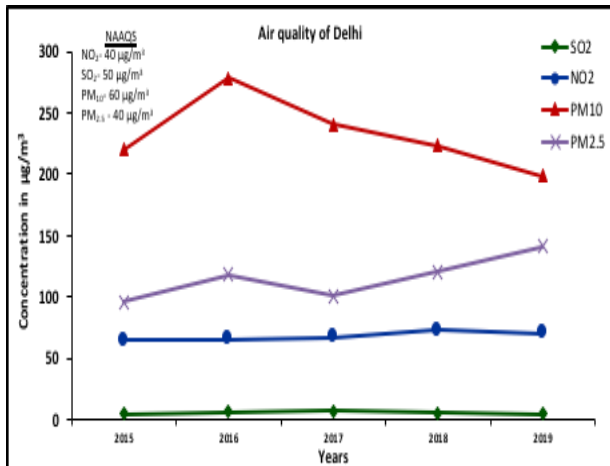


#### Raipur



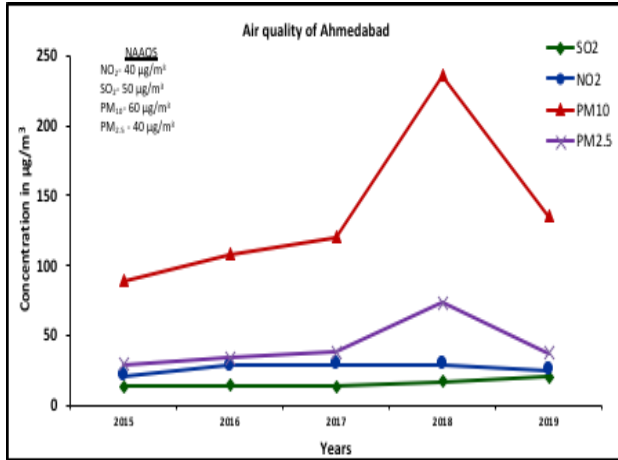
### 7.3.5 DELHI – THE CAPITAL CITY

#### Delhi

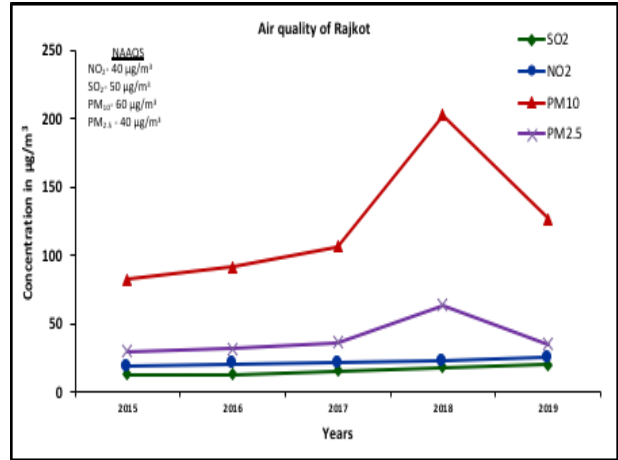


7.3.6 GUJARAT

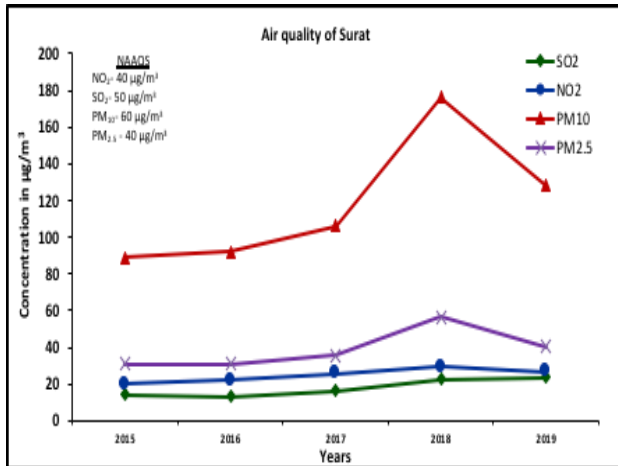
Ahmedabad



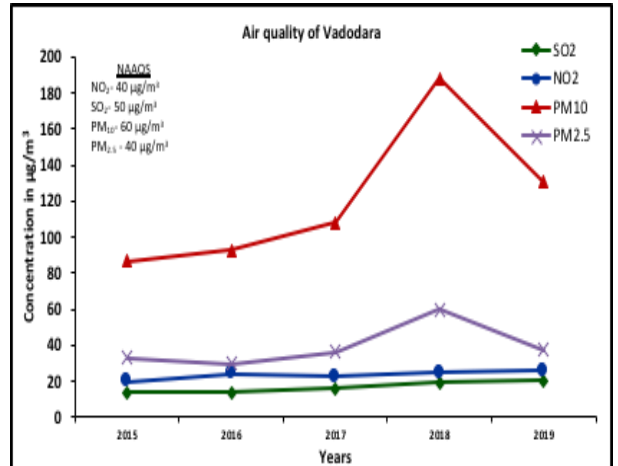
Rajkot



Surat

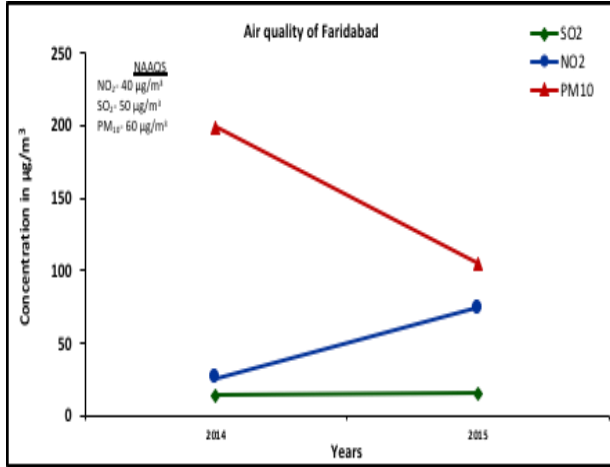


Vadodara



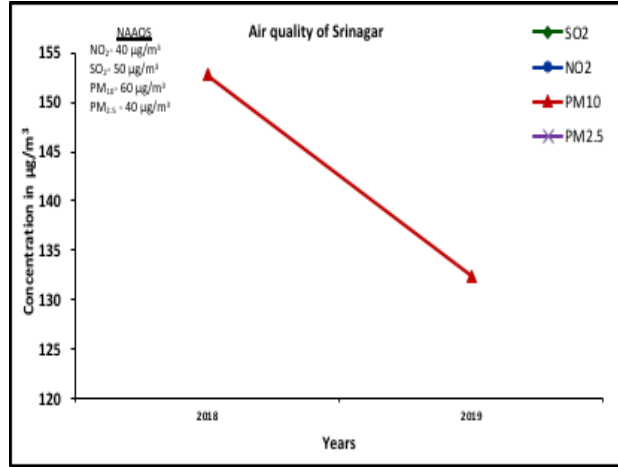
7.3.7 HARYANA

Faridabad



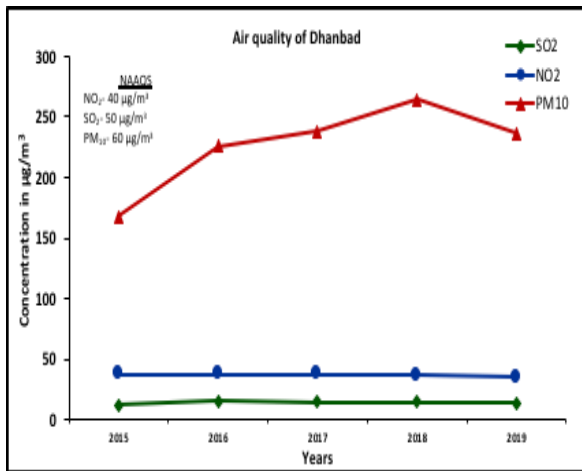
7.3.8 JAMMU & KASHMIR

Srinagar

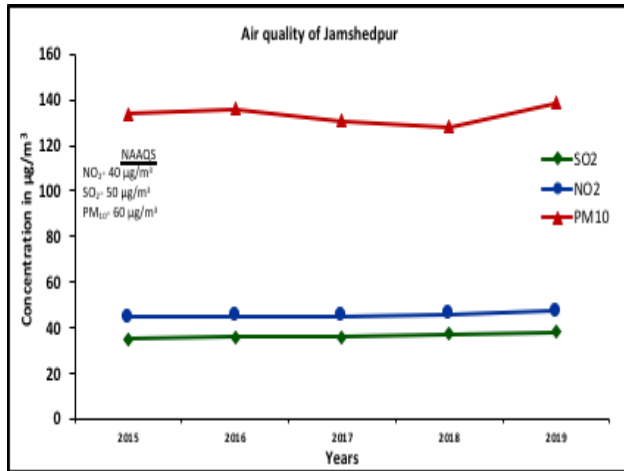


7.3.9 JHARKHAND

Dhanbad

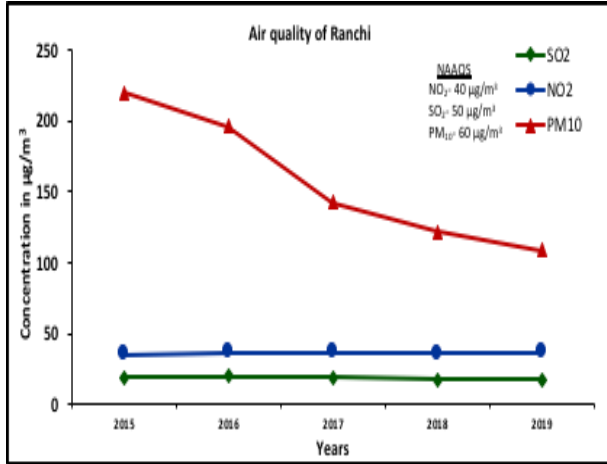


Jamshedpur

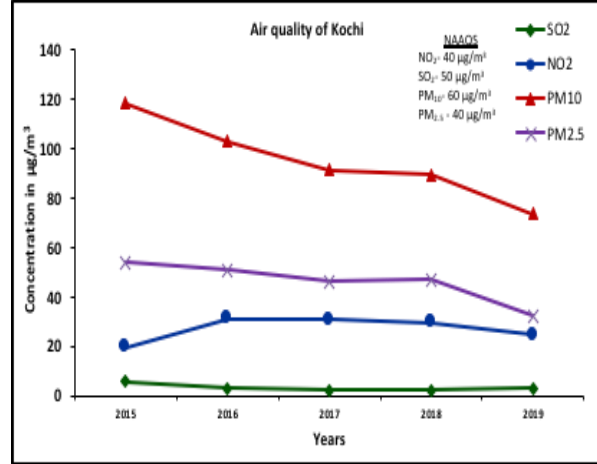


7.3.10 KARNATAKA

Ranchi

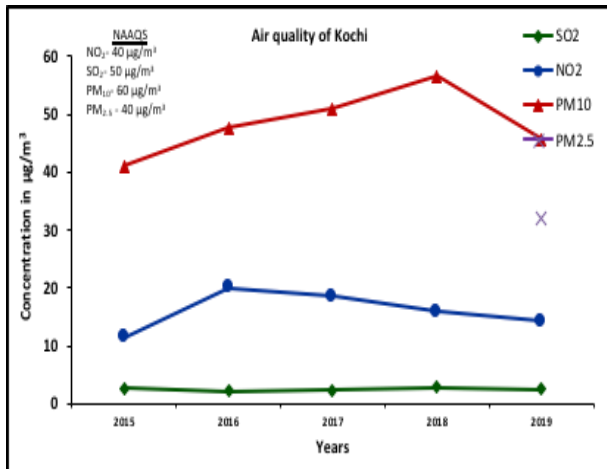


Bangalore

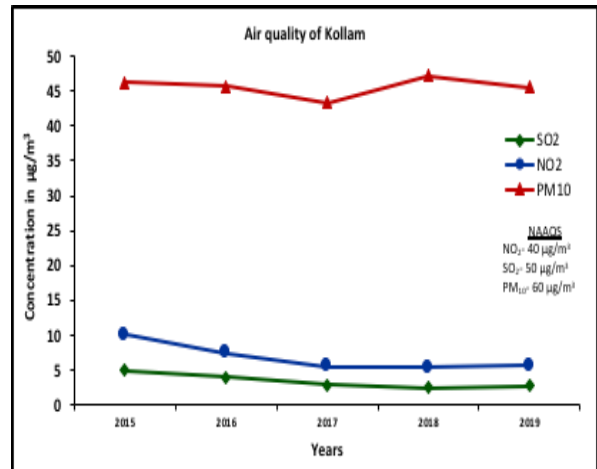


7.3.11 KERALA

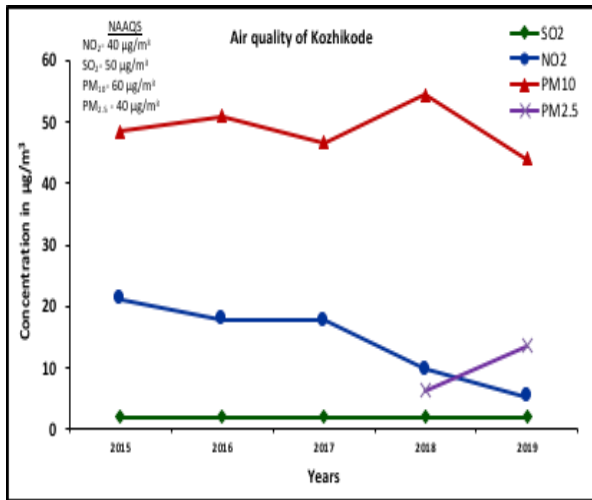
Kochi



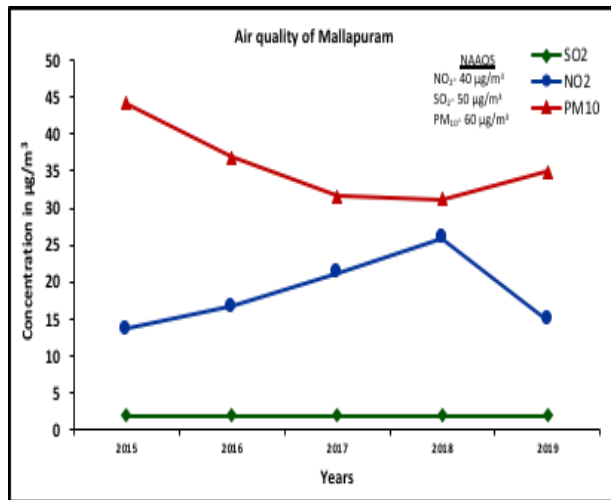
Kollam



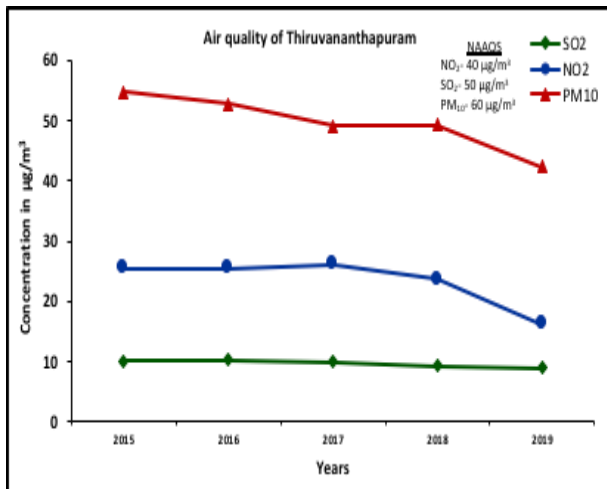
**Kozhikode**



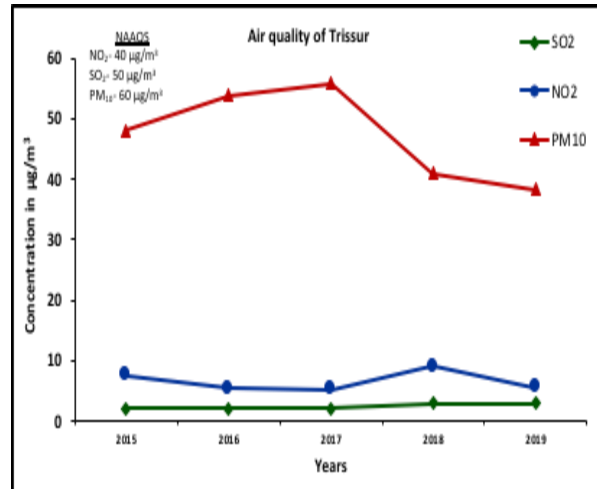
**Mallapuram**



**Thiruvananthapuram**

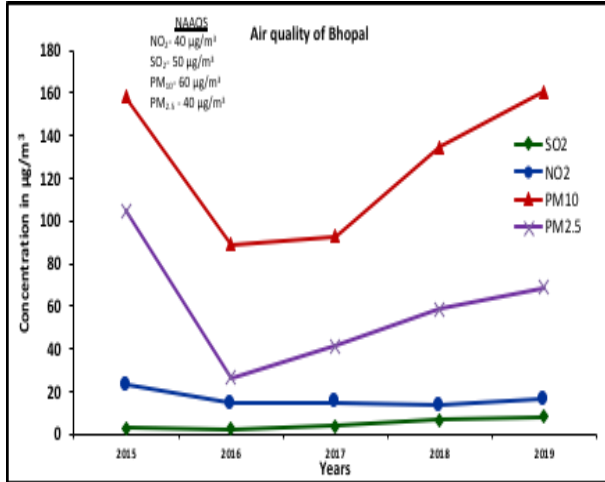


**Trissur**

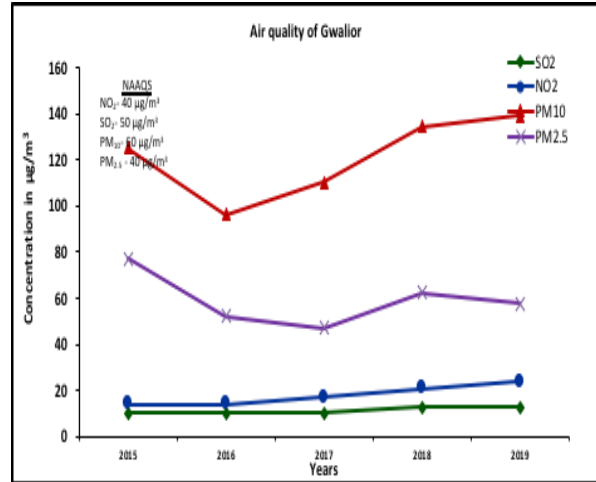


7.3.12 MADHYA PRADESH

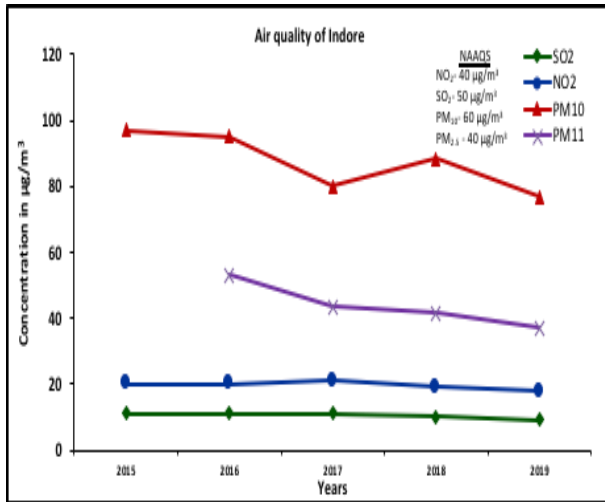
Bhopal



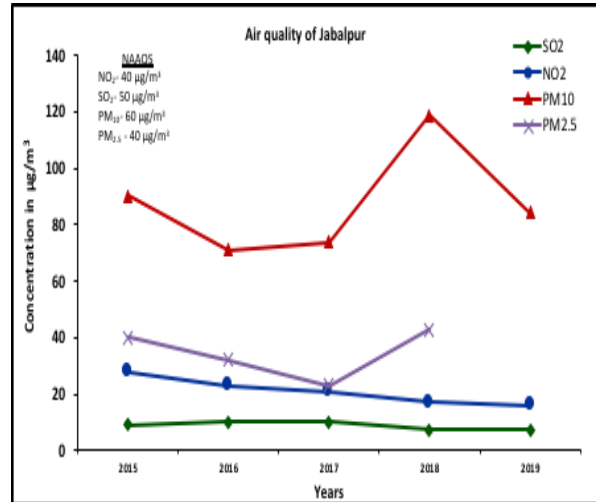
Gwalior



Indore



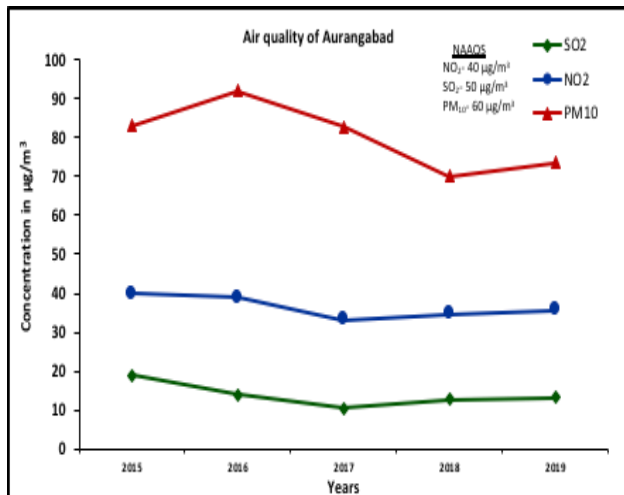
Jabalpur



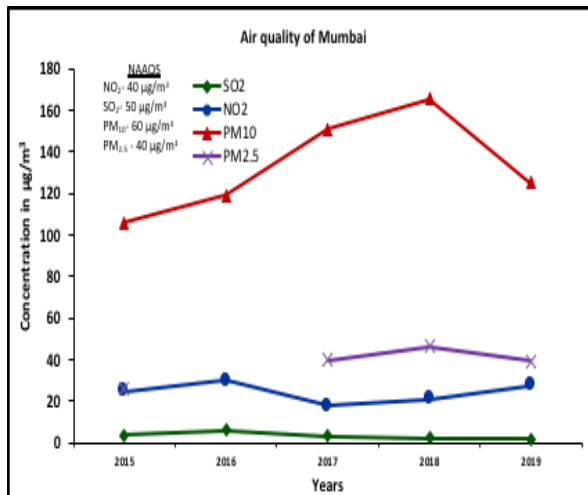


7.3.13 MAHARASHTRA

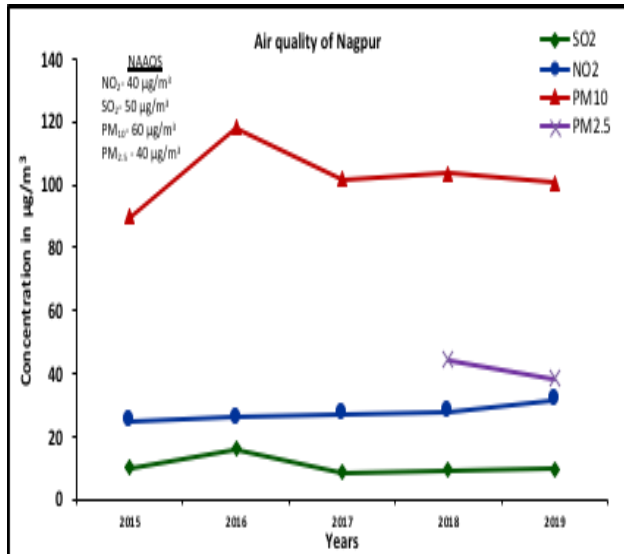
Aurangabad



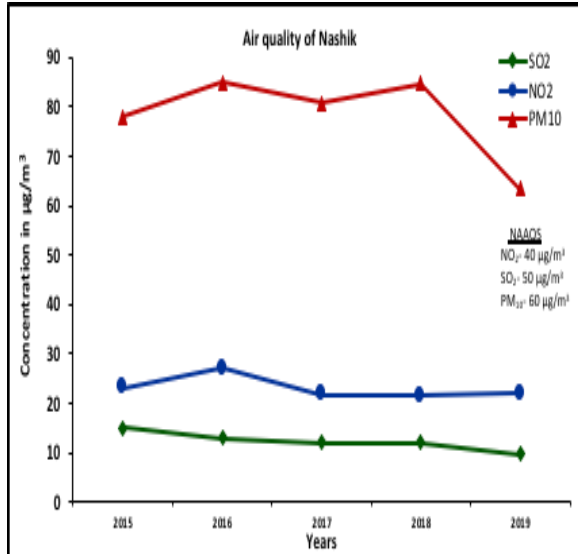
Mumbai



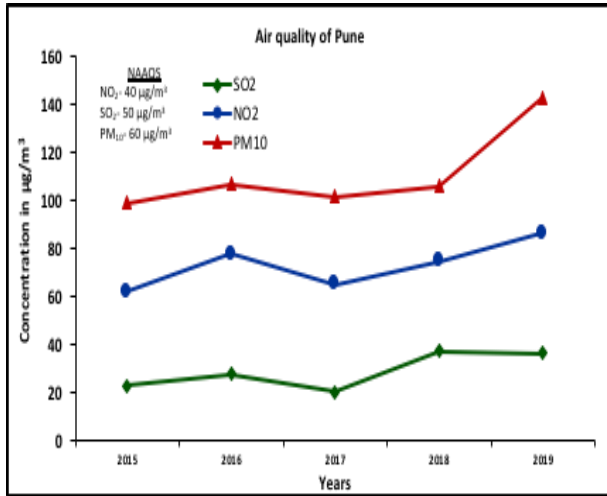
Nagpur



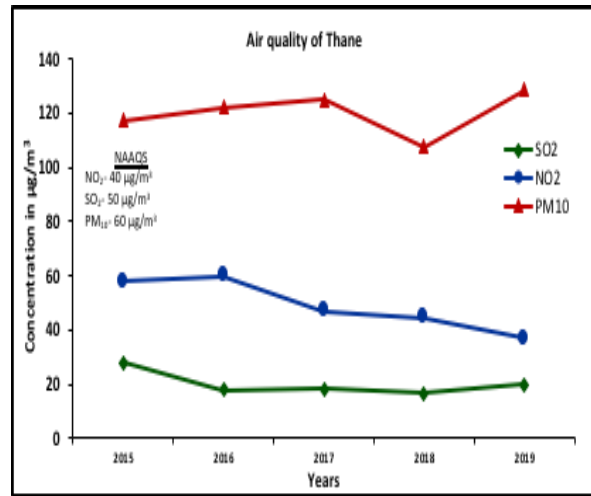
Nashik



**Pune**

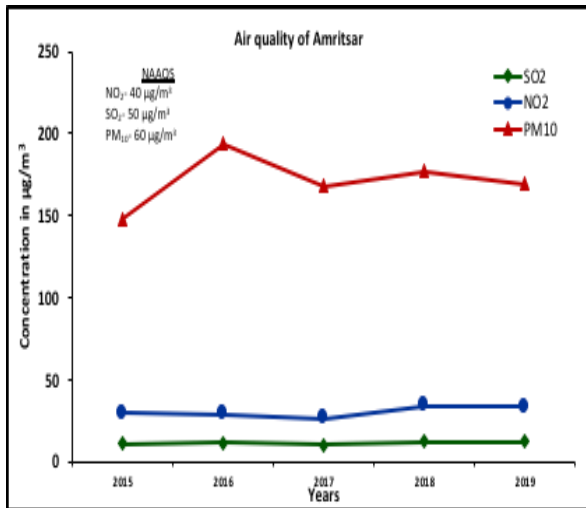


**Thane**

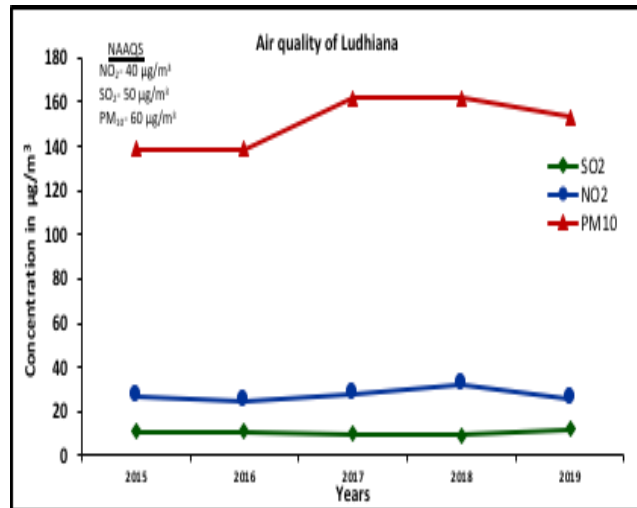


**7.3.14 PUNJAB**

**Amritsar**

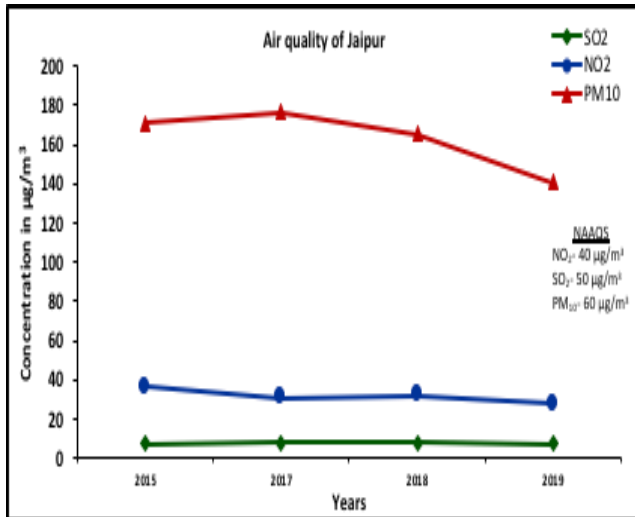


**Ludhiana**

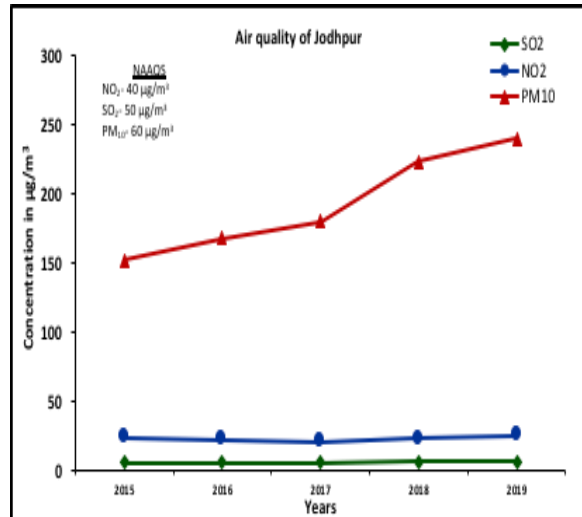


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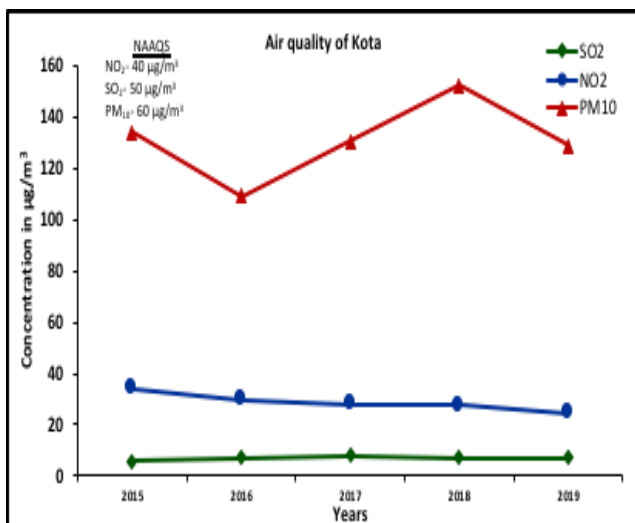
Jaipur



Jodhpur

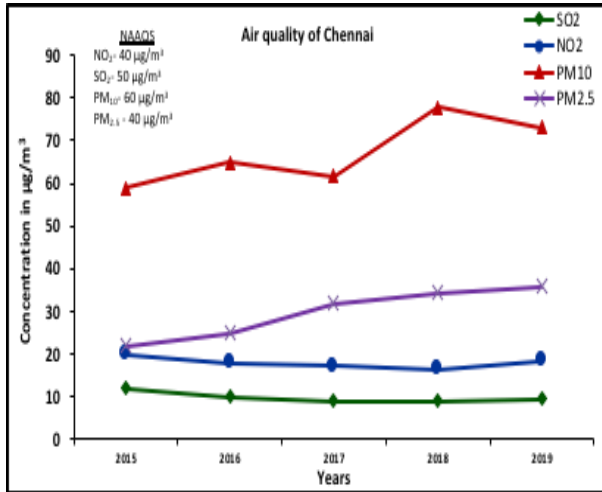


Kota

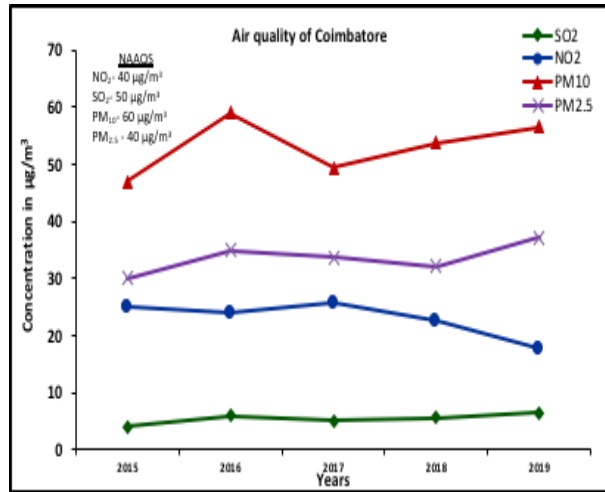


7.3.16 TAMILNADU

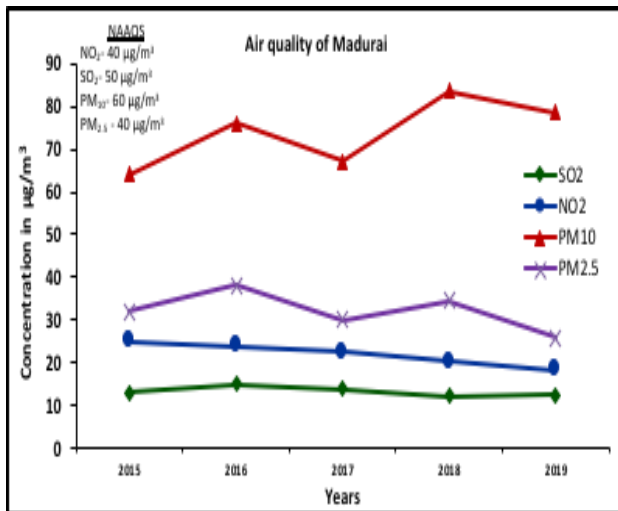
Chennai



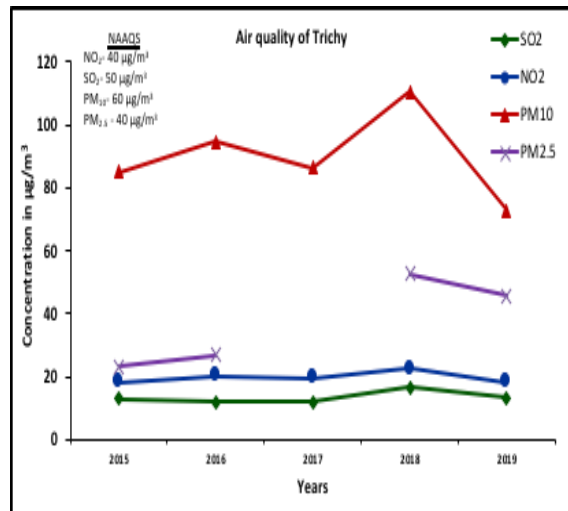
Coimbatore



Madurai

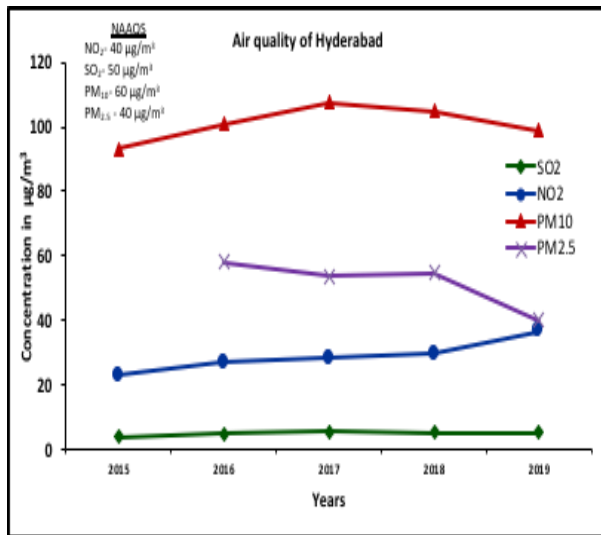


Trichy



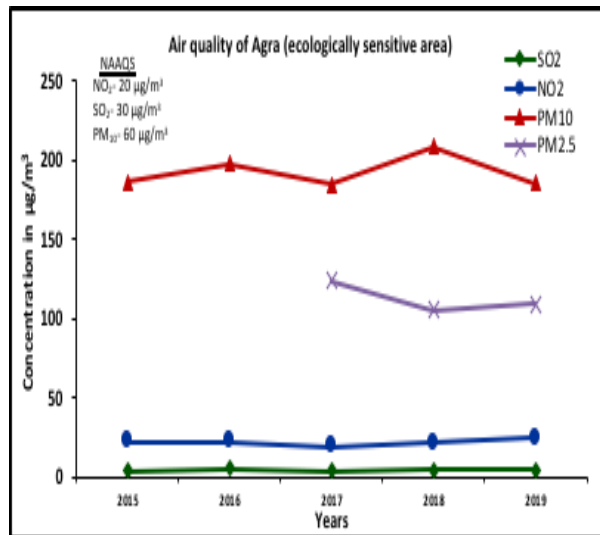
### 7.3.17 TELANGANA

#### Hyderabad

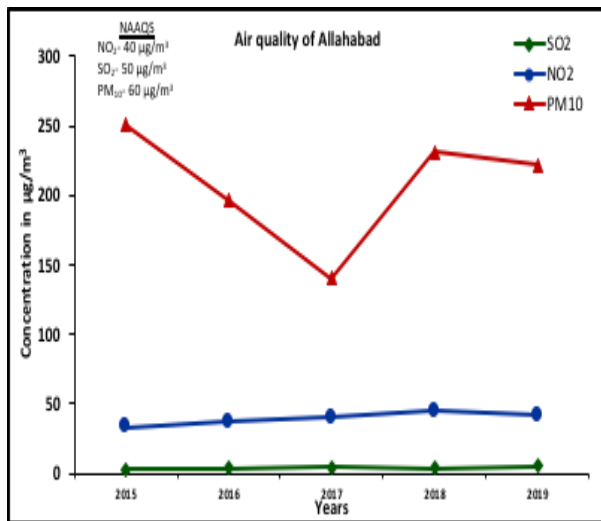


### 7.3.18 UTTAR PRADESH

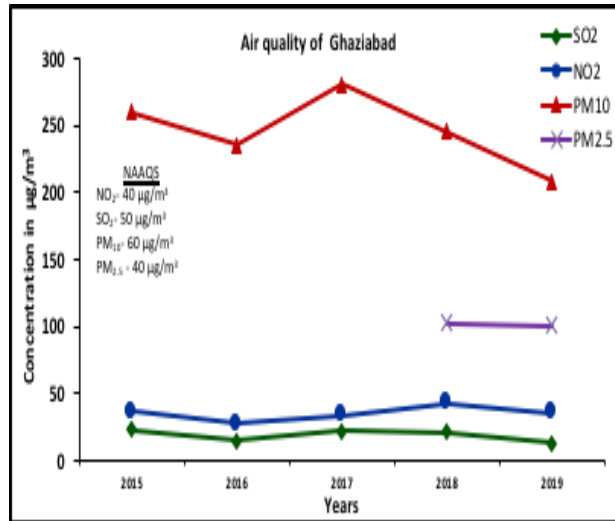
#### Agra



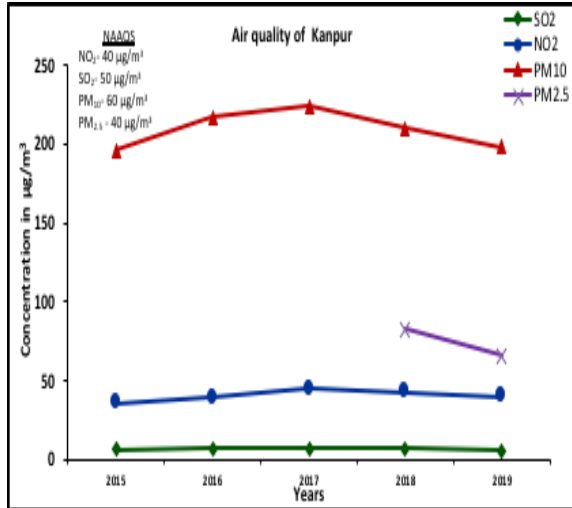
#### Allahabad



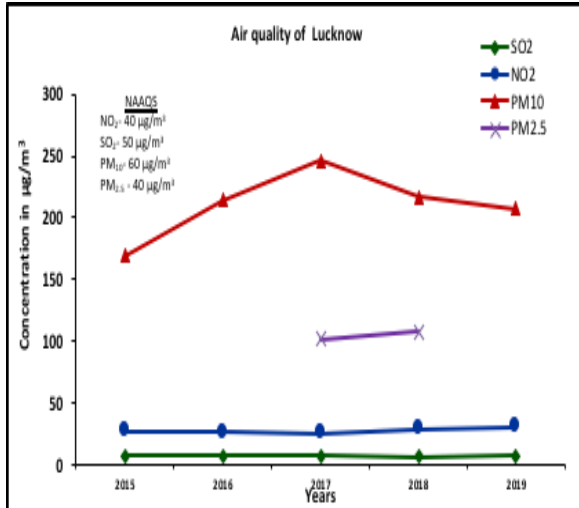
#### Ghaziabad



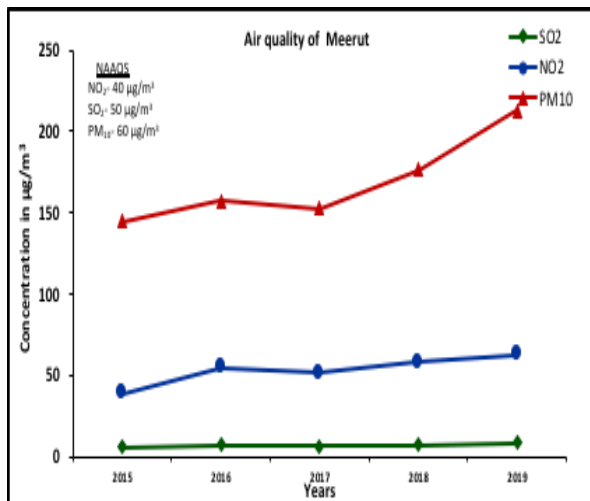
**Kanpur**



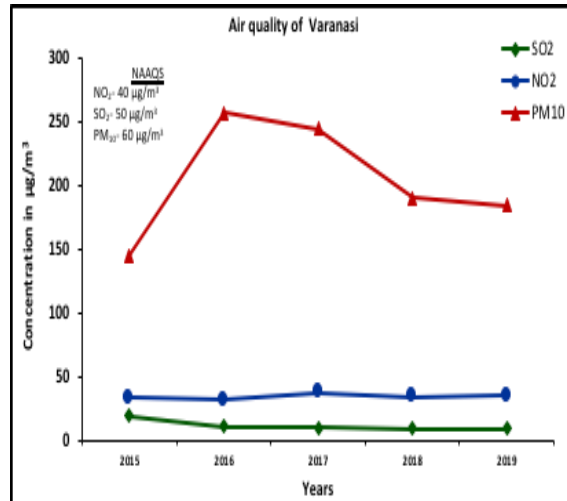
**Lucknow**



**Meerut**

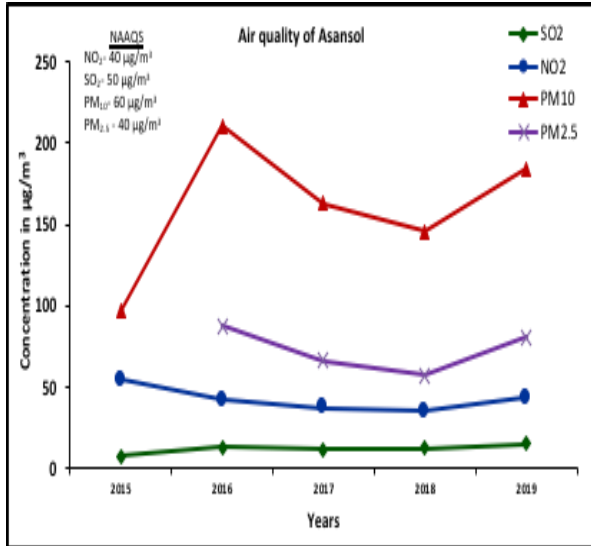


**Varanasi**

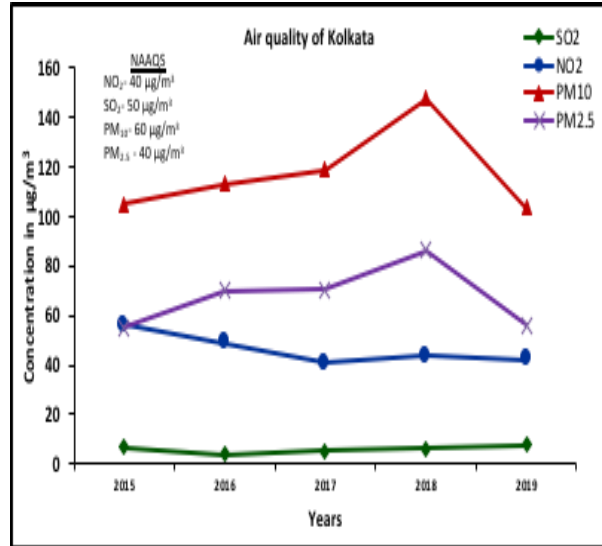


7.3.19 WEST BENGAL

Asansol



Kolkata



## 8.0 Continuous Ambient Air Quality Monitoring

### Introduction:

Air quality is a major concern worldwide. Therefore, the knowledge on instantaneous air quality (real-time) has become a need for the society. This has been possible with the Continuous Ambient Air Quality Monitoring System (CAAQMS) which monitors pollutants using different analyzers and working principles, thereby, generating, transmitting and displaying data within minutes, reducing the chances of manual error. Further, awareness of daily levels of air pollution is important to the citizens, especially for those who suffer from illnesses caused by exposure to air pollution.

Central Pollution Control Board has notified 4th version of National Ambient Air Quality Standards (NAAQS) - 2009 in which 12 set of health based parameters were notified. This necessitated the requirement of monitoring these parameters at National level with the notified methods. Therefore, the present NAAQS required an integrated system of monitoring i.e. it is a combination of Continuous Ambient Air Quality Monitoring System (CAAQMS) and manual monitoring system as the real time system can handle only 08 set of parameters. Since, the inauguration of National Air Quality Index (NAQI) - a tool for effective dissemination of air quality information to the public, by Hon'ble Prime Minister, the necessity of real time data was felt to generate the daily NAQI of cities. The instantaneous data therefore, is more relevant for depicting real-time generic information in the form of National Air Quality Index (AQI).

The CAAQMS network has got paced in the country to generate the real time air quality data, which is not only essential for publishing AQI, but also capable of providing (i) continuous flow of information, (ii) warning at critical period, (iii) trend analysis of any selective interval, (iv) quality data generation with minimizing human error, etc. Therefore, this real-time data displayed at respective locations, not only bring about a participation of general public in the prevention & control of air pollution at respective area of activity but also links with the authorities in respective areas, helping in quick policy decisions and intervention.

### 8.1 Continuous Ambient Air Quality Monitoring System

A Continuous Ambient Air Quality Monitoring System is a specialised system that is housed in a temperature controlled container/room and is equipped for monitoring of ambient air pollutants using different analyzers. The real time data generated through this system is transferred to Central Server and also to digital display board for public viewing. The data of these CAAQMS are being used for generating the daily National Air Quality Index (NAQI) of the cities.



A Continuous Ambient Air Quality Monitoring System is a specialised system is equipped for monitoring of ambient air pollutants and transmit the real time data to the Central Server. This data is used for computation of daily National Air Quality Index of the cities.



The pollutants which are measured using this system are:

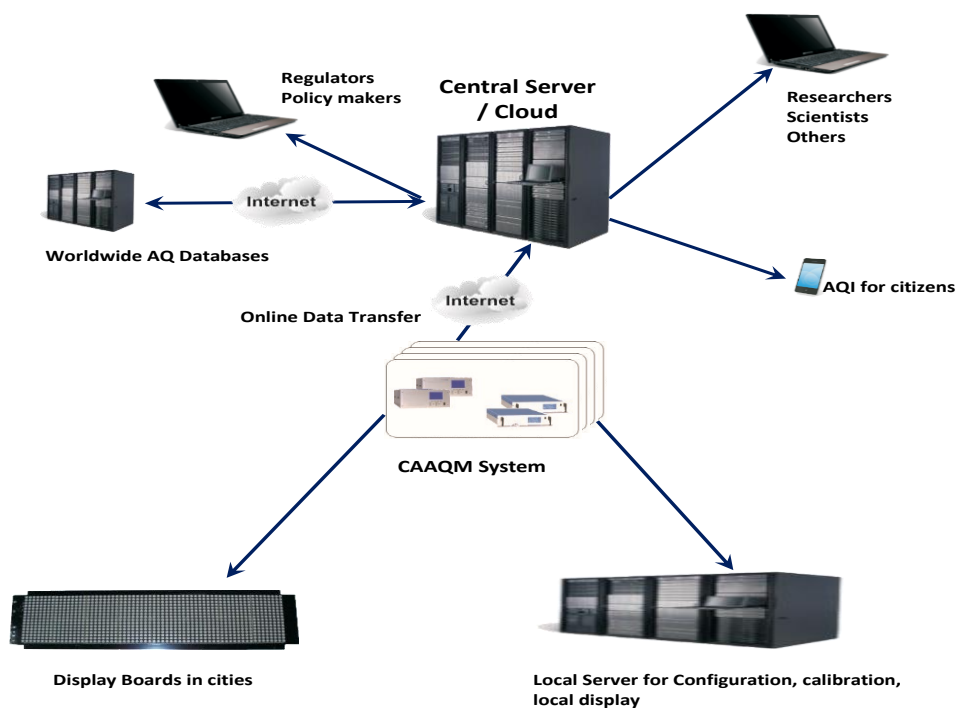
Pollutant	Principle of measurement
Particulate Matter, PM <sub>10</sub>	Beta Attenuation
Particulate Matter, PM <sub>2.5</sub>	Beta Attenuation
Sulphur dioxide, SO <sub>2</sub>	Ultraviolet Fluorescence
Nitrogen dioxide, NO <sub>2</sub>	Chemiluminiscence
Ammonia, NH <sub>3</sub>	Chemiluminiscence
Carbon Monoxide, CO	Non Dispersive Infra-Red - NDIR
Ozone, O <sub>3</sub>	U V Photometric
Benzene	Gas Chromatography - FID, PID



The CAAQM stations are also equipped with sensors to measure meteorological parameters such as Wind Speed, Wind Direction, Ambient Temperature, Relative Humidity, Solar Radiation and Rainfall.

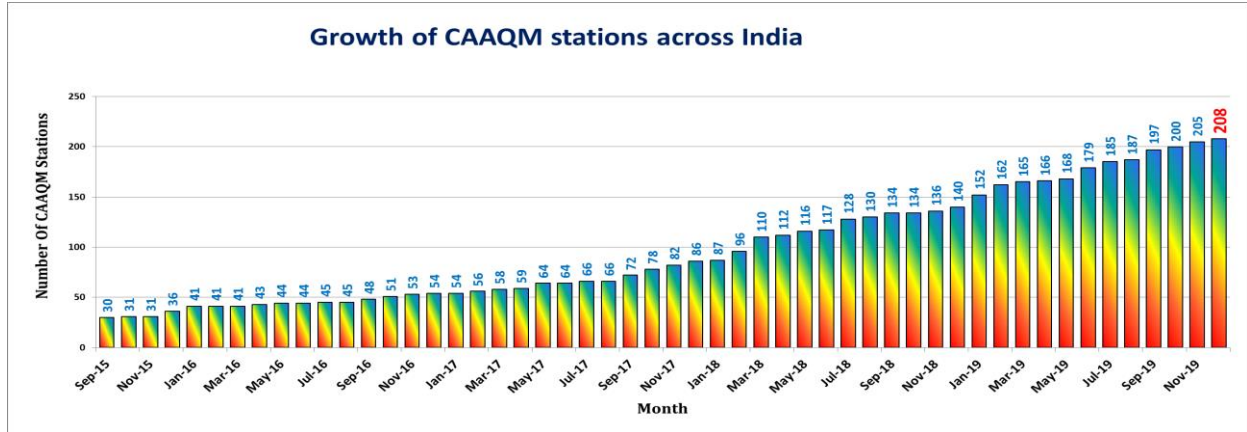
CAAQM stations provide real time data which enables assessment of extent of pollution in real time. The analyser used for measurement are USEPA/TUV/MCERTS certified. For quality data generation, the analyzers are calibrated using certified reference standards (NIST certified Gases/NIST certified Foil Gauges for Particulate Matter). Performance audit of CAAQM stations are carried out once in a year by third party. The CAAQM station operated by CPCB are also under NABL accreditation as per ISO 17025:2005.

Flow diagram of typical data dissemination from CAAQM Station:



### 8.2 Continuous Ambient Air Quality Monitoring Network in India

The network of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) is expanding in the country and at present, 208 CAAQM stations covering 114 cities in 20 states/UTs are existing across the country, depicted as under:



### 8.3 State wise station/location across the country

S.No.	State	City	Station Name	No. of stations
1	Andhra Pradesh	Amaravati	Secretariat, Amaravati - APPCB	1
		Rajahmendravaram	Anand Kala Kshetram, Rajamahendravaram - APPCB	1
		Tirupati	Tirumala, Tirupati - APPCB	1
		Vijayawada	PWD Grounds, Vijayawada - APPCB	1
		Visakhapatnam	APIIC Kancharapalem, Visakhapatnam – APPCB GVM Corporation, Visakhapatnam - APPCB	2
2	Assam	Guwahati	Railway Colony, Guwahati - APCB	1
3	Bihar	Gaya	Collectorate, Gaya - BSPCB	1
		Muzaffarpur	Muzaffarpur Collectorate, Muzaffarpur – BSPCB	1
		Patna	IGSC Planetarium Complex, Patna - BSPCB	4
			Muradpur, Patna - BSPCB	
			Rajbansi Nagar, Patna - BSPCB	
Samanpura, Patna - BSPCB				
4	Chandigarh	Chandigarh	Sector-25, Chandigarh - CPCC	1
5	Delhi	Delhi	Alipur- DPCC	38
			Anand Vihar, Delhi - DPCC	
			Ashok Vihar, Delhi - DPCC	
			Aya Nagar, New Delhi - IMD	
			Bawana- DPCC	
			Burari Crossing, New Delhi - IMD	
			CRRI Mathura Road, New Delhi - IMD	
			Dr. Karni Singh Shooting Range, Delhi - DPCC	
			DTU, New Delhi - CPCB	
			Dwarka-Sector 8, Delhi - DPCC	
			Mundaka-DPCC	
IGI Airport Terminal - 3, New Delhi - IMD				

Chapter 8: Continuous Ambient Air Quality Monitoring

S.No.	State	City	Station Name	No. of stations
			IHBAS, Dilshad Garden, New Delhi - CPCB	
			ITO, New Delhi - CPCB	
			Jahangirpuri, Delhi - DPCC	
			Jawaharlal Nehru Stadium, Delhi - DPCC	
			Lodhi Road, New Delhi - IMD	
			Major Dhyan Chand National Stadium, Delhi - DPCC	
			Mandir Marg, New Delhi - DPCC	
			Najafgarh, Delhi - DPCC	
			Narela, Delhi - DPCC	
			Nehru Nagar, Delhi - DPCC	
			North Campus, DU, New Delhi - IMD	
			NSIT Dwarka, New Delhi - CPCB	
			Okhla Phase-2, Delhi - DPCC	
			Patparganj, Delhi - DPCC	
			Punjabi Bagh, Delhi - DPCC	
			Pitampura Delhi- IMD	
			Pusa, New Delhi – DPCC	
			Pusa, New Delhi - IMD	
			R K Puram, New Delhi - DPCC	
			Rohini, Delhi - DPCC	
			Shadipur, New Delhi - CPCB	
Sirifort, New Delhi - CPCB				
Sonia Vihar, Delhi - DPCC				
Sri Aurobindo Marg- DPCC				
Vivek Vihar, Delhi - DPCC				
Wazirpur, Delhi - DPCC				
6	Gujarat	Ahmedabad	Maninagar, Ahmedabad - GPCB	1
		Ankleshwar	GIDC, Ankleshwar - GPCB	1
		Gandhinagar	Sector-10, Gandhinagar - GPCB	1
		Vapi	Phase-1 GIDC, Vapi - GPCB	1
		Vatva	Phase-4 GIDC, Vatva - GPCB	1
7	Haryana	Ambala	Patti Mehar, Ambala - HSPCB	1
		Bahadurgarh	Arya Nagar, Bahadurgarh - HSPCB	1
		Ballabgarh	Nathu Colony, Ballabgarh - HSPCB	1
		Bhiwani	H.B. Colony, Bhiwani - HSPCB	1
		Dharuhera	Municipal Corporation Office, Dharuhera - HSPCB	1
		Faridabad	Sector- 16A, Faridabad - HSPCB	1
		Fatehabad	Huda Sector, Fatehabad - HSPCB	1
		Gurugram	NISE Gwal Pahari, Gurugram - IMD	2
			Vikas Sadan, Gurugram - HSPCB	
		Hisar	Urban Estate-II, Hisar - HSPCB	1
		Jind	Police Lines, Jind - HSPCB	1
		Kaithal	Rishi Nagar, Kaithal - HSPCB	1
		Karnal	Sector-12, Karnal - HSPCB	1
Kurukshetra	Sector-7, Kurukshetra - HSPCB	1		

Chapter 8: Continuous Ambient Air Quality Monitoring

S.No.	State	City	Station Name	No. of stations
		Mandikhera	General Hospital, Mandikhera - HSPCB	1
		Manesar	Sector-2 IMT, Manesar - HSPCB	1
		Narnaul	Shastri Nagar, Narnaul - HSPCB	1
		Palwal	Shyam Nagar, Palwal - HSPCB	1
		Panchkula	Sector-6, Panchkula - HSPCB	1
		Panipat	Sector-18, Panipat - HSPCB	1
		Rohtak	MD University, Rohtak - HSPCB	1
		Sirsa	F-Block, Sirsa - HSPCB	1
		Sonipat	Murthal, Sonipat - HSPCB	1
		Yamuna Nagar	Gobind Pura, Yamuna Nagar - HSPCB	1
8	Jharkhand	Jorapokhar	Tata Stadium, Jorapokhar - JSPCB	1
9	Karnataka	Bengaluru	BTM Layout, Bengaluru - CPCB	10
			BWSSB Kadabesanahalli, Bengaluru - CPCB	
			Bapuji Nagar, Bengaluru - KSPCB	
			City Railway Station, Bengaluru - KSPCB	
			Hebbal, Bengaluru - KSPCB	
			Hombegowda Nagar, Bengaluru - KSPCB	
			Jayanagar 5th Block, Bengaluru - KSPCB	
			Peenya, Bengaluru - CPCB	
			Sanegurava Halli, Bengaluru - KSPCB	
			Silk Board, Bengaluru - KSPCB	
		Chamarajanagar	Urban, Chamarajanagar – KSPCB	1
		Chikkaballapur	Chikkaballapur Rural- KSPCB	1
		Hubballi	Deshpande Nagar, Hubballi - KSPCB	1
Kalaburagi	Lal Bahadur Shastri Nagar- KSPCB	1		
Mysuru	Hebbal 1st Stage, Mysuru - KSPCB	1		
Ramanagara	Vijay Nagar, Ramanagara - KSPCB	1		
Yadgir	Collector Office, Yadgir - KSPCB	1		
10	Kerala	Eloor	Udyogamandal, Eloor - Kerala PCB	1
		Thiruvananthapuram	Plammoodu, Thiruvananthapuram - Kerala PCB	1
11	Madhya Pradesh	Bhopal	T T Nagar, Bhopal - MPPCB	1
		Damoh	Shrivastav Colony, Damoh - MPPCB	1
		Dewas	Bhopal Chauraha, Dewas - MPPCB	1
		Maihar	Sahilara, Maihar - KJS Cements	1
		Indore	Chhoti Gwaltoli, Indore - MPPCB	1
		Jabalpur	Marhatal, Jabalpur - MPPCB	1
		Katni	Gole Bazar, Katni - MPPCB	1
		Mandideep	Sector-D Industrial Area, Mandideep - MPPCB	1
		Pithampur	Sector-2 Industrial Area, Pithampur - MPPCB	1
		Ratlam	Shastri Nagar, Ratlam - IPCA Lab	1
		Satna	Bandhavgar Colony, Satna - MPPCB	1
		Singrauli	Vindhyachal STPS, Singrauli - MPPCB	1
Ujjain	Mahakaleshwar Temple, Ujjain - MPPCB	1		
12	Maharashtra	Aurangabad	More Chowk Waluj, Aurangabad - MPCB	1
		Chandrapur	Chandrapur, Chandrapur - MPCB	2
			MIDC Khutala, Chandrapur - MPCB	
		Kalyan	Khadakpada, Kalyan - MPCB	1
Mumbai	Bandra, Mumbai - MPCB	1		

Chapter 8: Continuous Ambient Air Quality Monitoring

S.No.	State	City	Station Name	No. of stations
			Borivali East, Mumbai - MPCB	1
			Chhatrapati Shivaji Intl. Airport (T2), Mumbai - MPCB	1
			Colaba, Mumbai - MPCB	1
			Kurla, Mumbai - MPCB	1
			Powai, Mumbai - MPCB	1
			Sion, Mumbai - MPCB	1
			Vasai West, Mumbai – MPCB	1
			Vile Parle West, Mumbai – MPCB	1
			Worli, Mumbai - MPCB	1
		Nagpur	Opp GPO Civil Lines, Nagpur - MPCB	1
		Nashik	Gangapur Road, Nashik - MPCB	1
		Navi Mumbai	Airoli, Navi Mumbai - MPCB	1
			Mahape, Navi Mumbai - MPCB	1
			Nerul, Navi Mumbai - MPCB	1
Pune	Karve Road, Pune - MPCB	1		
Solapur	Solapur, Solapur - MPCB	1		
Thane	Pimpleshwar Mandir, Thane - MPCB	1		
13	Meghalaya	Shillong	Lumpynggad, Shillong - Meghalaya PCB	1
14	Odisha	Brajrajnagar	GM Office, Brajrajnagar - OSPCB	1
		Talcher	Talcher Coalfields, Talcher - OSPCB	1
15	Punjab	Amritsar	Golden Temple, Amritsar - PPCB	1
		Bathinda	Hardev Nagar, Bathinda - PPCB	1
		Jalandhar	Civil Line, Jalandhar - PPCB	1
		Khanna	Kalal Majra, Khanna - PPCB	1
		Ludhiana	Punjab Agricultural University, Ludhiana - PPCB	1
		Mandi Gobindgarh	RIMT University, Mandi Gobindgarh - PPCB	1
		Patiala	Model Town, Patiala - PPCB	1
		Rupnagar	Ratanpura, Rupnagar - PPCB	1
16	Rajasthan	Alwar	Moti Doongri, Alwar, Rajasthan - RSPCB	1
		Ajmer	Civil Lines, Ajmer - RSPCB	1
		Bhiwadi	RIICO Ind. Area III, Bhiwadi, Rajasthan - RSPCB	1
		Jaipur	Adarsh Nagar, Jaipur - RSPCB	3
			Police Commissionerate, Jaipur - RSPCB	
			Shastri Nagar, Jaipur - RSPCB	
		Jodhpur	Collectorate, Jodhpur - RSPCB	1
		Kota	Shrinath Puram, Kota - RSPCB	1
		Pali	Indira Colony Vistar, Pali - RSPCB	1
Udaipur	Ashok Nagar, Udaipur - RSPCB	1		
17	Tamil Nadu	Chennai	Alandur Bus Depot, Chennai - CPCB	4
			Manali Village, Chennai - TNPCB	
			Manali, Chennai - CPCB	
			Velachery Res. Area, Chennai - CPCB	
		Coimbatore	SIDCO Kurichi, Coimbatore - TNPCB	1
18	Telangana	Hyderabad	Bollaram Industrial Area, Hyderabad - TSPCB	6
			Central University, Hyderabad - TSPCB	
			ICRISAT Patancheru, Hyderabad - TSPCB	
			IDA Pashamylaram, Hyderabad - TSPCB	
			Sanathnagar, Hyderabad - TSPCB	

Chapter 8: Continuous Ambient Air Quality Monitoring

S.No.	State	City	Station Name	No. of stations
			Zoo Park, Hyderabad - TSPCB	
19	Uttar Pradesh	Agra	Sanjay Palace, Agra - UPPCB	1
		Baghpat	New Collectorate- UPPCB	1
		Bulandshahr	Yamunapuram, Bulandshahr - UPPCB	1
		Ghaziabad	Indirapuram, Ghaziabad - UPPCB	4
			Loni, Ghaziabad - UPPCB	
			Sanjay Nagar, Ghaziabad - UPPCB	
			Vasundhara, Ghaziabad - UPPCB	
		Greater Noida	Knowledge Park - III, Greater Noida - UPPCB	1
			Knowledge Park - V, Greater Noida - UPPCB	1
		Hapur	Anand Vihar, Hapur –UPPCB	1
		Kanpur	Nehru Nagar, Kanpur - UPPCB	1
		Lucknow	Central School, Lucknow - CPCB	5
			Gomti Nagar, Lucknow - UPPCB	
			Lalbagh, Lucknow - CPCB	
			Nishant Ganj, Lucknow – UPPCB	
			Talkatora District Industries Center, Lucknow - CPCB	
		Meerut	Ganga Nagar, Meerut - UPPCB	3
			Jai Bhim Nagar, Meerut - UPPCB	
			Pallavpuram Phase 2, Meerut - UPPCB	
		Moradabad	Lajpat Nagar, Moradabad - UPPCB	1
Muzaffarnagar	New Mandi, Muzaffarnagar - UPPCB	1		
Noida	Sector - 125, Noida - UPPCB	4		
	Sector - 62, Noida - IMD			
	Sector-1, Noida - UPPCB			
	Sector-116, Noida - UPPCB			
Varanasi	Ardhali Bazar, Varanasi - UPPCB	1		
20	West Bengal	Asanol	Asanol Court Area, Asanol - WBPCB	1
		Durgapur	Sidhu Kanhu Indoor Stadium, Durgapur – WBPCB	1
		Haldia	Haldia, Haldia - WBPCB	1
		Howrah	Belur Math, Howrah - WBPCB	3
			Ghusuri, Howrah - WBPCB	
			Padmapukur, Howrah - WBPCB	
		Kolkata	Ballygunge, Kolkata - WBPCB	7
			Bidhannagar, Kolkata - WBPCB	
			Fort William, Kolkata - WBPCB	
			Jadavpur, Kolkata - WBPCB	
			Rabindra Bharati University, Kolkata - WBPCB	
			Rabindra Sarobar, Kolkata - WBPCB	
			Victoria, Kolkata - WBPCB	
Siliguri	Ward-32 Bapupara, Siliguri - WBPCB	1		
Total	20	114	208	

### 8.4 Continuous Ambient Air Quality Monitoring Network in Delhi-NCR region

There are 73 CAAQM stations (year 2019), installed in Delhi-NCR presented in tables below:

S. No.	Station Name	Operating Agency-No. of Stations
<b>State: DELHI</b>		
1.	DTU, New Delhi	<b>CPCB-06</b>
2.	ITO, New Delhi	
3.	IHBAS, DilshadGarden, New Delhi	
4.	NSIT Dwarka, New Delhi	
5.	Shadipur, New Delhi	
6.	Sirifort, New Delhi	
7.	Alipur	<b>DPCC-24</b>
8.	AnandVihar, Delhi	
9.	Ashok Vihar, Delhi	
10.	Bawana	
11.	Dr. Karni Singh Shooting Range, Delhi	
12.	Dwarka-Sector 8, Delhi	
13.	Mundaka	
14.	Jahangirpuri, Delhi	
15.	Jawaharlal Nehru Stadium, Delhi	
16.	Major Dhyan Chand National Stadium, Delhi	
17.	MandirMarg, New Delhi	
18.	Najafgarh, Delhi	
19.	Narela, Delhi	
20.	Nehru Nagar, Delhi	
21.	Okhla Phase-2, Delhi	
22.	Patparganj, Delhi	
23.	Punjabi Bagh, Delhi	
24.	Pusa, DPCC Delhi	
25.	R K Puram, New Delhi	
26.	Rohini, Delhi	
27.	Sonia Vihar, Delhi	
28.	Sri AurobindoMarg	
29.	VivekVihar, Delhi	
30.	Wazirpur, Delhi	
31.	Aya Nagar, New Delhi	<b>IMD-08</b>
32.	Burari Crossing, New Delhi	
33.	CRRRI Mathura Road, New Delhi	
34.	IGI Airport Terminal - 3, New Delhi	
35.	Lodhi Road, New Delhi	
36.	North Campus, DU, New Delhi	
37.	Pusa, New Delhi	
38.	Pitampura, New Delhi	
<b>Total Stations</b>		<b>38</b>

S. No.	City	Location	Operating Agency-No. of Stations
<b>State: Haryana</b>			
39.	Bahadurgarh	Arya Nagar	<b>HSPCB-15</b>
40.	Ballabgarh	Nathu Colony	
41.	Bhiwani	H.B. Colony	
42.	Dharuhera	Municipal Corporation Office	
43.	Faridabad	Sector- 16A	
44.	Jind	Police Lines	
45.	Karnal	Sector-12	
46.	Mandikhera	Sector-7	
47.	Manesar	Sector-2 IMT	
48.	Narnaul	Shastri Nagar	
49.	Palwal	Shyam Nagar	
50.	Panipat	Sector-18	
51.	Rohtak	MD University	
52.	Sonipat	Murthal	
53.	Gurugram	Vikas Sadan	<b>IMD-01</b>
54.		NISE Gwal Pahari	
<b>Total Stations</b>			<b>16</b>
<b>State: Uttar Pradesh</b>			
55.	Baghpat	New Collectorate	<b>UPPCB-16</b>
56.	Bulandsahar	Yammunapuram	
57.	Ghaziabad	Indirapuram	
58.		Loni	
59.		Sanjay Nagar	
60.		Vasundhara,	
61.	Greater Noida	Knowledge Park-III	
62.		KnowledgePark V	
63.	Hapur	Anand Vihar	
64.	Meerut	Ganga Nagar	
65.		Jai Bhim Nagar	
66.		Pallavpuram Phase 2	
67.	Muzzafar Nagar	New Mandi	
68.	Noida	Noida-Sec 125	
69.		Noida- Sec 1	
70.		Noida-Sec 116	
71.		Noida-62	
<b>Total Stations</b>			<b>17</b>
<b>State: Rajasthan</b>			
72.	Alwar	MotiDoongri	<b>RSPCB-02</b>
73.	Bhiwadi	RIICO Industrial Area-III	
<b>Total Stations</b>			<b>02</b>



## 8.5 National Air Quality Index

National Air Quality Index (NAQI) was launched by Hon'ble Prime Minister on 6th April, 2015 with the objective for dissemination of Air Quality information to the public. Computation of AQI is done using real-time data of Continuous Ambient Air Quality Monitoring Stations. This index will help the people to know about the level of pollution in the ambient air on daily basis. The AQI Display has been increased from the initial 10 cities to currently 114 cities in 20 States/UTs of India. Total 208 Continuous Ambient Air Quality Monitoring Stations all over the country are connected with NAQI.

The AQI consider eight pollutants ( $PM_{10}$ ,  $PM_{2.5}$ ,  $NO_2$ ,  $SO_2$ ,  $CO$ ,  $O_3$ ,  $NH_3$ , and  $Pb$ ), it is calculated only if data are available for minimum three pollutants out of which one should necessarily be either  $PM_{2.5}$  or  $PM_{10}$ . There are six AQI categories namely, Good, Satisfactory, Moderate, Poor, Very Poor, and Severe. The AQI values and corresponding ambient concentrations (health breakpoints) as well as associated likely health impacts are as follows:

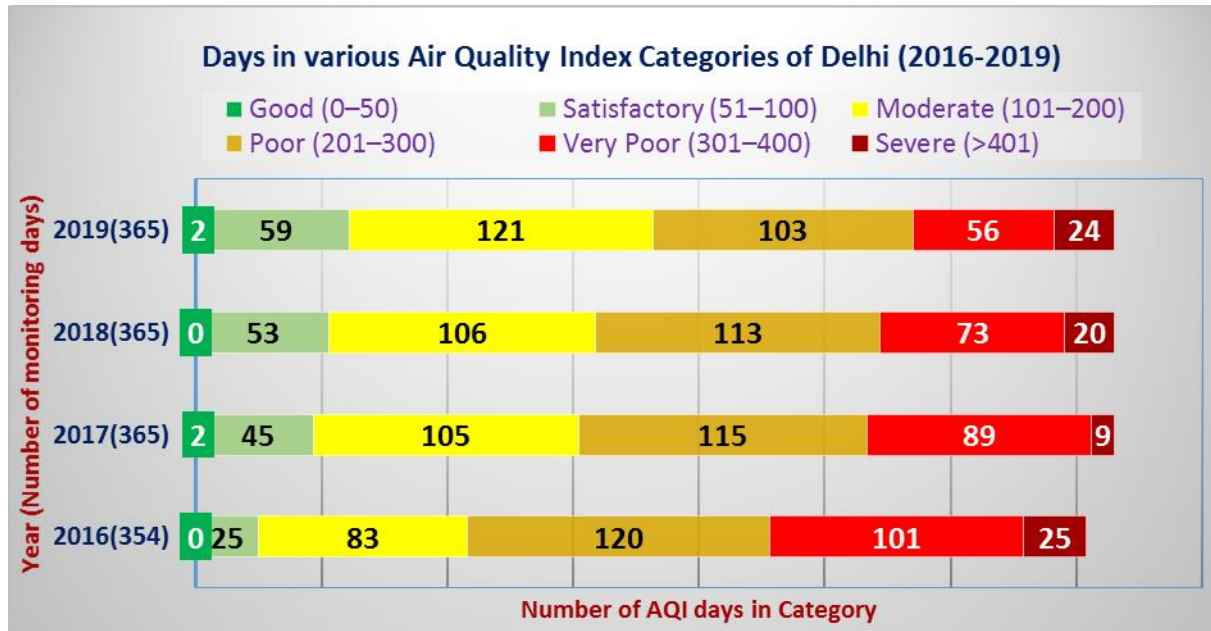
AQI Category, Pollutants and Health Breakpoints								
AQI Category (Range)	$PM_{10}$ 24-hr	$PM_{2.5}$ 24-hr	$NO_2$ 24-hr	$O_3$ 8-hr	$CO$ 8-hr ( $mg/m^3$ )	$SO_2$ 24-hr	$NH_3$ 24-hr	$Pb$ 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5 –1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	430 +	250+	400+	748+*	34+	1600+	1800+	3.5+

\*One hourly monitoring (for mathematical calculations only)

AQI	Associated Health Impacts
Good (0–50)	Minimal Impact
Satisfactory (51–100)	May cause minor breathing discomfort to sensitive people.
Moderately polluted (101–200)	May cause breathing discomfort to people with lung disease such as asthma, and discomfort to people with heart disease, children and older adults.
Poor (201–300)	May cause breathing discomfort to people on prolonged exposure, and discomfort to people with heart disease
Very Poor (301–400)	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases.
Severe (401-500)	May cause respiratory effects even on healthy people and serious health impacts on people with lung/heart diseases. The health impacts may be experienced even during light physical activity

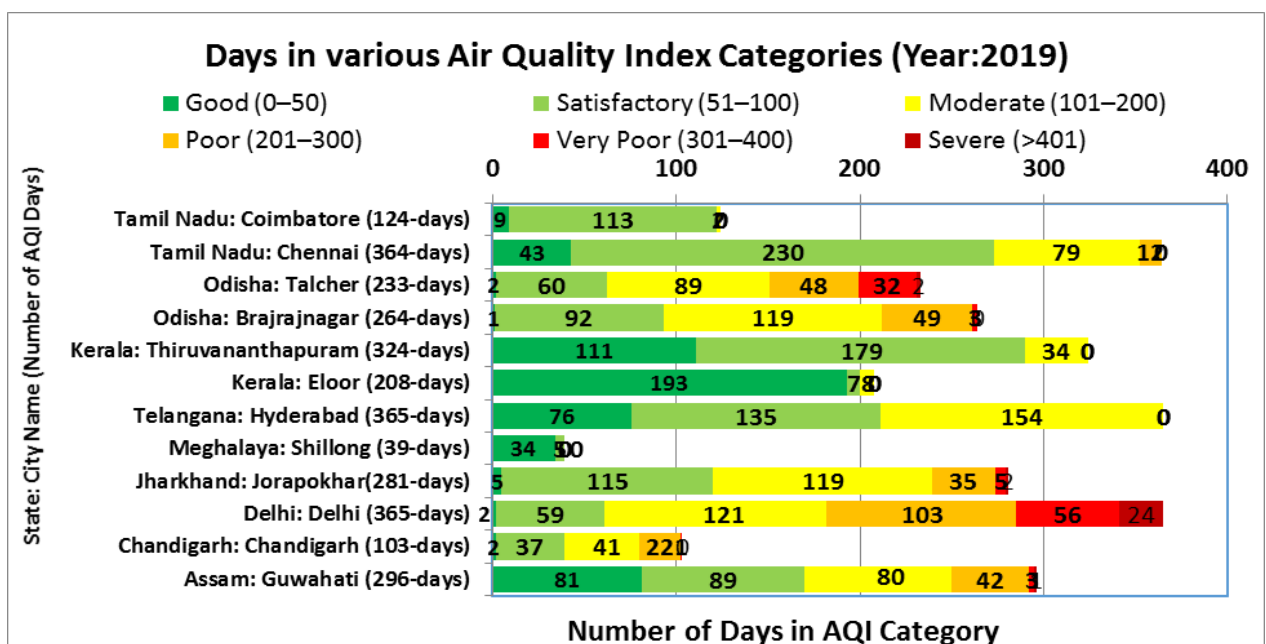
### 8.6 Air Quality Index of Delhi

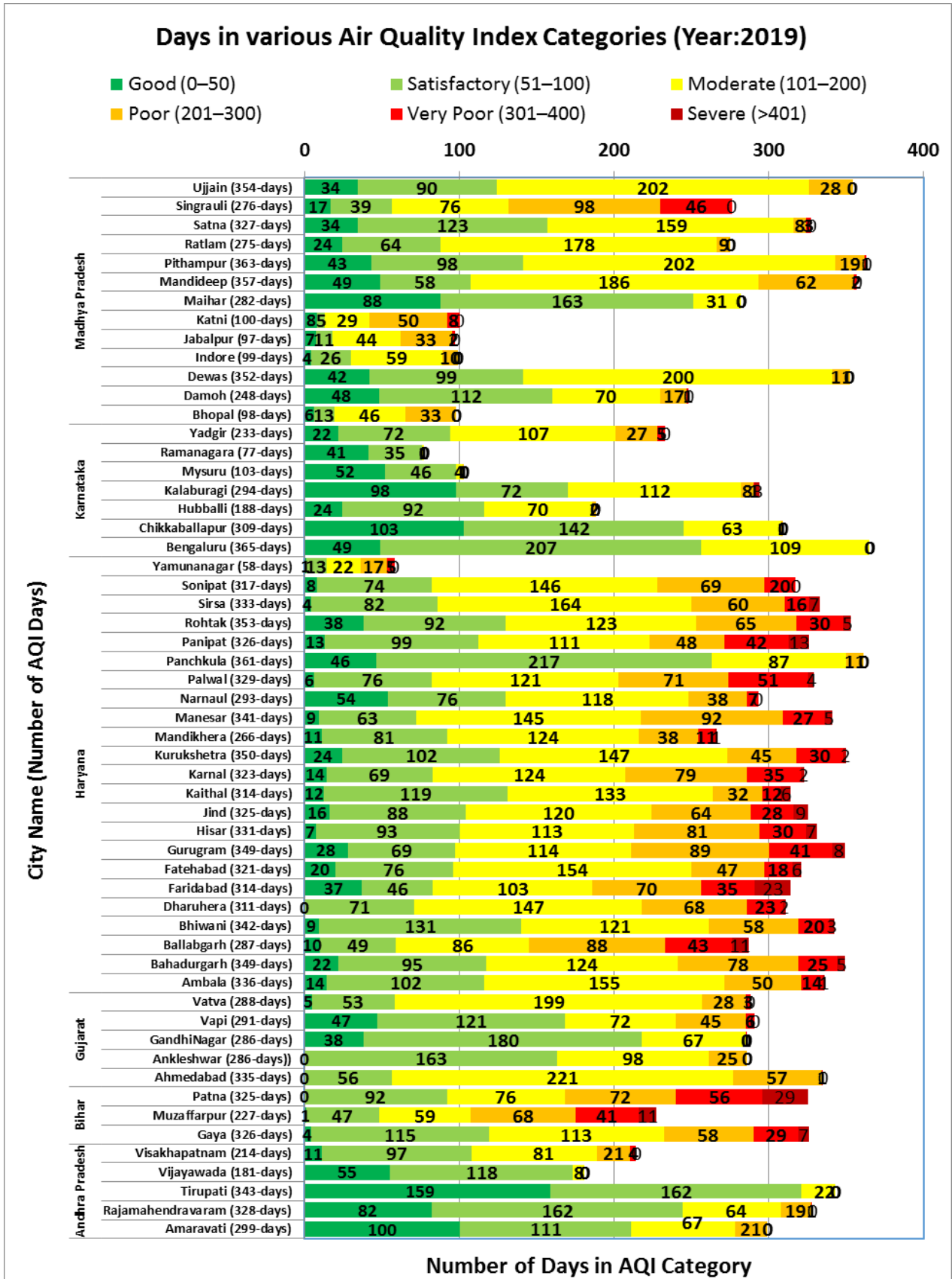
Air Quality Index of Delhi from year 2016 to 2019 is presented in the following figure. Number of days in each category for particular year is depicted in the chart. The chart shows that all Good/Satisfactory/Moderate days have increased significantly and Poor/Very Poor/Severe days in total have gone down as compared to year 2018.

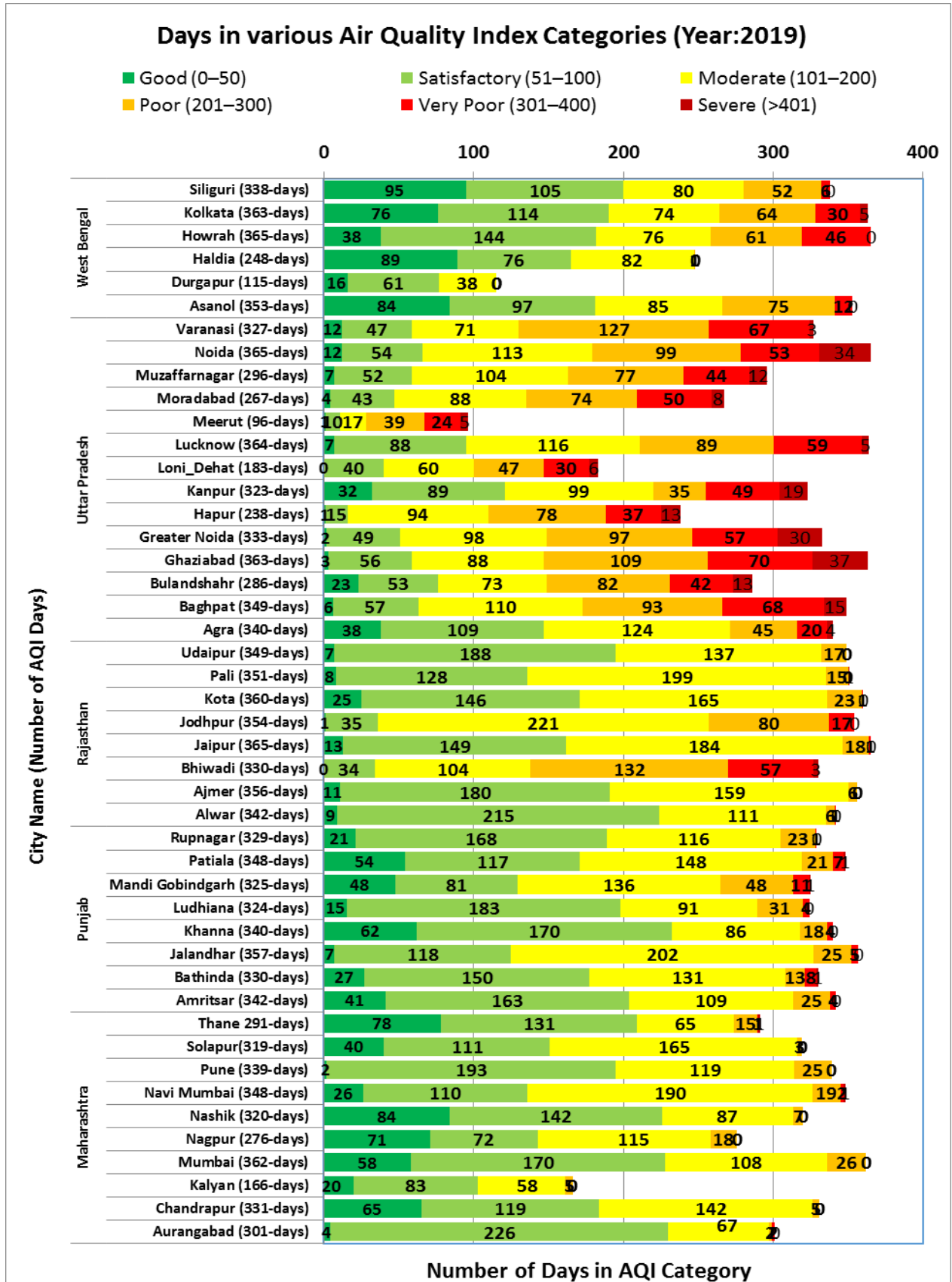


### 8.7 Air Quality Index of different Cities

Air Quality Index of 114 cities of country for year 2019 is presented in the following charts. Number of days in each category for 2019 is depicted of cities under NAQI.







## 9.0 Initiatives for Control of Air Pollution

A multidimensional approach of regulatory, technical, innovative solutions and integrated control strategies have been taken by the government for improving overall air quality in the country. The results have been encouraging with gradual improvement.

- At present air quality monitoring network has been strengthened to 804 manual and 231 real time stations covering 344 and 128 cities respectively. The current manual network will be strengthened by additional 1581 manual and 800 real time monitoring stations.
- A centralized data collection and dissemination system continuously disseminates air quality information including Air Quality Index (AQI) to the public.
- In addition to present ground based air quality monitoring network alternate monitoring methods such as Satellite based monitoring using aerosol optical depth (AOD) is being established to supplement the regulatory monitoring network in collaboration with IIT Delhi under a project titled “Satellite based near real time monitoring of ambient PM<sub>2.5</sub> at national scale for air quality management”.
- Revised National Ambient Air Quality Standards (NAAQS) were notified in 2009 for 12 pollutants in order to protect human and ecological health.
- At present 122 non-attainment cities have been identified based on air quality data form 2014-18 as cities which exceed National Ambient Air Quality Standards. Particulate Matter is a major concern in non-attainment cities.
- City action plans of are being implemented for 110 non-attainment cities while actions plans are being revised for remaining 12 cities. These plans include actions to control emissions from various city specific sources identified as per emission inventory and source apportionment studies.
- In 2019, National Clean Air Programme (NCAP) was launched by Ministry of Environment, Forest and Climate Change with targets to achieve 20 to 30 % reduction in PM<sub>10</sub> and PM<sub>2.5</sub> concentrations by 2024 across the country.
- NCAP includes mainstreaming initiatives under five national missions of National Action Plan on Climate Change (NAPCC) viz. National Solar Mission, National Mission for Enhanced Energy Efficiency, National Mission on Sustainable Habitat, National Mission for a Green India and National Mission for Sustainable Agriculture.
- Under NCAP ₹224.74 crores have been released to 90 cities including 28 million plus population and 07 cities of north east region in 2019-20 for initiating priority action.
- Further, Fifteenth Finance Commission has recommended ₹4400 cores to 42 million plus cities in 2020-21 for air quality improvement including capacity building of local bodies & State Pollution Control Boards (SPCBs).
- Major sectoral interventions having direct link to air quality improvement are:
  - ✓ Development of low carbon strategies across sectors such as phasing out older coal based power plants, compliance of standards, City Gas Distribution (CGD) network, emphasis on improved power reliability in urban areas, etc.
  - ✓ Promotion of policies such as 5-10% use of biomass pellets with coal for power generation in thermal power plants and 10% ethanol blending in transport fuels by 2022.
  - ✓ Around 63 industry-specific emission standards have been developed or revised for different sectors including thermal power plants. Criteria for categorizing industries in red/orange/green/white categories have been

adopted by SPCBs/PCCs for strengthening enforcement mechanism of environmental norms. Oxides of Sulphur and Nitrogen (SO<sub>2</sub> and NO<sub>x</sub>) standards for glass, lime kiln, reheating furnaces, foundry, ceramic industry, and airport noise) have been evolved and six emission standards (thermal power plant, sugar, man-made fibres, fertilizer, cement, and brick kiln) have been revised.

- ✓ In order to strengthen the enforcement regime Online Continuous Effluent/Emission Monitoring System (OCEMS) in 17-categories of highly polluting industries have been installed at 3519 out of 4251 industrial units in the country.
- ✓ Leapfrogging to BS VI fuel. Specific actions initiated under city action plans to establish e-mobility ecosystem, including vehicle manufacturers, charging infrastructure companies, fleet operators, service providers, etc.
- ✓ Extension of Ujawala Yojana to ensure shifting to cleaner fuel.
- Technical interventions are being also explored to control air pollution. Pilot projects were deployed in Delhi for evaluation of localised air pollution mitigation technologies:
  - As air quality management cannot be restricted to administrative boundaries an airshed approach to delineate regions experiencing similar air quality or areas affecting air quality of downwind locations is being initiated to formulate comprehensive air quality management policies.
  - Research and Development towards air quality management is being undertaken in collaboration with national and international experts Regional air quality modelling is being taken up to fortify air quality management plans in Indo Gangetic Plain. Air Quality Early Warning System for Delhi has been implemented for facilitating proactive actions.
  - Crop residue burning is being closely monitored using satellite based Active Fire Events (AFE) during the stubble burning periods. Along with financial incentives provided for in-situ crop residue management in States of Punjab, Haryana, Uttar Pradesh and the National Capital Territory of Delhi, several awareness programmes have been organised. Efforts have led to consistent decrease in stubble burning in the Haryana.
  - Guidelines including siting criteria, pollution prevention and control measures with respect to fuel leakages during fuel filling operations and from underground storage tanks and VOC emissions released during fuel unloading and filling operations has been prepared. Installation of Vapor Recovery System at new petrol pumps selling more than 100 KLPM and located in cities with million plus population, and, petrol pumps selling more than 300 KLPM and located in cities with population between 01 lakhs to 01 million recommended.
  - A super city network programme is being formulated to capture air quality information at 10 sites using state of the art ambient air quality measurement techniques.
  - A certification scheme has been established for certifying ambient air quality monitoring instruments in India.
  - SAMEER App and Social Media platform (Facebook & Twitter) have been set up by CPCB, which have been very effective in monitoring performance of implementing agencies to curb Air Pollution.

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**NAAQS- 2019**

**ANNEXURES**



## Air Pollutants, their sources and effects

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
<p><b>Sulphur dioxide (SO<sub>2</sub>)</b> SO<sub>2</sub> is the chemical compound produced by volcanoes and in various industrial processes and are also a precursor to particulates in the atmosphere.</p>	<ul style="list-style-type: none"> <li>• Volcanoes (67%)</li> </ul>	<ul style="list-style-type: none"> <li>• combustion of fossil fuel (coal, heavy fuel oil in thermal power plants, office, factories)</li> <li>• paper Industry</li> <li>• extraxtion &amp; distribution of fossil fuels</li> <li>• smelting of metals (sulfide ores to produce copper, lead and zinc)</li> <li>• Petroleum refining</li> <li>• combustion process in diesel, petrol, natural gas driven vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• respiratory illness</li> <li>• visibility impairment</li> <li>• aggravate existing heart and lung diseases</li> </ul>	<ul style="list-style-type: none"> <li>• acid rain</li> <li>• aesthetic damage</li> </ul>
<p><b>Oxides of Nitrogen (NO<sub>x</sub>)</b> Oxides of nitrogen are a generic term for a group of highly reactive gases that contain nitrogen and oxygen in varying amounts. NO<sub>x</sub> are emitted as nitrogen oxide (NO) which is rapidly oxidized to more toxic nitrogen dioxide (NO<sub>2</sub>) Nitrogen dioxide (NO<sub>2</sub>) is a reddish-brown toxic gas with a characteristic sharp, biting odor and is a prominent air pollutant.</p>	<ul style="list-style-type: none"> <li>• Lightning</li> <li>• Forest fires</li> <li>• Bacterial activity of soil</li> </ul>	<ul style="list-style-type: none"> <li>• High temperature combustion (internal combustion engines, fossil fuel-fired power stations, industrial)</li> <li>• Burning of Bio-mass and Fossil Fuels</li> </ul>	<ul style="list-style-type: none"> <li>• irritates the nose and throat</li> <li>• increase susceptibility to respiratory infections</li> </ul>	<ul style="list-style-type: none"> <li>• Precursor of ozone formed in the troposphere</li> <li>• Form atmospheric fine particulate matter burden as a result of oxidation to form nitrate aerosol</li> </ul>
<p><b>Respirable Suspended Particulate Matter (PM<sub>10</sub>, size ≤ 10µm, coarse fraction PM<sub>10</sub> - PM<sub>2.5</sub>). called thoracic fraction)</b> Particulate matter (PM) is a complex mixture of suspended solid and liquid particle in semi equilibrium with surrounding</p>	<ul style="list-style-type: none"> <li>• Coarse particles are produced by the mechanical break-up of larger solid particles.</li> <li>• Wind blown dust such as road</li> </ul>	<ul style="list-style-type: none"> <li>• Road traffic emissions particularly from diesel vehicles</li> <li>• Industrial combustion plants some public power generation</li> <li>• Commercial and residential combustion</li> <li>• Non-combustion processes</li> </ul>	<ul style="list-style-type: none"> <li>• cardio-pulmonary problems</li> <li>• asthma, bronchitis, and pneumonia in older people</li> </ul>	<p>Visibility reduction</p>

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
gases. The major constituents of RSPM are organic and elemental carbon, metals/elements like silicon, magnesium, iron, ions like sulphates, nitrates, ammonium etc. PM10 can settle in the bronchi and lungs and cause health problems	dust, fly ash, soot, agricultural processes • physical processes of crushing, grinding and abrasion of surfaces. • photochemically produced particles, such as those found in urban haze • Pollen grains, mould spores, and plant and insect parts • Non-combustible materials released when burning fossil fuels.	(e.g. quarrying) • agricultural activities		

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
<p><b>Particulate Matter 2.5</b> (PM<sub>2.5</sub>, size ≤ 2.5µm, <b>fine</b> fraction size up to 2.5 µm, respirable fraction) Airborne particles smaller than 2.5 µm called fine particles. Composed mainly of carbonaceous materials (organic and elemental), inorganic compounds (sulfate, nitrate, and ammonium), and trace metal compounds (iron, aluminium, nickel, copper, zinc, and lead). pose the greatest problems, PM<sub>2.5</sub>, tend to penetrate into the gas exchange regions of the lung, and very small particles (&lt; 100 nanometers) may pass through the lungs to affect other organs. The smallest particles, however, less than 100 nm (nanoparticles) can get into the bloodstream and affect the cardiovascular system</p>	<ul style="list-style-type: none"> <li>• Fine particles are largely formed from gases.</li> <li>• Ultrafine particles are formed by nucleation, which is the initial stage in which gas becomes a particle. These particles can grow up to a size of 1µm either through condensation, when additional gas condensates or coagulation</li> </ul>	<ul style="list-style-type: none"> <li>• Vehicular emission</li> <li>• Industrial combustion plants some public power generation</li> <li>• Commercial and residential combustion</li> </ul>	<ul style="list-style-type: none"> <li>• oxidative stress</li> <li>• respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing</li> <li>• decreased lung function</li> <li>• aggravated asthma</li> <li>• chronic bronchitis</li> <li>• irregular heartbeat cardio-pulmonary disorders</li> <li>• premature death in people with heart or lung disease</li> </ul>	<ul style="list-style-type: none"> <li>• aesthetic damage</li> <li>• visibility reduction</li> </ul>
<p><b>Ozone(O<sub>3</sub>)</b> Ozone is a pale blue gas, soluble in water and non-polar solvents with specific sharp odor somewhat resembling chlorine bleach. Ozone is a secondary pollutants formed in the atmosphere by reaction between oxides of nitrogen and volatile organic compounds (VOCs) in the presence of sunlight. Peak O<sub>3</sub></p>	<ul style="list-style-type: none"> <li>• ozone is present in the atmosphere in the stratosphere, in a region also known as the ozone layer between about 10 km and 50 km above the surface</li> </ul>	<ul style="list-style-type: none"> <li>• formed by the reaction of sunlight on air containing hydrocarbons and nitrogen oxides emitted by car engines, industrial operations, chemical solvents to form ozone</li> <li>• electronic equipment such as photocopiers</li> </ul>	<ul style="list-style-type: none"> <li>• lung function deficits</li> <li>• respiratory illness</li> <li>• premature death, asthma, bronchitis, heart attack, and other cardiopulmonary problems.</li> <li>• ground-level ozone and pollution which interferes with photosynthesis and stunts overall growth of some plant species</li> </ul>	<ul style="list-style-type: none"> <li>• Ozone cracking in car tires, gaskets, O-rings is caused by attack of ozone on any polymer possessing olefinic or double bonds within its chain structure,</li> <li>• ozone present in the upper troposphere acts as a greenhouse gas, absorbing some</li> </ul>

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
levels occur typically during the warmer times of the year.				of the infrared energy emitted by the earth.
<p><b>Lead(Pb)</b> Lead is a bright silvery soft, dense, ductile, highly malleable, bluish-white metal that has poor electrical conductivity heavy metal and is highly resistant to corrosion.</p>	<ul style="list-style-type: none"> <li>• food (lead is absorbed by plants)</li> </ul>	<ul style="list-style-type: none"> <li>• Waste incineration</li> <li>• Metal processing</li> <li>• Paint Industry</li> <li>• lead solder in food cans, breast milk, drinking water, Cosmetics, ceramic pottery, burning of firewood or kerosene, indigenous remedies, tobacco and tobacco products, contaminated drinking water, toys, industrial effluents, lead acid batteries, ammunition, paints and varnishes, water pipes</li> <li>• automobile exhaust,</li> </ul>	<ul style="list-style-type: none"> <li>• Pb is rapidly absorbed into the bloodstream and is believed to have adverse effects on the central nervous system, the cardiovascular system, kidneys, and the immune system</li> <li>• causes blood disorders like anemia increase in blood pressure.</li> <li>• potent neurotoxin that accumulates both in soft tissues and the bones.</li> <li>• causes nephropathy, and colic-like abdominal pains.</li> <li>• weakness in fingers, wrists, or ankles.</li> <li>• Miscarriage and reduction of fertility in males, delayed puberty in girls</li> <li>• permanently reduce the cognitive capacity of children</li> </ul>	

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
<p><b>Carbon monoxide (CO)</b>  . also called <b>carbonous oxide</b>, is a colorless, odorless and tasteless gas which is slightly lighter than air. It is highly toxic to humans and animals in higher quantities. Mainly formed by incomplete combustion of carbon containing fuels.</p>	<ul style="list-style-type: none"> <li>• produced during normal animal metabolism (by the action of heme oxygenase 1 and 2 on the heme from hemoglobin breakdown and produces carboxyhemoglobin in normal persons) in low quantities and has some normal biological functions (signalling molecule)</li> <li>• volcanic activity</li> <li>• forest and bushfires</li> </ul>	<ul style="list-style-type: none"> <li>• Exhaust of internal combustion engines, especially of vehicles with petrol engines</li> <li>• Burning of carbon fuels</li> <li>• organic combustion in waste incineration</li> <li>• power station processes</li> <li>• Iron smelting</li> <li>• burning of crop residues</li> </ul>	<ul style="list-style-type: none"> <li>• CO enters the bloodstream through lungs and combines with hemoglobin forms carboxyhemoglobin. This condition is known as anoxemia, which inhibits blood's oxygen carrying capacity to organs and tissues.</li> <li>• Persons with heart disease are sensitive to CO poisoning and may experience chest pain if they breathe the gas while exercising.</li> <li>• adverse effects on the fetus of a pregnant woman</li> <li>• Infants, elderly persons, and individuals with respiratory diseases are also particularly sensitive.</li> <li>• anti-inflammatories, vasodilators and encouragers of neovascular growth</li> </ul>	
<p><b>Ammonia (NH<sub>3</sub>)</b>  A compound of nitrogen and hydrogen, a colourless gas with a characteristic pungent odour. Contributes significantly to the nutritional needs of terrestrial organisms by serving as a</p>	<ul style="list-style-type: none"> <li>• putrefaction of nitrogenous animal and vegetable matter</li> <li>• Ammonia and ammonium</li> </ul>	<ul style="list-style-type: none"> <li>• Farms</li> <li>• Fertilizers Industry</li> <li>• Industrial sites that store ammonia or use it as a refrigerant can release high levels if the chemical leaks or is spilled</li> </ul>	<ul style="list-style-type: none"> <li>• irritating to skin, eyes, throat, and lungs and cause coughing</li> <li>• burns</li> <li>• Lung damage and death may occur after exposure to very high</li> </ul>	Odour

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
precursor to food and fertilizers, and either directly or indirectly, is also a building block for the synthesis of many pharmaceuticals.	<p>salts are also found in small quantities in rainwater, fertile soil and in seawater</p> <ul style="list-style-type: none"> <li>• during volcanic eruption</li> <li>• The kidneys secrete <math>\text{NH}_3</math> to neutralize excess acid</li> </ul>		concentrations of ammonia	
<p><b>Benzene (<math>\text{C}_6\text{H}_6</math>)</b> Benzene is a colorless, sweet smelling liquid. Benzene is generated whenever carbon-rich materials undergo incomplete combustion. Benzene is generated whenever carbon-rich materials undergo incomplete combustion.</p>	<ul style="list-style-type: none"> <li>• volcanoes</li> <li>• forest fires</li> </ul>	<ul style="list-style-type: none"> <li>• Combustion of fuel (automotive fuel, wood and stationary fossil fuel, other aromatics)</li> <li>• evaporation (fuel storage containers, during refueling)</li> <li>• Industrial emission</li> <li>• Coke oven</li> <li>• Perchloroethylene is emitted from some dry cleaning facilities</li> <li>• tobacco smoke, wood smoke</li> <li>• glues, paints, furniture wax, and detergents</li> </ul>	<ul style="list-style-type: none"> <li>• Hematotoxic, neurotoxic, leukemogenic, carcinogenic effects</li> <li>• Chronic exposure to benzene may cause chromosomal damage, immune suppression, aplastic anemia, myelodysplastic syndrome, leukemia, non-Hodgkin's lymphoma, and cancer of the lung and nasopharynx</li> <li>• Effect the Reproductive system, developing fetus and fertility in men, low birth weights, delayed bone formation, and bone marrow damage</li> </ul>	
<p><b>Polyaromatic hydrocarbons (BaP) (particulate phase only)</b> is a five-ring polycyclic aromatic</p>	<ul style="list-style-type: none"> <li>• coal tar (after a forest fire),</li> <li>• eruption of</li> </ul>	<ul style="list-style-type: none"> <li>• Incomplete combustion of fuels (processing of coal and crude oil)</li> </ul>	<ul style="list-style-type: none"> <li>• Mutagenic and highly carcinogenic (skin, lung, and bladder cancer in</li> </ul>	

Pollutant	Possible Sources		Effects	
	Natural	Anthropogenic	Human / flora / fauna	Environment & Property
hydrocarbon whose metabolites are mutagenic and highly carcinogenic	volcanoes	<ul style="list-style-type: none"> <li>• Combustion of natural gas</li> <li>• Road transport</li> <li>• Industrial plant</li> <li>• Tobacco smoke</li> <li>• coal tar</li> <li>• automobile exhaust fumes (especially diesel engines), in all smoke resulting from the combustion of organic material</li> <li>• charbroiled food, burnt toast, cooked meat products, in burnt foods such as coffee</li> </ul>	humans and in animals) <ul style="list-style-type: none"> <li>• skin rash or eye irritation</li> <li>• Bronchitis</li> </ul>	
<b>Arsenic (As)</b> is a solid layered, a ruffled analogue of graphite, metallic gray in color and is a semiconductor. It is a potent poison IARC) recognizes arsenic and group 1 carcinogen (IARC)	<ul style="list-style-type: none"> <li>• volcanic ash, weathering of the arsenic-containing mineral and ores as well as groundwater.</li> <li>• food, water, soil and air</li> </ul>	<ul style="list-style-type: none"> <li>• Smelting of metals,</li> <li>• Combustion of fuels (especially of low-grade brown coal)</li> <li>• Use of pesticides.</li> <li>• wood preservation, glass production, nonferrous metal alloys, electronic semiconductor manufacturing.</li> <li>• coke oven emissions associated with the smelter industry</li> </ul>	<ul style="list-style-type: none"> <li>• epigenetic changes</li> <li>• multi-system organ failure</li> <li>• As poisoning</li> </ul>	
<b>Nickil (Ni)</b> a silvery-white lustrous corrosion-resistant metal with a slight golden tinge	<ul style="list-style-type: none"> <li>• <u>urease</u> (an enzyme which assists in the hydrolysis of urea) contains nickel</li> </ul>	<ul style="list-style-type: none"> <li>• Combustion of fossil fuels</li> <li>• Nickel plating</li> <li>• Metallurgical processes</li> </ul>	<ul style="list-style-type: none"> <li>• Nickel sulfide fume and dust is believed to be carcinogenic</li> <li>• allergy, dermatitis. Sensitivity to nickel may also be present in patients with pompholyx.</li> </ul>	<ul style="list-style-type: none"> <li>• explosive in air</li> </ul>

**Revised National Ambient Air Quality Standards (NAAQS)**[NAAQS Notification dated 18<sup>th</sup> November, 2009]

S. No.	Pollutants	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
			Industrial, Residential, Rural and other Areas	Ecologically Sensitive Area (notified by Central Government)	
1	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual*	50	20	1. Improved West and Gaeke 2. Ultraviolet Fluorescence
		24 Hours**	80	80	
2	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual*	40	30	1. Modified Jacob & Hochheiser 2. Chemiluminescence
		24 Hours**	80	80	
3	Particulate Matter (Size <10µm) or PM <sub>10</sub> µg/m <sup>3</sup>	Annual*	60	60	1. Gravimetric 2. TEOM 3. Beta attenuation
		24 Hours**	100	100	
4	Particulate Matter (Size <2.5 µm) or PM <sub>2.5</sub> µg/m <sup>3</sup>	Annual*	40	40	1. Gravimetric 2. TEOM 3. Beta attenuation
		24 Hours **	60	60	
5	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	8 hours**	100	100	1. UV photometric 2. Chemiluminescence 3. Chemical Method
		1 hours **	180	180	
6	Lead (Pb), µg/m <sup>3</sup>	Annual *	0.50	0.50	1. AAS/ICP Method after sampling using EPM 2000 or equivalent filter paper 2. ED-XRF using Teflon filter
		24 Hour**	1.0	1.0	
7	Carbon Monoxide (CO), mg/m <sup>3</sup>	8 Hours **	02	02	Non dispersive Infra Red (NDIR) Spectroscopy
		1 Hour**	04	04	
8	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	Annual*	100	100	1. Chemiluminescence 2. Indophenol blue method
		24 Hour**	400	400	
9	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	Annual *	05	05	1. Gas chromatography based continuous analyzer 2. Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP)-particulate phase only, ng/m <sup>3</sup>	Annual*	01	01	Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m <sup>3</sup>	Annual*	06	06	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m <sup>3</sup>	Annual*	20	20	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

\* Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform interval. \*\* 24 hourly 08 hourly or 01 hourly monitored values, as applicable shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

NOTE: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.



**Levels of Sulphur Dioxide (SO<sub>2</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Andhra Pradesh	Anantapur	Kamala Nagar	4	15	6	105	0	2
		APIIC Zonl office industrial estate	4	10	5	106	0	1
		Cancer Unit. G.G.Hsharada Nagar, JNTU Road	4	9	5	108	0	1
		D.No.6/5/545, Ram Nagar Colony	4	12	5	108	0	1
	Chittoor	GNC Toll Gate Tirumala	2	19	5	107	0	3
		Near Nutrine Confectionery, Palamaner Road	4	9	5	107	0	0
		O/O Mines and Geology, Old Collector Office, Greampet	4	6	5	104	0	0
		Sankar Foundary, Industrial Estate, Adjacent of DIC Office	4	7	5	106	0	0
	Eluru	Rangachari street, Shanthapeta.	4	6	5	92	0	0
		Ashram Diagnostic Centre	4	6	5	108	0	0
		District Head quarters hospital	4	6	5	108	0	0
		M/s Laxmi Propylene Ltd., Plot.No. 25, Industrial Park, Satrampadu	4	6	5	108	0	0
	Guntur	Somalingeswara nilayam D.N.7B-18-5, Thooru Veedhi, Eastern street, Paidichintaadu	4	6	5	108	0	0
		Near Hindu College, Market Road	4	5	5	100	0	0
		A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road	4	6	5	101	0	0
		Distirct Industries Center office Buiding Autonagar	4	5	5	100	0	0
	Kadapa	Government General hospital	4	6	5	101	0	0
		Near ICL Industries, Yerragunta, YSR	4	19	6	108	0	2
		Devi Diabetes & Hormone Centre, 7 Roads	4	18	5	106	0	2
		DIC Office,Kadapa	4	19	5	108	0	2
	Kakinada	Rajiv Gandhi Institute of Medical Sciences	4	7	5	108	0	0
		Municipal Primary School	4	14	5	107	0	1
		Office Building Ramanayyapeta	4	13	8	102	0	1
		Gram Panchayathi building, Suryaraopeta	4	13	8	105	0	2
	Kurnool	MEE Seva / MEPMA Office, Sailipeta	4	13	9	105	0	2
		Petro Chemical Engineering Block, JNTU , Pithapuram Road	4	12	8	106	0	2
		Mourya Inn, Krishna Nagar	4	11	5	108	0	1
		APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center	4	13	5	107	0	2
	Nellore	Rajvihar Circle	4	14	6	108	0	2
		Pump House, Venkataramana Colony	4	12	5	108	0	1
		Venkatareddy Nagar, Vedayapalem	4	6	5	107	0	0
		D. No.15-471, James Garden, Venkata Ramapuram, Nellore, SPSR Nellore District	4	6	5	107	0	0
	Ongole	Chandramouli nagar	4	6	5	107	0	0
		Dr.P.V. Rama chandra Reddy Hospital, Brindavnam	4	5	5	107	0	0
		Near Court Center	4	6	5	107	0	0
		APIIC, Administrative Office, Growth Centre, Gundlapalli	4	5	5	104	0	0
	Rajahmundry/ Rajamahendravaram	Ongole Municipal Corporation	4	6	5	106	0	0
		Prakasam Milk Product Compay	4	6	5	105	0	0
		Staff Clud Building, A.P. Paper Mill	5	14	9	98	0	2
		GAIL Administrative Office, A.V. Apparao Road	5	15	8	104	0	2
	Srikakulam	MCH Block ,District Hospital, Near Central Prison, Lalacheruvu Road	4	12	8	105	0	2
		APEPDCL, Circle Office Godavari Gattu	4	16	8	97	0	2
SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram		6	12	8	96	0	1	
		District cooperative office at SKLM Old	5	11	8	106	0	1

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation	
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS		
		Bridge							
		APIIC, Kushalapuram	5	15	8	95	0	2	
		Municipal corporation Office, Old Bustand	5	12	8	107	0	1	
	Tirupati	Regional Science Centre, Chittoor Bypass	4	6	5	106	0	0	
		Municipal Office, Tilak Road	4	8	5	107	0	0	
		APPCB-Regional Office, 1st Floor, APSFC Building, NT road	4	6	5	100	0	0	
		Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand	4	8	5	108	0	0	
		NTR Veterinary college of sciences, Gannavaram	4	11	5	107	0	1	
	Vijaywada	VR Siddhartha Engineering college , Kanuru	4	6	5	107	0	0	
		APIIC, IALA, IDA, Kondaplli	4	6	5	106	0	0	
		Benz Circle	4	7	5	107	0	0	
		Autonagar	4	7	5	108	0	0	
		Police Control Room	5	6	5	89	0	0	
		A.P. Pollution Control Board, plot no. 41, Sri Kanakadurga Officers colony, Gurunank Road	4	7	5	108	0	0	
		Gram Panchayat Office, Yenamalakuduru	4	6	5	108	0	0	
		Indian Medical Association Hall,Eluru Road, Governorpet	4	6	5	107	0	0	
	Vishakhapatnam	Industrial Estate, Marrisalem	5	13	9	108	0	2	
		Panchayat Raj office, Mindi	5	11	8	105	0	1	
		Police Barracks	6	14	9	105	0	2	
		INS-Virabahu, Naval Area	5	10	7	93	0	1	
		Seethammadhara	5	13	8	99	0	1	
		Ganapuram Area	6	13	9	107	0	2	
		Pedagantyada (V), Gajuwada (M)	5	11	8	104	0	1	
		CWMP, RAMKY, Parawada	5	14	9	106	0	2	
	MVP Raitu Bajar	5	15	7	102	0	1		
	Vizianagaram	Industrial Growth Centre, APIIC Building at IDA Bobbili	5	12	8	101	0	1	
		APIIC Building, VT Agraharam,Industrial area	5	14	8	105	0	2	
		Municipal Kaspas High School	6	12	8	102	0	1	
		Municipal Office	5	13	8	93	0	2	
	Arunachal Pradesh	Itnagar	PCCF's Office Compound	2	10	3	43	0	2
		Naharlagun	APSPCB Office compound	2	6	3	34	0	1
	Assam	Bongaigaon	Oil India Ltd. PS-6, Chirang	3	12	4	70	0	1
			Barpara Office Building	3	11	4	86	0	1
Daranga		BATAD, Sandoop Jhankar town of Bhutan, Baska	4	11	7	94	0	1	
Dibrugarh		Dibrugarh Office Building	4	9	5	89	0	1	
Golaghat		Golaghat Office Building	4	8	6	80	0	1	
Guwahati		Head Office, Bamunimaidam	7	24	12	134	0	3	
		Boragaon, IASST, Kamrup	5	12	7	114	0	1	
		Guwahati University, Kamrup	5	11	7	117	0	1	
		ITI Building, Gopinath Nagar	5	12	7	117	0	1	
		Khanapara, Central Dairy, Kamrup	5	15	7	129	0	1	
Near Pragjyotish College, Santipur		5	11	7	133	0	1		
Margherita		Coal India Office	4	9	6	91	0	1	
Nagaon		Water Resources Div., Christian Patty, Nagaon College	5	10	7	97	0	1	
Nalbari		PWD Rural Div Office Complex, near Gordon Boy's GS School	4	10	7	77	0	1	
North Lakhimpur		Bazar Patti, North Lakhimpur Town	5	10	7	86	0	1	
Silchar		Govt. Boys HS School, Janiganj	5	8	6	74	0	1	
		RLO, Ithkola Market, Ghaniwala Road	5	9	7	75	0	1	
Sivasagar		Sibasagar Office Building	4	8	6	102	0	1	
		Usha Lodge, near ONGCL Colony	5	9	7	103	0	1	
Tezpur		Tezpur Office Building	6	10	7	86	0	1	
Tinsukia	Digboi Carbon factory Campus, Borguri	4	8	6	94	0	1		
	Shreepuria, Borguri	4	8	6	98	0	1		
	Shivdham	4	9	6	98	0	1		

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Bihar	Begusarai	Begusarai	9	19	12	104	0	2
	Darbhanga	Smt Baby Kumari, Ashok Hotel, Kadirabad Chowk	12	22	15	105	0	2
	Gaya	Godam Road, Raja Market	6	15	11	104	0	2
	Muzaffarpur	BSPCB Regional Office, Bela Industrial Area, Bela	10	22	14	104	0	2
	Patna	Beltron Bhawan, Shastri Nagar	2	7	2	59	0	1
			2	14	4	75	0	3
	Rajgir	Sujkund, Near Samuraji hotel	5	15	10	104	0	2
Sasaram	Takia, Ward no.2, Rhotas	6	13	10	105	0	2	
Chandigarh	Chandigarh	Modern Foods, Industrial Area	2	2	2	149	0	0
		Sector-17 C	2	2	2	142	0	0
		Punjab Engineering College, Sector- 12	2	2	2	163	0	0
		Sector-39, IMTECH	2	2	2	155	0	0
		Kaimbala Village	2	2	2	140	0	0
Chattisgarh	Bilaspur	Regional Office, CECB Vyapar Vihar	4	7	6	91	0	1
	Durg-Bhillainagar	Visak Hostel, Sector-4	5	8	7	77	0	1
		R.O., 5/32 Banglow Office Building	3	8	4	83	0	1
		M.P. Laghu Udyog Nigam	7	11	9	84	0	1
		CSIDC Industrial Growth Center, Borai, Durg	7	10	8	81	0	1
	Korba	HIG 21,22.Near Ghantaghar, MP Extension	6	11	8	97	0	1
			5	10	7	103	0	1
			6	13	9	100	0	1
Raipur	New HIG-9, Hirapur/Housing Board Complex Kabir Nagar	11	19	15	67	0	2	
		13	25	17	40	0	3	
Dadra & Nagar Haveli and Daman & Diu	Baldevi (Dadra & Nagar Haveli)	Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli	8	25	16	97	0	6
	Silvassa	Khadoli Industrial Area, Khadoli	10	41	26	99	0	12
			11	41	25	100	0	12
	Daman	Prima Plastic, Kadaiya Industrial Area, Kadaiya	9	39	23	97	0	11
			8	37	21	99	0	10
	Patlara (Daman)	Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman	8	25	15	100	0	6
Delhi	Delhi	N.Y. School, Sarojini Nagar, Delhi	2	9	3	88	0	1
		Janakpuri	4	16	5	120	0	2
		Naraina Industrial Area, Delhi	2	23	4	88	0	3
		Nizamuddin	4	17	5	116	0	2
		Pritampura	4	18	5	127	0	3
		Shahadra	4	18	6	113	0	3
		Shahzada Bagh	4	21	5	109	0	2
		Siri Fort	4	16	5	113	0	2
Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi	2	10	4	88	0	2		
Goa	Amona	Amona, Bicholim	9	12	11	105	0	1
	Assanora	Assanora Junction, Bardez	9	12	11	104	0	1
	Bicholim	Bicholim	9	12	11	103	0	1
	Codli	Codli Tisk, Ponda, Sanguem	9	12	10	103	0	1
	Cuncolim	Cuncolim	9	13	11	102	0	1
	Honda	Honda Junction, Sattari	9	12	11	104	0	1
	Kundaim	Kundaim Industrial Estate	9	13	11	104	0	1
	Mapusa	Mapusa town	2	7	3	90	0	1
	Margao	Margao Town	9	13	11	102	0	1
	Mormugao	Fire Brigade Station, Port Trust	2	8	3	68	0	2
	Panaji	Old GSPCB premises, Patto	2	17	3	77	0	2
	Ponda	Ponda Town	9	12	11	105	0	1
	Sanguem	Near Railway Station at Kalem, Sanguem	9	12	11	103	0	1
	Tilamol	Quepem, Tilamol	10	13	11	102	0	1
	Tuem	Tuem Industrial Estate	9	13	11	104	0	1
	Usgao	Usgao Plae, Junction, Ponda	9	12	11	96	0	1
Vasco	Fuse Call Office, Mormugao	2	11	3	88	0	2	
Gujarat	Ahmedabad	Naroda, G.I.D.C., Ahmadabad	14	33	19	87	0	4

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Cadilla Bridge Narol	12	37	20	86	0	5
		Bhagavathi Estate, Keval Kanta Road, Rakhiyal	12	35	20	88	0	5
		Reliable Products, 61/62 Ilaben estate, Pirana Dump Site, Narol (previous Dyno Wash)	11	39	22	87	0	6
		L.D. Engg. College	14	33	20	88	0	4
		Shardaben Hospital, Saraspur	13	34	20	86	0	5
		R.C. Technical High School, Mirzapur	13	35	20	86	0	5
		AZL Behrampur, Ahmadabad	13	38	20	87	0	5
	Anklesvar	Sola L.T. Chanakyapuri Pumping Station	11	35	21	88	0	6
		Rallis India Ltd.	13	36	20	88	0	5
	Jamnagar	Durga Traders, Bhavanafarm Society	12	35	19	88	0	5
		Fisheries Office	11	39	19	87	0	6
	Rajkot	Nr. Sardhara Industrial Corporation	13	36	21	87	0	5
		GPCB Regional Office	12	40	19	87	0	6
	Surat	S.V.R. Engg. College	12	45	23	87	0	6
		B.R.C. High School, Udhna	12	46	26	83	0	8
		Near Air India Office	9	41	22	88	0	8
	Vadodara	GPCB Office, Geri Vasahat	11	37	19	87	0	6
		Sterling Gelatin Guest House, Vill-Karakhadhi Padia	11	43	20	87	0	7
		Dandia Bazaar	12	41	20	88	0	6
		CETP Nandesari	13	46	22	85	0	7
	Vapi	Lubrizol	11	45	21	87	0	8
		GEB, Ilrd Phase, GIDC	9	38	21	86	0	6
		Vapi Nagar Palika, Vapi	9	35	18	87	0	7
Himachal Pradesh	Baddi	Industry Department Office Building	2	2	2	122	0	0
		AHC barotiwala	2	2	2	111	0	0
		Housing Board	2	2	2	52	0	0
	Damtal	Regional Office	2	2	2	120	0	0
		Old Road	2	2	2	114	0	0
	Dharamshala	Kotwali Bazar Dharamshala	2	2	2	85	0	0
		Daari, Dharamshala	2	2	2	122	0	0
	Gulaba	Behind green tax barrier	2	3	2	19	0	0
	Kala Amb	Kala Amb Industrial Area	2	8	3	166	0	1
		Kala Amb Town/Trilokpur	2	8	3	161	0	1
	Manali	Nehru Park, Manali, Kullu	2	4	2	88	0	1
		HPSPCB, Hadimba Road, Manali, Kullu	2	2	2	72	0	0
	Marhi	Behind Police check post	2	2		12	0	0
	Nalagarh	Municipal Council	2	2	2	113	0	0
	Paonta Sahib	Paonta Sahib	2	8	3	165	0	1
		Gondhpur Industrial Area	2	5	3	120	0	1
	Parwanoo	Regional Office, Sector- 4	2	4	2	133	0	0
		Asst. Commissioner Building Sector I	2	4	2	121	0	0
	Shimla	Bus Stand, Winterfield	2	7	2	203	0	1
	Sunder Nagar	HPSPCB, BBMB Colony, Mandi	2	2	2	143	0	0
Municipal Council, NH-21, Mandi		2	2	2	107	0	0	
Una	Regional Office, Una	2	3		17	0	0	
Vashisht	Behind pollution check barrier, Bahang / Station No.-II1, Bahang	2	4	2	44	0	0	
Jammu & Kashmir	Jammu	Regional Office, Jammu	2	5	3	66	0	1
		M.A. Stadium, Jewel Chowk	2	5	3	62	0	1
		Bari Brahamana Industrial Area	2	4	3	73	0	1
Jharkhand	Barajamda	Barajamda U.M. Office	13	35	17	91	0	3
	Dhanbad	R.O. Dhanbad	11	16	14	102	0	1
		EMTI, Bastacola	11	18	13	75	0	1
		CGM Office, Kusunda	10	17	13	100	0	1
	Jamshedpur	Bistupur Vehical Testing Centre	30	44	39	93	0	3
		Golmuri Vehicle Testing Centre	31	42	38	91	0	3
	Jharia	M.A.D.A.	12	17	14	105	0	1
	Ranchi	Albert Ekka Chowk, Main Road	11	27	18	96	0	1
Saraikeela	RO Building, Adityapur	30	43	37	91	0	3	
Sindri	BIT / PDIL	10	16	13	73	0	1	

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Karnataka	Bagalkote	Bagalkote KSPCB Office Premises	2	2	2	85	0	0
	Bangalore	Graphite India, White Field Road	2	2	2	83	0	0
		AMCO Batteries, Mysore Road	2	2	2	107	0	0
		KHB Industrial Area, Yelahanka	2	2	2	80	0	0
		Peenya Industrial Area	2	2	2	52	0	0
		Victoria hospital	2	2	2	103	0	0
		Yeshwanthpura police station	2	2	2	100	0	0
		Jnanabharathi, Bangalore University	4	12	7	102	0	2
		RV College of Engineering, Mysore Road	8	8		1	0	
	TERI office, Vital Medi healthcare Pvt Ltd	2	2	2	108	0	0	
	Belgaum	Karnataka SPCB Office Building	2	9	2	52	0	1
	Bidar	KSPCB Office Premises	2	4	2	52	0	0
	Bijapur	KSPCB Office Premises	2	2	2	38	0	0
	Chitradurga	KSPCB Office Premises	2	20	6	105	0	4
	Devanagere	Regional Office building, KSPCB	2	20	6	94	0	4
		Mothi Theatre, Gandhi Circle, P.B. Road / Traffic Police Station	5	30	20	80	0	5
		HPF Intakewell, Kumarapattnam	2	13	5	102	0	3
	Gulbarga	Government Hospital	2	4	3	50	0	1
	Hassan	KSRTC bus stand building	2	5	3	104	0	0
	Hubli-Dharwad	Lakkamanahalli Industrial Area, Dharwad	4	6	4	105	0	0
		Rani Chennamma Circle, Hubli	4	6	5	104	0	0
	Kolar	KSPCB Office Premises, Kolar	2	2	2	98	0	0
	Mandya	KSPCB Building, Bandigowda Badarahe	2	9	2	107	0	1
Mangalore	Baikampady Industrial Area	5	9	7	92	0	1	
	K.R.Circle, Visvesvaraya Bldg	2	12	2	111	0	1	
Mysore	KSPCB Bldg. Hebbal Ind. Area	10	10		1	0		
	KSPCB Office Premises, Raichur	2	7	2	77	0	1	
Shimoga	The VISL, Oxygen Plant, Shimoga	3	50	24	100	0	13	
Timukuru	KSPCB Office Premises	2	2	2	103	0	0	
Kerala	Alappuzha	District Office, Aliserry Road	2	2	2	107	0	0
		DC Mills, Pathirappally	2	2	2	25	0	0
		William Goodacre Power House Bridge	2	5	2	71	0	1
	Kochi	Eloor I, FACT, Ambalamughal	2	5	3	107	0	1
		Eloor II	2	5	3	102	0	1
		Irumpanam	2	3	2	105	0	0
		Ernakulum South	2	2	2	65	0	0
		VYTTILA	2	2	2	105	0	0
		MG Road Bank Ernakulum	2	2	2	105	0	0
		KALAMASSERY / CSIR Complex	2	3	2	103	0	0
		Kuttipadam	2	12	5	42	0	3
	Kollam	KSPCB, District Office, Kadappakada	2	3	2	110	0	0
		KMML Chavara	2	5	3	110	0	1
	Kottayam	Kottayam	2	3	2	119	0	0
		Vadavathoor	2	4	3	119	0	1
	Kozhikode	Kozhikode City	2	2	2	103	0	0
		Nallalam	2	2	2	69	0	0
	Malapuram	Kakkanchery, Sijmak oils	2	2	2	107	0	0
	Palakkad	SEPR Refractories India Ltd.	2	10	2	98	0	1
	Pathanamthitta	KSPCB, Makkamkundu	2	2	2	100	0	0
	Thiruvananthapuram	PRS Hospital/COSMO	3	20	9	105	0	3
		SMV School	4	22	9	105	0	4
		VELI / HiTech Chackai	6	28	10	105	0	5
PETTAH / Sasthamangalam(plamadou)		4	18	8	105	0	2	
Thissur	KSPCB, District Office, Poonkunnam	2	12	3	104	0	2	
	Thissur/ Peringandoor	2	10	3	74	0	2	
Wayanad	Sulthan Bathery	2	2	2	104	0	0	
	Wayanad	2	2	2	79	0	0	
Madhya Pradesh	Amlai	HJI	10	19	14	60	0	2
		OPM	9	16	12	69	0	2
	Bhopal	Hamidia Road, MP Hastshilp Vikas Nigam	2	28	11	71	0	4
		CETP Govindpura	2	16	9	88	0	3
		Nutan Subhash School, T.T. Nagar	2	5	2	36	0	1
Kolar Thana, Kolar Road, Bhopal	2	20	10	69	0	4		

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Maharashtra		AKVN Office, Industrial Area Mandideep, Raisen	8	22	14	71	0	3
		Barkatuallah University, Hoshgabad Road, Bhopal	2	13	7	71	0	2
		Main Road, Hemu Colony, Bairagarh, Bhopal	2	14	8	76	0	3
		Arera Colony	2	11	3	82	0	2
	Chhindwara	HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon	2	6	3	96	0	1
		Hindustan Unileaver, Narsinghpur Road,	2	4	3	87	0	1
	Dewas	EID Perry (I) Limited	9	33	19	94	0	6
		Dewas Metal Section	10	33	19	93	0	6
		Vikas Nagar	11	32	20	96	0	6
	Gwalior	Dindayal Nagar	5	26	12	90	0	3
		Maharaj Bada	2	32	13	93	0	4
	Indore	M.P. Laghu Udyog, Pologround	4	13	9	103	0	2
		Kothari Market, M.G. Road	3	20	9	109	0	2
		Telephone Nagar, 26 A, Kanadia Road	5	12	9	109	0	2
	Jabalpur	Vijay Nagar	2	2	2	101	0	0
		Udaipur Beverage Racchai	11	16	13	101	0	1
	Katni	HIG-4 Housing Board Colony Jhinhri, Katni	7	18	10	96	0	1
		Calderys Works Refractories India Private Limited, Guest House, Katni	8	12	11	72	0	1
	Nagda	Chem. D. Labour Club	7	26	14	79	0	4
		B C I Labour Club	4	13	8	80	0	2
		Grasim Kalyan Kendra	5	17	9	75	0	2
	Prithampur	Vikas Bhavan, Sector-2	6	14	10	94	0	2
		RCC Over Head Tank No. 1, Sector-3	6	14	10	112	0	2
	Sagar	Pt.Deendayal Nagar	2	6	4	69	0	1
		Katra Bazar, Sagar	2	5	3	66	0	1
	Satna	Sub-divisional Office E/M Light Machniery	2	6	4	77	0	1
		MPPCB,Dharwari GaliNo.5,House No.318	2	6	3	75	0	1
	Singrauli	Jayant Township	18	61	31	83	0	8
		N.T.P.C., Vidyanagar	17	64	31	81	0	8
		Waidhan	13	63	30	87	0	9
	Ujjain	District Office	9	14	11	67	0	1
		Regional Office	7	14	10	75	0	1
		Mahakal Temple	7	15	11	51	0	2
		Chamunda Mata Chouraha	8	15	11	49	0	1
	Akola	LRT Commerce College, Civil Lines, Akola	11	14	12	88	0	1
		MIDC Water Work, Phash-II, MIDC Akola	11	18	15	143	0	2
		College Of Engineering & Tech, Akola	11	18	14	196	0	2
	Ambernath	Ambernath Municipal Council Office	12	47	27	131	0	8
		Apurva Oil Industries, A-23, MIDC	8	24	14	215	0	3
	Amravati	Elect. Dept., Govt College Engineering	8	16	13	92	0	2
		Rajkamal Square, Vaneeta Samaj	8	24	14	154	0	3
		S.B.E.S. College	6	24	14	144	0	5
	Aurangabad	Collector Office	6	23	12	127	0	4
		C.A.D.A. Office, Garkheda	7	24	14	91	0	5
	Badlapur	BIWA Office	11	58	27	187	0	8
	Bhiwandi	Prematai Hall, Near Dhamankar Naka	22	44	32	101	0	4
		Fire Brigade Office, I.G.M. Hospital	22	44	32	165	0	4
Regional Office, M.P.C. Board, Kalyan		22	44	31	237	0	5	
Chandrapur	Grampanchat Ghughus	4	7	4	94	0	0	
	M.I.D.C. Chandrapur	4	5	4	101	0	0	
	Nagar Parishad	3	5	4	163	0	0	
	Gadchandur Gram Panchayat, Rajura	4	5	4	97	0	0	
	MIDC, Tadali	4	6	4	97	0	0	
	Municipal Council, Ballarshah	4	5	4	99	0	0	
Dombivali	Dombivali MIDC Phase-II	11	54	27	190	0	7	
Jalgaon	B. J. Market	9	16	12	94	0	1	
	Girna water tank	9	15	12	213	0	1	
	MIDC Jalgaon	9	15	12	154	0	2	
Jalna	Bachat Bhawan, Near S P Office	8	12	10	104	0	1	
	Krishidhan Seeds Ltd, MIDC Area	8	12	10	172	0	1	

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation		
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS			
Maharashtra	Kolhapur	University Campus, Shivaji University	7	19	13	80	0	3		
		Ruikar Trust, S.T. Stand	7	41	22	147	0	9		
		Mahadwar Road, Near Mahalaxmi Temple	7	41	22	203	0	8		
	Latur	MIDC Water Works	4	7	5	239	0	0		
		Kshewraj Vidyalaya Shyam nagar	4	7	5	104	0	0		
		Sidhleshwar Sahakari Bank Ganjgolai	4	7	5	172	0	0		
	Mumbai	Bank of India, Kalbadevi /Branch, Kalbadevi/ VARSOVA	2	4	2	84	0	0		
		Parel TT, Ambedkar Road	2	4	2	88	0	0		
		Worli	2	5	2	87	0	0		
	Nagpur	Institution of Engineers	9	23	13	100	0	3		
		Govt. Polytechnic College, Sadar	8	23	14	96	0	3		
		MIDC Office Hingana Road	8	22	14	100	0	3		
		MIDC Industrial Area, MIDC Office, Hingna	2	24	6	82	0	4		
		Nagpur Coop Building, Maskasath, Itwari	2	12	5	79	0	3		
		NEERI Lab, Nehru Marg, Highway No. 7	2	21	5	74	0	4		
	Nashik	MPCB Office Premises, Civil Lines	7	22	12	321	0	3		
		R.T.O. Colony Tank	2	19	10	154	0	4		
		VIP Industrial Area, MIDC Satpura	2	17	10	104	0	4		
		Nashik Municipal Council Building	2	18	9	218	0	4		
	Navi Mumbai	MPCB Sub R.O. Udyog Bhawan, Nashik	2	30	9	305	0	4		
		T.B.I.A, Rabale Airoli, TTC	13	23	17	103	0	3		
		Dr. D.Y. Patil College, Nerul, TTC	13	23	17	229	0	2		
		MPCB Lab, Mhape, TTC	12	25	17	168	0	2		
		CIDCO Nodal Office Kharghar	13	25	18	103	0	3		
		Water Pump House, Panvel, Taloja	12	25	17	168	0	3		
	Pimpri-Chinchwad	MIDC Collom Facility Building, Taloja	12	25	17	229	0	2		
		Bank of Baroda Buiing, Near M.C Building	6	75	28	199	0	11		
	Pune	Maratha Chamber of commerce, Bhosari	14	90	33	62	1	15		
		State Electricity Board BLDG Nalstop	6	90	32	113	1	15		
		Swargate Police Chawki	15	90	46	33	1	16		
	Sangli	Udyog bhavan / SRO, MPCB Sangli	6	13	9	99	0	1		
		Sangli- Miraj Primary school Building	6	21	10	226	0	2		
		Krishna Valley School	6	15	9	163	0	2		
	Solapur	WIT Campus	11	21	17	102	0	3		
		Voronoko School / Chitale Clinic	11	21	16	144	0	3		
	Thane	Maternity Hospital, Dhobighat, Thane East	15	26	19	24	0	3		
		Shahu Market,Naupada, Thane West	15	31	21	49	0	4		
		Kolshet and Balkum, Thane West	13	31	20	73	0	4		
	Ulhasnagar	Smt. C. H. M. College Campus	11	37	21	99	0	5		
		Octroi Naka, Pawai-Chowk, Vithalwadi	12	48	27	107	0	7		
	Manipur	Imphal	Secretariat Building	3	18	9	32	0	5	
	Meghalaya	Byrnihat	EPIP, Ri-Bhoi district	2	28	15	121	0	9	
			Dawki	Terrace building, Jaintia Hills District	2	24	7	121	0	8
		Khliehriat	O/o BDO, C & R.D. Block-Khliehriat	2	4	3	122	0	1	
		Shillong	Nongstoin	Office Premises of E.E, PHED	2	8	2	121	0	1
			Boards Office Permises, Lumpyngngad	2	3	2	106	0	0	
			State Tuberculosis Hospital	2	9	6	121	0	2	
Forest Rest House, Polo Hills			2	6	3	117	0	1		
Tura		41/2 mile, Myllem Range Office	2	6	2	119	0	1		
Umiam / Umsning	PHED, Araimille, West Garo Hills District	2	4	3	116	0	0			
Mizoram	Aizawl	Umiam Industrial Complex, Ri-Bhoi District	2	6	3	120	0	1		
		Khatla, M.G-Road, Mizoram SPCB	2	2	2	103	0	0		
		Laipuitlang	2	2	2	106	0	0		
		Bawngkawn	2	2	2	102	0	0		
		Dawrpui Y.M.A, Building, Dawrpui	2	2	2	102	0	0		
	Champhai	Lengpui Airport, Model Veng, Lengpui	2	2	2	93	0	0		
		D.T.O Office Building, Kahrawt veng	2	2	2	101	0	0		
		Lalzidinga building, Vengthlang	2	2	2	101	0	0		
	Kolasib	H. Lalthuama Building, Project Veng	2	2	2	101	0	0		
		Synod Bookroom, Building Diakkawn	2	2	2	101	0	0		
Lunglei	Thangkhuma Building, Salem Veng	2	2	2	96	1	0			

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State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Nagaland	Dimapur	K.Lalliantluanga, Chanmari I, Lunglei	2	2	2	96	0	0
		Bank Colony	2	2	2	139	0	0
		Dhobinala	2	2	2	121	0	0
		Signal point, Dimapur, Nagaland SPCB	2	2	2	103	0	0
		House no-288, Tenyiphe-I, Chumukiedima, Dimapur	2	2	2	103	0	0
		Vidya Bhawan School, Lane 17, Nagarjan, Kuda Village, Dimapur	2	2	2	48	0	0
		House no 24, Near community Hall, Viola colony, Dimapur	2	2	2	48	0	0
	Kohima	ERJO Motors, Burma Camp, Dimapur	2	2	2	48	0	0
		Opposite NST Office	2	2	2	138	0	0
Odisha	Angul	Opposite War Cemetery	2	2	2	121	0	0
		Industrial Estate	6	19	11	102	0	3
	Balasore	NALCO Township	8	15	10	102	0	1
		Sahadevkhunta	2	2	2	104	0	0
		DIC office	2	2	2	104	0	0
	Berhampur	Rasalpur near Balgopalpur I/A	6	9	7	105	0	0
		Regional Office Orissa SPCB	2	11	4	107	0	1
	Bhubneshwar	Capital Police Station	2	7	2	97	0	1
		IRC Village	2	5	2	95	0	0
		Office Premises Bhubaneswar	2	4	2	100	0	0
		Water works, Palasuni, Rasalgarh	2	7	2	69	0	1
		Patrapara, Khandagiri	2	5	2	101	0	0
	Bonaigarh	Chandrashekharpur	2	6	2	91	0	0
		Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh	5	17	9	104	0	3
	Cuttack	Traffic Tower, Badambadi	3	8	5	57	0	1
		P.H.D Office Barabati	2	35	6	104	0	7
		R.O. Cuttack Office, Surya Vihar	3	10	6	104	0	2
	Jharsuguda	R.O. Building Cox colony	6	29	7	108	0	2
		TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bhepahar,	5	23	8	106	0	2
	Kalinga Nagar	Over the Guest House of M/s NINL	2	2	2	55	0	0
		Maintenance Office of M/s NINL, Duburi	2	2	2	77	0	0
	Konark	Konark Police Station	2	3	2	101	0	0
	Paradeep	On roof of PPT Staff Quarter	10	30	18	101	0	3
		On roof of PPL Gueest	9	26	18	101	0	3
		On roof of STP building IFFCO	14	27	19	83	0	2
	Puri	Sadar police station	2	2	2	46	0	0
		Town Police Station	2	6	2	75	0	0
	Rajgangpur	DISIR, Rajgangpur	6	23	12	103	0	5
	Rayagada	Regional Office Orissa SPCB	2	12	4	104	0	1
LPS High School, Jaykaypur		2	9	4	101	0	1	
Rourkela	Regional Office, ORPB	5	16	8	104	0	1	
	Kalunga Industrial Estate	6	16	12	104	0	3	
	IDL Police Out-post, Sonaparbat	5	10	6	104	0	1	
	Kuarmunda, Sundergarh	4	14	8	104	0	2	
Sambalpur	Filter Plant, PHD Office, Modipara	4	36	6	105	0	3	
Talcher	Coal Field Area	8	14	10	104	0	1	
	T.T.P.S.Colony	6	14	11	104	0	2	
Puducherry	Karaikal	B.Ed College (PKCE), Nehru Nagar	2	3	2	89	0	0
		Govt. Tourist Home, Kovilpathu	2	3	2	91	0	0
		M/s Puducherry Power Corporation Limited, Polagam, T.R. Pattinam,	2	3	2	82	0	0
	Puducherry	DSTC Office Upstairs, PHB 3rd Floor, AnnaNagar	3	6	5	92	0	1
		PIPDIC Ind. Estate Mettupalayam	4	6	5	87	0	1
	Chamber Of Commerce	2	6	4	85	0	1	
Punjab	Aligarh (Jagraon)	Forest Office, Vill:Aligarh, Teh:Jagraon	4	12	6	103	0	2
	Amritsar	R.O. Focal Point (earlier Nagina soap factory)	11	14	13	62	0	1
		Vinod Chilling Center / Kochar Bhavan (earlier A-1,Platers)	11	19	13	60	0	1



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	Aspal Khurd (Tapa)	Vill:Aspal Khurd, Teh:Tapa	4	8	5	123	0	1
	Bara Pind (Goraya)	Vill:Bara Pind, Teh:Goraya	4	11	7	83	0	1
	Bhatinda	Bathinda Milk Producers, Dabwali Road	2	8	5	81	0	1
	Binjon (Garshankar)	CHC, Vill:Binjon, Teh: Garshankar	4	24	7	80	0	2
	Bishanpura (Payal)	Longowalia Yarns (Unit-II), Vill-Bishanpura, Teh: Payal	4	20	10	93	0	4
	Changal (Sangrur)	Mastuana Sahib, Vill:Changal, Teh:Sangrur	4	7	5	107	0	1
	Chowkimann (Jagraon)	Ludhiana College of Engineering, Vill:Chowkimann, Teh:Jagraon	4	12	7	102	0	1
	Dera Baba Nanak	C-PYTE Building	3	9	7	68	0	1
	Dera Bassi	Punjab Chem and Crop Protection, Bhanakarpur Rd	4	8	6	107	0	1
		Winsome Yarns Ltd., Barwala Road	4	7	5	113	0	1
	Fatehpur (Samana)	Baba Banda Singh Bahadur College, Vill:Fatehpur, Teh:Samana	4	7	5	38	0	1
	Gobindgarh	Modi Oil and General Mills, Mandi	6	9	7	126	0	1
		Raj Steel Rolling Mills, Mandi	5	9	7	133	0	1
		United Rolling Mills, Mandi Gobindgarh	5	9	7	130	0	1
	Guru Ki Dhab (Kotkapura)	Vil:Guru Ki Dhab / Basti Himmatpura, Teh:Kotkapura	2	8	5	22	0	2
	Jaito Sarja (Batala)	Royal Nursing College, Vill: Jaito Sarja, Teh: Batala	4	7	6	37	0	1
	Jalandhar	Municipal Council Tubewell No. 27	8	24	12	81	0	2
		Regional Office	9	23	11	73	0	2
		Punjab Maltex , Kapurthala Road	5	20	10	59	0	3
		Focal Point	8	15	12	63	0	1
	Khanna	Markfed Vanaspati, Khanna	5	25	10	112	0	3
		AS School, Khanna	5	64	13	117	0	11
	Kharaori (Sirhind)	Vill:Kharaori, Teh:Sirhind	4	8	6	126	0	1
	Kotladoo (Ajnala)	Satyam College, Ramtirath Road, Vill: Kotladoo, Teh: Ajnala	5	8	7	62	0	1
	Lakho ke Behram (Ferozpur)	Vill:Lakho ke Behram, Teh:Ferozpur	3	6		11	0	1
	Ludhiana	Bharat Nagar Chowk / RO Gill Road	6	20	11	120	0	3
		Nahar Spining Mills, Dholewal Chawk	6	49	14	124	0	7
		Ludhiana Coop. Milk Producer, Ferozpur Rd	5	40	10	136	0	7
		PPCB Office Building, Vishavkarma Chowk	6	64	13	131	0	9
	Mrar Kalan (Muktsar)	Vill: Mrar Kalan, Teh:Muktsar	4	9	5	40	0	1
	Mukandpur (Nawashahar)	Govt. Senior Sec. School, Vill:Mukandpur, Teh:Nawashahar	5	12	8	78	0	1
	Mureedke (Batala)	Johal Farm, Vill: Mureedke, Teh: Batala	4	10	7	98	0	1
	Naudhrani (Malerkotla)	Vill:Naudhrani, Teh:Malerkotla	4	8	5	106	0	1
	Naya Nangal	Punjab Alkalis & Chemicals Ltd	5	8	6	92	0	1
		M/s NFL Guest House,Naya Nangal	4	7	5	104	0	1
	Patiala	Ceylon Industries, Factory Area, Patiala	4	7	5	130	0	1
		Fire Brigade Station, Bahera Road, Patiala	4	8	5	134	0	1
	Peer Mohammad (Jalalabad)	Vill:Peer Mohammad, Teh:Jalalabad	4	6	5	26	0	1
	Poohli (Bhatinda)	Vill: Poohli, Teh:Bhatinda	4	7	5	21	0	1
	Qila Bharian (Sangrur)	Gurdwara Gangsar Sahib, Vill:Qila Bharian, Teh:Sangrur	4	8	5	112	0	1
	Rakhra (Patiala)	Shree Ganesh Group of Institute, Vill:Rakhra, The:Patiala	5	7	5	53	0	1
	Rohila (Samrala)	Gopimal Kaur Sain Industries Pvt. Ltd, Vil:Rohila, Teh:Samrala	5	19	10	120	0	3
	Tirathpur (Amritsar I)	United ITI, Vill: Tirathpur, Teh:Amritsar I (earlier Sriguru Harkishan Public	5	8	7	58	0	1

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Rajasthan	Alwar	School,Rasulpur Kalan)						
		Rajasthan State Pollution Control Board	6	13	9	98	0	2
		Gaurav Solvex Ltd. MIA	8	18	13	103	0	2
	Bharatpur	RIICO Pump House, MIA	8	17	12	105	0	2
		Khadi Gramoday Samiti	7	12	8	98	0	1
		RIICO office Building	6	10	7	100	0	0
	Bhiwadi	RO, Building	7	8	7	102	0	0
		R.O.Building	8	63	28	101	0	7
		UIT Guest House	7	33	24	38	0	7
	Chittorgarh	Uttam Strips Ltd	6	40	25	97	0	8
		Regional Office building, RSPCB, Near FCI Godown, Chnaderiya	5	20	8	102	0	2
		Veterinary Hospital, Meeranagar	5	16	7	97	0	2
	Jaipur	PHED Pump House, Segawa	4	14	6	97	0	1
		Ajmeri Gate	5	15	7	107	0	1
		RJPB Office,Jhalana Doongari	4	12	6	104	0	1
		District Education Officer, Chandpole	6	23	7	101	0	2
		RIICO Office, M.I.A.	5	14	6	104	0	1
		RSPCB, Vidyadhar Nagar	5	27	7	104	0	2
		VKIA	5	31	10	104	0	4
		22,Godam, RIICO Office	5	10	6	107	0	1
		Mansarovar Nagar Niigam	5	10	6	99	0	1
		RIICO Office Sitapura Industrial Area	4	16	7	103	0	2
	Jodhpur	DIC Office, Industrial Estate	3	23	7	86	0	3
		Sojati Gate	4	12	7	80	0	2
		Basni Industrial Area, RIICO Office	3	13	7	87	0	2
		Maha Mandir Police Thane	4	10	7	84	0	2
		Office of Housing Board, Chopasani Road	3	11	7	82	0	2
		Shastri Nagar Police Thana	3	12	7	87	0	2
		Kudi Mahila Thana	5	8	6	50	0	1
		Sangariya Police Choki	5	9	6	47	0	1
	Kota	SoorsagarThana	5	9	6	47	0	1
		Regional Office, RJPB, Anantpura	5	11	7	99	0	1
		Municipal Corporation Building	5	11	7	104	0	1
		Samcore Glass Ltd.	5	13	7	109	0	1
		FireStation Nagar Nigam Shrinathpuram	5	11	7	104	0	2
		RajasthanTechnical University,Rawatbhata	5	12	7	103	0	2
	Udaipur	Sewage Treatment Plant, Balita, Kota	5	9	6	107	0	1
		Ambamata	3	13	6	103	0	2
		Town Hall	4	23	13	105	0	5
	Sikkim	Regional Office,MIA	5	26	14	104	0	5
		Chungthang	3	10	5	90	0	1
		Gangtok	4	10	6	77	0	1
		Mangan	3	7	5	101	0	1
Namchi		4	7	6	99	0	1	
Pelling		2	11	5	94	0	2	
Rangpo		3	16	8	94	0	3	
Ravangla		2	28	5	99	0	3	
Tamilnadu	Singtam	Police Station Building	4	8	6	93	0	1
	Chennai	Govt. High School, Manali	12	18	15	58	0	2
		Kathivakkam	11	17	14	63	0	1
		Thiruvottiyur	11	16	14	62	0	1
		Madras Medical College	2	22	3	86	0	3
		NEERI, CSIR CampusTaramani	2	6	2	86	0	1
		Thiruvottiyur Municipal Office	2	50	5	87	0	6
		Adiyar	5	13	8	57	0	1
		Kilpauk	8	13	10	66	0	1
		Thiyagaraya Nagar	8	16	11	68	0	1
	Nunbakgum	8	14	11	63	0	1	
	Anna Nagar	8	14	10	53	0	1	
	Coimbatore	Poniarajapuram, On the top of DEL	4	72	6	86	0	7
		G.D.Matric Hr.Sec.School	4	9	6	69	0	1
	Cuddalore	SIDCO Office, Coimbatore/ Kurichi	5	9	7	77	0	1
	Eachangadu Village	11	15	13	94	0	1	

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		SIPCOT (Project Office)	9	13	11	82	0	1
		DEE Office, Cuddalore	12	18	15	75	0	1
	Madurai	Highway (Project -I) Building	9	14	12	70	0	1
		Fenner (I) Ltd. Kochadai	10	16	13	67	0	1
		Kunnathur Chatram Avvai Girls HS School	10	16	13	75	0	1
	Mettur	Raman Nagar	5	10	6	79	0	1
		SIDCO	5	9	6	77	0	1
	Salem	Sowdeswari College Building	4	26	7	77	0	3
	Trichy	Gandhi Market	8	16	13	68	0	2
		Main Guard Gate	10	19	15	67	0	2
		Bishop Heber College	9	15	11	75	0	1
		Golden Rock	8	14	12	72	0	1
		Central Bus Stand	10	19	15	69	0	2
	Tuticorin	Fisheries College, Tuticorin Sipcot	6	16	10	72	0	2
		Raja Agencies	9	15	12	66	0	1
AVM Jewellery Building		7	16	10	83	0	2	
Telangana	Adilabad	Building of SCCL Manadamarri Club Mandamarri, Mancherial	4	7	5	108	0	1
	Hyderabad	Balanagar	4	11	6	106	0	1
		Tarnaka, NEERI Lab. IICT Campus	2	9	5	88	0	2
		Nacharam, Industrial Estate	2	9	5	88	0	2
		ABIDS Circle General Post Office	2	9	5	88	0	2
		Uppal, Modern Foods & Industries IDA	4	10	6	112	0	1
		Jubilee Hills	4	11	5	119	0	1
		Paradise	4	13	6	119	0	1
		Charminar	3	10	5	119	0	1
	Zoo Park	2	9	4	85	0	1	
		Jeedimetla Industrial Estate, Rangareddy Distt.	3	11	6	119	0	1
	Karimnagar	On the terrace of the DIC building, Karimnagar	6	14	9	87	0	2
	Khammam	CER Club Khammam	7	14	9	100	0	1
		Jalasoudha building	6	11	9	102	0	1
	Kothur	Mehaboobnagar	7	13	9	104	0	1
	Nalgonda	AP PCB Nalgonda	3	7	5	99	0	1
		M/s. Srinu Pharmaceuticals pvt. Ltd.Choutuppal (V & M)	4	7	6	99	0	1
	Nizamabad	subashnagar,nizamabad dist	4	6	5	99	0	0
	Patencheru	Police Station, Medak, Ramachadrapuram	4	7	5	93	0	1
	Ramagundam	Godavarikhani, Ramagundam, Karimnagar	7	13	9	98	0	2
		Pashamylaram/Municipal Office	2	52	8	118	0	9
Regional office Building of SANGAREDDY		3	6	5	98	0	0	
	M/s. Mylan Industries, Gaddapothara	5	7	6	99	0	1	
Warangal	KUDA Office, Hanumakonda	6	11	9	99	0	1	
	Mee-Seva Building ,Municipal Complex	6	11	9	98	0	1	
Tripura	Agartala	SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban	2	6	4	83	0	1
		Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala	2	6	4	83	0	1
Uttar Pradesh	Agra	Regional Office, Bodla	3	6	4	90	0	1
		Nunhai	3	12	5	94	0	2
		Taj Mahal	2	34	4	242	0	4
		DIC Nunhai	2	21	4	125	0	3
		Etmad-uddaulah	2	35	4	130	0	4
		Rambagh	2	20	4	124	0	3
	Allahabad	Square crossing circle of Laxmi Talkies	2	16	9	92	0	4
		Bharat Yantra Nigam Ltd	2	19	8	102	0	4
		Alopibagh/Sewage Pumping Stations	2	5	3	92	0	1
		Jhonstonganj/co-operative Bank	2	3	2	57	0	0
		Rambagh/Parag Dairy	2	5	3	82	0	1
	Anpara	Anpara Colony, Sonabhadra	10	22	17	95	0	2
		Renusagar Colony, Sonabhadra	11	21	17	97	0	2
Baghpat	Sarvodaya Hospital, Tatiri Merrut, Baghpat Road	6	37	11	93	0	4	

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Weavetex Overseas Hostel, Khekra, Baghpat	7	37	11	96	0	4
	Bareilly	IVRI Izatnaga	10	45	22	107	0	7
		Indian oetrol pump, Civil Line	13	62	31	107	0	8
	Firozabad	Center for Development of Glass Industry	6	12	8	104	0	2
		Tilak Nagar	6	12	8	104	0	2
		Raza ka Tal	6	12	8	103	0	1
	Gajraula	Raunaq Auto Ltd, J.P. Nagar	8	43	22	94	0	7
		Indira Chowk, J.P. Nagar	10	50	28	91	0	7
	Ghaziabad	Atlas Cycles Industries, Sahibabad Ind. area	5	30	15	93	0	8
		Bulandshaar Road Industrial Area	5	26	13	87	0	7
		Khora Colony, Ghaziabad	7	35	12	86	0	4
		Vinoba Bhawe Park, Lohia Nagar, Ghaziabad	7	30	12	85	0	4
	Gorakhpur	M. M.M. Engineering College, Gorakhpur	2	26	10	93	0	7
		India Glycol Ltd. Gida, Gorakhpur	18	62	33	101	0	11
		Jalkal, Muncipal Corporation, Golghar	9	55	24	92	0	13
	Greater Noida	Holland Tractor, Greater Noida	6	48	12	88	0	6
		Honda Power, Greater Noida	6	48	12	88	0	6
	Hapur	Srinagar Colony, Railway Road, Hapur	5	28	13	89	0	5
		Jindal Pipes Ltd, Hapur	5	28	16	70	0	5
	Jhansi	Manik Chawk / Jal chauraha	4	20	7	117	0	1
		Veeranga Nagar	3	18	6	117	0	1
	Kanpur	Forest & Training Centre, Kidwai Nagar	6	20	8	93	0	2
		Chamber Of Commerce Darshanpurwa / Deputy ka Parao	6	11	8	94	0	1
		Associated Chem Pvt Ltd, Fazalganj, Panki, Site-5	7	11	8	83	0	1
		Head Post Office, Govind Nagar / Dabauli / Shastri NGR	6	10	8	83	0	1
		Jajmau / Awas Vikas	6	9	8	93	0	1
		I.I.T. Campus, Kanpur	2	2	2	100	0	0
		IIT 12 parameter	2	2	2	48	0	0
		Dada Nagar, Kanpur	3	17	6	91	0	2
	Ramadevi, Kanpur	2	4	2	88	0	0	
	Khurja	Central Glass & Ceramic Research Institute	19	26	22	95	0	1
		Ahirpara	19	23	20	92	0	1
	Lucknow	Mahanagar	4	19	8	225	0	2
		Chandganj Garden, Aliganj	4	19	8	270	0	2
		Kapoor Hotel, Hazratganj	4	19	8	187	0	2
		Talkatora	4	19	8	268	0	2
		Aminabad / S.M.K Chowk	4	19	8	279	0	2
		Nagar Nigam	4	19	8	268	0	2
		Ansal Technical Institute Campus, Ansal API	4	19	8	266	0	2
	Vikas Khand	2	2	2	56	0	0	
	Mathura	RO. UPPCB, 65 Baldevpuri, Maholi Road	8	15	11	81	0	2
		CETP, Industrial Area, Mathura	10	17	13	83	0	2
	Meerut	Begum Bridge	9	12	10	59	0	1
		Thana Railway Road / Kesarganj	7	8	7	59	0	0
	Moradabad	Hindu College, Station Road	8	60	32	91	0	13
		Central Police Hospital, Civil Lines	5	39	20	90	0	8
	Muzaffarnagar	Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road	6	13	8	97	0	1
		Lekhpal Bhawan, Tehsil Sadar Campus	7	15	9	97	0	2
	Noida	UP PPCB, E-12/1, Sector - 1	5	31	14	97	0	7
		Gee-Pee Electroplating and Eng. Work	5	30	15	96	0	7
		Subros, Noida	6	39	12	92	0	4
		Golf Course, Noida	7	39	11	90	0	4
	Raebareli	Town Hall Colony, Ahmad Nagar, Gulab Road	7	10	9	54	0	1
		Khoya mandi Tiraha Lucknow Road Raebareli	12	16	14	54	0	1
		Amawan Road Ind. Area Raebareli	7	11	10	54	0	1
	Saharanpur	SRE-A, IIT Roorkee, Saharanpur Campus	9	25	16	92	0	4
		UPCL S.E. Office, Near Clock Tower	10	23	16	91	0	3
	Unnao	H. No. 5, Krishna Nagar	7	11	9	74	0	1

Annexure 3: Location wise SO<sub>2</sub> - 2019

State / UT	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Varanasi	IIA Building, Industrial Area, Site 10	8	11	9	74	0	1
		Regional Office, Jawahar Nagar	4	14	9	98	0	2
		Sigra	3	14	9	191	0	2
		Saket Nagar	6	15	10	93	0	2
		Banaras Hindu University	6	12	9	91	0	1
		Chandpur	9	16	11	88	0	2
Uttarakhand	Dehradun	Raipur Road, Near parag Diary	21	26	23	68	0	1
		Clock Tower, PWD Guest House	23	27	25	70	0	1
		Himalaya Drug Co. Near ISBT	23	28	26	68	0	1
	Haldwani	Govt. Women Hospital	5	32	8	103	0	3
	Haridwar	SIDCUL, Haridwar	16	23	20	66	0	3
	Kashipur	BSNL Office, Kashipur	13	24	14	97	0	1
	Rudrapur	SIDCUL Office	12	23	14	87	0	1
West Bengal	Alipurduar	Rabikanta High School	2	11	7	103	0	3
		Jaigaon Police Station	2	12	7	102	0	3
		Birpara Police Station	2	13	7	104	0	3
	Amtala	P Roy Industrial Training Institute, Amtala	2	12	7	104	0	3
	Asansol	Asansol Municipal Corporation	8	18	15	104	0	1
		Kangsabati Spinning Mill, Barjora	7	19	15	104	0	1
		Burnpur Town Department, Burnpur	11	18	15	104	0	1
	Baharampur	Baharampur Municipality	2	22	7	104	0	3
	Balurghat	Balurghat College	2	12	6	104	0	3
	Bankura	Bankura Municipality	2	14	2	104	0	1
	Barasat	Barasat Municipality, 73 Rishi Bankim Chandra Road	2	20	8	103	0	2
	Bardhaman	Bardhaman Town, Rajbati	2	14	2	104	0	1
	Barrackpore	Barrackpore Municipality	2	19	8	104	0	3
		Dum Dum Telephone Exchange	3	16	8	103	0	2
		Khardah Municipality	4	21	8	103	0	3
	Baruipur	Baruipur Police Station, Baruipur	2	16	7	104	0	3
	Bolpur	Bolpur Municipality	2	15	2	104	0	1
	Chinsura	Chinsura Municipality, Pipulpati Auto Stand	2	18	7	104	0	2
	Coochbehar	ABM Seal College	2	14	7	104	0	3
		Uttarbanga Krishi Viswavidyalaya, Pundibari	2	11	6	104	0	3
	Dankuni	Krishnanagar Municipality, Dankuni	2	18	7	104	0	2
	Darjeeling	Bose Institute Campus	2	10	5	104	0	2
	Durgapur	DMC Water Works, Angadpur	9	17	15	104	0	1
		Kwality Hotel, Bhiringi More, Benachiti	2	18	15	104	0	2
		Bidhannagar, PCBL Club, Muchipara	7	22	11	103	0	3
		Dew India Limited, PCBL More, Durgapur	2	18	15	104	0	2
	Ghatal	Annapurna Hotel, Ghatal-Panskura Bus Stand	2	22	10	107	0	5
	Haldia	Debhog Milan Viyapith, Bhabanipur	4	19	9	107	0	3
		Bhunia Raichak, Driver's Hut, Bhunia	3	22	10	105	0	4
		Supermarket Building, Durgachak	2	20	9	106	0	4
		WBIIDC Ruchi Soya Ind. Durgachak	2	20	9	106	0	4
	Howrah	Howrah Municipal Corporation	5	26	13	105	0	5
Naskarpara Pump House, Ghuseri		3	21	11	107	0	5	
CDS & Health Centre, Bator		6	23	12	104	0	4	
Howrah Municipality School, Bandhaghat		4	23	12	104	0	5	
Jalpaiguri	Raninagar Jalpaiguri	2	12	6	106	0	3	
Jhargram	Jhargram	3	19	9	105	0	4	
Kalimpong	Kalimpong Municipality	2	10	6	104	0	3	
Kalyani	College of Medicine & JNM Hospital, Kalyani Industrial Area	2	20	7	104	0	3	
Kharagpur	AMD Building, TATA Bearing	5	24	13	106	0	5	
Kolkata	Salt Lake, Rooftop of CK Market	2	13	7	104	0	2	
	KMC office Building, Moulali	2	18	9	104	0	3	
	Minto Park, Inside Park AJC Bose Road	3	15	8	104	0	2	
	Dunlop Bridge, National Sample Survey	4	18	10	104	0	3	
	Behala Chowrasta, Traffic Guard Building	3	18	8	104	0	3	
	Upanagari Sporting Club, Baishnabghata	2	17	8	104	0	3	
		Cossipore Police Station, B.T. Road	2	35	10	79	0	7

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			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Dalhousie Square, Lal Bazaar Police Headqtr.	2	36	9	79	0	7
		Kasba	2	37	5	78	0	5
		RD CPCB	2	22	4	111	0	4
		Infectious Diseases & BG Hospital, Beliaghata	2	18	8	104	0	3
		CESC Building, Mandeville Gardens, Gariahat	2	13	7	104	0	2
		Administrative Building, Hyde Road	3	20	11	104	0	3
		KMC Drainage, Pumping Station, 9 Mominpur Road, Mominpur	2	14	7	104	0	2
		Paribesh Bhawan	2	20	7	104	0	3
		Milan Tirtha Club, Picnic Garden	2	22	9	104	0	4
		Public Health Engineering Office Building, Rajarhar	2	20	7	104	0	4
		Tennis Club Building, 45-46 Canal West Road, Fariapukur, Shyambazar	3	17	9	104	0	3
		Elite India Rubber Products Pvt.Ltd., Topsia	3	17	9	104	0	3
		Maniktala Fire Station Building, 17, Bagmari Lane, Ultadanga	3	23	9	104	0	3
		Tollygunge	2	12	7	104	0	2
	Krishnanagar	Krishnanagar Municipality, TN Thakur Road	2	15	7	104	0	2
	Madhyamgram	Madhyamgram Municipality	2	20	8	103	0	2
	Malda	WBPCB Office, Paribesh Bhaban, Vill. Abhirampur	2	13	7	103	0	3
	Medinipur	Vidyasagar University	4	18	9	107	0	3
	Purulia	Purulia Municipality	2	13	2	104	0	1
	Raigunj	Raigunj College	2	28	7	104	0	4
	Rampurhat	Rampurhat Municipality	2	12	2	104	0	1
	Ranaghat	Ranaghat Municipality, 11 school lane	2	17	7	104	0	3
	Raniganj	Raniganj Municipality	10	19	15	104	0	1
		Mangalpur, SKS School Mangalpur	8	18	15	104	0	1
		Jamuraia Municipality	7	20	15	104	0	2
	Rishra	Rishra Municipality	2	21	8	104	0	3
	Sankrail	Bharat Co-op Housing Society	2	23	9	104	0	4
		Bagan Police Station, Bagan	3	23	10	104	0	4
		Dhulagar Gram Pachayat	5	23	12	106	0	5
		P Mukherjee's House, Near SBI Amta	4	34	11	104	0	5
	Siliguri	Siliguri	2	13	6	105	0	3
	Suri	Suri Municipality	2	15	2	104	0	1
	Tamluk	HP Gas Service Station, Maniktala	3	23	10	106	0	5
	Tribeni	Tribeni Health Center	2	16	7	104	0	2
	Uluberia	ESI hospital nursing building, 3rd floor, Near Sahib Mandir	3	23	10	104	0	5

**Note:**

Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009. Annual NAAQS of SO<sub>2</sub> is 50 µg/m<sup>3</sup> for Residential/ industrial / other area and 20 µg/m<sup>3</sup> for ecologically sensitive area.

**Levels of Nitrogen Dioxide (NO<sub>2</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Andhra Pradesh	Anantapur	Kamala Nagar	10	26	18	105	0	4
		APIIC Zonl office industrial estate	9	24	14	106	0	3
		Cancer Unit. G.G.Hsharada Nagar, JNTU Road	10	16	12	108	0	1
		D.No.6/5/545, Ram Nagar Colony	10	24	16	108	0	3
	Chittoor	GNC Toll Gate Tirumala	11	105	37	107	2	16
		Near Nutrine Confectionery, Palamaner Road	9	23	15	107	0	2
		O/O Mines and Geology, Old Collector Office, Greampet	10	22	15	105	0	2
		Sankar Foundary, Industrial Estate, Adjacent of DIC Office	11	21	15	106	0	2
	Eluru	Rangachari street, Shanthapeta.	10	20	14	92	0	2
		Ashram Diagnostic Centre	15	30	19	108	0	2
		District Head quarters hospital	17	30	19	108	0	2
		M/s Laxmi Propylene Ltd., Plot.No. 25, Industrial Park, Satrampadu	16	30	19	108	0	2
		Somalingeswara nilayam D.N.7B-18-5, Thooru Veedhi, Eastern street, Paidichintaadu	17	25	19	108	0	2
	Guntur	Near Hindu College, Market Road	17	25	19	100	0	2
		A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road	17	25	19	101	0	2
		Distirct Industries Center office Buiding Autonagar	16	25	19	100	0	2
		Government General hospital	17	24	19	101	0	2
	Kadapa	Near ICL Industries, Yerragunta, YSR	10	25	16	108	0	3
		Devi Diabetes & Hormone Centre, 7 Roads	10	27	15	106	0	3
		DIC Office, Kadapa	10	20	15	108	0	2
		Rajiv Gandhi Institute of Medical Sciences	9	19	13	108	0	3
		Municipal Primary School	10	23	15	107	0	3
	Kakinada	Office Building Ramanayyapeta	11	24	18	102	0	3
		Gram Panchayathi building, Suryaraopeta	10	27	19	105	0	4
		MEE Seva / MEPMA Office, Sailipeta	10	29	20	105	0	4
		Petro Chemical Engineering Block, JNTU , Pithapuram Road	9	27	18	106	0	5
	Kurnool	Mourya Inn, Krishna Nagar	9	24	14	108	0	3
		APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center	10	23	15	107	0	3
		Rajvihar Circle	11	36	19	108	0	4
		Pump House, Venkataramana Colony	10	18	12	108	0	2
	Nellore	Venkatareddy Nagar, Vedayapalem	16	25	19	107	0	2
		D. No.15-471, James Garden, Venkata Ramapuram, Nellore, SPSR Nellore District	15	25	19	107	0	2
		Chandramouli nagar	16	27	19	107	0	2
		Dr.P.V. Rama chandra Reddy Hospital, Brindavnam	15	25	19	107	0	2
	Ongole	Near Court Center	15	26	19	107	0	2
		APIIC, Administrative Office, Growth Centre, Gundlapalli	16	26	19	104	0	2
		Ongole Municipal Corporation	16	26	19	106	0	2
		Prakasam Milk Product Compay	16	26	19	105	0	2
	Rajahmundry/ Rajamahendravaram	Staff Clud Building, A.P. Paper Mill	11	29	19	98	0	4
		GAIL Administrative Office, A.V. Apparao Road	10	27	18	104	0	4
		MCH Block ,District Hospital, Near Central Prison, Lalacheruvu Road	10	27	18	105	0	4
		APEPDCL, Circle Office Godavari Gattu	11	27	18	97	0	3
Srikakulam	SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram	13	29	18	96	0	3	

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation	
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS		
		District cooperative office at SKLM Old Bridge	11	28	18	106	0	3	
		APIIC, Kushalapuram	12	28	19	95	0	4	
		Municipal corporation Office, Old Bustand	13	27	19	107	0	3	
	Tirupati	Regional Science Centre, Chittoor Bypass	10	21	14	106	0	3	
		Municipal Office, Tilak Road	11	29	17	107	0	3	
		APPCB-Regional Office, 1st Floor, APSFC Building, NT road	10	20	14	100	0	2	
		Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand	11	25	16	108	0	3	
		Vijaywada	NTR Veterinary college of sciences, Gannavaram	15	30	19	107	0	2
			VR Siddhartha Engineering college , Kanuru	14	32	19	107	0	2
	APIIC, IALA, IDA, Kondapalli		15	29	19	106	0	2	
	Benz Circle		15	28	19	107	0	2	
	Autonagar		15	29	19	108	0	2	
	Police Control Room		16	30	20	89	0	2	
	A.P. Pollution Control Board, plot no. 41, Sri Kanakadurga Officers colony, Gurunank Road		14	30	19	108	0	2	
	Gram Panchayat Office, Yenamalakuduru		13	31	18	108	0	2	
	Indian Medical Association Hall,Eluru Road, Governorpet		15	27	19	108	0	2	
	Vishakhapatnam	Industrial Estate, Mrippalem	11	31	21	108	0	4	
		Panchayat Raj office, Mindi	10	28	18	105	0	3	
		Police Barracks	14	32	22	105	0	4	
		INS-Virabahu, Naval Area	12	25	17	93	0	3	
		Seethammadhara	12	28	18	99	0	3	
		Ganapuram Area	11	32	22	107	0	4	
		Pedagantyada (V), Gajuwada (M)	12	25	18	104	0	3	
		CWMP, RAMKY, Parawada	10	30	21	106	0	4	
	MVP Raitu Bajar	13	38	17	102	0	3		
	Vizianagaram	Industrial Growth Centre, APIIC Building at IDA Bobbili	13	29	19	101	0	3	
		APIIC Building, VT Agraharam,Industrial area	11	28	20	105	0	4	
		Municipal Kaspas High School	11	28	19	102	0	3	
		Municipal Office	12	29	19	93	0	4	
	Arunachal Pradesh	Itnagar	PCCF's Office Compound	5	17	7	43	0	4
		Naharlagun	APSPCB Office compound	5	14	7	35	0	4
	Assam	Bongaigaon	Oil India Ltd. PS-6, Chirang	10	20	12	70	0	1
			Barpara Office Building	10	18	12	86	0	1
Daranga			BATAD, Sandoop Jhankar town of Bhutan, Baska	10	21	14	94	0	2
Dibrugarh		Dibrugarh Office Building	9	18	11	89	0	2	
Golaghat		Golaghat Office Building	9	16	12	80	0	2	
		Guwahati	Head Office, Bamunimaidam	9	36	15	134	0	5
Boragaon, IASST, Kamrup			12	21	16	114	0	2	
Guwahati University, Kamrup			11	22	16	117	0	3	
ITI Building, Gopinath Nagar			10	30	15	117	0	3	
Khanapara, Central Dairy, Kamrup			10	34	15	129	0	3	
Near Pragjyotish College, Santipur			11	27	16	133	0	2	
Margherita		Coal India Office	9	18	12	91	0	2	
Nagaon		Water Resources Div., Christian Patty, Nagaon College	11	20	15	97	0	2	
Nalbari		PWD Rural Div Office Complex, near Gordon Boy's GS School	11	18	14	77	0	2	
North Lakhimpur		Bazar Patti, North Lakhimpur Town	11	17	14	86	0	2	
Silchar		Govt. Boys HS School, Janiganj	10	14	11	74	0	1	
		RLO, Ithkola Market, Ghaniwala Road	8	13	10	75	0	1	
Sivasagar		Sivasagar Office Building	9	17	12	102	0	1	
		Usha Lodge, near ONGCL Colony	10	18	14	103	0	2	
Tezpur	Tezpur Office Building	11	20	15	86	0	2		



Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Tinsukia	Digboi Carbon factory Campus, Borguri	6	16	12	94	0	2
		Shreepuria, Borguri	9	17	12	98	0	2
		Shivdham	9	18	13	98	0	2
Bihar	Begusarai	Begusarai	16	39	22	104	0	3
	Darbhanga	Smt Baby Kumari, Ashok Hotel, Kadirabad Chowk	18	32	24	105	0	3
	Gaya	Godam Road, Raja Market	15	34	21	104	0	3
	Muzaffarpur	BSPCB Regional Office, Bela Industrial Area, Bela	19	49	31	104	0	7
	Patna	Beltron Bhawan, Shastri Nagar	13	61	33	59	0	10
		Gandhi Maidan, Auto Exhaust Test Centre	29	121	69	75	18	17
	Rajgir	Sujkund, Near Samuraji hotel	16	30	21	104	0	3
Sasaram	Takia, Ward no.2, Rhotas	16	27	20	105	0	2	
Chandigarh	Chandigarh	Modern Foods, Industrial Area	8	48	24	149	0	8
		Sector-17 C	8	43	19	142	0	7
		Punjab Engineering College, Sector- 12	5	33	16	162	0	5
		Sector-39, IMTECH	8	85	18	155	1	8
		Kaimbwala Village	8	53	16	140	0	7
Chattisgarh	Bilaspur	Regional Office, CECB Vyapar Vihar	10	14	12	91	0	1
	Durg-Bhillainagar	Visak Hostel, Sector-4	13	19	16	77	0	2
		R.O., 5/32 Banglow Office Building	8	15	12	83	0	2
		M.P. Laghu Udyog Nigam	17	25	22	84	0	3
		CSIDC Industrial Growth Center, Borai, Durg	15	25	18	81	0	3
	Korba	HIG 21,22.Near Ghantaghar, MP Extension	16	30	19	97	0	2
		Pragati Nagar NTPC Colony, Jamnipali	16	24	18	103	0	1
		I.T.I., Rampur	16	21	19	100	0	1
	Raipur	New HIG-9, Hirapur/Housing Board Complex Kabir Nagar	19	34	26	67	0	4
M/S Wool Worth India Pvt. Ltd. Sarora		20	42	33	40	0	4	
Dadra & Nagar Haveli and Daman & Diu	Baldevi (Dadra & Nagar Haveli)	Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli	9	24	17	97	0	5
	Silvassa	Khadoli Industrial Area, Khadoli	11	45	28	99	0	11
		Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta	10	40	26	100	0	11
	Daman	Prima Plastic, Kadaiya Industrial Area, Kadaiya	9	39	26	97	0	9
		Mashal Chawk, Nani Daman	8	37	23	99	0	9
Patlara (Daman)	Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman	9	28	17	100	0	6	
Delhi	Delhi	N.Y. School, Sarojini Nagar, Delhi	28	180	92	88	53	32
		Janakpuri	16	107	47	120	7	20
		Naraina Industrial Area, Delhi	28	195	98	88	63	33
		Nizamuddin	24	175	72	116	35	29
		Pritampura	11	148	46	127	11	23
		Shahadra	19	90	47	113	4	16
		Shahzada Bagh	31	120	63	109	16	19
		Siri Fort	16	145	53	113	15	27
Goa	Amona	Amona, Bicholim	13	16	14	105	0	1
	Assanora	Assanora Junction, Bardez	13	16	14	104	0	1
	Bicholim	Bicholim	13	17	14	103	0	1
	Codli	Codli Tisk, Ponda, Sanguem	11	17	14	103	0	1
	Cuncolim	Cuncolim	13	17	14	102	0	1
	Honda	Honda Junction, Sattari	13	16	14	104	0	1
	Kundaim	Kundaim Industrial Estate	13	17	14	104	0	1
	Mapusa	Mapusa town	5	31	10	90	0	6
	Margao	Margao Town	13	16	14	102	0	1
	Mormugao	Fire Brigade Station, Port Trust	5	45	13	68	0	6
	Panaji	Old GSPCB premises, Patto	5	31	13	77	0	6
	Ponda	Ponda Town	13	16	14	105	0	1
	Sanguem	Near Railway Station at Kalem, Sanguem	13	17	14	103	0	1
Tilamol	Quepem, Tilamol	13	16	14	102	0	1	

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Tuem	Tuem Industrial Estate	13	17	14	104	0	1
	Usgao	Usgao Plae, Junction, Ponda	13	17	14	96	0	1
	Vasco	Fuse Call Office, Mormugao	5	29	13	88	0	6
Gujarat	Ahmedabad	Naroda, G.I.D.C., Ahmadabad	17	50	25	87	0	8
		Cadilla Bridge Narol	16	52	24	86	0	7
		Bhagavathi Estate, Keval Kanta Road, Rakhiyal	17	48	25	88	0	8
		Reliable Products, 61/62 Ilaben estate, Pirana Dump Site, Narol (previous Dyno Wash)	18	57	28	87	0	9
		L.D. Engg. College	17	52	24	88	0	8
		Shardaben Hospital, Saraspur	17	54	25	86	0	9
		R.C. Technical High School, Mirzapur	16	48	24	86	0	7
		AZL Behrampura, Ahmadabad	16	49	25	87	0	8
		Sola L.T. Chanakyapuri Pumping Station	16	46	26	88	0	7
	Anklesvar	Rallis India Ltd.	17	46	26	88	0	6
		Durga Traders, Bhavanafarm Society	16	45	25	88	0	6
	Jamnagar	Fisheries Office	14	43	25	87	0	7
		Nr. Sardhara Industrial Corporation	18	46	26	87	0	7
	Rajkot	GPCB Regional Office	16	51	25	87	0	8
		S.V.R. Engg. College	15	50	26	87	0	7
	Surat	B.R.C. High School, Udhna	15	50	29	83	0	8
		Near Air India Office	13	52	26	88	0	10
		GPCB Office, Geri Vasahat	14	49	25	87	0	8
	Vadodara	Sterling Gelatin Guest House, Vill-Karakhadi Padia	14	47	25	87	0	8
		Dandia Bazaar	16	45	25	88	0	7
		CETP Nandesari	16	60	27	85	0	10
		Lubrizol	14	55	26	87	0	10
	Vapi	GEB, Illrd Phase, GIDC	10	58	26	86	0	10
Vapi Nagar Palika, Vapi		10	45	23	87	0	9	
Himachal Pradesh	Baddi	Industry Department Office Building	19	44	33	123	0	5
		AHC barotiwala	20	38	27	110	0	4
		Housing Board	23	49	33	48	0	5
	Damtal	Regional Office	5	12	9	119	0	2
		Old Road	5	12	9	113	0	1
	Dharamshala	Kotwali Bazar Dharamshala	5	10	6	84	0	1
		Daari, Dharamshala	5	14	6	124	0	1
	Gulaba	Behind green tax barrier	5	7	5	19	0	1
		Kala Amb Industrial Area	10	36	15	166	0	2
	Kala Amb	Kala Amb Town/Trilokpur	9	20	14	161	0	1
		Nehru Park, Manali, Kullu	7	16	11	88	0	2
	Manali	HPSPCB, Hadimba Road, Manali, Kullu	5	7	5	72	0	1
		Behind Police check post	5	11		12	0	2
	Nalagarh	Municipal Council	18	56	25	114	0	4
		Paonta Sahib	9	21	13	165	0	2
	Paonta Sahib	Gondhpur Industrial Area	11	19	15	120	0	1
		Regional Office, Sector- 4	5	30	6	133	0	3
	Parwanoo	Asst. Commissioner Building Sector I	5	34	6	122	0	3
		Bus Stand, Winterfield	11	34	26	202	0	4
	Shimla	HPSPCB, BBMB Colony, Mandi	5	26	8	143	0	4
		Municipal Council, NH-21, Mandi	5	24	9	107	0	4
	Sunder Nagar	Regional Office, Una	7	8		17	0	0
		Behind pollution check barrier, Bahang / Station No.-II1, Bahang	5	11	5	44	0	2
Jammu & Kashmir	Jammu	Regional Office, Jammu	6	26	17	66	0	4
		M.A. Stadium, Jewel Chowk	10	24	17	62	0	3
		Bari Brahmana Industrial Area	9	25	17	73	0	4
Jharkhand	Barajamda	Barajamda U.M. Office	18	28	23	91	0	2
		R.O. Dhanbad	30	43	36	102	0	3
	Dhanbad	EMTI, Bastacola	28	44	34	75	0	3
		CGM Office, Kusunda	28	43	34	100	0	2
		Bistupur Vehical Testing Centre	37	54	48	93	0	4
Jamshedpur	Golmuri Vehicle Testing Centre	37	52	47	91	0	3	

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Jharia	M.A.D.A.	29	41	35	105	0	2
	Ranchi	Albert Ekka Chowk, Main Road	35	121	37	96	1	9
	Saraikela	RO Building, Adityapur	39	53	46	91	0	4
	Sindri	BIT / PDIL	24	40	33	73	0	3
Karnataka	Bagalkote	Bagalkote KSPCB Office Premises	8	32	17	85	0	3
	Bangalore	Graphite India, White Field Road	15	41	27	83	0	6
		AMCO Batteries, Mysore Road	18	41	28	107	0	6
		KHB Industrial Area, Yelahanka	11	39	24	80	0	6
		Peenya Industrial Area	18	38	30	52	0	7
		Victoria hospital	14	38	25	103	0	7
		Yeshwanthpura police station	14	38	28	100	0	6
		Jnanabharathi, Bangalore University	9	32	17	102	0	5
		RV College of Engineering, Mysore Road	18	18		1	0	
	TERI office, Vital Medi healthcare Pvt Ltd	14	40	27	108	0	7	
	Belgaum	Karnataka SPCB Office Building	9	27	16	52	0	4
	Bidar	KSPCB Office Premises	5	16	9	59	0	2
	Bijapur	KSPCB Office Premises	9	33	17	36	0	4
	Chitradurga	KSPCB Office Premises	5	11	6	105	0	2
	Devanagere	Regional Office building, KSPCB	5	14	8	94	0	2
		Mothi Theatre, Gandhi Circle, P.B. Road / Traffic Police Station	9	41	19	80	0	10
		HPF Intakewell, Kumarapattnam	5	11	7	102	0	2
	Gulbarga	Government Hospital	8	28	13	58	0	5
	Hassan	KSRTC bus stand building	14	27	20	104	0	3
	Hubli-Dharwad	Lakkamanahalli Industrial Area, Dharwad	13	23	17	105	0	2
		Rani Chennamma Circle, Hubli	14	26	21	104	0	3
	Kolar	KSPCB Office Premises, Kolar	17	40	27	98	0	6
	Mandya	KSPCB Building, Bandigowda Badarahe	11	27	14	107	0	2
Mangalore	Baikampady Industrial Area	9	11	10	92	0	0	
	K.R.Circle, Visvesvaraya Bldg	12	34	15	111	0	2	
Mysore	KSPCB Bldg. Hebbal Ind. Area	11	11		1	0		
	KSPCB Office Premises, Raichur	5	27	11	77	0	5	
Shimoga	The VISL, Oxygen Plant, Shimoga	5	14	6	100	0	2	
Timukuru	KSPCB Office Premises	17	42	27	103	0	6	
Kerala	Alappuzha	District Office, Alissery Road	5	5	5	107	0	0
		DC Mills, Pathirappally	5	5	5	25	0	0
		William Goodacre Power House Bridge	5	10	5	71	0	1
	Kochi	Eloor I, FACT, Ambalamughal	6	31	19	107	0	4
		Eloor II	10	43	23	102	0	5
		Irumpanam	5	35	11	105	0	6
		Ernakulum South	5	32	13	65	0	7
		VYTTILA	5	33	12	105	0	6
		MG Road Bank Ernakulum	5	31	12	105	0	6
		KALAMASSERY / CSIR Complex	5	31	10	103	0	5
		Kuttipadam	7	20	13	42	0	4
	Kollam	KSPCB, District Office, Kadappakada	5	8	5	110	0	0
		KMML Chavara	5	9	7	110	0	1
	Kottayam	Kottayam	12	13	12	119	0	0
		Vadavathoor	12	14	13	119	0	0
	Kozhikode	Kozhikode City	5	13	5	103	0	1
		Nallalam	5	11	5	67	0	1
	Malapuram	Kakkanchery, Sijmak oils	9	21	15	107	0	2
	Palakkad	SEPR Refractories India Ltd.	5	28	7	98	0	4
	Pathanamthitta	KSPCB, Makkamkunnu	14	19	17	100	0	1
	Thiruvananthapuram	PRS Hospital/COSMO	8	29	15	105	0	5
		SMV School	7	32	16	105	0	5
		VELI / HiTech Chackai	10	40	18	105	0	7
PETTAH / Sasthamangalam(plamadou)		8	34	16	105	0	5	
Thissur	KSPCB, District Office, Poonkunnam	5	20	6	104	0	3	
	Thissur/ Peringandoor	5	12	5	74	0	1	
Wayanad	Sulthan Bathery	5	5	5	104	0	0	
	Wayanad	5	5	5	79	0	0	
Madhya Pradesh	Amlai	HJI	15	26	21	60	0	2
		OPM	14	22	18	69	0	2

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Madhya Pradesh	Bhopal	Hamidia Road, MP Hastshilp Vikas Nigam	5	39	21	72	0	7
		CETP Govindpura	8	32	17	88	0	5
		Nutan Subhash School, T.T. Nagar	5	11	9	36	0	2
		Kolar Thana, Kolar Road, Bhopal	5	53	20	69	0	10
		AKVN Office, Industrial Area Mandideep, Raisen	9	56	27	71	0	8
		Barkatuallah University, Hoshgabad Road, Bhopal	5	30	13	74	0	5
		Main Road, Hemu Colony, Bairagarh, Bhopal	5	41	17	77	0	7
	Chhindwara	Arera Colony	5	24	10	82	0	4
		HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon	8	21	14	96	0	3
	Dewas	Hindustan Unileaver, Narsinghpur Road,	7	19	14	88	0	3
		EID Perry (I) Limited	16	35	26	94	0	6
		Dewas Metal Section	13	35	26	93	0	7
	Gwalior	Vikas Nagar	16	35	26	96	0	6
		Dindayal Nagar	8	44	23	90	0	5
		Maharaj Bada	10	46	24	93	0	6
	Indore	M.P. Laghu Udyog, Pologround	7	67	18	103	0	7
		Kothari Market, M.G. Road	7	30	17	109	0	4
		Telephone Nagar, 26 A, Kanadia Road	12	33	18	109	0	3
	Jabalpur	Vijay Nagar	11	19	14	101	0	2
		Udaipur Beverage Racchai	15	22	19	101	0	2
	Katni	HIG-4 Housing Board Colony Jhinhri, Katni	17	36	27	96	0	4
		Calderys Works Refractories India Private Limited, Guest House, Katni	21	36	29	72	0	3
	Nagda	Chem. D. Labour Club	7	25	12	79	0	4
		B C I Labour Club	8	21	13	80	0	3
		Grasim Kalyan Kendra	9	20	15	75	0	3
	Prithampur	Vikas Bhavan, Sector-2	11	22	18	94	0	3
		RCC Over Head Tank No. 1, Sector-3	11	24	18	112	0	3
	Sagar	Pt.Deendayal Nagar	5	21	14	96	0	4
		Katra Bazar, Sagar	5	32	13	101	0	4
	Satna	Sub-divisional Office E/M Light Machniery	7	20	11	73	0	2
		MPPCB, Dharwari Gali No.5, House No.318	5	34	10	75	0	6
	Singrauli	Jayant Township	20	112	49	83	7	20
		N.T.P.C., Vidyanagar	19	107	49	81	6	18
Waidhan		19	94	47	87	8	19	
Ujjain	District Office	10	15	13	66	0	1	
	Regional Office	8	16	11	75	0	2	
	Mahakal Temple	8	16	12	51	0	2	
	Chamunda Mata Chouraha	10	21	12	49	0	2	
Maharashtra	Akola	LRT Commerce College, Civil Lines, Akola	12	15	13	88	0	1
		MIDC Water Work, Phash-II, MIDC Akola	12	19	15	143	0	2
		College Of Engineering & Tech, Akola	12	19	15	196	0	1
	Ambernath	Ambernath Municipal Council Office	21	129	66	131	33	21
	Amravati	Apurva Oil Industries, A-23, MIDC	9	25	15	215	0	3
		Elect. Dept., Govt College Engineering	9	18	14	92	0	2
		Rajkamal Square, Vaneeta Samaj	9	25	15	154	0	3
	Aurangabad	S.B.E.S. College	19	68	37	144	0	11
		Collector Office	10	65	33	127	0	10
		C.A.D.A. Office, Garkheda	22	65	37	91	0	11
	Badlapur	BIWA Office	19	120	60	187	32	20
	Bhiwandi	Prematai Hall, Near Dhamankar Naka	31	69	44	101	0	8
		Fire Brigade Office, I.G.M. Hospital	31	69	44	165	0	7
		Regional Office, M.P.C. Board, Kalyan	31	69	43	237	0	7
	Chandrapur	Grampanchat Ghughus	12	49	28	94	0	7
		M.I.D.C. Chandrapur	18	46	29	101	0	6
		Nagar Parishad	10	85	30	163	1	10
		Gadchandur Gram Panchayat, Rajura	18	47	29	97	0	6
		MIDC, Tadali	14	45	29	97	0	6
	Dombivali	Municipal Council, Ballarshah	19	43	29	99	0	5
	Dombivali	Dombivali MIDC Phase-II	20	120	60	190	29	18

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State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation	
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS		
Maharashtra	Jalgaon	B. J. Market	28	36	32	94	0	2	
		Girna water tank	27	38	32	213	0	2	
		MIDC Jalgaon	27	38	33	154	0	2	
	Jalna	Bachat Bhawan, Near S P Office	33	51	39	104	0	4	
		Krishidhan Seeds Ltd, MIDC Area	33	52	40	172	0	4	
	Kolhapur	University Campus, Shivaji University	10	33	20	80	0	5	
		Ruikar Trust, S.T. Stand	10	82	38	147	1	18	
		Mahadwar Road, Near Mahalaxmi Temple	10	82	37	203	1	16	
	Latur	MIDC Water Works	18	27	21	239	0	2	
		Kshewraj Vidyalaya Shyam nagar	18	27	21	104	0	2	
		Sidheshwar Sahakari Bank Ganjgolai	18	27	20	172	0	2	
	Mumbai	Bank of India, Kalbadevi /Branch, Kalbadevi/ VARSOVA	5	73	27	84	0	15	
		Parel TT, Ambedkar Road	7	73	30	88	0	14	
		Worli	6	71	26	87	0	15	
	Nagpur	Institution of Engineers	29	57	39	100	0	6	
		Govt. Polytechnic College, Sadar	29	60	41	96	0	6	
		MIDC Office Hingana Road	23	56	42	100	0	7	
		MIDC Industrial Area, MIDC Office, Hingna	5	63	22	82	0	11	
		Nagpur Coop Building, Maskasath, Itwari	6	41	18	79	0	7	
		NEERI Lab, Nehru Marg, Highway No. 7	8	83	21	74	1	10	
	Nashik	MPCB Office Premises, Civil Lines	22	56	38	321	0	6	
		R.T.O. Colony Tank	8	42	22	154	0	8	
		VIP Industrial Area, MIDC Satpura	8	42	22	104	0	7	
		Nashik Municipal Council Building	8	42	22	218	0	7	
	Navi Mumbai	MPCB Sub R.O. Udyog Bhawan, Nashik	6	72	21	305	0	8	
		T.B.I.A, Rabale Airoli, TTC	17	75	48	103	0	11	
		Dr. D.Y. Patil College, Nerul, TTC	22	67	45	229	0	7	
		MPCB Lab, Mhape, TTC	35	73	47	168	0	8	
		CIDCO Nodal Office Kharghar	35	68	48	103	0	9	
		Water Pump House, Panvel, Taloja	35	75	48	168	0	8	
	Pimpri-Chinchwad	MIDC Collom Facility Building, Taloja	28	75	47	229	0	4	
		Bank of Baroda Buiing, Near M.C Building	23	176	78	199	77	37	
	Pune	Maratha Chamber of commerce, Bhosari	21	178	72	62	21	29	
		State Electricity Board BLDG Nalstop	25	254	87	113	59	38	
		Swargate Police Chawki	48	178	101	33	27	26	
	Sangli	Udyog bhavan / SRO, MPCB Sangli	10	87	34	99	1	16	
		Sangli- Miraj Primary school Building	10	102	42	226	22	22	
		Krishna Valley School	10	102	39	163	11	20	
	Solapur	WIT Campus	31	39	35	102	0	2	
		Voronoko School / Chitale Clinic	31	39	35	144	0	2	
	Thane	Maternity Hospital, Dhobighat, Thane East	33	40	37	24	0	2	
		Shahu Market,Naupada, Thane West	33	45	37	49	0	3	
		Kolshet and Balkum, Thane West	32	45	36	73	0	3	
	Ulhasnagar	Smt. C. H. M. College Campus	18	83	48	99	1	14	
		Octroi Naka, Pawai-Chowk, Vithalwadi	24	110	63	107	15	17	
	Manipur	Imphal	Secretariat Building	5	52	21	57	0	11
	Meghalaya	Byrnihat	EPIP, Ri-Bhoi district	5	18	13	121	0	3
Dawki			Terrace building, Jaintia Hills District	5	18	13	121	0	3
Khliehriat			O/o BDO, C & R.D. Block-Khliehriat	5	15	11	122	0	3
Nongstoin			Office Premises of E.E, PHED	5	21	13	121	0	3
Shillong			Boards Office Permises, Lumpyngngad	5	13	7	106	0	2
Tura		State Tuberculosis Hospital	5	26	20	121	0	6	
		Forest Rest House, Polo Hills	5	16	11	117	0	3	
		41/2 mile, Myllem Range Office	5	16	9	119	0	3	
Umiam / Umsning		PHED, Araimille, West Garo Hills District	5	16	12	116	0	3	
Mizoram	Aizawl	Umiam Industrial Complex, Ri-Bhoi District	5	15	12	120	0	2	
		Khatla, M.G-Road, Mizoram SPCB	5	15	11	103	0	3	
		Laipuitlang	5	5	5	106	0	0	
		Bawngkawn	5	17	9	102	0	2	
		Dawrpui Y.M.A, Building, Dawrpui	5	21	11	102	0	3	
Lengpui Airport, Model Veng, Lengpui	5	5	5	94	0	0			

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			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS		
	Champhai	D.T.O Office Building, Kahrawt veng	5	5	5	101	0	0	
		Lalzidinga building, Vengthlang	5	5	5	101	0	0	
	Kolasib	H. Lalthuama Building, Project Veng	5	5	5	101	0	0	
		Synod Bookroom, Building Diakkawn	5	5	5	101	0	0	
	Lunglei	Thangkhuma Building, Salem Veng	5	5	5	96	1	0	
		K.Lalliantluanga, Chanmari I, Lunglei	5	5	5	96	0	0	
Nagaland	Dimapur	Bank Colony	5	32	8	139	0	5	
		Dhobinala	5	24	13	121	0	5	
		Signal point, Dimapur, Nagaland SPCB	5	5	5	103	0	1	
		House no-288, Tenyiphe-I, Chumukiedima, Dimapur	5	25	7	103	0	4	
		Vidya Bhawan School, Lane 17, Nagarjan, Kuda Village, Dimapur	5	5	5	48	0	1	
		House no 24, Near community Hall, Viola colony, Dimapur	5	5	5	48	0	0	
	Kohima	ERJO Motors, Burma Camp, Dimapur	5	16	9	48	0	4	
		Opposite NST Office	5	10	5	138	0	1	
		Kohima	Opposite War Cemetery	5	12	5	121	0	1
Odisha	Angul	Industrial Estate	18	33	27	102	0	3	
		NALCO Township	22	34	26	102	0	2	
	Balasore	Sahadevkhunta	10	12	11	104	0	0	
		DIC office	10	13	11	104	0	0	
		Rasalpur near Balgopalpur I/A	11	14	11	104	0	1	
	Berhampur	Regional Office Orissa SPCB	13	46	19	107	0	4	
		Capital Police Station	11	37	19	97	0	5	
	Bhubneshwar	IRC Village	12	24	16	94	0	3	
		Office Premises Bhubaneswar	11	22	16	100	0	2	
		Water works, Palasuni, Rasalgarh	10	51	17	69	0	5	
		Patrapara, Khandagiri	12	33	14	101	0	3	
		Chandrashekharapur	13	22	15	91	0	2	
	Bonaigarh	Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh	11	26	16	104	0	5	
	Cuttack	Traffic Tower, Badambadi	14	31	19	58	0	2	
		P.H.D Office Barabati	13	33	18	104	0	3	
		R.O. Cuttack Office, Surya Vihar	14	38	22	104	0	3	
	Jharsuguda	R.O. Building Cox colony	11	43	13	108	0	3	
		TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bheparhar,	11	27	18	106	0	3	
	Kalinga Nagar	Over the Guest House of M/s NINL	13	22	18	55	0	2	
		Maintenance Office of M/s NINL, Duburi	11	27	17	77	0	3	
	Konark	Konark Police Station	11	16	13	101	0	1	
	Paradeep	On roof of PPT Staff Quarter	6	16	11	101	0	2	
		On roof of PPL Guest	6	20	10	101	0	3	
		On roof of STP building IFFCO	6	12	10	83	0	1	
	Puri	Sadar police station	13	18	15	46	0	1	
		Town Police Station	13	22	15	75	0	1	
	Rajgangpur	DISIR, Rajgangpur	11	37	19	103	0	8	
	Rayagada	Regional Office Orissa SPCB	11	22	17	104	0	2	
		LPS High School, Jaykaypur	12	21	17	101	0	2	
	Rourkela	Regional Office, ORPB	10	22	14	104	0	2	
Kalunga Industrial Estate		9	26	17	104	0	4		
IDL Police Out-post, Sonaparbat		10	16	11	104	0	1		
Kuarmunda, Sundergarh		8	22	12	104	0	2		
Sambalpur	Filter Plant, PHD Office, Modipara	19	46	24	105	0	3		
Talcher	Coal Field Area	23	35	28	104	0	2		
	T.T.P.S.Colony	24	33	29	104	0	2		
Puducherry	Karaikal	B.Ed College (PKCE), Nehru Nagar	5	11	5	88	0	1	
		Govt. Tourist Home, Kovilpathu	5	10	6	91	0	1	
		M/s Puducherry Power Corporation Limited, Polagam, T.R. Pattinam,	5	9	5	82	0	1	
	Puducherry	DSTC Office Upstairs, PHB 3rd Floor, AnnaNagar	9	17	13	92	0	1	
		PIPDIC Ind. Estate Mettupalayam	10	16	13	87	0	1	
		Chamber Of Commerce	6	14	10	85	0	1	

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			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Punjab	Aligarh (Jagraon)	Forest Office, Vill:Aligarh, Teh:Jagraon	9	37	17	103	0	5
	Amritsar	R.O. Focal Point (earlier Nagina soap factory)	25	38	33	62	0	3
		Vinod Chilling Center / Kochar Bhavan (earlier A-1,Platers)	26	46	35	60	0	3
	Aspal Khurd (Tapa)	Vill:Aspal Khurd, Teh:Tapa	9	18	12	124	0	2
	Bara Pind (Goraya)	Vill:Bara Pind, Teh:Goraya	10	26	20	83	0	4
	Bhatinda	Bhatinda Milk Producers, Dabwali Road	5	21	13	84	0	2
	Binjon (Garshankar)	CHC, Vill:Binjon, Teh: Garshankar	9	19	14	80	0	2
	Bishanpura (Payal)	Longowalia Yarns (Unit-II), Vill-Bishanpura, Teh: Payal	9	39	21	93	0	6
	Changal (Sangrur)	Mastuana Sahib, Vill:Changal, Teh:Sangrur	6	26	13	106	0	3
	Chowkimann (Jagraon)	Ludhiana College of Engineering, Vill:Chowkimann, Teh:Jagraon	9	32	19	102	0	4
	Dera Baba Nanak	C-PYTE Building	11	17	13	67	0	1
	Dera Bassi	Punjab Chem and Crop Protection, Bhanakarpur Rd	9	26	13	107	0	3
		Winsome Yarns Ltd., Barwala Road	9	18	12	114	0	2
	Fatehpur (Samana)	Baba Banda Singh Bahadur College, Vill:Fatehpur, Teh:Samana	10	13	11	38	0	1
	Gobindgarh	Modi Oil and General Mills, Mandi	13	44	36	126	0	6
		Raj Steel Rolling Mills, Mandi	13	40	35	133	0	4
		United Rolling Mills, Mandi Gobindgarh	15	98	36	130	1	8
	Guru Ki Dhab (Kotkapura)	Vil:Guru Ki Dhab / Basti Himmatpura, Teh:Kotkapura	7	26	13	22	0	5
	Jaito Sarja (Batala)	Royal Nursing College, Vill: Jaito Sarja, Teh: Batala	11	18	14	37	0	1
	Jalandhar	Municipal Council Tubewell No. 27	18	49	25	81	0	5
		Regional Office	18	47	24	73	0	5
		Punjab Maltex , Kapurthala Road	12	40	22	59	0	5
		Focal Point	20	34	25	62	0	4
	Khanna	Markfed Vanaspati, Khanna	7	73	26	112	0	10
		AS School, Khanna	11	45	27	116	0	7
	Kharaori (Sirhind)	Vill:Kharaori, Teh:Sirhind	10	29	13	126	0	5
	Kotladoo (Ajnala)	Satyam College, Ramtirath Road, Vill: Kotladoo, Teh: Ajnala	11	18	13	62	0	1
	Lakho ke Behram (Ferozpur)	Vill:Lakho ke Behram, Teh:Ferozpur	5	12		11	0	
	Ludhiana	Bharat Nagar Chowk / RO Gill Road	13	39	23	120	0	6
		Nahar Spining Mills, Dholewal Chawk	11	46	25	126	0	7
		Ludhiana Coop. Milk Producer, Ferozpur Rd	5	48	24	137	0	7
		PPCB Office Building, Vishavkarma Chowk	20	86	32	131	1	8
	Mrar Kalan (Muktsar)	Vill: Mrar Kalan, Teh:Muktsar	10	26	14	42	0	5
Mukandpur (Nawashahar)	Govt. Senior Sec. School, Vill:Mukandpur, Teh:Nawashahar	13	26	17	78	0	3	
Mureedke (Batala)	Johal Farm, Vill: Mureedke, Teh: Batala	8	18	12	98	0	2	
Naudhrani (Malerkotla)	Vill:Naudhrani, Teh:Malerkotla	9	25	13	104	0	3	
Naya Nangal	Punjab Alkalis & Chemicals Ltd	9	22	12	95	0	2	
	M/s NFL Guest House,Naya Nangal	9	23	12	108	0	2	
Patiala	Ceylon Industries, Factory Area, Patiala	9	30	12	128	0	2	
	Fire Brigade Station, Bahera Road, Patiala	10	23	12	132	0	3	
Peer Mohammad (Jalalabad)	Vill:Peer Mohammad, Teh:Jalalabad	10	13	12	23	0	1	

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	Poohli (Bhatinda)	Vill: Poohli, Teh:Bhatinda	10	26	15	23	0	5	
	Qila Bharian (Sangrur)	Gurdwara Gangsar Sahib, Vill:Qila Bharian, Teh:Sangrur	10	27	13	112	0	3	
	Rakhra (Patiala)	Shree Ganesh Group of Institute, Vill:Rakhra, The:Patiala	11	13	12	53	0	1	
	Rohila (Samrala)	Gopimal Kaur Sain Industries Pvt. Ltd, Vil:Rohila, Teh:Samrala	9	42	20	120	0	7	
	Tirathpur (Amritsar I)	United ITI, Vill: Tirathpur, Teh:Amritsar I (earlier Sriguru Harkishan Public School,Rasulpur Kalan)	10	14	13	58	0	1	
Rajasthan	Alwar	Rajasthan State Pollution Control Board	22	40	30	98	0	5	
		Gaurav Solvex Ltd. MIA	28	45	37	103	0	4	
		RIICO Pump House, MIA	27	45	34	105	0	4	
	Bharatpur	Khadi Gramoday Samiti	23	38	27	97	0	3	
		RIICO office Building	5	34	25	99	0	3	
		RO, Building	20	30	24	102	0	1	
	Bhiwadi	R.O.Building	15	78	44	101	0	12	
		UIT Guest House	31	79	53	38	0	11	
		Uttam Strips Ltd	12	79	42	97	0	14	
	Chittorgarh	Regional Office building, RSPCB, Near FCI Godown, Chnaderiya	18	91	29	102	1	9	
		Veterinary Hospital, Meeranagar	15	83	27	97	2	12	
		PHED Pump House, Segawa	14	64	23	97	0	7	
	Jaipur	Ajmeri Gate	17	50	34	107	0	6	
		RJPB Office,Jhalana Doongari	13	33	21	104	0	4	
		District Education Officer, Chandpole	22	72	34	101	0	7	
		RIICO Office, M.I.A.	15	42	23	104	0	6	
		RSPCB, Vidyadhar Nagar	5	50	27	104	0	6	
		VKIA	16	55	31	104	0	8	
		22,Godam, RIICO Office	14	40	24	107	0	5	
		Mansarovar Nagar Niigam	15	39	24	99	0	5	
	Jodhpur	RIICO Office Sitapura Industrial Area	16	47	27	103	0	6	
		DIC Office, Industrial Estate	10	53	25	86	0	9	
		Sojati Gate	11	56	26	80	0	9	
		Basni Industrial Area, RIICO Office	10	50	25	87	0	8	
		Maha Mandir Police Thane	11	58	26	84	0	9	
		Office of Housing Board, Chopasani Road	10	53	25	82	0	9	
		Shastri Nagar Police Thana	11	57	26	87	0	9	
		Kudi Mahila Thana	17	43	25	50	0	7	
		Sangariya Police Choki	18	44	27	47	0	7	
	Kota	SoorsagarThana	15	52	26	47	0	8	
		Regional Office, RJPB, Anantpura	19	32	24	99	0	3	
		Municipal Corporation Building	19	31	24	104	0	3	
		Samcore Glass Ltd.	19	37	24	109	0	3	
		FireStation Nagar Nigam Shrinathpuram	20	31	25	104	0	3	
		RajasthanTechnical University,Rawatbhata	19	33	25	103	0	4	
	Udaipur	Sewage Treatment Plant, Balita, Kota	18	45	24	107	0	3	
		Ambamata	11	44	27	103	0	7	
		Town Hall	15	52	32	105	0	8	
		Regional Office,MIA	13	53	33	104	0	8	
	Sikkim	Chungthang	Chungthang	5	5	5	90	0	0
		Gangtok	White Hall Complex, Tasi view point	5	25	10	77	0	6
		Mangan	Mangan Police Station	5	8	5	101	0	1
Namchi		Namchi	5	8	5	99	0	1	
Pelling		The Pelling Girls Hostel	5	11	5	93	0	1	
Rangpo		Rangpo Fire Station	5	18	8	94	0	3	
Ravangla		Ravangla Range Office	5	8	5	98	0	1	
Tamilnadu	Chennai	Police Station Building	5	8	6	93	0	1	
		Govt. High School, Manali	15	21	18	58	0	2	
		Kathivakkam	14	20	17	62	0	2	
		Thiruvottiyur	14	19	16	62	0	2	
		Madras Medical College	5	65	21	86	0	12	
NEERI, CSIR CampusTaramani	5	43	16	86	0	8			



Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Thiruvottiyur Municipal Office	5	68	23	87	0	12
		Adiyar	11	20	15	52	0	2
		Kilpauk	14	26	19	66	0	2
		Thiyagaraya Nagar	14	24	20	68	0	2
		Nunbakgum	15	29	20	60	0	2
		Anna Nagar	15	27	19	53	0	2
	Coimbatore	Poniarajapuram, On the top of DEL	14	19	16	86	0	1
		G.D.Matric Hr.Sec.School	14	22	18	69	0	2
		SIDCO Office, Coimbatore/ Kurichi	16	25	19	77	0	2
	Cuddalore	Eachangadu Village	18	19	18	94	0	0
		SIPCOT (Project Office)	15	18	17	81	0	0
		DEE Office, Cuddalore	17	25	21	75	0	2
	Madurai	Highway (Project -I) Building	13	21	18	70	0	2
		Fenner (I) Ltd. Kochadai	14	23	19	67	0	2
		Kunnathur Chatram Avvai Girls HS School	14	22	18	75	0	1
	Mettur	Raman Nagar	17	33	21	79	0	3
		SIDCO	18	36	22	77	0	4
	Salem	Sowdeswari College Building	8	42	21	77	0	5
		Gandhi Market	13	21	18	68	0	2
		Main Guard Gate	14	22	19	67	0	2
		Bishop Heber College	12	22	16	75	0	2
		Golden Rock	13	22	17	72	0	2
	Trichy	Central Bus Stand	14	24	20	69	0	2
		Fisheries College, Tuticorin Sipcot	8	20	11	72	0	1
Raja Agencies		9	22	12	66	0	2	
AVM Jewellery Building		7	20	11	83	0	2	
Tuticorin								
Telangana	Adilabad	Building of SCCL Manadamarri Club Mandamarri, Mancherial	23	27	25	108	0	1
		Balanagar	22	123	51	106	5	16
	Hyderabad	Tarnaka, NEERI Lab. IICT Campus	5	41	15	89	0	12
		Nacharam, Industrial Estate	5	45	15	88	0	11
		ABIDS Circle General Post Office	5	42	16	88	0	12
		Uppal, Modern Foods & Industries IDA	21	73	44	112	0	10
		Jubilee Hills	23	83	42	119	1	10
		Paradise	24	96	51	119	4	13
		Charminar	17	68	38	119	0	9
		Zoo Park	9	141	48	115	13	30
		Jeedimetla Industrial Estate, Rangareddy Distt.	18	77	47	119	0	12
	Karimnagar	On the terrace of the DIC building, Karimnagar	45	68	55	86	0	5
	Khammam	CER Club Khammam	28	74	53	101	0	8
		Jalasoudha building	44	66	52	102	0	5
	Kothur	Mehaboobnagar	47	67	59	104	0	4
	Nalgonda	AP PCB Nalgonda	23	28	25	99	0	1
		M/s. Srini Pharmaceuticals pvt. Ltd.Choutuppal (V & M)	24	29	26	99	0	1
	Nizamabad	subashnagar,nizamabad dist	23	27	25	99	0	1
	Patancheru	Police Station, Medak, Ramachadrapuram	22	28	25	93	0	1
	Ramagundam	Godavarikhani, Ramagundam, Karimnagar	45	65	55	97	0	5
	Sangareddy	Pashamylaram/Municipal Office	7	109	39	104	4	20
		Regional office Building of SANGAREDDY	23	27	25	98	0	1
		M/s. Mylan Industries, Gaddapothara	24	29	25	99	0	1
	Warangal	KUDA Office, Hanumakonda	33	66	52	99	0	5
Mee-Seva Building ,Municipal Complex		40	60	51	98	0	4	
Tripura	Agartala	SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban	8	15	10	83	0	2
		Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala	9	16	11	83	0	2
		Regional Office, Bodla	10	33	21	90	0	5
Uttar Pradesh	Agra	Nunhai	11	45	29	94	0	8
		Taj Mahal	5	71	19	298	0	12
		DIC Nunhai	5	69	28	126	0	12
		Etmad-uddaulah	5	67	27	131	0	12

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Rambagh	5	58	23	124	0	12
	Allahabad	Square crossing circle of Laxmi Talkies	10	51	39	106	0	9
		Bharat Yantra Nigam Ltd	7	57	34	108	0	9
		Alopibagh/Sewage Pumping Stations	29	88	49	76	1	11
		Jhonstonganj/co-operative Bank	26	72	42	98	0	8
		Rambagh/Parag Dairy	26	69	46	102	0	9
	Anpara	Anpara Colony, Sonabhadra	19	32	29	95	0	3
		Renusagar Colony, Sonabhadra	21	32	28	97	0	2
	Baghpat	Sarvodaya Hospital, Tatiri Merrut, Baghpat Road	10	54	21	93	0	8
		Weavetex Overseas Hostel, Khekra, Baghpat	10	57	21	94	0	8
	Bareilly	IVRI Izatnaga	18	38	27	107	0	5
		Indian oetrol pump, Civil Line	25	65	36	107	0	6
	Firozabad	Center for Development of Glass Industry	17	42	31	104	0	5
		Tilak Nagar	20	41	31	104	0	5
		Raza ka Tal	22	41	31	103	0	4
	Gajraula	Raunaq Auto Ltd, J.P. Nagar	16	55	35	94	0	9
		Indira Chowk, J.P. Nagar	14	67	40	92	0	10
	Ghaziabad	Atlas Cycles Industries, Sahibabad Ind. area	23	65	46	93	0	10
		Bulandshaar Road Industrial Area	21	61	43	87	0	9
		Khora Colony, Ghaziabad	10	85	26	86	1	13
	Gorakhpur	Vinoba Bhawe Park, Lohia Nagar, Ghaziabad	10	82	27	85	1	13
		M. M.M. Engineering College, Gorakhpur	10	42	19	93	0	9
		India Glycol Ltd. Gida, Gorakhpur	28	80	48	101	1	11
	Greater Noida	Jalkal, Muncipal Corporation, Golghar	20	75	37	92	0	14
		Holland Tractor, Greater Noida	10	87	26	88	1	14
		Honda Power, Greater Noida	9	86	26	88	1	14
	Hapur	Srinagar Colony, Railway Road, Hapur	13	41	23	89	0	6
		Jindal Pipes Ltd, Hapur	13	42	27	70	0	6
	Jhansi	Manik Chawk / Jal chauraha	11	33	19	117	0	3
		Veeranga Nagar	9	30	17	116	0	2
	Kanpur	Forest & Training Centre, Kidwai Nagar	34	63	48	93	0	7
		Chamber Of Commerce Darshanpurwa / Deputy ka Parao	35	69	53	94	0	7
		Associated Chem Pvt Ltd, Fazalganj, Panki, Site-5	37	66	54	83	0	7
		Head Post Office, Govind Nagar / Dabauli / Shastri NGR	33	59	52	83	0	6
		Jajmau / Awas Vikas	41	63	50	93	0	5
		I.I.T. Campus, Kanpur	9	24	14	100	0	2
		IIT 12 parameter	7	66	14	164	0	6
		Dada Nagar, Kanpur	15	55	41	91	0	7
	Khurja	Ramadevi, Kanpur	21	75	36	89	0	7
		Central Glass & Ceramic Research Institute	18	24	20	95	0	1
	Lucknow	Ahirpara	18	21	19	92	0	1
		Mahanagar	21	43	30	225	0	5
		Chandganj Garden, Aliganj	21	43	31	270	0	5
		Kapoor Hotel, Hazratganj	21	43	31	187	0	5
		Talkatora	20	43	30	268	0	5
		Aminabad / S.M.K Chowk	20	43	31	279	0	5
		Nagar Nigam	20	43	30	268	0	5
		Ansal Technical Institute Campus, Ansal API	20	43	30	266	0	5
	Mathura	Vikas Khand	16	70	37	68	0	14
		RO. UPPCB, 65 Baldevpuri, Maholi Road	17	32	26	81	0	3
	Meerut	CETP, Industrial Area, Mathura	19	40	29	83	0	4
		Begum Bridge	70	85	78	59	25	5
	Moradabad	Thana Railway Road / Kesarganj	40	56	48	59	0	5
		Hindu College, Station Road	11	83	51	91	2	16
	Muzaffarnagar	Central Police Hospital, Civil Lines	13	59	32	90	0	12
		Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road	14	46	33	97	0	7
	Noida	Lekhpal Bhawan, Tehsil Sadar Campus	21	51	35	97	0	8
		UP PPCB, E-12/1, Sector - 1	16	147	61	97	20	26

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Gee-Pee Electroplating and Eng. Work	18	147	64	96	24	27
		Subros, Noida	10	80	26	92	0	14
		Golf Course, Noida	10	82	27	90	1	15
	Raebareli	Town Hall Colony, Ahmad Nagar, Gulab Road	13	16	15	54	0	1
		Khoya mandi Tiraha Lucknow Road Raebareli	17	21	19	54	0	1
		Amawan Road Ind. Area Raebareli	14	18	17	54	0	1
	Saharanpur	SRE-A, IIT Roorkee, Saharanpur Campus	18	26	23	92	0	2
		UPCL S.E. Office, Near Clock Tower	19	27	24	91	0	2
	Unnao	H. No. 5, Krishna Nagar	24	30	26	74	0	1
		IIA Building, Industrial Area, Site 10	26	29	27	74	0	1
	Varanasi	Regional Office, Jawahar Nagar	9	83	35	98	2	17
		Sigra	7	84	34	191	3	17
		Saket Nagar	20	47	32	93	0	6
		Banaras Hindu University	15	42	30	91	0	6
Chandpur		26	64	41	88	0	8	
Uttarakhand	Dehradun	Raipur Road, Near parag Diary	26	30	28	69	0	1
		Clock Tower, PWD Guest House	27	31	29	70	0	1
		Himalaya Drug Co. Near ISBT	27	32	29	68	0	1
	Haldwani	Govt. Women Hospital	21	46	28	103	0	4
	Haridwar	SIDCUL, Haridwar	20	27	24	66	0	3
	Kashipur	BSNL Office, Kashipur	22	31	23	97	0	1
	Rudrapur	SIDCUL Office	21	30	23	87	0	1
West Bengal	Alipurduar	Rabikanta High School	13	48	33	103	0	11
		Jaigaon Police Station	15	50	34	102	0	10
		Birpara Police Station	13	48	32	104	0	11
	Amtala	P Roy Industrial Training Institute, Amtala	26	53	40	104	0	6
	Asansol	Asansol Municipal Corporation	26	53	43	104	0	4
		Kangsabati Spinning Mill, Barjora	23	55	44	104	0	4
		Burnpur Town Department, Burnpur	27	53	44	104	0	4
	Baharampur	Baharampur Municipality	16	49	25	104	0	6
	Balurghat	Balurghat College	13	50	33	104	0	10
	Bankura	Bankura Municipality	14	32	20	104	0	2
	Barasat	Barasat Municipality, 73 Rishi Bankim Chandra Road	11	50	27	103	0	6
	Bardhaman	Bardhaman Town, Rajbati	15	33	20	104	0	2
	Barrackpore	Barrackpore Municipality	15	44	27	104	0	6
		Dum Dum Telephone Exchange	17	53	28	103	0	6
	Khardah	Khardah Municipality	16	51	28	103	0	6
		Baruipur	Baruipur Police Station, Baruipur	28	58	40	104	0
	Bolpur	Bolpur Municipality	15	33	20	104	0	2
	Chinsura	Chinsura Municipality, Pipulpati Auto Stand	15	47	26	104	0	6
	Coochbehar	ABM Seal College	13	49	33	104	0	11
		Uttarbanga Krishi Visvavidyalaya, Pundibari	13	47	32	104	0	11
	Dankuni	Krishnanagar Municipality, Dankuni	13	44	25	104	0	5
	Darjeeling	Bose Institute Campus	13	45	30	104	0	10
	Durgapur	DMC Water Works, Angadpur	24	53	44	104	0	4
		Kwality Hotel, Bhiringi More, Benachiti	24	56	43	104	0	5
		Bidhannagar, PCBL Club, Muchipara	24	48	32	103	0	4
		Dew India Limited, PCBL More, Durgapur	20	53	44	104	0	5
	Ghatal	Annapurna Hotel, Ghatal-Panskura Bus Stand	30	48	39	107	0	5
Haldia	Debhog Milan Viyapith, Bhabanipur	31	50	39	107	0	5	
	Bhunja Raichak, Driver's Hut, Bhunia	28	48	38	105	0	5	
	Supermarket Building, Durgachak	30	49	38	106	0	5	
	WBIDC Ruchi Soya Ind. Durgachak	30	47	37	106	0	4	
Howrah	Howrah Municipal Corporation	31	52	42	105	0	5	
	Naskarpara Pump House, Ghuseri	30	57	39	107	0	5	
	CDS & Health Centre, Bator	32	49	40	104	0	4	
	Howrah Municipality School, Bandhaghat	32	49	40	104	0	4	
Jalpaiguri	Raninagar Jalpaiguri	14	49	33	106	0	10	
Jhargram	Jhargram	29	48	37	105	0	4	

Annexure 4: Location wise NO<sub>2</sub> - 2019

State / UT	City / town / village	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Kalimpong	Kalimpong Municipality	13	47	31	104	0	10
	Kalyani	College of Medicine & JNM Hospital, Kalyani Industrial Area	15	49	26	104	0	7
	Kharagpur	AMD Building, TATA Bearing	31	52	41	106	0	5
	Kolkata	Salt Lake, Rooftop of CK Market	24	59	38	104	0	7
		KMC office Building, Moulali	31	86	46	104	1	11
		Minto Park, Inside Park AJC Bose Road	23	72	40	104	0	10
		Dunlop Bridge, National Sample Survey	27	84	47	104	1	11
		Behala Chowrasta, Traffic Guard Building	25	77	42	104	0	12
		Upanagari Sporting Club, Baishnabghata	27	69	42	104	0	10
		Cossipore Police Station, B.T. Road	5	206	54	80	15	41
		Dalhousie Square, Lal Bazaar Police Headqtr.	5	141	51	80	12	28
		Kasba	5	105	30	79	4	25
		RD CPCB	6	89	33	111	2	24
		Infectious Diseases & BG Hospital, Beliaghata	25	65	40	104	0	10
		CESC Building, Mandeville Gardens, Gariahat	27	71	40	104	0	9
		Administrative Building, Hyde Road	33	68	50	104	0	8
		KMC Drainage, Pumping Station, 9 Mominpur Road, Mominpur	27	60	38	104	0	7
		Paribesh Bhawan	26	67	40	104	0	9
		Milan Tirtha Club, Picnic Garden	27	65	47	104	0	10
		Public Health Engineering Office Building, Rajarhar	25	63	39	104	0	8
		Tennis Club Building, 45-46 Canal West Road, Fariapukur, Shyambazar	29	71	43	104	0	10
		Elite India Rubber Products Pvt.Ltd., Topsia	28	81	45	104	1	12
	Maniktala Fire Station Building, 17, Bagmari Lane, Ultadanga	29	78	44	104	0	11	
	Tollygunge	25	56	40	104	0	7	
	Krishnanagar	Krishnanagar Municipality, TN Thakur Road	15	44	26	104	0	6
	Madhyamgram	Madhyamgram Municipality	11	50	27	103	0	6
	Malda	WBPCB Office, Paribesh Bhaban, Vill. Abhirampur	14	49	34	105	0	10
	Medinipur	Vidyasagar University	30	47	38	107	0	5
	Purulia	Purulia Municipality	14	32	20	104	0	2
	Raigunj	Raigunj College	13	48	32	104	0	11
	Rampurhat	Rampurhat Municipality	15	33	20	104	0	2
	Ranaghat	Ranaghat Municipality, 11 school lane	15	57	26	104	0	7
	Raniganj	Raniganj Municipality	24	52	44	104	0	4
		Mangalpur, SKS School Mangalpur	20	54	44	104	0	5
		Jamuria Municipality	19	53	44	104	0	5
	Rishra	Rishra Municipality	11	51	27	104	0	7
	Sankrail	Bharat Co-op Housing Society	29	50	37	104	0	5
		Bagan Police Station, Bagan	30	50	38	104	0	4
		Dhulagar Gram Pachayat	30	49	40	106	0	4
		P Mukherjee's House, Near SBI Amta	31	48	38	104	0	4
	Siliguri	Siliguri	17	46	33	104	0	9
	Suri	Suri Municipality	15	34	20	104	0	2
	Tamluk	HP Gas Service Station, Maniktala	30	59	38	106	0	5
	Tribeni	Tribeni Health Center	12	43	25	104	0	6
	Uluberia	ESI hospital nursing building, 3rd floor, Near Sahib Mandir	30	50	39	104	0	4

Note: Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009

Annual NAAQS of NO<sub>2</sub> is 40 µg/m<sup>3</sup> for Residential/ industrial / other area and 30 µg/m<sup>3</sup> for ecologically sensitive area.

**Levels of Particulate Matter ≤ 10 µm (PM<sub>10</sub>) in locations / Ambient Air Quality  
Monitoring Stations under NAMP during 2019**

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Andhra Pradesh	Anantapur	Kamala Nagar	35	138	85	106	37	26
		APIIC Zonl office industrial estate	19	119	62	107	8	26
		Cancer Unit. G.G.Hsharada Nagar, JNTU Road	16	96	52	108	0	21
		D.No.6/5/545, Ram Nagar Colony	28	128	68	108	6	22
	Chittoor	GNC Toll Gate Tirumala	17	117	58	100	6	24
		Near Nutrine Confectionery, Palamaner Road	26	95	58	108	0	11
		O/O Mines and Geology, Old Collector Office, Greampet	28	77	53	108	0	11
		Sankar Foundary, Industrial Estate, Adjacent of DIC Office	30	84	55	108	0	10
		Rangachari street, Shanthapeta.	17	76	47	95	0	13
		Ashram Diagnostic Centre	49	93	69	108	0	6
		District Head quarters hospital	48	73	59	108	0	5
	Eluru	M/s Laxmi Propylene Ltd., Plot.No. 25, Industrial Park, Satrampadu	54	86	64	108	0	5
		Somalingeswara nilayam D.N.7B-18-5, Thooru Veedhi, Eastern street, Paidichintaadu	41	102	61	108	1	6
		Near Hindu College, Market Road	42	181	62	101	1	17
	Guntur	A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road	29	192	40	101	1	16
		Distirct Industries Center office Buiding Autonagar	35	78	57	100	0	13
		Government General hospital	35	162	52	101	1	15
		Near ICL Industries, Yerragunta, YSR	19	99	60	108	0	17
	Kadapa	Devi Diabetes & Hormone Centre, 7 Roads	19	93	52	106	0	19
		DIC Office,Kadapa	24	142	55	108	1	18
		Rajiv Gandhi Institute of Medical Sciences	17	121	43	108	1	18
		Municipal Primary School	20	91	57	107	0	16
		Office Building Ramanayyapeta	18	221	63	104	16	39
	Kakinada	Gram Panchayathi building, Suryaraopeta	14	206	66	106	21	38
		MEE Seva / MEPMA Office, Sailipeta	18	186	59	105	16	39
		Petro Chemical Engineering Block, JNTU , Pithapuram Road	16	176	56	107	13	38
		Mourya Inn, Krishna Nagar	17	119	59	108	6	24
	Kurnool	APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center	22	113	64	108	6	24
		Rajvihar Circle	29	117	72	108	8	21
		Pump House, Venkataramana Colony	16	100	49	108	0	21
		Venkatareddy Nagar, Vedayapalem	38	80	68	107	0	6
		D. No.15-471, James Garden, Venkata Ramapuram, Nellore, SPSR Nellore District	45	80	68	107	0	6
	Nellore	Chandramouli nagar	41	74	64	107	0	5
		Dr.P.V. Rama chandra Reddy Hospital, Brindavnam	40	78	63	107	0	6
		Near Court Center	38	74	62	107	0	6
		APIIC, Administrative Office, Growth Centre, Gundlapalli	35	70	57	104	0	6
	Ongole	Ongole Municipal Corporation	35	76	60	106	0	7
		Prakasam Milk Product Compay	27	70	58	104	0	7
		Staff Clud Building, A.P. Paper Mill	17	186	64	99	23	43

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Rajahmundry/ Rajahmendravaram	GAIL Administrative Office, A.V. Apparao Road	15	193	61	105	19	40
		MCH Block ,District Hospital, Near Central Prison, Lalacheruvu Road	17	221	64	106	19	42
		APEPDCL, Circle Office Godavari Gattu	18	159	58	98	14	33
	Srikakulam	SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram	28	162	72	96	10	23
		District cooperative office at SKLM Old Bridge	25	137	60	106	3	17
		APIIC, Kushalapuram	26	205	72	96	9	29
		Municipal corporation Office, Old Bustand	23	115	63	107	2	15
	Tirupati	Regional Science Centre, Chittoor Bypass	12	66	43	108	0	10
		Municipal Office, Tilak Road	19	99	63	108	0	16
		APPCB-Regional Office, 1st Floor, APSFC Building, NT road	15	82	48	101	0	14
		Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand	25	81	59	108	0	11
	Vijaywada	NTR Veterinary college of sciences, Gannavaram	40	89	73	108	0	9
		VR Siddhartha Engineering college , Kanuru	32	86	66	108	0	9
		APIIC, IALA, IDA, Kondaplli	31	99	75	106	0	11
		Benz Circle	47	94	78	108	0	8
		Autonagar	50	97	80	108	0	8
		Police Control Room	48	99	81	90	0	9
		A.P. Pollution Control Board, plot no. 41, Sri Kanakadurga Officers colony, Gurunank Road	42	97	71	108	0	9
		Gram Panchayat Office, Yenamalakuduru	42	95	57	108	0	10
	Vishakhapatnam	Indian Medical Association Hall,Eluru Road, Governorpet	43	104	73	108	1	8
		Industrial Estate, Marrisalem	31	167	86	108	30	27
		Panchayat Raj office, Mindi	28	171	71	105	17	31
		Police Barracks	35	179	86	105	32	29
		INS-Virabahu, Naval Area	26	198	78	95	21	31
		Seethammadhara	25	152	64	99	4	21
		Ganapuram Area	34	270	91	107	33	32
		Pedagantya (V), Gajuwada (M)	29	138	73	105	14	25
		CWMP, RAMKY, Parawada	29	157	69	106	23	31
	Vizianagaram	MVP Raitu Bajar	27	119	63	102	7	23
		Industrial Growth Centre, APIIC Building at IDA Bobbili	33	103	74	101	1	12
		APIIC Building, VT Agraharam,Industrial area	43	84	67	106	0	8
		Municipal Kaspas High School	43	110	63	102	1	9
	Arunachal Pradesh	Itnagar	35	113	64	93	1	10
Naharlagun		10	228	97	48	18	55	
Assam	Bongaigaon	APSPCB Office compound	9	187	74	41	11	51
		Oil India Ltd. PS-6, Chirang	31	112	53	70	1	14
	Daranga	Barpara Office Building	21	80	35	86	0	9
		BATAD, Sandoop Jhankar town of Bhutan, Baska	17	134	53	94	11	30
	Dibrugarh	Dibrugarh Office Building	15	125	36	89	1	20
	Golaghat	Golaghat Office Building	17	85	45	80	0	18
	Guwahati	Head Office, Bamunimaidam	23	295	122	134	70	79
		Boragaon, IASST, Kamrup	21	180	79	114	34	41
		Guwahati University, Kamrup	18	167	74	117	36	37
		ITI Building, Gopinath Nagar	33	323	142	117	64	84
		Khanapara, Central Dairy, Kamrup	16	126	48	129	4	24
Near Pragiyotish College, Santipur	20	287	115	133	63	63		

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Margherita	Coal India Office	16	93	48	91	0	19
	Nagaon	Water Resources Div., Christian Patty, Nagaon College	35	269	105	97	42	46
	Nalbari	PWD Rural Div Office Complex, near Gordon Boy's GS School	37	184	87	77	25	33
	North Lakhimpur	Bazar Patti, North Lakhimpur Town	18	131	56	86	12	30
	Silchar	Govt. Boys HS School, Janiganj	39	58	50	74	0	4
		RLO, Ithkola Market, Ghaniwala Road	32	57	43	75	0	6
	Sivasagar	Sibasagar Office Building	16	116	49	102	1	16
		Usha Lodge, near ONGCL Colony	20	115	62	103	1	15
	Tezpur	Tezpur Office Building	24	189	98	86	41	41
	Tinsukia	Digboi Carbon factory Campus, Borguri	15	100	43	94	0	19
Shreepuria, Borguri		17	96	48	98	0	19	
Shivdham		15	71	43	98	0	14	
Bihar	Begusarai	Begusarai	37	164	117	104	77	29
	Darbhanga	Smt Baby Kumari, Ashok Hotel, Kadirabad Chowk	35	267	123	105	67	59
	Gaya	Godam Road, Raja Market	13	145	71	104	21	33
	Muzaffarpur	BSPCB Regional Office, Bela Industrial Area, Bela	40	414	152	104	67	82
		Beltron Bhawan, Shastri Nagar	40	531	187	59	53	84
	Patna	Gandhi Maidan, Auto Exhaust Test Centre	37	746	288	75	59	181
		Sujkund, Near Samuraji hotel	12	136	69	104	19	31
Sasaram	Takia, Ward no.2, Rhotas	12	116	61	105	7	28	
Chandigarh	Chandigarh	Modern Foods, Industrial Area	26	444	114	149	72	63
		Sector-17 C	15	221	85	143	39	43
		Punjab Engineering College, Sector- 12	20	279	92	161	54	47
		Sector-39, IMTECH	19	263	96	155	57	50
		Kaimbwala Village	19	267	96	140	57	51
Chattisgarh	Bilaspur	Regional Office, CECB Vyapar Vihar	28	64	47	91	0	8
		Visak Hostel, Sector-4	70	86	78	77	0	4
		R.O., 5/32 Banglow Office Building	49	66	58	82	0	4
		M.P. Laghu Udyog Nigam	67	99	92	84	0	6
		CSIDC Industrial Growth Center, Borai, Durg	75	98	87	81	0	5
	Korba	HIG 21,22.Near Ghantaghar, MP Extension	35	76	58	97	0	12
		Pragati Nagar NTPC Colony, Jamnipali	33	95	54	103	0	13
		I.T.I., Rampur	37	82	63	100	0	13
	Raigarh	Regional Office, ECB, Raigarh	30	73	55	82	0	11
		Jindal Industrial Area, Punjipathra, Raigarh	37	90	73	81	0	12
	Raipur	OP Jindal School premises Patrapali	26	78	64	65	0	11
		New HIG-9, Hirapur/Housing Board Complex Kabir Nagar	37	89	63	108	0	13
M/S Wool Worth India Pvt. Ltd. Sarora		49	98	74	77	0	14	
Dadra & Nagar Haveli and Daman & Diu	Baldevi (Dadra & Nagar Haveli)	Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli	22	87	65	97	0	14
	Silvassa	Khadoli Industrial Area, Khadoli	57	164	108	99	53	28
		Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta	50	153	102	100	49	25
	Daman	Prima Plastic, Kadaiya Industrial Area, Kadaiya	27	143	99	97	47	26
		Mashal Chawk, Nani Daman	23	138	92	99	45	31
	Patlara (Daman)	Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman	27	91	63	100	0	16
Delhi		N.Y. School, Sarojini Nagar, Delhi	20	460	154	88	50	108
		Janakpuri	24	593	211	120	99	128
		Naraina Industrial Area, Delhi	38	565	217	88	72	115
		Nizamuddin	41	483	178	116	88	94
	Delhi	Pritampura	45	720	206	127	100	130

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State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Shahadra	31	508	188	113	89	106
		Shahzada Bagh	56	479	192	109	86	96
		Siri Fort	32	552	185	112	82	110
		Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi	47	836	258	88	75	164
Goa	Amona	Amona, Bicholim	32	166	72	105	26	34
	Assanora	Assanora Junction, Bardez	22	129	57	104	5	21
	Bicholim	Bicholim	32	169	63	103	12	28
	Codli	Codli Tisk, Ponda, Sanguem	30	160	60	103	7	27
	Cuncolim	Cuncolim	32	182	80	102	31	40
	Honda	Honda Junction, Sattari	30	112	63	104	3	21
	Kundaim	Kundaim Industrial Estate	21	138	62	104	12	27
	Mapusa	Mapusa town	14	268	72	90	13	40
	Margao	Margao Town	31	198	59	102	9	28
	Mormugao	Fire Brigade Station, Port Trust	16	437	100	68	24	84
	Panaji	Old GSPCB premises, Patto	14	518	87	78	23	66
	Ponda	Ponda Town	31	203	66	105	14	32
	Sanguem	Near Railway Station at Kalem, Sanguem	32	145	57	103	6	25
	Tilamol	Quepem, Tilamol	29	139	67	102	16	27
	Tuem	Tuem Industrial Estate	33	154	57	104	6	22
Usgao	Usgao Plae, Junction, Ponda	32	152	64	96	8	23	
Vasco	Fuse Call Office, Mormugao	16	377	81	81	23	57	
Gujarat	Ahmedabad	Naroda, G.I.D.C., Ahmadabad	75	323	132	87	60	59
		Cadilla Bridge Narol	83	422	150	86	63	94
		Bhagavathi Estate, Keval Kanta Road, Rakhial	75	308	132	88	62	61
		Reliable Products, 61/62 Ilaben estate, Pirana Dump Site, Narol (previous Dyno Wash)	76	407	158	87	75	85
		L.D. Engg. College	66	339	126	88	54	60
		Shardaben Hospital, Saraspur	71	391	128	86	48	73
		R.C. Technical High School, Mirzapur	68	295	122	86	49	57
		AZL Behrampur, Ahmadabad	71	353	132	87	50	69
	Anklesvar	Sola L.T. Chanakyapuri Pumping Station	70	381	138	88	58	77
		Rallis India Ltd.	59	213	119	88	52	38
	Jamnagar	Durga Traders, Bhavanafarm Society	55	239	110	88	38	37
		Fisheries Office	57	267	123	87	48	50
	Rajkot	Nr. Sardhara Industrial Corporation	68	256	128	87	49	54
		GPCB Regional Office	56	332	125	87	46	62
	Surat	S.V.R. Engg. College	66	166	100	87	33	25
		B.R.C. High School, Udhna	57	356	151	83	59	75
		Near Air India Office	69	342	132	85	54	64
	Vadodara	GPCB Office, Geri Vasahat	47	269	107	87	30	51
		Sterling Gelatin Guest House, Vill-Karakhadi Padia	62	378	145	87	53	81
		Dandia Bazaar	71	293	120	88	47	49
CETP Nandesari		68	375	151	85	0	85	
Lubrizol		65	333	131	87	52	63	
Vapi	GEB, Illrd Phase, GIDC	44	316	131	86	49	66	
	Vapi Nagar Palika, Vapi	45	284	108	87	35	57	
Himachal Pradesh	Baddi	Industry Department Office Building	57	292	157	125	118	41
		AHC barotiwala	49	195	125	102	81	29
		Housing Board	74	327	163	50	40	62
	Damtal	Regional Office	19	86	47	128	0	12
		Old Road	17	94	50	121	0	14
	Dharamshala	Kotwali Bazar Dharamshala	16	65	35	98	0	10
		Daari, Dharamshala	16	114	38	122	1	12
	Gulaba	Behind green tax barrier	8	62		19	0	13
	Kala Amb	Kala Amb Industrial Area	23	233	121	171	142	41
		Kala Amb Town/Trilokpur	18	188	82	168	40	30
Manali	Nehru Park, Manali, Kullu	26	217	79	101	23	36	



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		HPSPCB, Hadimba Road, Manali, Kullu	19	113	49	83	1	19	
	Marhi	Behind Police check post	18	60	35	12	0	13	
	Nalagarh	Municipal Council	68	251	125	120	86	37	
	Paonta Sahib	Paonta Sahib		26	188	79	165	30	28
		Gondhpur Industrial Area		17	188	88	119	39	30
	Parwanoo	Regional Office, Sector- 4		29	191	61	141	1	17
		Asst. Commissioner Building Sector I		32	192	67	128	1	17
	Shimla	Bus Stand, Winterfield		19	137	59	213	5	19
	Sunder Nagar	HPSPCB, BBMB Colony, Mandi		5	193	69	144	14	29
		Municipal Council, NH-21, Mandi		22	170	76	107	16	25
Una	Regional Office, Una		30	79	60	164	0	5	
	DIC Building, Mehatpur, Una		51	71	62	97	0	4	
Vashisht	Behind pollution check barrier, Bahang / Station No.-II1, Bahang		26	96	48	44	0	15	
Jammu & Kashmir		Regional Office, Jammu	94	178	140	91	89	19	
	Jammu	M.A. Stadium, Jewel Chowk	89	175	136	82	77	18	
		Bari Brahamana Industrial Area	70	186	139	99	96	20	
		Khrew		43	269	120	58	32	56
	Srinagar	SPCB Office Campus, Srinagar	42	237	76	50	6	36	
		Khonmoh		52	858	136	55	36	110
	Lasjan, Budgam		90	362	185	55	53	55	
Jharkhand	Barajamda	Barajamda U.M. Office	50	98	76	91	0	9	
	Dhanbad	R.O. Dhanbad	73	286	162	103	83	50	
		EMTI, Bastacola	171	397	275	75	75	60	
		CGM Office, Kusunda	77	437	273	100	97	75	
	Jamshedpur	Bistupur Vehical Testing Centre	61	197	139	93	82	26	
		Golmuri Vehicle Testing Centre	81	171	138	91	82	25	
	Jharia	M.A.D.A.	109	427	302	105	105	71	
	Ranchi	Albert Ekka Chowk, Main Road	73	168	109	96	94	9	
Saraikela	RO Building, Adityapur	66	236	135	91	80	28		
Sindri	BIT / PDIL	24	204	137	75	52	50		
Karnataka	Bagalkote	Bagalkote KSPCB Office Premises	16	117	45	85	2	19	
	Bangalore	Graphite India, White Field Road	56	186	91	83	58	25	
		AMCO Batteries, Mysore Road	52	152	89	107	19	21	
		KHB Industrial Area, Yelahanka	42	184	80	80	11	28	
		Peenya Industrial Area	53	183	104	52	23	32	
		Victoria hospital	24	131	56	103	2	16	
		Yeshwanthpura police station	41	165	79	100	17	23	
		Jnanabharathi, Bangalore University	11	84	43	68	0	12	
		RV College of Engineering, Mysore Road	34	34		1	0		
		TERI office, Vital Medi healthcare Pvt Ltd	44	146	87	108	27	23	
	Belgaum	Karnataka SPCB Office Building	18	169	87	52	20	40	
	Bidar	KSPCB Office Premises	14	155	71	60	13	36	
	Bijapur	KSPCB Office Premises	32	208	93	38	13	38	
	Chitradurga	KSPCB Office Premises	18	98	52	105	0	22	
	Devanagere	Regional Office building, KSPCB	19	100	52	94	1	22	
		Mothi Theatre, Gandhi Circle, P.B. Road / Traffic Police Station	38	212	115	80	54	34	
		HPF Intakewell, Kumarapattnam	17	81	42	102	0	14	
	Gulbarga	Government Hospital	32	240	87	58	19	45	
	Hassan	KSRTC bus stand building	27	49	37	104	0	5	
	Hubli-Dharwad	Lakkamanahalli Industrial Area, Dharwad	47	81	62	105	0	8	
		Rani Chennamma Circle, Hubli	58	91	76	104	0	8	
	Kolar	KSPCB Office Premises, Kolar	60	152	109	98	58	22	
Mandya	KSPCB Building, Bandigowda Badarahe	34	81	43	106	0	7		
Mangalore	Baikampady Industrial Area	23	80	47	92	0	9		
Mysore	K.R.Circle, Visvesvaraya Bldg	30	70	52	110	0	6		
	KSPCB Bldg. Hebbal Ind. Area								
Raichur	KSPCB Office Premises, Raichur	17	186	74	77	16	38		
Shimoga	The VISL, Oxygen Plant, Shimoga	11	79	33	100	0	13		

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	Timukuru	KSPCB Office Premises	41	145	75	103	7	20
Kerala	Alappuzha	District Office, Alissery Road	23	84	49	107	0	12
		DC Mills, Pathirappally	37	84	67	25	0	9
		William Goodacre Power House Bridge	40	83	52	71	0	10
	Kochi	Eloor I, FACT, Ambalamughal	27	144	49	107	4	23
		Eloor II	32	127	50	102	2	18
		Irumpanam	12	118	42	104	1	22
		Ernakulum South	20	91	51	64	0	18
		VYTTILA	11	181	42	104	1	25
		MG Road Bank Ernakulum	15	90	40	104	0	17
		KALAMASSERY / CSIR Complex	16	120	50	102	2	20
		Kuttipadam	19	64	42	42	0	12
	Kollam	KSPCB, District Office, Kadappakada	32	50	45	110	0	3
		KMML Chavara	40	55	46	110	0	2
	Kottayam	Kottayam	27	52	41	119	0	6
		Vadavathoor	21	38	30	119	0	4
	Kozhikode	Kozhikode City	14	119	44	103	8	22
		Nallalam	12	110	44	67	2	25
	Malapuram	Kakkanchery, Sijmak oils	21	70	35	107	0	10
	Palakkad	SEPR Refractories India Ltd.	11	144	51	98	4	26
	Pathanamthitta	KSPCB, Makkamkunnu	31	37	34	100	0	1
Thiruvananthapuram	PRS Hospital/COSMO	22	65	41	105	0	9	
	SMV School	29	68	43	105	0	8	
	VELI / HiTech Chackai	23	68	43	105	0	10	
	PETTAH / Sasthamangalam(plamadou)	26	82	43	105	0	10	
Thissur	KSPCB, District Office, Poonkunnam	27	70	39	104	0	7	
	Thissur/ Peringandoor	22	55	38	74	0	6	
Wayanad	Sulthan Bathery	14	41	28	104	0	8	
	Wayanad	15	37	26	79	0	7	
Madhya Pradesh	Amlai	HJI	65	118	92	60	25	16
		OPM	54	101	78	69	2	13
	Bhopal	Hamidia Road, MP Hastshilp Vikas Nigam	90	320	181	72	70	46
		CETP Govindpura	88	244	152	87	84	34
		Nutan Subhash School, T.T. Nagar	71	172	122	36	31	20
		Kolar Thana, Kolar Road, Bhopal	89	337	195	70	69	55
		AKVN Office, Industrial Area Mandideep, Raisen	140	420	230	71	71	64
		Barkatuallah University, Hoshgabad Road, Bhopal	82	244	138	73	67	32
		Main Road, Hemu Colony, Bairagarh, Bhopal	53	241	149	77	71	34
		Arera Colony	55	189	119	83	62	27
	Chhindwara	HIG -33, Front of Geetanal Park Housing Board Colony, Chadagaon	29	121	73	96	2	17
		Hindustan Unileaver, Narsinghpur Road,	36	138	83	88	8	18
	Dewas	EID Perry (I) Limited	51	98	80	94	0	11
		Dewas Metal Section	57	97	79	93	0	12
		Vikas Nagar	45	96	78	96	0	12
	Gwalior	Dindayal Nagar	41	382	135	90	74	46
		Maharaj Bada	46	215	143	93	78	41
	Indore	M.P. Laghu Udyog, Pologround	28	130	81	94	12	23
		Kothari Market, M.G. Road	25	132	77	101	13	24
		Telephone Nagar, 26 A, Kanadia Road	22	120	73	99	3	20
	Jabalpur	Vijay Nagar	49	128	74	101	2	11
		Udaipur Beverage Racchai	85	101	94	101	4	4
	Katni	HIG-4 Housing Board Colony Jhinhri, Katni	80	172	99	96	37	12
		Calderys Works Refractories India Private Limited, Guest House, Katni	83	115	97	72	22	7
	Nagda	Chem. D. Labour Club	30	59	45	75	0	6
		B C I Labour Club	35	61	47	80	0	6

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	Prithampur	Grasim Kalyan Kendra	42	93	66	75	0	13
		Vikas Bhavan, Sector-2	53	108	85	94	4	13
		RCC Over Head Tank No. 1, Sector-3	46	115	86	112	11	14
	Sagar	Pt.Deendayal Nagar	19	123	75	96	3	20
		Katra Bazar, Sagar	20	120	69	102	1	16
	Satna	Sub-divisional Office E/M Light Machniery	73	185	137	77	76	20
		MPPCB,Dharwari GaliNo.5,House No.318	8	133	110	73	61	18
	Singrauli	Jayant Township	30	360	189	83	71	82
		N.T.P.C., Vidyanagar	37	485	197	80	67	83
		Waidhan	32	492	189	87	66	92
	Ujjain	District Office	60	115	95	67	60	12
		Regional Office	37	107	64	73	1	11
		Mahakal Temple	38	109	74	51	3	17
		Chamunda Mata Chouraha	56	107	80	49	5	13
Maharashtra	Akola	LRT Commerce College, Civil Lines, Akola	60	74	66	88	0	3
		MIDC Water Work, Phash-II, MIDC Akola	60	81	71	143	0	5
		College Of Engineering & Tech, Akola	60	81	69	196	0	5
	Ambernath	Ambernath Municipal Council Office	26	330	118	131	69	62
	Amravati	Apurva Oil Industries, A-23, MIDC	54	134	96	215	86	21
		Elect. Dept., Govt College Engineering	56	102	77	92	1	11
		Rajkamal Square, Vaneeta Samaj	56	136	96	154	58	23
	Aurangabad	S.B.E.S. College	43	96	74	140	0	11
		Collector Office	43	104	70	123	1	11
	Badlapur	C.A.D.A. Office, Garkheda	49	97	77	87	0	11
	Bhiwandi	BIWA Office	17	319	108	187	81	55
		Prematai Hall, Near Dhamankar Naka	63	82	68	101	0	4
		Fire Brigade Office, I.G.M. Hospital	63	85	70	165	0	6
	Chandrapur	Regional Office, M.P.C. Board, Kalyan	21	85	68	237	0	10
		Grampanchat Ghughus	85	357	223	94	89	75
		M.I.D.C. Chandrapur	44	148	90	101	33	21
		Nagar Parishad	23	193	85	163	45	34
		Gadchandur Gram Panchayat, Rajura	76	278	170	97	94	44
		MIDC, Tadali	54	220	110	97	68	25
	Dombivali	Municipal Council, Ballarshah	61	205	119	99	69	32
	Jalgaon	Dombivali MIDC Phase-II	17	295	106	190	89	48
		B. J. Market	49	90	60	87	0	6
		Girna water tank	47	89	59	193	0	6
	Jalna	MIDC Jalgaon	46	93	61	140	0	7
		Bachat Bhawan, Near S P Office	83	120	98	104	34	7
		Krishidhan Seeds Ltd, MIDC Area	75	120	96	172	30	6
	Kolhapur	University Campus, Shivaji University	36	82	62	81	0	11
		Ruikar Trust, S.T. Stand	41	158	98	147	75	35
		Mahadwar Road, Near Mahalaxmi Temple	41	158	96	203	92	29
Latur	MIDC Water Works	54	152	84	239	35	19	
	Kshewraj Vidyalaya Shyam nagar	57	148	88	104	21	18	
	Sidhsheshwar Sahakari Bank Ganjgolai	55	147	85	172	30	18	
Mumbai	Bank of India, Kalbadevi /Branch, Kalbadevi/ VARSOVA	33	262	118	84	45	57	
	Parel TT, Ambedkar Road	21	591	136	88	57	86	
	Worli	43	441	122	87	51	63	
Nagpur	Institution of Engineers	53	183	103	100	44	27	
	Govt. Polytechnic College, Sadar	54	214	103	96	39	26	
	MIDC Office Hingana Road	66	199	109	100	59	28	
	MIDC Industrial Area, MIDC Office, Hingna	3	403	74	82	24	66	
	Nagpur Coop Building, Maskasath, Itwari	3	586	112	79	40	96	

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Maharashtra		NEERI Lab, Nehru Marg, Highway No. 7	3	898	131	74	44	114
		MPCB Office Premises, Civil Lines	46	149	73	321	31	19
	Nashik	R.T.O. Colony Tank	23	169	65	154	22	31
		VIP Industrial Area, MIDC Satpura	23	162	66	104	17	28
		Nashik Municipal Council Building	23	162	61	218	27	27
		MPCB Sub R.O. Udyog Bhawan, Nashik	24	312	61	305	30	29
		T.B.I.A, Rabale Airoli, TTC	34	69	55	103	0	7
	Navi Mumbai	Dr. D.Y. Patil College, Nerul, TTC	31	83	53	229	0	8
		MPCB Lab, Mhape, TTC	31	79	54	168	0	7
		CIDCO Nodal Office Kharghar	31	74	53	103	0	7
		Water Pump House, Panvel, Taloja	31	74	53	168	0	7
		MIDC Collom Facility Building, Taloja	31	74	55	229	0	7
	Pimpri-Chinchwad	Bank of Baroda Builing, Near M.C Building	13	219	76	199	49	42
	Pune	Maratha Chamber of commerce, Bhosari	14	331	123	62	34	72
		State Electricity Board BLDG Nalstop	14	331	125	113	76	65
		Swargate Police Chawki	82	331	181	33	31	60
	Sangli	Udyog bhavan / SRO, MPCB Sangli	14	148	61	99	14	34
		Sangli- Miraj Primary school Building	14	203	69	226	61	47
		Krishna Valley School	14	179	70	163	46	43
	Solapur	WIT Campus	54	88	73	102	0	7
		Voronoko School / Chitale Clinic	54	89	75	144	0	8
Thane	Maternity Hospital, Dhobighat, Thane East	62	232	124	24	10	60	
	Shahu Market,Naupada, Thane West	58	232	135	49	30	52	
	Kolshet and Balkum, Thane West	47	232	127	72	41	51	
Ulhasnagar	Smt. C. H. M. College Campus	17	187	76	99	15	35	
	Octroi Naka, Pawai-Chowk, Vithalwadi	34	319	113	107	50	52	
Manipur	Imphal	Secretariat Building	38	180	109	58	36	35
Meghalaya	Byrnihat	EPIP, Ri-Bhoi district	17	199	103	121	80	54
		Dawki	Terrace building, Jaintia Hills District	16	167	53	121	27
	Khliehriat	O/o BDO, C & R.D. Block-Khliehriat	17	55	43	122	0	9
		Nongstoin	Office Premises of E.E, PHED	8	36	30	121	0
	Shillong	Boards Office Permises, Lumpynggad	16	43	30	106	0	5
		State Tuberculosis Hospital	17	69	50	121	0	13
		Forest Rest House, Polo Hills	17	42	34	117	0	6
		41/2 mile, Myllem Range Office	12	58	31	118	0	9
	Tura	PHED, Araimille, West Garo Hills District	14	40	31	116	0	6
	Umiam / Umsning	Umiam Industrial Complex, Ri-Bhoi District	17	136	94	120	66	27
Mizoram	Aizawl	Khatla, M.G-Road, Mizoram SPCB	10	211	84	103	39	40
		Laipuitlang	11	31	20	106	0	4
		Bawngkawn	10	99	46	102	0	14
		Dawrpui Y.M.A, Building, Dawrpui	35	95	56	102	0	10
	Champhai	Lengpui Airport, Model Veng, Lengpui	14	89	34	94	0	17
		D.T.O Office Building, Kahrawt veng	13	31	21	101	0	4
	Kolasib	Lalzidinga building, Vengthlang	22	37	29	101	0	4
		H. Lalthuama Building, Project Veng	3	35	16	101	0	8
	Lunglei	Synod Bookroom, Building Diakkawn	15	141	30	101	1	13
		Thangkhuma Building, Salem Veng	3	9	7	96	0	1
Nagaland	Dimapur	K.Lalliantluanga, Chanmari I, Lunglei	7	21	10	96	0	2
		Bank Colony	19	232	97	139	51	42
		Dhobinala	46	247	125	121	88	40
	Dimapur	Signal point, Dimapur, Nagaland SPCB	15	104	49	103	2	20
		House no-288, Tenyiphe-I, Chumukiedima, Dimapur	20	188	75	103	18	35
		Vidya Bhawan School, Lane 17, Nagarjan, Kuda Village, Dimapur	15	102	61	48	1	20
		House no 24, Near community Hall, Viola colony, Dimapur	20	92	53	48	0	19
ERJO Motors, Burma Camp, Dimapur	27	128	80	48	14	28		

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Kohima	Opposite NST Office	21	163	77	138	40	38
		Opposite War Cemetery	25	299	112	121	54	64
Odisha	Angul	Industrial Estate	48	189	107	102	62	24
		NALCO Township	34	223	92	102	36	25
	Balasore	Sahadevkhunta	69	103	85	104	1	7
		DIC office	69	113	84	104	1	7
		Rasalpur near Balgopalpur I/A	26	115	89	105	2	9
	Berhampur	Regional Office Orissa SPCB	33	151	65	107	8	23
	Bhubneshwar	Capital Police Station	67	206	108	98	54	28
		IRC Village	41	234	105	95	43	38
		Office Premises Bhubaneswar	47	218	100	100	41	42
		Water works, Palasuni, Rasalgarh	43	126	90	69	22	18
		Patrapara, Khandagiri	38	237	97	101	40	38
	Bonaigarh	Chandrashekharapur	42	244	93	91	27	38
		Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh	58	209	118	104	62	33
	Cuttack	Traffic Tower, Badambadi	51	235	108	58	22	47
		P.H.D Office Barabati	57	362	109	104	34	57
		R.O. Cuttack Office, Surya Vihar	54	224	100	104	35	47
	Jharsuguda	R.O. Building Cox colony	79	160	106	108	71	12
		TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bheparhar,	92	394	106	106	72	29
		Over the Guest House of M/s NINL	46	209	122	55	35	39
	Kalinga Nagar	Maintenance Office of M/s NINL, Duburi	27	438	114	77	48	54
	Konark	Konark Police Station	50	102	72	101	2	12
	Paradeep	On roof of PPT Staff Quarter	72	343	146	101	86	56
		On roof of PPL Gueest	76	342	149	101	84	61
		On roof of STP building IFFCO	69	316	138	83	62	62
	Puri	Sadar police station	87	141	115	46	35	15
		Town Police Station	87	163	109	75	48	15
	Rajgangpur	DISIR, Rajgangpur	73	272	150	103	79	46
	Rayagada	Regional Office Orissa SPCB	17	112	63	104	3	23
LPS High School, Jaykaypur		15	118	66	101	2	23	
Rourkela	Regional Office, ORPB	52	178	87	104	6	13	
	Kalunga Industrial Estate	78	242	174	104	90	45	
	IDL Police Out-post, Sonaparbati	73	160	90	104	15	12	
	Kuarmunda, Sundergarh	54	213	142	104	86	40	
Sambalpur	Filter Plant, PHD Office, Modipara	29	266	92	105	44	38	
Talcher	Coal Field Area	54	207	119	104	73	36	
	T.T.P.S.Colony	35	209	93	104	36	38	
Puducherry	Karaikal	B.Ed College (PKCE), Nehru Nagar	18	68	35	88	0	9
		Govt. Tourist Home, Kovilpathu	22	118	46	91	1	15
		M/s Puducherry Power Corporation Limited, Polagam, T.R. Pattinam,	17	92	42	82	0	15
	Puducherry	DSTC Office Upstairs, PHB 3rd Floor, AnnaNagar	21	81	47	94	0	13
		PIPDIC Ind. Estate Mettupalayam	21	87	50	88	0	11
	Chamber Of Commerce	15	68	34	85	0	11	
Punjab	Aligarh (Jagraon)	Forest Office, Vill:Aligarh, Teh:Jagraon	22	199	73	106	19	37
	Amritsar	R.O. Focal Point (earlier Nagina soap factory)	46	313	155	62	53	55
		Vinod Chilling Center / Kochar Bhavan (earlier A-1,Platers)	76	366	185	60	58	62
		Vill:Aspal Khurd, Teh:Tapa	64	213	107	127	69	25
	Bara Pind (Goraya)	Vill:Bara Pind, Teh:Goraya	53	338	150	85	60	66
	Bhatinda	Bathinda Milk Producers, Dabwali Road	53	194	106	90	47	24
	Binjon (Garshankar)	CHC, Vill:Binjon, Teh: Garshankar	23	249	102	80	39	38
	Bishanpura (Payal)	Longowalia Yarns (Unit-II), Vill-Bishanpura, Teh: Payal	19	374	137	100	65	74
Changal (Sangrur)	Mastuana Sahib, Vill:Changal, Teh:Sangrur	53	240	105	122	52	34	

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State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Punjab	Chowkimann (Jagraon)	Ludhiana College of Engineering, Vill:Chowkimann, Teh:Jagraon	20	170	68	108	16	34
	Dera Baba Nanak	C-PYTE Building	25	199	70	68	7	28
	Dera Bassi	Punjab Chem and Crop Protection, Bhanakarpur Rd	41	174	101	106	53	21
		Winsome Yarns Ltd., Barwala Road	51	150	94	114	30	21
	Fatehpur (Samana)	Baba Banda Singh Bahadur College, Vill:Fatehpur, Teh:Samana	79	107	95	38	11	7
	Gobindgarh	Modi Oil and General Mills, Mandi	91	219	147	126	121	34
		Raj Steel Rolling Mills, Mandi	86	238	140	134	123	33
		United Rolling Mills, Mandi Gobindgarh	84	229	138	131	120	30
	Guru Ki Dhab (Kotkapura)	Vil:Guru Ki Dhab / Basti Himmatpura, Teh:Kotkapura	74	212	124	22	17	38
	Jaito Sarja (Batala)	Royal Nursing College, Vill: Jaito Sarja, Teh: Batala	21	109	60	37	3	26
	Jalandhar	Municipal Council Tubewell No. 27	62	315	151	81	71	54
		Regional Office	57	329	144	74	58	62
		Punjab Maltex , Kapurthala Road	35	296	120	59	22	66
		Focal Point	62	259	131	62	50	34
	Khanna	Markfed Vanaspati, Khanna	78	368	192	113	110	58
		AS School, Khanna	45	289	137	118	90	48
	Kharaori (Sirhind)	Vill:Kharaori, Teh:Sirhind	68	190	100	128	45	17
	Kotladoo (Ajnala)	Satyam College, Ramtirath Road, Vill: Kotladoo, Teh: Ajnala	49	395	128	62	35	60
	Lakho ke Behram (Ferozpur)	Vill:Lakho ke Behram, Teh:Ferozpur	73	169		11	7	31
	Ludhiana	Bharat Nagar Chowk / RO Gill Road	35	331	139	120	94	50
		Nahar Spining Mlls, Dholewal Chawk	53	383	151	129	109	51
		Ludhiana Coop. Milk Producer, Ferozpur Rd	33	392	135	141	81	80
		PPCB Office Building, Vishavkarma Chowk	80	498	187	132	123	85
	Mrar Kalan (Muktsar)	Vill: Mrar Kalan, Teh:Muktsar	55	228	111	66	35	36
	Mukandpur (Nawashahar)	Govt. Senior Sec. School, Vill:Mukandpur, Teh:Nawashahar	58	247	134	78	57	48
	Mureedke (Batala)	Johal Farm, Vill: Mureedke, Teh: Batala	21	142	87	98	45	30
	Naudhrani (Malerkotla)	Vill:Naudhrani, Teh:Malerkotla	55	198	108	127	69	27
	Naya Nangal	Punjab Alkalis & Chemicals Ltd	40	159	88	94	22	24
		M/s NFL Guest House,Naya Nangal	39	154	93	107	35	23
	Patiala	Ceylon Industries, Factory Area, Patiala	74	190	101	130	42	18
		Fire Brigade Station, Bahera Road, Patiala	78	197	102	133	43	21
Peer Mohammad (Jalalabad)	Vill:Peer Mohammad, Teh:Jalalabad	69	133	102	41	23	16	
Poohli (Bhatinda)	Vill: Poohli, Teh:Bhatinda	64	337	114	57	29	44	
Qila Bharian (Sangrur)	Gurdwara Gangsar Sahib, Vill:Qila Bharian, Teh:Sangrur	49	178	104	135	69	26	
Rakhra (Patiala)	Shree Ganesh Group of Institute, Vill:Rakhra, The:Patiala	64	129	98	53	24	10	
Rohila (Samrala)	Gopimal Kaur Sain Industries Pvt. Ltd, Vil:Rohila, Teh:Samrala	21	575	159	123	94	95	
Tirathpur (Amritsar I)	United ITI, Vill: Tirathpur, Teh:Amritsar I (earlier Sriguru Harkishan Public School,Rasulpur Kalan)	25	202	93	58	18	35	
Rajasthan	Alwar	Rajasthan State Pollution Control Board	75	244	154	98	85	43
		Gaurav Solvex Ltd. MIA	72	349	197	103	102	51
		RIICO Pump House, MIA	79	274	164	105	99	41
	Bharatpur	Khadi Gramoday Samiti	83	561	213	96	91	82
		RIICO office Building	69	474	218	98	91	89
	Bhiwadi	RO, Building	61	324	167	102	96	61
		R.O.Building	101	442	245	103	103	85

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Rajasthan	Chittorgarh	UIT Guest House	149	442	290	38	38	78	
		Uttam Strips Ltd	103	415	231	97	97	80	
		Regional Office building, RSPCB, Near FCI Godown, Chnaderiya	40	292	168	101	90	58	
		Veterinary Hospital, Meeranagar	39	311	162	95	76	67	
		PHED Pump House, Segawa	31	204	97	96	41	35	
	Jaipur	Ajmeri Gate	63	377	163	107	99	49	
		RJPB Office, Jhalana Doongari	37	225	103	104	45	39	
		District Education Officer, Chandpole	52	323	151	101	92	49	
		RIICO Office, M.I.A.	34	279	108	104	51	45	
		RSPCB, Vidyadhar Nagar	46	413	160	104	98	60	
		VKIA	51	498	193	104	98	73	
		22, Godam, RIICO Office	65	281	142	107	98	38	
		Mansarovar Nagar Niigam	63	225	128	99	82	33	
		RIICO Office Sitapura Industrial Area	63	221	120	103	76	28	
		DIC Office, Industrial Estate	60	507	187	85	72	83	
		Sojati Gate	76	396	220	77	71	77	
		Jodhpur	Basni Industrial Area, RIICO Office	46	489	172	87	73	84
	Maha Mandir Police Thane		54	412	205	83	72	87	
	Office of Housing Board, Chopasani Road		69	512	244	82	77	104	
	Shastri Nagar Police Thana		81	613	245	86	80	112	
	Kudi Mahila Thana		102	520	248	50	50	103	
	Sangariya Police Choki		110	634	344	47	47	109	
	Soorsagar Thana		85	973	293	47	46	131	
	Regional Office, RJPB, Anantpura		30	382	152	99	73	73	
	Municipal Corporation Building		21	251	116	104	67	58	
	Samcore Glass Ltd.		22	303	115	109	68	59	
	Kota	Fire Station Nagar Nigam Shrinathpuram	21	272	115	104	65	56	
		Rajasthan Technical University, Rawatbhata	21	373	160	103	76	93	
		Sewage Treatment Plant, Balita, Kota	19	348	116	107	72	55	
		Ambamata	55	254	131	103	77	42	
		Town Hall	61	258	152	105	89	48	
	Udaipur	Regional Office, MIA	92	254	186	104	102	37	
	Sikkim	Chungthang	Chungthang	16	47	28	90	0	7
		Gangtok	White Hall Complex, Tasi view point	21	83	49	75	0	15
		Mangan	Mangan Police Station	13	62	34	101	0	11
		Namchi	Namchi	22	856	41	98	1	83
		Pelling	The Pelling Girls Hostel	9	77	28	89	0	14
		Rangpo	Rangpo Fire Station	30	100	64	94	0	20
		Ravangla	Ravangla Range Office	13	38	25	95	0	4
		Singtam	Police Station Building	33	70	54	93	0	7
	Tamilnadu	Chennai	Govt. High School, Manali	42	81	63	58	0	10
			Kathivakkam	41	116	62	62	2	15
			Thiruvottiyur	38	87	61	62	0	10
			Madras Medical College	12	138	67	86	5	21
			NEERI, CSIR Campus Taramani	17	128	39	86	1	15
			Thiruvottiyur Municipal Office	11	186	85	87	23	29
			Adiyar	28	98	59	57	0	15
Kilpauk			53	231	101	66	26	40	
Thiyagaraya Nagar			47	181	88	68	17	30	
Nunbakgum			48	141	82	82	14	22	
Anna Nagar			55	183	97	53	21	29	
Coimbatore			Poniarajapuram, On the top of DEL	13	96	41	83	0	16
			G.D. Matric Hr. Sec. School	21	140	68	69	13	31
		SIDCO Office, Coimbatore/ Kurichi	23	204	61	75	3	26	
Cuddalore		Eachangadu Village	47	55	52	94	0	2	
		SIPCOT (Project Office)	41	280	52	81	2	30	
		DEE Office, Cuddalore	49	70	62	75	0	4	
Madurai		Highway (Project -I) Building	46	95	71	70	0	16	
		Fenner (I) Ltd. Kochadai	32	139	83	67	16	23	

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	Mettur	Kunnathur Chatram Avvai Girls HS School	31	144	82	75	22	27	
		Raman Nagar	18	74	38	79	0	14	
		SIDCO	17	244	71	76	19	42	
	Salem	Sowdeswari College Building	Gandhi Market	19	148	79	68	22	32
			Main Guard Gate	31	140	82	66	23	28
			Bishop Heber College	27	101	60	75	1	20
			Golden Rock	23	120	60	72	4	24
			Central Bus Stand	18	140	82	69	28	32
	Tuticorin	Fisheries College, Tuticorin Sipcot	Raja Agencies	41	112	83	72	8	14
			Raja Agencies	55	126	91	66	16	14
			AVM Jewellery Building	44	127	83	82	7	14
	Telangana	Adilabad	Building of SCCL Manadamarri Club Mandamarri, Mancherla	50	85	74	108	0	6
Balanagar			36	386	148	104	79	57	
Hyderabad		Tarnaka, NEERI Lab. IICT Campus	3	130	49	96	4	31	
		Nacharam, Industrial Estate	3	129	48	96	5	31	
		ABIDS Circle General Post Office	3	123	57	96	2	29	
		Uppal, Modern Foods & Industries IDA	50	235	117	112	62	42	
		Jubilee Hills	47	261	116	119	68	42	
		Paradise	46	208	110	117	68	32	
		Charminar	37	381	108	119	61	46	
		Zoo Park	12	381	104	114	59	59	
		Jeedimetla Industrial Estate, Rangareddy Distt.	44	381	131	118	81	53	
Karimnagar		On the terrace of the DIC building, Karimnagar	87	140	106	95	73	8	
Khammam		CER Club Khamam	72	118	95	101	27	10	
		Jalasoudha building	72	109	86	102	2	7	
Kothur		Mehaboobnagar	92	141	111	105	97	9	
Nalgonda		AP PCB Nalgonda	48	75	57	99	0	4	
		M/s. Srimi Pharmaceuticals pvt. Ltd.Choutuppal (V & M)	53	75	61	99	0	3	
Nizamabad		subashnagar,nizamabad dist	53	72	63	99	0	4	
Patencheru		Police Station, Medak, Ramachadrapuram	45	106	83	96	9	15	
Ramagundam		Godavarikhani, Ramagundam, Karimnagar	61	144	107	100	81	11	
Sangareddy	Pashamylaram/Municipal Office	12	381	104	118	52	64		
	Regional office Building of SANGAREDDY	39	102	70	96	1	13		
	M/s. Mylan Industries, Gaddapothara	53	116	88	99	13	13		
Warangal	KUDA Office, Hanumakonda	63	110	88	105	3	7		
	Mee-Seva Building ,Municipal Complex	57	108	87	104	4	7		
Tripura	Agartala	SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban	28	65	48	83	0	6	
		Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala	83	125	105	83	62	8	
Uttar Pradesh	Agra	Regional Office, Bodla	47	505	192	87	73	94	
		Nunhai	49	494	228	92	80	99	
		Taj Mahal	13	509	150	298	194	99	
		DIC Nunhai	23	501	207	124	91	123	
		Etmad-uddaulah	23	496	173	126	88	113	
		Rambagh	21	477	165	123	87	96	
	Allahabad	Square crossing circle of Laxmi Talkies	136	488	258	106	106	75	
		Bharat Yantra Nigam Ltd	116	405	208	108	108	51	
		Alopibagh/Sewage Pumping Stations	119	400	252	76	76	54	
		Jhonstonganj/co-operative Bank	82	251	171	98	91	44	
	Rambagh/Parag Dairy	80	332	220	102	100	57		
	Anpara	Anpara Colony, Sonabhadra	42	287	176	101	94	53	
Renusagar Colony, Sonabhadra		41	264	166	103	95	47		



Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Baghpat	Sarvodaya Hospital, Tatiri Merrut, Baghpat Road	73	475	168	94	90	64
		Weavetex Overseas Hostel, Khekra, Baghpat	93	480	175	94	92	68
	Bareilly	IVRI Izatnaga	79	547	163	107	86	64
		Indian oetrol pump, Civil Line	103	679	237	107	107	116
	Firozabad	Center for Development of Glass Industry	63	464	215	102	90	97
		Tilak Nagar	54	488	215	104	87	98
		Raza ka Tal	57	439	211	103	90	92
	Gajraula	Raunaq Auto Ltd, J.P. Nagar	126	421	213	94	94	50
		Indira Chowk, J.P. Nagar	96	382	244	89	88	43
	Ghaziabad	Atlas Cycles Industries, Sahibabad Ind. area	46	616	231	93	83	123
		Bulandshaar Road Industrial Area	49	694	232	87	75	132
		Khora Colony, Ghaziabad	72	514	184	86	83	75
		Vinoba Bhawe Park, Lohia Nagar, Ghaziabad	92	505	184	85	83	71
	Gorakhpur	M. M.M. Engineering College, Gorakhpur	103	336	218	93	93	65
		India Glycol Ltd. Gida, Gorakhpur	164	443	351	101	101	45
	Greater Noida	Jalkal, Muncipal Corporation, Golghar	136	429	315	92	92	45
		Holland Tractor, Greater Noida	93	501	189	88	86	78
		Honda Power, Greater Noida	91	489	190	88	87	79
	Hapur	Srinagar Colony, Railway Road, Hapur	51	520	208	89	73	110
		Jindal Pipes Ltd, Hapur	64	577	248	70	65	115
	Jhansi	Manik Chawk / Jal chauraha	31	237	105	117	78	29
		Veeranga Nagar	24	207	86	117	31	25
	Kanpur	Forest & Training Centre, Kidwai Nagar	120	288	210	93	93	45
		Chamber Of Commerce Darshanpurwa / Deputy ka Parao	119	280	221	94	94	39
		Associated Chem Pvt Ltd, Fazalganj, Panki, Site-5	94	336	228	83	82	49
		Head Post Office, Govind Nagar / Dabauli / Shastri NGR	112	298	192	83	83	44
		Jajmau / Awas Vikas	102	261	188	93	93	40
		I.I.T. Campus, Kanpur	11	399	124	101	58	77
		IIT 12 parameter	28	331	117	88	47	64
		Dada Nagar, Kanpur	26	600	228	94	78	124
		Ramadevi, Kanpur	32	746	273	93	76	161
		Khurja	Central Glass & Ceramic Research Institute	21	401	204	103	85
	Ahirpara		19	384	186	92	77	77
	Lucknow	Mahanagar	40	411	207	225	205	86
		Chandganj Garden, Aliganj	40	411	206	270	242	86
		Kapoor Hotel, Hazratganj	40	411	219	187	172	87
		Talkatora	31	411	205	268	239	87
		Aminabad / S.M.K Chowk	40	411	206	279	253	85
		Nagar Nigam	34	411	207	268	231	91
		Ansal Technical Institute Campus, Ansal API	34	411	202	266	227	89
Vikas Khand		29	464	209	68	53	115	
Mathura	RO. UPPCB, 65 Baldevpuri, Maholi Road	110	188	153	81	81	20	
	CETP, Industrial Area, Mathura	138	191	170	82	82	13	
Meerut	Begum Bridge	216	237	225	59	59	6	
	Thana Railway Road / Kesarganj	189	213	200	59	59	8	
Moradabad	Hindu College, Station Road	61	464	275	91	90	61	
	Central Police Hospital, Civil Lines	110	399	204	90	90	54	
Muzaffarnagar	Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road	47	417	194	97	85	96	
	Lekhpal Bhawan, Tehsil Sadar Campus	60	360	187	97	88	80	
Noida	UP PPCB, E-12/1, Sector - 1	47	1073	235	97	79	149	

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
		Gee-Pee Electroplating and Eng. Work	56	569	233	96	85	110
		Subros, Noida	73	803	188	92	90	102
		Golf Course, Noida	97	492	191	90	87	79
	Raebareli	Town Hall Colony, Ahmad Nagar, Gulab Road	80	372	153	54	46	53
		Khoya mandi Tiraha Lucknow Road Raebareli	95	394	170	54	52	53
		Amawan Road Ind. Area Raebareli	95	345	167	54	52	48
	Saharanpur	SRE-A, IIT Roorkee, Saharanpur Campus	50	344	167	92	82	54
		UPCL S.E. Office, Near Clock Tower	52	334	165	91	80	49
	Unnao	H. No. 5, Krishna Nagar	79	174	105	88	50	15
		IIA Building, Industrial Area, Site 10	142	185	166	88	88	10
	Varanasi	Regional Office, Jawahar Nagar	41	388	196	98	81	77
		Sigra	41	388	194	191	156	78
		Saket Nagar	77	305	176	93	83	59
		Banaras Hindu University	63	236	142	91	72	46
		Chandpur	94	356	210	88	86	70
Uttarakhand	Raipur Road, Near parag Diary	93	150	127	69	67	12	
		Clock Tower, PWD Guest House	128	218	171	70	70	20
	Dehradun	Himalaya Drug Co. Near ISBT	145	260	205	68	68	25
	Haldwani	Govt. Women Hospital	92	218	111	103	97	12
	Haridwar	SIDCUL, Haridwar	104	161	131	78	78	14
	Kashipur	BSNL Office, Kashipur	109	236	132	70	70	19
	Rishikesh	Nagar Palika Parishad	99	215	137	82	80	29
	Rudrapur	SIDCUL Office	110	277	132	72	72	22
West Bengal	Alipurduar	Rabikanta High School	43	157	78	103	17	24
		Jaigaon Police Station	44	156	83	102	19	23
		Birpara Police Station	47	210	79	104	16	27
	Amtala	P Roy Industrial Training Institute, Amtala	33	254	84	104	28	45
	Asansol	Asansol Municipal Corporation	84	261	182	104	102	42
		Kangsabati Spinning Mill, Barjora	94	262	184	104	102	43
		Burnpur Town Department, Burnpur	98	258	187	104	103	42
	Baharampur	Baharampur Municipality	67	455	107	104	52	46
	Balurghat	Balurghat College	47	217	89	104	24	37
	Bankura	Bankura Municipality	61	141	99	104	46	19
	Barasat	Barasat Municipality, 73 Rishi Bankim Chandra Road	57	567	118	103	69	63
	Bardhaman	Bardhaman Town, Rajbati	63	136	103	104	64	19
		Barrackpore Municipality	69	307	112	104	70	31
	Barrackpore	Dum Dum Telephone Exchange	71	305	116	103	78	29
		Khardah Municipality	82	445	117	103	76	46
		Baruipur	Bauipur Police Station, Baruipur	28	270	87	104	31
	Bolpur	Bolpur Municipality	62	140	98	104	49	20
	Chinsura	Chinsura Municipality, Pipulpati Auto Stand	53	324	112	104	61	36
	Coochbehar	ABM Seal College	45	173	80	104	19	24
		Uttarbanga Krishi Visvavidyalaya, Pundibari	44	179	79	104	18	28
	Dankuni	Krishnanagar Municipality, Dankuni	58	349	107	104	56	36
	Darjeeling	Bose Institute Campus	42	85	57	104	0	9
	Durgapur	DMC Water Works, Angadpur	102	262	183	104	104	43
		Kwality Hotel, Bhiringi More, Benachiti	92	272	182	104	102	43
		Bidhannagar, PCBL Club, Muchipara	87	249	136	103	101	34
		Dew India Limited, PCBL More, Durgapur	93	253	192	104	103	45
	Ghatal	Annapura Hotel, Ghatal-Panskura Bus Stand	39	278	93	107	35	46
Haldia	Debhog Milan Viyapith, Bhabanipur	37	280	89	107	28	45	
	Bhunia Raichak, Driver's Hut, Bhunia	47	171	85	105	31	33	
	Supermarket Building, Durgachak	35	269	85	106	28	42	
	WBIIDC Ruchi Soya Ind. Durgachak	33	221	84	106	32	44	

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Howrah	Howrah Municipal Corporation	75	453	254	105	101	89
		Naskarpara Pump House, Ghuseri	44	442	127	107	42	88
		CDS & Health Centre, Bator	54	338	153	104	73	68
		Howrah Municipality School, Bandhaghat	56	367	164	104	81	72
	Jalpaiguri	Raninagar Jalpaiguri	50	131	76	106	0	19
	Jhargram	Jhargram	36	169	79	105	25	32
	Kalimpong	Kalimpong Municipality	42	95	58	104	0	11
	Kalyani	College of Medicine & JNM Hospital, Kalyani Industrial Area	75	534	113	104	62	56
	Kharagpur	AMD Building, TATA Bearing	46	651	194	106	95	86
	Kolkata	Salt Lake, Rooftop of CK Market	24	258	89	104	28	53
		KMC office Building, Moulali	42	394	118	104	44	75
		Minto Park, Inside Park AJC Bose Road	26	316	101	104	38	64
		Dunlop Bridge, National Sample Survey	21	385	125	104	46	89
		Behala Chowrasta, Traffic Guard Building	27	334	100	104	40	72
		Upanagari Sporting Club, Baishnabghata	30	379	104	104	41	69
		Cossipore Police Station, B.T. Road	14	568	126	79	36	118
		Dalhousie Square, Lal Bazaar Police Headqtr.	16	610	103	79	30	292
		Kasba	18	318	91	79	29	74
		RD CPCB	14	354	102	110	42	90
		Infectious Diseases & BG Hospital, Beliaghata	23	281	96	104	39	65
		CESC Building, Mandeville Gardens, Gariahat	23	281	80	104	23	61
		Administrative Building, Hyde Road	71	334	151	104	87	56
		KMC Drainage, Pumping Station, 9 Mominpur Road, Mominpur	29	259	78	104	22	53
		Paribesh Bhawan	19	312	98	104	35	66
		Milan Tirtha Club, Picnic Garden	40	260	94	104	32	48
		Public Health Engineering Office Building, Rajarhar	27	279	92	104	34	57
		Tennis Club Building, 45-46 Canal West Road, Fariapukur, Shyambazar	35	350	110	104	38	73
		Elite India Rubber Products Pvt.Ltd., Topsia	27	356	114	104	46	74
		Maniktala Fire Station Building, 17, Bagmari Lane, Ultadanga	29	339	115	104	43	80
	Tollygunge	23	282	89	104	30	52	
	Krishnanagar	Krishnanagar Municipality, TN Thakur Road	72	316	107	104	55	33
	Madhyamgram	Madhyamgram Municipality	57	567	118	103	69	63
	Malda	WBPCB Office, Paribesh Bhaban, Vill. Abhirampur	54	218	101	105	37	35
	Medinipur	Vidyasagar University	35	181	80	107	20	34
	Purulia	Purulia Municipality	55	135	95	104	42	19
	Raigunj	Raigunj College	46	160	78	104	16	21
	Rampurhat	Rampurhat Municipality	58	158	102	104	53	19
	Ranaghat	Ranaghat Municipality, 11 school lane	65	409	112	104	58	45
	Raniganj	Raniganj Municipality	86	263	188	104	103	41
		Mangalpur, SKS School Mangalpur	89	254	185	104	102	41
Jamuria Municipality		78	261	186	104	103	42	
Rishra	Rishra Municipality	51	574	118	104	71	54	
Sankrail	Bharat Co-op Housing Society	31	189	81	104	23	43	
	Bagan Police Station, Bagan	35	273	106	104	41	56	
	Dhulagar Gram Pachayat	48	339	151	106	71	72	
	P Mukherjee's House, Near SBI Amta	42	289	105	104	42	64	
Siliguri	Siliguri	46	198	80	105	21	33	
Suri	Suri Municipality	62	140	98	104	47	19	
Tamluk	HP Gas Service Station, Maniktala	43	431	108	106	37	75	

Annexure 5: Location wise PM<sub>10</sub> - 2019

State	City	Location	Concentration in $\mu\text{g}/\text{m}^3$			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Tribeni	Tribeni Health Center	43	506	114	104	62	56
	Uluberia	ESI hospital nursing building, 3rd floor, Near Sahib Mandir	36	255	94	104	37	51

**Note:**

'-' data not available. Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009

Annual NAAQS of PM<sub>10</sub> is 60  $\mu\text{g}/\text{m}^3$  for Residential/ industrial / other area and for ecologically sensitive area.

**Levels of Particulate Matter  $\leq 2.5 \mu\text{m}$  (PM<sub>2.5</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

State	City	Location	Concentration in $\mu\text{g}/\text{m}^3$			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Andhra Pradesh	Anantapur	Kamala Nagar	12	65	41	35	1	14
		APIIC Zoni office industrial estate	10	53	24	65	0	10
		Cancer Unit. G.G.Hsharada Nagar, JNTU Road	13	32	20	34	0	4
		D.No.6/5/545, Ram Nagar Colony	18	55	34	72	0	9
	Chittoor	GNC Toll Gate Tirumala	7	66	24	80	1	13
		Near Nutrine Confectionery, Palamaner Road	10	49	28	87	0	7
		O/O Mines and Geology, Old Collector Office, Greampet	12	41	27	71	0	7
	Eluru	Ashram Diagnostic Centre	15	33	22	45	0	5
		District Head quarters hospital	12	30	16	39	0	4
	Guntur	Near Hindu College, Market Road	21	48	29	63	0	5
		A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road	13	31	18	75	0	3
		Distirct Industries Center office Buiding Autonagar	18	38	25	63	0	4
		Government General hospital	11	33	19	49	0	3
	Kadapa	Near ICL Industries, Yerragunta, YSR	10	48	30	81	0	8
		DIC Office, Kadapa	10	42	23	54	0	7
		Rajiv Gandhi Institute of Medical Sciences	8	69	24	70	1	11
	Kakinada	Office Building Ramanayyapeta	6	107	30	55	6	23
		Gram Panchayathi building, Suryaraopeta	6	30	15	28	0	6
		MEE Seva / MEPMA Office, Sailipeta	6	59	16	41	0	11
		Petro Chemical Engineering Block, JNTU , Pithapuram Road	6	53	18	41	0	10
	Kurnool	Mourya Inn, Krishna Nagar	9	55	25	57	0	11
		APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center	13	58	34	42	0	11
		Rajvihar Circle	17	56	34	68	0	10
		Pump House, Venkataramana Colony	10	41	25	63	0	8
	Nellore	Venkatareddy Nagar, Vedayapalem	27	38	33	77	0	3
		Chandramouli nagar	26	37	32	36	0	2
	Ongole	Near Court Center	8	40	25	35	0	7
		APIIC, Administrative Office, Growth Centre, Gundlapalli	15	34		12	0	6
		Ongole Municipal Corporation	8	35	24	34	0	8
	Rajahmundry/ Rajamahendravaram	Staff Clud Building, A.P. Paper Mill	8	118	34	70	11	27
	Srikakulam	SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram	10	95	36	64	2	16
	Tirupati	Regional Science Centre, Chittoor Bypass	19	31		10	0	4
		Municipal Office, Tilak Road	9	38	26	44	0	7
		Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand	18	46	31	46	0	7
	Vijaywada	Benz Circle	15	43	25	90	0	4
		Autonagar	20	40	27	81	0	3
		Police Control Room	18	43	28	90	0	3
	Vishakhapatnam	Industrial Estate, Marrisipalem	8	80	36	64	9	18
		Panchayat Raj office, Mindi	9	75	27	68	2	12
		Police Barracks	7	99	36	89	8	19
		INS-Virabahu, Naval Area	7	49	27	55	0	11
		Seethammadhara	8	91	29	80	1	13
		Ganapuram Area	10	127	41	77	11	22
		Pedagantyada (V), Gajuwada (M)	7	70	34	77	3	15
		CWMP, RAMKY, Parawada	10	73	32	54	5	16
	MVP Raitu Bajar	8	84		4	1	35	
	Vizianagaram	Industrial Growth Centre, APIIC Building at IDA Bobbili	8	58	35	50	0	13

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Assam	Guwahati	Head Office, Bamunimaidam	12	51	27	24	0	10
		ITI Building, Gopinath Nagar	17	51	30	25	0	8
		Khanapara, Central Dairy, Kamrup	10	43	23	21	0	9
Bihar	Begusarai	Begusarai	19	114	55	104	36	21
	Muzaffarpur	BSPCB Regional Office, Bela Industrial Area, Bela	19	304	101	104	65	72
Chandigarh	Chandigarh	Modern Foods, Industrial Area	11	323	74	124	61	51
		Sector-17 C	10	149	59	90	35	32
		Punjab Engineering College, Sector- 12	17	180	63	115	51	37
		Sector-39, IMTECH	13	199	64	126	53	37
		Kaimbwala Village	7	165	56	127	44	33
Chhattisgarh	Bilaspur	Regional Office, CECB Vyapar Vihar	13	38	27	91	0	4
	Durg-Bhillainagar	Visak Hostel, Sector-4	28	50	39	69	0	6
		R.O., 5/32 Banglow Office Building	20	40	29	72	0	5
		M.P. Laghu Udyog Nigam	33	61	52	75	1	5
		CSIDC Industrial Growth Center, Borai, Durg	37	61	48	74	1	7
	Korba	HIG 21,22.Near Ghantaghar, MP Extension	13	46	30	97	0	11
		Pragati Nagar NTPC Colony, Jamnipali	12	46	27	99	0	10
		I.T.I., Rampur	15	49	32	100	0	11
	Raigarh	Regional Office, ECB, Raigarh	10	34	20	78	0	4
		Jindal Industrial Area,Punjipathra, Raigarh	15	40	28	72	0	6
OP Jindal School premises Patrapali		8	32	22	64	0	5	
Dadra & Nagar Haveli and Daman & Diu	Baldevi (Dadra & Nagar Haveli)	Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli	10	43	25	97	0	10
	Silvassa	Khadoli Industrial Area, Khadoli	20	59	39	99	0	12
		Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta	17	60	40	100	0	13
		Prima Plastic, Kadaiya Industrial Area, Kadaiya	12	59	38	97	0	13
	Daman	Mashal Chawk, Nani Daman	11	57	34	99	0	14
Patlara (Daman)	Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman	10	39	23	100	0	8	
Delhi	Delhi	Janakpuri	15	513	108	120	72	90
		Naraina Industrial Area, Delhi	13	339	79	92	51	63
		Pritampura	11	590	128	110	79	108
Goa	Amona	Amona, Bicholim	16	120	38	105	18	21
	Assanora	Assanora Junction, Bardez	13	61	30	104	1	11
	Bicholim	Bicholim	12	63	31	103	3	13
	Codli	Codli Tisk, Ponda, Sanguem	14	81	32	103	7	16
	Cuncolim	Cuncolim	15	77	38	102	13	17
	Honda	Honda Junction, Sattari	15	69	32	104	7	14
	Kundaim	Kundaim Industrial Estate	12	83	31	104	8	15
	Margao	Margao Town	15	78	30	102	7	14
	Panaji	Old GSPCB premises, Patto	4	166	50	60	15	29
	Ponda	Ponda Town	16	85	33	105	9	16
	Sanguem	Near Railway Station at Kalem, Sanguem	15	68	29	103	3	12
	Tilamol	Quepem, Tilamol	15	90	35	102	9	16
	Tuem	Tuem Industrial Estate	14	68	29	104	3	11
	Usgao	Usgao Plae, Junction, Ponda	17	99	33	96	3	13
	Vasco	Fuse Call Office, Mormugao	5	114	41	53	8	24
Gujarat	Ahmedabad	Naroda, G.I.D.C., Ahmadabad	18	102	38	87	18	22
		Cadilla Bridge Narol	16	130	40	86	16	29
		Bhagavathi Estate, Keval Kanta Road, Rakhiyal	16	98	36	88	15	22
		Reliable Products, 61/62 Ilaben estate,PiranaDump Site,Narol (previous Dyno Wash)	21	130	44	87	15	27
		L.D. Engg. College	16	103	35	88	17	23
		Shardaben Hospital, Saraspur	16	113	35	86	12	24
		R.C. Technical High School, Mirzapur	16	93	33	86	12	21
	AZL Behrampur, Ahmadabad	16	108	36	87	16	24	
	Ahmedabad	Sola L.T. Chanakyapuri Pumping Station	18	112	37	88	13	27
	Anklesvar	Rallis India Ltd.	21	70	37	88	7	12

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation	
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS		
	Jamnagar	Durga Traders, Bhavanafarm Society	21	67	35	88	4	11	
		Fisheries Office	14	85	34	87	12	18	
	Rajkot	Nr. Sardhara Industrial Corporation	16	83	35	87	10	16	
		GPCB Regional Office	14	98	35	87	11	19	
	Surat	S.V.R. Engg. College	16	57	33	87	0	9	
		B.R.C. High School, Udhna	18	109	46	83	15	23	
		Near Air India Office	13	104	41	88	13	20	
	Vadodara	GPCB Office, Geri Vasahat	17	86	34	87	12	17	
		Sterling Gelatin Guest House, Vill-Karakhadi Padia	17	108	40	87	16	25	
		Dandia Bazaar	17	89	34	88	10	17	
		CETP Nandesari	18	112	41	85	0	26	
	Vapi	Lubrizol	17	94	36	87	11	19	
		GEB, Illrd Phase, GIDC	17	98	45	86	18	22	
	Himachal Pradesh	Damtal	Vapi Nagar Palika, Vapi	12	89	35	87	10	18
Regional Office			6	43	19	99	0	7	
Dharamshala		Old Road	7	52	22	97	0	10	
		Kotwali Bazar Dharamshala	8	25	14	29	0	4	
Kala Amb		Daari, Dharamshala	7	82	17	118	1	8	
		Kala Amb Industrial Area	70	113	85	19	19	11	
Manali		Kala Amb Town/Trilokpur	14	79	52	29	10	15	
		Nehru Park, Manali, Kullu	1	76	27	118	3	11	
Paonta Sahib		HPSPCB, Hadimba Road, Manali, Kullu	7	31	17	31	0	6	
		Paonta Sahib	8	63	39	49	2	15	
Parwanoo		Regional Office, Sector- 4	6	56	18	140	0	8	
		Asst. Commissioner Building Sector I	6	56	19	108	0	8	
Shimla		Bus Stand, Winterfield	5	56	26	118	0	9	
		HPSPCB, BBMB Colony, Mandi	6	75	30	47	2	16	
Sunder Nagar	Municipal Council, NH-21, Mandi	18	86	46	24	5	17		
	Jammu & Kashmir	Regional Office, Jammu	12	63		27	1	15	
Jammu		M.A. Stadium, Jewel Chowk	16	56	39	20	0	11	
		Bari Brahamana Industrial Area	12	49	35	26	0	10	
Karnataka	Bagalkote	Regional Office KSPCB Office Premises	10	68	29	40	2	14	
		Graphite India, White Field Road	12	70	32	72	1	12	
	Bangalore	AMCO Batteries, Mysore Road	16	74	36	96	3	12	
		KHB Industrial Area, Yelahanka	11	47	27	28	0	10	
		Peenya Industrial Area	17	57	36	13	0	15	
		Victoria hospital	11	59	23	71	0	8	
		Yeshwanthpura police station	10	74	35	88	3	14	
		Jnanabharathi, Bangalore University	20	55	40	20	0	9	
		TERI office, Vital Medi healthcare Pvt Ltd	11	67	30	79	1	12	
	Belgaum	Karnataka SPCB Office Building	7	90	38	50	9	21	
	Bidar	KSPCB Office Premises	5	89	39	51	9	22	
	Bijapur	KSPCB Office Premises	15	76		16	2	18	
	Devanagere	Regional Office building, KSPCB	3	35	16	85	0	9	
	Gulburga	Government Hospital	23	102	46	35	9	18	
	Hubli-Dharwad	Hassan	KSRTC bus stand building	18	36	25	78	0	4
		Lakkamanahalli Industrial Area, Dharwad	12	33	20	105	0	4	
	Kolar	Rani Chennamma Circle, Hubli	15	38	24	104	0	5	
		KSPCB Office Premises, Kolar	12	53	28	31	0	10	
	Mangalore	Baikampady Industrial Area	15	59		14	0	13	
Mysore	K.R.Circle, Visvesvaraya Bldg	18	41	26	108	0	4		
Raichur	KSPCB Office Premises, Raichur	1	34	14	43	0	9		
Shimoga	The VISL, Oxygen Plant, Shimoga	3	24	12	62	0	5		
Kerala	Kochi	Kuttipadam	4	61	32	43	2	17	
		Kozhikode City	2	38	13	85	0	8	
	Kozhikode	Nallalam	1	56	14	87	0	11	

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
Madhya Pradesh	Bhopal	Hamidia Road, MP Hastshilp Vikas Nigam	35	119		13	10	30
		CETP Govindpura	25	56		7	0	12
		Kolar Thana, Kolar Road, Bhopal	39	122		14	10	29
		AKVN Office, Industrial Area Mandideep, Raisen	37	125		12	10	29
		Barkatuallah University, Hoshgabad Road, Bhopal	25	86		16	9	23
		Arera Colony	12	80	48	40	12	18
	Chhindwara	HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon	12	60	34	96	0	12
		Hindustan Unileaver, Narsinghpur Road,	12	60	37	88	0	11
	Dewas	EID Perry (I) Limited	25	59	47	24	16	11
		Dewas Metal Section	30	58	45	26	18	8
		Vikas Nagar	25	86	46	41	27	12
	Gwalior	Dindayal Nagar	13	175	57	89	43	21
		Maharaj Bada	19	91	58	93	51	17
	Indore	M.P. Laghu Udyog, Pologround	13	68	39	94	3	12
		Kothari Market, M.G. Road	11	63	37	101	2	12
		Telephone Nagar, 26 A, Kanadia Road	12	64	36	99	4	10
	Katni	HIG-4 Housing Board Colony Jhinhri, Katni	20	37		2	0	12
		Calderys Works Refractories India Private Limited, Guest House, Katni	26	26		1	0	
	Nagda	Chem. D. Labour Club	25	38	30	15	0	4
		Grasim Kalyan Kendra	30	48	41	22	14	6
	Prithampur	Vikas Bhavan, Sector-2	17	45	32	76	0	7
		RCC Over Head Tank No. 1, Sector-3	17	65	33	80	1	8
	Sagar	Pt.Deendayal Nagar	6	44	19	25	0	8
		Katra Bazar, Sagar	10	32	19	26	0	5
	Singrauli	Jayant Township	12	165	68	37	23	39
		N.T.P.C., Vidyanagar	13	222	69	35	19	39
		Waidhan	8	143	63	40	21	36
Ujjain	Regional Office	13	70		5	1	25	
	Chamunda Mata Chouraha	25	46		2	1	15	
Maharashtra	Mumbai	Worli	4	174	40	94	17	29
	Nagpur	NEERI Lab, Nehru Marg, Highway No. 7	5	84	39	78	12	20
Manipur	Imphal	Secretariat Building	37	71		6	0	13
Meghalaya	Byrnihat	EPIP, Ri-Bhoi district	3	10	7	36	0	2
	Dawki	Terrace building, Jaintia Hills District	3	10	7	36	0	2
	Khliehriat	O/o BDO, C & R.D. Block-Khliehriat	3	10	7	36	0	2
	Nongstoin	Office Premises of E.E, PHED	3	10	7	36	0	2
	Shillong	Boards Office Permises, Lumpyngngad	3	17	9	106	0	3
		State Tuberculosis Hospital	3	10	7	36	0	2
		Forest Rest House, Polo Hills	3	10	7	36	0	2
	Tura	41/2 mile, Myllem Range Office	3	10	7	36	0	2
	Tura	PHED, Araimille, West Garo Hills District	3	10	7	36	0	2
Umiam / Umsning	Umiam Industrial Complex, Ri-Bhoi District	3	10	7	36	0	2	
Odisha	Angul	Industrial Estate	21	87	55	102	39	14
		NALCO Township	15	64	40	102	4	11
	Balasore	Sahadevkhunta	30	62	45	103	1	8
		DIC office	30	70	44	104	1	8
		Rasalpur near Balgopalpur I/A	34	75	50	105	5	7
	Berhampur	Regional Office Orissa SPCB	13	70	26	107	1	9
	Bhubneshwar	Capital Police Station	16	37	30	49	0	5
		IRC Village	10	129	28	76	6	19
Office Premises Bhubaneswar		14	110	30	46	2	18	



Annexure 6: Location wise PM<sub>2.5</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation	
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS		
Odisha		Water works, Palasuni, Rasalgarh	7	76	30	70	1	12	
		Patrapara, Khandagiri	14	56	30	46	0	13	
		Chandrashekharpur	12	83	28	61	1	12	
	Bonaigarh	Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh	24	89	51	104	0	14	
	Cuttack	Traffic Tower, Badambadi	18	97	40	54	1	13	
		P.H.D Office Barabati	25	113	50	54	14	24	
		R.O. Cuttack Office, Surya Vihar	24	106	50	94	23	22	
	Jharsuguda	R.O. Building Cox colony	35	93	51	108	21	10	
		TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bhepahar,	29	71	39	106	1	7	
	Paradeep	On roof of PPT Staff Quarter	23	169	55	76	14	39	
	Puri	Town Police Station	12	91		38	1	13	
	Rajgangpur	DISIR, Rajgangpur	31	93	58	103	39	15	
	Rayagada	Regional Office Orissa SPCB	10	91	32	104	2	14	
		LPS High School, Jaykaypur	9	66	35	101	2	14	
	Rourkela	Regional Office, ORPB	20	88	37	104	2	7	
		Kalunga Industrial Estate	17	79	47	104	29	16	
		IDL Police Out-post, Sonaparbat	40	93	51	104	10	8	
	Sambalpur	Kuarmunda, Sundergarh	22	93	53	104	38	14	
		Filter Plant, PHD Office, Modipara	19	164	48	105	17	20	
	Talcher	Coal Field Area	19	93	49	104	34	20	
		T.T.P.S.Colony	12	125	44	104	24	23	
	Tamilnadu	Chennai	Govt. High School, Manali	26	52	36	30	0	6
			Kathivakkam	20	45	33	28	0	6
Thiruvottiyur			25	48	35	30	0	5	
NEERI, CSIR CampusTaramani			10	76	29	85	1	11	
Kilpauk			17	57	38	34	0	11	
Thiyagaraya Nagar			15	59	42	27	0	12	
Coimbatore		Anna Nagar	25	52	39	23	0	8	
		Poniarajapuram, On the top of DEL	9	50	28	29	0	11	
Cuddalore		G.D.Matric Hr.Sec.School	10	122	42	20	2	23	
		SIDCO Office, Coimbatore/ Kurichi	12	79	42	32	3	16	
		Eachangadu Village	27	35	32	40	0	2	
Madurai		SIPCOT (Project Office)	24	33	29	38	0	2	
		DEE Office, Cuddalore	32	38	35	34	0	2	
		Highway (Project -I) Building	12	62		16	1	11	
Mettur		Fenner (I) Ltd. Kochadai	18	36		15	0	5	
		Kunnathur Chatram Avvai Girls HS School	15	49		15	0	9	
Salem		Raman Nagar	15	48		14	0	11	
		SIDCO	21	71		16	2	15	
Trichy		Sowdeswari College Building	13	80		14	2	18	
		Gandhi Market	46	82	57	30	10	8	
		Main Guard Gate	32	67	57	32	15	8	
		Bishop Heber College	22	43	31	37	0	5	
		Golden Rock	20	43	29	33	0	5	
	Central Bus Stand	19	67	54	35	12	11		
Tuticorin	Fisheries College, Tuticorin Sipcot	14	36	22	32	0	5		
	Raja Agencies	13	43	25	27	0	5		
	AVM Jewellery Building	13	44	22	36	0	6		
Telangana	Adilabad	Building of SCCL Manadamarri Club Mandamarri, Mancherial	40	50	45	90	0	3	
		Balanagar	13	74	35	45	4	16	
	Hyderabad	Tarnaka, NEERI Lab. IICT Campus	14	110	55	81	34	25	
		Uppal, Modern Foods & Industries IDA	13	67	30	45	2	13	
		Jublee Hills	11	69	30	43	2	15	
		Paradise	4	80	41	83	9	16	
		Charminar	9	70	33	92	2	15	
		Zoo Park	7	148	55	102	40	33	
	Jeedimetla Industrial Estate, Rangareddy Distt.	13	78	42	67	10	18		
	Khammam	CER Club Khammam	34	56	45	24	0	7	
Nalgonda	AP PCB Nalgonda	28	47		16	0	6		
Nizamabad	subashnagar,nizamabad dist	33	46	41	45	0	3		

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

State	City	Location	Concentration in µg/m <sup>3</sup>			No. of days in the year		Standard deviation
			Minimum (24-hourly average)	Maximum (24-hourly average)	Annual Average	Monitored	Exceeding NAAQS	
	Patencheru	Police Station, Medak, Ramachadrapuram	21	56	41	58	0	8
	Sangareddy	Pashamlaram/Municipal Office	4	131	45	107	28	30
		Regional office Building of SANGAREDDY	21	53	40	53	0	7
		M/s. Mylan Industries, Gaddapothara	30	58	46	47	0	7
Warangal	Mee-Seva Building ,Municipal Complex	32	36		2	0	3	
Tripura	Agartala	SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban	13	29	24	83	0	3
		Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala	45	69	61	83	59	4
Uttar Pradesh	Agra	Regional Office, Bodla	21	199	102	26	15	65
		Nunhai	30	338	160	25	21	81
		Taj Mahal	6	405	91	244	138	73
		DIC Nunhai	10	350	94	82	49	69
		Etmad-uddaulah	26	394	135	73	60	89
		Rambagh	14	300	76	80	38	57
	Baghpat	Sarvodaya Hospital, Tatiri Merrut, Baghpat Road	42	261	91	97	88	37
		Weavetex Overseas Hostel, Khekra, Baghpat	42	265	93	97	90	40
	Bareilly	IVRI Izatnaga	24	32		18	0	3
		Indian oetrol pump, Civil Line	24	32		18	0	3
	Ghaziabad	Atlas Cycles Industries, Sahibabad Ind. area	15	457	102	79	49	89
		Bulandshaar Road Industrial Area	1	430	105	80	48	91
		Khora Colony, Ghaziabad	47	283	95	97	84	44
	Greater Noida	Vinoba Bhawe Park, Lohia Nagar, Ghaziabad	58	292		41	38	48
		Holland Tractor, Greater Noida	48	281	94	95	83	42
	Hapur	Honda Power, Greater Noida	49	293	95	97	86	42
		Srinagar Colony, Railway Road, Hapur	17	388	114	84	55	88
	Kanpur	Jindal Pipes Ltd, Hapur	16	398	108	62	40	84
		IIT 12 parameter	3	259	66	88	38	52
	Muzaffarnagar	Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road	11	170	86	97	62	39
Lekhpal Bhawan, Tehsil Sadar Campus		33	170	87	97	71	36	
UP PPCB, E-12/1, Sector - 1		16	462	117	97	67	99	
Gee-Pee Electroplating and Eng. Work		12	454	115	96	74	85	
Noida	Subros, Noida	43	297	95	97	87	41	
	Golf Course, Noida	49	289	94	97	89	41	
West Bengal	Asansol	Asansol Municipal Corporation	46	141	81	104	98	18
	Barrackpore	Barrackpore Municipality	47	114	66	104	60	14
	Darjeeling	Bose Institute Campus	13	43	24	104	0	6
	Durgapur	Bidhannagar, PCBL Club, Muchipara	53	127	73	103	91	15
	Haldia	Supermarket Building, Durgachak	10	121	35	106	17	23
		Howrah Municipal Corporation	21	177	73	105	45	44
	Kalyani	CDS & Health Centre, Bator	20	148	63	104	37	37
		College of Medicine & JNM Hospital, Kalyani Industrial Area	43	121	60	104	39	12
	Kolkata	KMC office Building, Moulali	17	181	62	104	42	44
		Minto Park, Inside Park AJC Bose Road	13	177	52	104	32	42
		Behala Chowrasta, Traffic Guard Building	14	173	52	104	34	41
		Tennis Club Building, 45-46 Canal West Road, Fariapukur, Shyambazar	14	175	57	104	36	45
	Sankrail	P Mukherjee's House, Near SBI Amta	21	51		10	0	9
	Siliguri	Siliguri	11	68	32	105	2	14

Note:

Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009

Annual NAAQS of PM<sub>2.5</sub> is 40 µg/m<sup>3</sup> for Residential/ industrial / other area and for ecologically sensitive area.

**Ambient Air Quality Monitoring Stations under National Ambient Air Quality Monitoring Programme (NAMP) – manual stations**

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations
1.	Andhra Pradesh	1.	Anantapur	4
		2.	Chittoor	5
		3.	Eluru	4
		4.	Guntur	4
		5.	Kadapa	5
		6.	Kakinada	4
		7.	Kurnool	4
		8.	Nellore	4
		9.	Ongole	4
		10.	Rajahmundry/ Rajamahendravaram	4
		11.	Srikakulam	4
		12.	Tirupati	4
		13.	Vijaywada	9
		14.	Vishakhapatnam	9
		15.	Vizianagaram	4
2.	Arunachal Pradesh	16.	Itnagar	1
		17.	Naharlagun	1
3.	Assam	18.	Bongaigaon	2
		19.	Daranga	1
		20.	Dibrugarh	1
		21.	Golaghat	1
		22.	Guwahati	6
		23.	Margherita	1
		24.	Nagaon	1
		25.	Nalbari	1
		26.	North Lakhimpur	1
		27.	Silchar	2
		28.	Sivasagar	2
		29.	Tezpur	1
		30.	Tinsukia	3
4.	Bihar	31.	Begusarai	1
		32.	Darbhanga	1
		33.	Gaya	1
		34.	Muzaffarpur	1
		35.	Patna	2
		36.	Rajgir	1
		37.	Sasaram	1
5.	Chandigarh (UT)	38.	Chandigarh	5
6.	Chattisgarh	39.	Bilaspur	1
		40.	Durg-Bhillainagar	4
		41.	Korba	3
		42.	Raigarh	3
		43.	Raipur	2
7.	Dadra & Nagar Haveli and Daman & Diu (UT)	44.	Baldevi (Dadra & Nagar Haveli)	1
		45.	Daman	2
		46.	Patlara (Daman)	1
		47.	Silvassa	2
8.	Delhi (UT)	48.	Delhi	10
9.	Goa	49.	Amona	1

## Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations
		50.	Assanora	1
		51.	Bicholim	1
		52.	Codli	1
		53.	Cuncolim	1
		54.	Curchorem	1
		55.	Honda	1
		56.	Kundaim	1
		57.	Mapusa	1
		58.	Margao	1
		59.	Mormugao	1
		60.	Panaji	1
		61.	Ponda	1
		62.	Sanguem	1
		63.	Tilamol	1
		64.	Tuem	1
		65.	Usgao	1
66.	Vasco	1		
10.	Gujarat	67.	Ahmedabad	9
		68.	Anklesvar	2
		69.	Jamnagar	1
		70.	Rajkot	2
		71.	Surat	3
		72.	Vadodara	5
		73.	Vapi	2
11.	Haryana	74.	Faridabad	2
		75.	Hissar	2
		76.	Yamunanagar	1
12.	Himachal Pradesh	77.	Baddi	3
		78.	Damtal	2
		79.	Dharamshala	2
		80.	Gulaba	1
		81.	Kala Amb	2
		82.	Manali	2
		83.	Marhi	1
		84.	Nalagarh	1
		85.	Paonta Sahib	2
		86.	Parwanoo	2
		87.	Shimla	2
		88.	Sunder Nagar	2
		89.	Una	2
90.	Vashisht	1		
13.	Jammu & Kashmir (UT)	91.	Jammu	3
		92.	Pulwama	1
		93.	Srinagar	3
14.	Jharkhand	94.	Barajamda	1
		95.	Dhanbad	3
		96.	Jamshedpur	2
		97.	Jharia	1
		98.	Ranchi	1
		99.	Saraikela	1
		100.	Sindri	1
15.	Karnataka	101.	Bagalkote	1
		102.	Bangalore	9

## Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations		
		103.	Belgaum	1		
		104.	Bidar	1		
		105.	Bijapur	1		
		106.	Chitradurga	1		
		107.	Devanagere	3		
		108.	Gulbarga	1		
		109.	Hassan	1		
		110.	Hubli-Dharwad	2		
		111.	Karwar	1		
		112.	Kolar	1		
		113.	Mandya	1		
		114.	Mangalore	1		
		115.	Mysore	2		
		116.	Raichur	1		
		117.	Shimoga	1		
		118.	Timukuru	1		
		16.	Kerala	119.	Alappuzha	3
				120.	Kochi	8
121.	Kollam			2		
122.	Kottayam			2		
123.	Kozhikode			2		
124.	Malapuram			2		
125.	Palakkad			1		
126.	Pathanamthitta			1		
127.	Thiruvananthapuram			4		
128.	Thissur			2		
129.	Wayanad			2		
17.	Lakshwadeep (UT)	130.	Kavaratti	1		
18.	Madhya Pradesh	131.	Amlai	2		
		132.	Bhopal	8		
		133.	Chhindwara	2		
		134.	Dewas	3		
		135.	Gwalior	2		
		136.	Indore	3		
		137.	Jabalpur	2		
		138.	Katni	2		
		139.	Nagda	3		
		140.	Prithampur	2		
		141.	Sagar	2		
		142.	Satna	2		
		143.	Singrauli	3		
		144.	Ujjain	4		
19.	Maharashtra	145.	Akola	3		
		146.	Ambernath	1		
		147.	Amravati	3		
		148.	Aurangabad	4		
		149.	Badlapur	1		
		150.	Bhiwandi	3		
		151.	Chandrapur	6		
		152.	Dombivali	1		
		153.	Jalgaon	3		
		154.	Jalna	2		
		155.	Kolhapur	3		

## Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations
		156.	Latur	3
		157.	Lote	2
		158.	Mahad	3
		159.	Mumbai	3
		160.	Nagpur	7
		161.	Nanded	3
		162.	Nashik	4
		163.	Navi Mumbai	6
		164.	Pimpri-Chinchwad	1
		165.	Pune	3
		166.	Roha	2
		167.	Sangli	3
		168.	Solapur	2
		169.	Tarapur	3
		170.	Thane	3
171.	Ulhasnagar	2		
20.	Manipur	172.	Imphal	1
21.	Meghalaya	173.	Byrnihat	1
		174.	Dawki	1
		175.	Khliehriat	1
		176.	Nongstoin	1
		177.	Shillong	4
		178.	Tura	1
		179.	Umiam / Umsning	1
22.	Mizoram	180.	Aizawl	5
		181.	Champhai	2
		182.	Kolasib	2
		183.	Lunglei	2
23.	Nagaland	184.	Dimapur	7
		185.	Kohima	2
24.	Odisha	186.	Angul	2
		187.	Balasore	3
		188.	Berhampur	1
		189.	Bhubneshwar	6
		190.	Bonaigarh	1
		191.	Cuttack	3
		192.	Jharsuguda	3
		193.	Kalinga Nagar	3
		194.	Konark	1
		195.	Paradeep	3
		196.	Puri	2
		197.	Rajgangpur	1
		198.	Rayagada	2
		199.	Rourkela	4
		200.	Sambalpur	1
201.	Talcher	2		
25.	Puducherry (UT)	202.	Karaikal	3
		203.	Puducherry	3
26.	Punjab	204.	Aligarh (Jagraon)	1
		205.	Amritsar	2
		206.	Aspal Khurd (Tapa)	1
		207.	Bara Pind (Goraya)	1
		208.	Bhatinda	1

## Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations
		209.	Binjon (Garshankar)	1
		210.	Bishanpura (Payal)	1
		211.	Changal (Sangrur)	1
		212.	Chowkimann (Jagraon)	1
		213.	Dera Baba Nanak	1
		214.	Dera Bassi	2
		215.	Fatehpur (Samana)	1
		216.	Gobindgarh	3
		217.	Guru Ki Dhab (Kotkapura)	1
		218.	Jaito Sarja (Batala)	1
		219.	Jalandhar	4
		220.	Khanna	2
		221.	Kharaori (Sirhind)	1
		222.	Kotladoo (Ajnala)	1
		223.	Lakho ke Behram (Ferozpur)	1
		224.	Ludhiana	4
		225.	Mrar Kalan (Muktsar)	1
		226.	Mukandpur (Nawashahar)	1
		227.	Mureedke (Batala)	1
		228.	Naudhrani (Malerkotla)	1
		229.	Naya Nangal	2
		230.	Patiala	2
		231.	Peer Mohammad (Jalalabad)	1
		232.	Poohli (Bhatinda)	1
		233.	Qila Bharian (Sangrur)	1
		234.	Rakhra (Patiala)	1
		235.	Rohila (Samrala)	1
		236.	Subanpur (Dhilwan)	1
		237.	Tirathpur (Amritsar I)	1
27.	Rajasthan	238.	Alwar	3
		239.	Bharatpur	3
		240.	Bhiwadi	3
		241.	Chittorgarh	3
		242.	Jaipur	9
		243.	Jodhpur	9
		244.	Kota	6
		245.	Udaipur	3
28.	Sikkim	246.	Chungthang	1
		247.	Gangtok	2
		248.	Mangan	1
		249.	Namchi	1
		250.	Pelling	1
		251.	Rangpo	1
		252.	Ravangla	1
		253.	Singtam	1
29.	Tamilnadu	254.	Chennai	11
		255.	Coimbatore	3
		256.	Cuddalore	3
		257.	Madurai	3
		258.	Mettur	2
		259.	Salem	1
		260.	Trichy	5
		261.	Tuticorin	3

## Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations
30.	Telangana	262.	Adilabad	1
		263.	Hyderabad	10
		264.	Karimnagar	1
		265.	Khammam	2
		266.	Kothur	1
		267.	Nalgonda	2
		268.	Nizamabad	1
		269.	Patencheru	1
		270.	Ramagundam	1
		271.	Sangareddy	3
31.	Tripura	272.	Warangal	2
		273.	Agartala	2
32.	Uttar Pradesh	274.	Agra	6
		275.	Allahabad	5
		276.	Anpara	2
		277.	Baghpat	2
		278.	Bareilly	2
		279.	Firozabad	3
		280.	Gajraula	2
		281.	Ghaziabad	4
		282.	Gorakpur	3
		283.	Greater Noida	2
		284.	Hapur	2
		285.	Jhansi	2
		286.	Kanpur	9
		287.	Khurja	2
		288.	Lucknow	8
		289.	Mathura	2
		33.	Uttarakhand	290.
291.	Moradabad			2
292.	Muzaffarnagar			2
293.	Noida			4
294.	Raebareli			3
295.	Saharanpur			2
34.	West Bengal	296.	Unnao	2
		297.	Varanasi	5
		298.	Dehradun	3
		299.	Haldwani	1
		300.	Haridwar	1
		301.	Kashipur	1
		302.	Rishikesh	1
		303.	Rudrapur	1
		304.	Alipurduar	3
		305.	Amtala	1
		306.	Asansol	3
		307.	Baharampur	1
		308.	Balurghat	1
		309.	Bankura	1
310.	Barasat	1		
311.	Bardhaman	1		
312.	Barrackpore	3		
313.	Baruipur	1		
314.	Bolpur	1		



## Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

S. No.	States & UTs	Sl. No.	City/Town/Village	Number of stations
		315.	Chinsura	1
		316.	Coochbehar	2
		317.	Dankuni	1
		318.	Darjeeling	1
		319.	Durgapur	4
		320.	Ghatal	1
		321.	Haldia	4
		322.	Howrah	4
		323.	Jalpaiguri	1
		324.	Jhargram	1
		325.	Kalimpong	1
		326.	Kalyani	1
		327.	Kharagpur	1
		328.	Kolkata	21
		329.	Krishnanagar	1
		330.	Madhyamgram	1
		331.	Malda	1
		332.	Medinipur	1
		333.	Purulia	1
		334.	Raigunj	1
		335.	Rampurhat	1
		336.	Ranaghat	1
		337.	Raniganj	3
		338.	Rishra	1
		339.	Sankrail	4
		340.	Siliguri	1
		341.	Suri	1
		342.	Tamluk	1
		343.	Tribeni	1
		344.	Uluberia	1
	<b>28 States &amp; 6 UTs = 34</b>		<b>344 Cities</b>	<b>804 Stations</b>

NB. Village names with tehsil in parentheses under City / town / village are rural stations.

**Non-Attainment cities (122 cities) with respect to Ambient Air Quality India (2014-2018)**

S. No.	State	S. No.	City
1.	Andhra Pradesh	1.	Anantapur
		2.	Chittoor
		3.	Eluru
		4.	Guntur
		5.	Kadapa
		6.	Kurnool
		7.	Nellore
		8.	Ongole
		9.	Rajahmundry
		10.	Srikakulam
		11.	Vijaywada
		12.	Vishakhapatnam
		13.	Vizianagaram
2.	Assam	14.	Guwahati
		15.	Nagaon
		16.	Nalbari
		17.	Sibsagar
3.	Bihar	18.	Silcher
		19.	Gaya
4.	Chandigarh	20.	Muzaffarpur
		21.	Patna
5.	Chhattisgarh	22.	Chandigarh
6.	Delhi	23.	Durg Bhilai Nagar
		24.	Korba
		25.	Raipur
7.	Gujarat	26.	Delhi
		27.	Ahmedabad
		28.	Surat
8.	Himachal Pradesh	29.	Vadodara
		30.	Baddi
		31.	Damtal
		32.	Kala Amb
		33.	Nalagarh
		34.	Paonta Sahib
		35.	Parwanoo
		36.	Sunder Nagar
9.	Jammu & Kashmir	37.	Jammu
		38.	Srinagar
10.	Jharkhand	39.	Dhanbad
11.	Karnataka	40.	Bangalore
		41.	Devangere
		42.	Gulbarga
		43.	Hubli-Dharwad
12.	Madhya Pradesh	44.	Bhopal
		45.	Dewas
		46.	Gwalior
		47.	Indore
		48.	Sagar
		49.	Ujjain
13.	Maharashtra	50.	Akola
		51.	Amravati
		52.	Aurangabad
		53.	Badlapur
		54.	Chandrapur
		55.	Jalgaon
		56.	Jalna
		57.	Kolhapur
		58.	Latur
		59.	Mumbai
		60.	Nagpur
		61.	Nashik
		62.	Navi Mumbai
		63.	Pune

S. No.	State	S. No.	City
		64.	Sangli
		65.	Solapur
		66.	Thane
		67.	Ulhasnagar
14.	Meghalaya	68.	Byrnihat
15.	Nagaland	69.	Dimapur
		70.	Kohima
16.	Odisha	71.	Angul
		72.	Balasore
		73.	Bhubneshwar
		74.	Cuttack
		75.	Kalinga Nagar
		76.	Rourkela
		77.	Talcher
17.	Punjab	78.	Amritsar
		79.	Dera Baba Nanak
		80.	Dera Bassi
		81.	Gobindgarh
		82.	Jalandhar
		83.	Khanna
		84.	Ludhiana
		85.	Naya Nangal
		86.	Patiala
18.	Rajasthan	87.	Alwar
		88.	Jaipur
		89.	Jodhpur
		90.	Kota
		91.	Udaipur
19.	Tamilnadu	92.	Trichy
		93.	Tuticorin
20.	Telangana	94.	Hyderabad
		95.	Nalgonda
		96.	Patencheru
		97.	Sangareddy
21.	Uttar Pradesh	98.	Agra
		99.	Allahabad
		100.	Anpara
		101.	Bareilly
		102.	Firozabad
		103.	Gajraula
		104.	Ghaziabad
		105.	Jhansi
		106.	Kanpur
		107.	Khurja
		108.	Lucknow
		109.	Moradabad
		110.	Noida
		111.	Raebareli
		112.	Varanasi
22.	Uttarakhand	113.	Dehradun
		114.	Kashipur
		115.	Rishikesh
23.	West Bengal	116.	Asansol
		117.	Barrackpore
		118.	Durgapur
		119.	Haldia
		120.	Howrah
		121.	Kolkata
		122.	Raniganj



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