

Action plan on Non Attainment City- Jaipur (Rajasthan)

Jaipur is State Capital of Rajasthan. It is situated at Latitude: 26°55'10" N & Longitude: 75°47'16" E and Elevation above sea level is 435 m. According to the latest data, the population of the city has surpassed 3 million people. The city is surrounded by the Nahargarh hills in the north and Jhalana in the east. To its south and west the city is surrounded by isolated and discontinuous hillocks. Jaipur city falls under the semi-arid of climate. Total no. of vehicles registered as on March, 2017 in Jaipur District with Transport Department is 25,83,106 (Truck: 88349, Bus 24980, Car: 362256, Taxi: 36915, Jeep: 75869, Three Wheeler: 30078, Two Wheeler: 1882871, Tractor: 50101, Trailers: 3050, Tempo (Pass) : 3765, Tempo (Goods): 14944 and others: 6273).



The major sources of air pollution in Jaipur are road dust, vehicular Emission, construction and demolition activities, industrial emissions etc. State Board inspect

industries time to time and take essential measures to control pollution emitted by the Industries. For monitoring ambient air quality in the Jaipur State Board have installed three Continuous Ambient Air Quality Monitoring Station at Police Commissioner office, Regional Science Centre and psychiatric Centre. At these Stations Particulate Matter (PM₁₀ and PM_{2.5}), Gaseous pollutants – SO₂, NO_x, O₃, CO, VOC and NH₃ and Meteorological parameters like Temperature, Relative Humidity, Wind Speed, Wind Direction, Pressure, Solar Radiation etc are measured continuously. Besides it, State Board has also installed 09 Manual Stations under the National Air Quality Monitoring Program at following locations:

1. Ajmeri Gate, Jaipur
2. RSPCB Office, Jhalana Dungri, Jaipur
3. Chandpole, Jaipur
4. MIA, RIICO Office, Jaipur
5. Nagar Nigam Office, Mansarovar, Jaipur
6. RIICO Office, Baees Godam Ind. Area, Jaipur
7. RIICO Office, Sitapura Ind. Area, Jaipur
8. RO Jaipur (N), Vidyadhar Nagar, Jaipur
9. V K I A, Jaipur

Rajasthan lies in the arid and semi-arid agro-climatic zone of the country and hence presence of dust due to dry climatic conditions coupled with strong hot air movement is common.

Presence of Particulate Matter in the atmosphere goes particularly high during summer months and during winters when the phenomenon of thermal inversion occurs.

As per the available data, level of gaseous pollutants like SO₂ and NO₂ are well within the prescribed limit of 80 micro gram per cubic metre. Due to the dry conditions prevailing over a major part of the year, levels of PM₁₀ is found to be in excess of the prescribed limit of 100 micro gram per cubic metre.

To draw an action based on qualitative data, a source apportionment study has been initiated for the City of Jaipur. For this purpose, State Board has signed MOU with IIT, Kanpur on 24th Jan 2017 for conducting the Project entitled “Air Quality Assessment, Trend Analysis, Emission Inventory and Source Apportionment Study in Jaipur City”. The project cost is Rs.1, 12, 12,500/ and is expected to be completed by this year end. This study is one of the first of its kind that is being done for Jaipur city.

ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITIES

Name of the cities:- **Jaipur- Rajasthan State.**

Air Pollution concern: **PM₁₀ and PM_{2.5}**

| Source group | Action Points | Implementation period | Time Frame for implementation | Responsible agency(ies) |
|--------------------------|---|------------------------------|--------------------------------------|--|
| Vehicle Emission Control | 1. Launch extensive drive against polluting vehicles for ensuring strict compliance and regular checking of vehicular emission and issue of PUC certificate | Short Term | April-2019 | Dept. of Transport Traffic Police |
| | 2. Launch Public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicle, lane discipline, etc. | Short Term | April-2019 | Dept. of Transport Traffic Police |
| | 3. Prevent parking of vehicles in the non-designed areas. | Short Term | April 2019 | Traffic Police |
| | 4. Initiate steps for retrofitting of particulate filters in diesel vehicles, when BS-V fuels are available. | Long Term | Dec-2020 | Dept. of Transport |
| | 5. Prepare action plan to check fuel adulteration and random monitoring of fuel quality data. | Short Term | April 2019 | Dept. of Food & Supplies |
| | 6. Prepare plan for widening of road and improvement of Infrastructure for decongestion of road. | Mid Term | Dec. 2019 | LSG Development Authorities Municipal Corporations UITs in their jurisdiction |
| | 7. Prepare plan for construction of expressways/bypasses to avoid congestion due to non-destined vehicles | Long Term | Dec. 2019 | NHAI PWD |
| | 8. Steps for promoting battery operated vehicles/ Promotion & operationalisation of E-rickshaw | Short Term | April-2019 | Dept. of Transport |
| | 9. Install weigh in motion bridge at borders of cities/towns and States to prevent overloading of vehicles | Long Term | Dec. 2019 | NHAI PWD |

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| | 10. Synchronize traffic movements /Introduce intelligent traffic systems for lane-driving. | Long Term | Dec. 2019 | Traffic Police |
| | 11. Installation of remote sensor based PUC system | Long Term | Dec. 2019 | Traffic Police |
| | 12. Restriction on plying & phasing out of 15 years old commercial diesel driven vehicles. | Long Term | March-2020 | Dept. of Transport |
| | 13. Introduction of cleaner fuel for CNG/LPG vehicles | Long Term | April 2020 | Dept. of Transport Food &Supplies |
| | 14. Plan for restriction on the registration on diesel driven Auto-rickshaw & Tempo | Mid Term | Dec. 2019 | Dept. of Transport |
| | 15. Monitoring on vehicle fitness | Mid Term | Sept 2019 | Dept. of Transport |
| | 16. Periodic calibration test of vehicular emission monitoring instrument | Mid Term | July 2019 | Dept. of Transport |
| | 17. Preparation of plan for development Multi level Parking | Long Term | Dec. 2019 | UDH Development authorities in their jurisdiction |
| Re-Suspension of Road Dust and Other Fugitive Emission Control | 1. Prepare plan for green buffers along the traffic corridors. | Mid Term | Sept 2019 | NHAI PWD Urban local body |
| | 2. Maintain potholes free roads for free roads for free flow of traffic | Mid Term | Sept 2019 | NHAI, PWD, and Urban local body |
| | 3. Introduce water fountain at major traffic intersection wherever feasible | Mid Term | Sept 2019 | Urban local body Development Authorities Municipal Corporations UITs in their jurisdiction |
| | 4. Greening of open areas, gardens, community places, schools and housing societies | Mid Term | Sept 2019 | Urban local body Dept of Education |

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| | 5. Blacktopping metaled road including pavement of road shoulders. | Mid Term | Sept 2019 | NHAI PWD Urban local body |
| | 6. Widening of roads and construction of pucca footpath along main roads (RIICO Industrial Areas) | Long Term | Dec. 2019 | RIICO as per requirement and feasibility |
| | 7. Regular cleaning of road (RIICO and other areas) | Long Term | March 2020 | RIICO UDH |
| | 8. Tree plantation along the roads (RIICO Industrial Areas) | Long Term | Sept 2019 | RIICO |
| Control of Emissions from Biomass/Crop Residue/Garbage/Municipal Solid Waste burning | 1. Launch extensive drive against open burning of bio-mass, garbage, leaves, etc. | Short Term | April 2019 | Urban local body |
| | 2. Regular check and control of burning of municipal solid waste. | Short Term | April 2019 | Urban local body |
| | 3. Ensure ban on burning of agriculture waste and crop residues and its implementation | Long Term | Dec. 2019 | Department of Agriculture Revenue |
| | 4. Construction of advanced waste management Site. | Mid Term | Dec-2020 | Urban local body |
| | 5. Restriction on open burning of municipal solid waste biomass and plastic (RIICO Industrial Areas) | Short Term | January 2019 | RIICO |
| | 6. Restriction on open burning of biomass and plastic | Short Term | Regular activity | Urban local body |
| | 7. Immediate lifting of solid waste generated from desilting and cleaning of drains for its disposal | Short Term | January 2019 | RIICO Urban local body |
| | 8. Transportation of solid waste, construction material and debris in covered system. | Short Term | April 2019 | RIICO Urban local body |
| Control Of Industrial Emissions | 1. Identification of brick kilns and their regular monitoring including use of designated fuel and closure of unauthorized units. | Mid Term | Sept-2019 | State Pollution Control Board |
| | 2. Conversion of natural draft brick kilns to induced draft. | Mid Term | Sept-2019 | State Pollution Control Board |

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| | 3. Action against non-complying industrial units. | Short Term | Regular activity | State Pollution Control Board |
| | 4. Regulation on setting up of new air polluting industries in industrial areas located in urban limits of these 5 cities. | Mid Term | Dec 2019 | State Pollution Control Board RIICO |
| Control of Air Pollution From Construction and Demolition activities | 1. Enforcement of Construction and Demolition Waste Rules | Short Term | Regular activity | Urban Local Bodies Development authorities under their jurisdiction |
| | 2. Control measures for fugitive emissions from material handling-conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units. | | | |
| | 3. Ensure carriage of construction material in closed / covered vessels. | Short Term | April 2019 | Urban Local Bodies RIICO |
| | 4. Covering of construction sites and Restriction on storage of construction materials along the road | Long Term | March 2020 | RIICO Urban local body |
| | 5. Restriction on storage of construction materials along the road. | Short Term | April 2019 | RIICO Urban Local Bodies |
| Other Steps to control Air Pollution | 1. Air Quality Index to be calculated and disseminated to the people through website and other media.(on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations) | Short Term | Regular activity | State Pollution Control Board |
| | 2. Establish an Air Quality Management Division at SPCB/PCC Head Quarters to oversee air quality management activities in the State and interact CPCB. | Short Term | April 2019 | State Pollution Control Board |
| | 3. Set-up and publicize helpline in each city/town as well as SPCB/PCC HQ for complaints against reported non-compliance | Short Term | April 2019 | State Pollution Control Board |

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| | 1. Engage with concerned authorities on continual basis for maximizing coverage of LPG /PNG for domestic and commercial cooking with target of 100% coverage. | Short Term | April 2019 | State Govt. |
| | 2. Monitoring of DG sets and action against violations. | Short Term | July 2019 | State Pollution Control Board |
| | 3. Involvement of industrial associations in awareness program (RIICO Industrial Areas) | Mid Term | March 2019 | RIICO |
| | 4. Development/maintenance of green areas, gardens and parks (RIICO Industrial Areas) | Long Term | Sept 2019 | RIICO |

| COMPARATIVE STATEMENT | | | | | | | | | | | | |
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| Ambient Air Quality Monitoring Data of Jaipur City | | | | | | | | | | | | |
| YEARLY AVERAGE LEVEL AT 3 DIFFERENT MONITORING STATIONS | | | | | | | | | | | | |
| MONITORING SITES | | Ajmeri Gate, Jaipur | | | RSPCB, Jhalana Doongari, Jaipur | | | | Chandpol, Jaipur | | | |
| S. No. | Year | MONTHLY AVERAGE IN($\mu\text{g}/\text{M}^3$) | | | Year | MONTHLY AVERAGE IN($\mu\text{g}/\text{M}^3$) | | | Year | MONTHLY AVERAGE IN($\mu\text{g}/\text{M}^3$) | | |
| | | SO2 | NO2 | PM10 | | SO2 | NO2 | PM10 | | SO2 | NO2 | PM10 |
| 1 | 2012 | 9.2 | 52.7 | 159 | 2012 | 7.8 | 46.6 | 125 | 2012 | 9.1 | 52.3 | 209 |
| 2 | 2013 | 7.3 | 43.2 | 119 | 2013 | 6.7 | 37.5 | 102 | 2013 | 7.2 | 40.6 | 143 |
| 3 | 2014 | 7.1 | 41.2 | 122 | 2014 | 6.7 | 39.4 | 100 | 2014 | 7.1 | 41.8 | 148 |
| 4 | 2015 | 7.1 | 37.1 | 145 | 2015 | 6.8 | 34.1 | 112 | 2015 | 7.0 | 44.1 | 179 |
| 5 | 2016 | 8.5 | 34.7 | 187 | 2016 | 8.3 | 32.3 | 124 | 2016 | 8.6 | 35.2 | 252 |
| 6 | 2017 | 9.7 | 36.0 | 267 | 2017 | 9.6 | 35.1 | 140 | 2017 | 10.0 | 29.4 | 129 |
| | AVERAGE | 8.2 | 40.8 | 167 | AVERAGE | 7.6 | 37.5 | 117 | AVERAGE | 8.2 | 40.6 | 177 |

| COMPARATIVE STATEMENT | | | | | | | | | | | | |
|---|----------------|--|-------------|------------|-------------------|--|-------------|------------|----------------|--|-------------|------------|
| Ambient Air Quality Monitoring Data of Jaipur City | | | | | | | | | | | | |
| YEARLY AVERAGE LEVEL AT 3 DIFFERENT MONITORING STATIONS | | | | | | | | | | | | |
| MONITORING SITES | | RIICO, Malviya Nagar, Jaipur | | | RO, RSPCB, Jaipur | | | | VKIA, Jaipur | | | |
| S. No. | Year | MONTHLY AVERAGE IN($\mu\text{g}/\text{M}^3$) | | | Year | MONTHLY AVERAGE IN($\mu\text{g}/\text{M}^3$) | | | Year | MONTHLY AVERAGE IN($\mu\text{g}/\text{M}^3$) | | |
| | | SO2 | NO2 | PM10 | | SO2 | NO2 | PM10 | | SO2 | NO2 | PM10 |
| 1 | 2012 | 7.9 | 47.7 | 129 | 2012 | 9.6 | 54.4 | 271 | 2012 | 9.6 | 53.5 | 238 |
| 2 | 2013 | 6.4 | 34.7 | 107 | 2013 | 8.0 | 41.9 | 197 | 2013 | 8.1 | 40.3 | 258 |
| 3 | 2014 | 6.5 | 37.1 | 103 | 2014 | 7.6 | 42.9 | 225 | 2014 | 7.8 | 43.3 | 236 |
| 4 | 2015 | 6.6 | 32.3 | 111 | 2015 | 7.5 | 40.1 | 230 | 2015 | 7.9 | 39.0 | 249 |
| 5 | 2016 | 7.6 | 30.7 | 121 | 2016 | 9.0 | 36.1 | 251 | 2016 | 9.2 | 36.6 | 274 |
| 6 | 2017 | 9.2 | 29.4 | 129 | 2017 | 11.4 | 35.1 | 140 | 2017 | 8.9 | 33.1 | 267 |
| | AVERAGE | 7.4 | 35.3 | 117 | AVERAGE | 8.8 | 41.7 | 219 | AVERAGE | 8.6 | 41.0 | 254 |

Additional three NAMP stations in Jaipur started in 2017

Particulate Matter (PM₁₀)

