

**Akola City  
Air Pollution Control  
Action Plan**



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

**AKOLA**



**MAHARASHTRA POLLUTION CONTROL BOARD**

**KALPATARU POINT, 3<sup>rd</sup> Floor,  
Sion-Matunga Scheme Rd. No.8,  
Opp. Sion Circle, Sion (East),  
Mumbai-400 022.**

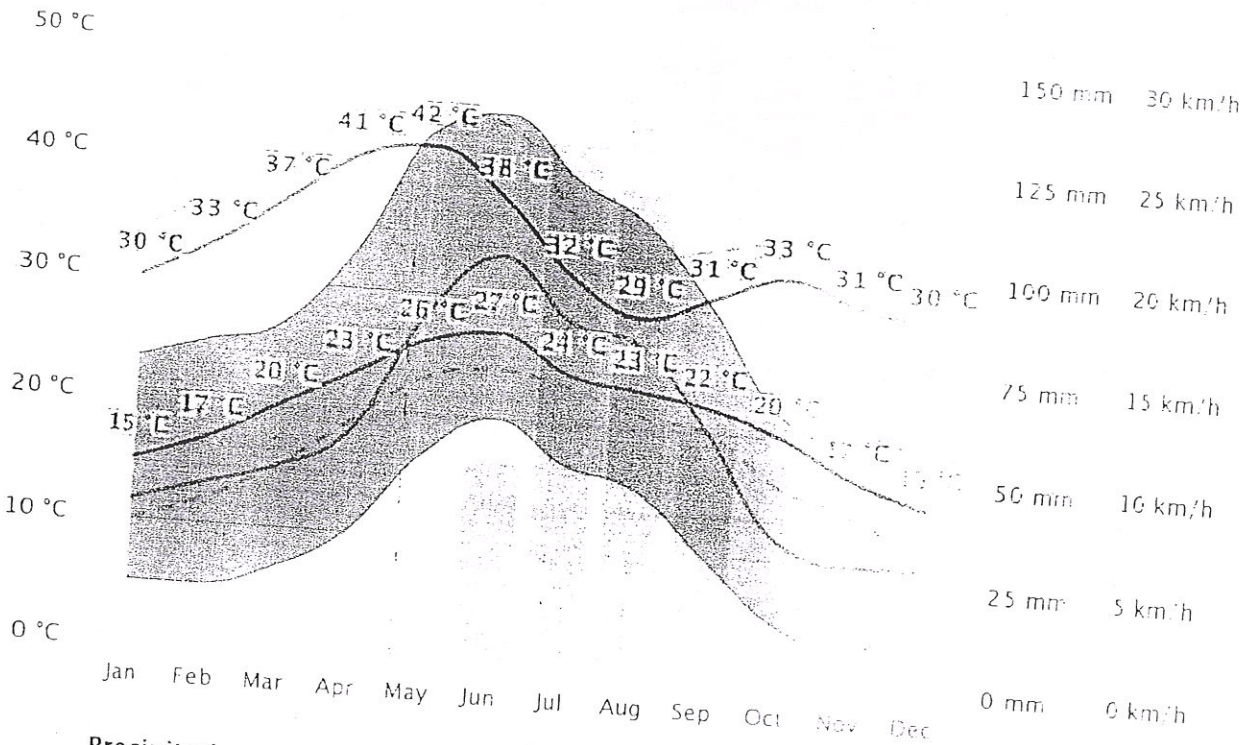
**Action Plan for Control of Air Pollution in Akola City**

1. Name of the city: **Akola** (Under Akola Municipal Corporation)
2. Air Pollution concerns:
  - Road Side Dust and Vehicular emission is the biggest threat to the Akola City
  - Specially Suspended Particulate Matter and vehicular gases direct concern and emitted as gases, mainly 500 m from the road.
3. Air pollution levels: RSPM levels founds High
4. Months with high air pollution levels: December and January

Note: Implementation period (Short: 1 Years /Mid- Four Years /Long-7 Years)

**Climate Akola**

**Average Temperatures and Precipitation**



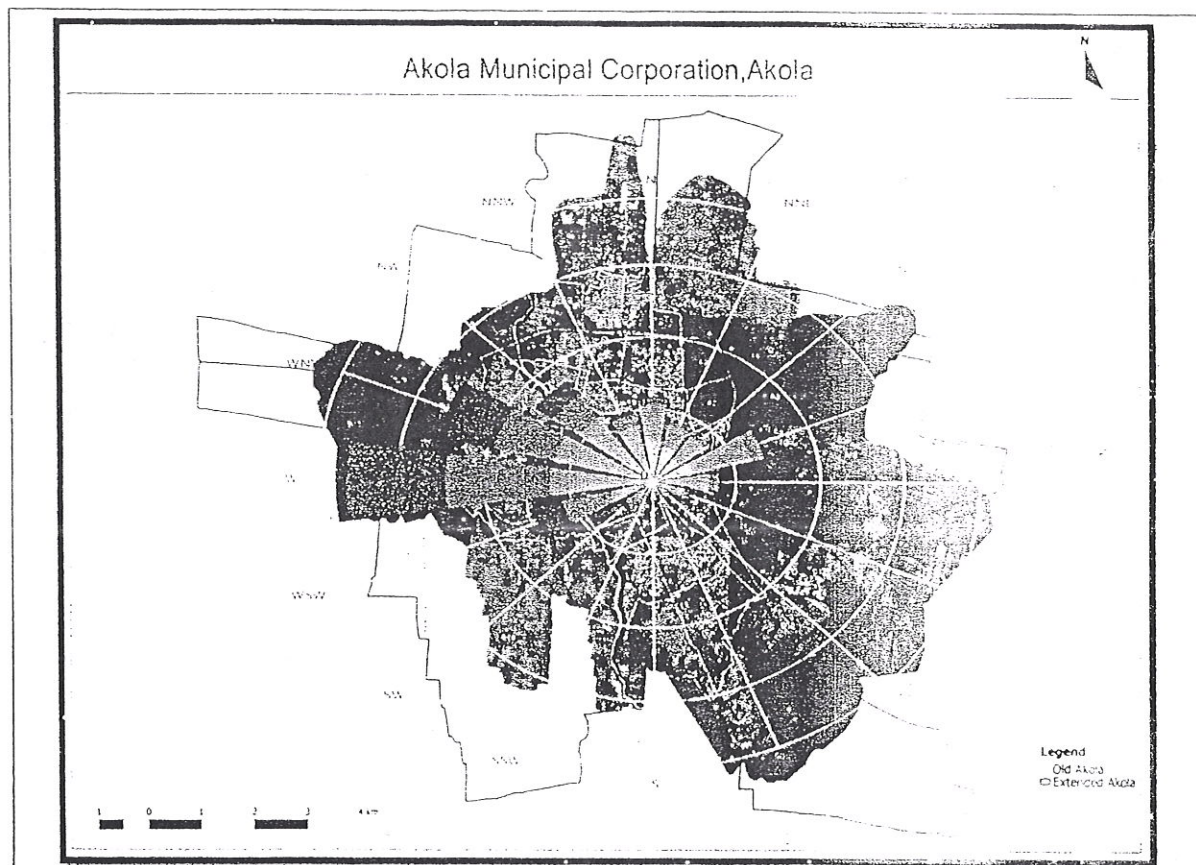
Precipitation — Mean daily maximum — Hot days — Mean daily minimum  
 Cold nights — Wind speed



The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month in Akola. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years.

The precipitation chart is useful to plan for seasonal effects such as monsoon climate in India . Monthly precipitations above 150mm are mostly wet, below 30mm mostly dry.

### Wind Rose



**Akola Windrose Diagram**

**Legends**

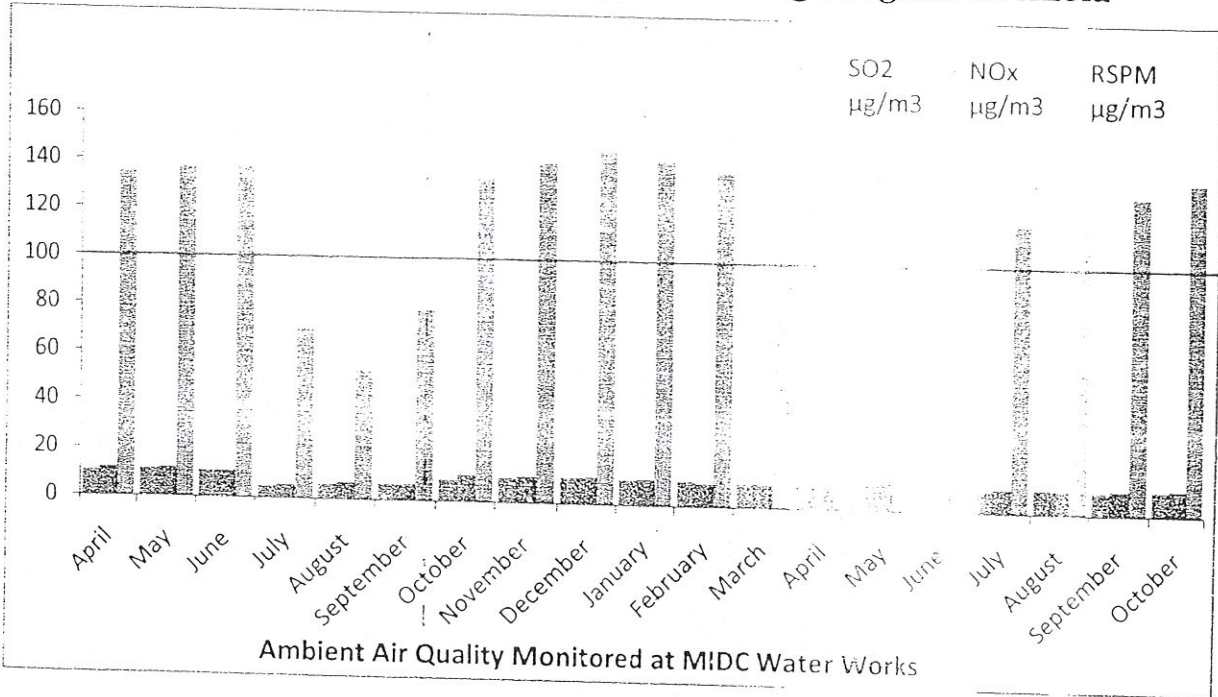
- 0 km/h
- 1 to 4 km/h
- 5 to 11 km/h
- 12 to 18 km/h
- 19 to 27 km/h
- 28 to 37 km/h
- 38 to 49 km/h
- 50 to 60 km/h
- Above 61 km/h

**Akola MIDC Industrial Area**

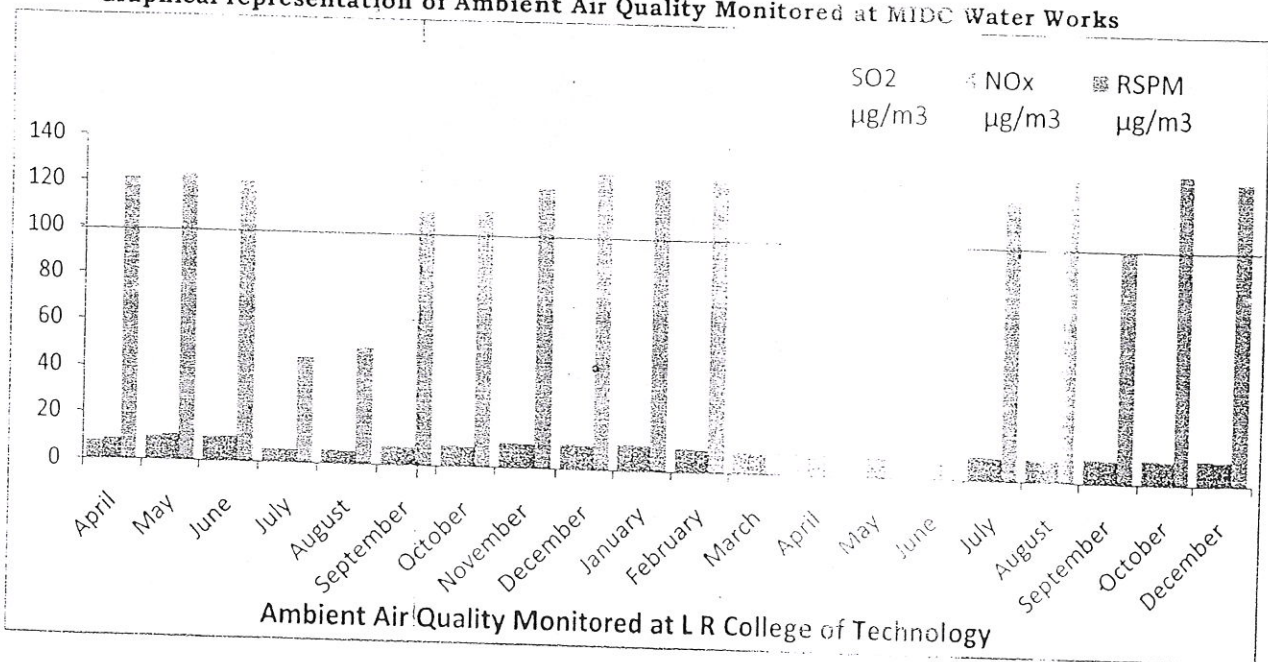
The economy is mostly agriculture based. Now a day, The total land under Akola MIDC Industrial area is 6.25 km<sup>2</sup>.

Sr. No.	Categories	Quantity	Proposed
1.	Large	3	0
2.	Small	22	10
<b>Total</b>		25	10

**National Ambient Air Quality Monitoring Program in Akola**

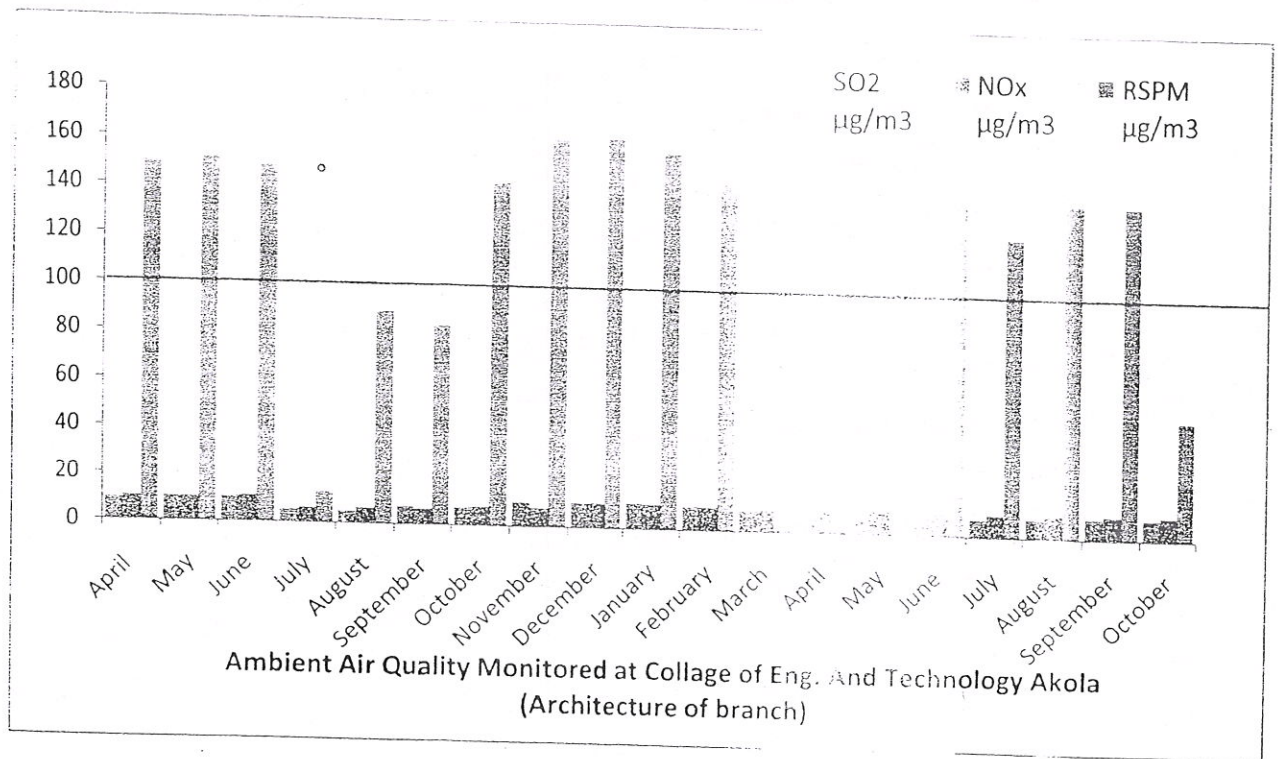


**Graphical representation of Ambient Air Quality Monitored at MIDC Water Works**



**Graphical representation of Ambient Air Quality Monitored at L R College of Technology**





Graphical Representation of Ambient Air Quality Monitored at Collage of Eng. And Technology Akola (Architecture of branch)

From the result, it was observed that the RSPM levels found to be above standard limit, i.e. 100  $\mu\text{g}/\text{m}^3$  which is indicated by a red accent colour line on the graphical representation.

#### Observation for Being Akola a Non-Attainment City

1. Roadside encroachment which caused congestion of traffic
2. Road Dust/Re-suspension of dust and other fugitive emission
3. Air Pollution from Construction and Demolition Activities
4. Use of wood, coal of restaurants/Dhabas/roadside eateries instead of LPG
5. **Vehicular emission** specially from auto-rickshaws have significant contribution to increase the pollution level as most of the auto rickshaw are using kerosene which is not a cleaner fuel source. The fuel adulteration issue is not addressed properly and due to that air pollution level increases, especially toxic, are high in ambient air.
6. **Roadside Dust (Bad Condition of Roads):** Lack of facilities like underground drainage system, roadside plantation, pedestrian, proper sewer line, poor conditions of the roads and solid waste management are mainly the dominant factor for the poor environmental condition in Akola city.
7. The anthropogenic gas contributes mainly to being an Akola a Non-Attainment city, which is evolving from the burning of waste at Naygaon

road solid waste Dumpsite. And this is due to large deposition of waste and its improper disposal and processing.

8. After evaluation of new extended boundary in Akola city, it is finding that the development of regional needs special attention, since the new extended region is grown unmanaged way
9. Poor public transport facilities available in the region due to which the rate of personal vehicles increases and proportionally the pollution too.
10. The inspection and maintenance programme for in use vehicle emission control is not effective.
11. Air pollution from SSI units (brick kiln, stone crusher, hot mix plants)
12. There are no strict Rules and Regulations for operating diesel DG-sets in the AMC area.
13. The team also found garbage dumped at several places across and lack of public conveniences all leading to aggravation in the air-quality in one of the worst polluted regions.
14. Open garbage burning of residential and commercial areas has significant contribution for rising pollution level in the region.
15. No implementation of Construction and Demolition rule 2016 in the area, which cause unplanned construction activities to readily increase particulate matter levels in the region.
16. Lack of public awareness for using cleaner sources of fuel like LPG mostly in Lower Economy Class as there is still usage of smoke spreading fuel for household purpose.
17. No proper traffic management and synchronize traffic plan implemented which cause congestion at the main road.
18. Lack of green space development around the city near the roadside area.
19. Road encroachment which leads to traffic congestion.
20. No specialized staff for the Environmental section to handle the regulations in a systematic manner which results to fail the required compliances for the betterment of the environment in the Akola city.
21. The Limited availability of funds is affecting the developmental work which is responsible for the increase in pollution level in Akola Municipal Corporation.
22. No synchronization between government departments for implementation of planning.



23. No initiative program or planning for promoting battery operated vehicles by government or private bodies.
24. No proper regulations against bricks kiln making.
25. Large number of DG Sets (small power generating set run on liquid fuel)

**Contributors of Pollution in Akola:**

Sr. No.	Particulars	Quantity
1.	<b>Population</b>	537,149
2.	<b>Petrol Pumps</b>	16
	i. Petrol	60,000 LPD
	ii. Diesel	40,000 LPD
3.	<b>Kerosene</b>	6,80,000LPM
4.	<b>LPG Gas Connections</b>	110000 Approx
5.	<b>Total Property</b>	153,488
	i. No of Households	96,056
	ii. Schools and Colleges	317
	iii. Commercial Places	19597
6.	<b>Total Roads (Internal and External) without pedestrian</b>	900 km
7.	<b>Auto-Rickshaws</b>	13138

**Important Step to Evaluate the Environmental Condition in Akola City**

- Preparation of Environmental Status Report
- Installation of whether monitoring station and Ambient Air Quality Monitoring Station

## AIR QUALITY STATUS OF AKOLA CITY

Akola – LRT Commerce College

**Table: Data for Monthly average reading recorded at LRT Commerce College. - Akola**

Station Name	year	Month	Average of SO <sub>2</sub>	Average of NO <sub>x</sub>	Average of RSPM
			50	40	60
LRT Commerce College	2017	Apr	10	10	130
		May	10	10	127
		Jun	8	10	123
		Jul	7	10	120
		Aug	7	9	129
		Sep	7	10	122
		Oct	8	10	132
		Nov	12	12	121
		Dec	10	10	77
	2018	Jan	10	10	70
		Feb	10	11	67
		Mar	10	11	66

**Figure: Monthly average reading recorded at LRT Commerce College. – Akola**

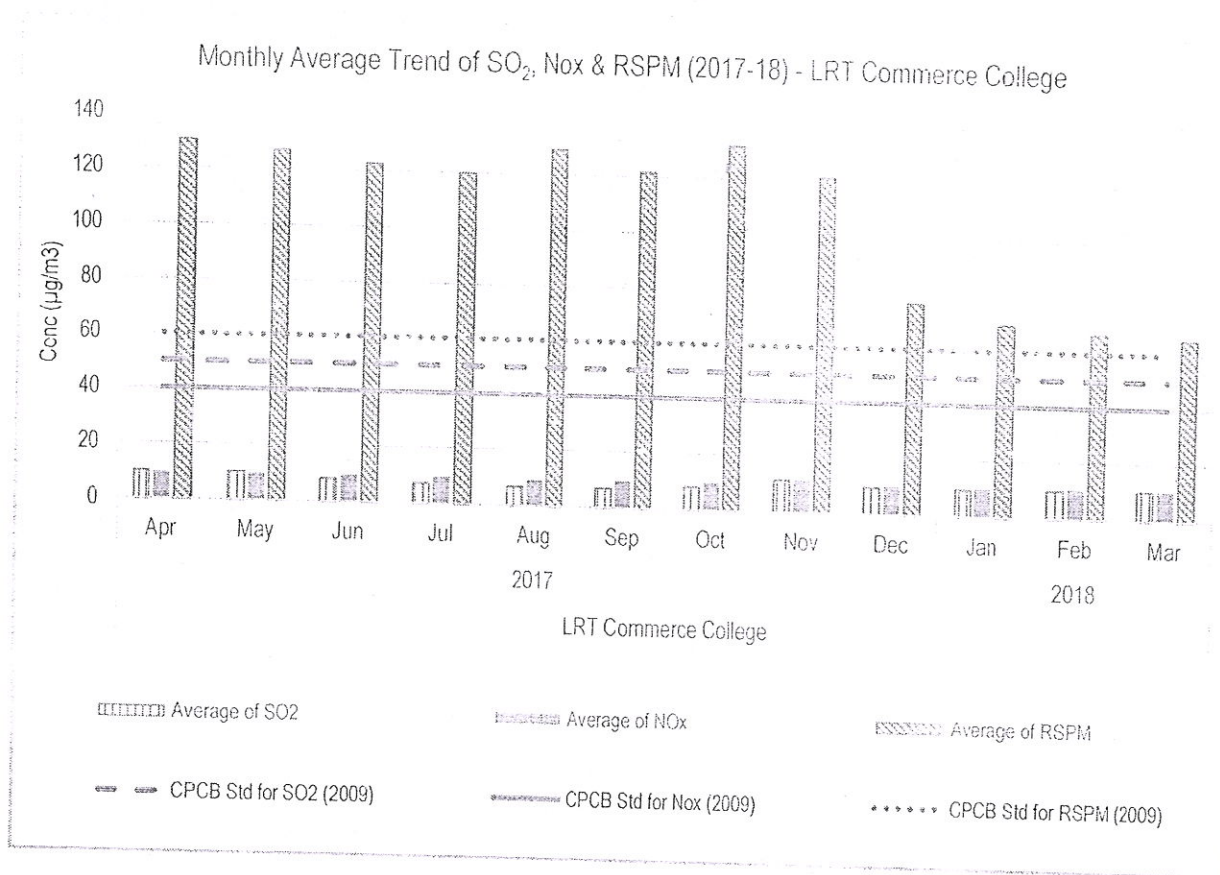
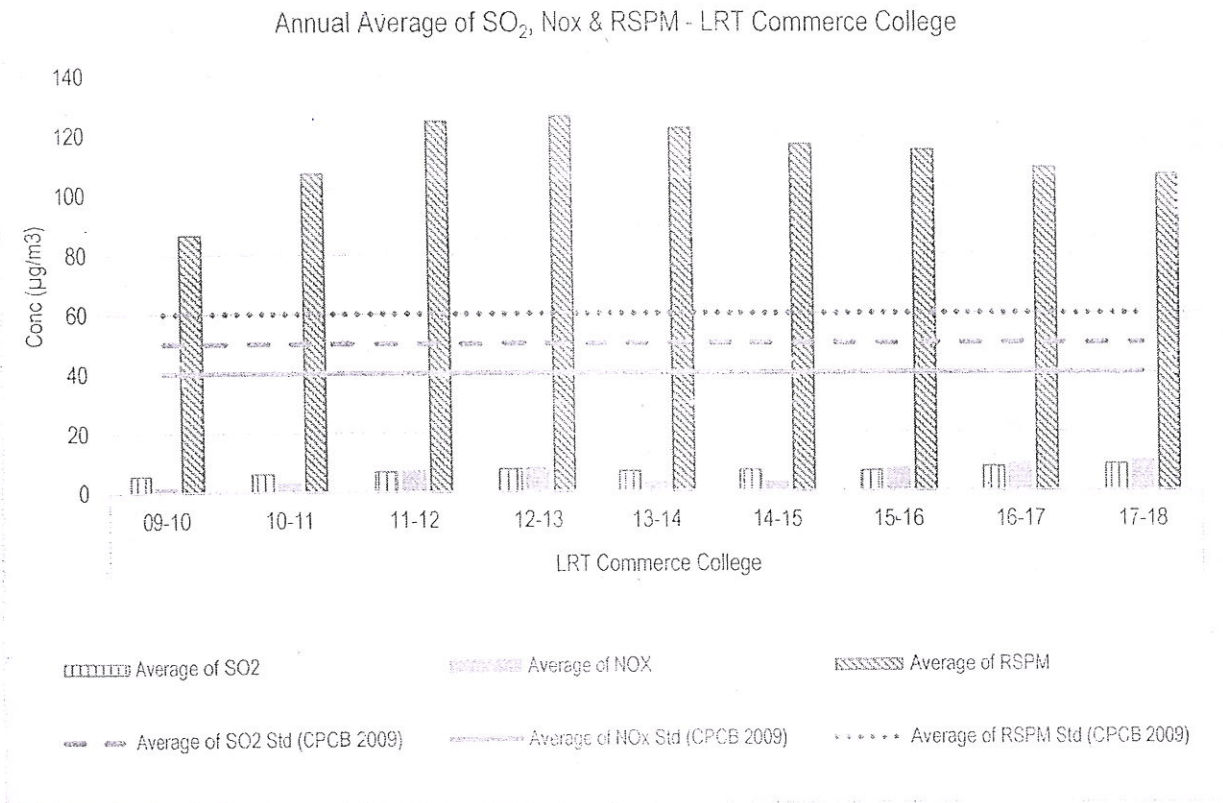




Table No. 1: Data for Annual average trend of SO<sub>2</sub>, NO<sub>x</sub>, and RSPM at LRT Commerce College. – Akola

Station Name	year	Average of SO <sub>2</sub>	Average of NO <sub>x</sub>	Average of RSPM
		50	40	60
LRT Commerce College	09-10	6	2	87
	10-11	6	3	107
	11-12	7	7	125
	12-13	8	8	126
	13-14	7	3	122
	14-15	7	3	117
	15-16	7	7	115
	16-17	8	9	109
	17-18	9	10	107

Figure: Annual average trend of SO<sub>2</sub>, NO<sub>x</sub>, and RSPM at LRT Commerce College. – Akola



# Akola -MIDC Water Works

Table: Data for Monthly average reading recorded at MIDC Water works.-Akola

Station Name	year	Month	Average of SO <sub>2</sub>	Average of NO <sub>x</sub>	Average of RSPM
			50	40	60
MIDC Water Works - Akola	2017	Apr	10	11	139
		May	12	12	141
		Jun	10	11	133
		Jul	9	10	119
		Aug	10	10	128
		Sep	9	10	131
		Oct	10	11	138
		Nov	10	10	110
		Dec	12	12	90
	2018	Jan	12	12	89
		Feb	12	12	87
		Mar	12	13	82

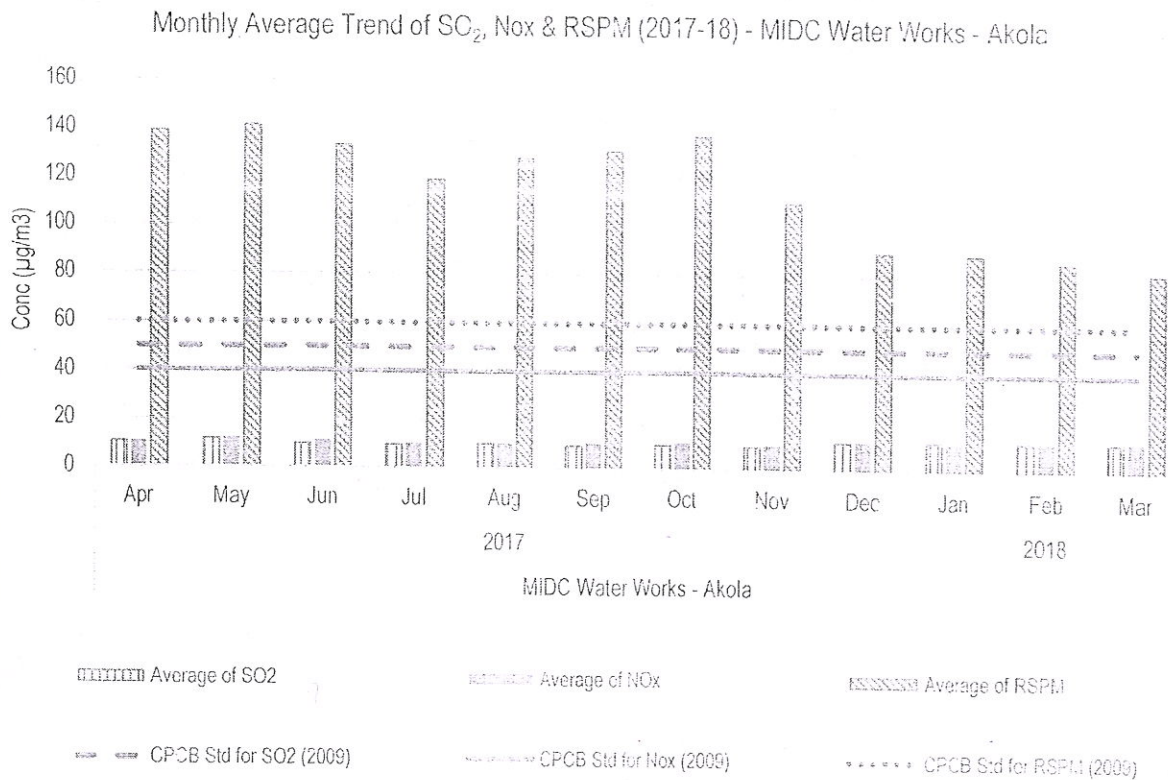


Figure: Monthly average reading recorded at MIDC Water works.-Akola

Table: Data for Annual average trend of SO<sub>2</sub>, NO<sub>x</sub>, and RSPM at MIDC Water works.-Akola

Station Name	year	Average of SO <sub>2</sub>	Average of NO <sub>x</sub>	Average of RSPM
		50	40	60
MIDC Water Works - Akola	09-10	8	10	88
	10-11	9	7	131
	11-12	10	11	141
	12-13	10	11	142
	13-14	9	7	136
	14-15	9	9	129
	15-16	7	12	106
	16-17	9	10	128
	17-18	11	11	116

Annual Average of SO<sub>2</sub>, Nox & RSPM - MIDC Water Works-Akola

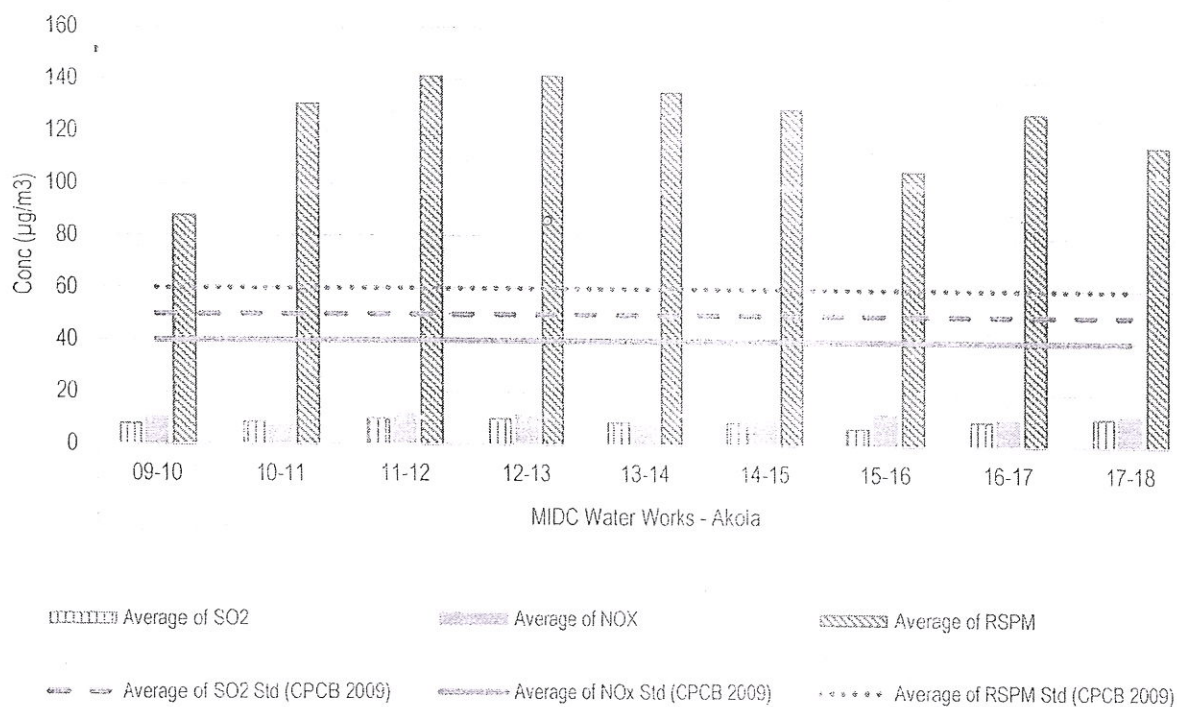


Figure: Annual average trend of SO<sub>2</sub>, NO<sub>x</sub>, and RSPM at MIDC Water works.-Akola



# Akola - College of Engg & Technology

Table: Data for Monthly average reading recorded at College of Engg & Technology Akola (Architecture Branch)-Akola

Station Name	year	Month	Average of SO <sub>2</sub>	Average of NO <sub>x</sub>	Average of RSPM	
Akola- College of Engg & Technology	2017		50	40	60	
		Apr	10	10	145	
		May	9	10	145	
		Jun	9	10	137	
		Jul	7	9	124	
		Aug	8	10	139	
		Sep	9	10	138	
		Oct	9	10	136	
		Nov	10	10	95	
		Dec	10	10	74	
		2018	Jan	10	11	79
			Feb	11	11	73
	Mar		11	11	71	

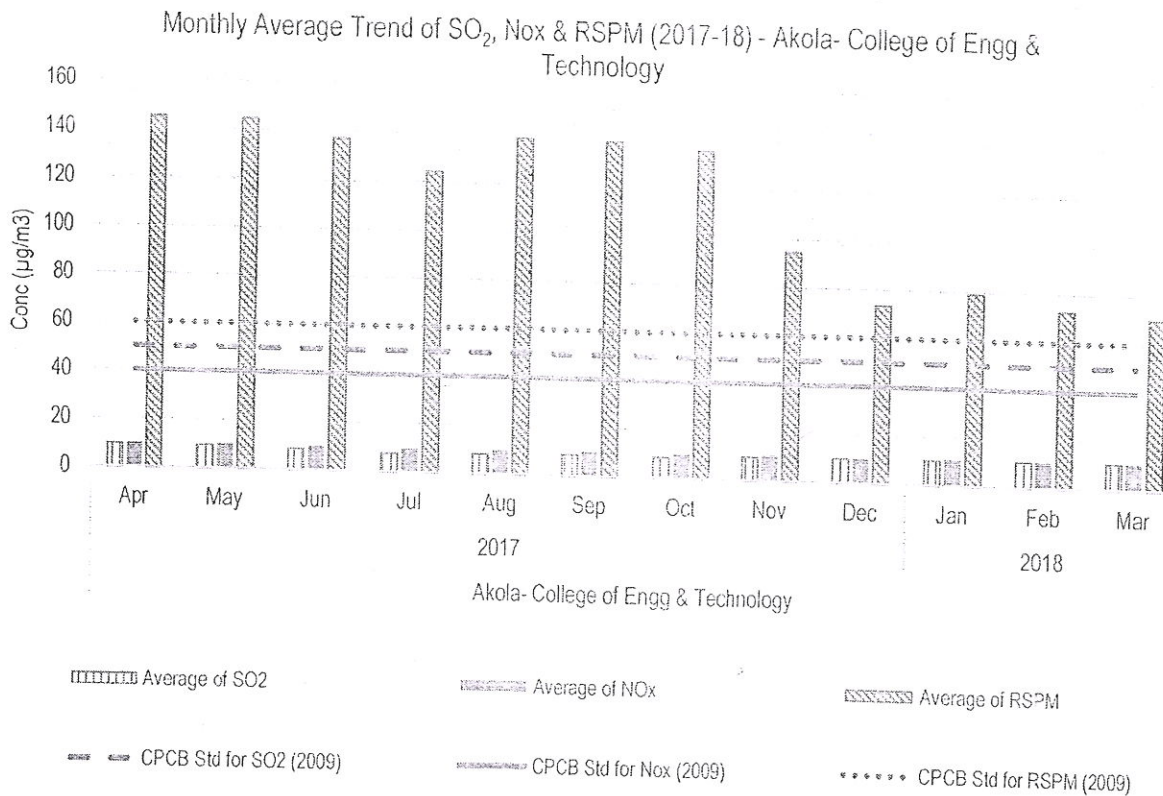
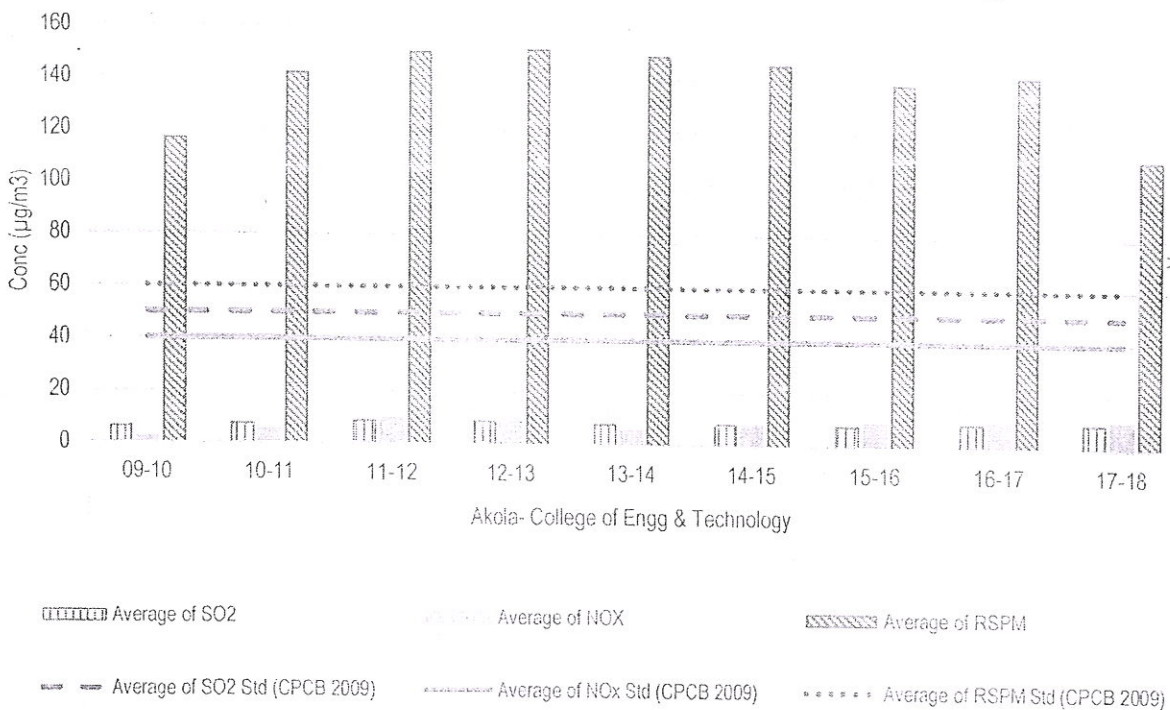


Figure: Monthly average reading recorded at College of Engg & Technology Akola (Architecture Branch)-Akola

**Table: Data for Annual average trend of SO<sub>2</sub>, NO<sub>x</sub>, and RSPM at College of Engg & Technology Akola (Architecture Branch)-Akola**

Station Name	year	Average of SO <sub>2</sub>	Average of NO <sub>x</sub>	Average of RSPM
		50	40	60
Akola- College of Engg & Technology	09-10	6	2	117
	10-11	7	5	142
	11-12	9	9	150
	12-13	9	8	151
	13-14	8	6	149
	14-15	8	8	146
	15-16	8	9	139
	16-17	9	9	142
	17-18	9	10	111

Annual Average of SO<sub>2</sub>, Nox & RSPM - Akola College of Engg & Technology



**Figure: Annual average trend of SO<sub>2</sub>, NO<sub>x</sub>, and RSPM at College of Engg & Technology Akola (Architecture Branch)-Akola**

### **Monitoring Mechanism for Implementation**

The aforesaid action plan shall be implemented by Maharashtra State Pollution Control Board with coordination of concern departments/stakeholders.

### **Implementation status**

The Chief Secretary, Govt. of Maharashtra to convene the meetings with different concerned departments and direct for compliance of directions for implementation of air quality of Amravati. The Principal Secretary, Environment and Forest, Govt. of Maharashtra to also convene the meeting for follow up of the aforesaid directions. The Maharashtra Pollution control Board continuously conducted the meetings with all stakeholders for preparation of comprehensive action plan for city and its implementation.



**Evaluation of Emission Control Option**

<p>1. Road Dust (Most Prominent in Akola City)</p>	<ul style="list-style-type: none"> <li>Plantation Drive along the roadside</li> </ul>	<p>High</p>	<ul style="list-style-type: none"> <li>The technical plan already been prepared for improvement of infrastructure in the Akola Municipal corporation and it will be implemented soon</li> </ul>	<ul style="list-style-type: none"> <li>4.5 Cr reserved for under AMRUT Scheme</li> </ul>	<p>2018-2020</p>	<ul style="list-style-type: none"> <li>Garden Department</li> <li>Akola Municipal Corporation</li> <li>Building And Construction, Akola Municipal Corporation Department</li> </ul>
<ul style="list-style-type: none"> <li>Blacktopping of metaled road, or Cementing Road</li> </ul>	<p>High</p>	<ul style="list-style-type: none"> <li>Akola Municipal Corporation constructed Cement road around 150 km construct</li> <li>The corporation also initiates the pothole free to minimize the dust</li> </ul>	<p>MID-TERM</p>	<p>2018-2019</p>	<ul style="list-style-type: none"> <li>Building And Construction Department, Akola Municipal Corporation</li> <li>PWD Maharashtra State</li> </ul>	

**Evaluation of Emission Control Option**

<ul style="list-style-type: none"> <li>Greening of open areas, gardens, community places, schools and housing societies.</li> <li>Proposed plan for creation of green buffers along the traffic corridors</li> </ul>	<p>Medium</p>	<ul style="list-style-type: none"> <li>The plan prepared under AMRUT scheme</li> <li>New City Development Plan prepared which will give a road map for betterment of city and reduction in Air pollution</li> </ul>	<ul style="list-style-type: none"> <li>4.5 Cr reserved for under AMRUT Scheme for Green Space Development</li> </ul>	<p>MID-TERM</p>	<p>2018-2019</p>	<ul style="list-style-type: none"> <li>Water Supply Department, Akola Municipal Corporation</li> </ul>
<ul style="list-style-type: none"> <li>Preparation of plans for commences water fountains at major traffic intersection, wherever feasible</li> </ul>	<p>Medium</p>	<p>Three Point identified for installation of fountains</p> <ol style="list-style-type: none"> <li>Civil Line Square</li> <li>Ashok Square</li> <li>Agrasan Square</li> </ol>	<ul style="list-style-type: none"> <li>The price will be provided after cost estimation as CSR rates</li> </ul>	<ul style="list-style-type: none"> <li>Mid- term</li> </ul>	<p>2018-2019</p>	<ul style="list-style-type: none"> <li>Water Supply Department, Akola Municipal Corporation</li> </ul>
<ul style="list-style-type: none"> <li>Wall to wall paving by percolated bricks</li> </ul>	<p>High</p>	<p>Currently no pavement along the roadside, it will be implemented as per the City Development Plan suggestion</p>	<ul style="list-style-type: none"> <li>The price will be provided after cost estimation as CSR rates</li> </ul>	<ul style="list-style-type: none"> <li>Long- Term</li> </ul>	<p>2018-2022</p>	<ul style="list-style-type: none"> <li>Akola Municipal Corporation</li> </ul>



**Evaluation of Emission Control Option**

	<ul style="list-style-type: none"> <li>Construction of storm water drainage line which will increase the life of road and control the dust pollution</li> </ul>	High	<p>Currently no pavement along the roadside, it will be implemented as per the City Development Plan suggestion</p>	<ul style="list-style-type: none"> <li>The price will be provided after cost estimation as CSR rates</li> </ul>	<ul style="list-style-type: none"> <li>Long- Term</li> </ul>	2018-2022	<ul style="list-style-type: none"> <li>Akola Municipal Corporation</li> </ul>	<ul style="list-style-type: none"> <li>Policy adapt as measures to ensure that all vehicle come for tests</li> <li>On road inspection of vehicles</li> <li>planned and periodicity and coverage</li> <li>6 PUC station working at present to checked the pollution levels</li> </ul>
2.	<ul style="list-style-type: none"> <li>Immediate Launch of extensive Fuel adulteration drive specially against auto rickshaws polluting vehicles,</li> </ul>	Medium pollution from existing vehicle will get reduced	<ul style="list-style-type: none"> <li>Setting up monitoring instrumentation for fuel adulteration</li> <li>Announcement on the Solid waste collection for vehicle maintenance of vehicle</li> </ul>	<ul style="list-style-type: none"> <li>2 Lakh</li> </ul>	<ul style="list-style-type: none"> <li>Mid Term</li> </ul>	Six Months	<ul style="list-style-type: none"> <li>District supply Officer &amp; Tahsildar</li> <li>B&amp; C</li> <li>Akola Municipal Corporation</li> <li>Transport Division</li> </ul>	<ul style="list-style-type: none"> <li>Encroachment Department, Akola Municipal Corporation</li> <li>City Police, Akola</li> <li>RTO, Akola</li> <li>City Traffic Police &amp; Akola</li> </ul>
	<ul style="list-style-type: none"> <li>For reducing the traffic congestion hawkers and other road encroachers shall be moved to outer areas and main traffic roads will have to be made shopping free roads.</li> </ul>	High	<ul style="list-style-type: none"> <li>Strong Policy will implement to make the hawker free area at traffic congestion point</li> </ul>		<ul style="list-style-type: none"> <li>Short- term</li> </ul>	4 months		

**Evaluation of Emission Control Option**

<ul style="list-style-type: none"> <li>Synchronize traffic movements / Introduce intelligent traffic systems for lane-driving</li> </ul>	<p>Low</p>	<ul style="list-style-type: none"> <li>The technical plan is already being prepared for 15 locations in the municipal corporation. The locations are as follows:                     <ol style="list-style-type: none"> <li>Durga Square</li> <li>Jathar Peth</li> <li>Agrasan Square</li> <li>Civil Line Square</li> <li>Nehru Park Square</li> <li>Washim Bypass Square</li> <li>Railway station Square</li> <li>Post office Square</li> <li>City Korwali Square</li> <li>Hutatma Smarak nagar Square</li> <li>Ashok Watika Square</li> <li>Tower Square</li> <li>Bus Stand Square</li> </ol>                     From the above list three locations are already completed.                 </li> </ul>	<p>68 Lakhs</p>	<ul style="list-style-type: none"> <li>Mid-term</li> <li>The contract is already given to the agency, only site clearance is remaining</li> </ul>	<p>6 Months</p>	<ul style="list-style-type: none"> <li>Electrical Department, Akola Municipal Corporation</li> <li>Regional Transport Office</li> <li>City traffic Police</li> </ul>	<p><b>Traffic Congestion Point at Akola</b></p> <ol style="list-style-type: none"> <li>Bus Stand</li> <li>Tower Square</li> <li>Railway Station</li> <li>Gandhi Road Square</li> <li>Devi Mandir</li> <li>City Korwali</li> <li>Tilak Square</li> <li>Rait Haveli Square</li> <li>Jain Square</li> <li>Tajana Peth police Square</li> <li>Fate Square</li> <li>Durga Square</li> <li>Civil Square</li> <li>Tewhar Square</li> <li>Nehru Park Square</li> <li>Tukaram Square</li> <li>Malkapur Square</li> <li>Koul-Khed Square</li> </ol>
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**Evaluation of Emission Control Option**

<ul style="list-style-type: none"> <li>Undertake road widening and improvement of infrastructure for decongestion of the road</li> </ul>	Mid	<ul style="list-style-type: none"> <li>Preparing the plan to phasing out the old vehicle in systematic ways</li> </ul>	Mid-Term	20 Months	<ul style="list-style-type: none"> <li>Building And Construction Department. Akola Municipal Corporation</li> </ul>
<ul style="list-style-type: none"> <li>Retro-fitting of Diesel Oxidation Catalyst (DOC) in 4- wheeler public transport (BS- II and BS-III).</li> </ul>	High	<ul style="list-style-type: none"> <li>Regular monitoring Drive for inspection of the vehicles to check the standard norms as per direction given by Ministry of Roads, Surface transport and National Highway</li> </ul>	<ul style="list-style-type: none"> <li>Short- Term</li> </ul>	2 Months	<ul style="list-style-type: none"> <li>City Traffic Police, Akola</li> <li>RTO, Akola</li> </ul>
<ul style="list-style-type: none"> <li>Promote battery operated vehicles</li> </ul>	Mid	<ul style="list-style-type: none"> <li>This provision made in Morna river front development plant, the Corporation will purchase 7 vehicles to promote e-mode of transport</li> </ul>	<ul style="list-style-type: none"> <li>Long-Term</li> </ul>	2018-2022	<ul style="list-style-type: none"> <li>Vehicle Department, Akola Municipal Corporation</li> </ul>

**Evaluation of Emission Control Option**

	Mid	<ul style="list-style-type: none"> <li>Prevent parking of vehicles in the non-designated areas</li> <li>Free Up the parking area which are allotted for residential and commercial complexes</li> </ul>	<ul style="list-style-type: none"> <li>The Action Plan for free up the parking area in the commercial and the residential complexes as per the sanction plan</li> <li>Notice will be given to the owners for free up the parking space</li> <li>If direction is not followed by the owner, liable for fine Rs. 5000</li> </ul>	<ul style="list-style-type: none"> <li>Short - Term</li> </ul>	2 Months	<ul style="list-style-type: none"> <li>Encroachment Department, Akola Municipal corporation</li> <li>ADTP</li> </ul>
	High	<ul style="list-style-type: none"> <li>Public Transport: the current status of public transport in terms of number of buses, load factor etc. and proposed plans to argument the fleet</li> </ul>	<ul style="list-style-type: none"> <li>The contract is has already given this regards to run 35 buses on the road on ppp basis</li> <li>5 buses currently running on Road, 30 More will start till mid Feb-2018</li> <li>Akola Municipal Corporation is targeting 20% of passenger initially which will be increased substantially</li> </ul>	<ul style="list-style-type: none"> <li>Short-Term</li> </ul>	2 Months	<ul style="list-style-type: none"> <li>Transport Department, Akola Municipal Corporation</li> </ul>
	High	<ul style="list-style-type: none"> <li>Install weigh in motion bridges at the border and states to prevent overload of vehicles</li> </ul>		<ul style="list-style-type: none"> <li>Long Term</li> </ul>	2018-2019	<ul style="list-style-type: none"> <li>RTO &amp; Ministry of Road Surface Transport &amp; National Highways Gol</li> </ul>



**Evaluation of Emission Control Option**

<p>1. Biomass/ trash burning, landfill waste burning</p>	<ul style="list-style-type: none"> <li>• Launching an extensive drive against open burning of biomass, crop residue, garbage, leaves etc.</li> </ul>	<p>High</p>	<ul style="list-style-type: none"> <li>• Provision made as per the NGT order to impose the fine for trash burning, it will be accumulated under the municipal bylaws after the general body meeting</li> </ul>	<ul style="list-style-type: none"> <li>• Short Term</li> </ul>	<p>2018-2019</p>	<ul style="list-style-type: none"> <li>• Health Department Akola Municipal Corporation</li> </ul>
<ul style="list-style-type: none"> <li>• Strict compliance of ban on open burning in Municipal area</li> <li>• Regular check and control of burning of Municipal Solid waste</li> <li>• Public Awareness about the effect of burning and current law</li> </ul>	<p>High</p>	<ul style="list-style-type: none"> <li>• Sanitary Inspectors from each zone will give the responsibility to monitor the situation</li> <li>• Complaint number for public will be for complaining about trash burning</li> <li>• The Akola municipal Corporation have 130 MSW Collection vehicle through which the announcement done on regular basis about impact and fine impose by AMC</li> </ul>	<ul style="list-style-type: none"> <li>• Short-Term</li> </ul>	<p>2 Months</p>	<ul style="list-style-type: none"> <li>• Health Department, Akola Municipal corporation</li> <li>• Akola Police</li> </ul>	<ul style="list-style-type: none"> <li>• The resolution will be passed in General body meeting for imposing the fine of Rs.5000 to 25000 as per Hon'ble NGT order</li> </ul>

## Evaluation of Emission Control Option

	<ul style="list-style-type: none"> <li>Ensure ban on burning of agriculture waste and crop residue and its implementation</li> </ul>	High	<ul style="list-style-type: none"> <li>The resolution will be passed in General body meeting for imposing the fine of Rs.5000 to 25000 as per Hon'ble NGT order</li> </ul>	<ul style="list-style-type: none"> <li>Short-Term</li> </ul>	2 Months	<ul style="list-style-type: none"> <li>Agriculture office Akola</li> <li>Akola Police</li> </ul>				
4.	<ul style="list-style-type: none"> <li>Identification of Bricks Kiln and regular monitoring, including use of designated fuel and closure of unauthorized units</li> </ul>	Medium	<ul style="list-style-type: none"> <li>Complete report will be prepared about number of Brick kiln industries and evaluate the feasibility to setup unit outside municipal area preferably in downside area</li> <li>It is proposed for banning on Bricks Kiln in Municipal Boundary Area</li> </ul>	<ul style="list-style-type: none"> <li>Mid-Term</li> </ul>	2018-2020	<ul style="list-style-type: none"> <li>Akola Municipal Corporation Maharashtra Pollution Control Board</li> </ul>				

**Evaluation of Emission Control Option**

<ul style="list-style-type: none"> <li>Action against non-complying industrial units</li> <li>Location specific Emission reduction</li> <li>Installation / up gradation of air pollution control systems</li> <li>Regular audit of stack emission for QA/QC</li> </ul>	<ul style="list-style-type: none"> <li>As per the concerned rule Water Act 1974 and Air Pollution Act 1981.</li> <li>A roadmap for tackling emissions from brick kilns would involve the phasing out of inefficient and highly polluting technology, and developing and implementing emissions standards that are in line with the technology standards, and promoting alternative building material and bricks.</li> </ul>	<ul style="list-style-type: none"> <li>Short-Term</li> </ul>	<ul style="list-style-type: none"> <li>Maharashtra Pollution Control Board</li> </ul>	<ul style="list-style-type: none"> <li>The 35 medium industries are situated in Municipal Corporation area and Paras Thermal Power Plant which is 25 km away from Akola City have marginal influence on air quality status</li> </ul>
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**Evaluation of Emission Control Option**

5	<p><b>Construction and Demolition Activities</b></p> <ul style="list-style-type: none"> <li>Enforcement of construction &amp; demolition rules-2016</li> <li>Ensure carriage of construction material in closed/covered Vessels</li> <li>Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers, and suppression units.</li> </ul>	<p>Better construction practices with Particulate Matter reduction of 50%</p>	<ul style="list-style-type: none"> <li>The rule will be established as per C &amp; D rule 2016 all the precautionary measures will be included in the agreement condition of the contract</li> <li>The Site Engineer of each zone will be nominated for proper monitoring and implementation of Construction and Demolition rule within the area</li> <li>Strict warning given to the contractor for proper maintenance of construction site</li> </ul>	<ul style="list-style-type: none"> <li>Mid term</li> </ul>	<p>2018-2020</p>	<ul style="list-style-type: none"> <li>AMC and MPCB</li> </ul>	<ul style="list-style-type: none"> <li>In the case of the former, issues such as fiscal policies and distribution systems designed to make clean energy affordable and accessible to the poor will need particular</li> </ul>
6.	<ul style="list-style-type: none"> <li>Shift to LPG from solid fuel and kerosene for domestic application</li> <li>Making clean sources available</li> <li>Making ubiquitously available sources (i.e., biomass) clean.</li> </ul>	<p>Low</p>	<ul style="list-style-type: none"> <li>Public Awareness Under UJJWALA Scheme Yojana by Government of India the LPG provider to the LEG</li> </ul>	<ul style="list-style-type: none"> <li>As per Budgetary provision</li> </ul>	<p>2017-2022</p>	<ul style="list-style-type: none"> <li>District supply Officer</li> </ul>	<ul style="list-style-type: none"> <li>In the case of the former, issues such as fiscal policies and distribution systems designed to make clean energy affordable and accessible to the poor will need particular</li> </ul>

**Evaluation of Emission Control Option**

<p><b>Diesel generator sets</b></p>	<ul style="list-style-type: none"> <li>• Strict action against old DG Set which are not comply standard emission norms</li> <li>• Public awareness about effects of DG set pollution</li> </ul>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• The Electrical Department will take action to control unauthorized polluting generators</li> <li>• The list will be prepared of all DG sets user within the Municipal Corporation Area</li> </ul>	<p>• Mid Term</p>	<p>2017-2019</p>	<ul style="list-style-type: none"> <li>• Maharashtra Pollution Control Board</li> <li>• Akola Municipal Corporation</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel generator sets, primarily located in residential areas or in commercial buildings, are a significant contributor to the pollution load in city</li> </ul>
<p><b>Bakeries/ Crematoria</b></p>	<ul style="list-style-type: none"> <li>• Use of LPG in Hotels and "Dhabas"</li> <li>• Providing cleaner fuel for crematoria</li> </ul>	<p>Medium</p>	<ul style="list-style-type: none"> <li>• The plan prepared for electrical crematoria and provide cleaner source of fuel for crematoria</li> <li>• In Umbri Crematoria the pollution control system is installed to minimize the impact</li> <li>• Provision will be made by imposing heavy fine on hotel, resto those not using cleaner source like LPG</li> </ul>	<p>• Long term</p>	<p>2018-2021</p>	<ul style="list-style-type: none"> <li>• AMC</li> <li>• District Supply Officer</li> </ul>	

Preferably, quantify each priority pollutant. Otherwise, a qualitative statement (low/medium/high) may be given.

1. Whether it is technically feasible (e.g., replacing coal with natural gas may not be feasible, if its sustained availability is not assured); whether any implementation issues exist (e.g., low-income group may not have finances to use liquefied petroleum gas for cooking).
2. Estimate the total costs (investment and maintenance costs) over the duration of implementation period, and provide sources of financing.
3. Define the expected start and completion year (e.g., 2017-2020).



**Evaluation of Implementation Barriers and Required Actions**

<p><b>1. Vehicle</b></p> <ul style="list-style-type: none"> <li>• City traffic police</li> <li>• Akola Municipal Corporation</li> <li>• No proper traffic management and synchronize traffic plan implementation policy</li> <li>• Poor public transport facility</li> </ul>	<p>No investor available</p>	<ul style="list-style-type: none"> <li>• No availability of Environmental Specialist with Akola Municipal corporation which create confusion between the divisions to execute the planning in sustainable manner</li> <li>• Currently only 74 traffic police are working 30 more manpower require for better management</li> </ul>	<ul style="list-style-type: none"> <li>• No mindset to follow the traffic rule</li> <li>• No awareness about proper maintenance of vehicle</li> <li>• Introduction of public transportation like city buses, taxis</li> <li>• Extensive Drive to create awareness to be initiated</li> </ul>	<p>Pro-active policies from government are required to encourage the public transport.</p>	<ul style="list-style-type: none"> <li>• Involvement of professional communicator</li> <li>• Strengthen area committee by delegating necessary power development policies at area level &amp; pass expenses incurred thereon, By this way ULB will be unique democratic features having adequate power to maintain essential municipal services and power to collect expenses incurred on municipal services</li> </ul>	<ul style="list-style-type: none"> <li>• Public participation in information, education, communication, &amp; awareness program.</li> <li>• Photo Exhibition was organized through display of banners</li> <li>• Distribution of Handbills of Traffic Rules</li> <li>• Eye checkup camp arranged for drivers on National Highway No. 6 near toll naka</li> <li>• School Children and other residents were given information about traffic Rules</li> </ul>
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<p>2. Introduce battery-operated vehicles in targeted segments of two-wheelers, three-wheelers, and buses. supported by zero emission battery-operated vehicles: Priority may be accorded to battery-operated para-transit as feeders and for last mile connectivity in such areas</p>	<p>No investors</p>	<p>Very few investors and private sector available due to unclear policy and demand from the customer</p>	<p>Public awareness programme to empower citizens to report small sources but highly prevalent Inclusion of road construction related burning in rules</p>	<p>Akola Municipal transport division RTO</p>	<p>Identification of stakeholders/agencies to implement e-vehicle policy</p>	<p>Helmet checking expedition done for Two Wheelers vehicles Reflectors were distributed to the hand carts, bullock carts &amp; tractor trailer</p>
						<p>Awareness through display of banners Public participation in information, education, communication, &amp; awareness program.</p>

<p>economic or social needs.</p> <ul style="list-style-type: none"> <li>• Policy objectives should be appropriately prioritized; given the importance of the stability of the financial system, top priority should be given to promoting confidence in the financial system and addressing systemic risks.</li> </ul>					
<p>3. <b>Encroachment</b></p>	<p>NA</p>	<ul style="list-style-type: none"> <li>• No proper implementation of encroachment laws</li> <li>• Strong power delegation require for strict implementation of encroachment free city</li> <li>• No strong regulations for banning expansion of shop structure and road hawkers</li> </ul>	<p>• Regulation by local bodies: strong regulation should impose for encroachment</p> <ul style="list-style-type: none"> <li>• Free up parking space allotted to shopping complexes and other properties as per there sanction plan</li> </ul>		



**Action Plan for Control of Air Pollution**

Research studies including air pollution inventory, source apportionment, health impact studies, exposure impacts and other relevant studies: Govt. to support research works / scientific studies by academic / research institutions. Expertise will be sought from various institutions to develop protocols for assessment of the research proposals.

Source group	Control option	Suggested Action	Implementation period (short / mid / l-term)	Time target for implementation	Responsibility	Any other information
Vehicle (Transportation)	Public Awareness for Air pollution control, Vehicle Maintenance, Minimizing use of personal vehicles,	<p>Introduction of public transportation like city buses, taxis</p> <p>Extensive Drive to create awareness to be initiated</p> <ul style="list-style-type: none"> <li>To carry out regular (Monthly / Quarterly) air monitoring at prime locations in order to get idea of air quality and to continue with the necessary measures to reduce pollution levels.</li> <li>To avoid air pollution from the traffic congestion, parking arrangement should be made in town and quality of roads needs to be improved.</li> <li>Proper traffic management should be done with support of RTO and local police to avoid traffic jams.</li> <li>Displays of Air Quality status can be provided at the council office and main traffic signals.</li> </ul> <p>Unauthorized vehicle should be checked and siesed</p>	Mid	2018-2020	Transport Department, Traffic Police, Akola Municipal Corporation	
Road side dust	Creation of green buffers along the	The Garden department to carry out the plantation drive	Mid-Term	2018-2020	Garden department, AMC, Town Planning	



Source group	Control option	Suggested Action	Implementation period (short/mid/l-term)	Time target for implementation	Responsibility	Any other information
	Identify Brick kiln and other polluting industries	Carryout inspection and enforce the ban within municipal area Find out the feasibility to build the brick kiln industries to downwind sound of City			MPCB, AMC	
	Reducing use of woods as a domestic fuel in the City	Maximizing coverage of LPG for domestic and commercial Cooking (with target of 100% coverage) Renewable Energy options like solar energy to be looked into.			AMC, District Supply office	
	DG set Monitoring	With the help of Maharashtra Pollution Control Board, AMC should issue emission and noise standards	2		AMC, MPCB	

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Municipal Commissioner

Akola Municipal Corporation

Source group	Control option	Suggested Action	Implementation period (short/mid/1-term)	Time target for implementation	Responsibility	Any other information
	traffic corridors	<p>in Akola Region</p> <ul style="list-style-type: none"> <li>To do Tree Plantation along road sides and at open places wherever possible.</li> <li>To do Road widening wherever possible for smooth traffic flow</li> </ul>			Department, Building and Construction Department	
Building and Construction	Sensitize the local architecture body for follow the building laws	<ul style="list-style-type: none"> <li>Akola Municipal Corporation has imposed the fine on 25 architecture to not following the building by laws Strict compliance against construction policies</li> </ul>	Short-term	6 months	Building and Construction Department, Akola Municipal Corporation	
Trash Burning	Control on Open Burning Regular check and control of burning of Municipal Solid waste	<ul style="list-style-type: none"> <li>Mass awareness drive be initiated to educate general public about its effect cause by burning waste</li> <li>AMC notify ban on burning waste within Municipal area</li> </ul>	Short-Term	2018-2019	MPCB, AMC, Sanitation Department	To provide garbage / debris or such inert material collection & transportation & its disposal facility on Pay& use basis.
Vehicular Pollution	Check fuel adulteration and random monitoring of fuel quality data	<ul style="list-style-type: none"> <li>AMC will notify about the responsibility of department of Legal Metrology and consumer protection for checking fuel adulteration</li> <li>RTO Department will be equipped fuel adulteration testing since there is no testing center in city to check fuel adulteration</li> </ul>	Long-term	2018-2022	MPCB, AMC, RTO	

