

Kashipur City Air Action Plan

(Revised)



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Contents

Background	2
Sources of Pollution in Kashipur	3
Months with high air pollution levels	5
Why Clean Air Action Plan?	5
Kashipur Clean Air Action Plan	8
<u>Kashipur Clean Air Action Plan</u>	7
<u>Financial Layout</u>	12
Monitoring mechanism for implementation	11
Annexures	13
Disclaimer	13
Summary of Various Issues Addressed in Action Plan	14

Background

Kashipur is a city of Udham Singh Nagar district in the Indian state of Uttarakhand, and one of its seven subdivisions. Located in the western part of Udham Singh Nagar district at 29.2104°N & 78.9619°E, it is Kumaun's third most populous city and the sixth most populous in Uttarakhand. According to the 2011 Census of India, the population is 121,623 for the city of Kashipur and 283,136 for Kashipur Tehsil. The total area of kashipur is 199.91 Sq. km and about 239metres above sea level.



Figure: Kashipur City

Source: Uttarakhand Housing and Urban Development Authority

Industrial activities in the region were very small scale and agriculture based. Later, with administrative encouragement and support, rapid industrial development took place around Kashipur town. About 603 industrial units were functioning in the town, as reported by the Kashipur 2011 Master Plan. These included 163 Cottage industries, 415 small scale industries, and 25 medium (or large) Industries. Industrial development coupled with rich agricultural cash crops practices made this area more prosperous, relative to other parts of Kumaon region.

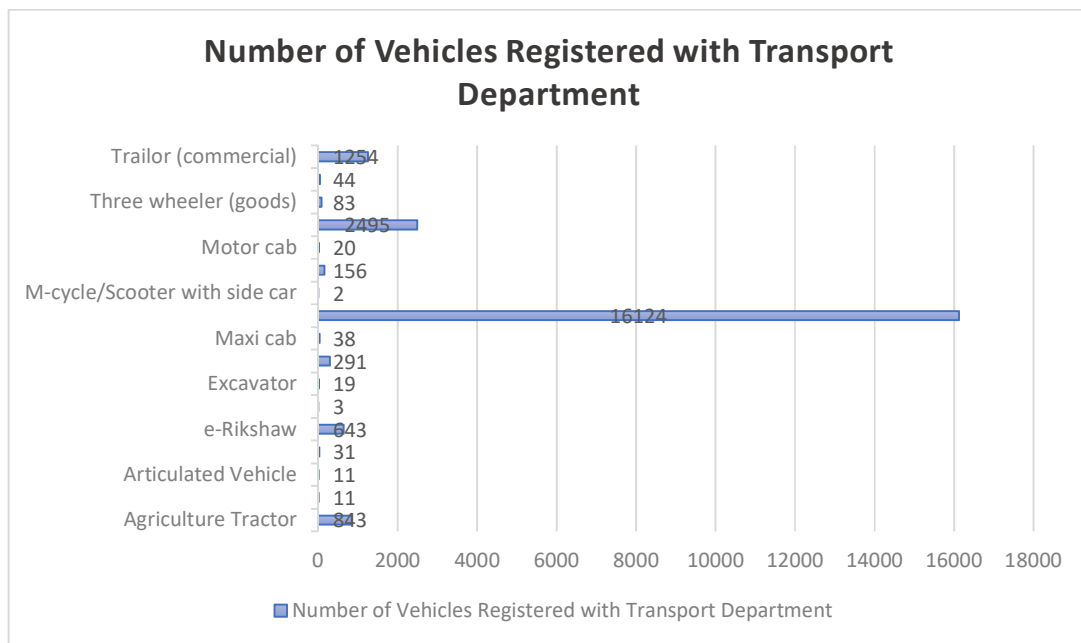
The region accounts for almost 50% of the medium and large-scale industries in the district. Major Industrial units, mostly located on Kashipur-Thakurdwara road, include Surya Roshini Limited (Bulbs and Tubes), India Glycols limited, Kashi Vishwanath Steels limited, Jindal Solvents extraction limited, Naini Papers limited, Sidharth Paper Mills, SRF limited and Shriram extraction private limited etc. Large industrial houses such as Flexituff International Ltd, IGL, Pasupati Arcylon Limited etc. also have branch establishments in the

city. Kashipur is becoming a thriving industrial center, as the city is suited for industrial park projects with cost of living compared to metros. Because of cheap and abundant raw materials available, several paper mills already have a presence in and around the city.

Sources of Air Pollution in Kashipur

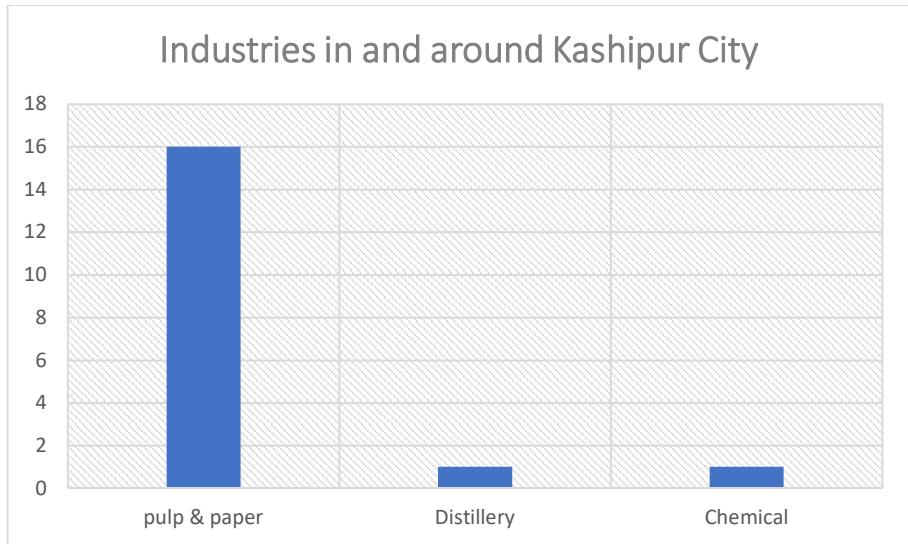
Identified sources of air pollution in Kashipur are road dust, vehicular emission, domestic fuel burning, open waste burning, construction activities, industrial emissions etc. Central Pollution Control Board is regularly monitoring the ambient air quality at various cities in Uttarakhand through National Air Quality Management Programme (NAMP) installed at LD Bhatt Government Hospital Kashipur under NAMP.

Particulate Matter (PM₁₀) has been identified as main air pollutant as it is found above the prescribed national standards. This is mainly due to re-suspension of road dust, emission from vehicles, D.G. sets, construction activities, burning of domestic fossil fuels, open burning of solid wastes, transportation of construction materials such as sand, soil etc. without covering and emission from brick kilns located around Kashipur.

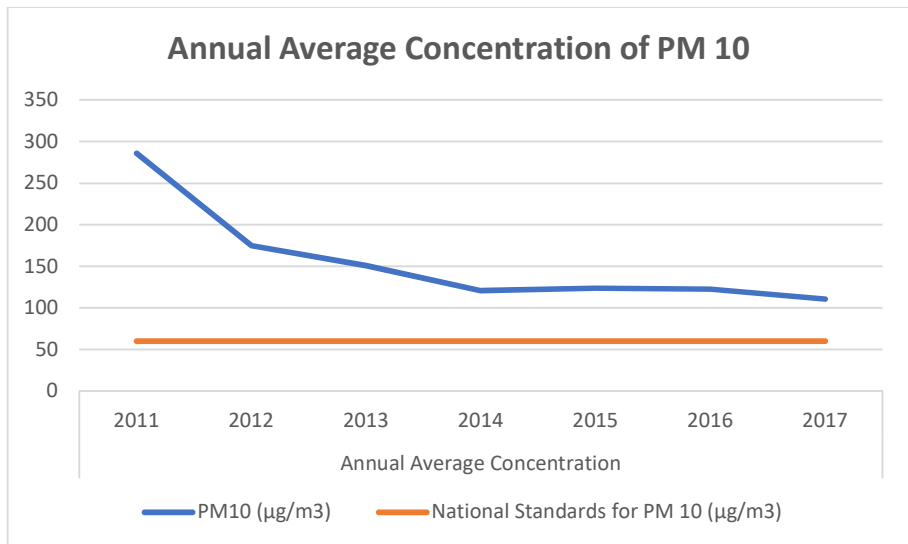


Source: Uttarakhand State Transport Department

Industries in the Kashipur region and its vicinity are also one of the contributors to the high levels of PM 10 in the area. The figure below gives the numbers and types of industries present in the area.



Although much more needs to be done to arrest the particulate matter in the prescribed limits, the results below indicate with the implementation for the more stringent air pollution control strategy in the past few years air quality has improved, and there are positive signs that can further help reduce toxicity in the air.



Source: CPCB

In Kashipur, agriculture residue burning is another burning issue. It is estimated that a total of 14000 Hectare farming land for rice crop in Kashipur, from which nearly 13833MT of agriculture residue is generated which is used to burn for its easy removal and preparation of field for next crop. Agriculture Department of Uttarakhand is in process of setting up a pilot project wherein the agriculture residue will be converted into fire briquettes by an environmentally sound manner and further used as a fuel in Industries. After success of the pilot project, this

will be launched for crop residue management. Uttarakhand Environment Protection and Pollution Control Board is ready to provide financial assistance to agriculture department for the pilot project.

As far as the Vehicular emission is concern, there are 889 diesel operated commercial vehicles which are 15 years old and this number will increase by 1221 in coming 05 years. To ban these commercial vehicles older than 15 years, proposal from State Government will be sent to Government of India. Checking of pollution level in the vehicles is mandatory activity of transport department. However, at present only 03 no. of vehicle pollution emission checking centres in Kashipur which is proposed to increase by 06 and also transport depart will increase the surveillance by checking 10 % vehicles every year. A sum of 1072 challans were made in 2017-18 in violation of vehicles not having PUCs.

Government of Uttarakhand has also formulated "Uttarakhand Anti Littering and Anti Spitting Act 2016" where in challans have been made in Kashipur and collected Rs 29100 against 67 challans. Also Rs 130050 were collected by making 197 challans for burning of the municipal waste.

In parallel, the routine monitoring and assessment of industrial emissions (including technical innovation) including third parties such as CPCB, UEPPCB is a regular practice. For the industries that did not meet the emission standards, UEPPCB issued closure directions to comply.

Months with high air pollution levels

It has been observed that air quality of during winter season becomes very poor & severe due to condensation of fine particulate matter in the lower portions of the atmosphere, and in summers it is due to wind storm. Details are given at Annexure.

Why Clean Air Action Plan?

India with an emerging economic development, faces enormous challenges when it comes to maintaining pace with the burgeoning population and parallel increase in urban development. This has been the scenario not only in mega cities but also in medium and small sized urban areas for the past many years now. Studies indicate that multiple factors are responsible for air pollution that emerges from sectors like power, transport, industry, residential, construction and waste. Despite having national standards and checks for various sources of emissions, many Indian cities are suffering from alarmingly high rates of air pollution emissions. While India has specified national

ambient air quality standards, many cities have not been able to meet these standards. It is in view of this and the growing demand for clean air, the central government under the National Clean Air Programme (NCAP) announced a comprehensive plan to overcome the challenges in over a hundred non- attainment cities.

The objective of the proposed clean air action plan is to meet the prescribed annual average ambient air quality standards in Kashipur in a stipulated timeframe.

Within the Clean Air Action Plan the NCAP suggests the following actions:-

To augment and evolve effective and proficient ambient air quality monitoring network across the country for ensuring comprehensive and reliable database

- To have efficient data dissemination and public outreach mechanism for timely measures for prevention and mitigation of air pollution and for inclusive public participation in both planning and implementation of the programmes and policies of government on air pollution
- To have a feasible management plan for prevention, control and abatement of air pollution.

It has been proposed under the NCAP that the city action plans need to be guided by a comprehensive science-based approach involving

- (i) identification of emission sources;
- (ii) assessment of extent of contribution of these sources;
- (iii) prioritizing the sources that need to be tackled;
- (iv) evaluation of various options for controlling the sources with regard to feasibility and economic viability; and
- (v) formulation of action plans

Kashipur Clean Air Action Plan

1. The two very significant components of an Air Action Plan for any city that is still growing and developing at a high pace, are;
 - Setting targets/Deadlines: Depending on estimated time for implementation of the action the time periods should be divided into Immediate, Short, Mid and Long-term actions
 - Setting up a steering committee to monitor the progress and implementation of activities under the action plan. A committee like that, should be comprised of high-level state officials from relevant departments.
2. Main Sources: A source apportionment study to identify the key sources of pollution needs to be done to identify the sources of pollution the plan is supposed to target. A study identifying the exact sources is yet to be conducted in Kashipur.
3. Type of Action: The recommended action should be designated as either policy, regulatory or implementation. The plan is colour coded based on these actions. Their explanation is given below:
 - **Policy Action:** This refers to an action that requires the framing of a new policy at the city or state level.
 - **Regulatory Action:** This refers to an action that requires better/different implementation of an existing policy or rule.
 - **Implementation Action:** This refers to an action that requires local execution of an activity.
4. Time period of implementation: Depending on estimated time for implementation of the action the time periods could be divided into Immediate (less than 12 months), Short (up to 2 years), Mid (2 years to 5 years), and Long (5 years to 10 years). Detailed Action Plan is as under:-

Source group	Action	Implementation period (Immediate / Short/ Mid /Long-term)	Time target	Responsible agency(ies)	Remarks
Vehicles	1. Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles. Type of Action: <u>POLICY</u>	--	--	Transport Department	Presently 889 commercially driven Diesel Vehicles and this number will increase up to 1221 in next 05 years. However, Ban on diesel driven vehicles is under the preview of the Central Government.
	2. Introduction of cleaner fuels (CNG/LPG) for commercial vehicles Type of Action: <u>IMPLEMENTATION</u>	Mid	March 2023	Transport Department & Oil companies	After introduction of CNG/LPG driven vehicles, old diesel driven vehicles will be replaced in phased manner.
	3. Regular checking of vehicles and Establishment of adequate number of Pollution Checking Centres to issue PUC (Pollution Under Control Certificate) Type of Action: <u>REGULATORY</u>	Mid	March 2023	Transport Department & Traffic Police	Present numbers of PUC checking centres are 03. These numbers of PUCIC will be increased up to 06. Every year at least 10% of vehicles will be challaned. It is policy of Transport Department to allow to run PUC centres at no cost if the person willing to do it with its own resources. Transport Department will make it mandatory that the all Government Departments must have to have their vehicles checked and get PUC in time. Also, surveillance will be increase. After increase in demands, the number of PUC centres will automatically be increased. Transport Department will also do the vehicle checking by Mobile Laboratories. Which are to be procured.
	4. Increase in Penalty of Rs 1000 to Rs 5000 in case of violation of PUC. Type of Action: <u>POLICY</u>	--	--	Transport Department	As the penalty to be increased by the Central Government, so the proposal from State Government will be sent to Government of India for the same.
	5. Integration of all Pollution Checking Centres with Single web based software for ensuring control & monitoring of polluting vehicles. Strengthening facility for enforcement regarding the vehicles involved in pollution emission. Type of Action: <u>REGULATORY</u>	Short	March 2021	Transport Department	Software for this action is ready. Testing and Customization will be done in the given time frame.

	6. Promotion and operationalization of E-rickshaw Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	Transport Department	Presently 1662 E-Rickshaw are registered in Kashipur. More promotion to E-Rickshaw will reduce the pollution level.
	7. Monitoring on vehicle fitness of Commercial Vehicles Type of Action: <u>REGULATORY</u>	Immediate	<u>15.10.2019</u>	Transport Department & Traffic Police	
	8. Periodic calibration test of vehicular emission monitoring instrument Type of Action: <u>REGULATORY</u>	Short	March 2021	Transport Department	
Road Dust	1. Daily cleaning of road dust Type of Action: <u>IMPLEMENTATION</u>	Immediate	15.10.2019	Nagar Nigam	Nagar Nigam will procure vacuum road sweeping machines
	2. Water spraying on road through tankers Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	Nagar Nigam	
	3. Construction of pucca pavement along the roads Type of Action: <u>IMPLEMENTATION</u>	Mid	March 2023	Nagar Nigam and PWD	
	4. Tree plantation along the roads Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	Nagar Nigam and Forest Department	
	5. Development of green belt in open areas, gardens, parks/ community places, schools & housing societies Type of Action: <u>IMPLEMENTATION</u>	Mid	March 2023	Nagar Nigam and Forest Department	
Construction and Demolition Activities	1. Covering of construction site Type of Action: <u>IMPLEMENTATION</u>	Immediate	15.10.2019	Nagar Nigam and Development Authority	In the first phase will be implemented at sites having more than 10,000 sq. Mt. Covered area
	2. Transportation of construction materials like sand, soil, stone chips etc. in covered system Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	Transport Department, District Adm. & Traffic Police	
	3. Restriction on storage of construction materials along the road Type of Action: <u>POLICY</u>	Short	March 2021	Nagar Nigam and Development Authority	

Biomass and garbage burning	1. Restriction on open burning of municipal solid waste, Biomass, plastic, horticulture waste etc Type of Action: <u>IMPLEMENTATION</u>	Immediate	15.10.2019	Nagar Nigam	
	2. Immediate lifting of solid wastes generated from de-silting and cleaning of municipal drains for its disposal Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	Nagar Nigam	To be lifted within 48 hrs.
	3. Transportation of municipal solid wastes, construction materials and debris in covered system Type of Action: <u>IMPLEMENTATION</u>	Immediate	15.10.2019	Nagar Nigam	
	4. Ensuring promotion & use of cleaner fuel for commercial purposes like local Dhaba/ eateries Type of Action: <u>IMPLEMENTATION</u>	Mid	March 2023	District Adm, Nagar Nigam and Forest Department	To be implemented in the geographical area of Nagar Nigam.
	5. Replacement of Wood which is used as Domestic Fuel Type of Action: <u>IMPLEMENTATION</u>	Mid	March 2023	District Adm, Nagar Nigam and Forest Department	To be implemented in the geographical area of Nagar Nigam.
Industrial Emissions	1. Installation and operation of advance air pollution control systems and Continuous Ambient Air Quality Monitoring System in Industries located in and around Kashipur Type of Action: <u>REGULATORY</u>	Mid	March 2023	UEPPCB	To be implemented in Grossly Polluting Industries in and around Kashipur.
	2. Adoption of cleaner fuel in the industries Type of Action: <u>POLICY</u>	Mid	March 2023	UEPPCB	
	3. Restriction of new industries which are based on Solid fuel like wood and coke Type of Action: <u>POLICY</u>	Mid	March 2023	UEPPCB	
	4. Phase out of Wood and Pet coke from industries Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	UEPPCB	
Strengthening of AAQ monitoring	1. Installation of CAAQMS Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	UEPPCB	01 CAAQMS to be installed
	2. Increasing Number of Manual Ambient Air Quality Station from 01 to 03. 3. Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	UEPPCB	Already 01 Monitoring station is in operation at Kashipur. This number will increase from 1 to 3
	4. Source apportionment study Type of Action: <u>IMPLEMENTATION</u>	Mid	March 2023	UEPPCB	

Public Awareness	1. Issue of advisory to public for prevention and control of air pollution, Vehicle fitness , maintenance and minimise use of personal vehicles etc Type of Action: <u>REGULATORY</u>	Immediate	15.10.2019	UEPPCB and Nagar Nigam, transport Department	
	2. Involvement of school and other academic institution in awareness program Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	UEPPCB	
Agriculture	1. Prevention of open burning of Agriculture Residue Type of Action: <u>REGULATORY</u>	Short	March 2021	Agriculture Department	At present there is a total of - 15709 Hectare land in Kashipur wherein rice crop is taken in 14000 Hectare (34584 Acre) area. From the crop annually 69168 MT of straw is produced. Out of which nearly 80% was cut down and remaining 20% i.e. 13833 MT is used to burn to clear the field. It is to be prevented from burning. Agriculture department is proposing to give funds for setting up Straw bailing machines. In Kashipur area this will cost about Rs. 32.37 lakhs funds to be given to farmers for the same.
	2. Pilot Project on making Agriculture waste residue to Fire Briquettes Type of Action: <u>IMPLEMENTATION</u>	Short	March 2021	Agriculture Department	State Pollution Control Board will assist in proving financial assistance to Agriculture Department for setting up of the pilot project.
Others	1. Compliance of guidelines on D.G. sets regarding use of retrofitted emission control system (PM captured efficiency 70%) capacity equal to or above 800 KW Type of Action: <u>REGULATORY</u>	Short	March 2021	UEPPCB, Industry Department, and Dist Admin.	
	2. Removal of Open DG sets Type of Action: <u>REGULATORY</u>	Mid	March 2023	UEPPCB, Industry Department, Nagar Nigam and Dist Admin.	
	3. Public Grievance Redressal Portal Type of Action: <u>IMPLEMENTATION</u>	Immediate	15.10.2019	UEPPCB	Portal will be created on the web site of Board for redressal of public complaints on air pollution along with a supervisory control for the disposal of complaints All such complaint will be addressed and disposed in a month time.

Financial Lay out

Following Financial Lay out is being given for execution of Air Action Plan for Rishikesh :-

S. No.	Name of Action Point	Financial Layout in Rs
1	Paving of shoulders along the urban roads.	11.88 crore
2	Tanker and tractor required for water spray on road (02 nos)	0.09 crore
3	Vacuum road sweeping machines	(02 nos) 1.5 crore
4	Small vacuum cleaning machines for smaller roads	(04 nos) 0.48 crore
5	Mobile vehicular checking labs/ PUC centres (02 nos)	0.3 crore
6	Emission inventory and source apportionment study	1.0 crore
7	Installation and AMC for 05 years for CAAQMS	2.5 crore
8	Installation of additional 02 manual air quality monitoring stations	0.25 crore
9	I & E activities	0.5 crore
10	Pilot Project on making agriculture waste Residue to Fire Briquettes	0.40 Croe
	Total	18.90 Crore

Monitoring mechanism for implementation

The baseline emission from traffic being too high because of rapid economic growth counter balancing the control measures. At the beginning of 2011, heavy smog covering the [Kashipur](#) region arose public concern about air pollution. Immediately, by taking remedial and regulatory measures by UEPPCB the PM level is rectified and presently the level of PM 10 is around 100-120 µgm/cubic meters.

Annexures

Table-1: Status of Ambient Air Quality, Kashipur

Status of Ambient Air Quality, Kashipur (PM 10)									
Sl No.	Month	Average Values from 2011 to 2017							
		2011	2012	2013	2014	2015	2016	2017	2018
1	January	333.06	233.87	248.07	169.56	164.08	151.03	161.82	70.15
2	February	274.35	274.61	148.62	126.03	120.68	162.34	122.47	96.26
3	March	190.08	245.33	128.93	121.29	107.28	134.47	132.04	113.54
4	April	311.08	185.77	128.33	117.48	118.96	147.05	130.35	90.81
5	May	308.93	269.26	171.14	114.48	129.22	120.6	124.47	121.5
6	June	247.65	194.92	186.3	111.85	237.16	94.01	102.73	141.06
7	July	328.61	79.17	153.09	88.25	64.16	86.85	86.49	100.69
8	August	188.15	71.04	128.73	86.67	68.68	76.59	71.54	103.08
9	September	Nil	73.13	106.45	62.89	78.42	90.26	69.45	103.70
10	October	363.24	113.01	93.32	106.09	117.85	109.52	91.71	100.34
11	November	244.01	170.14	174.39	145.31	141.95	153.16	128.22	120.14
12	December	355.59	190.29	141.78	199.54	135.46	147.16	106.59	108.45
	Average	285.88	175.04	150.76	120.78	123.65	122.75	110.65	105.81
Standard		60µg/m3 Annual							

Table-2: Annual Average Concentration

Sl. No	PARAMETERS	Annual Average Concentration								Standards for residential, Rural and other Areas (Annual)
		2011	2012	2013	2014	2015	2016	2017	2018	
1.	PM ₁₀	285.88 µg/m ³	175.04 µg/m ³	150.76 µg/m ³	120.78 µg/m ³	123.65 µg/m ³	122.75 µg/m ³	110.68 µg/m ³	105.81 µg/m ³	60 µg/m ³

Disclaimer

This plan is prepared by Uttarakhand Environment Protection and Pollution Control Board in alliance with Clean Air Asia.

Summary of Various Issues Addressed in the Action Plan

Policy level Issues

1. Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles. Ban on registration of Diesel driven auto-rickshaw /Tempo: to be referred to Central Government
2. Increase in Penalty of Rs 10000 to Rs 5000 in case of violation of PUC: to be referred to Central Government
3. Restriction on storage of construction materials along the road
4. Adoption of cleaner fuel in the industries
5. Restriction of new industries which are based on Solid fuel like wood and coke

Regulatory Issues

1. Regular checking of vehicles and Establishment of adequate number of Pollution Checking Centres to issue PUC (Pollution Under Control Certificate)
2. Integration of all Pollution Checking Centres with Single web based software for ensuring control & monitoring of polluting vehicles. Strengthening facility for enforcement regarding the vehicles involved in pollution emission.
3. Monitoring on vehicle fitness of Commercial Vehicles
4. Periodic calibration test of vehicular emission monitoring instrument
5. Installation and operation of advance air pollution control systems and Continuous Ambient Air Quality Monitoring System in Industries located in and around Kashipur
6. Issue of advisory to public for prevention and control of air pollution, Vehicle fitness, maintenance and minimise use of personal vehicles etc.
7. Prevention of open burning of Agriculture Residue
8. Compliance of guidelines on D.G. sets regarding use of retrofitted emission control system (PM captured efficiency 70%) capacity equal to or above 800 KW

9. Removal of Open DG sets

Issues Related to Implementation

1. Use of cleaner fuels (CNG/LPG) for commercial vehicles
2. Promotion and operationalization of E-rickshaw
3. Daily cleaning of road dust
4. Water spraying on road through tankers
5. Construction of pucca pavement along the roads
6. Tree plantation along the roads
7. Development of green belt in open areas, gardens, parks/ community places, schools & housing societies
8. Covering of construction site
9. Transportation of construction materials like sand, soil, stone chips etc. in covered system
10. Restriction on open burning of municipal solid waste, Biomass, plastic, horticulture waste etc
11. Immediate lifting of solid wastes generated from desilting and cleaning of municipal drains for its disposal
12. Transportation of municipal solid wastes, construction materials and debris in covered system
13. Ensuring promotion & use of cleaner fuel for commercial purposes like local Dhaba/ eateries
14. Phase out of wood and Pet coke from industries
15. Installation of CAAQMS
16. Increasing Number of Manual Ambient Air Quality Station from 01 to 03
17. Source apportionment study
18. Involvement of school and other academic institution in awareness program.
19. Pilot Project on making Agriculture waste residue to Fire Briquettes
20. Public Grievance Redressal Portal