

ACTION PLAN

FOR

THE CONTROL OF AIR POLLUTION

IN

KANPUR CITY



REGIONAL OFFICE
UTTAR PRADESH POLLUTION CONTROL BOARD
243, AVAS VIKAS, PHASE III, SADBHAVNA NAGAR,
KALYANPUR, KANPUR-17

1. INTRODUCTION

Kanpur is the 12th most populous city in India and the second largest city in the state of Uttar Pradesh after Lucknow. The city is the administrative headquarters of Kanpur Nagar district and Kanpur division. The name of the city is believed to have derived from Karnapur (meaning "town of Karna", one of the heroes of the Mahabharata). Another theory is that it came from the nearby town of Makaanpur, earlier known as Khairabad, where the Sufi saint of the Madariya Sufi order, Badiuddin Zinda Shah Madar, settled.

Area of city is 403.70 km². It has an average elevation of 126 m. Kanpur is the second most populous city in Uttar Pradesh, after Lucknow, and its urban agglomeration is among the largest in India. It is an important road and rail hub and has an airport for domestic flights. The city is a major commercial and industrial centre and is especially renowned for its leather industry, which includes some of the world's largest tanneries. The central part of the city lies northwest of a cantonment (military installation); most of its industry is still farther northwest. The urban area also includes three railway colonies and Armapur, a suburb. There is a military airfield nearby. Kanpur has a university; colleges of medicine, law, and education; the Indian Institute of Technology, Kanpur (established 1959); and a government experimental farm. Notable buildings include a sacred Hindu glass temple and Kamla Retreat, a rest house on a small lake. There are several museums.

Air pollution has been viewed seriously by the Hon'ble Supreme Court, Hon'ble High Court & Hon'ble National Green Tribunal and issued specific directions from time to time for the improvement the air quality of the city.

Central Pollution Control Board has also issued direction under section 18 (1)(b) of the Air (Prevention & Control of Pollution) Act 1981, regarding prevention, control or abatement of Air pollution in various cities of Uttar Pradesh including Kanpur.

2. ACTION TAKEN BY THE BOARD

Board has issued directions to Principal Secretary Urban Development, Principal Secretary Forests, Principal Secretary Transport, Principal Secretary Agriculture, Managing Director Central U.P. Gas Ltd., Managing Director Indraprastha Gas Ltd, and Managing Director Green Gas Ltd. under section 31 (A) of the Air (Prevention and Control of Pollution) Act, 1981 regarding prevention and control of air pollution in Kanpur city on dated 05.09.2016 in compliance of directions issued by Central Pollution Control Board, Delhi under section 18(1) (b) of the Air (Prevention and Control of Pollution) Act, 1981. Board has also issued directions under section 31(A) of the Air (Prevention and Control of Pollution) Act, 1981 as amended regarding prevention and control of air pollution in Kanpur city on dated 14.11.2017.

Ambient Air is being monitored regularly by the Board. At source emission monitoring i.e. stack monitoring of industries is also being done regularly and action is being taken accordingly on the basis of analysis report. If any industry is found violating the standards firstly show-cause notice is issued to the industry followed by closure under Air (Prevention and Control of Pollution) Act, 1981.

3. ANNUAL AVERAGE DATA OF AMBIENT AIR QUALITY PM₁₀ (µg/m³) OF KANPUR CITY (YEAR 2013-2018)

U.P. Pollution Control Board is monitoring ambient air quality of Kanpur city manually at 08 locations viz. Jareeb Chowki, Kidwai Nagar, Panki Site-I, Shastri Nagar, Awas vikas, Kalyanpur, Dadanagar, IIT Campus, Ramadevi crossing for PM₁₀, SO₂ and NO₂ parameters. Annual Average data of Ambient Air Quality particularly PM₁₀ (Particulate Matter size less than 10 microns) were observed during the year 2013-18 are as given below.

S.No.	Name of Location	Category	2013	2014	2015	2016	2017	2018
1	Jareeb Chowki	Commercial	215.3	218.4	204.1	236.3	237.7	226.73
2	Kidwai Nagar	Residential	191.0	186.0	200.6	217.6	209.5	210.72
3	Panki Site-I	Industrial	206.4	218.4	219.2	240.7	241.7	237.17
4	Shastri Nagar	Residential	196.8	208.3	203.8	228.1	233.9	190.45
5	Awas vikas, Kalyanpur	Residential	195.8	195.6	200.0	206.1	228.1	202.60
6	Dadanagar	Residential	260.7	221.4	222.0	214.9	247.1	256.58
7	IIT Campus	Residential	117.8	110.2	118.4	128.0	118.4	120.32
8	Ramadevi crossing	Commercial	235.9	218.9	240.2	264.7	278.3	291.23
	STANDARD (annual average)	60 µg/m ³						

It is clear from the data that the pollution levels are increasing year by year and the air quality index is getting worst. If we do not take steps now, this can lead to severe consequences. In spite of all the effort to control air pollution by regulatory authorities the data summarized above suggest that the air pollution level in Kanpur is on higher side. Kanpur has witnessed significant growth during last one & half decade and recorded similar trends of Air pollution to other cities in Northern Indian planes in India.

During 2001 to 2011 city recorded a growth of approximately 25 % population & 160% number of vehicles. The present review based on monitoring conducted in Kanpur identified particulate matter as main pollutant in the city. High traffic densities and abnormal meteorological factors adversely influenced Ambient Air Quality of Kanpur in winter. Degraded Air Quality has adverse effect on buildings, materials, Human health, Plants, historical monuments and material surface get degraded and decolorize due to air pollutants. Clean air is a "matter of right" and the steps are urgently required to improve air quality and also the steps require a multi prolonged, sustained and integrated approach including close monitoring of

implementation. Hence a short term and long term action plan is an urgent need to control air Pollution of Kanpur city.

4. SOURCES OF POLLUTION IN KANPUR

Based on source apportionment study carried out by IIT-Kanpur during 2008-10 for Central Pollution Control Board, Delhi, the main sources of air pollution in Kanpur city are Industries (Point source-26% & Areas source 7%), Vehicular (20%), Construction & Demolition activities (19%), Road dust (14%), Garbage burning (5%) & Agriculture waste burning (4%) etc. Data obtained from Continuous Ambient Air Quality Monitoring System (2018) at Kanpur showed values of CO 2.64 (mg/m³); O₃ 26.78 (µg/m³); NO₂ 73.63(µg/m³); SO₂ 11.3 (µg/m³); PM_{2.5} 102.52 (µg/m³); and Benzene 1.28(µg/m³), Toluene 2.55(µg/m³), Xylene 1.92(µg/m³).

5. SHORT TERM & LONG TERM ACTION PLAN

(A) Vehicle emission control

(a) Long Term Action Plan: Reduce congestion

Sl. No	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i	Plying of electric buses for public transport including establishment of sufficient charging stations.	360 days	Transport Department
ii	Prepare plan for construction of expressways/bypasses to avoid congestion due to non-destined vehicles.	360 days	N.H.A.I. /PWD
iii	Construction of peripheral road around the city to avoid congestion.	360 days	N.H.A.I./PWD
iv	Arrangement of Multilevel Parking Facilities	360 days	Nagar Nigam/Development Authorities
vi	Development/Strengthening of Bike zone/Cycle zone at metro/railways/bus stations from where travelers hire bi- cycle to reach the destination.	360 days	Nagar Nigam/Development Authorities
vii	Initiate steps for retrofitting of particulate filters in diesel vehicles, when BS-VI fuels are available	360 days	Vehicle Manufacturing Companies/Ministry of Road Transport & Highways (MoRTH)
viii	Use of Bio-Ethanol in the city/urban transport system/waste to energy.	360 days	Transport Department

(b) Short Term Action Plan

Sl. No	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i	Launch extensive drive against polluting vehicles for ensuring strict compliance	As regular activity	R.T.O/Traffic Police
ii	Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	As regular activity	R.T.O/ Traffic Police
iii	Prevent parking of vehicles in the non-designated areas	As regular activity	Traffic Police/ Nagar Nigam
iv	Prepare & implement action plan to check fuel adulteration and random monitoring of fuel quality data	30 days	District Supply Officer/Oil companies
v	Prepare & implement plan for widening of roads and improvement of infrastructure for decongestion of road	90 days	Nagar Nigam
vi	Steps for promoting battery operated vehicles including establishment of charging stations.	120 days	Transport Department/Nagar Nigam & Development Authorities
vii	Install weigh in motion bridges at the borders of cities/towns and States to prevent overloading of vehicles	180 days	Transport Department
viii	Synchronize traffic movements/Introduce intelligent traffic systems for lane-driving	180 days	Traffic Police
ix	Installation of remote sensor based PUC system	180 days	Traffic Police

(B) Suspension of road dust and other fugitive emissions control**(a) Long Term Action Plan**

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Implementation of maintaining at least 33% forest cover area in the city in master plan.	360 days	Nagar Nigam/KDA/Forest Department
ii)	All the canals/nullah's side roads should be brick lined. Proper plantation also carried out.	360 days	Irrigation Department/ Forest department

(b) Short Term Action Plan

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Prepare plan for creation of green buffers along the traffic corridors. Plantation of specific types of species of plants which are helpful in pollution control.	90 days	Forest Department/Nagar Nigam & Development Authorities
ii)	Maintain potholes free roads for free-flow of traffic.	90 days & as regular activity afterwards.	Nagar Nigam/ Development Authorities
iii)	Introduce water fountains at major traffic intersection, wherever feasible.	90 days	Nagar Nigam
iv)	Greening of open areas, gardens, community places, Residential welfare associations/societies (RWAS), schools and housing societies	90 days	Forest Department
v)	Blacktopping of metalled road including pavement of road shoulders	180 days	Nagar Nigam
vi)	Use of treated effluent of STPs in Pollution Control Measure such as watering of Plants, sprinkling for dust suppression purposes.	90 days	Nagar Nigam
vii)	Wall to Wall pavement for control of dust from road. Design the footpath pavement/tiles having capacity to grow grass in between.	180 days	Nagar Nigam

(C) Control of emissions from biomass/crop residue/garbage/municipal solid waste burning

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Launch extensive drive against open burning of bio-mass, crop residue, garbage, leaves, etc.	90 days	Nagar Nigam
ii)	Regular check and control of burning of municipal solid wastes and use of fire extinguisher for control of fire in municipal solid waste and bio mass.		Nagar Nigam
iii)	Proper collection of horticulture waste (bio-mass) and its disposal following composting-		Nagar Nigam

	cum-gardening approach		
iv)	Ensure ban on burning of agriculture waste and crop residues and its implementation	180 days	Agriculture Department & U.P. Pollution Control Board
v)	Door to Door collection of segregated waste by agency and then its disposal directly in plant without dumping it on land.	90 days	Nagar Nigam
vi)	Establishment of composting pits in Parks/ residential societies etc for management of biodegradable waste.	90 days	Nagar Nigam/KDA
vii)	No plot should be left open for more than 02 years and planting of trees must be mandatory on vacant plots.	90 days	Nagar Nigam/KDA

(D) Control of industrial emissions

(a) Long Term Action Plan

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Conversion of natural draft brick kilns to induced draft using zigzag technique in a phased manner.	360 days	U.P. Pollution Control Board
ii)	Installation of Electro Static Precipitators (ESP) or appropriate air pollution control devices in factory units/industries.	180 days	U.P. Pollution Control Board
iii)	Development of mobile facility/van for continuous ambient air quality monitoring for different localities.	360 days	Nagar Nigam

(b) Short Term Action Plan

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Identification of brick kilns and their regular monitoring including use of designated fuel,	60 days	U.P. Pollution Control Board

	and closure of unauthorized units.		
ii)	Monitoring of industrial emission including real time online monitoring through OCEMS (Online Continuous Emission Monitoring System) and live camera feed to take action against non-complying industrial units.	60 days, and thereafter, regular activity	U.P. Pollution Control Board
iii)	Bank guarantee should be taken for the compliance of conditions imposed in CTO/CTE for control of Environmental Pollution from industries. The bank guarantee shall be forfeited in case of any violation. Verification of these conditions to be carried out by UPPCB/selected Third Party Institutions/Quality control agencies etc.	60 days, and thereafter, regular activity	U.P. Pollution Control Board
iv)	Installation of web cams and OCEMS in Grossly Polluting Industries.	60 days	U.P. Pollution Control Board

(E) Control of air pollution from constructions and demolition activities

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Enforcement of Construction & Demolition Rules 2016. Fine should be imposed on defaulting units.	15 days , and thereafter, continue as regular activity	Urban Development/Development Authorities
ii)	Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units;		Urban Development/Development Authorities
iii)	Ensure carriage of construction material in closed/covered vessels		Development authorities/ Regional Transport Department
iv)	Environmental aspects should be included during preparation of master plan for development of city.	Proposed Master Plan for Kanpur City 2021	Urban Development/Development Authorities

v)	Builders should leave 33% area for green belt in residential colonies. Plantation should be done as per Office order No. H16405/220/2018/02 dated 16.02.2018 available on website of the Board .i.e., www.uppcb.com.	Within a reasonable timeframe	Urban Development/Development Authorities/ housing companies
vi)	All construction areas must be covered to avoid dispersion of particulate matter.	30 days	Nagar Nigam /Development Authorities

(F) Other Steps to control Air Pollution

(a) Long Term Action Plan

(G)

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Dead Bodies of Animals should be disposed through proper treatment facility like rendering plant etc.	360 days	Nagar Nigam
ii)	Installation of CAAQMS by polluting units/institutions etc. under "Polluters Pay Principles".	360 days	U.P. Pollution Control Board

(b) Short Term Action Plan

Sl. No.	Action Points	Timeframe for implementation	Action Required to be Taken by Responsible Departments
i)	Air Quality Index to be calculated and disseminated to the people through website and other media (on maximum fortnightly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	15 days, and thereafter, continue as regular activity	U.P. Pollution Control Board, Lucknow
ii)	Establish an Air Quality Management Division at SPCB/PCC Head Quarters to oversee air quality management activities in	30 days	U.P. Pollution Control Board

	the State and interact with CPCB		
iii)	Set-up and publicize helpline in the city/town as well as SPCB/PCC HQ for complaints against reported non-compliance	30 days	U.P. Pollution Control Board
iv)	Engage with concerned authorities on continual basis for maximizing coverage of LPG/PNG for domestic and commercial cooking with target of 100% coverage	30 days	District Supply Officer
v)	Monitoring of DG sets and action against violations. Fine should be imposed on defaulters.	30 days	U.P. Pollution Control Board/ Nagar Nigam
vi)	Street vendors are to be controlled strictly in respect of removing their wastes and debris before leaving the site of operation	30 days	Nagar Nigam /Development Authorities
vii)	Complete ban on littering of streets with municipal solid wastes (MSW). Segregation & source collection at source of MSW to be implemented.	30 days	Nagar Nigam /Development Authorities
viii)	If Air Quality Index found severe or above grade, ensure availability of masks to public for protection.	90 days	Nagar Nigam