

Action Plan for control of Air Pollution in Non-Attainment Cities of Assam

Prepared By

Air Quality Monitoring Committee (AQMC)

Under the Supervision of



Addl. Chief Secretary to the Government of Assam,
Department of Environment and forest

Addl. Chief Secretary
to the Government of Assam
Environment & Forests Deptt.
Dispur, Guwahati-6

Background

Air Quality Monitoring Committee (AQMC)

As per the orders of Hon'ble National Green Tribunal (NGT) in the matter of news item published in 'The Times of India' authored by Shri. Vishwa Mohan titled "NCAP with Multiple Timelines to Clear Air in 102 Cities to be released around August 15" O.A. No.681 of 2018, Air Quality Monitoring Committee (AQMC) has been constituting in Assam with following members Vide Notification No.ENG.7/2017/5 dtd 19/12/18.

1. The Secretary to the Govt. of Assam, Department of Environment & Forest
2. The Commissioner, Transport
3. The Director, Municipal Affairs
4. The Director, Agriculture
5. The Commissioner, Industries & Commerce
6. Member Secretary, Pollution Control Board Assam.

The Committee will function under the overall Supervision & Co-ordination of Additional Chief Secretary to the Govt. of Assam, Environment & Forest.

Action Plan for Control of Air Pollution in Non-Attainment City/ Towns of Assam

অসম চৰকাৰ



GOVERNMENT OF ASSAM



Pollution Control Board, Assam
(Department of Environment & Forests:: Government of Assam)

Bamunimaidam, Guwahati - 781021, Assam

Introduction

Assam, the “Land of Red River and Blue Hills’ located south of the eastern Himalayas serves as the gateway to the northeastern part of India. Dominated by the mighty Brahmaputra River, Assam is located between 28°18' and 24° N latitude and 89° 46' and 97° 4 E longitudes with an area of 78,438 km². As per the Census of 2011, the population was assessed at 31.18 million.

Guwahati, earlier known as Pragjyotishpur, Capital of Assam is the largest urban centre of trade and commerce, transport and communication, etc. of the NE Region. This major city of Assam is situated between 25°43' and 26°51' N latitude and 90°36' & 92°12' E longitude covering geographical area of about 1,527.84 km² with humid type of climate. Located on the banks of the Brahmaputra River, this rapidly growing city provides a link to seven other northeastern states including the two highways, NH31 and NH37, passing through the city, are busy with vehicular traffic day and night. The topography of the city is non-uniform with a preponderance of high and low areas. Moreover, due to uneven topography, geographical location and the climatic factors have a role in the growing concentration of unequal dispersion of air pollutants within the city which are created mainly due to the presence of hills and hillocks in three sides of the city, that restricts free movement of air. During the past few decades, it has experienced unprecedented spatial expansion and also steep rise in population.

Sivasagar is located at 26.98° N longitude and 94.64° E latitude, about 360 kms northeast of Guwahati. The city covers an area of about 2662 km² and is surrounded by the Dehing rainforest, where mighty Dihing (Brahmaputra) and Lohit river meets. This historic place is also known for its rich biodiversity. It is the place of Ahom Kingdom. Sivasagar is also known as the Crude Oil City of Assam.

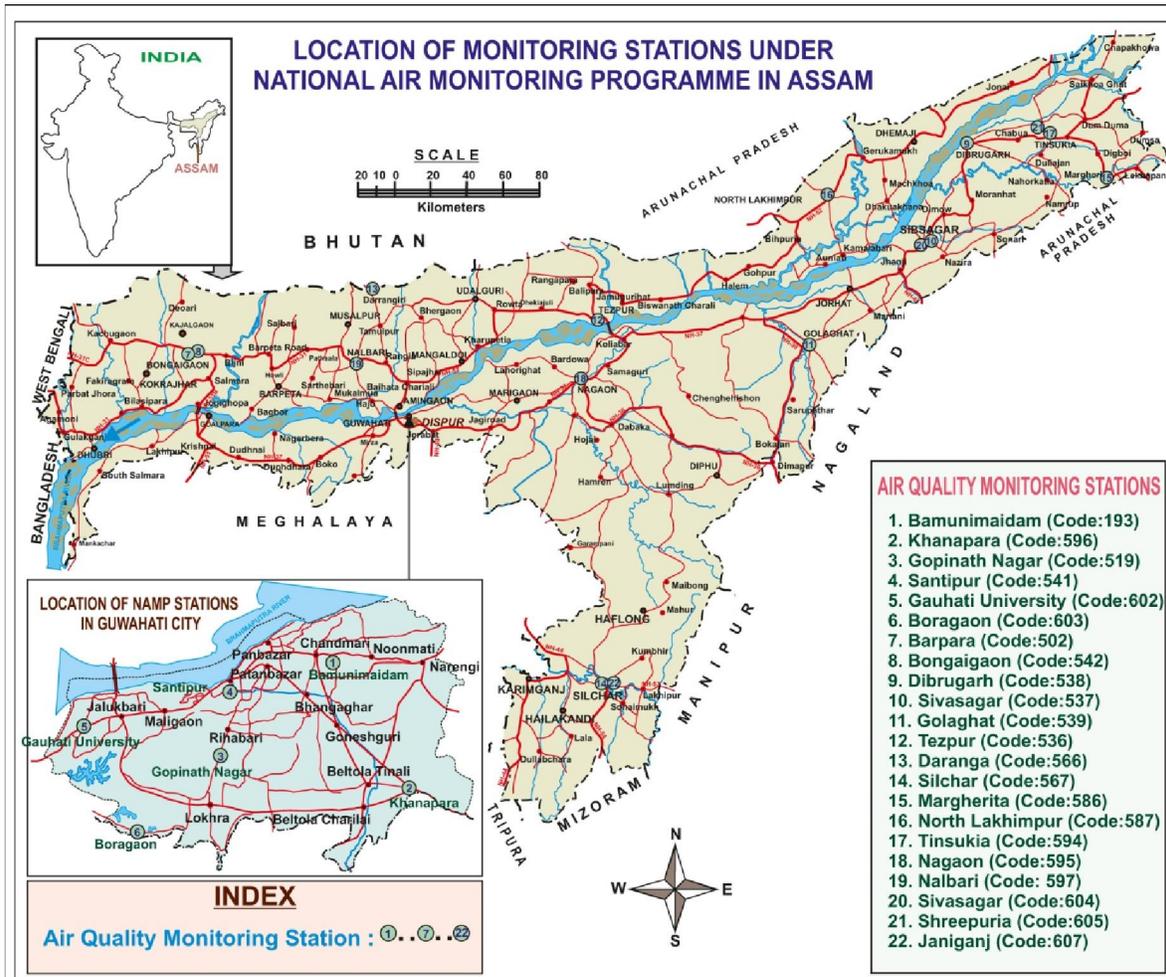
Silchar, the district headquarter of Cachar is situated on the left bank of the Barak river in the extreme southern part of the state. Situated between 24°49' N longitude and 92°48' E latitude. As per census of 2011 the population of Cachar is recorded as 17,36,61. Poor and narrow road conditions of the main city with high vehicular density contributes to high concentration of Particulate Matter (PM₁₀) values.

Nalbari district occupies an area of 2,257 km² and is situated at 26.44° N and 91.44° E with total population of 82,730. The entire area is located in the plains of Brahmaputra valley. The road condition is poor.

Nagaon is situated 121 kms east of Guwahati city at 26.35° N and 92.67° E. As of 2011 census, Nagaon city had total population of 28,23,768 making it one of the largest cities of Assam. The Kolong river, a tributary of Brahmaputra river flows through Nagaon.

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All the monitoring stations located at Guwahati city and other towns of Assam are shown in the following map -



The occurrence of higher values of air pollution in different months of a year is associated with the type of climate, and accordingly with different atmospheric conditions in particular months, changing state of weather on a given day, and anthropogenic activity. Seasonal weather characteristics i.e. prolonged dryness, local physiographic and meteorological conditions, vast sandy banks of River Brahmaputra, hill cutting, windblown dust and increased infrastructural development and construction activities along with traffic activities attributes to the increase of RSPM values in the State. Particulate Matter (PM₁₀) has been identified as the main air pollutant in the State as it is observed to exceed the prescribed limit. Re-suspension of road dust and emission from vehicles are main contributors of air pollution in the crowded streets of the cities.

Action Plan for Control of Air Pollution in Non-Attainment City

Name of the City/Town: Guwahati

Air Pollution concerns: PM₁₀

Action to reduce Vehicular Pollution-						
Sl. No	Source Group	Control Option	Implementation period (Short/Mid/Long Term)	Time Target for implementation	Responsible Agencies	Any other information
1.	Vehicles	i. Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	Short-term	December 2019 (the activity shall also Continue thereafter)	Transport Department , Gov. of Assam Pollution Control Board, Assam	<ul style="list-style-type: none"> PCBA along with the District Transport Department, Kamrup (Metro) has conducted a joint public awareness drive at different locations of the city to know and disseminate the status of vehicular emission levels of different types of vehicles plying on the road along with the ambient noise level. Leaflets and flyers about the rising trend of vehicular pollution, air pollution and noise pollution were also distributed to the public. This programme shall be conducted on regular basis in collaboration with the Transport

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					Department.	
		<p>ii. Auditing and reform of Pollution Under Control (PUC) certification</p> <p>Enforcement of PUC norms and link PUC certificates with annual vehicle insurance.</p> <p>Setting up of adequate numbers of additional auto emission testing stations.</p>	Short-term	March 2020	Transport Department, Gov. of Assam	<p>The Transport Department has taken steps for opening of Auto Emission Testing Stations throughout the state for periodical testing of the limit value of smoke emitted through motor vehicles engine and to issue necessary Pollution Under Control Certificate. Accordingly, as many as 175 nos. of Private Auto Emission Testing Stations had already been set up.</p>
		<p>iii. Widening of road wherever feasible and improvement of infrastructure for decongestion of road</p>	Mid-term	December 2020	Public Works Dept. (Road), Guwahati Municipal Corporation, Guwahati Metropolitan Development Authority	<ul style="list-style-type: none"> • Drives are carried out by GMC to remove the unauthorized road side vendors and other establishments. • Most of the roadside drains have been covered to provide more space for vehicular movement.
		<p>iv. Launch extensive drive against polluting vehicles which have completed 15 years for ensuring strict compliance and their stepwise phasing out from the road</p>	Short-term	March, 2020 (continuous activity thereafter)	Transport Department, Gov. of Assam District Administration	<p>The District Transport Department is regularly conducting drive against polluting vehicles to ensure strict compliance, Enforcement and implementation of Motor Vehicle Act, 1988 and Assam Motor Vehicle Rules, 2003.</p>

		<p>v. To intensify public transport system to reduce vehicle numbers from street surfaces.</p> <p>Introduction of new electric buses (with proper infrastructure facilities such as charging stations) and CNG buses for public transport which will reduce plying of private vehicles on road and help to curb tail-pipe emissions.</p>	Mid -term	September, 2020	<p>Transport Department , Gov. of Assam, District Administration</p>	<ul style="list-style-type: none"> • 15 electric buses already procured under FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) scheme are ready to be introduced. • Under the second phase of FAME scheme, the Central government has sanctioned 100 more electric buses to Assam. Fifty are for Guwahati and 25 each for Jorhat and Silchar. • Trial run of Passenger Rope-Way Project connecting Panbazar and North Guwahati with the capacity of 250 persons per hour already done. This initiative shall ease the vehicular traffic in the busy MG Road.
		<p>vi. Introduction of battery-operated/electric vehicles in Guwahati city</p>	Short-term	Already implemented	<p>Transport Department , Gov. of Assam,</p>	<ul style="list-style-type: none"> • Assam State Zoocum Botanical Garden has introduced battery operated e-vehicles for better convenience of the visitors. • The battery operated e-rickshaws are also being operated along the feeder routes of the city.

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		vii. Prevent parking of vehicles in the non-designated areas	Short term	October, 2019 (Continuous activity)	Traffic Police Department	<ul style="list-style-type: none"> The traffic personnel are being trained regularly for better management along with youths engaged by the GMC in managing parking of vehicles. Two multi-level parking facilities constructed at Panbazar and ShradhanjalaiKanan, Zoo Road.
		viii. To encourage non-motorized transport by introducing cycle tracks along with the roads	Long-term	December, 2022	Public Works Dept. (Road) Guwahati Metropolitan Development Authority (GMDA) & Guwahati Municipal Corporation (GMC)	Survey will be conducted to identify suitable routes to start the initiative
Control of Road dust generation-						
2.	Road Dust	i. Creation of green buffers along the traffic corridors and their maintenance	Mid-term	April 2020	Forest Department, Govt. of Assam, National Highway Authority of India and Public Works Department (Road), Assam	The plantations in the road medians have already been started. The Medians are being modified to facilitate Plantations.

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		ii. Ensure carriage of construction materials in closed/ covered vessels	Short-term	October 2019 (Continuous activity)	District Administration, Guwahati Municipal Corporation (GMC), Govt. of Assam	All the ULBs have been directed to ensure proper implementation of Construction and Demolition Waste Management Rules, 2016
		iii. Necessary changes in bye-laws-Greening of open areas, gardens, community places, schools and housing societies	Mid-term	December 2020	Guwahati Metropolitan Development Authority & Forest Department, Assam	Changes to be made in bye-laws for a minimum compulsory green area in all public and private establishments.
		iv. Black-topping of unpaved road including pavement of road shoulders	short-term	October 2019 (Continuous activity)	Public Works Dept. (Road)	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
		v. Minimize earth cutting from the hills to prevent dust generation.	short-term	October 2019 (Continuous activity)	Forest Dept. /District Administration	The Kamrup Metro district administration banned all kinds of earth cutting along with extraction and blasting of stone across the district.
		vi. Regular cleaning of street surfaces and spraying of water to suppress dust.	Short term (Immediate)	October 2019 (continuous activity)	Guwahati Municipal Corporation	The city is regularly being cleaned manually by the workers engaged under the Guwahati Municipal Corporation (GMC)
		vii. Maintain potholes free roads for free	Short-term (Immediate)	October 2019 (continuous activity)	Public Works Dept.	The maintenance work of roads is continuously being done.

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		flow of traffic	e)	activity)	(Road), Assam	
		viii. Immediate lifting of solid waste generated from disilting and cleaning of municipal drains for its disposal	Short term (Immediate)	October, 2019 (continuous activity)	Guwahati Municipal Corporation	
Control of Open Burning-						
3.	Biomass and Garbage burning	i. Regular check and control of burning of municipal solid wastes	Short-term (Immediate)	October, 2019 (continuous activity)	Guwahati Municipal Corporation	<ul style="list-style-type: none"> All the ULBs have been directed to close down the existing garbage dump sites and establish waste processing facilities and sanitary landfills. Identification of suitable plot of land for establishment of waste processing facility (composting plant, RDF plant, sanitary landfill) in Guwahati is under process. Implement provisions of Solid Waste Management Rules 2016.
		ii. Stop open burning of garbage as this process pollutes the environment. Defaulters to be imposed fines.	Short-term (Immediate)	October, 2019 (continuous activity)	Guwahati Municipal Corporation & District Administration,	<ul style="list-style-type: none"> PCBA has already issued directions to Urban Local Bodies to ensure prohibition of littering and open garbage burning. GMC has already started imposition of fines. Door to door collection of waste is carried out in Guwahati by GMC

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						to minimize littering of waste and burning of garbage in households.
Industries-						
4.	Industries	i. To intensify monitoring of industries to reduce of emission by the industries.	Short-term (Immediate)	October, 2019(continuous activity)	Pollution Control Board, Assam,	Ensuring installation and operation of air pollution control devices in industries. Installation of online emission monitoring system has been made mandatory in all 17 categories of industries. All air polluting industries are inspected regularly by PCBA.
		ii. Action against non-complying industrial units	Short-term (Immediate)	October, 2019 (continuous activity)	Pollution Control Board, Assam/ Industry Dept.	Proper framework will be prepared for imposition of Environmental compensation from non-complying industries.
Air Quality Monitoring Network-						
5.	Strengthening of Air Quality Monitoring Network	<p>i. Expansion of Air Quality Monitoring stations (PCBA operates 23 NAMP stations all over the State)</p> <p>Installation of additional 4 nos of CAAQM Stations at suitable location within the city (proposed) ; One such station is being operated at Head Office building of PCBA, Bamunimaidam</p>	Long-term	March, 2021	Pollution Control Board, Assam	<ul style="list-style-type: none"> At present, PCBA manually operates 6 (six) nos. of NAMP stations in Guwahati city; which are located at Bamunimaidam, Gopinath Nagar ITI, Shantipur, Gauhati University, Khanapara and Boragaon. All the stations are located in residential areas. Since the population of Guwahati city lies within 10,00,000- <50,00,000, PCBA has decided to operate additional 4 nos. of NAMP stations at Industrial and Commercial area

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						and install 4 (four) additional CAAQMS.
		ii. Research studies including air pollution inventory source apportionment, health impact studies, exposure impacts and other relevant studies	Long-term	December,2020		PCBA has signed Memorandum of Understanding (MoU) with Indian Institute of Technology, Guwahati to carry out research and source apportionment studies.
Awareness generation-						
6.	Public Awareness	i. Dissemination of Air Quality Index to the public through website and other media (on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	Short-term	Already implemented	Pollution Control Board, Assam	The Air Quality Index (AQI) of Guwahati city along with weekly ambient air quality data is regularly published in the Board's official website.
		ii. Involvement of schools and academic institutions in awareness program	Short-term	April 2020		Every year on the occasion of World Environment Day, PCBA organizes awareness programmers by conducting drawing competition among the various age groups of students, carrying out plantation drives in

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						schools/institutions well as selecting a model school/academy to organize Environment Day. Pamphlets, leaflets/flyers and plant saplings are also distributed to the students.
		iii. To launch a mobile app to update public about the status of air quality of the area	Short-term	December 2019		In compliance to Hon'ble NGT Order, the "SAMEER" app shall be procured by PCBA for easy access of air quality data by the public. The App shall be used for public compliant redressal system as well as public awareness.
Domestic Fuel-						
7.	Use of Domestic Fuel	i. Increasing the LPG connections in low income strata.	short-term	March 2020	Food and Civil Supplies	Under Pradhan MantriUjjwalaYojana, most of the households have been provided with LPG connections. Many other Government schemes are also implemented to ensure free connection of LPG to all the sections of the society.53532 nosLPG connections already provided.
		ii. Ensuring promotion and	short-term	March 2020	District Administra	Awareness programs and regulation of use of coal

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		use of cleaner fuel (i.e. LPG) instead of coal fired chulas or fire-woods in the hotels and open spaces			tion, PCBA	and firewood to be carried out
		iii. Introduce schemes for providing subsidized LPG connections as well as providing means of finance to small tea vendors/hawkers using kerosene stoves in order to reduce emissions from burning of kerosene	Long-term	November, 2021	Industries and Commerce Department, District Administration, Food & Civil Supplies,	Government shall look into options and possibilities for financing and subsidizing LPG connections to small vendors.
Construction Activities-						
8.	Construction activities	i. Ensure transportation of construction materials in covered vehicles	Short-term (Immediate)	October 2019 (Continuous)	Guwahati Municipal Corporation (GMC)	Already enforced by Guwahati Municipal Corporation (GMC)
		ii. Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	Short-term (Immediate)	October 2019 (Continuous)	Guwahati Municipal Corporation (GMC)	Proper implementation of construction and demolition waste management Rules, 2016. PCBA has already issued public notices and directions to ULBs
		iii. Restriction on storage of construction materials along the road.	Short-term (Immediate)	October 2019 (Continuous)	Guwahati Municipal Corporation (GMC)	Unloading of building materials in the roads is already prohibited by Guwahati Municipal Corporation (GMC)
Miscellaneous-						
9.	Other steps	i. Set-up and publicize helpline in	short-term	December 2019	Pollution Control	Sameer App developed by CPCB shall be procured. Currently

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		PCBA HQ for complaints against reported non-compliance			Board, Assam	public can make complaints through PCBA's web portal.
		ii. Monitoring of DG sets and action against violations	short-term (Immediate)	October 2019 (Continuous activity)		Monitoring carried out by PCBA

Name of the City/Town: Nalbari

Air Pollution concerns: PM₁₀

Action to reduce Vehicular Pollution:						
Sl. No	Source Group	Control Option	Implementation period (Short/Mid/Long term)	Time Target for implementation	Responsible Agencies	Any other information
1.	Vehicles	i. Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department , Gov. of Assam Pollution Control Board, Assam	<ul style="list-style-type: none"> PCBA along with the District Transport Department has conducted a joint public awareness drive at different locations of the city to know and disseminate the status of vehicular emission levels of different types of vehicles plying on the road along with the ambient noise level. Leaflets and flyers about the rising trend of vehicular pollution, air pollution and noise pollution

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						<p>were also distributed to the public.</p> <ul style="list-style-type: none"> This programme shall be conducted on regular basis in collaboration with the Transport Department.
		<p>ii. Auditing and reform of Pollution Under Control (PUC) certification</p> <p>Enforcement of PUC norms and link PUC certificates with annual vehicle insurance. Setting up of additional auto emission testing stations.</p>	Short-term	March 2020	Transport Department, Gov. of Assam	Auto Emission Testing Stations throughout the state for periodical testing of the limit value of smoke emitted through motor vehicles engine and to issue necessary Pollution Under Control Certificate
		<p>iii. widening of road and improvement of infrastructure for decongestion of road</p>	Mid-term	December 2020	Public Works Dept. (Road), Urban Local Bodies, District Development Authority	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of Major District Roads (MDR) in the State.
		<p>iv. Launch extensive drive against polluting vehicles which have completed 15 years for ensuring strict compliance and their stepwise phasing out from the road</p>	Short-term	March, 2020	Transport Department, Gov. of Assam District Administration	The District Transport Department is regularly conducting drive against polluting vehicles to ensure strict compliance, Enforcement and implementation of Motor Vehicle Act, 1988 and Assam

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						Motor Vehicle Rules, 2003.
		v. To intensify public transport system to reduce vehicle numbers from street surfaces.	Mid -term	September, 2020	Transport Department , Gov. of Assam, District Administration	
		vi. Introduction of battery-operated/electric vehicles	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department , Gov. of Assam,	E-rickshaws already introduced in the city.
		vii. Prevent parking of vehicles in the non-designated areas	Short-term (Immediate)	October, 2019	Traffic Police Department	The traffic personnel are being trained regularly for better management along with youths engaged by the Urban local Bodies in managing parking of vehicles
Control of Road dust generation-						
2.	Road Dust	i. creation of green buffers along the traffic corridors and their maintenance	Short-term	March, 2020	Forest Department , Govt. of Assam with the help of National Highway Authority of India and Public Works	The plantations in the road medians have already been started. The Medians are being modified to facilitate Plantations.

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					Department (Road), Assam	
		ii. Ensure carriage of construction materials in closed/ covered vessels	Mid -term	September, 2020	Public Works Dept. (Road) & Urban Local Bodies	All the ULBs have been directed to ensure proper implementation of Construction and Demolition Waste Management Rules, 2016
		iii. Necessary changes in bye-laws-Greening of open areas, gardens, community places, schools and housing societies	Mid-term	December 2020	District Development Authority & Forest Department, Assam	Changes to be made in bye-laws for a minimum compulsory green area in all public and private establishments.
		iv. Black-topping of unpaved road including pavement of road shoulders	short-term	October 2019 (Continuous activity)	Public Works Dept. (Road)	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
		v. Minimize earth cutting from the hills to prevent dust generation.	short-term	October 2019 (Continuous activity)	Forest Dept. /District Administration	The District administration has issued notification to temporarily ban all kinds of earth cutting across the district.
		vi. Regular cleaning of street surfaces and spraying of water to suppress dust.	Short -term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies	The city is regularly being cleaned manually by the workers engaged under the Urban Local Body (ULB).

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		vii. Maintain potholes free roads for free flow of traffic	Short-term (Immediate)	October 2019 (continuous activity)	Public Works Dept. (Road), Assam	The maintenance work of roads is continuously being done.
		viii. Immediate lifting of solid waste generated from disilting and cleaning of municipal drains for its disposal	Short term (Immediate)	October 2019 (continuous activity)	Urban local Body	
Open Burning						
3.	Biomass and Garbage burning	i. Regular check and control of burning of municipal solid wastes	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies	Implement provisions of Solid Waste Management Rules 2016.
		ii. To stop open burning of garbage as this process pollutes the environment. Defaulters may be imposed fines.	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies & District Administration,	PCBA has already issued directions to Urban Local Bodies to ensure prohibition of littering and open garbage burning.
Industries-						
4.	Industries	i. To intensify enforcement of acts and rules to prevent industrial emission and	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam,	Ensuring installation and operation of air pollution control devices in industries. Installation of online

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		compliance of emission standards by the industries.				emission monitoring system has been made mandatory in all 17 categories of industries. All air polluting industries are inspected regularly by PCBA.
		ii. Action against non-complying industrial units	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam/ Department of Industries, Govt. of Assam	Proper framework will be prepared for imposition of Environmental compensation from non-complying industries.
Air Quality Monitoring Network						
5.	Strengthening of Air Quality Monitoring Network	i. Expansion of Air Quality Monitoring stations	Long-term	March, 2021	Pollution Control Board, Assam	In addition to the existing NAMP station, PCBA shall operate additional 2 (two) nos. of NAMP stations and one CAAQMS at suitable locations in the city.
		ii. Research studies including air pollution inventory source apportionment, health impact studies, exposure impacts and other relevant studies	Long-term	December, 2020		PCBA has signed Memorandum of Understanding (MoU) with Indian Institute of Technology, Guwahati to carry out research and source apportionment studies

Domestic Fuels						
6	Domestic Fuels	i. Increasing LPG connections in low income strata.	Short-term	Already implemented		Under Pradhan Mantri Ujjwala Yojana, most of the households have been provided with LPG connections. Many other Government schemes are also implemented to ensure free connection of LPG to all the sections of the society.
		ii. Ensuring promotion and use of cleaner fuel (i.e. LPG) instead of coal fired chulas or fire-woods in the hotels and open spaces	Short-term	April 2020	Local Urban local bodies & District Administration	Awareness programs and regulation of use of coal and firewood to be carried out
		iii. Introduce schemes for providing subsidized LPG connections as well as finances to small tea vendors/hawkers using kerosene stoves in order to reduce emissions from burning of kerosene.	Long-term	November 2021	Local Urban local bodies & District Administration	Government shall look into options and possibilities for financing and subsidizing LPG connections to small vendors.

Awareness generation-						
6.	Public Awareness	Dissemination of Air Quality Index to the public through website and other media (on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	Short-term	Already implemented	Pollution Control Board, Assam	The Air Quality Data is regularly updated in the official website.
		Involvement of schools and academic institutions in awareness program	short-term	April, 2020		Every year on the occasion of World Environment Day, PCBA organizes awareness programmers by conducting drawing competition among the various age groups of students, carrying out plantation drives in schools/institutions well as selecting a model school/academy to organize Environment Day. Pamphlets, leaflets/flyers and plant saplings are also distributed to the students.
		To launch a mobile app to update public about the status of air quality of the area	Short-Term	December, 2019		In compliance to Hon'ble NGT Order, the "SAMEER" app shall be procured by PCBA for easy access of air quality data by the public. The App shall be used for public compliant redressal system as well as public awareness.

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Construction Activities-						
7.	Construction Activities-	Ensure transportation of construction materials in covered vehicles	Short-term	October 2019 (Continuou s)	Urban local bodies	Already enforced by Urban Local Bodies
		Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	Short-term	October 2019 (Continuou s)	Urban local bodies	Proper implementation of construction and demolition waste management Rules, 2016. PCBA has already issued public notices and directions to ULBs
		Restriction on storage of construction materials along the road.	Short-term	October 2019 (Continuou s)	Urban local bodies	Unloading of building materials in the roads is already prohibited by ULBs
Miscellaneous-						
8.	Other steps	Set-up and publicize helpline in PCBA HQ for complaints against reported non-compliance	short-term	December 2019	Pollution Control Board, Assam	Sameer App developed by CPCB shall be procured. Currently public can make complaints through PCBA's web portal.
		Monitoring of DG sets and action against violations	short-term	October 2019 (Continuou s activity)		Monitoring carried out by PCBA

Name of the City/Town: Nagaon

Air Pollution concerns: PM₁₀

Action to reduce Vehicular Pollution:						
Sl. No	Source Group	Control Option	Implementation period (Short/Mid/Long term)	Time Target for implementation	Responsible Agencies	Any other information
1.	Vehicles	i. Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department , Gov. of Assam Pollution Control Board, Assam	<ul style="list-style-type: none"> • PCBA along with the District Transport Department has conducted a joint public awareness drive at different locations of the city to know and disseminate the status of vehicular emission levels of different types of vehicles plying on the road along with the ambient noise level. • Leaflets and flyers about the rising trend of vehicular pollution, air pollution and noise pollution were also distributed to the public. • This programme shall be conducted on regular basis in collaboration

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					with the Transport Department.
	ii. Auditing and reform of Pollution Under Control (PUC) certification Enforcement of PUC norms and link PUC certificates with annual vehicle insurance. Setting up of additional auto emission testing stations.	Short-term	March 2020	Transport Department, Gov. of Assam	Auto Emission Testing Stations throughout the state for periodical testing of the limit value of smoke emitted through motor vehicles engine and to issue necessary Pollution Under Control Certificate
	iii. widening of road and improvement of infrastructure for decongestion of road	Mid-term	December 2020	Public Works Dept. (Road), Urban Local Bodies, District Development Authority	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of Major District Roads (MDR) in the State.
	iv. Launch extensive drive against polluting vehicles which have completed 15 years for ensuring strict compliance and their stepwise phasing out from the road	Short-term	March, 2020	Transport Department, Gov. of Assam District Administration	The District Transport Department is regularly conducting drive against polluting vehicles to ensure strict compliance, Enforcement and implementation of Motor Vehicle Act, 1988 and Assam Motor Vehicle Rules, 2003.
	v. To intensify public transport system to reduce vehicle numbers from street surfaces.	Mid-term	September, 2020	Transport Department, Gov. of Assam, District Administration	

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		vi. Introduction of battery-operated/electric vehicles	Short-term	Already implemented	Transport Department, Gov. of Assam,	E-rickshaws already introduced in the city.
		vii. Prevent parking of vehicles in the non-designated areas	Short-term (Immediate)	October, 2019 (Continuous activity)	Traffic Police Department	The traffic personnel are being trained regularly for better management along with youths engaged by the Urban local Bodies in managing parking of vehicles
Control of Road dust generation-						
2.	Road Dust	i. creation of green buffers along the traffic corridors and their maintenance	Short-term	March, 2020	Forest Department, Govt. of Assam with the help of National Highway Authority of India and Public Works Department (Road), Assam	The plantations in the road medians have already been started. The Medians are being modified to facilitate Plantations.
		ii. Ensure carriage of construction materials in closed/covered vessels	Short-term (Immediate)	October, 2019	Public Works Dept. (Road) & Urban Local Bodies	All the ULBs have been directed to ensure proper implementation of Construction and Demolition Waste Management Rules, 2016

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		iii. Necessary changes in bye-laws- Greening of open areas, gardens, community places, schools and housing societies	Mid-term	December 2020	District Development Authority & Forest Department, Assam	Changes to be made in bye-laws for a minimum compulsory green area in all public and private establishments.
		iv. Black-topping of unpaved road including pavement of road shoulders	short-term	October 2019 (Continuous activity)	Public Works Dept. (Road)	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
		v. Minimize earth cutting from the hills to prevent dust generation.	short-term	October 2019 (Continuous activity)	Forest Dept. /District Administration	
		vi. Regular cleaning of street surfaces and spraying of water to suppress dust.	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies	The city is regularly being cleaned manually by the workers engaged under the Urban Local Body (ULB).
		vii. Maintain potholes free roads for free flow of traffic	Short-term (Immediate)	October 2019(continuous activity)	Public Works Dept. (Road), Assam	The maintenance work of roads is continuously being done.
		viii. Immediate lifting of solid waste generated from disilting and cleaning of municipal drains for its disposal	Short term (Immediate)	October 2019(continuous activity)	Urban local bodies	

Open Burning						
3.	Biomass and Garbage burning	i. Regular check and control of burning of municipal solid wastes	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies	Implement provisions of Solid Waste Management Rules 2016.
		ii. To stop open burning of garbage as this process pollutes the environment. Defaulters may be imposed fines.	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies & District Administration,	PCBA has already issued directions to Urban Local Bodies to ensure prohibition of littering and open garbage burning.
Industries-						
4.	Industries	i. To intensify enforcement of acts and rules to prevent industrial emission and compliance of emission standards by the industries.	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam,	Ensuring installation and operation of air pollution control devices in industries. Installation of online emission monitoring system has been made mandatory in all 17 categories of industries. All air polluting industries are inspected regularly by PCBA.
		ii. Action against non-complying industrial units	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam/ Department of	Proper framework will be prepared for imposition of Environmental compensation from non-complying

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					Industries, Govt. of Assam	industries.
Air Quality Monitoring Network						
5.	Strengthening of Air Quality Monitoring Network	i. Expansion of Air Quality Monitoring stations	Long-term	March, 2021	Pollution Control Board, Assam	In addition to the existing NAMP station, PCBA shall operate additional 2 (two) nos. of NAMP stations and one CAAQMS at suitable locations in the city.
		ii. Research studies including air pollution inventory source apportionment, health impact studies, exposure impacts and other relevant studies	Long-term	December, 2020		PCBA has signed Memorandum of Understanding (MoU) with Indian Institute of Technology, Guwahati to carry out research and source apportionment studies.
Domestic Fuels						
6	Domestic Fuels	i. Increasing LPG connections in low income strata.	Short-term	Already implemented		Under Pradhan Mantri Ujjwala Yojana, most of the households have been provided with LPG connections. Many other Government schemes are also implemented to ensure free connection of LPG to all the sections of

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						the society.
		ii. Ensuring promotion and use of cleaner fuel (i.e. LPG) instead of coal fired chulas or fire-woods in the hotels and open spaces	Short-term	April 2020	Local Urban local bodies & District Administration	Awareness programs and regulation of use of coal and firewood to be carried out
		iii. Introduce schemes for providing LPG connections to small tea vendors/hawkers using kerosene stoves in order to reduce emissions from burning of kerosene.	Long-term	November 2021	Local Urban local bodies & District Administration	Government shall look into options and possibilities for financing and subsidizing LPG connections to small vendors.
Awareness generation-						
6.	Public Awareness	i. Dissemination of Air Quality Index to the public through website and other media (on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	Short-term	Already implemented	Pollution Control Board, Assam	The Air Quality Data is regularly updated in the official website.
		ii. Involvement of schools and academic institutions in awareness	short-term	April, 2020		Every year on the occasion of World Environment Day, PCBA organizes

		program				awareness programmers by conducting drawing competition among the various age groups of students, carrying out plantation drives in schools/institutions well as selecting a model school/academy to organize Environment Day. Pamphlets, leaflets/flyers and plant saplings are also distributed to the students.
		iii. To launch a mobile app to update public about the status of air quality of the area	Short-Term	December, 2019		In compliance to Hon'ble NGT Order, the "SAMEER" app shall be procured by PCBA for easy access of air quality data by the public. The App shall be used for public compliant redressal system as well as public awareness.
Construction Activities-						
7.	Construction Activities-	i. Ensure transportation of construction materials in covered vehicles	Short-term	October 2019 (Continuou s)	Urban local bodies	Already enforced by Urban Local Bodies
		ii. Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	Short-term	October 2019 (Continuou s)	Urban local bodies	Proper implementation of construction and demolition waste management Rules, 2016. PCBA has already issued public notices and

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						directions to ULBs
		iii. Restriction on storage of construction materials along the road.	Short-term	October 2019 (Continuou s)	Urban local bodies	Unloading of building materials in the roads is already prohibited by ULBs
Miscellaneous-						
8.	Other steps	i. Set-up and publicize helpline in PCBA HQ for complaints against reported non-compliance	short-term	December 2019	Pollution Control Board, Assam	Sameer App developed by CPCB shall be procured. Currently public can make complaints through PCBA's web portal.
		ii. Monitoring of DG sets and action against violations	short-term	October 2019 (Continuou s activity)		Monitoring carried out by PCBA

Name of the City/Town: **Silchar**Air Pollution concerns: **PM₁₀****Action to reduce Vehicular Pollution:**

Sl. No	Source Group	Control Option	Implementation period (Short/Mid/Long term)	Time Target for implementation	Responsible Agencies	Any other information
1.	Vehicles	i. Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department , Gov. of Assam Pollution Control Board, Assam	<ul style="list-style-type: none"> PCBA along with the District Transport Department has conducted a joint public awareness drive at different locations of the city to know and disseminate the status of vehicular emission levels of different types of vehicles plying on the road along with the ambient noise level. Leaflets and flyers about the rising trend of vehicular pollution, air pollution and noise pollution were also distributed to the public. This programme shall be conducted on regular basis in collaboration with the

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					Transport Department.
ii.	Auditing and reform of Pollution Under Control (PUC) certification Enforcement of PUC norms and link PUC certificates with annual vehicle insurance. Setting up of additional auto emission testing stations.	Short-term	March 2020	Transport Department , Gov. of Assam	Auto Emission Testing Stations throughout the state for periodical testing of the limit value of smoke emitted through motor vehicles engine and to issue necessary Pollution Under Control Certificate
iii.	widening of road and improvement of infrastructure for decongestion of road	Mid-term	December 2020	Public Works Dept. (Road), Urban Local Bodies, District Development Authority	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of Major District Roads (MDR) in the State.
iv.	Launch extensive drive against polluting vehicles which have completed 15 years for ensuring strict compliance and their stepwise phasing out from the road	Short-term	March, 2020	Transport Department , Gov. of Assam District Administration	The District Transport Department is regularly conducting drive against polluting vehicles to ensure strict compliance, Enforcement and implementation of Motor Vehicle Act, 1988 and Assam Motor Vehicle Rules, 2003.
v.	To intensify public transport system to reduce vehicle numbers from street surfaces.	Mid-term	September, 2020	Transport Department , Gov. of Assam, District Administration	<ul style="list-style-type: none"> •15 electric buses procured under FAME (Faster Adoption and Manufacturing of Hybrid and Electric

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						<p>Vehicles) scheme are ready to be introduced.</p> <ul style="list-style-type: none"> •Under the second phase of FAME scheme, the Central government has sanctioned 100 more electric buses to Assam. 25 of which has been allotted for Silchar.
		vi. Introduction of battery-operated/electric vehicles	Short-term	Already implemented	Transport Department, Gov. of Assam,	E-rickshaws already introduced in the city.
		vii. Prevent parking of vehicles in the non-designated areas	Short-term	October, 2019 (Continuous Activity)	Traffic Police Department	The traffic personnel are being trained regularly for better management along with youths engaged by the Urban local Bodies in managing parking of vehicles
Control of Road dust generation-						
2.	Road Dust	i. Creation of green buffers along the traffic corridors and their maintenance	Short-term	March, 2020	Forest Department, Govt. of Assam with the help of National Highway Authority of India and Public Works Department	The plantations in the road medians have already been started. The Medians are being modified to facilitate Plantations.

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				(Road), Assam	
ii.	Ensure carriage of construction materials in closed/covered vessels	Short-term	October, 2019	Public Works Dept. (Road) & Urban Local Bodies	All the ULBs have been directed to ensure proper implementation of Construction and Demolition Waste Management Rules, 2016
iii.	Necessary changes in bye-laws- Greening of open areas, gardens, community places, schools and housing societies	Mid-term	December 2020	District Development Authority & Forest Department, Assam	Changes to be made in bye-laws for a minimum compulsory green area in all public and private establishments.
iv.	Black-topping of unpaved roads including pavement of road shoulders	short-term	October 2019 (Continuous activity)	Public Works Dept. (Road)	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
v.	Minimize earth cutting from the hills to prevent dust generation.	short-term	October 2019 (Continuous activity)	Forest Dept. /District Administration	The District administration has issued notification to temporarily ban all kinds of earth cutting across the district.
vi.	Regular cleaning of street surfaces and spraying of water to suppress dust.	Short-term (Immediate)	October 2019(continuous activity)	Local Urban local bodies	The city is regularly being cleaned manually by the workers engaged under the Urban Local Body (ULB).

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		vii. Maintain potholes free roads for free flow of traffic	Short-term (Immediate)	October 2019(continuous activity)	Public Works Dept. (Road), Assam	The maintenance work of roads is continuously being done.
		viii. Immediate lifting of solid waste generated from disilting and cleaning of municipal drains for its disposal	Short term (Immediate)	October 2019 (continuous activity)	Urban Local Bodies	
Open Burning						
3.	Biomass and Garbage burning	i. Regular check and control of burning of municipal solid wastes	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies	Implement provisions of Solid Waste Management Rules 2016.
		ii. To stop open burning of garbage as this process pollutes the environment. Defaulters may be imposed fines.	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies& District Administration,	PCBA has already issued directions to Urban Local Bodies to ensure prohibition of littering and open garbage burning.
Industries-						
4.	Industries	iii. To intensify enforcement of acts and rules to prevent industrial emission	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam,	Ensuring installation and operation of air pollution control devices in industries.

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		and compliance of emission standards by the industries.				Installation of online emission monitoring system has been made mandatory in all 17 categories of industries. All air polluting industries are inspected regularly by PCBA.
		iv. Action against non-complying industrial units	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam/ Department of Industries, Govt. of Assam	Actions are already taken against non-complying industries. Proper framework will be prepared for imposition of Environmental compensation from non-complying industries.
Air Quality Monitoring Network						
5.	Strengthening of Air Quality Monitoring Network	i. Expansion of Air Quality Monitoring stations	Long-term	March, 2021	Pollution Control Board, Assam	In addition to the existing 2 nos. of NAMP station, PCBA shall operate additional 1 (one) no. of NAMP station and one CAAQMS at suitable locations in the city.

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		ii. Research studies including air pollution inventory source apportionment, health impact studies, exposure impacts and other relevant studies	Long-term	December, 2020		PCBA has signed Memorandum of Understanding (MoU) with Indian Institute of Technology, Guwahati to carry out research and source apportionment studies.
Domestic Fuels						
6	Domestic Fuels	i. Increasing LPG connections in low income strata.	Short-term	Already implemented		Under Pradhan Mantri Ujjwala Yojana, most of the households have been provided with LPG connections. Many other Government schemes are also implemented to ensure free connection of LPG to all the sections of the society.
		ii. Ensuring promotion and use of cleaner fuel (i.e. LPG) instead of coal fired chulas or firewoods in the hotels and open spaces	Short-term	April 2020	Local Urban local bodies & District Administration	Awareness programs and regulation of use of coal and firewood to be carried out

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		iii. Introduce schemes for providing subsidized LPG connections as well as finances to small tea vendors/hawkers using kerosene stoves in order to reduce emissions from burning of kerosene.	Long-term	November 2021	Local Urban local bodies & District Administration	Government shall look into options and possibilities for financing and subsidizing LPG connections to small vendors.
Awareness generation-						
6.	Public Awareness	i. Dissemination of Air Quality Index to the public through website and other media (on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	Short-term	Already implemented		The Air Quality Data is regularly updated in the official website.
		ii. Involvement of schools and academic institutions in awareness program	short-term	April, 2020	Pollution Control Board, Assam	Every year on the occasion of World Environment Day, PCBA organizes awareness programmers by conducting drawing competition among the various age groups of students, carrying out plantation drives in schools/institutions well as selecting a model school/academy to organize Environment Day. Pamphlets, leaflets/flyers and plant saplings are

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						also distributed to the students.
		iii. To launch a mobile app to update public about the status of air quality of the area	Short-Term	December, 2019		In compliance to Hon'ble NGT Order, the "SAMEER" app shall be procured by PCBA for easy access of air quality data by the public. The App shall be used for public compliant redressal system as well as public awareness.
Construction Activities-						
7.	Construction Activities-	i. Ensure transportation of construction materials in covered vehicles	Short-term	October 2019 (Continuou s)	Urban local bodies	Already enforced by Urban Local Bodies
		ii. Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	Short-term	October 2019 (Continuou s)	Urban local bodies	Proper implementation of construction and demolition waste management Rules, 2016. PCBA has already issued public notices and directions to ULBs
		iii. Restriction on storage of construction materials along the road.	Short-term	October 2019 (Continuou s)	Urban local bodies	Unloading of building materials in the roads is already prohibited by ULBs
Miscellaneous-						

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8.	Other steps	i. Set-up and publicize helpline in PCBA HQ for complaints against reported non-compliance	short-term	December 2019	Pollution Control Board, Assam	Sameer App developed by CPCB shall be procured. Currently public can make complaints through PCBA's web portal.
		ii. Monitoring of DG sets and action against violations	short-term	October 2019 (Continuous activity)		Monitoring carried out by PCBA

Name of the City/Town: Sivsagar

Air Pollution concerns: PM₁₀

Action to reduce Vehicular Pollution:						
Sl. No	Source Group	Control Option	Implementation period (Short/Mid/Long term)	Time Target for implementation	Responsible Agencies	Any other information
1.	Vehicles	i. Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department , Gov. of Assam Pollution Control Board, Assam	<ul style="list-style-type: none"> PCBA along with the District Transport Department has conducted a joint public awareness drive at different locations of the city to know and disseminate the status of vehicular

						<p>emission levels of different types of vehicles plying on the road along with the ambient noise level.</p> <ul style="list-style-type: none"> • Leaflets and flyers about the rising trend of vehicular pollution, air pollution and noise pollution were also distributed to the public. • This programme shall be conducted on regular basis in collaboration with the Transport Department.
		<p>ii. Auditing and reform of Pollution Under Control (PUC) certification</p> <p>Enforcement of PUC norms and link PUC certificates with annual vehicle insurance. Setting up of additional auto emission testing stations.</p>	Short-term	March 2020	Transport Department, Gov. of Assam	Auto Emission Testing Stations throughout the state for periodical testing of the limit value of smoke emitted through motor vehicles engine and to issue necessary Pollution Under Control Certificate
		<p>iii. widening of road and improvement of infrastructure for decongestion of road</p>	Mid-term	December 2020	Public Works Dept. (Road), Urban Local Bodies, District Developme	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of

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					nt Authority	Major District Roads (MDR) in the State.
		iv. Launch extensive drive against polluting vehicles which have completed 15 years for ensuring strict compliance and their stepwise phasing out from the road	Short-term	March, 2020	Transport Department, Gov. of Assam District Administration	The District Transport Department is regularly conducting drive against polluting vehicles to ensure strict compliance, Enforcement and implementation of Motor Vehicle Act, 1988 and Assam Motor Vehicle Rules, 2003.
		v. To intensify public transport system to reduce vehicle numbers from street surfaces.	Mid -term	September, 2020	Transport Department, Gov. of Assam, District Administration	
		vi. Introduction of battery-operated/electric vehicles	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department, Gov. of Assam,	E-rickshaws already introduced in the city.
		vii. Prevent parking of vehicles in the non-designated areas	Short-term (Immediate)	October, 2019	Traffic Police Department	The traffic personnel are being trained regularly for better management along with youths engaged by the Urban local Bodies in managing parking of vehicles
Control of Road dust generation-						
2.	Road Dust	i. creation of green buffers along the traffic corridors and	Short-term	March, 2020	Forest Department, Govt. of	The plantations in the

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	their maintenance			Assam with the help of National Highway Authority of India and Public Works Department (Road), Assam	road medians have already been started. The Medians are being modified to facilitate Plantations.
	ii. Ensure carriage of construction materials in closed/ covered vessels	Short-term	October, 2019	Public Works Dept. (Road) & Urban Local Bodies	All the ULBs have been directed to ensure proper implementation of Construction and Demolition Waste Management Rules, 2016
	iii. Necessary changes in bye-laws-Greening of open areas, gardens, community places, schools and housing societies	Mid-term	December 2020	District Development Authority & Forest Department, Assam	Changes to be made in bye-laws for a minimum compulsory green area in all public and private establishments.
	iv. Black-topping of unpaved road including pavement of road shoulders	short-term	October 2019 (Continuous activity)	Public Works Dept. (Road)	The Assam State Roads Project is implemented by the Public Works Roads Department (PWRD) through the Assam State Road Board (ASRB) for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
	v. Minimize earth cutting from the hills to prevent dust generation.	short-term	October 2019 (Continuous activity)	Forest Dept. /District Administration	The District administration has issued notification to temporarily ban all

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						kinds of earth cutting across the district.
		vi. Regular cleaning of street surfaces and spraying of water to suppress dust.	Short-term (Immediate)	October 2019(continuous activity)	Local Urban local bodies	The city is regularly being cleaned manually by the workers engaged under the Urban Local Body (ULB).
		vii. Maintain potholes free roads for free flow of traffic	Short-term (Immediate)	October 2019 (continuous activity)	Public Works Dept. (Road), Assam	The maintenance work of roads is continuously being done.
		viii. Immediate lifting of solid waste generated from disilting and cleaning of municipal drains for its disposal	Short term (Immediate)	October 2019 (continuous activity)	Urban Local Body	
Open Burning						
3.	Biomass and Garbage burning	i. Regular check and control of burning of municipal solid wastes	Short-term (Immediate)	October 2019 (continuous activity)	Local Urban local bodies	Implement provisions of Solid Waste Management Rules 2016.
		ii. To stop open burning of garbage as this process pollutes the environment. Defaulters may be imposed fines.	Short-term (Immediate)	October 2019(continuous activity)	Local Urban local bodies& District Administration,	PCBA has already issued directions to Urban Local Bodies to ensure prohibition of littering and open garbage burning.

Industries-						
4.	Industries	i. To intensify enforcement of acts and rules to prevent industrial emission and compliance of emission standards by the industries.	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam,	Ensuring installation and operation of air pollution control devices in industries. Installation of online emission monitoring system has been made mandatory in all 17 categories of industries. All air polluting industries are inspected regularly by PCBA.
		ii. Action against non-complying industrial units	Short-term (Immediate)	October 2019 (continuous activity)	Pollution Control Board, Assam/ Department of Industries, Govt. of Assam	Proper framework will be prepared for imposition of Environmental compensation from non-complying industries.
Air Quality Monitoring Network						
5.	Strengthening of Air Quality Monitoring Network	i. Expansion of Air Quality Monitoring stations	Long-term	March, 2021	Pollution Control Board, Assam	In addition to the existing 2 nos. of NAMP station, PCBA shall operate additional 1 (one) no. of NAMP station and one CAAQMS at suitable locations in the city.

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		ii. Research studies including air pollution inventory source apportionment, health impact studies, exposure impacts and other relevant studies	Long-term	December, 2020		PCBA has signed Memorandum of Understanding (MoU) with Indian Institute of Technology, Guwahati to carry out research and source apportionment studies.
Domestic Fuels						
6	Domestic Fuels	i. Increasing LPG connections in low income strata.	Short-term	Already implemented		Under Pradhan Mantri Ujjwala Yojana, most of the households have been provided with LPG connections. Many other Government schemes are also implemented to ensure free connection of LPG to all the sections of the society.
		ii. Ensuring promotion and use of cleaner fuel (i.e. LPG) instead of coal fired chulas or firewoods in the hotels and open spaces	Short-term	April 2020	Local Urban local bodies & District Administration	Awareness programs and regulation of use of coal and firewood to be carried out
		iii. Introduce schemes for providing subsidized LPG connections as well as finances to small tea vendors/hawkers using kerosene stoves in order to reduce emissions from burning of kerosene.	Long-term	November 2021	Local Urban local bodies & District Administration	Government shall look into options and possibilities for financing and subsidizing LPG connections to small vendors.

Awareness generation-						
6.	Public Awareness	i. Dissemination of Air Quality Index to the public through website and other media (on maximum weekly basis for manually operated monitoring stations and real time basis for continuous monitoring stations)	Short-term	Already implemented	Pollution Control Board, Assam	The Air Quality Data is regularly updated in the official website.
		ii. Involvement of schools and academic institutions in awareness program	short-term	April, 2020		Every year on the occasion of World Environment Day, PCBA organizes awareness programmers by conducting drawing competition among the various age groups of students, carrying out plantation drives in schools/institutions well as selecting a model school/academy to organize Environment Day. Pamphlets, leaflets/flyers and plant saplings are also distributed to the students.
		iii. To launch a mobile app to update public about the status of air quality of the area	Short-Term	December, 2019		In compliance to Hon'ble NGT Order, the "SAMEER" app shall be procured by PCBA for easy access of air quality data by the public. The App shall be used for public compliant redressal system as well as public awareness.

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Construction Activities-						
7.	Construction Activities-	i. Ensure transportation of construction materials in covered vehicles	Short-term	October 2019 (Continuou s)	Urban local bodies	Already enforced by Urban Local Bodies
		ii. Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	Short-term	October 2019 (Continuou s)	Urban local bodies	Proper implementation of construction and demolition waste management Rules, 2016. PCBA has already issued public notices and directions to ULBs
		iii. Restriction on storage of construction materials along the road.	Short-term	October 2019 (Continuou s)	Urban local bodies	Unloading of building materials in the roads is already prohibited by ULBs
Miscellaneous-						
8.	Other steps	i. Set-up and publicize helpline in PCBA HQ for complaints against reported non-compliance	short-term	December 2019	Pollution Control Board, Assam	Sameer App developed by CPCB shall be procured. Currently public can make complaints through PCBA's web portal.
		ii. Monitoring of DG sets and action against violations	short-term	October 2019 (Continuou s activity)		Monitoring carried out by PCBA

Various Air Pollution Control Options Considered In the Five-towns Source Apportionment Studies

Evaluation of Emission Control options

Sl. No	Source Group	Control Option	Expected reduction and impacts	Technical feasibility	Requirement of Financial resources	Implementation period (Short/Mid/Long term)	Time Target for implementation	Responsible Agencies
1.	Vehicles	Launch public awareness campaign for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline, etc.	Medium	Yes	Rs.7.0 lacs/ exhaust gas analyser for each non-attainment city (Total- 35 Lacs)	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department, Gov. of Assam Pollution Control Board, Assam
		Auditing and reform of Pollution Under Control (PUC) certification Enforcement of PUC norms and link PUC certificates with annual vehicle insurance. Setting up	Medium	Yes	No separate budget required, as it is a part of ongoing process	Short-term	March 2020	Transport Department, Gov. of Assam

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		of additional auto emission testing stations.						
		widening of road and improvement of infrastructure for decongestion of road	Medium	Yes	No separate Budget required	Mid-term	December 2020	Public Works Dept. (Road), Urban local bodies and development authorities
		Launch extensive drive against polluting vehicles which have completed 15 years for ensuring strict compliance and their stepwise phasing out from the road	High	Yes	No separate budget needs to be sanctioned for implementation of Action plans.	Short-term	March, 2020	Transport Department, Gov. of Assam District Administration
		To intensify public transport system to reduce vehicle numbers from street surfaces.	High	Yes	Already included in annual action plan of Transport Department	Mid-term	September, 2020	Transport Department, Gov. of Assam, District Administration
		Introduction of battery-operated/electric vehicles in Guwahati city	Medium	Yes	Funds already provided by Central Government	Short-term	December 2019 (the activity shall Continue thereafter)	Transport Department, Gov. of Assam,
		Prevent	Medium	Yes	NIL	Short-term	October, 2019	Superinten

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		parking of vehicles in the non-designated areas	Medium					Chief Officer of Police
		To encourage non-motorized transport by introducing cycle tracks along with the roads	Medium	Yes	Shall be ascertained after conducting preliminary study	Long-term	December 2022	Public Works Dept. (Road) Guwahati Metropolitan Development Authority (GMDA) & Guwahati Municipal Corporation (GMC)
2.	Road Dust	creation of green buffers along the traffic corridors and their maintenance	High	Yes	Total Rs. 22 Lakhs (@Rs. 880 per plantation & maintenance cost) per city	Mid-term	April 2020	Forest Department, Govt. of Assam, National Highway Authority of India and Public Works Department (Road), Assam
		Ensure carriage of construction materials in closed/covered vessels	Medium	Yes	NIL	Short-term	October 2019 (Continuous activity)	Urban Local Bodies, District Administration
		Necessary changes in bye-laws-Greening of open areas, gardens,	High	Yes	NIL	Mid-term	December 2020	Urban Local Bodies & Forest Department

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		community places, schools and housing societies						t, Assam
		Black-topping of metalled road including pavement of road shoulders	High	Yes	No separate budget required for the action plan	short-term	October 2019 (Continuous activity)	Public Works Dept. (Road)
		Minimize earth cutting from the hills to prevent dust generation.	High	Yes	-	short-term	October 2019 (Continuous activity)	Forest Dept. /District Administration
		Regular cleaning of street surfaces and spraying of water to suppress dust.	High	Yes	On-going process	Short-term	Immediate (continuous activity)	Urban Local Bodies
		Maintain potholes free roads for free flow of traffic	High	Yes	Already being carried out by PWD(R)	Short-term	Immediate (continuous activity)	Public Works Dept. (Road), Assam
3.	Biomass and Garbage burning	Regular check and control of burning of municipal solid wastes	High	Yes	Already being implemented, hence no separate budget allocation	Short-term	November, 2019 (Continuous Activity)	Urban local Bodies, District Administration
		To stop open burning of garbage as this process pollutes the environment . Defaulters	High	Yes	-	Short-term	November, 2019 (Continuous Activity)	Urban local Bodies, District Administration

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		may be imposed fines.						
		Ensuring promotion and use of cleaner fuel (i.e. LPG) instead of coal fired chulas or fire-woods in the hotels and open spaces	High	Yes	Rs. 5 Lakhs(for mass awareness)	Short-Term	March, 2020	Urban Local Bodies & District Administration, Pollution Control Board, Assam
4.	Industries	To intensify enforcement of acts and rules to prevent industrial emission and compliance of emission standards by the industries.	High	Yes	Carried out as routine work, hence, no separate budget allocation	Short-term	October, 2019 Immediate(cont inuous activity)	Pollution Control Board, Assam,
		Action against non-complying industrial units	High	Yes	NIL	Short-term	October, 2019 Immediate(cont inuous activity)	Pollution Control Board, Assam/ Industry Dept.
5.	Strengthening of Air Quality Monitoring Network	Expansion of Air Quality Monitoring stations (PCBA operates 23 NAMP stations all over the State)- Installation of additional	High	Yes	Rs. 1.2 Crore per station (Total proposed 8 nos. of CAAQM stations), Operational and Maintenance cost per station –	Long-term	March, 2021	Pollution Control Board, Assam

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		CAAQM Stations at suitable location within the city (proposed) ; One such station is being operated at Head Office building of PCBA, Bamunimaidam			Rs.20 Lacs/year Total=Rs. 11.2 Cr			
		Research studies including air pollution inventory source apportionment, health impact studies, exposure impacts and other relevant studies	Medium	Yes	Rs.2 Crore (Salary support for manpower and sophisticated instruments)	Long-term	December, 2020	
6.	Public Awareness	Dissemination of Air Quality Index to the public through website and other media (on Maximum weekly basis for manually operated monitoring stations and real time Basis for continuous monitoring	Medium	Yes	Carried out as routine work, hence, no separate budget allocation	short-term	Already implemented	Pollution Control Board, Assam

Action plan for control of Air pollution in Non-Attainment Cities of Assam

		stations)						
		To launch a mobile app to update public about the status of air quality of the area	Medium	Yes	Rs.5 Lacs	Short-term	December, 2019	
		Involvement of schools and academic institutions in awareness program	High	Yes	Rs. 1 lac/non-attainment city (Total- Rs. 5 lakhs)	Short-term	April, 2020	
7.	Domestic Fuel	Increasing the LPG connections in low income strata.	Low	Yes	Government schemes already been implemented	Short-term	March, 2020	
		Ensuring promotion and use of cleaner fuel (i.e. LPG) instead of coal fired chulas or fire-woods in the hotels and open spaces	Low	Yes		Short-Term	March, 2019	District Administration, PCBA
		To reduce emission load from burning of kerosene stoves by the small tea vendors/hawkers.	Low	Yes	Rs.25 Lacs	Long-term	November, 2021	Industries and Commerce Department
8.	Construction activities	Ensure transportation of construction	Medium	Yes	No separate budget required	Short-term	October, 2019 (continuous activity)	Urban local Bodies, District

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		materials in covered vehicles						Administration
		Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	Medium	Yes	No separate budget required	Short-term	October, 2019 (continuous activity)	
		Restriction on storage of construction materials along the road.	Medium	Yes	No separate budget required	Short-term	October, 2019 (continuous activity)	
9.	Other steps	Set-up and publicize helpline in PCBA HQ for complaints against reported non-compliance	Medium	Yes	Rs.3 Lacs annually	Short-term	December, 2019	Pollution Control Board, Assam
		Monitoring of DG sets to ensure only those DG sets that meet the standards are allowed to operate and action against violations	Medium	Yes	For Guwahati - Rs.20 Lacs/year and Rs.15 Lacs/year for other four non-attainment cities (Rs. 60Lacs annually)	Short-Term	October, 2019 (continuous activity)	

Total Budget required = Rs. 1308 Lakhs only

Monitoring mechanism for implementation:

Taking all the factors into consideration, Pollution Control Board Assam (PCBA) with the involvement and co-ordination of various agencies/organizations such as Forest Department, District Administration, Social Forestry, Transport Department, Power Department, Municipal Corporation, Public Works Department and Police (Traffic) Department shall implement the aforesaid action plan and periodically monitor the results and action taken accordingly.

Annexure- I**Status of Ambient Air Quality at Guwahati City**

Sl. No	Parameters	Annual Average Concentration (in $\mu\text{g}/\text{m}^3$)							Standards for Residential, Rural and other areas
		2011	2012	2013	2014	2015	2016	2017	
1	PM ₁₀	93.01	91.90	147.19	88.19	97.02	82.77	107.00	60 $\mu\text{g}/\text{m}^3$ Annual
2	SO ₂	6.92	6.85	8.35	6.75	6.52	6.70	7.00	50 $\mu\text{g}/\text{m}^3$ Annual
3	NO ₂	14.87	14.70	15.73	14.18	14.62	14.35	16.33	40 $\mu\text{g}/\text{m}^3$ Annual

Status of Ambient Air Quality at Sivasagar Town

Sl. No	Parameters	Annual Average Concentration (in $\mu\text{g}/\text{m}^3$)							Standards for Residential, Rural and other areas
		2011	2012	2013	2014	2015	2016	2017	
1	PM ₁₀	99.00	108.95	120.50	90.00	70.30	72.95	81.00	60 $\mu\text{g}/\text{m}^3$ Annual
2	SO ₂	5.85	6.75	6.75	6.15	6.25	8.20	8.50	50 $\mu\text{g}/\text{m}^3$ Annual
3	NO ₂	13.35	14.6	14.55	12.85	12.95	12.85	13.00	40 $\mu\text{g}/\text{m}^3$ Annual

Status of Ambient Air Quality at Silchar Town

Sl. No	Parameters	Annual Average Concentration (in $\mu\text{g}/\text{m}^3$)							Standards for Residential, Rural and other areas
		2011	2012	2013	2014	2015	2016	2017	
1	PM ₁₀	77.80	90.65	135.20	80.00	72.25	56.35	48.00	60 $\mu\text{g}/\text{m}^3$ Annual
2	SO ₂	5.80	5.80	7.05	5.95	6.05	6.10	6.50	50 $\mu\text{g}/\text{m}^3$ Annual
3	NO ₂	14.25	14.35	16.85	13.30	13.30	12.65	10.50	40 $\mu\text{g}/\text{m}^3$ Annual

Status of Ambient Air Quality at Nalbari Town

Sl. No	Parameters	Annual Average Concentration (in $\mu\text{g}/\text{m}^3$)							Standards for Residential, Rural and other areas
		2011	2012	2013	2014	2015	2016	2017	
1	PM ₁₀	95.00	82.00	140.00	76.00	120.00	106.70	94.00	60 $\mu\text{g}/\text{m}^3$ Annual
2	SO ₂	6.70	5.80	6.00	7.20	6.60	7.10	6.00	50 $\mu\text{g}/\text{m}^3$ Annual
3	NO ₂	15.80	15.00	15.10	16.90	15.00	17.00	16.00	40 $\mu\text{g}/\text{m}^3$ Annual

Status of Ambient Air Quality at Nagaon Town

Sl. No	Parameters	Annual Average Concentration (in $\mu\text{g}/\text{m}^3$)							Standards for Residential, Rural and other areas
		2011	2012	2013	2014	2015	2016	2017	
1	PM ₁₀	86.00	79.00	132.00	100.00	137.00	56.35	71.00	60 $\mu\text{g}/\text{m}^3$ Annual
2	SO ₂	5.80	5.80	7.05	5.95	6.05	6.10	7.00	50 $\mu\text{g}/\text{m}^3$ Annual
3	NO ₂	14.25	14.35	16.85	13.3	13.30	12.65	16.00	40 $\mu\text{g}/\text{m}^3$ Annual

Guwahati city consists of six NAMP stations namely; Head Office at Bamunimaidam, Gauhati University, Shantipur, ITI at Gopinath Nagar, Boragaon and Khanapara; two NAMP stations in Sivasagar town which are located at the Office Building and ONGCL complex; Silchar consists of two stations i.e. Office Building and Janiganj respectively whereas Nalbari and Nagaon town has one NAMP station each. The total number of monitoring days in the non-attainment cities/towns during the year 2016, 2017 and number of days exceeding the 24 Hour average limit of PM₁₀ prescribed by NAAQMS are shown in the table below:

Table:

Name of Non-attainment cities/Station		2016			2017		
		Total nos. of monitoring days	Number of days exceeding the 24 hr avg. standard of PM 10 i.e. 100 µg/m ³	Number of days exceeding the Annual avg. standard of PM 10 i.e. 60 µg/m ³	Total nos. of monitoring days	Number of days exceeding the 24 hr avg. standard of PM 10 i.e. 100 µg/m ³	Number of days exceeding the Annual avg. standard of PM 10 i.e. 60 µg/m ³
Guwahati	Head Office, Bamunimaidam	212	145	200	147	54	132
	Gauhati University	218	176	206	135	51	97
	Shantipur	219	193	214	144	62	124
	ITI, Gopinath Nagar	220	217	217	146	78	134
	Boragaon	201	148	192	136	57	98
	Khanapara, Central Dairy Complex	220	206	214	147	56	110
Sivasagar	Office Building	104	22	45	104	12	67
	ONGCL	104	68	84	104	38	92
Silchar	Office Building	96	28	41	93	-	82
	Janiganj	96	49	37	93	-	90
Nalbari		104	72	104	98	27	59
Nagaon		55	26	54	80	15	19

Annexure-II

MONTHLY TREND OF AIR QUALITY INDEX (AQI) OF NON-ATTAINMENT CITY/TOWNS OF ASSAM

a) Guwahati city

Yr	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
2011	141	134	141	92	68	54	38	45	53	79	106	101
2012	93	124	127	71	68	39	50	37	56	88	131	141
2013	143	141	163	129	121	137	117	114	111	105	111	146
2014	151	142	127	111	65	51	42	49	48	55	71	64
2015	69	107	162	147	92	72	66	70	71	75	79	94
2016	118	137	161	96	86	80	74	69	68	71	98	113
2017	120	161	164	114	94	85	59	60	69	70	87	117

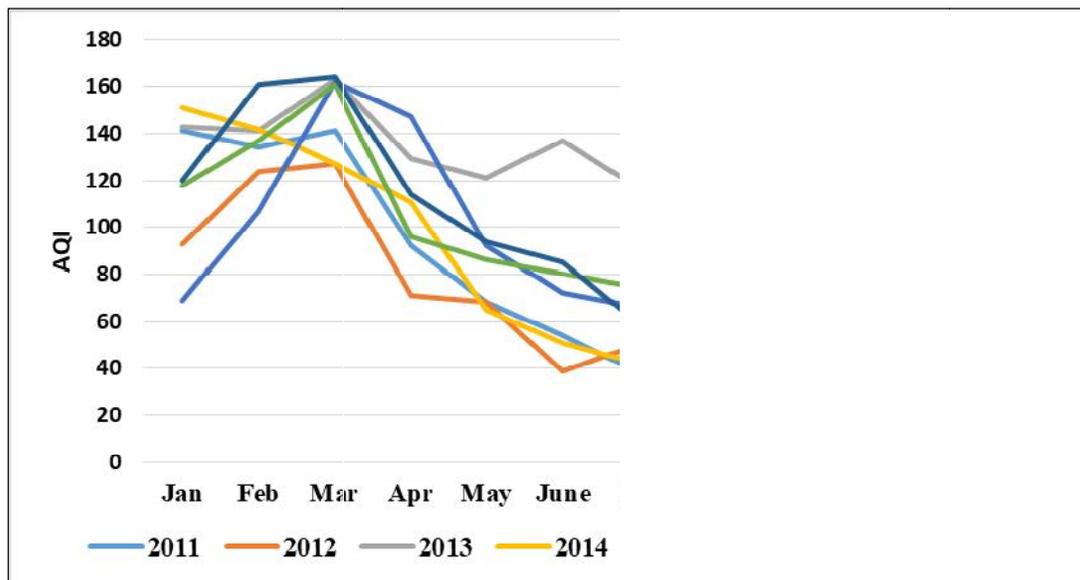


Fig a): Trend of Air Quality Index of Guwahati city during 2011-2017

b) Sivasagar Town

Yr.	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
2011	163	150	88	91	84	54	48	44	54	91	117	137
2012	117	142	105	77	57	77	86	112	88	101	119	159
2013	180	145	138	71	87	101	84	83	93	107	122	130
2014	135	129	123	111	85	87	77	62	70	108	101	88
2015	82	83	84	72	72	62	61	59	60	59	81	68
2016	98	83	70	66	103	83	61	65	66	54	76	88
2017	145	145	79	74	74	70	65	67	65	68	69	83

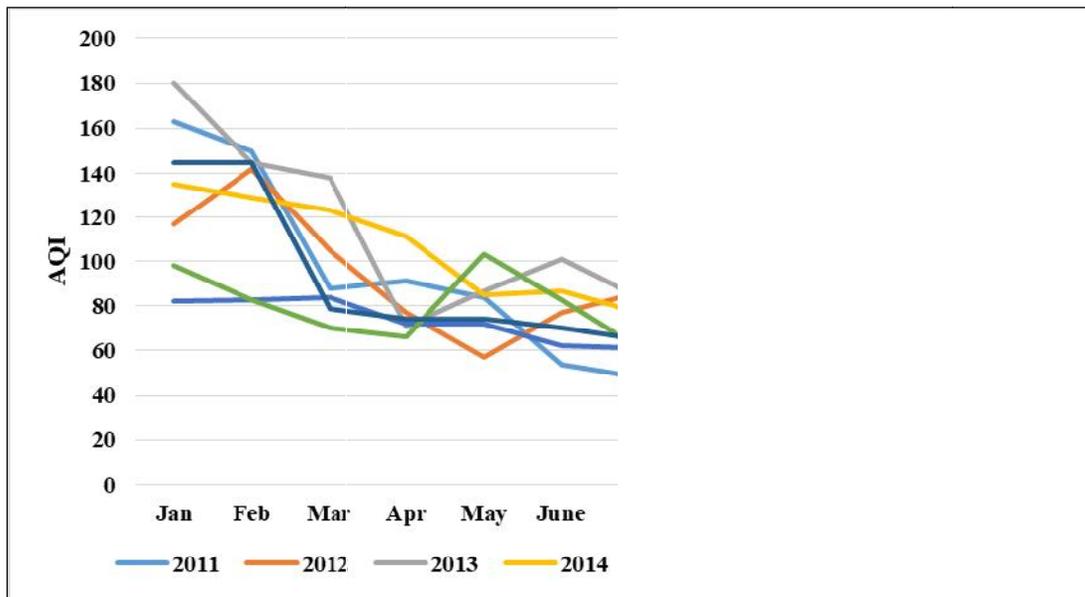


Fig b): Trend of Air Quality Index of Sivasagar Town during 2011-2017

c) Silchar Town

Yr.	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
2011	108	123	115	91	61	62	61	34	40	47	72	102
2012	77	111	124	88	80	61	61	59	47	69	115	147
2013	127	134	159	141	135	131	141	107	85	103	99	115
2014	81	105	78	71	77	74	68	75	84	71	80	89
2015	71	71	88	78	71	66	66	60	62	62	77	94
2016	79	74	75	66	51	40	42	48	48	47	52	55
2017	53	51	51	47	50	43	41	46	41	47	51	52

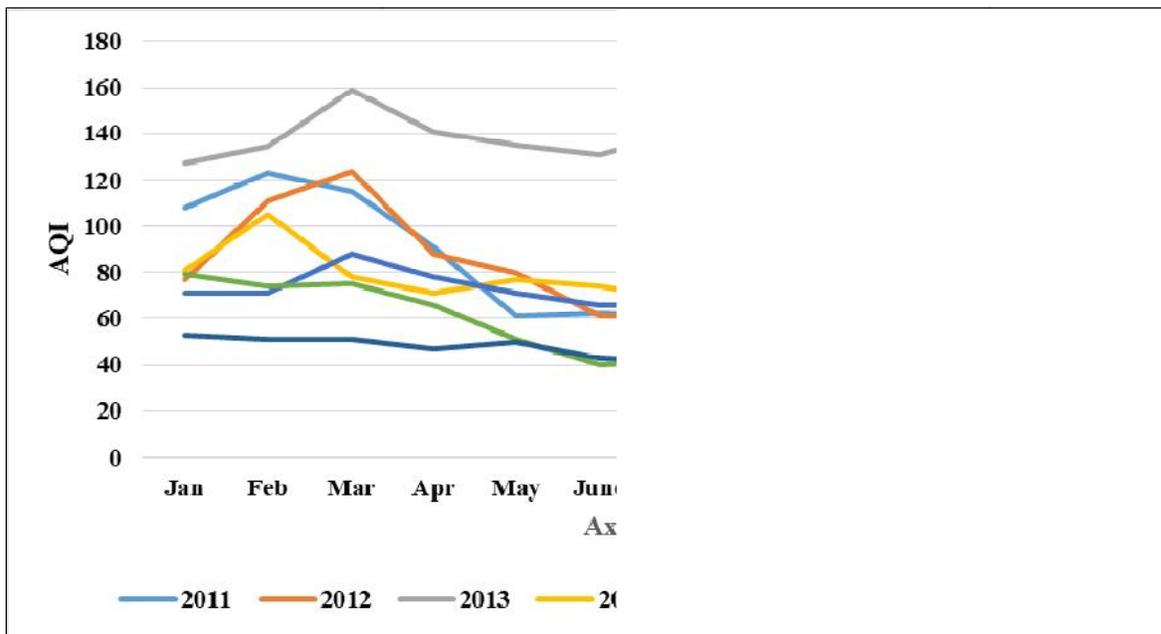


Fig c): Trend of Air Quality Index of Silchar Town during 2011-2017

d) Nagaon Town

Yr.	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
2011	127	139	146	90	79	44	46	39	41	74	105	100
2012	92	34	119	65	78	38	31	38	41	77	127	151
2013	139	126	141	137	104	120	106	111	108	92	135	130
2014	143	173	120	111	72	39	42	63	-	89	76	57
2015	61	102	163	179	203	147	0	114	-	127	103	105
2016	103	154	122	82	82	54	-	-	-	-	-	-
2017	-	-	124	89	59	57	42	60	35	50	80	118

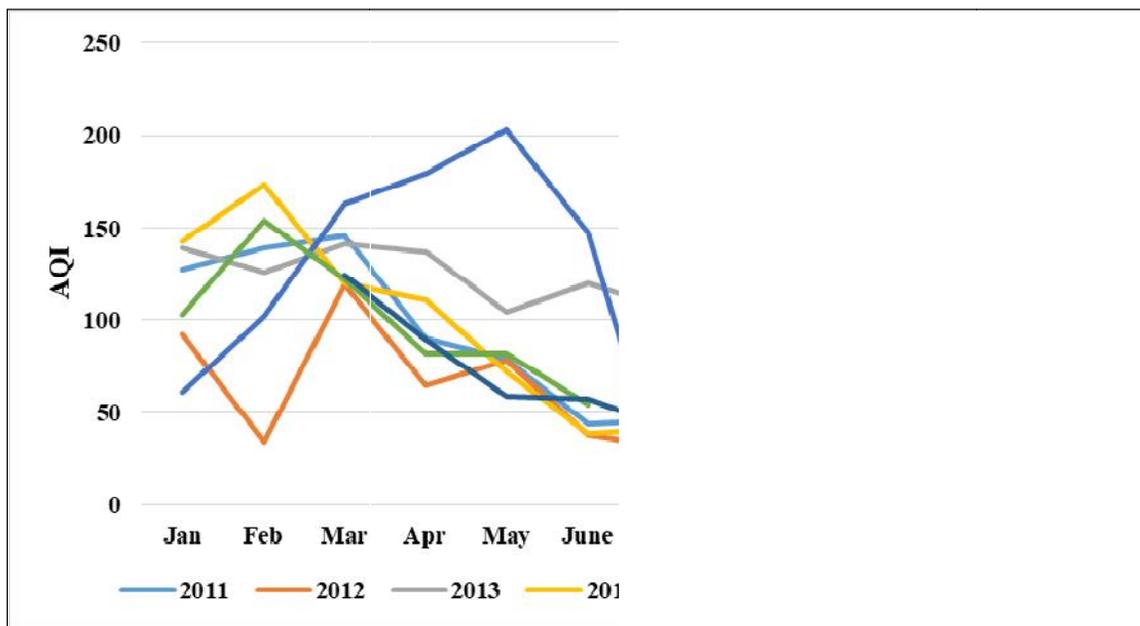


Fig d): Trend of Air Quality Index of Nagaon Town during 2011-2017

e) Nalbari Town

Yr.	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
2011	127	138	124	68	58	60	46	60	42	94	110	102
2012	115	67	116	48	66	35	48	40	50	85	115	149
2013	174	125	160	119	125	160	108	134	110	73	99	106
2014	115	123	102	103	81	62	50	44	42	48	66	62
2015	79	103	141	149	115	109	108	103	109	123	115	106
2016	127	138	124	68	58	60	46	60	42	94	110	102
2017	115	67	116	48	66	35	48	40	50	85	115	149

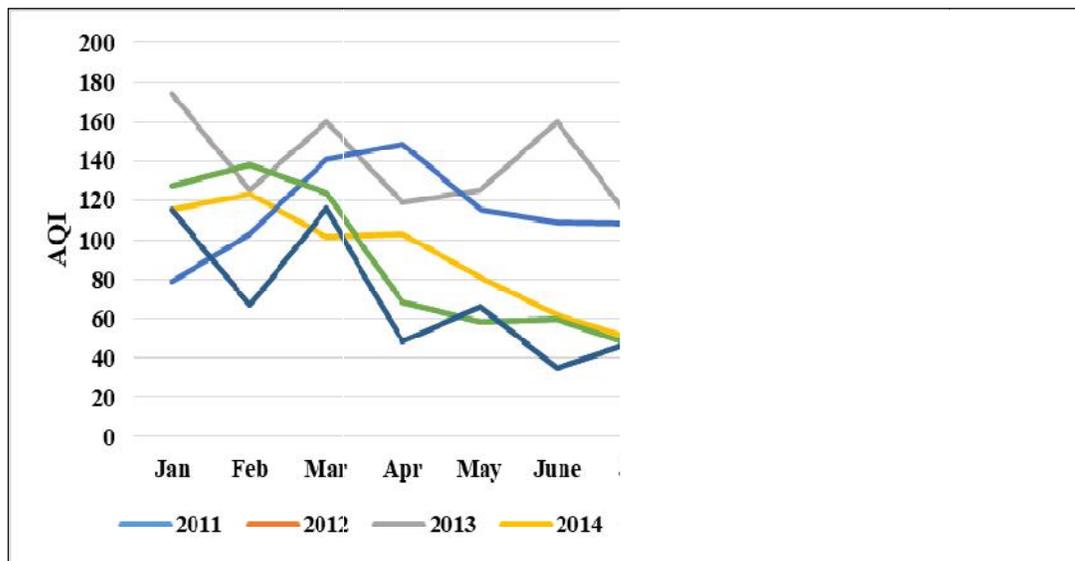


Fig e): Trend of Air Quality Index of Nalbari Town during 2011-2017