

**ACTION PLAN FOR CONTROL OF AIR POLLUTION
IN NON-ATTAINMENT CITY OF BIHAR
(Gaya)**



BY

**BIHAR STATE POLLUTION CONTROL BOARD
Parivesh Bhawan, Patliputra Industrial Area,
P.O.-Sadakat Ashram, Gaya-800 010**

Action Plan for Control of Air Pollution in Non-Attainment City of Bihar (Gaya)

Preamble:

Gaya, the Head Quarters of Magadh Division and Gaya district, is situated on banks of Flagu river at 24.75N latitude & 85.01E longitude and about 111m above sea level. It is spread over an area of 90.17 Sq km and has a population of 4,70,839 (Urban Agglomerations) as per census 2011. The Gaya agglomeration includes Gaya Municipal Corporation Area, Kaler (out growth) & Paharpur (census town) etc. Total no. of vehicles registered as on October 2018 in Gaya District with Transport Department is 3, 44,882 (Truck: 17429, Bus: 2318, Car: 14138, Taxi: 6240, Jeep: 8006, Three Wheeler: 23059, Two Wheeler: 251345, Tractor: 12561, Trailer 9467 and others: 319).





The major sources of air pollution in Gaya are road dust, vehicular emission, domestic fuel burning, open waste burning, construction activities, industrial emissions etc. Bihar State Pollution Control is regularly monitoring the ambient air quality at Gaya through Continuous Ambient Air Quality Monitoring Station (CAAQMS) installed at Collectorate campus.

Particulate Matter (PM₁₀ & PM_{2.5}) has been identified as main air pollutant as it is found above the prescribed national standards. This is mainly due to re-suspension of road dust, emission from vehicles, D.G. sets, construction activities, burning of domestic fossil fuels, open burning of solid wastes, transportation of construction materials such as sand, soil etc. without covering and emission from brick kilns located around Gaya. NO₂ also has been observed an alarming level. This is mainly due to vehicular emissions. Plying of old vehicles and traffic congestion causes higher level of NO₂. It has been observed that air quality of Gaya during winter season becomes very poor & severe due to condensation of fine particulate matter in the lower portions of the atmosphere.

Action Plan for Control of Air Pollution in Non-Attainment city of Bihar

1.	Name of the city	:	Gaya
2.	Air Pollution concerns	:	PM ₁₀ , PM _{2.5} , NO ₂
3.	Air pollution levels: (provide range of 24-houly average concentration values; annual average for past five years; No. days in various AQI categories)	:	Annexed as Annexure-1
4.	Months with high air pollution levels	:	January, February, November & December.

Sl. No	SECTOR	ACTION POINTS	Technology/Infras tructure requirement (TR/IR)/ Methods (M)/ Outcome (OC)	Implementation period (Short – 6 months, Med- <2 yrs.), long – (>2 yrs.)	Implementation agency	Time Target for Implementati on
1	Transportation	Restriction on plying and phasing out of 15 years old commercial diesel driven vehicles.	OC- Reduction In black carbon emissions M- Policy reforms	Medium	Transport Dept. Govt. of Bihar	December 2019
		Complete ban on 2-stroke autos and replacing them with EV or CNG based vehicle	TR—E-rickshaws OC—Reduction of emission load from autos	Medium		December-2019
			TR—CNG based autos OC—Reduction of emission load from autos			December-2020
		PUC check (every 6 months)	OC—With better PUC infrastructure and strict pollution norms emission from private and public vehicle will decrease	Medium		December-2021
		Better PUC check infrastructure and management (Hon'ble Supreme court of India in W.P.(C) no 13029/1985 that pollution testing centres should be set up with in premises of all petrol pumps)				
		Incentivising the use of cleaner fuels - electric vehicle and (CNG/LPG) for private vehicles	M—Proper infrastructure to increase adoption rate of cleaner fuels OC—Reduction of emission load from private vehicles	Medium		December-2020
		Installation of Diesel Particulate Filter (DPF) in all the diesel vehicles	TR—Installing DPF filters to existing diesel vehicles OC—Reduction of emission load from diesel vehicles	Medium		December-2020
		Good traffic management including re-direction	OC- Reduction in Emission due non congestion	Medium		Traffic police	December 2020

	of traffic movement to avoid congestion.	M- Policy intervention			
	Demarcated lanes for E rickshaw's plying for public commuting	OC- Reduction in Emission due non congestion M- Policy Intervention	Short	Traffic police	Immediate
	Development of multi-level parking facilities	OC- Traffic congestion reduction & road encroachment reduction will help in emission reduction M- Land space demarcation around public transportation hotspots	Long	Gaya Municipal Corporation (GMC)	December 2023
	Complete ban of carriage transport, heavy vehicles, during peak hours (8:00 -11:00 am & 5:00 - 8 pm). (Arranging alternate routes to all carriage transports between)	OC—Reduction in peak hour traffic will facilitate faster vehicle movement and reduce tail-pipe emission	Short	Traffic police	April 2019
	Launch drive against any vehicle with visible smoke coming out of it and ensure strict compliances	OC—Reduction in emission load from poorly maintained vehicle's tail pipe emission			
	Complete ban on on-road parking and encroachment removal from the roads	OC—Reduction in traffic congestion will facilitate faster vehicle movement and reduce tail-pipe emission	Alternate locations to park vehicles	Traffic police GMC	
	Monitoring of Vehicle fitness			Transport & Traffic dept.	December 2019
	Checking on fuel adulteration	OC- Reduction in emission M- Audit systems	Short - Medium	District Administration & Oil companies	April 2019
	Periodic calibration test of vehicular emission monitoring instrument.			BSPCB & Transportation Dept.	April 2019

2	Industry	Adapting new technologies for Brick kilns	Adapting Cleaner technology	High	Bihar State Pollution Control Board (BSPCB) Dept. of Industries (Bihar)	December 2019
		Shifting of Polluting Industries like stone crushers away from city area (min 10km away from the city outskirts)	TR- Regulatory requirements 1) Incentive to owner for relocating outside the city OC—Reduction in emission load from stone crushers	Long	Bihar State Pollution Control Board (BSPCB) Dept. of Industries (Bihar)	December 2021
		Ban on Polluting Industries	TR- Regulatory requirements	Short		June 2019
3	Biomass & Garbage Burning	Check on Stubble Burning	OC- Reduction in emission from stubble burnings M- Regulatory as well as Awareness Sensitization	Medium	Dept. Of Agriculture	December 2020
		1) Identify Garbage burning locations and strict enforcement of NGT (2016) rules regarding prohibition of garbage burning. 2) Promoting waste composting plants at city level 3) Recycling plants for dry waste.	M—Composting plants OC—Composting waste/garbage will reduce the emission load from garbage burning M—Recycling centres for dry waste OC—Proper disposal of dry waste will reduce the emission load from garbage burning	Medium	GMC	Immediate
		Ensure segregation of waste at source and daily collection of segregated waste	OC—Reduction in emission load from garbage burning	Incentivizing mechanism that ensures waste is segregated at the source		
		To create separate space/zone to handle solid waste, C&D waste and other waste in the city	OC—Reduction in emission load from SWM	Land allocation & fund availability		

4	Domestic	1) Increasing the LPG connections in low income strata. 2) To mandate LPG/Bio gas in commercial eateries.	M—Increase in LPG connection OC—Reduction in emission load	Medium	Food And Civil Supplies Department	December 2020
		Ensuring 100% electrification and uninterrupted electric supply with in the city.	OC—Reduction in total emission load from kerosene lamps	Medium	South Bihar Power Distribution Company Limited	December 2019
		Ensure easy availability of affordable cleaner cooking fuels (LPG in urban areas & biogas in rural areas)	M—Improvement in LPG/Bio gas infrastructure OC—Reduction in total emission load from chullahs (due to number reduction)	Medium	Food & Civil supplies Dept.	December 2020
		To mandate LPG/Biogas in commercial eateries and to promote induction cookers	M—Improvement in infrastructure that ensures availability of LPG/bio-gas to all eateries as in when required. OC—Reduction in emission load due to less burning of biomass	Setting up governance and rules that assists officials in mandating LPG/Bio gas at commercial locations	Food And Civil Supplies Department GMC	
		Introduction of improved chullahs (low emission chullahs)	1) Identifying areas for using chullahs 2) Procuring the chullahs OC—Reduction in indoor emission load	Medium		
5	Construction &	Construction materials should be transported in covered vehicles	OC—Reduction in emission load from dust	Short	Traffic Police & Gaya District Administration	Immediate

		To mandate facility of tar road inside the construction site for movement of vehicles carrying construction material	OC—Reduction in emission load from dust	Medium	GMC	December 2019
		Promotion of the use of prefabricated blocks for building construction	OC—Reduction in emission load from dust	Long		December 2020
		Restriction on storage of construction materials along the road.	OC- reduction in road dust	Short	GMC	Immediate
		Strict enforcement of CPCB guidelines for construction (use of green screens, side covering of digging sites, etc.)	OC—Reduction in emission load from dust	Short	BSPCB	Immediate
6	Road Dust	To take appropriate action to remove road dust/silt regularly by using mechanical sweepers	Mechanical sweeping 1) Identifying the road stretch with high silt content 2) Procuring the mechanical sweepers OC—Reduction in resuspension of dust	High	GMC	
		To reduce dust through end-to-end paving of the road	M—Improvement in Infrastructure OC—Reduction in resuspension of dust	High	GMC State Public Works Department	
		To create green buffer along the road	M—Identify and prioritize the road stretches and other areas OC— Reduction in resuspension of dust	Medium	GMC	

7	D G Sets	Initiate steps for installation of combined de NOx – particulate filter in all the diesel gen-sets	M –Procuring the filters and identifying the DG sets which needs to be retrofitted with filters	Medium	Medium	BSPCB
		Introduction of DG sets which use Clean Fuel	OC–Reduction in emission load from DG sets	Medium		
		Incentivising the use of clean fuel (CNG/ LPG) based generator set	OC–Reduction in emission load from DG sets	Medium		
8	Strengthening of AAQ monitoring	Installation of four CAAQMS at Gaya. a. Two CAAQM stations under CSR funds of CPSU through CPCB at Eco-Park. b. Two CAAQM stations under State Govt. financial assistance.	OC- Proper Evidence on sectorial contributions with primary baseline surveys to update the emissions inventory. OC- Efficient Monitoring	Short	BSPCB	June 2019
		Source apportionment study (Dispersion +Receptor) Modelling	OC- identification of pollutants	Medium	BSPCB	December 2019
9	Public Awareness	Issue of advisory to public for prevention and control of air pollution	OC- Awareness and better implementation of policy	Short	BSPCB & Dept. of Environment, forest & Climate Change	Immediate
		Launch public awareness programme campaign to control air pollution	OC—Through awareness, public participation for air pollution reduction will increase	Short	BSPCB GMC & Dept. of Environment, forest & Climate Change	Immediate
10	Others	Compliance of guidelines on D.G. sets and action against violation	OC- Reduction in Black carbon TR- DPF (Diesel Particulate Filters installation)	Short	BSPCB & GMC	Immediate
		Help line to oversee non compliances on aforesaid issues.	OC- Awareness and better implementation of policy	Short	BSPCB & GMC	Immediate

	Hospital incinerators for bio-medical incineration	OC—Reduction in bio-hazardous materials being dumped in to the landfill		BSPCB GMC Dept. of Health (Govt. of Bihar)	
	City wise cap on coal use	OC—Reduction in coal consumption will reduce the emission load		BSPCB Food And Civil Supplies Department	
	Polluter pay principle	OC—Will act as a deterrent against polluters	Medium	BSPCB	December 2019
	Transportation of municipal solid wastes, construction materials and debris in covered system.	OC- Minimization in road dust TR- Monitoring of Implementation	Short	GMC	Immediate
	Immediate lifting of solid wastes generated from de-silting and cleaning of municipal drains for its disposal.	OC- Minimization of Road dust TR- Monitoring of Implementation	Short	GMC	April 2019

1. **Monitoring mechanism for implementation:** The aforesaid action plan shall be implemented by Bihar State Pollution Control Board with co-ordination of Department of Environment and Forest, Govt. of Bihar, Urban Development & Housing Department, Govt. of Bihar, Transport Department, Gaya Municipal Corporation, Traffic Police and District Administration. Bihar State Pollution Control Board shall regularly review the implementation of aforesaid action plan.

2. **Public Awareness and Grievance Redressal:** A multifaceted awareness campaign is scheduled where in not just to create sensitization but create some agents of change among all sections of society. Set up an anti-Pollution Help-Line in Gaya region to register complaints of specific violations. A pollution app at crowd sourcing platform is in the phase to be prepared wherein citizens can take a picture of the violation and upload it for quick remedial action. In addition, efforts are also being made through various camps, trainings and workshops, apart from campaigns through various print media, televised shows and radio jingles, in informing the air pollution as a hazard and adhering to the standard measures as a citizen. Gathering information to build an Emissions Inventory is an essential input for forecasting air quality in a given area. While static emission sources like industries, brick kilns etc. are captured easily, the challenge lies in capturing information such as waste-burning, accidental fires, other events that throw up clouds of dust and any such type of events. One possible solution to this problem is to use crowd-sourced information where unknown individuals will be able to report as well as verify air pollution events that are random in nature. The challenge is to make sure that complete information about the event is captured as well as establish the veracity of the information being received. This will act as source of public awareness and simultaneously social media can used as a potential tool for the same.

3. BSPCB along with other stakeholders like Gaya District Administration BSDMA, Dept. Of Health will be sending out advisory for citizen's preparedness. Use of media and social media for creating wide dissemination will be catered through these advisory. A statutory advisory is attached in the annexure II.
4. To monitor the air pollution, Gaya has 1 Continuous Air Monitoring Station (CAMS) reporting data for all the criteria pollutants, one manual stations reporting data on PM2.5, PM10, SO2, and NO2 .However the data acquired by CAMS installed at Gaya Collectorate is insufficient to find the sectorial and per capita emission load. There should be at least 12 CAMS in the city for efficient reporting. However, emission inventory survey can be used to supplement the data to calculate the emission load and BSPCB is planning to conduct the emissions inventory survey.

5. **Convergence with Graded Response Action Plan :**

In pursuant to the order of the Hon'ble Supreme Court dated December 02, 2016 in the matter of M. C. Mehta Vs. Union of India regarding air quality in National Capital Region of Delhi and approval of Ministry of Environment, Forests and Climate Change, Govt. of India vide its notification S.O. 118 (E), dated- January 12, 2017 CPCB has formulated Graded Response Action Plan for Delhi & NCR based on Air Quality Index and concentration of particulate matter. In consistent with the same, a Graded Response Action Plan has been formulated for Gaya as hereunder:-

Severe + or Emergency (ambient PM2.5or PM10concentration values of 300µg/m3or 500µg/m3 respectively persist for 48 hours or more)	Implementing Agency
Stop entry of truck traffic into Gaya (except essential commodities).	Gaya Municipal Corporation (PMC) and Traffic Police, Gaya Town.
Stop construction activities.	Gaya Municipal Corporation, Building Construction Department, Govt. of Bihar, Road Construction Department, Govt. of Bihar, Bihar Rajya Pul Nirman Nigam(BRPNN) and Bihar State Pollution Control Board.
Introduce odd and even scheme for private vehicles based on license plate numbers and minimize exemptions.	Transport Commissioner, Transport Department, Gov. of Bihar, District Transport Officer, Gaya and District Magistrate, Gaya.
Task Force to take decision on any additional steps including shutting of schools	District Magistrate, Gaya
Severe (ambient PM2.5or PM10 concentration value is more than 250 µg/m3or 430µg/m3 respectively)	Implementing Agency
Intensify public transport services. Introduce differential rates to encourage off-peak travel.	Transport Commissioner, Transport Department, Gov. of Bihar, District Transport Officer, Gaya and District Magistrate, Gaya.

Close brick kilns, Stone Crushers.	Bihar State Pollution Control Board, Mining Department, Govt. of Bihar.
Increase frequency of mechanized cleaning of road and sprinkling of water on roads. Identify road stretches with high dust generation.	Gaya Municipal Corporation, Public Works Department, Govt. of Bihar, Road Construction Department, Govt. of Bihar and National Highway Authority of India.
Very Poor (ambient PM_{2.5} or PM₁₀ concentration value is between 121-250 µg/m³ or 351-430 µg/m³ respectively)	Implementing Agency
Stop use of diesel generator sets.	Bihar State Pollution Control Board, District Administration, Gaya, Gaya Municipal Corporation, Gaya.
Enhance parking fee by 3-4 times.	Gaya Municipal Corporation, Gaya.
Increase public transport bus services by augmenting contract buses and increasing frequency of service.	Transport Department, Gov. of Bihar, District Transport Officer, Gaya, District Administration, Gaya.
Stop use of coal/fire wood in hotels and open eateries.	Gaya Municipal Corporation, Gaya.
Residential Welfare Associations and individual house owners, Security Staff to provide electric heaters during winter to avoid open burning by them.	Resident Welfare Associations, Apartment Committee, Security Organizations
Alert in newspapers/TV/radio to advise people with respiratory and cardiac patients to avoid polluted areas and restrict outdoor movement.	Bihar State Pollution Control Board.
Moderate to poor(ambient PM_{2.5} or PM₁₀ concentration value is between 61-120 µg/m³ or 101-350 µg/m³ respectively)	Implementing Agency
Stringently enforce/stop garbage burning in landfills and other places and impose heavy fines on person responsible.	Gaya Municipal corporation, Gaya.
Close/stringently enforce all pollution control regulations in brick kilns and industries.	Bihar State Pollution Control Board.
Do periodic mechanized sweeping on roads with heavy traffic and water sprinkling also on unpaved roads every two days.	Gaya Municipal corporations, Gaya Traffic Police, Gaya to identify roads with heavy traffic and provide information to Municipal Commissioner, Gaya. In-charge, PWD, Govt. of Bihar, Gaya region to identify unpaved roads with heavy traffic and provide information to Municipal Commissioner, Gaya.
Strict vigilance and no tolerance for visible emissions–stop plying of visibly polluting vehicles by impounding or heavy fine.	District Transport Officer and Traffic Police, Gaya.
Strict vigilance and enforcement of PUC norms.	
Stringently enforce rules for dust control in construction activities and close non-	Gaya Municipal Corporation, Gaya, Building Construction Department,

compliant sites.	Govt. of Bihar and Road Construction Department, Govt. of Bihar.
Deploy traffic police for smooth traffic flow at identified vulnerable areas.	Traffic Police, Gaya
Strictly enforce Supreme Court ban on firecrackers.	Chief Controller of Explosives, Petroleum and Explosive Safety Organizations (PESO) and District Administration, Gaya.
Information dissemination through Social media, mobile Apps to inform people about the pollution levels, contact details of control room, enable them to report polluting activities/sources to the concerned authorities, and actions be taken by government based on the level of pollution.	Bihar State Pollution Control Board, Department of Environment and Forest, Govt. of Bihar.

Annexure-1

Status of Ambient Air Quality at Collectorate Campus Gaya

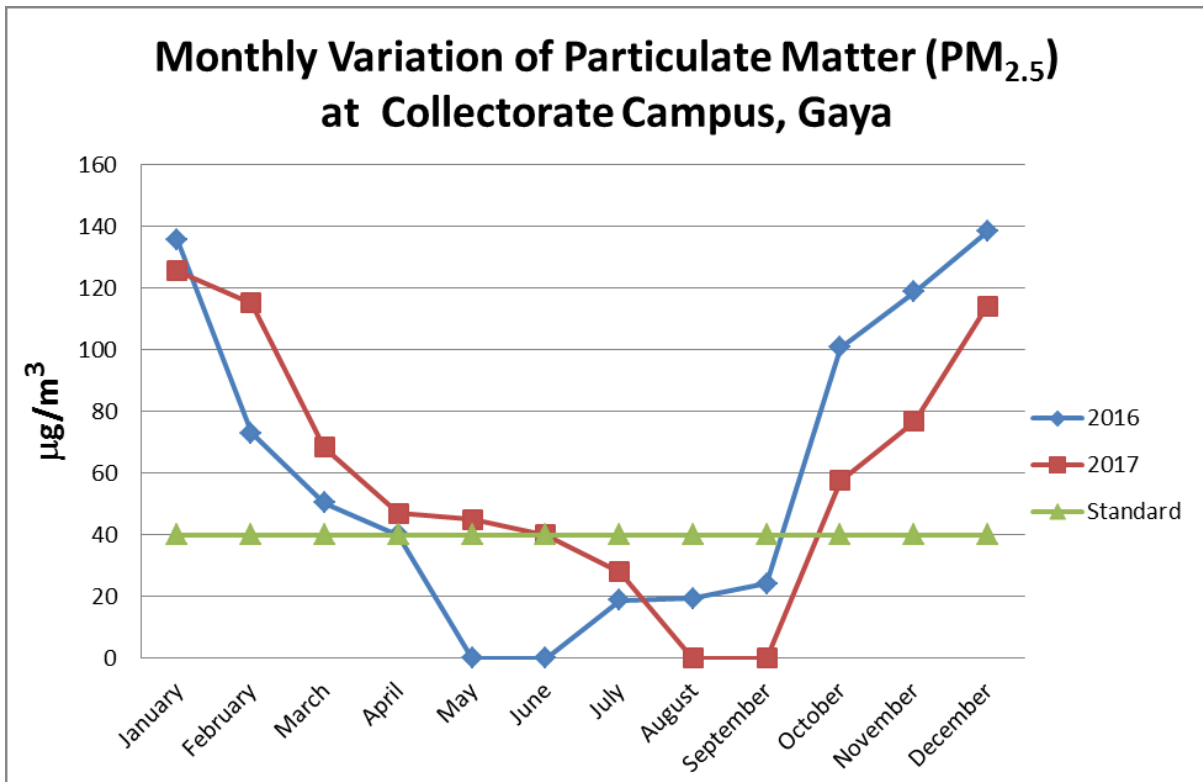
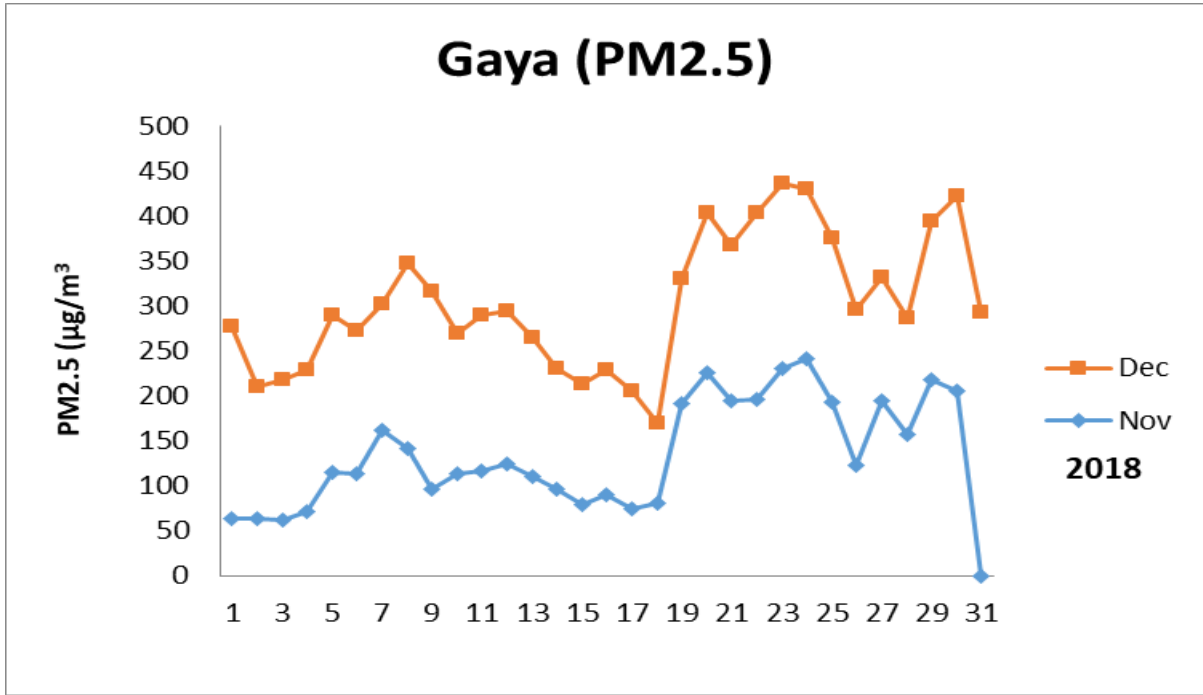
Sl. No.	PARAMETERS	Annual Average Concentration				Standards for residential, Rural and other Areas
		2014	2015	2016	2017	
1.	PM ₁₀	180.93 µg/m ³	76.85 µg/m ³	--	--	60 µg/m ³ Annual
2.	PM _{2.5}	--- µg/m ³	181.6 µg/m ³	71.97µg/m ³	71.85 µg/m ³	40 µg/m ³ Annual
3.	CO	2.69 mg/m ³	2.01 mg/m ³	1.43 mg/m ³	1.08 mg/m ³	02 mg/m ³ 8 hours 04 mg/m ³ 1 hour
4.	O ₃	23.80 µg/m ³	23.23 µg/m ³	14.05µg/m ³	21.22 µg/m ³	100 µg/m ³ 8 hours 180 µg/m ³ 1 hour
5.	SO ₂	6.10 µg/m ³	10.20 µg/m ³	7.48µg/m ³	5.53 µg/m ³	50 µg/m ³ Annual
6.	NO ₂	54.63 µg/m ³	20.95 µg/m ³	44.44µg/m ³	19.21 µg/m ³	40 µg/m ³ Annual
7.	Benzene	2.13 µg/m ³	2.21 µg/m ³	1.61µg/m ³	0.70 µg/m ³	05 µg/m ³ Annual

Status of Ambient Air Quality of Collectorate, Gaya 2016 & 2017													
Main pollutants													
Sl No.	Month	CO in mg/m ³		SO ₂ in µg/m ³		NO ₂ in µg/m ³		O ₃ in µg/m ³		PM 2.5 in µg/m ³		Benzene in µg/m ³	
		Avg		Avg		Avg		Avg		Avg		Avg	
		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
1	January	2.65	1.06	6.4	4.0	24.0	52.3	9.6	4.1	135.7	125.7	3.93	0.90
2	February	1.56	1.02	7.1	4.4	16.1	14.0	15.0	10.5	73.0	115.3	1.95	0.81
3	March	1.19	1.17	7.1	6.6	34.3	14.4	12.5	12.6	50.4	68.4	1.73	0.65
4	April	0.97	1.52	6.0	6.4	34.8	14.4	10.7	16.0	40.1	47.1	1.37	0.52
5	May	..	1.20	..	8.4	..	14.4	..	27.9	..	45.0	..	0.98
6	June	..	0.49	..	5.7	..	14.4	..	25.8	..	40.1	..	0.52
7	July	1.40	0.68	18.5	5.2	85.2	14.3	24.8	12.3	18.8	28.1	1.72	0.55
8	August	0.73	..	5.9	..	71.9	..	16.5	..	19.5	..	1.35	..
9	September	0.82	..	6.2	..	27.7	..	13.8	..	24.2	..	1.10	..
10	October	1.20	1.01	6.5	2.9	18.4	15.3	17.7	36.7	100.8	57.7	1.01	..
11	November	2.07	1.32	6.4	4.7	78.1	18.4	12.4	36.3	118.8	76.8	0.94	..
12	December	1.67	1.35	4.7	7.0	53.9	20.2	7.5	30.0	138.4	114.3	1.00	..
	Avg	1.43	1.08	7.48	5.53	44.44	19.21	14.05	21.22	71.97	71.85	1.61	0.70
Standards		02 mg/m ³ 8hours 04 mg/m ³ 1 hours		50 µg/m ³ Annual		40 µg/m ³ Annual		100 µg/m ³ 8hours 180µg/m ³ 1 hours		40 µg/m ³ Annual		05 µg/m ³ Annual	

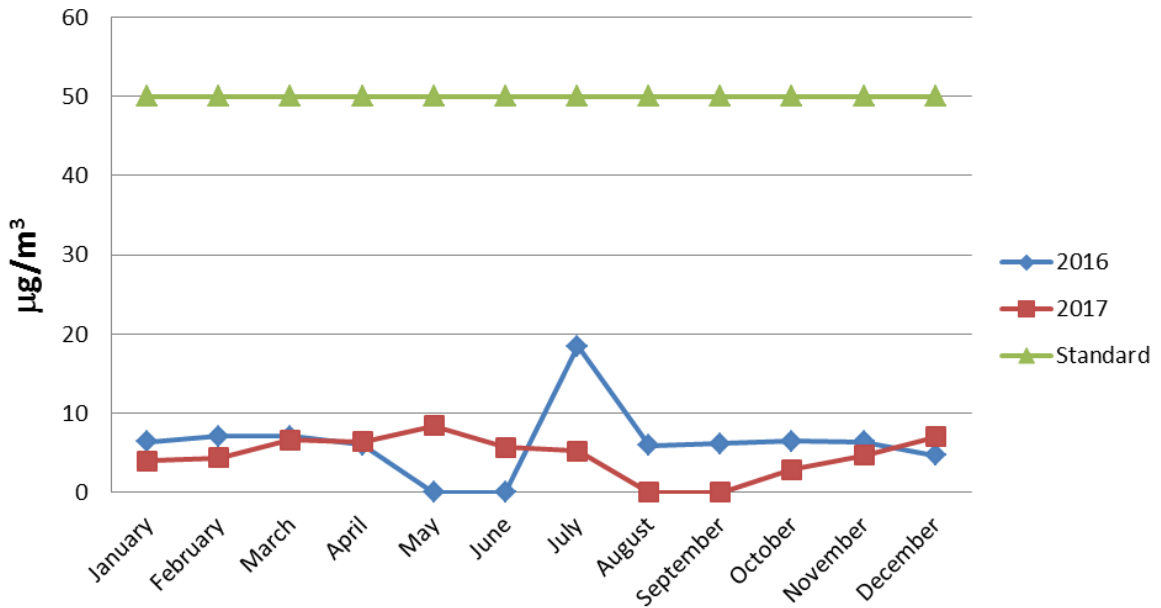
Status of Ambient Air Quality of Collectorate, Gaya 2016 & 2017															
Meteorological Parameters															
Sl. No.	Month	WS in m/s		WD in Degree		AT in °C		RH in %		BP in mmHg		SR in w/m ²		VWS in m/s	
		Avg		Avg		Avg		Avg		Avg		Avg		Avg	
		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
1	January	0.9	1.1	101	110.4	17	18.7	69.8	73.5	747.2	746.7	127.6	55.7	-0.01	-0.01
2	February	1.3	1.4	89.8	223.0	19.6	21.9	62.2	50.9	747.1	746.0	178.4	118.9	0.00	-0.01
3	March	2.0	1.8	103.7	224.7	23.2	24.5	52.3	42.7	746.7	745.9	250.2	155.3	0.00	-0.01
4	April	2.5	2.3	108	169.1	31	31.5	40.1	40.7	746	745.4	284.7	159.8	0.01	-0.01
5	May	..	2.1	..	134.4	..	33.1	..	43.4	..	745.2	..	176.4	..	-0.01
6	June	..	1.7	..	159.4	..	32.7	..	49.4	..	744.8	..	170.1	..	-0.01
7	July	1.9	0.9	82.3	220.2	31.6	27.8	79.3	64.4	745.2	745.2	185.9	99	-0.01	0.00
8	August	1.8	..	78.5	..	33.4	..	77.3	..	745.1	..	144.3	..	-0.02	..
9	September	1.5	..	83.1	..	33	..	81.1	..	745.5	..	115.3	..	-0.01	..
10	October	1.1	0.8	100.6	120.0	32.4	22.9	73.4	57.8	745.9	747.0	118.7	102.9	-0.01	-0.01
11	November	0.9	0.8	114.9	234.1	30.3	20.3	68.6	52.8	746.5	747.0	53.7	85.0	-0.01	-0.01
12	December	1.0	0.7	117.5	315.4	24.8	15.5	79.6	55.3	746.7	747.3	49.8	51.1	-0.01	-0.01

Avg	1.5	1.3	97.9	191.1	27.6	24.9	68.4	53.1	746.2	746.1	150.9	117.4	-0.01	-0.01
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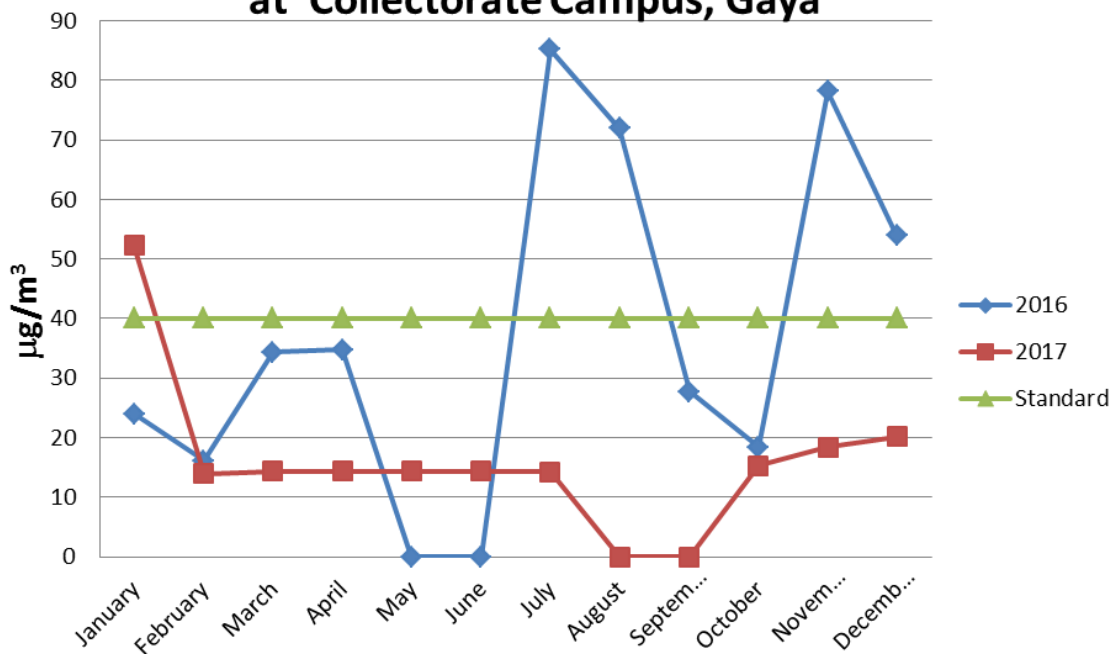
Air Quality Index of Gaya in days during 2016 & 2017													
Sl.No.	Month	Good		Satisfactory		Moderate		Poor		Very Poor		Severe	
		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
1.	January	..	..	..	..	03	04	07	12	21	10	..	01
2.	February	..	01	07	..	13	03	09	05	..	08	..	..
3.	March	01	..	18	10	12	13	..	04	..	..	..	..
4.	April	02	..	24	18	04	12	..	..	..	..	..	..
5.	May	..	01	..	19	..	11	..	..	..	..	..	..
6.	June	..	04	..	26	..	..	..	..	..	..	..	..
7.	July	..	03	01	03	04	..	..	..	..	..	..	..
8.	August	03	..	06	..	22	..	..	..	..	..	..	..
9.	September	05	..	10	..	..	..	..	..	..	..	..	..
10.	October	..	..	..	01	09	01	02	..	03	..	..	..
11.	November	..	..	..	07	09	14	11	08	11	..	..	..
12.	December	..	..	..	..	01	03	10	16	19	12	01	..
Total		11	09	66	84	77	61	39	45	54	30	01	01



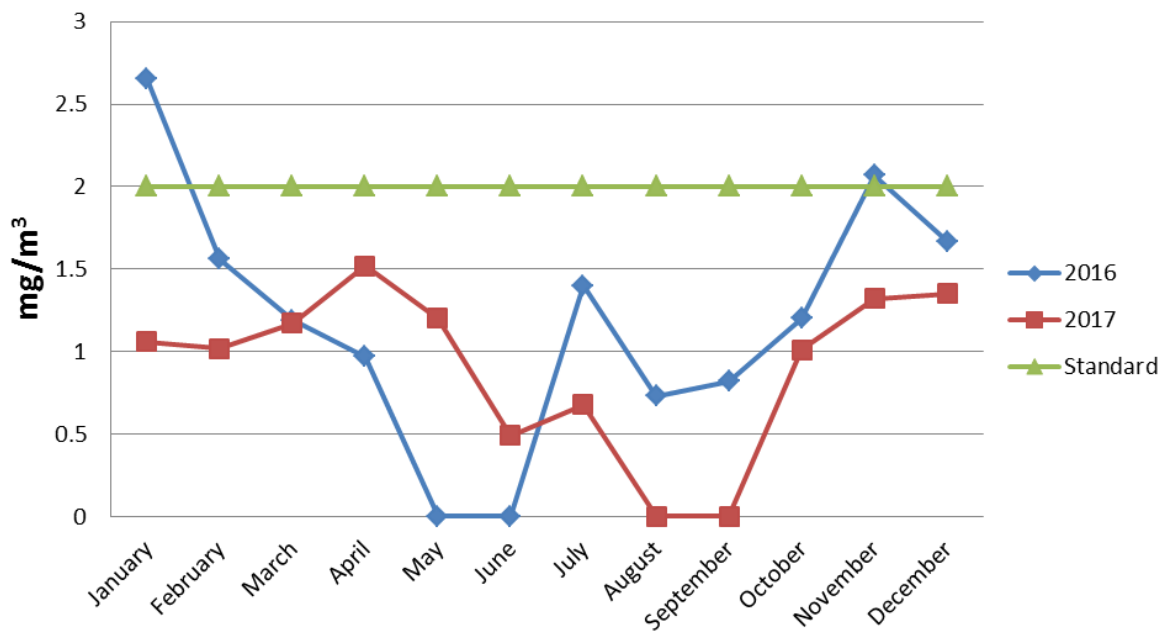
Monthly Variation of Sulphur Dioxide (SO₂) at Collectorate Campus Gaya,



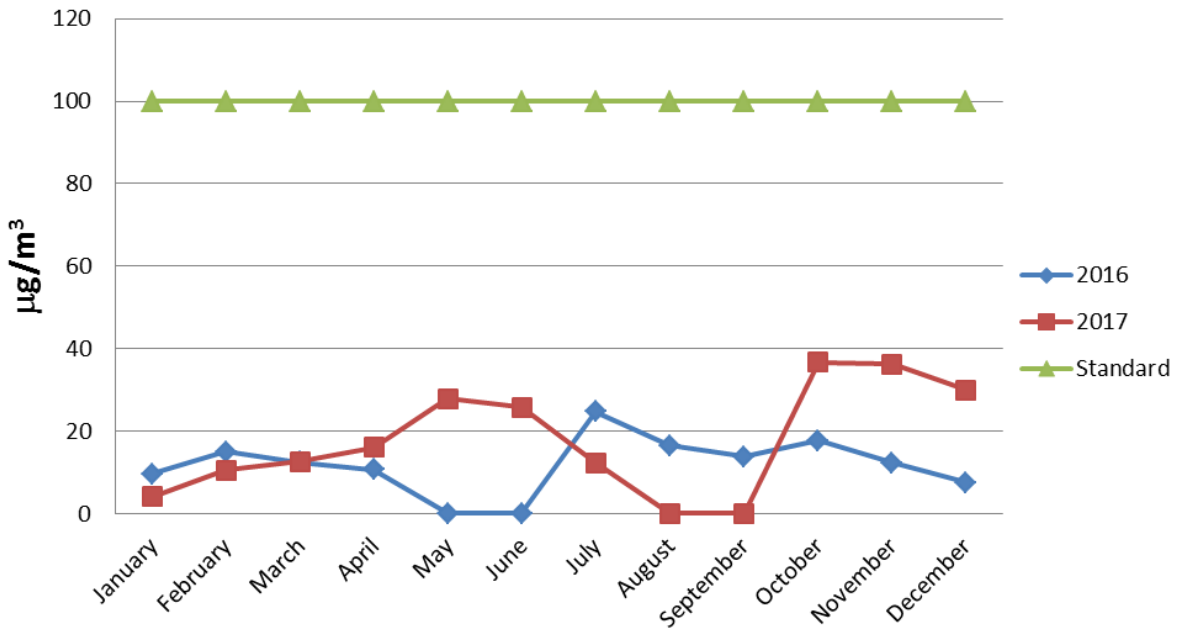
Monthly Variation of Nitrogen Dioxide (NO₂) at Collectorate Campus, Gaya



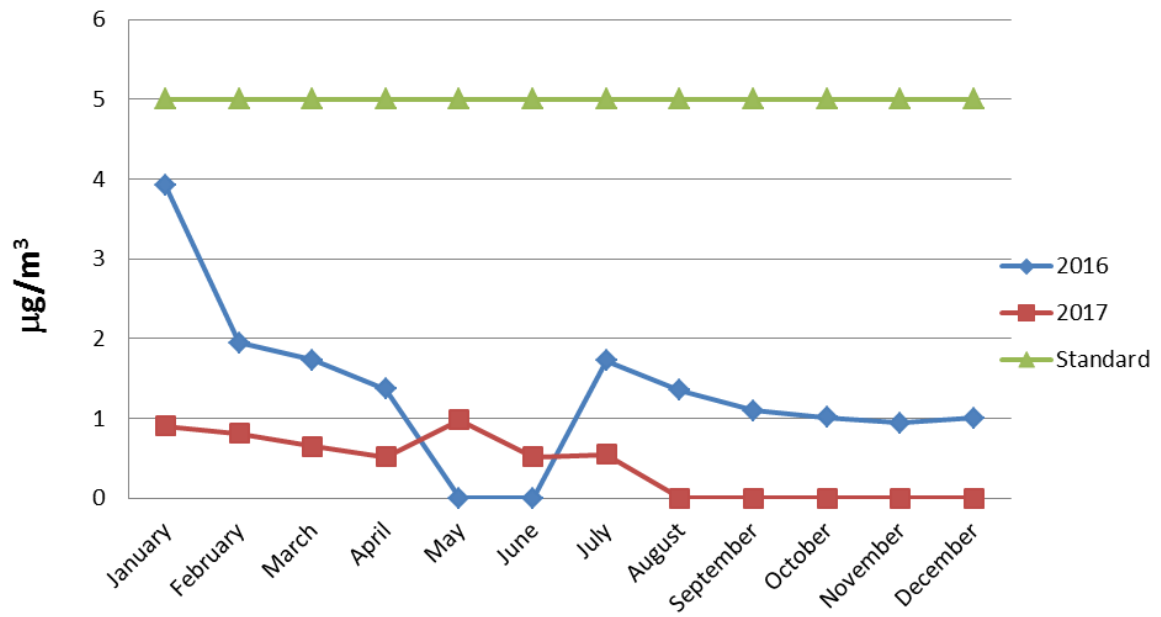
Monthly Variation of Carbon Monoxide (CO) at Collectorate Campus, Gaya



Monthly Variation of Ozone (O₃) at Collectorate Campus, Gaya,



Monthly Variation of Benzene (C₆H₆) at Collectorate Campus, Gaya,



Advisory

- Not to burn dry leaves, crops residue, wood, coal, Gobar Upla etc. plant more trees to make your city green. Trees like Neem, Sheesham, Peepal, Keekar , Gulmohar etc. make the air clean and healthy , create green belt in and around the capital
- Use carpooling and public transport, as much as possible. Walk or use non-polluting mode of transport for short distance
- Avoid going outdoor during early morning and late evening for walk or outdoor physical activity as the pollution levels are maximum during this time
- Avoid going to high pollution areas during peak hours. Stay indoor as much as possible
- Schools may avoid outdoor assembly, sports activities and other physical activities in the early morning
- Take extra precautions for high risk group as mentioned above, use N95 mask if going outdoor during the peak pollution hours
- Do not smoke, as it harms not only you but others also.
- If you feel irritation in the throat and nose, take steam and do salt water gargles. Drink plenty of warm water and maintain good hydration.
- If any time you are feeling breathless or palpitation, immediately go to nearest medical facility. Treatment is absolutely free in all the government Health facilities.