

**BEFORE THE NATIONAL GREEN TRIBUNAL,
WESTERN ZONE BENCH, PUNE
ORIGINAL APPLICATION NO. 157 OF 2025 (WZ)**

Suo Moto Cognizance of Deteriorating

Air Quality in PuneApplicant

Versus

The State of Maharashtra through

Maharashtra Pollution Control Board & Anr

.....Respondents

**AFFIDAVIT IN REPLY ON BEHALF OF RESPONDENT
NO. 2 PUNE MUNICIPAL CORPORATION (PMC).**

I Kishori Todamal-Shinde, Deputy Municipal Commissioner of the PMC Respondent Corporation having my office at Pune Municipal Corporation Building Shivajinagar Pune do hereby state on solemn affirmation as under:

- (1) I am working in the capacity of the Deputy Municipal Commissioner in the Pune Municipal Corporation. I am filing this Affidavit-in-Reply to oppose the contents of the Application preferred and reliefs sought by the Applicant in the above captioned matter. I am filing this present Affidavit-in-Reply to oppose the grant of any



reliefs to the Applicant as prayed in the present Application. I crave leave to file a further Additional Affidavit in Reply as and when sought necessary.

- (2) I am authorized by the Answering Respondents to file this present Affidavit-in-Reply in my official capacity and I have perused the documents brought on record and have understood the contents of the Application and based on the documents and information available in relation to the said issue.
- (3) I say and submit that present Application is Suo Moto cognizance by this Hon'ble Tribunal in relation to Deteriorating Air Quality in Pune within limits of Answering Respondent.
- (4) I say and submit that present matter pertains to AQI values exceeding 300 at Shivajinagar, MHADA Colony-Lohegaon and Bhumkar Nagar during December 2025.
- (5) I say and submit that aforesaid recordings, as indicated by the experts of Indian Institute of Tropical Meteorology were due to adverse meteorological conditions such as temperature inversion, low wind

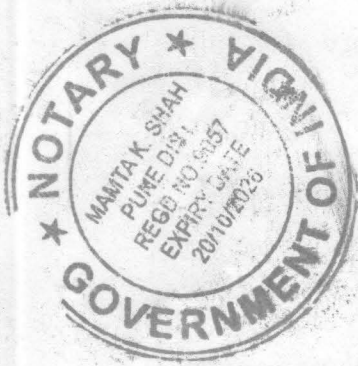


speed, poor ventilation index and increased atmospheric stability, which restrict pollutant dispersion. These episodic exceedances are primarily attributed to winter-specific unfavourable dispersion conditions, compounded by construction activities and traffic emissions.

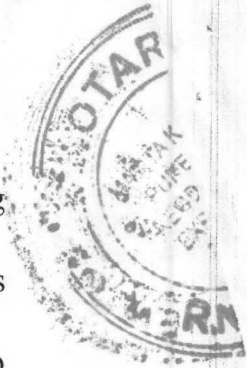
(6) I say and submit that due to outrage of above recordings Answering Respondent has initiated the Graded Response Action Plan (GRAP) hereto marked and annexed as “Annexure R2-I” is the copy of GRAP along with certain other actions.


(7) I say and submit that following actions initiated by the Answering Respondent for mitigation of Air Pollution:-

- i. Circular has been issued regarding sensor-based monitoring at construction sites and the guidelines to be followed for reducing air pollution, hereto marked and annexed as “Annexure R2-II” is the copy of circular. The answering respondent has initiated a significant program to effectively control dust at construction sites. Under this initiative, a structured framework has been developed to assess dust levels at



construction sites using a sensor-based monitoring system. In this context, answering respondent has conducted a co-location study at IITM, Pune, to shortlist suitable makes and models of sensors. A Task Force Committee has been constituted to establish a sensor-based air quality monitoring system and develop a centralized dashboard to control air pollution caused by dust at construction sites. Additionally, answering respondent has developed an internal monitoring platform (dashboard) to track dust levels and guide builders accordingly. As part of this initiative, it has been made mandatory for all construction projects with an area of 5,000 sq. m. or more to install sensor systems along with LED indicator displays. The LED indicator system reflects the intensity of dust levels and helps on-site personnel take necessary control measures. Answering respondent has also issued a circular dated 15/12/2025, introducing a mandatory control checklist for all construction sites, along with an action plan





based on dust intensity levels. At present, this system has been installed at 316 construction sites, out of which 313 sites have been successfully integrated with the answering respondent dashboard, across various construction sites in the answering respondent area, with 46 sensors in Zone 1, 89 in Zone 2, 19 in Zone 3, 52 in Zone 4, and 10 in Zone 5.

- ii. Circular has been issued regarding the ban on open burning of waste/material, hereto marked and annexed as “**Annexure R2-III**” is the copy of circular.
- iii. The frequency of rounds for fogging vehicles has been increased in order to control air pollutants. Highly polluted and traffic-dominated routes have been selected for the fogging vehicles. Hereto marked and annexed as “**Annexure R2-IV**” is the copy of fogging vehicles details.
- iv. Regular sweeping/cleaning of major roads hereto marked and annexed as “**Annexure R2-V**” is the copy of details regarding sweeping/cleaning.



v. Circular for bakeries operating within the municipal limits shall be directed to convert their existing fuel systems to cleaner fuels (PNG/electricity) within the stipulated timeline. hereto marked and annexed as “Annexure R2-VI” is the copy of circular.

(8) I say and submit that, apart from above initiatives other actions initiated by Answering Respondent are as below:-

i. A total of 1,928 buses of PMPML are operating for public transport out of which 1,211 are CNG buses.

The service of electric buses started in Pune city since February 2019. At Present: 490 electric buses are operational in the city. The E-buses have covered more than 4.5 core kilometers of travel. hereto marked and annexed as “Annexure R2-VII” is the copy of public transport details.

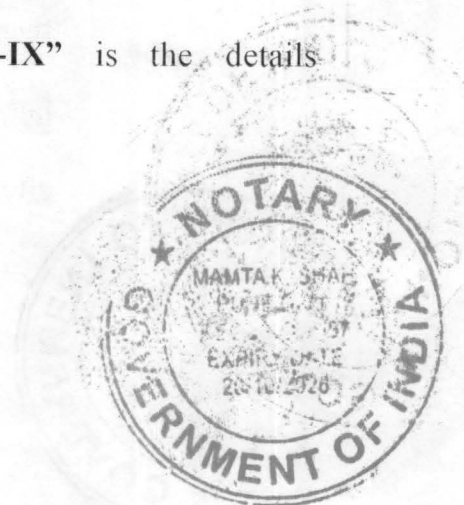
ii. Air Pollution Control (APC) systems for wood fired crematoriums have been installed in 27 crematoriums through the Electric Department. In addition, 10 crematoriums have electric facility and 19 crematoriums are equipped with gas based systems.



hereto marked and annexed as “Annexure R2-VIII”

is the details of APC at crematoriums.

- iii. Guidelines from 'Urban Street Design Guidelines' and 'Pedestrian Policy' are being used for road development works. Approximately 100 km of roads are being developed by the Road Department. Emphasis has been laid on footpaths and cycle tracks and a total of 65 km of roads have been developed by combining various roads (Data Available on PMC website- <https://www.pmc.gov.in/en/b/project-documents>).
- iv. Four Special Road Maintenance Vehicles (RMVs) are operational in Pune city and are connected through a mobile application. Additionally, eight new Road Maintenance Vehicles are proposed. Seventeen roads have been identified for development based on traffic congestion in the respective areas. hereto marked and annexed as “Annexure R2-IX” is the details regarding RMVs.



v. 224 parks in the city and the task of their maintenance is the responsibility of the Answering Respondent. Trees on hills are conserved by the Forest Department through the Joint Forest Management Committee, <https://www.pmc.gov.in/en/b/all-garden-list>.

vi. Indian Institute of Tropical Meteorology, Ministry of Earth Sciences, Government of India, Pashan have installed six Air Pollution Monitoring systems under the program SAFAR- System for Air Quality Forecast and Research. In addition, 3 more CAAQMS- Continuous Ambient Air Quality Monitoring Stations are installed by MPCB under Answering Respondent limits, <https://app.cpcbcr.com/ccr/#/caaqm-dashboard-all/caaqm-landing> & Mobile apps: Sameer App (Android/iOS)-Official CPCB app showing live AQI and station-level CAAQMS data. Proposal for four more CAAQMS installation in PMC jurisdiction received from MPCB and IITM (2 each) which will help in more effective air quality monitoring in the city.



- vii. In order to reduce the amount of particulate matter (PM10 and PM2.5) during handling and transportation of construction materials, the MPCB has directed implementation of measures such as water sprinkling and installation of barricades between construction sites and surrounding buildings. All construction developers have been informed of the applicable rules. Inspections of construction sites have been initiated by officials of the Construction Department, and notices have been issued to concerned professionals.
- viii. A special team has been appointed through Pune Maha Metro to control dust emissions at ongoing construction sites. Water sprinkler systems and barricading/green netting have been installed at such sites. hereto marked and annexed as “Annexure R2-X” is the details regarding special teams.
- ix. Metro rail services have commenced in Pune city, covering approximately 22 km. The Hinjewadi to Shivajinagar Metro line is currently under progress.





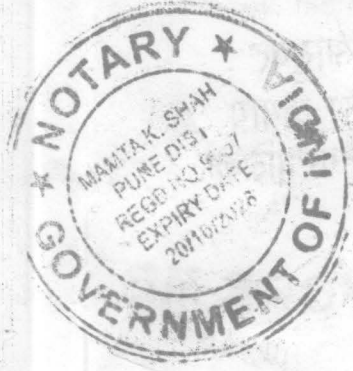
<https://www.punemetrorail.org/download/Updation%20of%20CMP%20for%20PMR.pdf>.

- x. Subsidies of Rs. 25,000 per vehicle are being provided for electric auto-rickshaws (three-wheeler passenger vehicles) registered with the Pune RTO, <https://www.pmc.gov.in/en/d/evcell>. So far 176 electric auto-rickshaws have been provided with the subsidies.
- xi. Subsidy for CNG kit-fitted auto rickshaws in the city:
To reduce increasing air pollution in the city for three-wheeler auto rickshaws and to promote the use of CNG fuel, a subsidy of Rs. 12,000/- each was given to permit holders of auto rickshaw fitted with CNG kits. From the year 2011-12 to 2019 subsidy was given to the total 16,861 CNG auto rickshaws. It has helped reduce the amount of air pollution in the city.
- xii. A public appeal has been made by the answering respondent through local newspapers and social media platforms to encourage celebration of an environmentally friendly Diwali



<https://www.pmc.gov.in/en/b/eco-friendly-diwali2025>.

- (9) I say and submit that the above initiatives have been undertaken by the Answering Respondent within an area of 480 sq. km, catering to a current population of 45 to 47 lakh.
- (10) In view of the above, the Answering Respondent respectfully submits that continuous and proactive steps are being taken to mitigate air pollution. It is further submitted that mitigation of air pollution is a collective responsibility of both the Answering Respondent and the residents within its jurisdiction.



Pune

Date: 21/04/2026



Res. No 2

उप आयुक्त

पर्यावरण विभाग

पुणे महानगरपालिका

VERIFICATION

I, Kishori Todmal-Shinde, Age: Adult, Deputy Municipal Commissioner, authorized signatory for PMC do hereby state on solemn affirmation that what is stated forgoing Para's is true and correct to my own knowledge and belief.

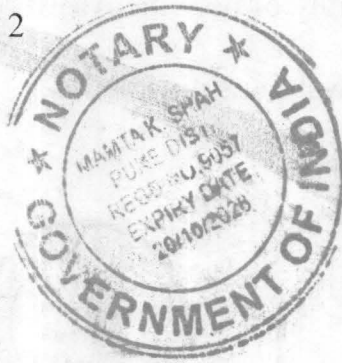
Solemnly affirmed at Pune

This 21st day of April, 2026



K. Shinde
Respondent No. 2
उप आयुक्त
पर्यावरण विभाग
पुणे महानगरपालिका

Adv. for Respondent No. 2



BEFORE ME
M. Shah
MAMTA K. SHAH
NOTARY
GOVT. OF INDIA
PUNE DISTRICT

NOTED AND REGISTERED
AT SR NO. 5619/2026
DATE .. 21 APR 2026





पर्यावरण विभाग
पुणे महानगरपालिका

जावक क्र.: ८५७

दिनांक: १७/१२/२५

प्रति,

पुणे महानगरपालिका.

विषय: हवा गुणवत्ता निर्देशांकात होणाऱ्या बदलास प्रतिसाद देण्यासाठी महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांचेद्वारे तयार करण्यात आलेल्या GRAP ची अंमलबजावणी करणेबाबत.

मा. महोदय,

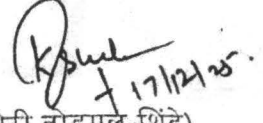
महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांचेद्वारे हिवाळ्यामध्ये हवा गुणवत्ता निर्देशांकात होणाऱ्या बदलाम प्रतिसाद देण्यासाठी हवा प्रदूषणातील विविध स्तरांमुळे Graded Response Action Plan (GRAP) ने अंमलबजावणी करणेबाबत यापूर्वीच राज्यातील सर्व १९ शहरांना कळविले आहे.

केंद्रीय प्रदूषण नियंत्रण मंडळ यांचे मार्फत तयार करण्यात आलेल्या SAMEER APP च्या अन्वये सध्यास्थितीमध्ये हिवाळी वातावरण असल्याने हवा प्रदूषणामध्ये पुणे शहराचा हवा गुणवत्ता निर्देशांक हा Moderate-Poor वर्गात दिसून येत आहे. त्या अनुषंगाने हवेची गुणवत्ता आणखी ढासळण्यापूर्वी महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांचे दिशानिर्देशान्वये खाली नमूद केल्याप्रमाणे GRAP नुसार कृती करणे अपेक्षित आहे.

अ.क्र.	कृती	अंमलबजावणी करणारा विभाग
१	उघड्यावर कचरा जाळणे बंद करून सदर व्यक्तीस दंड आकारणे.	घनकचरा विभाग, पुणे महानगरपालिका
२	बांधकाम करताना उडणाऱ्या धुळीवर नियंत्रण ठेवणेसाठी घालून दिलेल्या नियमांचे पालन करणे अन्यथा प्रकल्पावर बंदी आणणे.	बांधकाम विभाग, पुणे महानगरपालिका
३	उद्योगधंदे/ कारखाने इ. मधून होणारे प्रदूषण कमी करणे	उप प्रादेशिक अधिकारी, महाराष्ट्र प्रदूषण नियंत्रण मंडळ, पुणे
४	महत्वाच्या व वर्दळीच्या ठिकाणी वाहतूक सुरळीत करणेकरिता वाहतूक पोलिसांची नियुक्ती करणे	पोलीस उपआयुक्त, वाहतूक शाखा, पुणे शहर.
५	PUC नियमांची कडक दक्षता व अंमलबजावणी	प्रादेशिक परिवहन अधिकारी, प्रादेशिक परिवहन विभाग, पुणे
६	वर्दळीच्या रस्त्यावर पाणी मारणे व यांत्रिकीपद्धतीने साफसफाई करणे आणि फुटपाथ नसलेल्या ठिकाणी पाणी फवारणी करणे	घनकचरा विभाग, पुणे महानगरपालिका
७	सोशल मिडिया व मोबाईल ॲपद्वारे प्रदूषणाचा स्तर, हवेची गुणवत्ता सुधारणेकरिता जनजागृती करणेत येते त्यास प्रसिद्धी देणे	१) माहिती व जनसंपर्क अधिकारी, माहिती व जनसंपर्क कार्यालय पुणे महानगरपालिका. २) उप प्रादेशिक अधिकारी, महाराष्ट्र प्रदूषण नियंत्रण मंडळ, पुणे

तरी महाराष्ट्र प्रदूषण नियंत्रण मंडळाच्या सूचनेनुसार पुणे शहरातील हवा प्रदूषण कमी करण्यासाठी आपल्या विभागामार्फत त्वरित कार्यवाही होणेस विनंती आहे.

मा. स. कळावे.



(किशोरी तोडमल-शिंदे)

उप आयुक्त, पर्यावरण विभाग
पुणे महानगरपालिका

सोबत:- महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांचा Graded Response Action Plan (GRAP)

प्रत:

- १) मा. उपआयुक्त घनकचरा विभाग
पुणे महानगरपालिका
- २) मा. अधिक्षक अभियंता
बांधकाम विभाग
पुणे महानगरपालिका
- ३) मा. उप प्रादेशिक अधिकारी,
महाराष्ट्र प्रदूषण नियंत्रण मंडळ,
पुणे
- ४) मा. उपआयुक्त,
आपत्ती व्यवस्थापन विभाग
पुणे महानगरपालिका
- ५) सिस्टीम मॅनेजर,
सांखिकी व संगणक विभाग,
पुणे महानगरपालिका.
- ६) मा. प्रादेशिक परिवहन अधिकारी,
प्रादेशिक परिवहन विभाग,
पुणे.
- ७) मा. पोलीस उपआयुक्त,
वाहतूक शाखा,
पुणे शहर.
- ८) मा. माहिती व जनसंपर्क अधिकारी,
माहिती व जनसंपर्क कार्यालय,
पुणे महानगरपालिका.

मा.अति महापालिका आयुक्त (इस्टेट) यांजकडेस माहितीस्तव सविनय सादर...

To,
Pune Municipal Corporation

Subject: Implementation of GRAP prepared by the Maharashtra Pollution Control Board to respond to changes in the Air Quality Index.

Respected Sir,

The Maharashtra Pollution Control Board has prepared a *Graded Response Action Plan (GRAP)* to respond to changes in the Air Quality Index during the winter season, considering various sources of air pollution. Instructions regarding its implementation have already been communicated to all 11 cities in the state.

As per information provided by the Central Pollution Control Board through the SAMEER App, due to winter conditions, Pune city's Air Quality Index is currently falling under the *Moderate to Poor* category. In this context, to improve air quality, it is expected that actions as per GRAP guidelines issued by the Maharashtra Pollution Control Board should be implemented immediately.

Action Plan

Sr. No.	Action	Implementing Department
1	Ban on open burning of garbage and imposing penalties on offenders	Solid Waste Management Department, Pune Municipal Corporation
2	Strict compliance with dust control measures at construction sites; otherwise, stop the project	Construction Department, Pune Municipal Corporation
3	Reduce pollution caused by industries/factories	Regional Officer, Maharashtra Pollution Control Board, Pune
4	Appointment of traffic police at important and busy locations to ensure smooth traffic movement	Deputy Commissioner of Police, Traffic Branch, Pune City
5	Strict enforcement of PUC (Pollution Under Control) norms	Regional Transport Officer, Regional Transport Department, Pune
6	Sprinkling water on busy roads and mechanical cleaning; water spraying at places without footpaths	Solid Waste Management Department, Pune Municipal Corporation
7	Creating public awareness through social media and mobile apps about pollution levels and air quality improvement measures, and giving it publicity	1) Information & Public Relations Officer, PMC

2. Regional Officer, Maharashtra Pollution Control Board, Pune

Further, as per the instructions of the Maharashtra Pollution Control Board, you are requested to take immediate action through your respective departments to reduce air pollution in Pune city.

This is for your information and necessary action.

(Signature)

(Kishori Taidmal-Shinde)

Deputy Commissioner, Environment Department

Pune Municipal Corporation

Date: 17/12/2025

Enclosure: Graded Response Action Plan (GRAP) of Maharashtra Pollution Control Board

Copy to:

Deputy Commissioner, Solid Waste Management Department, Pune Municipal Corporation

Chief Engineer, Construction Department, Pune Municipal Corporation

Regional Officer, Maharashtra Pollution Control Board, Pune

Deputy Commissioner, Disaster Management Department, Pune Municipal Corporation

System Manager, Statistics & IT Department, Pune Municipal Corporation

Regional Transport Officer, Regional Transport Department, Pune

Deputy Commissioner of Police, Traffic Branch, Pune City

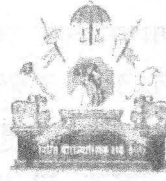
Information & Public Relations Officer, Information & Public Relations Office, Pune Municipal Corporation

Submitted for kind information to:

Hon'ble Additional Municipal Commissioner (Estate)

पृथ्वीराज बी.पी. (भा.उ.से.)

अतिरिक्त महापालिका आयुक्त



अतिरिक्त महापालिका आयुक्त (इस्टेट) कार्यालय,
पुणे महानगरपालिका

पुणे म.न.पा. भवन, शिवाजीनगर, पुणे ४११ ००५.

दूरध्वनी क्र. : ०२०-२५५०१४६३

E-mail : addmce@punecorporation.org

जा. क्र. : अति. म.भा. (२)/५५४/१३५

दिनांक : १५.१२.२०२५

बांधकाम प्रकल्पांच्या ठिकाणी हवा गुणवत्ता तपासणी प्रणाली बसविणेबाबतचे परिपत्रक

राज्यातील अनेक शहरांमध्ये पी.एम. २.५ आणि पी.एम. १० या धुलीकणांमुळे वायू प्रदूषण वाढत असल्याने राज्य सरकारकडून मार्गदर्शक तत्वे जारी करण्यात आली आहेत. महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांच्या दि.२/११/२०२३ रोजी पर्यावरण (संरक्षण) अधिनियम १९८६, कलम ५ अन्वये देण्यात आलेल्या निर्देशानुसार बांधकाम प्रकल्पांच्या ठिकाणी सेन्सर-आधारित हवा गुणवत्ता तपासणीसाठी प्रणाली उभारणे आवश्यक आहे. एआरएआय (ARAI, २०२२) च्या अहवालानुसार, बांधकाम क्षेत्र हे धूळ उत्सर्जनात प्रमुख योगदान देणारे क्षेत्र आहे. त्यामध्ये पीएम१० धूलिकणांची पातळी जवळपास २३% आहे. यानुसार बांधकामाच्या ठिकाणी धूळ नियंत्रित करणेसाठी अत्यावश्यक बाब आहे.

वरील बाबींच्या अन्वये पुणे महानगरपालिकेने हवा गुणवत्ता सेन्सर उत्पादकांना इंडियन इन्स्टिट्यूट ऑफ ट्रॉपिकल मेटेरोलॉजी (IITM), पाषाण, पुणे येथे सह-स्थान अभ्यास (Co-location Study) करण्यास सूचित केले होते. त्यान्वये उपकरणांसाठीची आवश्यक तांत्रिक वैशिष्ट्ये परिशिष्ट-अ मध्ये देण्यात आली असून IITM च्या सह-स्थान अभ्यास द्वारे लघुसूचित करण्यात आलेले सेन्सर मेक आणि मॉडेलसची यादी परिशिष्ट- ब मध्ये देण्यात आली आहे.

सदर परिपत्रकान्वये पुणे महानगरपालिकेद्वारे निर्देश देण्यात येतात की, पुणे महानगरपालिका हद्दीतील बांधकाम क्षेत्रफळ ५००० चौरस मीटर (Built-up Area) व त्याहून अधिक क्षेत्रफळ असलेल्या सर्व खाजगी व सार्वजनिक निवासी आणि व्यावसायिक बांधकाम प्रकल्पांमध्ये तसेच सर्व पायाभूत सुविधा प्रकल्पांमध्ये (Infrastructure Projects), बांधकामाच्या ठिकाणी पी.एम.(PM)२.५ आणि पीएम (PM) १० मोजण्यासाठी सेन्सर-आधारित हवा गुणवत्ता देखरेख प्रणाली स्थापित करण्यात यावी. तसेच धूळ प्रदूषण तीव्रता दर्शविण्यासाठी एलईडी इंडिकेटर (LED Signal) प्रणाली बसविण्यात यावी, ज्यामुळे बांधकामाच्या ठिकाणावरील कर्मचाऱ्यांना तेथील हवेच्या गुणवत्तेची स्थिती समजून घेता येईल आणि त्यानुसार प्रदूषण कमी करणेसाठी त्वरित उपाययोजना करता येतील.

पुणे शहरातील बांधकामाच्या ठिकाणी बसविण्यात येणारे सदरचे सेन्सर हे परिशिष्ट - अ मध्ये दिलेल्या तांत्रिक वैशिष्ट्यांनुसार असावेत. परिशिष्ट - ब मध्ये देण्यात आलेल्या सेन्सर उत्पादकांमधून सूचीबद्ध केलेल्या मेक आणि मॉडेलमधून निवडलेले असणे बंधनकारक आहे तसेच सेन्सर उत्पादकांची सुधारित यादी वेळोवेळी पुणे महानगरपालिकेच्या संकेत स्थळावर प्रसिद्ध करण्यात येईल. बांधकामाच्या ठिकाणी बसविण्यात येणाऱ्या सेन्सरमधून उपलब्ध होणारी हवा-गुणवत्ताबाबतची वास्तविक माहिती पुणे महानगरपालिका प्रशासनाच्या देखरेखीसाठी केंद्रीयकृत हवा गुणवत्ता संकेतस्थळावर एकत्रित केली जाईल.

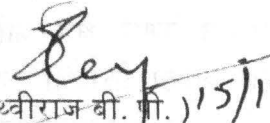
सर्व बांधकाम व्यावसायिकांना परिशिष्ट - क नुसार हवा प्रदूषण नियंत्रण उपाययोजनांचे काटेकोरपणे पालन करणे बंधनकारक आहे. याशिवाय, एलईडी इंडिकेटर (LED Signal) प्रणालीद्वारे दर्शविण्यात येणाऱ्या धूळ तीव्रता पातळीनुसार कृती मार्गदर्शक तत्वांचे पालन करण्यात यावे.

सर्व विद्यमान व नवीन सुरु होणाऱ्या प्रकल्पांनी (क्षेत्रफळ ५००० चौरस मीटर व अधिक) हे परिपत्रक प्रसिद्ध झाल्यापासून १५ दिवसांच्या आत हवा गुणवत्ता देखरेख प्रणाली आणि एलईडी इंडिकेटर (सिग्नल) बांधकामाच्या ठिकाणी बसवावेत. नवीन बांधकाम प्रकल्पांच्या बाबतीत, १५ दिवसांचा कालावधी हा बांधकामाच्या ठिकाणी प्रत्यक्ष कोणतेही कामकाज सुरु झाल्याच्या दिनांकापासून गृहीत धरण्यात येईल.

सदर परिपत्रकानुसार देण्यात आलेल्या निर्देशांचे पालन न केल्यास कारणे दाखवा नोटीस / काम थांबवण्याचे आदेश आणि लागू असलेली इतर दंडात्मक कारवाई केली जाईल याची कृपया नोंद घेण्यात यावी.

सोबत :-

- परिशिष्ट-अ :- बांधकाम ठिकाणांवर बसविण्यात येणाऱ्या हवा गुणवत्ता देखरेख प्रणालीची आवश्यक तांत्रिक वैशिष्ट्ये.
- परिशिष्ट-ब :- IITM च्या सह-स्थान अभ्यास द्वारे लघुसूचित करण्यात आलेले सेन्सर मेक आणि मॉडेल्सची यादी.
- परिशिष्ट-क :- बांधकाम व्यावसायिकांसाठी हवा प्रदूषण नियंत्रण उपाययोजना व धूळ तीव्रता पातळीनुसार कृती मार्गदर्शक तत्वे.


(पृथ्वीराज बी. पी.) 15/12/25
अतिरिक्त महापालिका आयुक्त (इ)
पुणे महानगरपालिका

Circular regarding installation of air quality inspection system at construction project sites

In many cities of the state, air pollution due to PM 2.5 and PM 10 particles is increasing, so the state government has issued guidelines. As per the directions issued by the Maharashtra Pollution Control Board under Section 5 of the Environment (Protection) Act, 1986 dated 2/11/2023, it is necessary to set up a system for sensor-based air quality monitoring at construction sites. According to the report of ARAI (ARAI, 2022), the construction sector is a major contributor to dust emissions. The level of PM 10 particles in it is about 23%. Accordingly, it is essential to control dust at construction sites.

In view of the above, the Pune Municipal Corporation had invited the air quality sensor manufacturers to conduct a co-location study at the Indian Institute of Tropical Meteorology (IITM), Pashan, Pune. The required technical specifications for the devices are given in Annexure-A and the list of sensor makes and models shortlisted through the co-location study of IITM is given in Annexure-V.

Under this circular, the Pune Municipal Corporation has directed that in all private and public residential and commercial construction projects with a built-up area of 5000 square meters and above as well as in all infrastructure projects within the limits of the Pune Municipal Corporation, a sensor-based air quality monitoring system should be installed to measure PM 2.5 and PM 10 at the construction site. Also, an LED indicator system should be installed to indicate the intensity of dust pollution, so that the workers at the construction site can understand the air quality condition there and take immediate measures accordingly to reduce pollution.

The sensors to be installed at construction sites in Pune city shall be as per the technical specifications given in Annexure A. It is mandatory to select the sensor manufacturers from the make and model listed in Annexure V and the revised list of sensor manufacturers shall be published on the website of Pune Municipal Corporation from time to time. Actual air quality information available from the sensors installed at construction sites shall be compiled on a centralized air quality website for the monitoring of Pune Municipal Corporation administration.

All construction professionals are required to strictly follow the air pollution control measures as per Annexure C. In addition, action guidelines should be followed as per the dust intensity level indicated by the LED indicator system.

All existing and new construction projects (area 5000 sq m and above) shall install Air Quality Monitoring System and LED Indicator (SIGRAL) at the construction site within 15 days from the date of publication of this circular. In case of new construction projects, the period of 15 days shall be deemed to be from the date of commencement of any actual work at the construction site.

Please note that failure to comply with the instructions given as per this circular will result in show cause notice/stop work order and other applicable penal action.

Along with :-

Annexure-A: Required technical specifications of air quality monitoring systems to be installed at construction sites.

Appendix-V: List of sensor makes and models shortlisted by IITM's co-location study.

Appendix-A:- Air pollution control measures and action guidelines for construction professionals according to dust intensity levels.

Additional Municipal Commissioner (E) Pune Municipal Corporation



महापालिका आयुक्त कार्यालय
पुणे महानगरपालिका
जावक क्र.: मआ/पर्या./ १०८४२
दिनांक: १८/११/२०२५

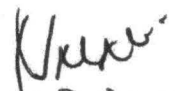
नागरिकांना जाहीर आवाहन

पुणे शहरातील अनेक गृहनिर्माण संस्था, व्यावसायिक संकुले तसेच निवासी परिसरांमध्ये रात्रीच्या वेळी सुरक्षा कर्मचारी थंडीपासून बचाव करण्यासाठी उघड्यावर शेकोट्या पेटवताना लाकूड, कचरा किंवा कोळसा जाळतात. यामधून निर्माण होणाऱ्या धुरांमुळे पुणे शहरातील हवा प्रदूषण वाढत आहे.

हवा प्रदूषणामुळे न केवळ वातावरणामध्ये बदल होतात, तर याचा थेट परिणाम नागरिकांच्या आरोग्यावर देखील होतो. शेकोट्या पेटवल्यामुळे धूर, कार्बन मोनोऑक्साइड PM १०, PM २.५ आणि अन्य हानिकारक वायूंच उत्सर्जन होऊन श्वसनावर परिणाम होतो, ज्यामुळे दमा, अस्थमा आणि इतर श्वसन रोगांचा धोका वाढत आहे.

शहरातील हवा गुणवत्तेत सुधारणा करणेसाठी केंद्र तसेच राज्य शासनाने हवा प्रदूषणाचा नियंत्रित करण्यासाठी विविध कायदे आणि नियम बनवले आहेत. जसे कि "हवा (प्रदूषण नियंत्रण) अधिनियम, १९८१" अंतर्गत भाग ४ कलम १९ (५), आणि "घनकचरा व्यवस्थापन नियम, २०१६" कलम १५ (छ) तसेच पर्यावरण, वन आणि हवामान बदल मंत्रालय यांचेकडील राष्ट्रीय स्वच्छ वायू कार्यक्रमाची दि. २५/८/२०२२ रोजीची मार्गदर्शक तत्वे यानुसार उघड्यावर कोळसा/ जैविक पदार्थ (बायोमास)/ प्लास्टिक/ रबर आणि इतर कचरा जाळण्यास मनाई केली आहे.

जर पुणे शहरातील सोसायटीच्या परिसरात किंवा रस्त्यावर शेकोटी पेटवून उघड्यावर कोळसा/ जैविक पदार्थ (बायोमास)/ प्लास्टिक/ रबर आणि इतर कचरा जाळून धूर निर्माण केला आणि कोणत्याही गृहनिर्माण संकुलातील वॉचमन, सफाई कामगार आणि इतर कामगार व्यक्ती, मनपा कर्मचारी किंवा कंत्राटी कामगार किंवा मनपा ठेकेदाराकडील नियुक्त कंत्राटी कामगार या नियमांचे उल्लंघन करताना आढळल्यास, त्यांच्यावर पुणे महानगरपालिकेच्या घनकचरा व्यवस्थापन विभागामार्फत दंडात्मक कारवाई केली जाईल याची नोंद घ्यावी.


(नवल किशोर राम)
महापालिका आयुक्त
पुणे महानगरपालिका

Municipal Commissioner Office
Pune Municipal Corporation
Outgoing No.: PMA/PRP/90682
Date: 16/11/2024

Public Appeal to Citizens

In many housing societies, commercial complexes, and residential areas in Pune city, during the winter season, bonfires are lit in open spaces to protect security guards and other staff from the cold, and leaves and small branches are also burned. The smoke generated from this is causing air pollution in Pune city.

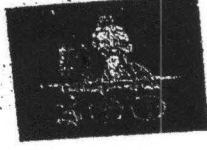
This air pollution not only causes inconvenience to the environment and citizens, but also adversely affects the health of citizens. Burning leaves produces smoke, which contains PM 2.0, PM 2.5, and other harmful gases, causing effects on the respiratory system, thereby increasing the risk of asthma, allergies, and heart and respiratory diseases.

For improving the air quality in the city, the Central and State Governments have made various laws and rules to control air pollution. For example, under the Air (Prevention and Control of Pollution) Act, 1981, Section 4, Clause 19(5), and the Solid Waste Management Rules, 2016, Rule 15(e), as well as according to the guidelines dated 25/01/2022 issued under the National Clean Air Programme of the Ministry of Environment, Forest and Climate Change, burning bonfires/open fires, organic matter (biomass), plastic, scrap, and other waste has been prohibited.

If, in any society premises or on roads in Pune city, bonfires/open fires are lit and organic matter (biomass), plastic, scrap, and other waste are burned causing smoke, and if any watchman, firefighting worker, or other worker in any housing complex, any Pune Municipal Corporation employee, or outsourced worker, or any worker appointed under PMC contractors is found violating these rules, strict action will be taken against them through the Solid Waste Management Department of Pune Municipal Corporation. Please take note of this.

-sd-

(Naval Kishore Ram)
Municipal Commissioner
Pune Municipal Corporation



Annexure R2-III

पर्यावरण विभाग
पुणे महानगरपालिका
जावक क्र.: ७६६
दिनांक: ०३/१२/२५

- १) मा.सहाय्यक महापालिका आयुक्त,
क्षेत्रीय कार्यालय क्र. १ ते १५,
पुणे महानगरपालिका
- २) मा. उप आयुक्त,
परिमंडळ क्र. १ ते ५,
पुणे महानगरपालिका

यांजकडेस....

विषय: शेकोटी/उघड्यावर कचरा पेटवण्यामुळे होणाऱ्या प्रदूषणाबाबत पुणे शहरातील केलेल्या कार्यवाहीचा अहवाल सादर करणेबाबत.

- संदर्भ: १) मा.सहाय्यक महापालिका आयुक्त कार्यालय, पुणे महानगरपालिका यांचे कार्यालयाकडील जा.क्र. मजा/पर्या/१०८४२ दि. १८/११/२०२५ रोजीचे कार्यालयीन परिपत्रक/ नागरिकांना जाहीर आवाहन.
- २) पर्यावरण विभाग यांचेकडील जा. क्र. ७११ दि. १९/११/२०२५ रोजीचे पत्र.

उपरोक्त संदर्भाकित पत्रान्वये क्र.१ नुसार हवा प्रदूषण कमी करण्याच्या दृष्टीने मा. महापालिका आयुक्त, पुणे महानगरपालिका यांचेमार्फत कार्यालयीन परिपत्रक / नागरिकांना जाहीर आवाहन देण्यात आले होते. संदर्भ क्र. २ अन्वये सदर बाब पुढील योग्य त्या कार्यवाहीसाठी आपणाकडे अग्रेषित करण्यात आली होती.

तरी सदर शेकोटी/उघड्यावर कचरा पेटवण्यामुळे होणारे हवा प्रदूषण व त्यावर नियंत्रण ठेवण्यासाठी आपल्या कार्यालयामार्फत परिपत्रकानुसार दि. ३०/११/२०२५ पर्यंत केलेल्या कार्यवाहीचा अहवाल सोबत जोडलेल्या गुगल फॉर्म लिंक (<https://forms.gle/AZamoYbZsFeiyzkw7>) मध्ये भरून इकडील कार्यालयास त्वरित पाठविण्यात यावा हि विनंती.

कळावे,

(किशोरी/वीडमल-शिंदे)

उप आयुक्त, पर्यावरण विभाग

पुणे महानगरपालिका

सोबत: गुगल फॉर्मचा नमुना

**Environment Department
Pune Municipal Corporation**

Outward No.: 686

Date: 03/12/2024

1. Hon. Assistant Municipal Commissioner,
Regional Offices Nos. 1 to 15,
Pune Municipal Corporation
2. Hon. Deputy Commissioner,
Zones Nos. 1 to 5,
Pune Municipal Corporation

...through proper channel...

Subject: Regarding the actions taken in Pune city concerning the pollution caused due to burning bonfires/open fires and garbage.

Reference:

1. Office circular/public appeal issued from the office of the Hon. Municipal Commissioner, Pune Municipal Corporation, bearing No. MPA/PRP/90682 dated 16/11/2024.
2. Letter of the Environment Department bearing outward No. 1212 dated 19/11/2024.

With reference to the above-mentioned letter no. 2, in order to reduce air pollution, a public appeal had been issued by the Hon. Municipal Commissioner, Pune Municipal Corporation, to office heads/citizens. In connection with reference no. 2 above, you had been instructed to carry out further action.

Therefore, in order to control the air pollution caused by the burning of bonfires/open fires and garbage, you are requested to promptly fill in the details of the action taken up to 30/11/2024 in the Google Form link attached along with the report of the action taken through the circular issued by this office.

Google Form link: (<https://forms.gle/AZamoYbZsFeiyzk7>)

Please take note.

-sd-

(Kishori -Shinde)

Deputy Commissioner, Environment Department
Pune Municipal Corporation

Enclosure: Specimen of Google Form.



पर्यावरण विभाग,
पुणे महानगरपालिका
जावक क्र.: ८६४
दिनांक: २३/१२/२५

मा. उप आयुक्त,
मोटार वाहन विभाग,
पुणे महानगरपालिका.

विषय : १५ व्या वित्त आयोग अंतर्गत हवा प्रदूषण कमी करणेकरिता खरेदी करण्यात आलेल्या
Fog Cannon वाहनांकरिता सुधारित (Revised) वेळापत्रकाची अंमलबजावणी
करणेबाबत.

संदर्भ : महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांचे क्र. 251218-FTS-0131 दि. १८/१२/२०२५
रोजीचे पत्र.

मा. महोदय,

पुणे महानगरपालिकेच्या पर्यावरण विभागाकडील १५ व्या वित्त आयोग अंतर्गत प्राप्त निधी मधून
हवा प्रदूषण कमी करणेकरिता खरेदी करण्यात आलेल्या ५ Fog Cannon Mounted Vehicle Machines
१ वर्षाकरिता ऑपरेशन व मेंटेनन्स चालविण्यासाठीची निविदा प्रक्रिया आपले विभागा मार्फत राबविण्यात
आली असून सदर वाहनांचे दैनंदिन कामकाज आपल्या देखरेखी मध्ये सुरु आहे.

उपरोक्त संदर्भाकित पत्रान्वये महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांनी पुणे शहरातील हवा पातळी
गुणवत्ता निर्देशांक (AQI) पातळीत वाढ झाल्याने रस्त्यांवर Fogging ची वारंवारता (frequency) व वेळ
(timings) वाढविण्याचा सल्ला दिला आहे. त्या अनुषंगाने शहरातील सर्व Fog Cannon Mounted
Vehicles यापूर्वीचे नियोजित मार्गावर (same routes) तसेच CAAQMS च्या आसपामचे रस्ते यांवर
खालीलप्रमाणे सुधारित वेळापत्रकानुसार चालविण्यात यावीत.

Revised Operating Timings (सुधारित वेळापत्रक):

- Shift I : सकाळी ०५.०० ते ०७:००
- Shift II : सकाळी ११:०० ते दुपारी ०१:००
- Shift III : दुपारी ०४:०० ते ०६:००
- Shift IV : रात्री ०८:०० ते १०:००

रस्त्यांवरील धुळीचे प्रमाण कमी करण्याच्या दृष्टीने Fog Cannon Machines चा वापर करणे
अपेक्षित असून, खालीलप्रमाणे काही महत्वाच्या रस्त्यांवर Fog Cannon द्वारे नियमित फवारणी
करण्यात यावी.

Route Plan:

Route No.	Route Details	Route Length (Kms)	Total kms per trip
1	Shivajinagar -Pashan- Baner-Sus (Along PMRDA Metro Line)	14	28
2	Pune Municipal Corporation – Karve Road – Warje – Chandni Chowk	12	24
3	Swargate – Katraj – Kondhwa-Undri	15	30
4	Swargate - Shewale Square- Hadapsar-Manjari	14	28
5	Sangamwadi – Yerwada –Kharadi-Wagholi- Kesnand Phata	17	34
6	Sinhagad Road (Dandekar Bridge to Dhayari Phata via Prayeja city to Khadkwasla)	20	40

याव्यतिरिक्त, पुणे महानगरपालिकेचे विविध विभाग तसेच इतर विभागांची खोदाई कामे, बांधकाम कामे चालू अमलेली मार्वजनिक ठिकाणे व अत्यावश्यक परिसर येथेही परिस्थितीनुसार Fog Cannon Machines चा वापर करण्यात यावा. सदर सुधारित वेळापत्रकानुसार Fog Cannon Mounted Vehicles चालविण्यास यावी, ही विनंती.

मा.स. कळावे,

(किशोरी शिंदे-शिंदे)

उप आयुक्त (पर्यावरण विभाग)
पुणे महानगरपालिका

22-12-25

Annexure R2-IV

Environment Department,
Pune Municipal Corporation
Outward No.: 686
Date: 29/12/2023

To,
The Deputy Commissioner,
Motor Vehicles Department,
Pune Municipal Corporation.

Subject: Regarding implementation of the revised schedule for the Fog Cannon vehicles purchased for reducing air pollution under the 15th Finance Commission.

Reference: Maharashtra Pollution Control Board letter no. 251218-FTS-0131 dated 28/12/2023.

Sir,

Under the Environment Department of Pune Municipal Corporation, 5 Fog Cannon Mounted Vehicle Machines have been purchased from the 15th Finance Commission fund for reducing air pollution and controlling dust pollution. These vehicles have been in operation through our department for the last 1 year in accordance with the process prescribed by the government.

Now, as per the advice given by the Maharashtra Pollution Control Board, Pune, in order to improve the air quality index (AQI) in Pune city, it has been suggested to increase the frequency and timings of fogging. Accordingly, all the Fog Cannon Mounted Vehicles in the city should be operated on the previously fixed routes (same routes) as well as in accordance with the revised schedule based on the readings of the CAAQMS system.

Revised Operating Timings:

- Shift I: Morning 05:00 to 09:00
- Shift II: Morning 11:00 to Afternoon 02:00
- Shift III: Afternoon 04:00 to 06:00
- Shift IV: Night 08:00 to 10:00

Therefore, in order to reduce dust pollution on roads, it is expected that Fog Cannon Machines should be used, and on some important roads, Fog Cannons should be regularly sprayed as follows.

Route Plan:

1. **Shivajinagar – Pashan – Baner – Sus** (along PMRDA Metro Line)
Route Length: 14 km
Total km per trip: 28

2. **Pune Municipal Corporation – Karve Road – Warje – Chandni Chowk**

Route Length: 12 km

Total km per trip: 24

3. **Swargate – Katraj – Kondhwa – Undri**

Route Length: 15 km

Total km per trip: 30

4. **Swargate – Shewale Square – Hadapsar – Manjari**

Route Length: 14 km

Total km per trip: 28

5. **Sangamwadi – Yerwada – Kharadi – Wagholi – Kesnand Phata**

Route Length: 17 km

Total km per trip: 34

6. **Sinhagad Road** (Dandekar Bridge to Dhayari Phata via Prayeja City to Khadakwasla)

Route Length: 20 km

Total km per trip: 40

Similarly, at public places where excavation work, construction work, and other such work by various departments of Pune Municipal Corporation as well as other departments is going on, Fog Cannon Machines should be used as required depending on the situation. It is requested that Fog Cannon Mounted Vehicles be operated according to the above revised schedule.

Yours faithfully,

-Sd-

(Kishori Shinde)

Deputy Commissioner (Head – Environment Department)
Pune Municipal Corporation

पर्यावरण विभाग, पुणे महानगरपालिका

Fogging Vehicle Routes

मार्ग क्र. १ गाडी क्र. १ :-

पुणे महानगरपालिका --- Agriculture collage ----- University ----- अभिमान श्री ----- IITM -----
 पाषाण चौक ----- सुस रोड ----- सुसगाव ----- सनि World ----- निमण
 घेताना ----- ऑडी शोरूम ----- Third सह्याद्री ----- बालेवाडी ----- RMC ----- मेट्रो स्टेशन
 ----- Primitcon ----- अभिनव चौक ----- साखर संकुल ----- वाकडेवाडी ----- सिमला चौक ----- कोर्ट
 ----- Pride ----- from जुना बाजार ----- शनिवारवाडा ----- मनपा

मार्ग क्र. २ गाडी क्र. २:-

काँग्रेस भवन ----- डेक्कन ----- कर्वे रोड ----- चांदणी चौक ----- भूगाव चौक ----- सर्विस रोड -----
 वारजे ----- NDA ----- उत्तमनगर ----- कोंढवे- धावडे ----- खडकवासला ----- नांदेड सिटी -----
 धायरी ----- प्रयेजा सिटी ----- वारजे ----- ----- commins कॉलेज ----- वनदेवी ----- कर्वे
 पुतळा ----- SNDP ----- डेक्कन ----- अल्का चौक ----- दांडेकर पूल

मार्ग क्र. ३ गाडी क्र. ३ :-

दांडेकर पूल ----- सिंहगड रोड ----- हायवे ----- आंबेगाव - कात्रज चौक ----- सातारा रोड ----- स्वारगेट -
 ----- सारसवाग ----- ABC चौक ----- शनिवारवाडा ----- दगडूशेठ ----- पेशवे गणपती ----- टिळक रोड
 ----- दांडेकर पूल ----- पाणी भरणे

मार्ग क्र. ४ गाडी क्र. ४ :-

कात्रज ----- उट्टी- कोंढवा ----- हांडेवाडी चौक ----- हडपसर गाडीतळ ----- सोलापूर रोड -----
 मांजरी बु. ----- स्वारगेट ----- गंगाधाम ----- कोंढवा ----- कात्रज

मार्ग क्र. ५ गाडी क्र. ५ :-

खराडी ----- येरवडा ----- गुंजन चौक ----- वडगाव शेरी ----- वाघोली चौक ----- जेल रोड -----
 C & D प्लॉट ----- विश्रान्तवाडी ----- लोहगाव ----- Airport ----- टिंगरेत्तार ----- विश्रान्तवाडी

**Environment Department, Pune Municipal Corporation
Fogging Vehicle Routes**

Route No. 1 Vehicle No. 1:-

Pune Municipal Corporation — Agriculture College — University — Chatushrungi — IITM — Pashan Chowk — Sus Road — Mugbaan — Mani World — Nirmaan Yojana — Audi Showroom — Third Eye Society — Balewadi — RMC — Metro Station — Pritmicon — Abhinav Bank — Sagar Sangam — Bavdhan Bk. — Nirmala Bank — Court — Pride — from Juna Bazaar — Shaniwarwada — PMC

Route No. 2 Vehicle No. 2:-

Sambhaji Bhavan — Balgandharva — Jungli Maharaj Road — Chandani Chowk — Bavdhan Chowk — Bhusari Road — Warje NDA Road — Uttamnagar — Shivane — Dhayari Phata — Khadakwasla — Nanded City — Dhayari — Prayeja City — Warje — Cummins College — Nalstop — Karve Putala — SNDP — Meenal — Alka Talkies — Dandekar Bridge

Route No. 3 Vehicle No. 3:-

Dandekar Bridge — Sinhadgad Road — Hingne — Anandnagar — Rajaram Bridge — Satara Road — Swargate — Sarasbaug — ABC Chowk — Bhawani Peth — Padmavati — Parvati Ganpati — Tilak Road — Dandekar Bridge — complete round

Route No. 4 Vehicle No. 4:-

Katraj — Undri — Kondhwa — Shatrunjay Society — Hadapsar Gadital — Solapur Road — Manjari Bk. — Swargate — Gangadham — Kondhwa — Katraj

Route No. 5 Vehicle No. 5:-

Kharadi — Yerawada — Gunjan Chowk — Bund Garden Bridge — Sangamwadi Chowk — Jail Road — C & D Plant — Vishrantwadi — Lohegaon — Airport — Dhanori — Vishrantwadi

रोड स्वीपर टिपणी

- नवीन गावे हद्दीत समाविष्ट झाल्याने पुणे महानगरपालिकेचे क्षेत्रफळ सुमारे ५१६ चौ. मी. इतके झाले असून शहराची लोकसंख्या अंदाजे सुमारे ७० ते ८० लक्ष इतकी झालेली आहे.
- पुणे शहरातील रहिवाशी व व्यवसायिक क्षेत्रातील रस्त्यांचे सुमारे दहा हजार सेवकांमार्फत झाडणकाम क्षेत्रिय कार्यालय स्तरावर करण्यात येत आहे.
- केंद्र शासनाच्या मार्गदर्शक सूचनांनुसार १८ मीटर पेक्षा जास्त रुंद असणाऱ्या रस्त्यांसाठी रोड स्वीपर वापरणे बाबत सूचित केलेले आहे. PM2.5 आणि PM10 Particulate मॅटर व धूल कमी करण्यासाठी मेकॅनिकल रोड स्वीपर मशिन आवश्यक आहेत.
- घनकचरा व्यवस्थापन विभागामार्फत रूट निश्चित करण्यात आलेले आहेत. झोन क्र. १ ते ४ मधील रस्त्यांकरिता ७ वर्ष कालावधी साठी झोन निहाय रस्त्यांवर भाडेतत्वावरील मेकॅनिकल रोड स्वीपर मशिन द्वारे रस्त्यांची साफसफाई करण्यात येत आहे. तसेच झोन क्र.५ करिता पुणे मनपाच्या मेकॅनिकल रोड स्वीपर मशिन द्वारे रस्त्यांची साफसफाई करण्यात येत आहे.
- पुणे मनपा मार्फत CPHEEO च्या मार्गदर्शक तत्वात नमूद केल्याप्रमाणे vacuum operated road sweeper machine वापरण्यात येत आहेत.
- पादचारी पथांची (फूटपाथ) साफसफाई करण्या करिता अत्याधुनिक pavement sweeper तसेच leaf blower यांचा वापर करण्यात येत आहे.
- प्रत्येक झोन मध्ये तीन रूट निश्चित करण्यात आलेले आहेत. प्रत्येक रूट हा १० किमी लांबीचा आहे. रस्ता दुभाजकाच्या दोन्ही बाजूने तसेच दोन्ही फुटपाथच्या बाजूने मशिन फिरत असून अशाप्रकारे एकूण ४० किमी साफसफाई करण्यात येत आहे.
- प्रत्येक रूट वरती एक Mechanical road sweeper machine , ११ कामगार, २ pavement sweeper, २ leaf blower आणि १ grass cutter machine, आणि १ छोटा हत्ती द्वारे काम करण्यात येत आहे.
- झोन मधील street furniture वगैरे धुवून स्वच्छ करण्यासाठी high pressure washer machine वापरण्यात येत आहे.
- पुणे महानगरपालिकेच्या झोन क्र. १ ते ५ करिता १६ यांत्रिकी रोड स्वीपर मशिन मार्फत दैनंदिन सुमारे १६० कि.मी. रस्त्यांची साफसफाई करण्यात येत आहे.
- उपरोक्त नमूद रोड स्वीपरच्या रूट ची यादी पुढील प्रमाणे आहे.

पुणे महानगरपालिकेच्या घनकचरा व्यवस्थापन विभागामार्फत दैनंदिन परिमंडळ निहाय खालील प्रमाणे मुख्य रस्तायांची यांत्रिकी पद्धतीने स्वच्छता करण्यात येत आहे.

परिमंडळ क्र.	रूट	टेंडर नं.	कायदेशिनांक	कामाची मुदत	कामाचे स्वरूप
१	१. ठाकरे चौक - आळंदी रोड - विश्रान्तवाडी - जेल रोड - VSNL	PMC/SWM/2024-25/49 ठेकेदार:- M/s. BVG India Pvt.Ltd	दि.१०/०७/२०२५ जावक.क्र.घनकचरा/2024-2025/7	७ वर्ष	•प्रत्येक रूट वरती एक Mechanical road sweeper machine , ११ कामगार, २ pavement sweeper, २ leaf blower आणि १ grass cutter machine, आणि १ छोटा हत्ती व तिन्ही रूट करिता १ Jetting machine मार्फत यांत्रिकी कामकाज .
	२.शास्त्री चौक - नगर रोड - आपले घर - खराडी बाय पास - मुंडवा त्रिज				
	३.गुंजन चौक - एअरपोर्ट रोड - शास्त्री चौक - कल्याणी नगर				
२	१.विद्यापीठ - औंध - औंध खडकी रोड - आय टी आय रोड - अभिमानश्री रोड.	PMC/SWM/2024-25/50 ठेकेदार:- M/s Global Waste Management Pvt.Ltd	दि.०९/०६/२०२५ जावक.क्र.घनकचरा/2024-2025/59	७ वर्ष	•प्रत्येक रूट वरती एक Mechanical road sweeper machine , ११ कामगार, २ pavement sweeper, २ leaf blower, १ grass cutter machine, आणि १ छोटा हत्ती व तिन्ही रूट करिता १ Jetting machine मार्फत यांत्रिकी कामकाज .
	२. सेनापती बापट रोड - संचेती-विद्यापीठ रोड - जुना मुंबई हायवे (पुणे मनपा हद्द)				
	३.वाणेर रोड - बालेवाडी हायस्ट्रीट - पॅनकार्ड क्लब रोड				
	४. पाटील इस्टेट - ठाकरे चौक - रुबी हॉल हॉस्पिटल - मंगमवाडी RTO चौक	PMC/SWM/2018-19/125 ठेकेदार:- M/s Global Waste Management Pvt.Ltd	दि.०६/०१/२०२३ जावक.क्र.घनकचरा/५४२३	३ वर्ष	रूट वरती एक Mechanical road sweeper machine , १० कामगार, १ छोटा हत्ती मार्फत यांत्रिकी कामकाज .
३	१. (सातारा रोड) मित्र मंडळ चौक - लक्ष्मीनारायण चौक - कात्रज चौक - मित्रमंडळ चौक	PMC/SWM/2024-25/51 ठेकेदार:- M/s Global Waste Management Pvt.Ltd	दि.०९/०६/२०२५ जावक.क्र.घनकचरा/2024-2025/57	७ वर्ष	•प्रत्येक रूट वरती एक Mechanical road sweeper machine , ११ कामगार, २ pavement sweeper, २ leaf blower, १ grass cutter machine, आणि १ छोटा हत्ती व तिन्ही रूट करिता १ Jetting machine मार्फत यांत्रिकी कामकाज .
	२. (सिंहगड रोड) सारस बाग (खंडोबा मंदिर) चौक ते नांदेड सिटी चौक - सारसबाग (खंडोबा मंदिर) चौक				
	३. (कर्वे रोड) खंडोजी बाबा चौक - गणपती माथा वारजे - खंडोजी बाबा चौक .				
	४. कात्रज कोंढवा रोड - मंतरवाडी	PMC/SWM/2022-23/48 ठेकेदार :- M/s Greenenviro Infratech Pvt. Ltd	दि.२४/०२/२०२३ जावक.क्र.घनकचरा/६४१२	३ वर्ष	रूट वरती एक Mechanical road sweeper machine , १० कामगार, १ छोटा हत्ती मार्फत यांत्रिकी कामकाज .
	५. पौड रोड (पौडफाटा कर्वेरोड - चांदणी चौक) डीपी रोड अँड. श्रीकांत ठाकरे रोड - वावधन पाषाण रोड - पाषाण सुस रोड				
	१. भैरोबा नाला - फातिमानगर - संविधान चौक - साळुंखे विहार रोड - नोबेल हॉस्पिटल	*			

परिमंडल क्र.	रूट	टेंडर नं.	कायदेश दिनांक	कामाची मुदत	कामाचे स्वरूप
४	२. नोबल हॉस्पिटल - हडपसर गाडीतळ - मांजरी फाटा (सोलापूर रोड) - हडपसर गाडीतळ - भेकराई चौक (सासवड रोड)	PMC/SWM/2024-25/52 ठेकेदार:- M/s Global Waste Management Pvt.Ltd	दि.०९/०६/२०२५ जावक.क्र.घनक चरा/2024-2025/58	७ वर्ष	•प्रत्येक रूट वरती एक Mechanical road sweeper machine ,११ कामगार, २ pavement sweeper, २ leaf blower,१ grass cutter machine, आणि १ छोटा हत्ती व तिन्ही रूट करिता १ Jetting machine मार्फत यांत्रिकी कामकाज .
	३. नोबल हॉस्पिटल - मुंडवा ब्रिज - पासपोर्ट ऑफीस (मगरपट्टा रोड) - नोबल हॉस्पिटल				
५	जवाहरलाल नेहरू रोड - बिबवेवाडी कोंढवा रोड - गंगाधाम शत्रुंजय रोड - स्वामी विवेकानंद रोड - मार्केटयार्ड रोड - वीर संताजी घोरपडे रोड - लालबहादूर शास्त्री रोड	PMC/SWM/2024-25/20 ठेकेदार :- M/s Innovative Cleaning System Pvt. Ltd	दि.१५/१०/२०२४ जावक.क्र.घनक चरा/2024-2025/11	२० महिने	रूट वरती एक Mechanical road sweeper machine मार्फत फक्त रस्त्यांची Divider बाजू घेण्यात येते.

Note on Road Sweeper

- Since newly added villages have recently been included within Pune Municipal Corporation limits, approximately **196 sq. km.** of area has been added, and road cleaning is being carried out in about **50 zones.**
- In Pune city, daily sweeping and cleaning of roads in residential and commercial areas is being carried out at the regional office level through about **10,000 sanitation workers.**
- As per the guidelines of the Central Government, it has been mentioned that road sweepers should be used on roads wider than **18 meters.** Mechanical road sweepers are required to reduce **PM 2.5** and **PM 10 particulate matter** and dust.
- Through the Solid Waste Management Department, roads are cleaned on a regular basis. In Zones Nos. **1 to 4,** roads are cleaned by appointed contractors and in Zone No. **5,** roads are cleaned through Pune Municipal Corporation's mechanical road sweeper machines.
- Pune Municipal Corporation uses **vacuum operated road sweeper machines** as prescribed in the guidelines of **CPHEEO.**
- For cleaning footpaths (pavements), modern **pavement sweepers** and **leaf blowers** are being used.
- In each zone, **three routes** have been fixed. Each route is about **10 km long.** The machine moves on both sides of the road as well as both sides of the footpath, and in this way a total of **40 km** is cleaned.
- On each route, **one mechanical road sweeper machine, 11 workers, 2 pavement sweepers, 2 leaf blowers, 2 grass cutter machines, and 1 small vehicle** are deployed.
- In the zones, **high pressure washer machines** are used for cleaning dusty street furniture.
- Through Pune Municipal Corporation's **Zones 1 to 5,** approximately **180 km of roads** are cleaned daily by **16 mechanical road sweeper machines.**
- The detailed information of the above road sweeper routes is as follows.

Daily route-wise mechanical sweeping of major roads by Pune Municipal Corporation's Solid Waste Management Department**Zone 1****Tender No.:** PMC/SWM/2024-25/49**Contractor:** M/s BVG India Pvt. Ltd**Work order date:** 27/09/2024**Work period:** 5 years**Routes:**

1. Akurdi Bridge - Dange Chowk - Ravet Bridge - D.Y. Patil Road - Nigdi Bus Stop - Mukai Chowk
2. Bhosari Bus Stand - Spine Road - Alandi Road - Bhosari Bus Stop - MIDC Chowk
3. Bhosari Chowk - Moshi - Chikhli Road - Bhosari Bus Stand - Bhosari Nagar

Machines and manpower:

- On each route: 1 mechanical road sweeper machine, 11 workers, 2 pavement sweepers, 2 leaf blowers, 2 grass cutter machines, and 1 small vehicle
- Footpath cleaning by jetting machine

Zone 2**Tender No.:** PMC/SWM/2024-25/50**Contractor:** M/s Global Waste Management Pvt. Ltd**Work order date:** 01/09/2024**Work period:** 5 years**Routes:**

1. Vishrantwadi Chowk - Alandi Road - Airport Road - Alandi Road - Office Main Road
2. Ramwadi Phata to Nagar Road - Yerwada - Vishrantwadi Road - Pune-Mumbai Highway (from PMC limits)
3. Alandi Road - Dighi Bridge - Bopkhel Road - Phulenagar Flyover
4. Mhatre Bridge - Garware Bridge - Law College Road - Nal Stop - RTO Chowk

Machines and manpower:

- On each route: 1 mechanical road sweeper machine, 11 workers, 2 pavement sweepers, 2 leaf blowers, 2 grass cutter machines, and 1 small vehicle
- Footpath cleaning by jetting machine

Zone 3**Tender No.:** PMC/SWM/2024-25/51**Contractor:** M/s Global Waste Management Pvt. Ltd**Work order date:** 01/09/2024**Work period:** 5 years**Routes:**

1. (Satara Road) Market Yard Chowk - Salisbury Park Chowk - Nana Chowk - Mukund Nagar
2. (Sinhagad Road) Mhasoba Chowk (Dandekar Bridge) - Rajaram Bridge - Anand Nagar - Hingne Bridge - Anandnagar (Sinhagad Road)
3. (Karve Road) Nal Stop Bus Stop - Garware Bridge Bus Stop - Law College Road
4. Katraj Kondhwa Road - Market Yard
5. Paud Road (Kothrud Depot) - Chandni Chowk - Bavdhan Bridge - Chandni Chowk - Pashan Road - Pashan Main Road
6. Senapati Bapat Road - Chaturshringi - Model Colony - Paud Phata Road - Noble Hospital

Machines and manpower:

- On each route: 1 mechanical road sweeper machine, 11 workers, 2 pavement sweepers, 2 leaf blowers, 2 grass cutter machines, and 1 small vehicle
- Footpath cleaning by jetting machine

Zone 4

Tender No.: PMC/SWM/2024-25/52

Contractor: M/s Global Waste Management Pvt. Ltd

Work order date: 01/09/2024

Work period: 5 years

Routes:

1. Noble Hospital - Hadapsar Gadital - Magarpatta Phata (Solapur Road) - Hadapsar Railway Station Chowk (Magarpatta Road)
2. Noble Hospital - Mundhwa Bridge - Magarpatta Bridge (Mundhwa Road) - Noble Hospital

Machines and manpower:

- On each route: 1 mechanical road sweeper machine, 11 workers, 2 pavement sweepers, 2 leaf blowers, 2 grass cutter machines, and 1 small vehicle
- Since the roads are narrow on this route, footpath cleaning is done by 1 jetting machine

Zone 5

Tender No.: PMC/SWM/2024-25/20

Contractor: M/s Innovative Cleaning System Pvt. Ltd

Work order date: 13/12/2024

Work period: 30 months

Routes:

Navale Bridge Road - Dhayari Phata Road - Garmal - Ambegaon Road - Sinhagad Road - Dhayari Phata - Navale Bridge Road - Taljai Tekdi Road

Machines and manpower:

- Road cleaning on this route is carried out by 1 mechanical road sweeper machine according to the route fixed for the division.

Some road names and local place names in the scanned table are faint, so a few spellings may be approximate, but the translation above follows the document closely.



पर्यावरण विभाग,
पुणे महानगरपालिका
जावक क्र.: ८६६
दिनांक: 23/09/202६

जाहीर आवाहन

विषय:- पुणे महानगरपालिका कार्यक्षेत्रातील बेकरी/हॉटेल्स/रेस्टोरंट/खाद्यपदार्थ स्टॉल/ ढाबा/ तंदूर हॉटेल्स यांमध्ये हरित इंधनांचा वापर करण्याबाबत जाहीर आवाहन.

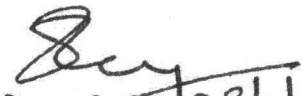
हवा प्रदूषण कमी करण्याच्या योजनेचा एक भाग म्हणून, महाराष्ट्र प्रदूषण नियंत्रण मंडळाने (MPCB) बेकरी/हॉटेल्स/रेस्टोरंट/खाद्यपदार्थ स्टॉल/ढाबा/तंदूर हॉटेल्स यांमध्ये लाकूड/कोळसा इत्यादीच्या वापराऐवजी एलपीजी, पीएनजी, विद्युत इ. हरित ऊर्जेच्या स्रोतांचा अवलंब करण्यासाठी मार्गदर्शक तत्त्वे जारी केली आहेत.

शहरातील हवा प्रदूषण गुणवत्तेत सुधारणा करणेसाठी महाराष्ट्र प्रदूषण नियंत्रण मंडळाने अन्न पदार्थ तयार करताना व्यावसायिक स्वरूपातील लाकूड/ कोळसा यांसारखे इंधनापासून निर्माण होणाऱ्या धूर व हवा प्रदूषणावर नियंत्रण आणणेकरिता शहरांमधील बेकरी/हॉटेल्स/रेस्टोरंट/खाद्यपदार्थ स्टॉल/ढाबा/तंदूर हॉटेल्स सारख्या व्यवसायांकरिता हरित इंधन जसे की एलपीजी, पीएनजी किंवा विद्युत इ. च्या वापरावर भर देणेस कळविले आहे.

तरी, शहरातील वाढते हवा प्रदूषण कमी करण्याच्या अनुषंगाने महाराष्ट्र प्रदूषण नियंत्रण मंडळ यांचेमार्फत दिनांक १३ फेब्रुवारी २०२४ रोजी हवा (प्रदूषण आणि नियंत्रण) अधिनियम १९८१ चे कलम ३१ (अ) तसेच दिनांक ७ मार्च २०२४ रोजी पर्यावरण (संरक्षण) अधिनियम १९८६ चे कलम ५ अंतर्गत जारी करण्यात आलेल्या मार्गदर्शक तत्त्वांनुसार बेकरी/हॉटेल्स/रेस्टोरंट/खाद्यपदार्थ स्टॉल/ढाबा/तंदूर हॉटेल्स यांमध्ये लाकूड/कोळसा इत्यादी पारंपारिक इंधनाच्या वापराऐवजी हरित इंधन जसे कि, एलपीजी, पीएनजी किंवा विद्युत स्रोतांचा वापर एक वर्ष कालावधीच्या आत रुपांतरीत करावा असे नमूद केले आहे. सदर इंधन रुपांतरीत करण्याचा कालावधी संपुष्टात आला आहे याची नोंद घ्यावी.

पुणे शहरातील सर्व बेकरी/हॉटेल्स/रेस्टोरंट/खाद्यपदार्थ स्टॉल/ढाबा/ तंदूर हॉटेल्स मध्ये व्यावसायिक कामासाठी अन्न पदार्थ तयार करताना लाकूड/कोळसा यांसारखे इंधनांपासून तयार होणारे धुरामुळे होणाऱ्या हवा प्रदूषणावर नियंत्रण आणणेकरिता सदर जाहीर आवाहनचे प्रसिद्धी दिनांकापासून पुणे महानगरपालिकेच्या क्षेत्रातील सर्व बेकरी/हॉटेल्स/रेस्टोरंट/खाद्यपदार्थ स्टॉल/ढाबा/तंदूर हॉटेल्स या ठिकाणी एलपीजी, पीएनजी किंवा विद्युत यांसारख्या हरित/स्वच्छ इंधनाचा वापर सुरु करणे आवश्यक आहे.

तरी, सदर ठिकाणी तपासणी दरम्यान रुपांतरीत इंधन वापराबाबतचे निकष आढळून न आल्यास व नियमांचे पालन न झाल्यास पुणे महानगरपालिकेमार्फत पुढील कायदेशीर कारवाई करण्यात येईल याची नोंद घ्यावी.



(पृथ्वीराज बी.पी.) 23/1/26

अतिरीक्त महापालिका आयुक्त (इ)

पुणे महानगरपालिका

**Environment Department,
Pune Municipal Corporation**

Outward No.: 686

Date: 23/01/2024

Public Appeal

Subject: Public appeal regarding the use of green fuels in bakeries/hotels/restaurants/food stalls/stalls/tandoor hotels within the jurisdiction of Pune Municipal Corporation.

As part of the plan to reduce air pollution, the Maharashtra Pollution Control Board (MPCB) has issued guidelines for bakeries/hotels/restaurants/food stalls/stalls/tandoor hotels to adopt green energy sources such as LPG, PNG, electricity, etc., instead of using wood/coal as fuel.

For improving the air quality in the city and controlling the smoke and air pollution generated from the use of wood/coal in commercial establishments while preparing food items, the Maharashtra Pollution Control Board has directed bakeries/hotels/restaurants/food stalls/stalls/tandoor hotels to use green fuels such as LPG, PNG, or electricity for cooking arrangements.

Accordingly, in view of reducing the increasing air pollution in the city, the Maharashtra Pollution Control Board, by its guidelines issued on **12 February 2024** under Section 31(A) of the Air (Prevention and Control of Pollution) Act, 1981 and under Section 5 of the Environment (Protection) Act, 1986, has stated that bakeries/hotels/restaurants/food stalls/stalls/tandoor hotels should convert from traditional fuels such as wood/coal to green fuels such as LPG, PNG, or electric sources within a period of one year.

For all bakeries/hotels/restaurants/food stalls/stalls/tandoor hotels in Pune city that prepare food commercially, in order to control the air pollution caused by the smoke generated from fuels like wood/coal, it is necessary from the date of this public appeal for all such establishments within the jurisdiction of Pune Municipal Corporation to use green/clean fuels or clean energy sources such as LPG, PNG, or electricity.

Therefore, it should be noted that if the fuel is not converted within the specified period from the date of this notice, and if the rules are not followed, punitive action will be taken by Pune Municipal Corporation, and this should be taken on record.

-sd-

(Prithviraj B.P.)

Additional Municipal Commissioner (East)

Pune Municipal Corporation

पुणे महानगर परिवहन महामंडळ लिमिटेड

PUNE MAHANAGAR PARIVAHAN MAHAMANDAL LIMITED

पीएमटी बिल्डींग, स्वर्गगेट, पुणे ४११०३७

PMT, Building, Swargate, Pune 411 037

CIN No-U60210PN200PLC130461

Website - www.pmpml.org

E-mail: (pmpmladmhr@gmail.com)



फोन : ०२०-२४४४०४१७

Phone : 020-24440417

फॅक्स : २४४४५४९०

Fax : 24445490

Ref.No.: PMPML/CE/5493

Date : 13/02/2025

Subscription LetterANNEXURE-A

To,
CGM (Contracts)
Convergence Energy
Services Limited Core-3,
2nd Floor, SCOPE Complex,
Lodhi Road, New Delhi-110003.

Subject : Proposal for participation in PM E-DRIVE through Aggregation model for Deployment of Electric Buses on Gross Cost Contract Wet Lease Model.

Sir,

Reference to Expression of Interest issued on 10/01/2025 for inviting proposal from STUs/Authority for **Participation in PM E-DRIVE through Aggregation model For Deployment of Electric Buses on Gross Cost Contract Model** issued by CESL, we are hereby submitting our Expression of Interest, in the prescribed format, for consideration of CESL. We agree to abide by the conditions set forth in the said EOI.

As a part of this program, we express our demand for E buses here under :

1. Demand for Type I buses:

Type	AC		Non-AC	
	Standard Floor	Low Floor	Standard Floor	Low Floor
Number of Buses (7m)	NA	NA	NA	NA
Number of Buses (9m)	NA	NA	200 (Non BRT)	NA
Number of Buses (12m)	NA	NA	800 (BRT)	NA

(Nitin Narvekar)
Joint Managing Director
Pune Mahanagar Parivahan
Mahamandal Ltd.

ANNEXURE-B

Additional information needed to be submitted by cities/STUs in response to EOI

A. General details :

Parameter	Details
Name of STU/Authority:	Pune Mahahnagar Parivhan Mahamandal Ltd. Pune (MH)
Details of nodal person: Name : Designation : Phone number : E-mail ID :	Mr. Rajesh Dashrath Kudale. Chief Mechanical Engineer +919881495581 ce@pmpml.org
Power Tariff applicable (final landed cost) for Electric buses (Rs. per unit). Tariff guidelines to be attached.	As per the state supply authority which is MSCDCL
Total no. of buses currently in operation	1928
No of buses in operation CNG Diesel	CNG - 1211 Diesel - 227
No of e-buses in operation	490
No of vehicles running on GCC model CNG Diesel	CNG - 435 Diesel - 00
No of e-buses on GCC model	490
Age of buses for scrapping	12 Year
No of Buses to be scrapped in FY 2024-25	Nil
No of Buses to be scrapped in FY 2025-26	322
No of Buses to be scrapped in FY 2026-27	Nil
No of depots identified for e-buses to be deployed under this program	8
Number of buses Authority is planning deploy in next 3 years Year 1 Year 2 Year 3	Year 1-350 Year 2-350 Year 3-300

B. List of depots identified for proposed electric buses to be deployed and no of buses (type wise) per depot under: (this information will be disclosed in the RFP).**i. GCC Model**

S. No.	Depot Name	No of proposed Buses	Bus type* (7/9/12 meter bus)	Area (sq.m)
1	Nigdi	210	12 Mtr	3600
2	Charoli	140	12 Mtr	14000
3	Upper Indira Nagar	100	9 Mtr	8000
4	Bhosri	100	12 Mtr	8000
5	Moshi	150	9 Mtr	5500
6	Kothrud Sr no 69	100	9 Mtr	5200
7	Kumre Park	100	12 Mtr	10000
8	Wakad	100	12 Mtr	8000

*Authority is advised to allocate minimum of 50 buses in a depot for each type of bus

C. Details about arrangement of upstream electricity supply for charging of electric buses.

i. GCC Model

Depot Name	No of Buses	Sanctioned load capacity	Sanctioned load source (6/11/33/66 KV)	Additional load requirement (if any)
Nigdi	210	3920 KW/4900 KVA	11/22 KV	NA
Charoli	140	3600 KW/4500 KVA	11/22 KV	NA
Upper Indira Nagar	100	3200 KW/4000 KVA	11/22 KV	NA
Bhosri	100	3200 KW/4000 KVA	11/22 KV	NA
Moshi	150	2720 KW/3400 KVA	11/22 KV	NA
Kothrud Sr no 69	100	2400 KW/3000 KVA	11/22 KV	NA
Kumre Park	100	3200 KW/4000 KVA	11/22 KV	NA
Wakad	100	4000 KW/5000 KVA	11/22 KV	NA

D. Any other information in support of proposal submitted by STU/Authority.

- There is no clarity on who will be responsible for paying the electricity bill for charging the EVs.
- There is no clear guidance on the number of spare buses required in case of breakdowns.
- There are no clear instructions on how to handle incomplete assured kilometers. What is the mechanism for deducting payments if the kilometers driven are less than the assured kilometers?
- Battery details and battery life are not mentioned anywhere.
- The driver should have a minimum of 2 years of experience with auto gear buses in cities.
- The escrow account payment mechanism should be in a 70-30 ratio instead of 90-10.
- There is no direction mentioned regarding the passenger load capacity in a single charge.
- We recommend using the latest technology, such as blade technology, in new e-buses, which can assure 500 km on a single charge.
- There should be a provision for qualified maintenance staff and a breakdown van.



(Nitin Narvekar)
Joint Managing Director
Pune Mahanagar Parivahan
Mahamandal Ltd.

विद्युत विभाग - स्मशानभूमी यादी

अ.क्र	परिमंडळ क्र.	शवदाहिन्यांचे ठिकाण	विद्युत	गॅस	विद्युत + गॅस	ए.पीसी.	पायर
१	१	येरवडा स्मशानभूमी, गुंजन चौक, नगर रोड	२	-	-	२ शेड मध्ये	६
२	१	विश्रांतवाडी स्मशानभूमी, विश्रांत सोसायटी	-	१	-	१ शेड मध्ये	३
३	१	कोरेगाव पार्क स्मशानभूमी, नॉर्थ मेन रोड बहिरोबा पंपिंग समोर	-	१	-	१ शेड मध्ये	३
४	१	अ) वडगावशेरी स्मशानभूमी, साईनाथ नगर ब) वडगाव शेरी भक्ती पार्क	-	१	-	-	३ ५
५	१	खराडी स्मशानभूमी, खराडी गाव	१	-	-	२ शेड मध्ये	६
६	१	तुलसीराम बर्निंग घाट स्मशानभूमी	-	-	-	१ शेड मध्ये	३
७	१	कैलास स्मशानभूमी, एस.एस.पी.एम.एस. मैदान जवळ, संगमवाडी	२	-	-	२ शेड मध्ये	६
८	१	वाघोली स्मशानभूमी, वाघेश्वर मंदिर जवळ, वाघोली	-	-	-	१ शेड मध्ये	३
९	२	संगमवाडी स्मशानभूमी, संगमवाडी	-	-	-	१ शेड मध्ये	१
१०	२	कोथरूड स्मशानभूमी, गुरुगणेश नगर	१	-	-	१ शेड मध्ये	३
११	२	बोपोडी स्मशानभूमी, बोपोडी गावठाण, भाऊ पाटील रोड.	-	२	-	१ शेड मध्ये	३
१२	२	औंध स्मशानभूमी, जकात नाका सिद्धार्थ नगर	-	१	-	१ शेड मध्ये	३
१३	२	पाषाण स्मशानभूमी, पाषाण गावठाण स्टेट बँक नगर	-	२	-	२ शेड मध्ये	५
१४	२	सुतारवाडी स्मशानभूमी, सुतारवाडी रोड जय भवानी उद्यान जवळ.	-	-	-	१ शेड मध्ये	२
१५	२	बाणेर स्मशानभूमी, औंध-बाणेर लिंक रोड.	१	-	-	-	-
१६	२	बावधन स्मशानभूमी, बावधन रोड पाटील नगर	-	१	-	१ शेड मध्ये	३
१७	३	वडगाव धायरी स्मशानभूमी	-	१	-	१ शेड मध्ये	३
१८	३	धनकवडी स्मशानभूमी, रामचंद्र नगर ज्योती पार्क.	-	१	-	२ शेड मध्ये	६
१९	३	कात्रज स्मशानभूमी, विजय डेअरी, संतोष नगर	-	२	-	१ शेड मध्ये	३
२०	३	आंबेगाव स्मशानभूमी, अम्बेगओन खुर्द	-	-	-	१ शेड मध्ये	३
२१	४	हडपसर अमरधाम स्मशानभूमी, माळवाडी	-	२	-	२ शेड मध्ये	६
२२	४	वानवडी स्मशानभूमी	-	१	-	१ शेड मध्ये	३

२३	४	मुंढवा स्मशानभूमी	-	१	-	१ शेड मध्ये	३
२४	४	कोंढवा खुर्द स्मशानभूमी	-	-	-	१ शेड मध्ये	३
२५	४	गंगानगर हडपसर स्मशानभूमी, गंगानगर हडपसर कॉलोनी	-	-	१	१ शेड मध्ये	३
२६	५	वैकुंठ स्मशानभूमी, नवी पेठ	५	३	-	३ शेड मध्ये	१८
२७	५	विबवेवाडी स्मशानभूमी, इंदिरा नगर, महेश सोसायटी	-	२	-	१ शेड मध्ये	७
एकूण			१२	२२	१		
			एकूण ३५			३३ शेड मध्ये	११६

प्राण्यांसाठी शवदहन व्यवस्था

१) मोठ्या प्राण्यांसाठी इन्सिनरेटर - नायडू कोठी	१
२) छोटी प्राण्यांसाठी इन्सिनरेटर - नायडू कोठी	१

कार्यकारी अभियंता (विद्युत)
पुणे महानगरपालिका

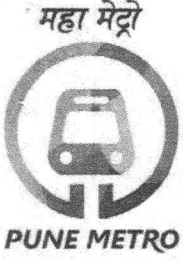
(Signature)

अधिक्षक अभियंता (विद्युत)
पुणे महानगरपालिका

Electricity Department – Crematorium List

Sr. No.	Zone No.	Location of Crematorium	Electric	Gas	Electric + Gas	PNG	Pyre
1	1	Yerwada Crematorium, Ranjan Chowk, Nagar Road	2	-	-	within 2 years	6
2	1	Vishrantwadi Crematorium, Vishrant Society	-	1	-	within 2 years	3
3	1	Koregaon Park Crematorium, North Main Road, behind Osho Ashram	-	1	-	within 2 years	3
4	1	A) Ambedkari Crematorium, Sahyadri Nagar B) Balaji Shinde Vasti Park	-	1	-	-	5
5	1	Kharadi Crematorium, Kharadi Gaothan	1	-	-	within 2 years	3
6	1	Tulsiram Varni Ghat Crematorium	-	-	-	within 2 years	6
7	1	Kailas Crematorium, S.M.P.M.S. Maidan area, Narpatgiri	2	-	-	within 2 years	6
8	1	Bavdhan Crematorium, near Bavdhan Temple, Bavdhan	-	-	-	within 2 years	3
9	2	Sangamwadi Crematorium, Sangamwadi	-	-	-	within 1 year	2
10	2	Koyajul Crematorium, Gurunanak Nagar	1	-	-	within 1 year	3
11	2	Bopodi Crematorium, Bopodi Gaothan, near Bhau Patil Road	-	1	-	within 1 year	3
12	2	Ondh Crematorium, Jagtap Nagar, Siddharth Nagar	-	1	-	within 2 years	3
13	2	Pashan Crematorium, Pashan Gaothan, State Bank Nagar	-	1	-	within 2 years	4
14	2	Sutardara Crematorium, Sutardara Road, near Jay Bhavani Udyan	-	-	-	within 1 year	2
15	2	Baner Crematorium, Aundh-Baner Link Road	1	-	-	-	-
16	2	Vadgaon Crematorium, Vadgaon Road, Patil Nagar	-	1	-	within 1 year	3
17	3	Vadgaon Dhayari Crematorium	-	1	-	within 1 year	3
18	3	Dhanakawadi Crematorium, Ramchandra Nagar, Jyoti Park	-	1	-	within 2 years	6

Sr. No.	Zone No.	Location of Crematorium	Electric	Gas	Electric + Gas	PNG	Pyre
19	3	Katraj Crematorium, Vijay Bakery, Santosh Nagar	-	2	-	within 1 year	3
20	3	Ambegaon Crematorium, Manjogiri Budruk	-	-	-	within 1 year	3
21	4	Hadapsar Amardham Crematorium, Magarwadi	-	2	-	within 2 years	6
22	4	Wanawadi Crematorium	-	1	-	within 1 year	3
23	4	Mundhwa Crematorium	-	1	-	within 1 year	3
24	4	Kondhwa Budruk Crematorium	-	-	-	within 1 year	3
25	4	Ganganagar Hadapsar Crematorium, Ganganagar, Hadapsar Colony	-	-	1	within 1 year	3
26	5	Vaikunth Crematorium, Navi Peth	4	3	-	within 3 years	18
27	5	Bibwewadi Crematorium, Indira Nagar, Mahesh Society	-	2	-	within 1 year	7



महाराष्ट्र मेट्रो रेल कॉर्पोरेशन लिमिटेड
MAHARASHTRA METRO RAIL CORPORATION LIMITED
(भारत सरकार आणि महाराष्ट्र शासनाचा संयुक्त उपक्रम)
Joint Venture of Govt. of India & Govt. of Maharashtra
PUNE METRO RAIL PROJECT



No. Maha-Metro/Plng/CMP/2024/1056

Date: 11.11.2024

To,
Additional Commissioner of Police,
Eastern Regional Division,
Central Administrative Building,
Near Pune Railway Station,
Pune- 411001.

Sub: Traffic Volume Data for 32 arterial roads and 75 sub-arterial roads

Ref: Your office letter dated: 21.09.2024

Dear Sir,

Vide your letter dated 21.09.2024, the traffic volume data of 32 arterial roads and 75 sub-arterial roads were sought. Accordingly, the aforesaid data collected during CMP study is enclosed for your kind reference.

Thanking you,

Encl: A/a

Yours faithfully,

(Atul Gadgil)

Director - Works

अपर पोलीस आयुक्त पूर्व प्रादेशिक विभाग, पुणे.	
ज.सं.आ.	110
वक्र.क्र.	110
शहर/जिल्हा	पुणे
अन्वय क्रमांक	2723
दिनांक	2 NOV 2024

CORPORATE OFFICE : PUNE

**Peak Hour and Daily Traffic in PCUs for Base year 2024 for
32 Arterial Roads**

Road Name	Peak Hour PCUs	Daily PCUs
1- Pune Nagar Road	13,157	1,37,051
2- Kharadi Bypass	11,013	1,14,715
3- North Main Road	5,132	53,461
4-Pune Solapur Road	18,273	1,90,340
5- Pune Saswad Road	3,857	52,120
6-Bypass Road	6,909	71,973
7- Satara Road	4,162	43,357
8- Shivaji Road	9,313	97,010
9- Bajirao Road	8,153	84,927
10- Tilak Road	7,985	83,178
11- Shastri Road	8,185	85,263
12- Sinhgad Road	8,666	90,275
13- Karve Road	13,409	1,39,673
14- Paud Road	10,145	1,05,675
15- Senapati Bapat Road	9,419	98,119
16- F. C. Road	7,919	82,489
17- Jangli Maharaj Road	9,931	1,03,448
18- Pashan to Sus Road	3,990	41,559
19- Baner Road	9,608	1,00,087
20- Ganeshkhind Road	16,929	1,76,344
21- Old Mumbai_Pune Highway	16,847	1,75,490
22- Mangaldas Road	8,865	92,348
23- Dr. Ambedkar Road	11,136	1,16,003
24- Bundgarden Road	9,159	95,403
25-Old Airport Road	9,310	96,979
26- Alandi Road	10,046	1,04,645
27- New Airport Road	7,599	79,158
28- Prince of Wales Road	4,677	48,724
29- Kondhwa Main Road	14,720	1,53,335
30- M G Road	4,079	42,494
31- Saadhu- Vaswani Road	5,449	56,755
32-Nehru Road	11,375	1,18,486

Dr. Kusum
11/11/24
Mahq Meho

**Peak Hour and Daily Traffic in PCUs for Base year 2024 for
75 Sub-Arterial and Other Roads**

Road Name	Peak Hour PCUs	Daily PCUs
1. Bhandarkar road	2,306	24,023
2. Prabhat road	2,500	26,044
3. BMCC Road	1,838	19,144
4. Ghole Road	3,095	32,245
5. Apte Road	2,129	22,178
6. Modern College Road	4,368	45,504
7. Bhosale Nagar	4,373	45,553
8. Aundh Road	8,530	88,849
9. Bhau Patil Road	4,410	45,940
10. Gulvani Maharaj Road and G.A.Kulkarni	5,122	53,355
11. Kelkar Road	1,812	18,879
12. Lakshmi Road	3,003	31,286
13. Kumthekar Road	2,035	21,195
14. Mudaliar Road, Ganesh Road	4,211	43,859
15. Mirza Ghalib Road	2,585	26,929
16. From Vega Center to Bhawe Chowk to Sanas Patala	907	9,453
17. Sans Statue to Dadekar Bridge	3,367	35,070
18. Parvati Po.St. to SP College Road	2,491	25,945
19. Shankarao Lahare Path	1,790	18,648
20. Bibvewadi Road (S.V.Rd.)	7,483	77,950
21. Shahu College Road	1,615	16,819
22. Napier Road	1,052	10,960
23. Wanwadi Road	3,203	33,364
24. Iravati Karve Road	2,122	22,102
25. East Street	4,024	41,916
26. Coyaji Road	2,158	22,474
27. Arjun Road	2,915	30,362
28. Shivarkar Road	5,597	58,304
29. BT Kawade Road Tadigutta	4,330	45,107
30. Hadapsar Way and kalepadal Road	2,541	26,472
31. Sasanenagar to ramtekdi Manhamdawadi road and Undri	876	9,126
32. Kalepadal to Saswad Road	460	4,788
33. Vimannagar Road	7,943	82,744
34. Town Square to Srikrishna Hotel	916	9,539
35. Sakorenagar Road	1,102	11,483
36. Nagarwala School to Edlab Chowk to Marigold	2,444	25,454
37. Shastrinagar to Badami Chowk	1,014	10,565
38. Ambedkar Chowk to Vishrantwadi	4,010	41,771
39. Alandi Road to Shastrinagar Loop Road	6,883	71,695
40. Kalyaninagar Vadgaonsheri Road	3,324	34,626
41. Rajmata Underpass to Katraj Dairy	6,739	70,199
42. Vittal Mandir to Karvenagar Village	2,647	27,573
43. Paikhi Marg to SP Mukherjee to Khanre Maruti Pulgate	4,613	48,052
44. Kothrud Po. Thane, Sathe Chowk to D.P.Road	1,838	19,145
45. Ganjve Chowk and Kanhe Road	1,556	16,210
46. Nathpai chowk to bhide Hospital	2,970	30,936
47. Mahesh society to KK Market	2,945	30,675
48. Padmavati to Gajanan Maharaj Math	5,033	52,432
49. Canal Road from Janata colony to Inamdar Chowk	1,315	13,702
50. Gujarwadi Road	943	9,821
51. Rajas Society to lake town road	1,282	13,354
52. Sanataji Ghorpade Road	6,995	72,860
53. BG. Shirke Co. to Manjari Khurd	2,284	23,792
54. Lohgaon to Wagholi	1,743	18,158
55. Mundhwa Bridge and dargah and Kharadi Zakat naka	628	6,540
56. Chaudary Wasti to Fountain Road to Dargah	1,338	13,941
57. Cummins College Road Karve Nagar	3,059	31,867

Bhandarkar
11.11.24
Maha Metro

Road Name	Peak Hour PCUs	Daily PCUs
58. PMPML Charging Depot Lohagaon to Lonikhand (Jagtap Dairy)	1,160	12,082
59. Theur Phata Solpaur Road to Kesanand to Lonikhand	1,028	10,709
60. Manjari Khurd to Kolwadi	652	6,793
61. No. 15 From Hadaspar to Manjari to Avalwadi to Wagholi	1,570	16,353
62. From Mundhwa to Keshav Nagar to Manjari Bu.	6,478	67,483
63. Kalbhor Lawn to Fursungi to Vadaki	935	9,737
64. Dhairi to Ambegaon Bhumkar Chowk	1,066	11,102
65. Sasanenagar to Handewadi Bypass Road	2,818	29,355
66. Ambegaon Katraj Road Junction to Bhumkar Chowk	1,695	17,659
67. Saswad Road	2,507	26,111
68. Pan Card Club Road Junction to Nanware Underpass	2,792	29,088
69. Green Park Road To Seasons Mall road	6,401	66,674
70. DP Road to Karve Putla	6,593	68,675
71. Gujarat Colony to DP Road	1,932	20,125
72. Tupe Patil Road to Amanora Road to Navi Kharadi Road	2,313	24,091
73. Tupe Patil Road from Amanora to railway Underpass to New Kharadi Bridge	985	10,261
74. Suncity to Hingane Chowk	1,441	15,011
75. Porwal Road	838	8,728

Parthasar
11.11.24
Maha Metro.

Sr.No	Name	Start-End Point	Km
1	Pune Saswad Road- Hadapsar to Diveghat	Hadapsar Gadital To Diveghat	13.70
2	Bypass Road- Nawale Bridge, Katraj, Gokulnagar, Khadimachine, Undri, Mantarwadi	Navale Bridge, Gokulnagar, Khadimachine Chowk, Undri Chowk, Mantarawadi Chowk	15.66
3	Old Airport Road	Gunjan CHowk- 509 Chowk- Airport	4.61
4	Alandi Road	Chandrama Chowk To Bopkhel Phata	6.07
5	Old Mumbai-Pune Highway	RTO Chowk To Harris Bridge	5.37
6	Senapati Bapat Road	SB Junction - Symboisis Law College- Nalstop	3.83
7	F. C. Road	Khandojibaba CHowk To Natawadi	2.58
8	Jangli Maharaj Road	Sancheti CHowk To Khandojibaba Chowk	2.01
9	Shastri Road	Tilak Chowki - Dandekar BRidge	1.34
10	Nehru Road	Pune Station- Seven Love- Gangadham Chowki- Hotel Kanha	9.52
11	M G Road	Golibar Maidan To Ambedkar Statue	1.75
12	Dr. Ambedkar Road	RTO Chowk To Teen Topha CHowk	2.45
13	Bundgarden Road	Dorabjee Mall To Mangaldas Chowk	3.07
14	Saadhu- Vaswani Road	Nehru Chowk - Jahangir Hospital	1.27
15	Prince of Wales Road	Bhairabanala - Lullanagar - Bibewadi	6.55
16	Kondhwa Main Road	Golibar Maidan - Jyoti Hotel - Khadi Machine Chowk	6.09
17	Tilak ROad	Alka Talkies Chowk to Swargate	2.00



Annexure A: Technical Specifications for Air Quality Sensor

Ambient Air Quality Sensor Monitors are Internet of Things (IoT) based air pollution monitoring systems that collect real-time data from multiple locations. The collected data can be used to assess air quality trends, detect pollution hotspots, and evaluate the effectiveness of mitigation measures. The system provides valuable insights for government agencies, researchers, and the public to make informed decisions about improving air quality.

The Ambient Air Quality Sensor Monitor sensors shall provide real-time measurements of PM_{2.5} and PM₁₀ concentration ($\mu\text{g}/\text{m}^3$), Relative Humidity (RH) (%) and Temperature ($^{\circ}\text{C}$). This robust device shall have ability to provide the real-time data at 1 minute interval with wide range of measurements.

1. Components and Specifications of Air Quality Sensor

Ambient Air Quality Sensor Monitor shall comprise of several components that work together to collect and analyse air quality data. The components will include –

- a) The major pollutants at construction site are PM_{2.5} and PM₁₀. The sensor installed should monitor PM_{2.5} and PM₁₀, temperature and relative humidity. The sensor specifications are given in table 1 below

Table 1 Sensor Specifications

Parameter	Measurement Range	Accuracy	Response Time (sec)	Life of Sensor (months)	Operating conditions
PM _{2.5}	0 to 1000 $\mu\text{g}/\text{m}^3$	$R^2 > 0.7$	<10	~24 to 30	T=-30 $^{\circ}\text{C}$ to ~70 $^{\circ}\text{C}$ RH=0 to 95%
PM ₁₀	0 to 1000 $\mu\text{g}/\text{m}^3$	$R^2 > 0.7$	<10	~24 to 30	T=-30 $^{\circ}\text{C}$ to ~70 $^{\circ}\text{C}$ RH=0 to 95%
Temperature	-10 $^{\circ}\text{C}$ to 50 $^{\circ}\text{C}$	+/- 0.5 C for range 0 – 65 C, +/- 1.25 C for range -20 to 0C	1	~24 to 30, validated from field deployments	NA
Humidity	15% to 95%	+/- 3%	1	~24 to 30, validated from field Deployments	NA

**Working Principle:**

The sensor shall employ a laser-based light scattering principle such as an Optical Particle Counter (OPC) or equivalent laser scattering technology to detect PM_{2.5} and PM₁₀. The device shall direct a laser beam through the air sample and measure the intensity of light scattered by particles using a photodetector. The scattered light signal shall be processed to estimate particle size and concentration, enabling calculation of mass concentrations ($\mu\text{g}/\text{m}^3$) based on established particle characteristics.

b) Micro-controller: It shall receive data from the sensors and process it and then send it to the cloud server or any other data storage hardware. The micro-controller is usually a microprocessor such as Arduino, Raspberry Pi or similar device.

Communication Module: The communication module shall be responsible for transmitting processed data from the microcontroller to the central cloud / server. It may utilise various communication technologies such as Wi-Fi, GSM/4G, LoRa, Ethernet, Sigfox, or NB-IoT to enable real-time or near real-time data transfer. However, for all construction site deployments within PMC limits, it is mandatory that the device is equipped with GSM/4G cellular connectivity as the primary mode of communication, ensuring reliable data transmission irrespective of local Wi-Fi availability or site-specific limitations. Other interfaces such as Wi-Fi, Ethernet, RS485, RS232, or low-power IoT protocols may be provided as secondary modes but shall not replace the requirement for GSM/4G-based connectivity. All communication channels shall support secure, authenticated API-enabled data transfer for seamless integration with the PMC Centralized Air Quality Dashboard.

c) Cloud Server: The cloud server is a centralized platform for storing, analyzing, and sharing air quality data. It shall collect data from the communication module of Ambient Air Quality Sensor Monitor and store it in a database. The cloud server also shall provide web and mobile applications for users to access the data. The cloud server will not be in scope of the project proponent of construction site, it will be in the scope of sensor manufacturer / provider.

d) Third party software support: Data shall be accessible through APIs to facilitate integration with third-party software, process automation, and the PMC Central Dashboard.



e) **Power Supply:** The devices shall operate on AC mains supply. In case of power failure, provisions for alternate power supply, such as solar panels or UPS with backup of 10 to 12 hours, should be in place.

CAUTION AND SAFETY FOR SENSORS

- Monitor shall use a regulated power supply to avoid fluctuations that could affect sensor performance. Voltage spikes or drops can lead to inaccurate readings or even damage the sensor.
- It shall use appropriate gauge wiring and secure connections to avoid issues related to poor connectivity or electrical noise.

f) **Internal Memory:** The module shall mandatorily be equipped with an internal memory backup system to ensure zero data loss during any network outage. An SD card-based local storage provision is compulsory, and the device shall automatically record all data on the SD card without interruption in the event of network failure. The storage capacity shall be adequate to securely retain a minimum of six months of continuous data.

g) **Enclosure:** The enclosure is the outer covering that protects the components from environmental factors such as dust, rain and wind. The enclosure housing the sensors and electronic peripherals shall be lightweight and compact System with IP65 and above grade enclosure for endurance against harsh weather conditions.

h) **LED Indicators (Signal):** The communication module shall be responsible for transmitting data from the microcontroller to the central cloud/server and to LED Signal. The LED Signal shall be configured to range of PM₁₀ values on 15-minutes running average basis. The signal shall display the dust severity colour codes as given below.

PM ₁₀ (µg/m ³) Range (Based on 15-min Average)	Colours to Display on Signal
0 to 100	Green ●
101 to 350	Yellow ●
351 to 430	Orange ●
430+	Red ●



The LED Signal shall serve the purpose of understanding the indicative dust severity levels at construction sites and guide on-site personnel to mitigate the air pollution accordingly. The technical specifications of LED Signal are as per table 2 below. The LED Signal should support wired / wireless connectivity with air quality sensor as per the site conditions.

Table 2 Indigenous Inbuilt Microcontroller-based LED Signalling System

Installation Type	Wall mounted/Stand Alone
LED Signal Size	310 mm (H) x 310 mm (W) (Approximately 1 ft X 1 ft)
Colours	Green, Yellow, Orange and Red (All colours are mandatory)
Connectivity	Must be compatible with 4G, Wi-Fi, RS485, RS232, Ethernet
Data Input	Rest API and Modbus
Installation Type	Wall mounted/Stand Alone
View Angle	Horizontal/Vertical 140°/130°
Ingress Protection	Front/Back IP65 or above grade
Visibility Range	30 metres minimum
Brightness	8500 NIT
Minimum Life Span of the system	30000 Hrs
Power Supply	230V AC
API credentials configurations using Web Based Application	

*Suitable size modifications as per site condition with prior approval.

2. Site Selection Criteria for Sensor Installation

Ambient Air Quality Sensor Monitor shall be installed in the field as a wall or a pole-mount, nearby a reliable power source. A suitable location with minimum 270° (three cardinal directions) free air circulation shall be identified.

Minimum Checklist:

- 24*7 Power Supply
- Unobstructed Airflow (270°/ 3-sides shall be unobstructed)
- Wi-Fi/ Cellular Network
- Easily Accessible for maintenance and calibration
- Site is selected for ambient air quality measurement.

Sensor Installation: For ambient air monitoring, sensors should be installed in locations with unobstructed air flow, at a height of approximately 3 to 5 meters above ground level. The sensor shall be installed on the observable downwind side of the



construction site, preferably 3 to 5 metres inside the site boundary, to capture representative air quality conditions.

LED Signal Installation: An LED indicator shall visually represent 15-minute running average of PM_{10} air quality levels through designated colour codes, enabling on-site personnel to easily understand dust severity levels. The LED signal should be installed near the site's front gate or at a prominent activity area, ensuring visibility to workers, irrespective of the sensor's placement. The LED signal should be connected to the air quality sensor either wirelessly or via a wired connection, depending on site conditions and technical feasibility.

3. Sensor Calibration and Data Accuracy

Ambient Air Quality Sensor Monitor shall provide ambient $PM_{2.5}$ and PM_{10} concentrations with notable accuracy. To ensure and improve accuracy, devices require calibration. Accuracy and precision should be tested against Federal Reference Method (FRM) /Federal Equivalent Method (FEM) regulatory monitors. Calibration should occur every three months. The Calibration Report for the unit/model/product shall be made available for inspection to PMC authorities as and when demanded.

Collocate sensors with reference monitors for deployment at construction sites:

All sensors must be collocated with reference monitors (e.g., CAAQMS) for a minimum of 15 days. Collocation (sampling with the sensor node within 10 meters of the reference monitor inlet) can improve data accuracy by developing correction models. For calibration of sensors, recognized and peer-reviewed calibration models should be used, with performance evaluated against the reference instrument using 1-hour averaged data for both $PM_{2.5}$ and PM_{10} . The calibration output must explicitly report all parameters assessed, including detailed error statistics and correlation metrics.

All project proponents, developers, and contractors engaged in building construction or infrastructure development activities whether private or government projects within the jurisdiction of Pune Municipal Corporation (PMC) shall deploy sensor-based air quality monitoring devices (with valid factory calibration certificates).

For both ongoing and new construction sites, each sensor unit shall undergo a minimum 15-day co-location study with a reference-grade monitor prior to installation at site. In cases where immediate co-location prior to installation is not feasible, the co-location study may be completed within one month from the date of installation,



and the co-location study report shall be made available for inspection by PMC upon request.

4. Data Collection, Transmission and Validation

Data Accessibility: Data should be accessible through APIs for integration into third-party software, process automation, and the Central Command Centre at PMC.

Real-time Data Collection: Sensor nodes should report the data at 30-second or 1-minute resolution. The manufacturer should provide API-based data access every 10 minutes to the central command centre so that officials can be alerted and take quick action if pollution levels are too high.

Data Standardisation: For using multiple integrators, the data should be standardised in near-real-time before analysing the data. General standardisation includes converting timestamps into IST, giving uniform names and units to the parameters (PM_{2.5} and PM₁₀ reported in $\mu\text{g}/\text{m}^3$), and averaging the measurements to uniform time intervals. Standard Reference PM Monitors like the Beta Attenuation Method (BAM) approved by CPCB used in Continuous Ambient Air Quality Monitoring Station (CAAQMS) generally report data as 1-hr averages. Hence, aggregating the sensor data on an hourly basis can assist in comparison with the reference monitors. However, sensor data should be averaged at hourly basis only if 75% of data points are available for that particular hour. For routine monitoring and data visualisation, reporting at 1-minute or 15-minute basis is recommended.

Data Processing: The dataset from Sensor Ambient Air Quality Monitor deployed should contain PM_{2.5} and PM₁₀ concentration and other meteorological parameters (such as Temperature and Relative Humidity) with a timestamp. All the collected datasets shall be merged based on timestamp and unique device ID.

5. Maintenance and Replacement Protocol

Evaluation & Accuracy of Ambient Air Quality Sensor Monitor: The Ambient Air Quality Sensor devices prior to installation in the field should be rigorously evaluated in the test sites in colocation with a reference monitor, for a period of 15 days.

Ageing of Sensors: The Ambient Air Quality Sensor devices lose their accuracy over a period of time, e.g. as dust collects on the sensor optics leading to underreporting of PM, humidity interference etc. Indicators can report the same concentration for days, or



reporting zeroes. Hence, periodic colocation study (e.g. every three months) with a reference PM monitor should be ensured to ensure data reliability.

Life Cycle of Components used in Ambient Air Quality Sensor Monitor: The typical lifetime of the sensors is 30 months. The sensors should be replaced at the end of 30 months cycle. The manufacturer/supplier shall ensure that the unit/mode/product offered is not at 'End of Life Cycle' and manufacturer shall support for spare parts/maintenance services for next three to five years.

Installation & Maintenance of Ambient Air Quality Sensor Monitor: The device monitoring module should notify the status of any offline/faulty device at every 6 hours to central command centre. The field maintenance team of the construction site shall reach the identified faulty devices. The maintenance should be carried out in the field for issues that can be resolved on site. For issues not serviceable in the field, the device should be swapped with a replacement device till the issue is resolved. The schedule for replacement of hardware consumables will be as per the component lifetime. Any faults without component replacement should be addressed within the 6-hour maintenance window. Expected replacement timeline is 24 hours.

Zero Break-down and Fault Detection Strategy: The objective of fault detection is to identify sensors that either provide inaccurate measurements or have stopped working. These sensors need to be replaced with new sensors in the devices.

- Checks to be performed on the data from the sensors every 6 hours

Check	Definition	Target Value
Uptime	The operational time of the sensor is calculated by dividing the actual number of hourly data points received from the sensor over last 24-hours by the total number of hourly data points	>95%
Range Violation	The count of out-of-bounds readings given by the sensor violating the upper limit or lower limit of sensor measurement range in last 24-hours	<1%

Any sensor recording less than the target uptime value for two consecutive months shall be replaced with a new sensor unit.

Cleaning: Periodic cleaning is important to ensure optimum device performance. Weekly regular maintenance activity has to be carried out depending upon the



surrounding. The activity includes cleaning the dome for the light sensor, air inlet, and outlet mesh & general cleaning of the exterior.



Annexure – B

List of shortlisted make & model of sensor-based Air Quality Monitors.

Sr No	Name of the Company	Make of Sensor / Unit	Model of Sensor Unit	Contact Person and Email / Number
1	M/s. Florosense Engineered Solution Pvt Ltd	DUTON (Florosense Engineered Solution Pvt Ltd)	FLO-NODE S	Mr. Adarsh K 7829553183/ 8073593961 info@florosense.com pune@florosense.com
2	M/s. PT Ecological Services Private Limited	PT Ecological Services Pvt. Ltd.	M-AAQM	Mrs. Sonal Mahyavanshi 7756979879 official@ptespl.com
3	Fortunexis Automation Pvt Ltd	Envirozone	EZ320	Mr. Dharmender Verma 8076751198 d.verma2004@gmail.com sales@fortunexis.in
4	M/s. Respirer Living Sciences Pvt Ltd	Respirer	AtmosAQ-Pro	Mr. Ritesh Tripathi 7709655722 support@respirer.in
5	M/s. Airveda Technology Pvt Ltd	Airveda	PM2510THGSM-EYE	Mr Amandeep Rajput 7417895486 info@airveda.com
6	M/s. Opruss India Pvt Ltd	Opruss India Pvt Ltd	OPRUSS ADM-1000 System	Mrs. Shreshtha Lad 9175984817 accounts@opruss.com
7	M/s. Saksham Scientific Instruments Pvt Ltd	TSI Incorporated USA	BlueSky™ AIR QUALITY MONITOR Model 8143	Mr. Rahul Yamgar 8828338357 sales@ssipl.net.in

Note: The list shall be updated by PMC from time to time, based on validation of new devices and re-assessment of existing models, as and when required.



Annexure C: Mitigation Checklist and Suggested Action Guidance





All project proponents are mandated to strictly comply with the Mitigation Checklist provided in this Annexure, as it forms the first and essential stage of reducing dust and air pollution at construction sites. The accompanying Action Guidance Chart is intended to help on-site personnel take immediate actions based on the indicative dust severity levels displayed through the LED signal system.

• Mitigation Checklist – Mandatory for All Construction Sites

Sr No	Description
1	Metal sheet barricading of minimum 25 feet height along the site perimeter.
2	Building structure covered with green cloth/tarpaulin to prevent dust dispersion.
3	Regular water sprinkling on exposed surfaces, internal roads, and dust-prone areas.
4	Water fogging during loading and unloading of construction materials.
5	Water sprinkling on debris, excavated earth, and loose material.
6	All construction material, excavated earth and C&D waste shall be stored on the site, not dumped on public roads or pavements and shall be covered with tarpaulin.
7	Installation and operation of sensor-based air pollution monitoring and LED indicators as per PMC specifications.
8	Conduct grinding, cutting, drilling, and similar dust-generating activities in enclosed areas. Use of vacuum machines and dust capturing shroud for grinding operation is recommended.
9	Provision of appropriate PPE (masks, goggles, protective gear) for all workers.
10	Deployment of smog guns to control dust, especially during high-activity periods.
11	Functional vehicle tyre washing facility at the site exit to prevent dust carry-over to public roads.
12	DG sets operational on sites shall run on clean fuels such as LPG/ PNG / Electricity, dual fuel mode, or be equipped with Emission Control Devices.
13	All vehicles transporting materials and/or C&D waste shall possess valid Pollution under Control (PUC) certification



• **Suggested Action Guidance Chart (Based on Indicative Dust Severity Levels)**

Category & Indicator	Action Points
<p>Good to Satisfactory Green (PM₁₀ < 100 µg/m³)</p> 	<ul style="list-style-type: none"> • Continue routine activities while complying with the Mitigation Checklist. • No activity restrictions.
<p>Moderate to Poor Yellow (PM₁₀: 101 – 350 µg/m³)</p> 	<ul style="list-style-type: none"> • Increase frequency of water sprinkling and anti-smog gun operation targeted at dust-generating activities. • Reduce cumulative dust load if applicable by work sequencing (postpone two simultaneous dusty activities) • Reinforce site housekeeping: remove loose dust from gates, pathways, and material unloading areas using wet sweeping.
<p>Very Poor Orange (PM₁₀: 351 – 430 µg/m³)</p> 	<ul style="list-style-type: none"> • Intensify water sprinkling. • Temporarily halt high dust-generating activities (excavation, debris shifting, drilling, cutting) until levels return to Green. • Operate fogging/smog guns continuously until levels reduce to Green. • Wet roads before any vehicle activity. Limit vehicle movement – essential vehicles only. • Increase supervision to ensure full compliance.
<p>Severe Red (PM₁₀ > 430+ µg/m³)</p> 	<ul style="list-style-type: none"> • Deploy smog guns at maximum capacity and ensure continuous water fogging. • Inspect all barricading, coverings, and enclosures for gaps or damage, and immediately fix any broken or missing nets, covers, or site barricades to prevent dust dispersion • Resume work only after pollution level returns to green. • Record cause, action taken, and review site conditions before restarting and report to PMC if levels remain severe for more than 2 hours.

Note: The Suggested Action Guidance Chart may be updated by PMC from time to time based on field observations and operational feedback.




D.O. No. : CAP-2023/CR-170/TC-2
 ENVIRONMENT & CLIMATE CHANGE DEPARTMENT,
 Room No. 217, 2nd Floor,
 Mantralaya (Annex),
 Mumbai 400 032.
 Date : 27/10/2023.

Subject: Guidelines for Air Pollution Mitigation.

- (1) All the project proponents in the corporation area shall ensure that at least 25 feet high tin / metal sheets shall be erected around the periphery of construction projects having height more than 50 mtrs and outside the corporation area at least 20 feet high tin / metal sheets.
- (2) **Mega Cities** – All construction layouts having area more than 1 (one) acre shall have tin / metal sheet erected of height 25 feet at least around periphery of the construction project sites and for construction sites, less than 1 (one) acre, the tin / metal sheet height shall be 25 feet at least.
- (3) All the buildings under construction shall be compulsorily enclosed by wet green cloth / wet jute sheet / tarpaulin from all sides.
- (4) All the structures under demolition shall be covered with tarpaulin / wet green cloth / wet jute sheet from top to bottom. There shall be continuous sprinkling/spraying of water during the process of demolishing the structure.
- (5) It shall be ensured that water fogging shall be carried out during loading and unloading of materials at the construction sites (use of stationary/ mobile anti- smog guns).
- (6) The water sprinkling shall be done on debris / earth material etc. which are prone to generate airborne particulate matters at all construction sites without fail.
- (7) All vehicles carrying construction materials shall be fully covered (i.e. from top and all sides) so that construction material or debris does not become airborne during transportation and the vehicle shall not be overloaded to avoid any spillage from the vehicle.
- (8) All construction sites shall deploy sensor - based air pollution monitors at work sites and act immediately on observing pollution levels exceeding the limit. This monitoring shall be made available for inspection to Municipal authorities as and when demanded.
- (9) All the work sites shall ensure that the grinding, cutting, drilling, sawing and trimming work is carried out in enclosed area and water sprinkler / water fogging is continuously done while working to avoid escape of fugitive air.
- (10) All the construction sites shall ensure that Construction and Demolition (C & D) waste generated within the premises / site of work is transported to designated unloading site strictly as per C & D Waste Management Plan. After unloading the debris, the vehicle shall be washed and cleaned thoroughly.

- (11) All the construction personnel managers shall mandatorily wear personal protective equipment such as masks, goggles, helmets, etc.
- (12) All the worksites like bridges and flyovers shall have barricading of minimum 20 feet.
- (13) All the metro works above ground shall be covered with barricading of 20 feet height. The construction site shall be covered with tarpaulin / wet green cloth / wet jute sheet. The smog guns / water sprinklers shall be used during the construction work.
- (14) District Collectors / Commissioners shall deploy special squads to prevent illegal C & D dumping at late night.
- (15) District Collectors / Commissioners shall deploy special squads for air pollution mitigation enforcement. The squad shall be headed by one senior officer from the Ward / Taluka.
- (16) The enforcement squad shall visit the premises and video graph the worksite. If it is observed that the worksite is not adhering to the above stated provisions, stringent action such as issue of Stop Work notice and / or sealing of worksite shall be taken immediately.
- (17) The timeline for procurement of sprinklers shall be 15 days and for procurement of smog guns shall be 30 days from issuance of this circular. All the project proponent / contractors shall abide by the above timelines without fail.
- (18) The vehicles carrying construction material or C & D material, possess vehicle tracking system installed on them, if found not adhering to above stated provisions, shall be seized and impounded by the RTO / Police Department.
- (19) The Transport Department shall take action against overloading of vehicles, uncovered vehicles, vehicles spilling construction materials on roads. Vehicle Scrappage policy shall be encouraged for End-of-Life Vehicles.
- (20) All vehicles carrying materials shall have valid PUC certificates and the same shall be produced as and when asked for by competent authorities.
- (21) MPCB shall monitor the air pollution emitted from the industries located in the corporation area.
- (22) The loose soil, sand, construction materials and debris of any kind and quantity shall be stored in demarcated / dedicated area and properly barricaded, fully covered / enclosed/protected with tarpaulins. It shall be ensured that there is no dumping of construction material and debris on public roads, footpaths, pavements and open area.
- (23) Vehicle tyre washing facility shall be provided at all exit points of construction sites. It shall be ensured that daily cleaning is carried out of major roads for removal of dust by using vacuum sweeping or water sprinkling, brushing, brooming and sweeping. This work may be outsourced to ensure wide and fast coverage of all major roads in one month's time.

- (24) There shall be complete ban on open burning anywhere especially garbage dumping grounds and possible sites of trash burning.
- (25) All roads under corporation / municipal council area shall be provided with paved foot paths.
- (26) Issue directions for the conversion of fuel in bakeries from non-renewable and polluting sources to cleaner alternatives, such as electric ovens, use of PNG or other eco-friendly technologies.
- (27) Take proactive steps in transitioning crematoria facilities to electric or other environmentally friendly cremation methods.
- (28) The Continuous Air Quality Monitoring stations installed by the MPC Board shall be regularly checked / monitored by the municipal authority.
- (29) Non-attainment cities (NCAP & XV FC) shall increase the air quality monitoring stations by utilizing their own resources.
- (30) Regular awareness campaigns shall be conducted.


(Pravin Darade),
Principal Secretary.

टिप्पणी


शहरातील सी.एन.जी. किट बसविलेल्या ऑटो रिक्षांना अनुदान: पुणे म.न.पा.च्या वतीने तीन चाकी रिक्षांकरिता हवेतील वाढते प्रदूषण कमी करण्यासाठी आणि सी.एन.जी.इंधन वापराला प्रोत्साहन देण्यासाठी सी.एन.जी. किट बसविलेल्या ऑटो रिक्षांच्या परमिट धारकांना प्रत्येकी १२,०००/- रु.चे अनुदान देण्यात येते. पुणे म.न.पा.तर्फे पुढीलप्रमाणे अनुदान देण्यात आलेले आहे.

शहरातील सी.एन.जी. किट बसविलेल्या ऑटो रिक्षांना अनुदान

आर्थिक वर्ष	अनुदान देण्यात आलेल्या रिक्षांची संख्या
२०११-१२	१६५१
२०१२-१३	८७३९
२०१३-१४	१६५०
२०१४-१५	२१६४
२०१५-१६	११४०
२०१६-१७	०३५४
२०१७-१८	०२०८
२०१८-१९	०६२८
२०१९-२०	०३२७
एकूण :	१६८६१

सन २०१९-२० मध्ये र.रु. ३९,२४,०००/- (अक्षरी एकोणचाळीस लाख चोवीस हजार) अनुदान वाटप करण्यात आले व या अनुदानातून ३२७ ऑटो रिक्षांना या योजनेचा लाभ मिळालेला आहे. मागील नऊ वर्षांत १६८६१ रिक्षांना अनुदान देण्यात आलेले आहे. मोठ्या प्रमाणावर ऑटो रिक्षा सी.एन.जी.वापर करित असल्याने शहरात होणाऱ्या हवेतील प्रदूषणाचे प्रमाण कमी होण्यास मदत झाली आहे.

सन २०२०-२१ मध्ये सि एन जी अनुदानाकरिता र.रु. १ कोटीची तरतूद करण्यात आली आहे.


पर्यावरण संवर्धन अधिकारी
पुणे महानगरपालिका

Note

Subsidy for CNG kit-fitted auto rickshaws in the city: On behalf of Pune Municipal Corporation, to reduce increasing air pollution in the city for three-wheeler auto rickshaws and to promote the use of CNG fuel, a subsidy of Rs. 12,000/- each is being given to permit holders of auto rickshaws fitted with CNG kits. Subsidy has been given by Pune Municipal Corporation as mentioned below.

Subsidy for CNG kit-fitted auto rickshaws in the city

Financial Year Number of rickshaws given subsidy

2011-12	1651
2012-13	8739
2013-14	1650
2014-15	2164
2015-16	1140
2016-17	0354
2017-18	0208
2018-19	0628
2019-20	0327
Total:	*16861*

In the year 2019-20, a subsidy of Rs. 39,24,000/- (Rupees Thirty-Nine Lakh Twenty-Four Thousand only) was distributed and through this subsidy, 327 auto rickshaws have benefited from this scheme. In the last nine years, 16,861 rickshaws have been given subsidy. Because auto rickshaws are using CNG on a large scale, it has helped reduce the amount of air pollution in the city.

In the year 2020-21, a provision of Rs. 1 Crore has been made for CNG subsidy.

Signed

Environment Conservation Officer

Pune Municipal Corporation