HALF YEARLY COMPLIANCE REPORT FOR ENVIRONMENTAL CLEARANCE (JULY-2023-DECEMBER-2023)

FOR

PROPOSED CONSTRUCTION OF INTEGRATED BUS TERMINUS CUM COMMERCIAL COMPLEX

PROJECT PROPONENT: M/s. NAVI MUMBAI MUNICIAL TRANSPORT
BEAPUR BHAVAN, 8th Floor, SECTOR 11,
CBD Belapur, Navi Mumbai
Maharashtra - 400614.

PROJECT LOCATION: VASHI BUS DEPOT
Plot No.3, Sector-9A,
Vashi Navi Mumbai
Maharashtra - 400703.

SUBMISSION FOR

Ministry of Environment, Forest & Climate Change
(MOEFCC)

SUBMITTED BY

M/s. NAVI MUMBAI MUNICIAL TRANSPORT
DECEMBER-2023.

HALF YEARLY COMPLIANCE REPORT FOR ENVIRONMENTAL CLEARANCE
(JULY-2023-DECEMBER-2023)
PROPOSED CONSTRUCTION OF INTEGRATED BUS TERMINOS CUM COMMERCIAL COMPLEX AT PLOT No.3, SECTOR-9A, VASHI NAVI MUMBAI, MAHARASHTRA 400703.

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CHAPTER 1

INTRODUCTION AND PROJECT DESCRIPTION

1.1 INTRODUCTION

Proposed Project," Proposed Construction of Integrated Bus Terminus Cum Commercial Complex at Plot No.3, Sector 91 Vashi, Navi Mumbai, Maharashtra 400703 is being developed by M/s Navi Mumbai Municipal Transport and the of the project have been approved by NMMC ADTP.

This project has been granted environmental clearance vide letter Dated November 7, 2019-SEIAA-EC-0000002069 by the State Environment Impact Assessment Authority, Maharashtra. Copy of EC is enclosed in Annexure.

1.2 PROJECT DESCRIPTION

Table 1.1: Brief Description of project.

Sr. no.	Description Details	Unit
1	Plot Area	10373.42 Sq.Mt
2	Proposed Built Up Area	47635.20 Sq.Mt
3	Total Water Requirement	138.8KLD
4	Fresh Water Demand	93KLD
5	Total Wastewater Generated	118KLD
6	Capacity of STP	125KLD
7	Total Power Requirement	3563 57KW
8	No. of RWH Pits	03
9	Solid Waste Generation	519.33
10	Total Parking	420 Nos
11	Total No of Towers	01
12	No of Floors	21 FLOORS
13	Height of tower	90Mtr

1.3 PRESENT STATUS

Project is in construction phase.

1.4 PURPOSE OF THE REPORT

This six-monthly report is being submitted as per the condition stipulated in the Environmental Clearance letter. Further the study will envisage the environmental impacts that have generated in the local environment due to the project.

The environmental assessment is being carried out to verify:

- That the project does not have any adverse environmental impacts in the project area and its surroundings.
- Compliance with the conditions stipulated in the Environmental Clearance Letter.
- The Project Management is implementing the environmental mitigation measures as suggested in the approved Form-1, Form-1A, Environmental Management Plan (EMP) and building plans.
- The project proponent is implementing the environmental safeguards in true spirit.
- Any non-conformity in the project with respect to the environmental implication of the project.

CHAPTER-2

COMPLIANCE OF STIPULATED CONDITIONS OF ENVIRONMENTAL CLEARANCE
Name of Project: PROPOSED CONSTRUCTION OF INTEGRATED BUS TERMINUS CUM COMMERCIAL COMPLEX
Clearance No.: SEIAA -EC-0000002069 Dated November 7, 2019.
Period of compliance Report: JULY-2023-DECEMBER-2023.

Sr No	Environment Clearance Conditions	Compliances Status
	Specific Conditions:	
1	The PP to get NOC from Competent authority with reference to Thane Creek flamingo sanctuary if the project site falls within 10KM radius rom the said sanctuary boundary. The planning Authority to ensure fulfilment of this condition before granting CC.	Condition was noted for the compliance. Flamingo. NOC Received post 60th meeting held at NEWL; NOC for Wildlife (Flamingo) received on 1st February 2021. (Copy Enclosed)
2	PP to explore the possibility to buy electric buses under CER activity.	Condition has been noted for the compliance and process has been initiated for purchasing 30 Electric Buses along with chargers (Copy Enclosed)
3	PP to submit report of AAQM modelling study.	Condition has been noted for the compliance and AAQM modelling study report has been submitted on 13/08/2019. (Copy Enclosed)
4	PP to submit CER Plan to Municipal commissioner, and submit the acknowledgement copy to Member Secretary, SEIAA	Condition has been noted for the compliance and CER Plan submitted to Municipal commissioner and acknowledgement copy submitted to

		Member Secretary, SEIAA on 13/08/2019. (Copy Enclosed)
5	PP to ensure that CER plan get approved from Municipal Commissioner/District Collector	Condition has been noted for the compliance and Complied (Copy Attached)
6	PP shall comply to standard EC conditions mentioned in the Office Memorandum issued by MOEF & CC vide F.No.22-34/2018- IA.Ill dt.04.01.2019	Condition has been noted for the compliance and has been complied.
7	SEIAA decided to grant EC for- FSI:15560.13m2, Non FS1:32280.09m2 & Total BUA:47815.81m2. 100 no. NMMC/TPO/ADTP/3881/2018, Approval Date-27.09.2018	Condition has been noted for the compliance and has been complied.

Sr No	Environment Clearance Conditions	Compliances Status
	General Conditions:	
1	E-waste shall be disposed through Authorized vendor as per E-waste (Management and Handling) Rules, 2016,	Condition has been noted for the compliance. There is no E-Waste generated at the project site.
2	The Occupancy Certificate shall be issued by the Local Planning Authority to the project only after ensuring sustained availability of drinking water, connectivity of sewer line to the project site and proper disposal of treated water as per environmental norms.	Condition has been noted for the compliance.
3	This environmental clearance is issued subject to obtaining NOC from Forestry & Wildlife angle including clearance from the standing committee of the National Board for Wildlife as if applicable & this environment clearance does not necessarily implies that Forestry & Wild life clearance granted to the project which will be considered separately on merit.	Not Applicable
4	PP has to abide by the conditions stipulated by SEAC& SEIAA	Condition has been noted for the compliance and complied accordingly.
5	The height, Construction built up area of proposed construction shall be in accordance with the existing FSI/FAR norms of the urban local body & it should ensure the same along	Condition has been noted for the compliance and has been complied.

	with survey number before approving layout plan & before according to commencement certificate to proposed work. Plan approving authority should also ensure the zoning permissibility for the proposed project as per the approved development plan of the area.	
6	If applicable Consent for Establishment shall be obtained from Maharashtra Pollution Control Board under Air and Water Act and a copy shall be submitted to the Environment department before start of any construction work at the site.	Condition has been noted for the compliance and has been complied. (Copy Attached)
7	All required sanitary and hygienic measures. should be in place before starting construction activities and to be maintained throughout the construction phase.	Condition has been noted for the compliance and has been complied.
8	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	Condition has been noted for the compliance and has been complied.
9	The solid waste generated should be properly collected and segregated, dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material,	Condition has been noted for the compliance and has been complied.
10	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	Condition has been noted for the compliance and has been complied.
11	Arrangement shall be made that wastewater and storm water do not get mixed.	Condition has been noted for the compliance.
12	All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.	Condition has been noted for the compliance and has been complied.

13	Additional soil for levelling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	Condition has been noted for the compliance and has been complied.
14	Green Belt Development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/ Agriculture Dept.	Condition has been noted for the compliance.
15	Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.	Condition has been noted for the compliance.
16	Construction spoils, including bituminous material and other hazardous materials must not be allowed to contaminate watercourses and the dumpsites for such material must be secured so that they should not leach into the ground water.	Condition has been noted for the compliance and has been complied.
17	Any hazardous waste generated during construction phase should be disposed of as per applicable rules and norms with necessary approvals of the Maharashtra Pollution Control Board.	Condition has been noted for the compliance.
18	The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environments (Protection) Rules prescribed for air and noise emission standards,	Condition has been noted for the compliance and has been complied.
19	The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from concern authority shall be taken.	Condition was noted for the compliance. Diesel is bought in barrels as and when required.
20	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.	Condition was noted for the compliance and records are maintained.
21	Ambient noise levels should conform to residential standards both during day and	Condition has been noted for the compliance.

	night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase, Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/MPCB.	
22	Fly ash should be used as building material in the construction as per the provisions of Fly Ash Notification of September 1999 and amended as on 27th August-2003. (The above condition is applicable only if the project site is located within the 100km of Thermal Power Stations).	NOT APPLICABLE
23	Ready mixed concrete must be used in building construction,	Condition was noted for the compliance and complied accordingly.
24	Storm water control and its re-use as per CGWB and BIS standards for various applications.	Condition has been noted for the compliance and provisions considered.
25	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	Condition was noted for the compliance and complied by using Ready Mix Concrete.
26	The ground water level and its quality should be monitored regularly in consultation with Ground Water Authority.	NOT APPLICABLE AS NO BORE WELL AT PROJECT SITE
27	The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the MPCB and Environment department before the project is commissioned for operation. Discharge of this unused treated affluent if any should be discharge in the sewer line. Treated effluent emanating from STP shall be recycled/refused to the maximum extent possible. Discharge of this unused treated affluent if any should be discharge in the sewer line. Treatment of 100% gray water by decentralized treatment should be done. Necessary measures should	Condition has been noted for the compliance.

	be made to mitigate the Oduor problem from STP.	
28	Permission to draw ground water and construction of basement if any shall be obtained from the competent Authority prior to construction/operation of the project.	Condition has been noted for the compliance. There is No Bore/Well at project site.
29	Separation of gray and black water should be done by the use of dual plumbing line for separation of gray and black water.	Condition has been noted for the compliance.
30	Fixtures for showers, toilet flushing, and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor-based control.	Condition has been noted for the compliance.
31	Use of glass may be reduced up to 40% to reduce the electricity consumption and load on air conditioning. If necessary, use high quality double glass with special reflective coating in windows.	Condition has been noted for the compliance.
32	Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfill requirement.	Condition has been noted for the compliance.
33	Diesel power generating sets proposed as source of backup power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use low Sulphur diesel. The location of the DG sets may be decided with in consultation with Maharashtra Pollution Control Board.	Condition has been noted for the compliance.
34	Energy conservation measures like Installation of CFLS/TFLS for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Use CFLS and TFLS should be properly collected and disposed	Condition has been noted for the compliance.

	off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the extent possible like installing solar streetlights, common solar water heaters system. Project proponent should install, after checking feasibility, solar plus hybrid non- conventional energy source as source of energy.	
35	Noise should be controlled to ensure that it does not exceed the prescribed standards. During night-time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.	Condition has been noted for the compliance and complied accordingly.
36	Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized, and no public space should be utilized.	Condition has been noted for the compliance and complied accordingly.
37	Opaque wall should meet prescriptive requirement as per Energy Conservation Building Code, which is proposed to be mandatory for all air-conditioned spaces while it is aspiration for non-air-conditioned spaces by use of appropriate thermal insulation material to fulfill requirement.	Condition has been noted for the compliance.
38	The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.	Condition has been noted for the compliance and complied accordingly.
39	Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.	Condition has been noted for the compliance and complied accordingly.
40	Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it was found that construction of the project	Condition has been noted for the compliance.

	has been started without obtaining environmental clearance.	
41	Six monthly monitoring reports should be submitted to the regional office MoEF, Bhopal with copy to this department and MPCB.	Condition has been noted for the compliance.
42	Project proponents shall ensure completion of STP, MSW disposal facility, green belt development prior to occupation of the buildings. As agreed during the SEIAA meeting, PP to explore possibility of utilizing excess treated water in the adjacent area for gardening before discharging it into sewer line No physical occupation or allotment will be given unless all above said environmental infrastructure is installed and made functional including water requirement in Para 2. Prior certification from an appropriate authority shall be obtained.	Condition has been noted for the compliance.
43	Wet garbage should be treated by Organic Waste Converter and treated waste (manure) should be utilized in the existing premises for gardening. And, no wet garbage will be disposed outside the premises. Local authority should ensure this.	Condition has been noted for compliance.
44	Local body should ensure that no occupation certification is issued prior to operation of STP/MSW site etc. with due permission of MPCB.	Condition has been noted for the compliance.
45	A complete set of all the documents submitted to Department should be forwarded to the Local authority and MPCB.	Condition has been noted for the compliance and complied.
46	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Department.	Condition has been noted for the compliance. No Change in Scope of work.
47	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Condition has been noted for the compliance.
48	Separate funds shall be allocated for implementation of environmental protection measures/EMP along with item-wise breaks-	Condition has been noted for the compliance and complied accordingly.

	up. This cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year- wise expenditure should reported to the MPCB & this department.	
49	The project management shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Marathi language of the local concerned within seven days of issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letter area available with the Maharashtra Pollution Control Board and may also be seen at Website at http://ec.maharashtra.gov.in.	Condition has been noted for the compliance and has been complied with (Copy Enclosed).
50	Project management should submit half yearly compliance reports in respect of the stipulated prior environment clearance terms and conditions in hard & soft copies to the MPCB & this department, on 1st June & 1st December of each calendar year.	Condition has been noted for the compliance.
51	A copy of the clearance letter shall be sent by proponent to the concerned Municipal Corporation and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Condition has been noted for the compliance.
52	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely, SPM, RSPM. SO2, NOx (ambient levels as well as stack emissions) or critical sector parameters,	Condition has been noted for the compliance.

	indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	
53	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.	Condition has been noted for the compliance.
54	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MOEF by e-mail.	Condition has been noted for the compliance.

CHAPTERS-3

DETAILS OF ENVIRONMENTAL MONITORING

3.1 AMBIENT AIR QUALITY MONITORING

3.1.1 Ambient Air Quality Monitoring Stations.

Ambient air quality monitoring has been carried out at one location at the Project in the month of September-2023 site to assess the ambient air quality. This will enable us to have a comparative analytical understanding about air quality and the changes in the air environment in the study area with respect to the condition prevailing. The location of the ambient air quality monitoring stations was taken at Northwest Corner of the plot.

The sampler was placed near the site office and was free from any obstructions. The surroundings of the sampling site represent residential environmental setting.

3.1.2 Ambient Air Quality Monitoring Methodology

Monitoring was conducted in respect of the following parameters:

PARAMETER	METHOD
Particulate Matter ($PM_{2.5}$)	Gravimetric method (CPCB guidelines 2012, NAAQS Volume 4
Particulate Matter (PM_{10})	IS 5182 (Part-23):2006, Reaffirmed-2017
Sulphur Dioxide ($S0_2$)	IS 5182 (Part-02):2006, Reaffirmed -2017
Nitrogen Dioxide (NO_2)	IS 5182 (Part-06):2006, Reaffirmed -2017
Ammonia (NH_1)	Indophenol Blue method 4. 1 (CPCB guidelines 201 2, NAAQS Volume-1)
Carbon Monoxide (CO)	155182(Part-10): 1999, Reaffirmed -2009
Benzene(C_6H_6)	15 5182 Part-11): 2006
Ozone (O_1)	Chemical Method (NAAQS Volume-1)
Lead (Pb)	ASS Method (NAAQS Volume-1)
Nickel (Ni)	ASS Method (NAAQS Volume-1)
Arsenic (As)	ASS Method (NAAQS Volume-1)
Benzo(a)pyrene (BaP)	15.5182(Part-12): 2004

The duration of sampling of PM2.5, PM10, SO and NO2 was 24 hourly continuous sampling per day and to were sampled for 1 hour continuous, thrice in 24-hour duration monitoring. The monitoring was conducted for o a day at each location. This is to allow a comparison with the National Ambient Air Quality Standards.

The alt samples were analyzed as per standard methods specified by Central Pollution Control Board (CPCB) and 15: 5182.

Respirable Dust Samplers Instruments have been used for monitoring Particulate Matter (PM10), Respirable fraction (<10 microns) and gaseous pollutants like SO, and NO. Pulse pumps and mylar bags were used for collection of Carbon monoxide samples. Gas Chromatography techniques have been used for the estimation of CO.

3.1.3 Ambient Air Quality Monitoring Results

Parameter	Result	Limit as per NAAQS	Unit
Particulate Matter ($PM_{2.5}$)	23.4	60	$\mu g/m^3$
Particulate Matter (PM_{10})	38.6	100	$\mu g/m^3$
Sulphur Dioxide (SO_2)	19.5	80	$\mu g/m^3$
Nitrogen Dioxide (NO_2)	26.3	80	$\mu g/m^3$
Ammonia (NH_3)	<10.0	400	$\mu g/m^3$
Carbon monoxide (CO)	1.4	04	mg/m^3
Benzene (C_6H_6)	<0.05	05	$\mu g/m^3$
Ozone (O_3)	<33.0	100	$\mu g/m^3$
Lead (Pb)	0.043	1.0	$\mu g/m^3$
Nickel (Ni)	<12.0	20	ng/m^3
Arsenic (As)	<1.2	06	ng/m^3
Benzo(a)pyrene (BaP)	<0.2	01	ng/m^3

3.2 AMBIENT NOISE MONITORING

3.2.1 Ambient Noise Monitoring Locations

The main objective of noise monitoring in the study area is to assess the present ambient noise levels at Northwest corner of the Plot due to various construction allied activities around the site and increased vehicular movement. A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in the area. Ambient noise monitoring was conducted at Northwest corner in the month of September 06-09-2023 to 07-09-2023 & 30th October-2023 time 10:00hrs to 18hrs.

3.2.2 Methodology of Noise Monitoring

Noise levels were measured using integrated sound level meter manufactured by Kusam-Meco KM929 MK I Sr. No.AIR-1- 057 Sound Level Meter has been designed to meet the measurement requirement of noise engineers, noise quality control & health prevention in various environments, such as noise measurement in factory, Office, Traffic Road, Family & all other noise measurement applications.

Noise level monitoring was carried out continuously for 24 hours with one-hour interval starting at 06:10hrs. to 05:10hrs next day. The noise levels were monitored on working days only.
During each hour Leg were directly computed by the instrument based on the sound pressure levels, Lday (Ld), Lnight (Ln) and Ldn values were computed using corresponding hourly Leq. Monitoring was carried out at 'A' response and fast mode.

3.2.3 Ambient Noise Monitoring Results

The location of ambient noise monitoring results is summarized in the below tabulation.

Date of Sampling: 06/09/2023 to 07/09/2023

LOCATION: North East Corner near Site Entrance

Day Time	Noise Level dB(A)	Night Time	Noise Level dB(A)
06:10	68.4	22:10	62.4
07:10	66.2	23:10	61.8
08:10	64.2	00:10	61.5
09:10	65.7	01:10	64.2
10:10	67.2	02:10	62.1
11:10	64.1	03:10	67.6
12:10	64.5	04:10	62.8
13:10	64.1	05:10	63.3
14:10	64.3		
15:10	67.4		
16:10	64.3		
17:10	66.5		
18:10	64.7		
19:10	65.3		
20:10	62.5		
21:10	62.7		
Day Time Avg.	**65.1**	**Night Time Avg.**	**63.1**

3.2.4 Discussion on Ambient Noise Levels in the Study Area

Day Time Noise Levels:
The day-time noise level was found to be within the limit prescribed for residential areas.
Night-time Noise Levels:
The night-time noise level was found to be within the limit prescribed for residential areas.

3.3 GROUNDWATER QUALITY MONITORING

3.3.1 Groundwater Quality Monitoring Locations

Facility at project site is using water through tanker for the construction purpose and RO water for drinking purpose is no bore well present at site. So, ground water monitoring is not required.

3.4 SOIL MONITORING

3.4.1 Soil Monitoring Locations

The objective of the soil monitoring is to identify the impacts of ongoing project activities on soil quality and predict impacts, which have arisen due to execution of various constructions allied activities. Accordingly, a study of assessment of the soil quality has been carried out.

To assess impacts of ongoing project activities on the soil in the area, the physio-chemical characteristics of soils were examined by obtaining soil samples from selected point and analysis of the same. One sample of soil was collected from the project site in the month of September-2023 for studying soil characteristics.

3.4.2 Methodology of Soil Monitoring

Monitoring was conducted in respect of the following parameters:

TEST PARAMETER	TEST METHOD
pH (10 % Solution)	Test Method
Loss on Drying @ 105°C	SW-846-9045-C
Loss on Ignition @550°C	APHA 2540
Sulphate as SO_4	APH A 2540
Chloride as Cl	IS 3025(Part 24)2009
Cooper	IS 3025(Part 32)2007
Cobalt	IS. 3025(P-45)1993
Lead	IS: 3025(P-45)1993
Iron	IS:3025(P-34)1988
Manganese	IS:3025(P-31)1988
Zinc	APHA 23rd Edition
Nickel	IS 3025 (Part 49)2009
Chromium	IS 3025 (Part 54)2003

3.4.3 Soil Monitoring Results

The physio-chemical characteristics of the soil, as obtained from the analysis of the soil sample, are presented.

Test Parameter	Result	Unit	Test Method
pH (10 % Solution)	7.6	---	SW-846-9045-C
Loss on Drying @ 105°C	28	%	APHA 23rd Edition
Loss on Ignition @550°C	4.1	%	APHA 23rd Edition
Sulphate as SO_4	<2.5	mg/kg	IS 3025(Part 24)2009
Chloride as Cl	124	mg/kg	IS 3025(Part 32)2007
Cooper as Cu	6.2	mg/kg	IS. 3025(P-34)1998
Cobalt as Co	<0.5	mg/kg	IS. 3025(P-45)1993
Lead as Pb	<0.1	mg/kg	IS: 3025(P-31)1993
Iron as Fe	198	mg/kg	IS:3025(P-31)1988
Manganese as Mn	30	mg/kg	APHA 23rd Edition
Zinc as Zn	8	mg/kg	APHA 23rd Edition
Nickel as Ni	<0.1	mg/kg	IS 3025 (Part 54)2003
Chromium as Cr	<0.1	mg/kg	IS 3025 (Part 52)2003

3.4.4 Discussion on Soll Characteristics in the Study Area.

The soil in the study area is characterized by moderate organic content. The soil quality in the project area has not been affected by the project activities.

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CIN : U73100MH1995PTC092502
NABL Accreditation Certificate No. TC-5088 Valid upto 31.12.2023

TEST REPORT
AMBIENT AIR QUALITY MONITORING

Report No.	PAPL/A-95A/09-23	**Report Date**	09/09/2023				
Work Order No.	--						
Name of Customer	M/s. Navi Mumbai Municipal Transport						
Address	Integrated Bus Terminus cum Commercial complex on Plot No. 3, Sector 9A, Vashi, Navi Mumbai.400703.						
MoEF Certificate No.	S.O.3744(E) dated 17.10.2019	**Valid up to**		16/10/2024			
Type of sampling	**AAQM**	24 Hrs.	√	**AAQM**	24 Hrs.	**AAQM**	24 Hrs.
Instrument used	RDS	√		FDS		√	
	ID No.	PAPL/LAB/103		ID No.		PAPL/LAB/098	
	Calibration Due Date	26/12/2023		Calibration Due Date		31/08/2024	
Date of Sampling	06/09/2023	**Sample Ref. No**	249A/A-95A/09-23				
Location of sampling	North West Corner near Steel Yard						
Sample Collected By	Padmaja Aerobiologicals Pvt. Ltd.						

POLLUTION PARAMETERS

Parameter	**Result**	**Limit as per NAAQS**	**Unit**	**Method**
Particulate Matter ($PM_{2.5}$)	23.4	60	$\mu g/m^3$	Gravimetric method (CPCB guidelines 2012, NAAQS Volume –I)
Particulate Matter (PM_{10})	38.6	100	$\mu g/m^3$	IS 5182(Part-23):2006,Reaffirmed-2017
Sulphur Dioxide (SO_2)	19.5	80	$\mu g/m^3$	IS 5182(Part -02):2001,Reaffirmed-2017
Nitrogen Dioxide (NO_2)	26.3	80	$\mu g/m^3$	IS 5182(Part-06):2006,Reaffirmed-2017
Ammonia (NH_3)	<10.0	400	$\mu g/m^3$	IS:595 (Part-25):2018
Carbon monoxide (CO)	1.4	04	mg/m^3	IS 5182(Part-10):1999,Reaffirmed -2009
Benzene (C_6H_6)	<0.05	05	$\mu g/m^3$	IS 5182(Part-11):2006
Ozone (O_3)	<33.0	100	$\mu g/m^3$	IS:595 (Part-9):1974 Reaffirmed-2019
Lead (Pb)	0.043	1.0	$\mu g/m^3$	AAS Method (NAAQS Volume-I)
Nickel (Ni)	<12.0	20	ng/m^3	AAS Method (NAAQS Volume-I)
Arsenic (As)	<1.2	06	ng/m^3	AAS Method (NAAQS Volume-I)
Benzo(a)pyrene (BaP)	<0.2	01	ng/m^3	IS 5182(Part-12):2004

Sampling conditions	Rain	Moderate	Construction site near by	No
	Wind	No	Vehicular Activity	No

Remark:--
Note: This test report may not be produced in part or full, without the permission of this laboratory.
This test report refers only to the sample submitted for the testing.

Analyst **Reviewed by** **Authorized Signatory**

----- End of test report------

AIR-F-011

Ref. No.: 249B/A-95B/09-23

Date: 09/09/2023

Work Order No. :- --
Name of the Industry: M/s. Navi Mumbai Municipal Transport
Integrated Bus Terminus cum
Commercial complex on Plot No. 3, Sector 9A,
Vashi, Navi Mumbai.400703.

CERTIFICATE OF ANALYSIS
NOISE LEVEL MEASUREMENTS

Date of Sampling: 06/09/2023 to 07/09/2023

LOCATION: North East Corner near Site Entrance

Day Time	Noise Level dB(A)	Night Time	Noise Level dB(A)
06:10	68.4	22:10	62.4
07:10	66.2	23:10	61.8
08:10	64.2	00:10	61.5
09:10	65.7	01:10	64.2
10:10	67.2	02:10	62.1
11:10	64.1	03:10	67.6
12:10	64.5	04:10	62.8
13:10	64.1	05:10	63.3
14:10	64.3		
15:10	67.4		
16:10	64.3		
17:10	66.5		
18:10	64.7		
19:10	65.3		
20:10	62.5		
21:10	62.7		
Day Time Avg.	**65.1**	**Night Time Avg.**	**63.1**

Remark:--
Instrument used: -Kusam-Meco KM 929 MK1 ID. No. PAPL/LAB/102
Instrument Calibration Due date: - 20/11/2023.
Limit During Day Time < 75dB(A)
Limit During Night Time < 70dB(A)

Analyst **Reviewed by** **Authorized Signatory**

-- End of test report --

AIR-F-005

CERTIFICATE OF ANALYSIS

ANALYSIS REPORT FOR STACK EMISSION

Sample / Report Ref. No.	249C/A-95C/09-23
Work Order No.	--
Report Date	09/09/2023
Name of Industry Address:	M/s. Navi Mumbai Municipal Transport Construction of Integrated Bus Terminus cum Commercial complex on Plot No. 3, Sector 9A, Vashi, Navi Mumbai.400703.
Sample Collected by	PADMAJA AEROBIOLOGICALS PVT. LTD.
Date of Sampling	06/09/2023

PARTICULARS OF STACK

Stack Attached to	D.G. Set (125KVA)
Stack Diameter (Meter)	0.1016
Stack Height (Meter)	1.0 Above Roof
Stack Temperature (^{O}C)	127
Stack Velocity of Flue Gases (m/s)	13.0
Stack Volume of Flue Gases (Nm^3/hr)	282
Type of Fuel	Diesel

POLLUTION PARAMETERS

Parameter	Result	Limit	Unit	Method
Particulate Matter (PM)	0.134	0.3	g/kw-hr	IS-11255 (Part 1) 1985 R-2019
SO_2 Conc.	0.23	NS	Kg/day	IS-11255 (Part 2) 1985 R-2019
NOx Conc.	0.094	9.2	g/kw-hr	IS 11255 (Part 7) 2005 Reaffirmed 2012

Remark: --
Instrument used: - Polltech make Model PEM SMK-10 I.D. No. PAPL/LAB/077
Instrument Calibration Due date: - 31/08/2024

Patil
Analyst

Reviewed by

Authorized Signatory

----- End of test report------

AIR-F-007

Ref. No.: 249D/A-95D/09-23 Date: 09/09/2023

Work Order No. :- --

Name of the Industry: M/s. Navi Mumbai Municipal Transport
Construction of Integrated Bus Terminus cum
Commercial complex on Plot No. 3, Sector 9A,
Vashi, Navi Mumbai.400703.

CERTIFICATE OF ANALYSIS

D.G SET NOISE LEVEL MEASUREMENT

Date of Sampling: 06/09/2023

Time	Locations	Noise Level in dB (A) (Day Time)	Limit dB (A)
10:05	D.G. Set 125 KVA(Door Opened)	101.2	--
10:08	D.G. Set 125 KVA(Door Closed-East side)	73.2	<75
10:09	D.G. Set 125 KVA(Door Closed-West side)	74.6	<75
10:10	D.G. Set 125 KVA(Door Closed-North Side)	74.3	<75
10:11	D.G. Set 125 KVA(Door Closed-South Side)	72.3	<75

Remark: --
Instrument used: -Kusam-Meco KM 929 MK1 ID. No. PAPL/LAB/064
Instrument Calibration Due date: - 28/02/2024.

Analyst **Reviewed by** **Authorized Signatory**

----- End of test report------

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.
Date :- 28/08/2023 & 29/08/2023

AMBIENT AIR QUALITY

Date & Time	Location	SO2 (< 80 µg/m3)			Nox (< 80 µg/m3)			NH3 (< 400 µg/m3)			H2S (µg/m3)			RSPM (< 60 µg/m3)
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
28/8/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	7.4	6.5	8.2	16.4	13.3	19.5	8.4	8.1	8.6	3.7	3.6	3.9	50.1
29/8/2023 10.00am To 6.00pm		7.4	6.9	7.9	19.5	19.1	19.9	7.9	7.1	8.6	3.0	2.8	3.2	37.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.

Date :- 28/08/2023 & 29/08/2023

AMBIENT AIR QUALITY

Date & Time	Location	VOC (mg/m3)	PM 10 (< 100 µg/m3)	PM 2.5 (< 60 µg/m3)	NH_3 (<0.4 mg/m3)	H_2S (mg/m3)	CO (<4 mg/m3)	CH_4 (mg/m3)
28/8/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	6.0	61.0	30.5	0.0	0.00	0.1	34.0
29/8/2023 10.00am To 6.00pm		6.7	74.0	54.5	0.0	0.0	0.15	33.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.

Date :- 28/08/2023 & 29/08/2023

SOUND QUALITY

Date & Time	Location	SOUND (dB(A))		
		Min.	Max.	Avg.
28/8/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	53.0	63.0	58.0
29/8/2023 10.00am To 6.00pm		52.0	64.0	58.0

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.

Date :- 27/07/2023 & 28/07/2023

AMBIENT AIR QUALITY

Date & Time	Location	SO2 (< 80 µg/m3)			Nox (< 80 µg/m3)			NH3 (< 400 µg/m3)			H2S (µg/m3)			RSPM (< 60 µg/m3)
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
27/7/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi	6.8	5.8	7.9	16.8	15.5	18.1	7.9	7.1	8.6	3.2	2.8	3.6	37.5
28/7/2023 10.00am To 6.00pm		7.3	6.5	8.2	13.9	13.3	14.6	7.6	7.1	8.1	3.2	2.5	3.9	50.1

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.
Date :- 27/07/2023 & 28/07/2023

AMBIENT AIR QUALITY

Date & Time	Location	VOC (mg/m3)	PM 10 (< 100 µg/m3)	PM 2.5 (< 60 µg/m3)	NH_3 (<0.4 mg/m3)	H_2S (mg/m3)	CO (<4 mg/m3)	CH_4 (mg/m3)
27/7/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi	7.0	56.0	22.0	0.0	0.0	1.0	29.5
28/7/2023 10.00am To 6.00pm		7.7	61.0	34.0	0.0	0.0	0.6	38.0

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.

Date :- 27/07/2023 & 28/07/2023

SOUND QUALITY

Date & Time	Location	SOUND (dB(A))		
		Min.	Max.	Avg.
27/7/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	53.0	64.0	58.5
28/7/2023 10.00am To 6.00pm		54.0	64.0	59.0

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi , Navi Mumbai.
Date :-21/06/2023 & 22/06/2023

AMBIENT AIR QUALITY

Date & Time	Location	SO2 (< 80 µg/m3)			Nox (< 80 µg/m3)			NH3 (< 400 µg/m3)			H2S (µg/m3)			RSPM (< 60 µg/m3)
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
21/06/2023 10.00am to 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	7.7	6.5	8.9	17.0	15.9	18.1	7.8	7.1	8.6	4.2	3.6	4.9	50.0
22/06/2023 10.00am to 6.00pm		8.8	7.9	9.6	21.8	17.2	26.5	8.4	8.1	8.6	4.1	3.9	4.3	62.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.

Date :-21/06/2023 & 22/06/2023

AMBIENT AIR QUALITY

Date & Time	Location	VOC (mg/m3)	PM 10 (< 100 µg/m3)	PM 2.5 (< 60 µg/m3)	NH_3 (<0.4 mg/m3)	H_2S (mg/m3)	CO (<4 mg/m3)	CH_4 (mg/m3)
21/06/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	5.6	61.5	36.5	0.00	0.00	0.5	33.5
22/06/2023 10.00am To 6.00pm		5.5	65.0	43.0	0.00	0.00	0.7	29.0

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.
Date :-21/06/2023 & 22/06/2023

SOUND QUALITY

Date & Time	Location	SOUND (dB(A))		
		Min.	Max.	Avg.
21/06/2023 10.00am to 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	53.0	65.0	59.0
22/06/2023 10.00am to 6.00pm		57.0	64.0	60.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9., Vashi ,Navi Mumbai.

Date :-25/05/2023 & 26/05/2023

AMBIENT AIR QUALITY

Date & Time	Location	SO2 (< 80 µg/m3)			Nox (< 80 µg/m3)			NH3 (< 400 µg/m3)			H2S (µg/m3)			RSPM (< 60 µg/m3)
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
25/5/2023 10.00am to 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	14.9	13.4	16.5	28.6	26.1	31.0	6.6	5.1	8.1	6.4	5.7	7.1	62.4
26/5/2023 10.00am to 6.00pm		15.6	14.1	17.2	24.3	23.0	25.7	7.6	6.6	8.6	4.8	4.6	4.9	75.0

Analysed By

Chemist

Reported By

Field Chemist

Checked By

Lab Incharge

Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.

Date :- 25/05/2023 & 26/05/2023

AMBIENT AIR QUALITY

Date & Time	Location	VOC (mg/m3)	PM 10 (< 100 µg/m3)	PM 2.5 (< 60 µg/m3)	NH_3 (<0.4 mg/m3)	H_2S (mg/m3)	CO (<4 mg/m3)	CH_4 (mg/m3)
25/5/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	6.4	80.5	65.5	0.00	0.00	0.3	30.5
26/5/2023 10.00am To 6.00pm		7.4	79.5	65.5	0.00	0.00	0.6	22.5

Analysed By

Chemist

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.

Date :- 25/05/2023 & 26/05/2023

SOUND QUALITY

Date & Time	Location	SOUND (dB(A))		
		Min.	Max.	Avg.
25/5/2023 10.00am to 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	53.0	68.0	60.5
26/5/2023 10.00am to 6.00pm		54.0	70.0	62.0

Analysed By

Chemist

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.
(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 Vashi, Navi Mumbai.
Date :- 24/03/2023 & 25/03/2023

AMBIENT AIR QUALITY

Date & Time	Location	SO2 (< 80 µg/m3)			Nox (< 80 µg/m3)			NH3 (< 400 µg/m3)			H2S (µg/m3)			RSPM (< 60 µg/m3)
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
24/3/2023 10.00am to 6.00pm	Navi Mumbai Municipal Transport Sec.-9, Vashi.	17.2	16.8	17.5	24.3	23.9	24.8	5.8	5.1	6.6	5.2	4.6	5.7	62.5
25/3/2023 10.00am to 6.00pm		13.6	12.7	14.4	21.2	18.2	24.3	6.3	5.6	7.1	5.2	4.3	6.0	50.0

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

For Lab Incharge
Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.
Date :- 24/03/2023

AMBIENT AIR QUALITY

Date & Time	Location	VOC (mg/m3)	PM 10 (< 100 µg/m3)	PM 2.5 (< 60 µg/m3)	NH_3 (<0.4 mg/m3)	H_2S (mg/m3)	CO (<4 mg/m3)	CH_4 (mg/m3)
24/03/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	6.2	85.0	59.0	0.00	0.00	1.00	42.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge
Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.

Date :-24/03/2023

SOUND QUALITY

Date & Time	Location	SOUND (<75dB(A))		
		Min.	Max.	Avg.
24/03/2023 10.00am To 6.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	52.0	71.0	61.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

Environment Laboratory

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.

Date :-30/10/2023

AMBIENT AIR QUALITY

Date & Time	Location	VOC (mg/m3)	PM 10 (< 100 µg/m3)	PM 2.5 (< 60 µg/m3)	NH_3 (<0.4 mg/m3)	H_2S (mg/m3)	CO (<4 mg/m3)	CH_4 (mg/m3)
30/10/2023 10.00am To 5.00pm	Navi Mumbai Municipal Transport Sec -9, Vashi.	6.9	170.0	141.0	0.05	0.00	0.00	52.5

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Aggoli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9, Vashi ,Navi Mumbai.

Date :-30/10/2023

SOUND QUALITY

Date & Time	Location	SOUND (dB(A))		
		Min.	Max.	Avg.
30/10/2023 10.00a m To 6.00p m	Navi Mumbai Municipal Transport Sec-9, Vashi.	56.0	70.0	63.0

Analysed By

Pollution Inspector

Reported by

Field Chemist

Checked By

Lab Incharge

NAVI MUMBAI MUNICIPAL CORPORATION

ENVIRONMENT DEPARTMENT

Below Agroli Bridge, C.B.D. Belapur, Navi Mumbai 400 614.

(ISO 9001:2015 Certified)

Location :- Navi Mumbai Municipal Transport Sec-9 , Vashi ,Navi Mumbai.

Date :-30/10/2023 & 31/10/2023

AMBIENT AIR QUALITY

Date & Time	Location	SO2 (< 80 µg/m3)			Nox (< 80 µg/m3)			NH3 (< 400 µg/m3)			H2S (µg/m3)			RSPM (< 60 µg/m3)
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	
30/10/2023 10.00am to 8.00pm	Navi Mumbai Municipal ransport Sec- 9, Vashi.	14.4	12.4	17.5	30.5	29.7	31.4	13.5	12.2	14.7	6.0	4.9	7.1	149.8
31/10/2023 10.00am to 8.00pm		13.6	10.8	16.8	25.9	25.7	26.1	10.6	9.6	11.7	7.6	5.7	9.6	125.2

Analysed By

Pollution Inspector

Reported By

Field Chemist

Checked By

Lab Incharge

F.No.6-1/2021 WL
Government of India
Ministry of Environment, Forest and Climate Change
(Wildlife Division)

2nd Floor, Jal Wing,
Indira Paryavaran Bhawan,
JorBagh Road, Aliganj,
New Delhi 110003
Date: 01.02.2021

To
The Principal Secretary,
Forest Department,
Wan Bhavan, Ramgiri Road, Civil Lines,
Nagpur 440001.

Sub: Construction of Integrated Bus Terminus cum Commercial complex on plot no. 3, Sector 9a, Vashi, Navi Mumbai, dist. Thane by Navi Mumbai Municipal Transport- reg.

Sir,

Reference is invited to the subject mentioned above. The 60th Meeting of Standing Committee of National Board for Wild Life was held on 5th January, 2021 through Video Conference under the Chairmanship of Hon'ble Minister for Environment, Forest & Climate Change.

After discussions, the Standing Committee decided to recommend the proposal subject to the following:

A. **Conditions imposed by the Chief Wild Life Warden:**

1. Project personnel, engaged in the project work shall observe the provisions of all the existing legal provisions' especially the Environment (Protection) Act, 1986, Wild Life (Protection) Act, 1972 and rules made there under & also take all precautionary measures for conservation & protection of flora, fauna in the vicinity of the project.

2. No dumping of debris on wet lands/mud flat and forest area will be done by project proponent.

3. All the other mandatory permissions from different statutory authorities should be obtained prior to commencement of work.

4. The project proponent shall deposit 2% cost of the (Rs.168.00 Crore) proposed project which passes through the deemed ESZ of the Thane Creek Flamingo Sanctuary for management of the sanctuary.

B. The annual compliance certificate on the stipulated conditions should be submitted by the project proponent to the State Chief Wild Life Warden and an annual compliance certificate shall be submitted by the State Chief Wild Life Warden to Government of India.

Details of the recommendations have been illustrated in the minutes of the meeting posted online in the "PARIVESH" portal of this Ministry.

Yours faithfully,

(Surender Gugloth)
Scientist 'D'
Email: ddwlmef@gmail.com

Copy to:

1. Chief Wild Life Warden, Government of Maharashtra, Forest Department, Van Bhavan, Ramgiri Road, Civil Lines, Nagpur 440001.
2. Regional Officer, Integrated Regional Office, Ministry of Environment, Forest and Climate Change, Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur-440001.
3. The Inspector General of Forests, FC Division, MoEF&CC, New Delhi.
4. The Joint Secretary, IA Division, MoEF&CC, New Delhi.

Ref. NMMT/TM/ENGG/ 2019/14 Date: 14-02-2019

Revised Letter of Award

To:
M/s. JBM Solaris Electric Vehicles Pvt Ltd.,
Plot No. 118, HSIDC, Sector 59, Ballabgard,
Faridabad, Pin - 121004.

Subject: **Letter of Award for Supply of Battery Operated 9M Electric 30 Buses with chargers.**

Ref: **1) Tender No.NMMT/TM/ENGG/07/2018-19**

2) Transport Committee Resolution No.103, dated 23-01-2019

This is to notify you that your above referred bid submitted pursuant to Tender for Selection of a Contractor for "Supply of Battery Operated Electric 30 Buses with Chargers and Annual Maintenance Contract (AMC)" dated 14/08/2018, the following price offered in your Price Bid from amongst the bids submitted and is hereby accepted by the NMMT:

Sr.	Description	Qty.	Quoted Rates (Basic Price)	GST @12%	Destination Price (Price per Unit)
1	Supply of 9 Metre AC 900 mm Floor Height	30	₹1,19,19,643/-	₹14,30,357/-	₹1,33,50,000/-
				Total for 30 Buses	**₹40,05,00,000/-**
2	Supply of Chargers	10	₹11,82,203/-	₹2,12,797/-	₹13,95,000/-
				Total for 10 Charger	**₹1,39,50,000/-**
				Total (1+2)	**₹41,44,50,000/-**

(In Rupees Forty One Crore Forty Four Lac Fifty Thousand Only)

Pursuant to the provisions of the RFP, you are hereby required to undertake the following:

i. Countersign this letter of award at the place indicated below to indicate your acknowledgment of the Letter of Award by the Navi Mumbai Municipal Transport Undertaking to you and return it within a period of 07 days from the date of this letter;

ii. You are required to send your duly authorised representative (with the proof of due authorisation in the form of power of attorney or a Board Resolution) to execute the Contract with paid stamp duty of Rs 4,15,000/- which shall be executed without any deviation as per tender.

Transport Manager
Navi Mumbai Municipal Transport Undertaking

JBM Solaris Electric Vehicles Private Limited

नवी मुंबई
महानगरपालिका

Navi Mumbai
Municipal Corporation

कार्यालय : नमुंमपा मुख्यालय, भूखंड क्र.१,
किल्ले गावठाण जवळ, पामबीच जंक्शन, सेक्टर १५ ए,
सी.बी.डी. बेलापूर, नवी मुंबई - ४००६१४.
दूरध्वनी : ०२२-२७५६ ७०७० / १ / २ / ३ / ४ / ५
फॅक्स : ०२२-२७५७७०७०

Head Office : Plot No. 1,
Near Kille Gaothan, Palmbeach, Junction
Sector 15A, C.B.D. Belapur, Navi Mumbai- 400 614
Tel : 022 - 2756 7070 / 1/2/3/4/5
Fax : 022 -27577070

Ref.No.NMMT/TM/ENGG/2019/68

Date: 29/06/2019

To
The Under Secretary (AEI),
Department of Heavy Industry,
Room No. 387, Udyog Bhawan, New Delhi – 110011.

Subject: Proposal for the deployment of Electric Buses in response to the EOI issued by DHI dated 04/06/2019

Reference Department of Heavy Industry's Expression of Interest issued on 04/06/2019 inviting detailed proposals from cities, for extending demand incentives under FAME India scheme Phase II for deployment of electric buses for public transport, we are hereby submitting our Expression of Interest, in the prescribed format, for consideration of the Department of Heavy Industry. We agree to abide by the conditions outlined in the said EOI.

We as a result of this declare that our proposal submitted in response to this EOI is made in good faith and the information contained is true and correct to the best of our knowledge and belief. If any of the information provided here is found to be misleading, we are liable to be disqualified from the EOI selection process.

(Dr. Ramaswami N.)
Municipal Commissioner
Navi Mumbai Municipal Corporation

नवी मुंबई महानगरपालिका
परिवहन उपक्रम

NAVI MUMBAI MUNICIPAL
TRANSPORT

कार्यालय : नवी मुंबई महानगरपालिका परिवहन उपक्रम,
बेलापूर भवन, ८वा मजला, सेक्टर-११,
सीबीडी बेलापूर, नवी मुंबई - ४०० ६१४.
दूरध्वनी : ०२२ - २७५७९०३२
फॅक्स : ०२२ - २७५७ ९०३३

Office : Navi Mumbai Municipal Transport
Belapur Bhavan, 8th Floor, Sector-11,
CBD Belapur, Navi Mumbai - 400 614.
Tel.: 022 - 2757 9032
Fax : 022 - 2757 9033

E-mail : nmmtmail@gmail.com

NMMC/TM/E.E.(Civil)/ 141 /2019
Date:13.8.2019

To

The Member Secretary
State Environmental Impact Assessment Authority,
15th Floor, New Administrative Block,
Department of Environment, Mantralaya,
Mumbai, Maharashtra.

Subject : Point wise reply raised by Honourable SEIAA during 170th Meeting on 15th July2019 for Proposed Integrated Bus Terminus cum Commercial Complex Project On Plot No. 3, Sector 9A, Vashi, Navi Mumbai, Dist. Thane by **Navi Mumbai Municipal Transport.**

Dear Sir,

With reference to the 170th SEIAA meeting, we are submitting herewith the point wise reply.

Sr. No.	Queries Raised during 170th Meeting of SEIAA	Reply
1	PP to submit report of AAQM modelling study.	AAQM modelling study report is attached as an **Annexure 1.**
2	PP to submit CER plan to Municipal Commissioner, and submit the acknowledgement copy to Member Secretary, SEIAA	The acknowledgement copy of submission of CER plan to Municipal Commissioneris attached as an **Annexure 2.**

We request you to consider our project for grantofEnvironmental Clearance.

Thanking you,

Yours Faithfully,

Transport Manager
Navi Mumbai Municipal Transport

Air Pollution & Air Quality Report

For

Proposed Integrated Bus Terminus cum Commercial Complex at Plot No. 3, Sector 9A, Vashi, Navi Mumbai, Dist. Thane, Maharashtra.

buildingenvironment

2019

Document Control:

Document	Air Pollution & Air Quality Report for " Proposed Integrated Bus Terminus cum Commercial Complex at Vashi ".
Version (Date)	R0 (09/08/2019)
Prepared by	Mr. Ashok Bandgar
Reviewed and approved by	Mr. Nilesh Potdar & Mr. Hrushikesh Kolatkar

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1 Introduction

M/s. Navi Mumbai Municipal Transport. has Proposed Integrated Bus Terminus cum Commercial Complex on Plot No. 3, Sector 9A, Vashi, Navi Mumbai, Dist. Thane of the Maharashtra State.

1.1 Project Location

The geo-graphical location of the project falls in the Latitude :19°04'30.45" N Longitude: 72°59'50.27" E. The project has direct access to Vashi Road and Vashi Turbhe Road. The Vashi railway Station is the nearest railway station located at aerial distance of 1.30 km from site, which provides local connectivity. The site is well connected to major landmarks in and around Mumbai & Navi Mumbai by roads as well as rail. The map depicting the road network in the vicinity of the project is shown in Figure 1-1.

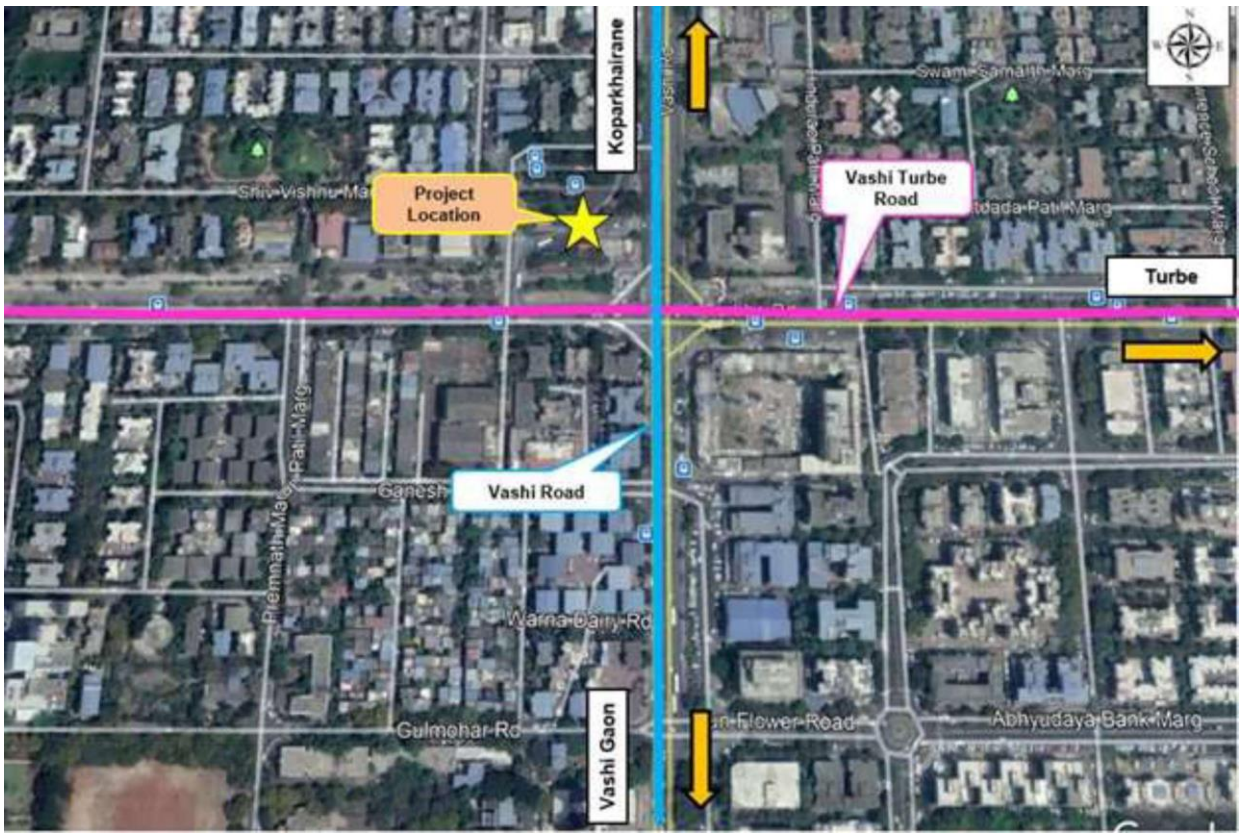


Figure 1-1:Project Location

1.2 Objective of Study

The study aims to achieve the following objectives:

1. To determine the impacts of background concentration of air pollutants in study area;

2. To project emission inventories using mathematical models taking into account of vehicle population/ improvements in vehicle technology, fuel quality changes and other activities having impact on ambient air quality thereof;
3. To determine the impact of project in different scenarios/cases.
4. To assess some control options for reductions of air pollutants in the project site after studying the results from dispersion modeling.

2 Meteorology of the study area

Various meteorological parameters which influence the dispersion of air pollutants include: wind speed, wind direction, temperature, precipitation, relative humidity, mean mixing depth (MMD) and nature of terrain. Hourly meteorological secondary data was obtained from Envitrans for Thane Geographical location, & which has been used for plotting annual variation of average wind speed, wind direction, temperature and wind-rose plot from Dec 2017 to Nov 2018. The maximum temperature 41.5°C was observed in the month March, 2018 and minimum 16.2°C in month Feb 2018. The maximum wind speed 22.32 m/s from SW direction was recorded in month July & Sept 2018. & avg wind speed was observed as 1.24 m/s in year Dec 2017-Nov 2018. The maximum relative humidity is observed 99% in each month and minimum is recorded as 19% in the month Jan. The month wise min and max values of meteorological parameters for year Nov 2017 to Dec 2018 are shown in following Table 2-1.

Table 2-1:Meteorological data for year Dec 2017 to Nov 2018

Study Period	Temp (^{0}C)		Predominant Wind Direction	Wind Speed (Km/hr)		Relative humidity (%)	
	Max	Min		Max	min	Max	min
Dec	36.4	16.9	NE	11.16	1.8	99	23
Jan	38.5	15.9	NE	11.16	1.8	99	19
Feb	40.4	16.2	NE	11.16	1.8	99	21
Mar	41.5	21.8	NE	12.96	1.8	99	30
Apr	40.1	22.9	NNW	18.36	1.8	99	58
May	40.4	25.8	W	16.56	1.8	99	39
Jun	37.2	23.9	SW	20.52	1.8	99	65
Jul	33.1	23	SW	22.32	1.8	99	57
Aug	31.1	24.4	SW	14.76	0	99	53
Sep	40.4	23.2	SW	22.32	0	99	53
Oct	40	20.9	NE	14.76	1.8	99	26
Nov	38.4	19	NE	14.76	1.8	99	33

Source: Secondary Meteorological data for year Dec 2017 to Nov 2018 by Envitrans for Thane geographical location.

The seasonal wind rose plot during 1st March 2018 to 31th May 2018 shows predominant wind direction as W to E which is shown in Figure 2-1. The calm period was found to be 63.3 % out of the annual period.

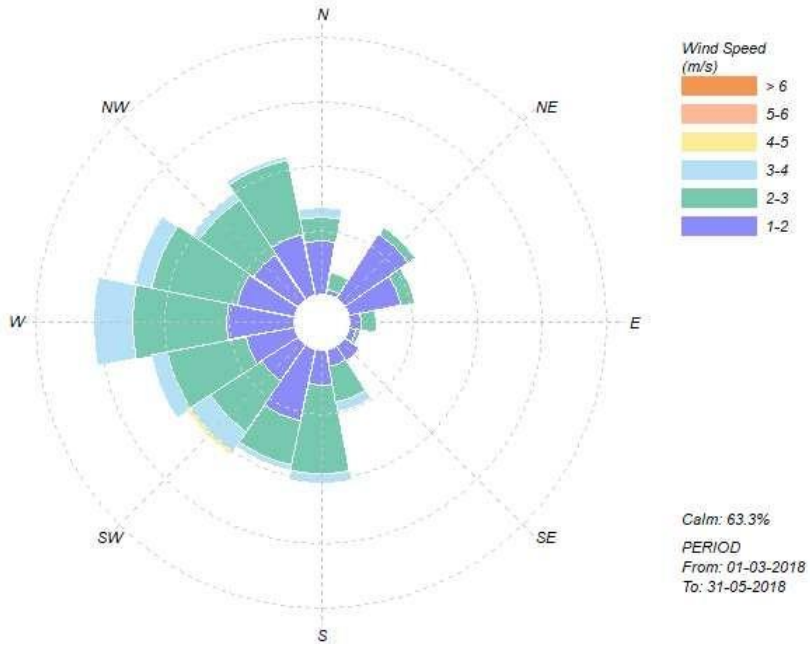
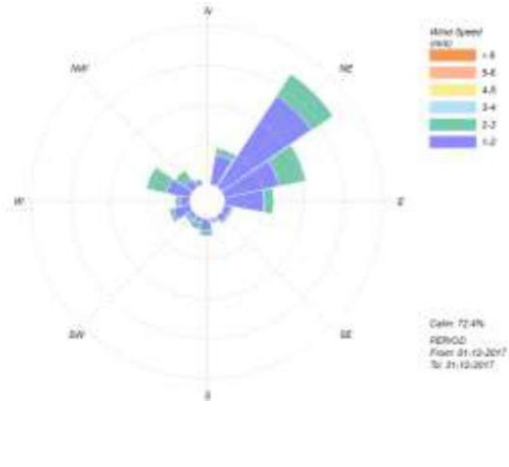
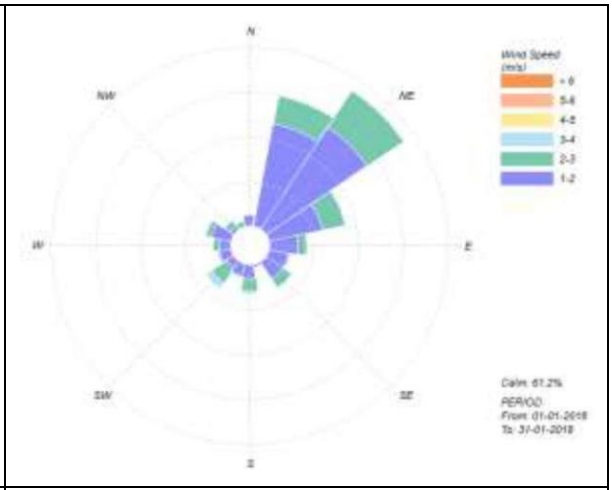
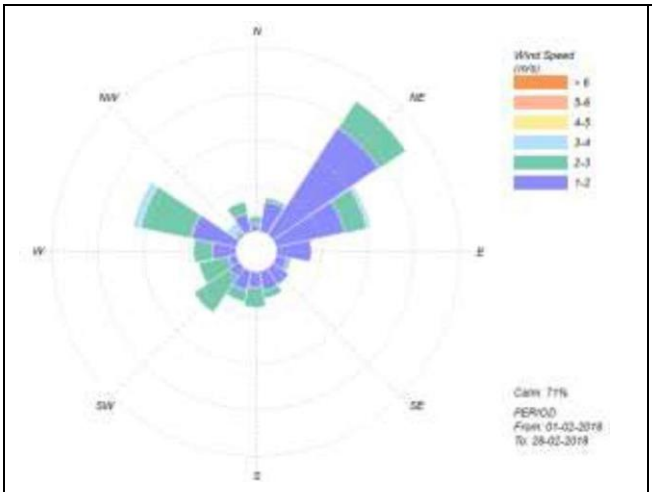
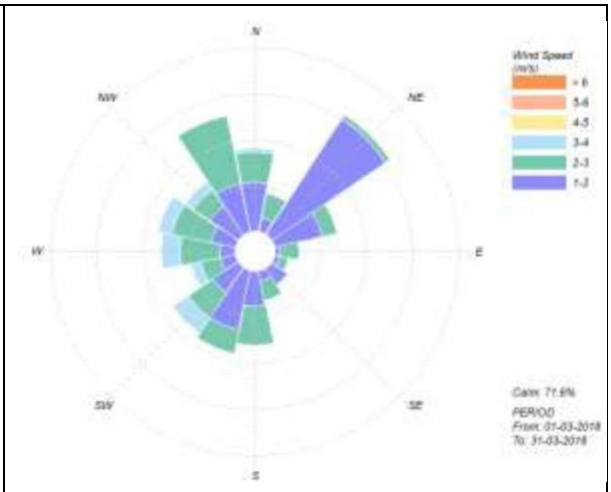
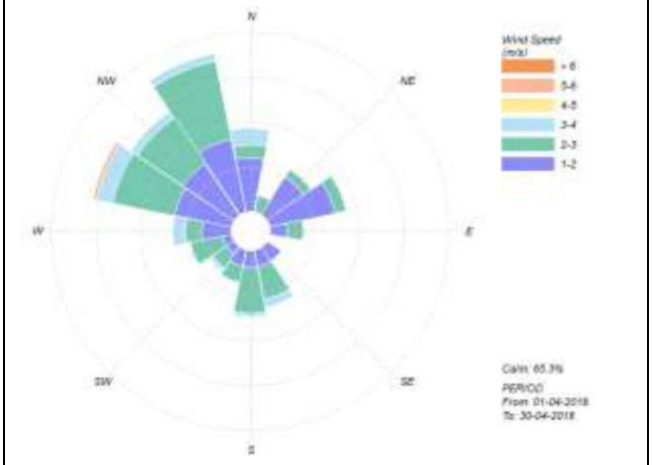
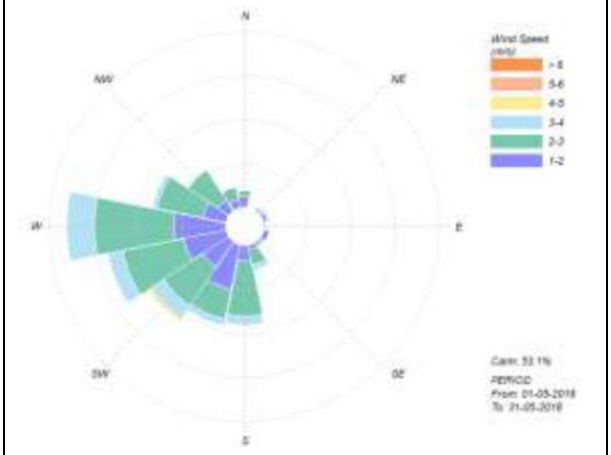
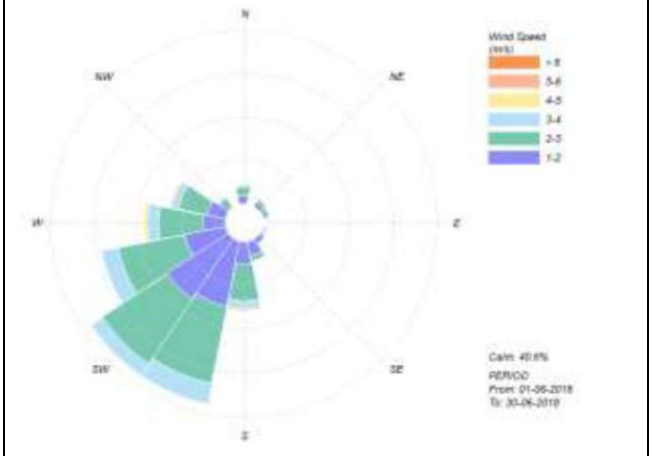
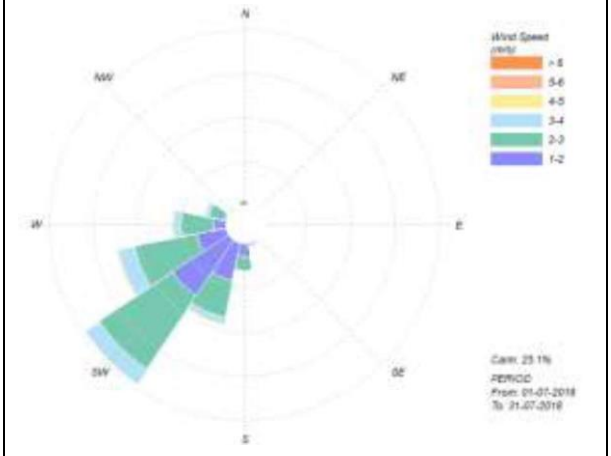


Figure 2-1: Seasonal wind-rose plot for Thane Geographical location, Maharashtra, India.

The prevailing wind direction at site is shown through following wind roses prepared for each month throughout the year Dec 2017 to Nov 2018 are shown in Figure 2-2 below:

	
Wind-rose diagram for Dec 2017	Wind-rose diagram for Jan 2018

	
Wind-rose diagram for Feb 2018	Wind-rose diagram for March 2018
	
Wind-rose diagram for April 2018	Wind-rose diagram for May 2018
	
Wind-rose diagram for June 2018	Wind-rose diagram for July 2018

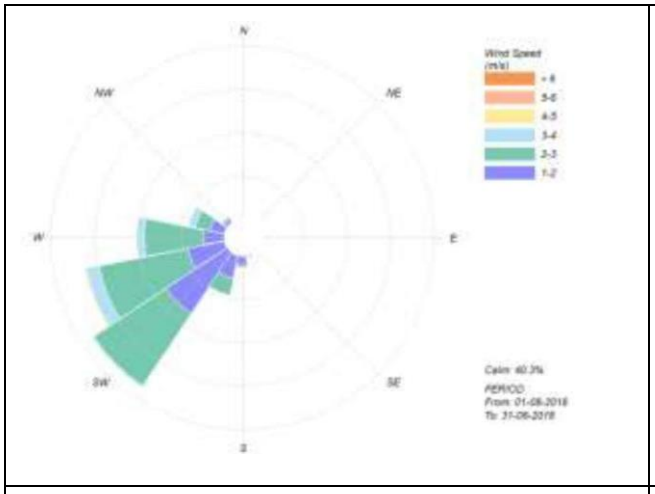
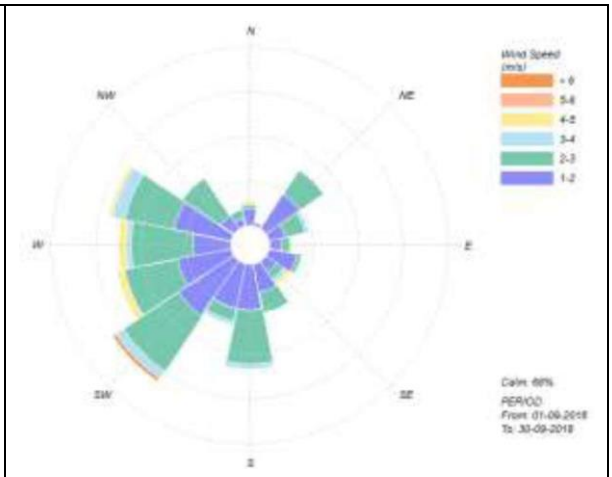
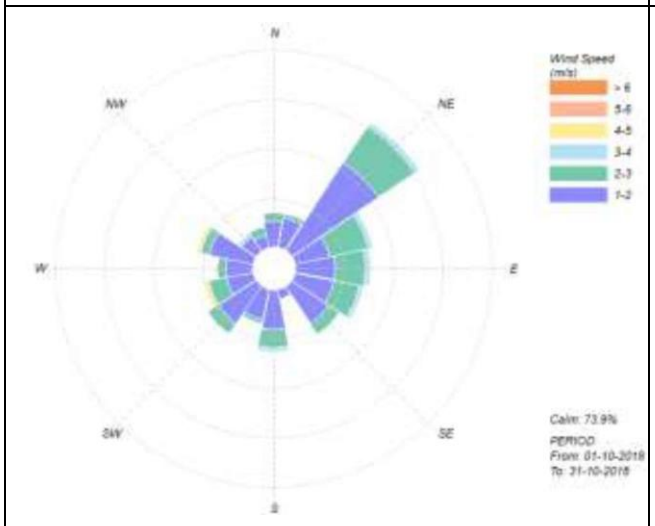
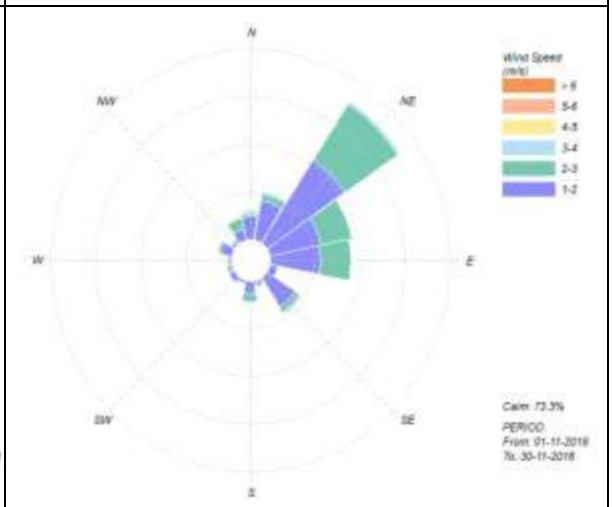
	
Wind-rose diagram for August 2018	Wind-rose diagram for September 2018
	
Wind-rose diagram for October 2018	Wind-rose diagram for November 2018

Figure 2-2: Month wise wind rose for Geographical location Thane.

3 Ambient Air Quality of Study area

Ambient air quality data for summer season from 1st March to 27th May 2019 has been collected from MPCB portal for nearest monitoring station Dr. D.Y. Patil College, Nerul which is operating continuously. The ambient air quality data gives the total concentration of air pollutants arising from nearby sources such as road vehicles, residential areas, industries and other man-made sources. Dispersion of air pollutant is dependent upon many meteorological factors, most significantly dependent upon wind velocity, wind direction and temperature. in Table 3-1 and Graphical representation is given in Figure 3-1. It was observed from the monitored results that

the pollutant concentrations values are found to be within the National Ambient Air Quality Standards (NAAQS).

Table 3-1: Min, max, average and 98th percentile ambient air quality data recorded at Nerul.

Station Name	Pollutant	Minimum	Maximum	Average	98th percentile
Nerul	SO2 µg/m3	36	82	47.09	59.14
	NO2 µg/m3	42	61	55.15	60.38
	RSPM µg/m3	48	198	110.7	174.9
	PM10 µg/m3	33.6	138.6	77.49	122.43

Note: Mean percentage composition of RSPM at Vashi location, 70% of PM10 & 30% of PM2.5

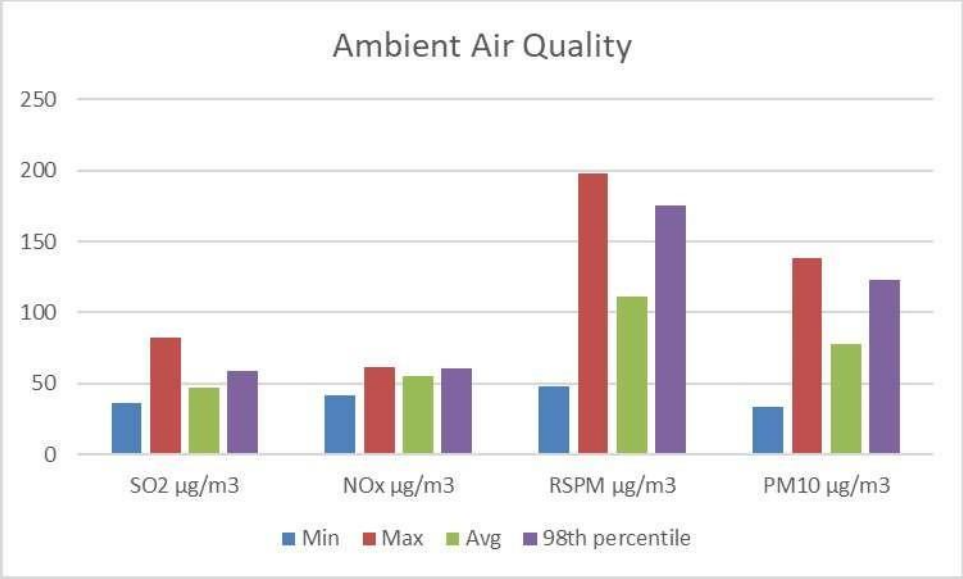


Figure 3-1: Graphical Representation of Baseline Status of pollutants SO2, NO2 & PM10 at Nerul monitoring station

SO2: The Minimum, Maximum, average and 98th percentile concentrations of SO2 were recorded during March to May 2019 at Nerul monitoring location is as 36.00 µg/m3, 82.00 µg/m3, 47.09 µg/m3 and 59.14 µg/m3 respectively. The maximum conc is recorded on single day of total period considered for study and which is exceeding the NAAQS limits for industrial, residential, rural and other areas (80 µg/m3). However, the average and 98th percentile concentration for March to May 2019 is found to be within the prescribed NAAQS limits for industrial, residential, rural and other areas (80 µg/m3).

NO2: The Minimum, Maximum, average and 98th percentile concentrations of NO2 were recorded during March to May 2019 at Nerul monitoring location is as 42.00 µg/m3, 61.00 µg/m3, 55.15 µg/m3 and 60.38 µg/m3 respectively. The min, Max, average and 98th percentile

concentration for March to May 2019 is found to be within the prescribed NAAQS limits for industrial, residential, rural and other areas (80 µg/m3).

RSPM: The Minimum, Maximum, average and 98th percentile concentrations of RSPM was recorded during March to May 2019 at Nerul monitoring location is as 48.00 µg/m3, 198.00 µg/m3, 110.70 µg/m3 and 174.90 µg/m3 respectively. The maximum, average and 98th percentile conc values are exceeding the NAAQS limits for industrial, residential, rural and other areas (100 µg/m3). The min concentration for March to May 2019 is found to be within the prescribed NAAQS limits for industrial, residential, rural and other areas (100 µg/m3).

PM 10: The Minimum, Maximum, average and 98th percentile concentrations of NO2 were recorded during March to May 2019 at Nerul monitoring location is as 33.60 µg/m3, 138.60 µg/m3, 77.49 µg/m3 and 122.43 µg/m3 respectively. The maximum a
nd 98th percentile conc values exceeding the NAAQS limits for industrial, residential, rural and other areas (100 µg/m3). However, the min and average concentration for March to May 2019 is found to be within the prescribed NAAQS limits for industrial, residential, rural and other areas (100 µg/m3).

CO: The ambient CO data is not available on MPCB portal as well as NMMC portal. The background concentration of Carbon monoxide (CO) is taken from EIA report of Nagaland State guest houses cum Emporium at Vashi, Navi Mumbai. The monitoring surveys of the study area (project area) were carried out for one season, during the months of March 2017 to May 2017. The baseline measurement carried out at all ambient air monitoring sites was consistently less than 0.4 mg/m3 and it also within the prescribed limit of NAAQs for CO of Industrial, Residential, Rural and Other Areas.

4 Traffic Studies

Vehicular emission is one of the major sources of air pollution in the study area. Pollutants from vehicular exhaust are released at ground level and hence, their impacts on the recipient population are likely to be of significant. Traffic surveys were conducted for Vashi road and Vashi Turbhe road to study baseline traffic scenario. The traffic study includes: count of total number of vehicles, segregation of different types of vehicles and vehicular movement at a given location.

4.1 Hourly traffic distribution of Vashi Turbhe Road

The hourly traffic count on Vashi Turbhe Road is shown in the graph, which is shown in Figure 4-1.

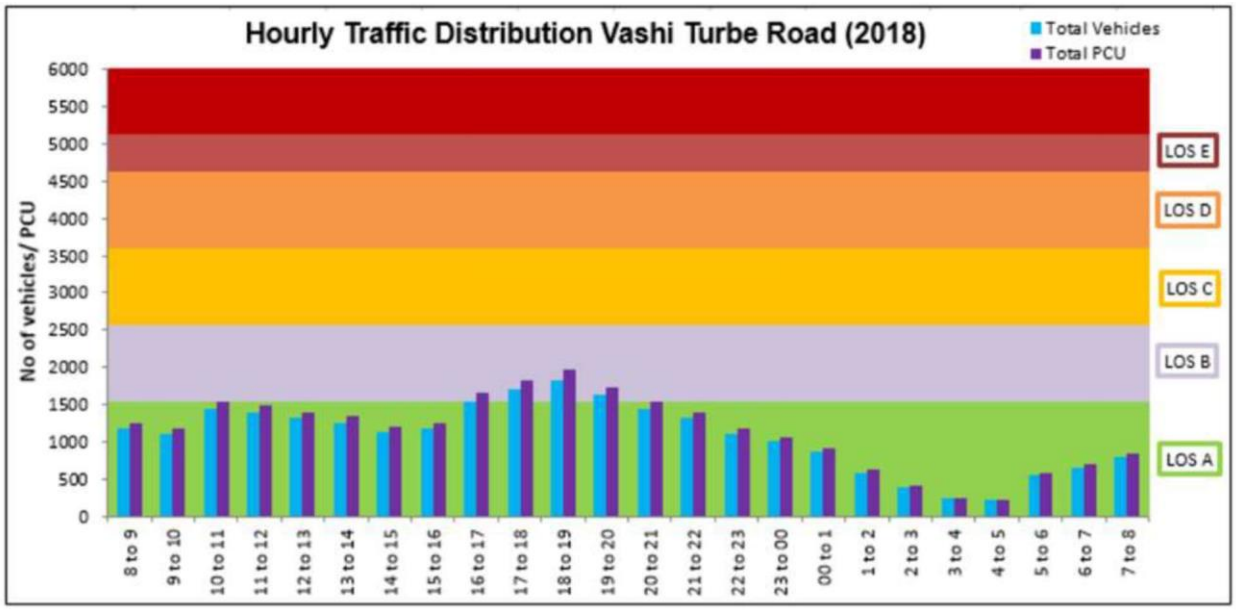


Figure 4-1: Hourly Traffic Counts at Vashi Turbhe Road

As per Figure 4-1, the peaks are well established during 18.00 to 19.00 Hrs. The modal split shows the percent composition of vehicles on Vashi Turbhe road. Cars contributes 31% of the traffic on Vashi Turbhe Road. The impact of the project traffic would be predominantly on Vashi Turbhe road and Vashi Road, which connects Thane Belapur Road and Sion Panvel Highway respectively. The hourly distribution of different types of vehicles on the Vashi Turbhe road is given in Figure 4-2

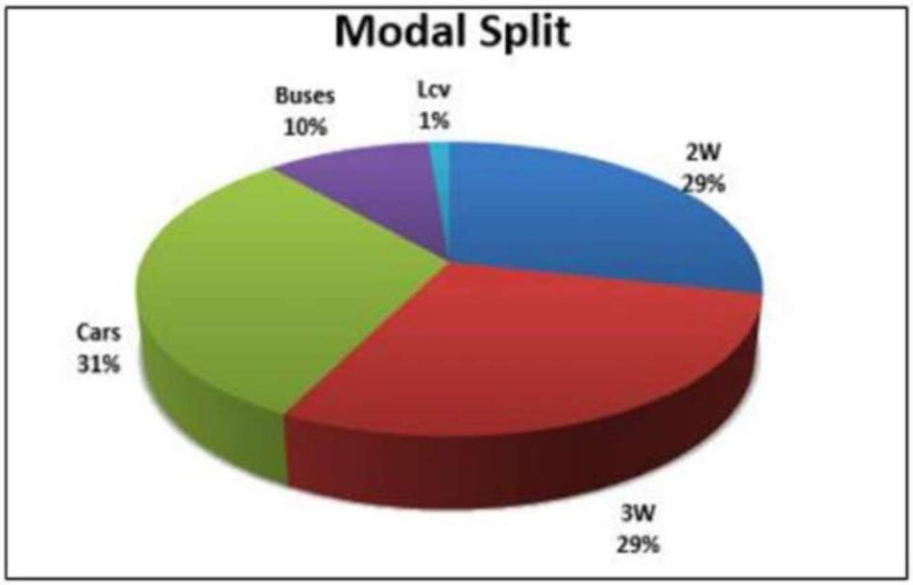


Figure 4-2: Hourly Traffic Distribution for Vashi Turbhe Road

4.2 Hourly traffic distribution of Vashi Road

The hourly traffic count and traffic distribution on Vashi Road is shown in Figure 4-3 & Figure **4-4**

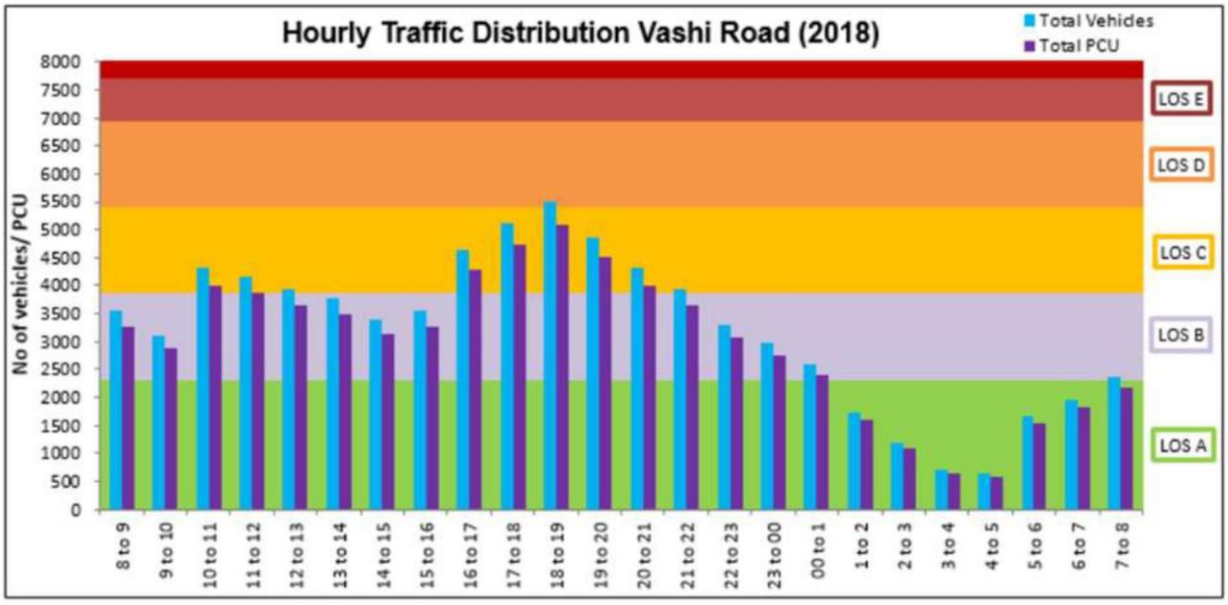


Figure 4-3: Hourly Traffic Counts at Vashi Road

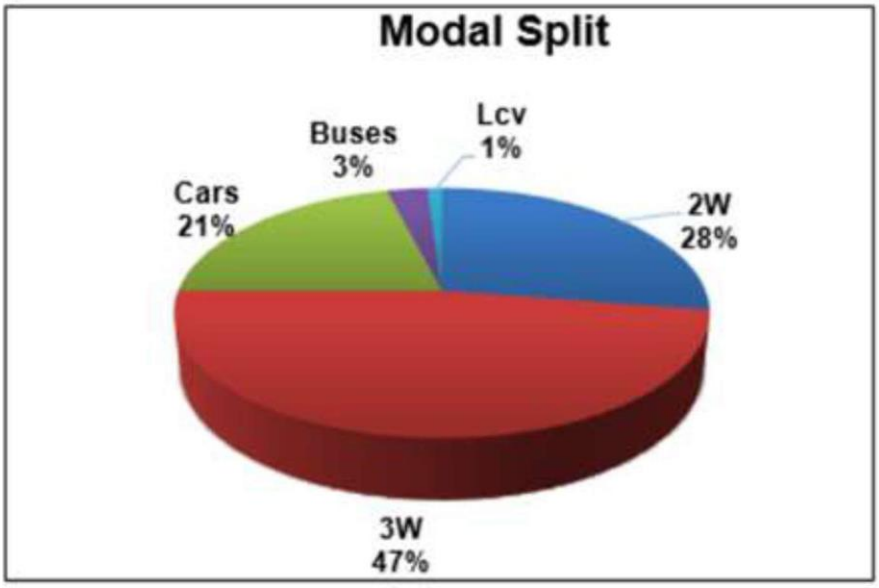


Figure 4-4: Hourly Traffic Distribution for Vashi Road

It is equally important for the project to consider the Passenger Car Unit (PCU) which impact the mode of transport (such as headway, speed and density) compared to a single car. Roads in India

carry heterogeneous traffic, where road space is shared among many traffic modes with different physical dimensions. The PCU's for the present studies are calculated based on the observed traffic volume and the PCU factors for each category of vehicles as per Indian Highway Capacity Manual (Indo-HCM). The peak hourly PCU count is represented in Table 4-1.

Table 4-1: Peak Hour PCU Count Year 2018

Road	Volume	PCU
	1800 – 1900 hr.	1800 – 1900 hr.
Vashi Turbhe Road	1835	1959
Vashi Road	5499	5094

The hourly peak PCU and traffic on Vashi Turbhe Road and Vashi road seems to be comparatively medium especially compared to the other connecting roads in the area.

4.3 Projections for vehicular growth

In traffic study 5 percent of annual traffic growth is considered for external roads to forecast the Base Traffic for "Scenario – 2025" on Vashi Turbhe Road & Vashi Road. The exact growth cannot be predicted for this road since its uncertainty for year of actual implementation and operation. The projected traffic has been summarized in Table 4-2.

Table 4-2: Traffic predictions (PCU/hr)

Road	Present PCU	PCU in 2025	Projected PCU over base year	Project vehicles addition in operation phase (in PCU)	Total PCU considered for modelling in operation phase	Total Volume considered for modelling in operation phase
Vashi Turbhe Road	1959	2645	686	52	738	801
Vashi Road	5094	6877	1783	52	1835	1482

4.4 Congestion analysis

The current and projected total traffic on the road is compared with existing and future road capacity. This V/C ratio of peak traffic volume and capacity is used as an index to determine level of congestion on link which is likely to occur when projected traffic is operative on link. Pedestrian traffic is assumed to use footpaths and not affect the road capacity. The summary of results shows the future traffic flow on Vashi Turbhe road and Vashi Road is shown in Table 4-3.

Table 4-3: Traffic Capacity Analysis

Road Name	Projected peak traffic volume in 2025 (PCU/hr)	Design Traffic capacity as per IRC 106:1990 (PCU/hr)	V/C Ratio	LOS
Vashi Turbhe Road	5697	7714	0.35	B
Vashi Road	6929	7714	0.90	D

Under configuration of the year 2025 the Vashi Turbhe Road and Vashi road will operate at V/C ratio up to 0.35 & 0.9 respectively during the peak hour after completion of the proposed development, which indicates the traffic will continue to run as usual with appropriate vigil during peak hours after commissioning of project. Mitigation measures will have to be adopted after 2020 to cater to the increasing traffic.

5 Dispersion modelling and Result analysis

The modelling is carried out using AERMOD Cloud Gaussian dispersion model for area and point sources. During construction phase only construction vehicles and construction related activities will add the emissions in to the ambient air and which will not cause for major impact on air quality. Air Emissions during operation phase (Year 2025) are from CNG Generator, vehicles of commercial unit and addition of new buses. There will be higher air emission impact of the project during operation phase. Hence the air quality modelling is carried out for operation phase only.

5.1 Methodology for modelling

The AERMOD Cloud modeling tool was used for air quality study, which is based on Gaussian plume dispersion (Point source and area source) and simplified form of the three-dimensional transmission-distribution equation. The Short-term model incorporates the COMPLEX1 screening model dispersion algorithms for receptors in complex terrain. The model is capable of handling multiple sources, including point, volume, area and open pit source types. To run the model, the main model input files include: input run-stream file and meteorological data file. Run-stream setup file contains modelling options, source information, receptor locations, meteorological data file specifications and output options. However, meteorological data file contains all the required meteorological data on hourly basis.

AERMOD Cloud software developed by taking into consideration of the Indian regulatory (Ministry of Environment and Forests and Central Pollution Control Board) requirements. AERMOD Cloud is used extensively and recommended by the Ministry of Environment and Forests to assess air pollution concentration from a wide variety of sources. Indian regulatory compliance requirements have incorporated within AERMOD Cloud, the requirements include the National Ambient Air Quality Standards 2009, Guidelines for Conducting Air Quality Modeling, EIA Manual and Notifications.

In the present study AERMOD Cloud model is used to predict the dispersion of pollutants over the study area to predict pollutant concentrations near highways or roads by approximating them as area sources. The inputs to the model are defined in two functional pathways as represented in the following sections. Each of these functional parameters include several options that may be user defined or set as default, the details of some of these essential elements of AERMOD Cloud runs have been explained in the discussions. The elevated terrain has been assumed while running the model.

5.2 Emission Sources

Air modelling is carried out considering grid of 4.00 km x 4.00 km with 400 m column and grid spacing in study area. The entire carriage way of the roads is marked and considered as line area sources. The average release height of vehicular emission is taken as 0.15 m. The CNG generator of capacity 450 KVA is proposed as power backup during operation phase. The project location is considered at the Centre of the Grid. Figure 5-1 shows the location of the proposed project site and road connectivity.

Figure 5-1: Project location & connecting roads.

5.3 Model Input:

The data base included in model are meteorological data and the source emissions data. Background concentrations were calculated using monitored values from sites.

Model Used	AERMOD Cloud for line area & point source
Source Type	**Line area source**: vehicular emissions on carriageway (within project site, Vashi road and Vashi-turbhe road **Point sources:** - CNG based Gen-set during operation phase (Scenario-1) - Diesel based Gen-set during operation phase (Scenario-2)
Modelling Grid	1 Cartesian Grid, 4.00 km x 4.00 km
Emission Factor	Vehicles - Emission rates in g/s.m^2 based on Euro VI emission factors.

	Generator Set: - CNG Gen set emissions are considered from manufactured data Daily 1-hour working; - Diesel Gen set emissions are considered from AP-42 (Small stationery engine which are applicable for power rating less than 600hp) data Daily 1-hour working;
Met File (ISC Met Ready file)	1st December 2017 to 30th November 2018 for Thane Geographical Location.; Secondary met data source: Envitrans
Prediction Years	2025 (Operation Phase)– assumption based on discussion with client;

6 Modelling Case-1: Project & Access Roads

Model outputs were obtained for emissions of each of the pollutants at cartesian receptor grid (4.00 km X 4.00 km). The concentration level contours of dispersed pollutants are plotted in AERMOD Cloud in the given grid. Isopleths are plotted for each of the pollutants and the concentration by the line source i.e. future scenario including growth rate and additional vehicle assumed to be added due to project. This map is superimposed on the Google Earth imagery of the project location. To determine the impact during operation phase two different scenarios are considered.

- Scenario 1: CNG based Gen-set & Vehicular Emissions
- Scenario 2: Diesel based Gen-set & Vehicular Emissions

6.1 Scenario 1: CNG based Gen-set & Vehicular Emissions

Air quality modelling is carried out considering emissions from CNG Generator, vehicles of commercial unit (6m wide internal road) and projected traffic of surrounding roads (Vashi Turbhe Road, 28m wide carriageway & Vashi Road, 27m wide carriage way).

Power generator characteristics have been shown in Table 6-1, which includes, stack height, exit temperature of flue gas, exit velocity and exhaust pipe diameter of generator.

Table 6-1: Genset data required for model run

Genset No.	KVA	Stack height (m)	Exit Gas Temp (K)	Exit Gas Velocity (m/s)	Exhaust pipe dia. (m)
1	**450**	**90.41**	**700**	**10**	**0.2**

The Euro VI emission factors has been considered for estimating the emissions of road vehicles which are shown in

Table 6-2 below and emissions of CNG generator are taken from manufactured data as shown in

Table 6-3. The analysis of modelling result for criteria pollutants CO, NO2 and PM10 is given along the isopleth.

Table 6-2: Emission Factors of project vehicles in 2025

Sr No	Road	No of vehicles (vehicles/Hour)									Emission Factor (g/s/sq.m)		
		2W	3W	4W	LCV	Bus	Truck	2/3 Axle	MAV	Total	CO	NO2	PM10
1	Vashi Turbhe Road	212	216	285	76	9	3	0	0	801	$4.70x10^{-6}$	$4.921x10^{-7}$	$1.11x10^{-8}$
2	Vashi Road	392	677	353	42	15	3	1	0	1482	$1.27x10^{-5}$	$1.07x10^{-6}$	$2.61x10^{-8}$
3	Project inside road	0	0	40	0	407	0	0	0	447	$1.63x10^{-5}$	$3.92x10^{-5}$	$1.09x10^{-7}$

Table 6-3: CNG Genset emission rates

Sr No.	Rating (KVA)	CO (g/s)	NO_2 (g/s)
1	450	0.005922	0.2076

CNG Genset emission rates are taken from the manufactured data.

6.1.1 Modelling Results for CO

The predicted max GLC of pollutant CO is found as 389.25 µg/m3 at 5.2 m height and 225m NNE from centre of grid. The spread of emissions is found along the roads with higher conc at road centre than surrounding. The width of spread for conc. 15 µg/m3 to 52.44 µg/m3 is higher than other emission contour levels. The observed 8 hourly max GLC conc is found within the prescribed NAAQ standard of 2000µg/m3 & is shown in Table 6-4.

Table 6-4: Predicted and Resultant CO Concentration

Baseline max CO (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
400	389.25	789.25	2000

The maximum resultant GLC 789.25 µg/m3 is found at 225m NNE from centre of the grid. The resultant GLC is within the NAAQ standard of 2000µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 6-1: Isopleth for predicted CO Concentration.

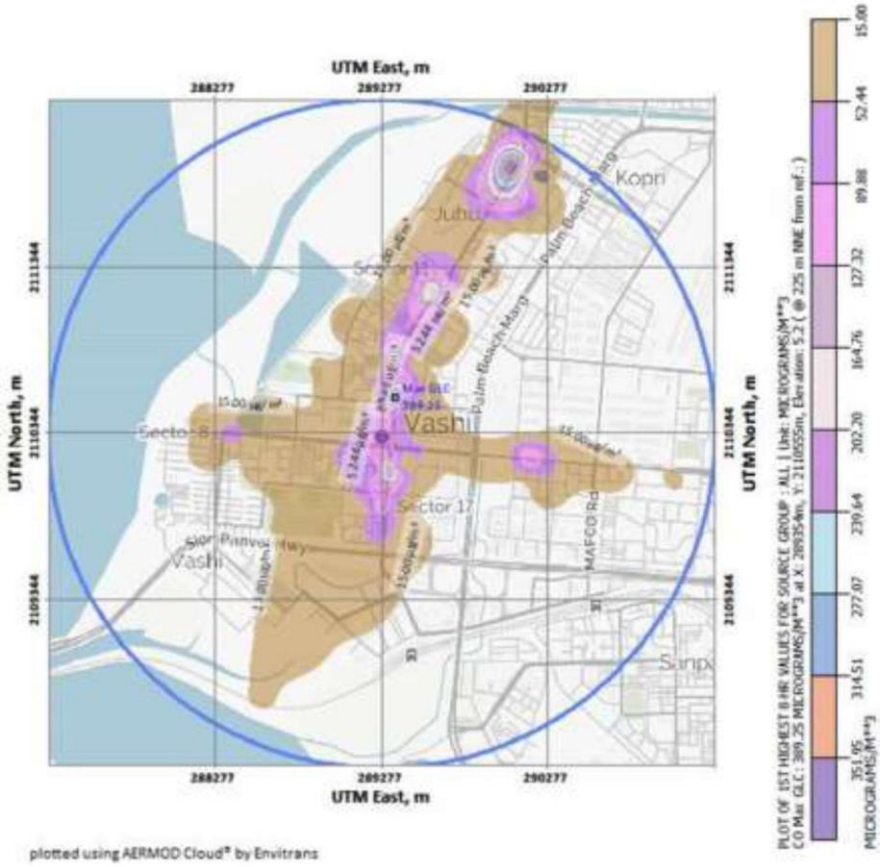


Figure 6-1: Isopleth for predicted CO Concentration

The colour shown in the isopleth corresponds to the average 8-hour CO concentration & the value of which is shown in the legend given along with the isopleth.

6.1.2 Modelling Results for NO2

The predicted max GLC of pollutant NO2 is found as 28.98 µg/m3 at 5.4 m height and 0.00 m from centre of the grid. The spread of emissions is found along the roads with higher conc at road centre than surrounding. The width of spread for conc. 1.2 µg/m3 to 3.99 µg/m3 is higher than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 80µg/m3 & is shown in Table 6-5.

Table 6-5: Predicted and Resultant NO2 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
60.38	28.98	89.36	80

The maximum resultant GLC 89.36 µg/m3 is found at centre of grid. The resultant GLC is exceeding the NAAQ standard of 80µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 6-2.

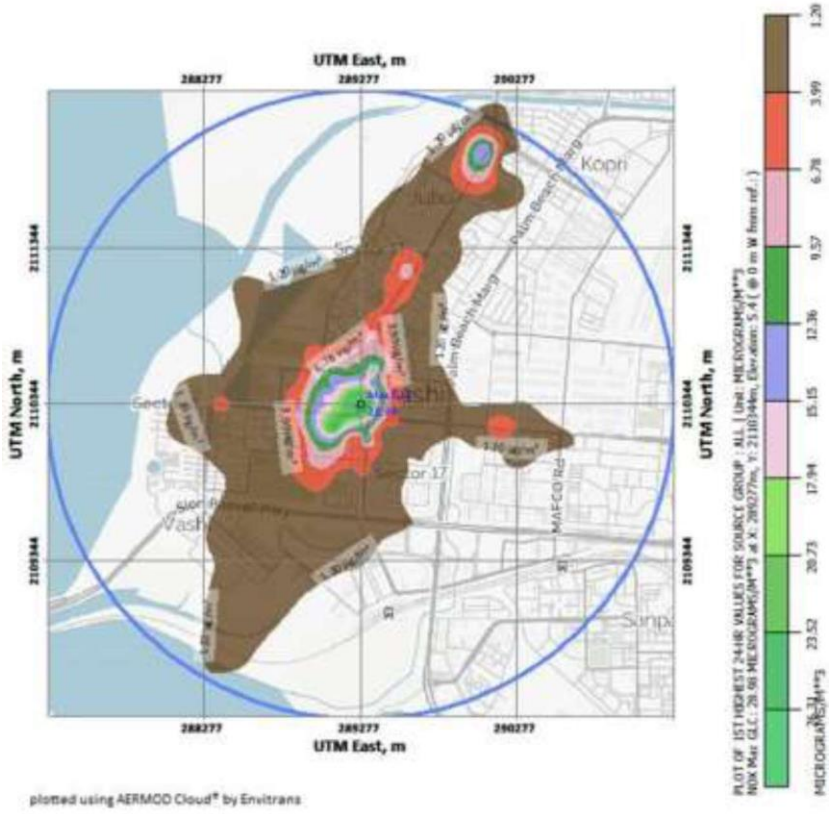


Figure 6-2 : Isopleth of predicted NO2 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour NO2 concentration & the value of which is shown in the legend given along with the isopleth.

6.1.3 Modelling Results for PM10

As per manufactured data no harmful particulate matter and smoke can be generated from CNG based Genset. Only Road vehicular emissions are considered for pollutant PM10 modeling. The predicted max GLC of pollutant PM10 is found as 0.32 µg/m3 at 5.2 m height and 225 m NNE from centre of the grid. The spread of emissions is found along the roads with higher conc at road centre than surrounding. The width of spread for conc. 0.001 µg/m3 to 0.03 µg/m3 is higher than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 100µg/m3 & is shown in Table 6-6.

Table 6-6: Predicted and Resultant NO2 Concentration

Baseline (98th percentile) (µg/m3)	Incremental max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
122.43	0.32	122.75	100

The maximum resultant GLC 122.75 µg/m3 is found at 225m NNE from center of grid. The resultant GLC is exceeding the NAAQ standard of 100µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 6-3.

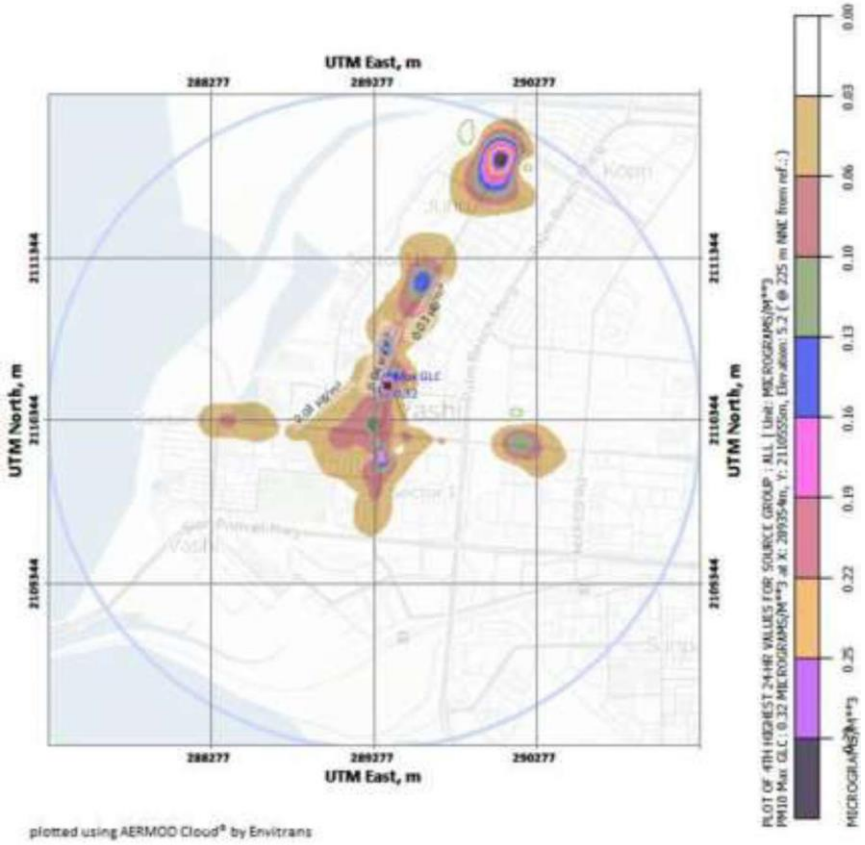


Figure 6-3: Isopleth of predicted PM10 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour PM10 concentration & the value of which is shown in the legend given along with the isopleth.

6.2 Scenario 2: Diesel based Gen-set & Vehicular Emissions

In this scenario Air quality modelling is carried out considering emissions from Diesel generator, vehicles of commercial unit (6m wide internal road) and projected traffic of surrounding roads (Vashi Turbhe Road, 28m wide carriageway & Vashi Road, 27m wide carriage way).

Power generator characteristics and emission rates have been shown in Table 6-7 & Table 6-8 respectively. The DG characteristics includes, stack height, exit temperature of flue gas, exit velocity and exhaust pipe diameter of generator.

Table 6-7: DG set data required for model run

Sr No.	KVA	Stack height (m)	Exit Gas Temp (K)	Exit Gas Velocity (m/s)	Exhaust pipe dia. (m)
1	450	90.41	700	10	0.2

The road vehicular emissions are considered as mentioned in scenario 1 above.

The AP-42 emission factors for small stationary diesel engines are considered in modeling scenario 2 as shown in Table 6-8 below.

Table 6-8: DG set emission rates

Sr No.	Rating KVA	CO (g/s)	NO2 (g/s)	PM10 (g/s)
1	450	0.4061	1.8848	0.1338

6.2.1 Modelling Results for CO

The predicted max GLC of pollutant CO is found as 389.26 µg/m3 at 5.2 m height and 225m NNE from center of grid. The spread of emissions is found along the roads with higher conc at road center than surrounding. The width of spread for conc. 10 µg/m3 to 47.54 µg/m3 is higher than other emission contour levels. The observed 8 hourly max GLC conc is found within the prescribed NAAQ standard of 2000µg/m3 & is shown in Table 6-9.

Table 6-9: Predicted and Resultant CO Concentration

Baseline max CO (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
400	389.26	789.26	2000

The maximum resultant GLC 789.26 µg/m3 is found at 225m NNE from centre of the grid. The resultant GLC is within the NAAQ standard of 2000µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 6-4.

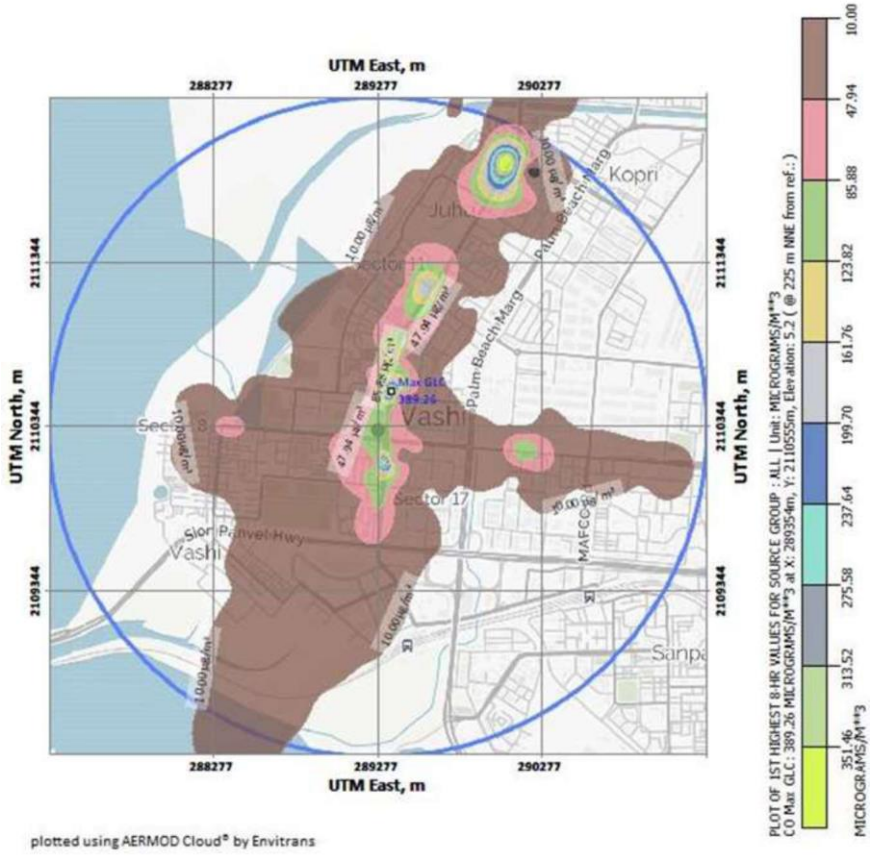


Figure 6-4: Isopleth for predicted CO Concentration

The colour shown in the isopleth corresponds to the average 8-hour CO concentration & the value of which is shown in the legend given along with the isopleth.

6.2.2 Modelling Results for NO_2

The predicted max GLC of pollutant NO2 is found as 28.99 µg/m3 at 5.4 m height and 0.00 m from centre of the grid. The spread of emissions is found along the roads with higher conc at road centre than surrounding. The width of spread for conc. 1.0 µg/m3 to 3.81 µg/m3 is higher than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 80µg/m3 & is shown in Table 6-10.

Table 6-10: Predicted and Resultant NO_2 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
60.38	28.99	89.37	80

The maximum resultant GLC 89.37 µg/m3 is found at centre of grid. The resultant GLC exceeds the NAAQ standard of 80µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 6-5.

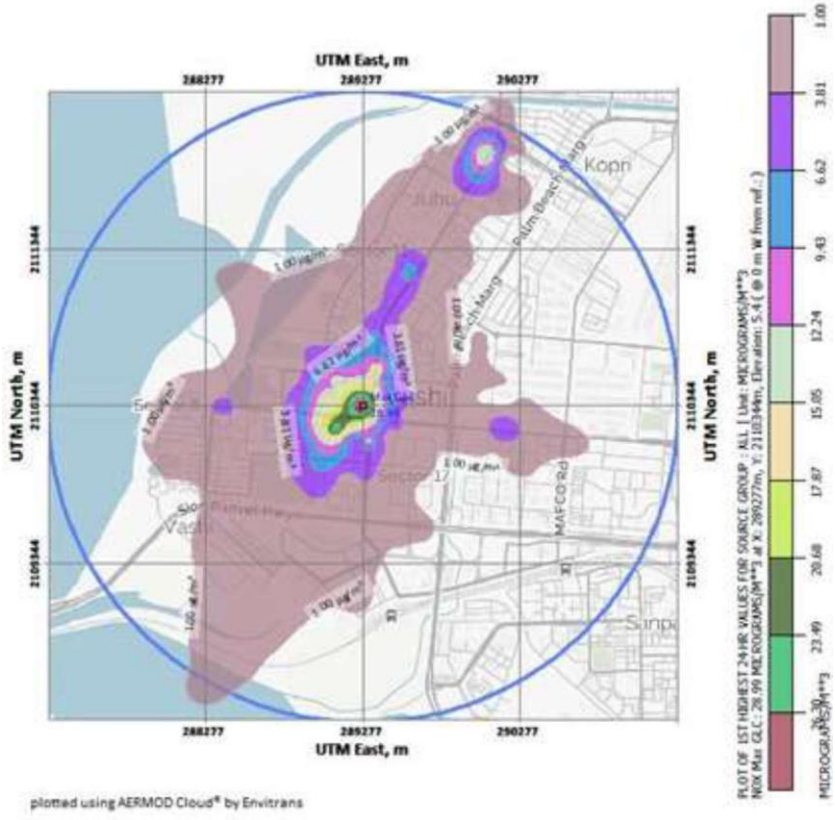


Figure 6-5: Isopleth of predicted NO2 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour NO2 concentration & the value of which is shown in the legend given along with the isopleth.

6.2.3 Modelling Results for PM10

The predicted max GLC of pollutant PM10 is found as 0.32 µg/m3 at 5.2 m height and 225 m NNE from centre of the grid. The spread of emissions is found along the roads with higher conc at road centre than surrounding. The width of spread for conc. 0.01 µg/m3 to 0.05 µg/m3 is higher than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 100µg/m3 & is shown in Table 6-11.

Table 6-11: Predicted and Resultant PM10 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
122.43	0.32	122.75	100

The maximum resultant GLC 122.75 µg/m3 is found at 225m NNE from centre of grid. The resultant GLC is exceeding the NAAQ standard of 100µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 6-6.

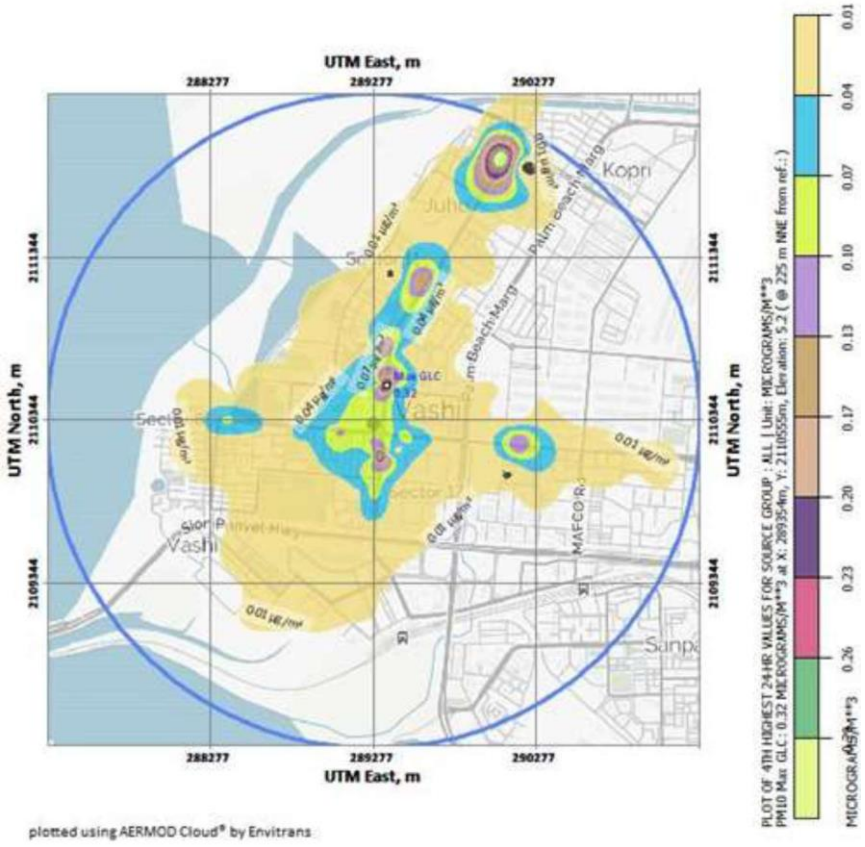


Figure 6-6: Isopleth of predicted PM10 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour PM10 concentration & the value of which is shown in the legend given along with the isopleth.

7 Modelling Case-2: Only Project

In this case, the emission sources from project (Generator set and commercial vehicles) are considered. The access roads (Vashi road and Vashi-Turbhe road are not considered). Theproposed project will add the emissions of 450 KVA power generator and daily peak hourly 52 number of cars for commercial unit in year 2025. The emission factors of CNG Gen-set are considered from Table 6-3 and Diesel Gen-Set from Table 6-8 above. The emissions of 52 cars are derived from Euro-VI emission standards considering the total retrieval time 18 minutes for commercial unit cars from parking area to exit point. For air quality modeling two scenarios are assumed.

- Scenario 1: CNG Gen-set & Commercial vehicles inside project area
- Scenario 2: Diesel Gen-set & Commercial vehicles inside project area

7.1 Scenario 1: CNG Gen-set & Commercial vehicles inside project area

7.1.1 Modelling Results for CO

The predicted max GLC of pollutant CO is found as 19.18 µg/m3 at 5.1 m height and 225m WSW from centre of grid. The width of spread for emission dispersion is 1.2 µg/m3 to 3.01 µg/m3 which is larger than other emission contour levels. The observed 8 hourly max GLC conc is found within the prescribed NAAQ standard of 2000µg/m3 & is shown in Table 6-9 Table 7-1.

Table 7-1: Predicted and Resultant CO Concentration

Baseline max CO (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
400	19.18	419.18	2000

The maximum resultant GLC 419.18 µg/m3 is found at 225m WSW from centre of the grid. The resultant GLC is within the NAAQ standard of 2000µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 7-1.

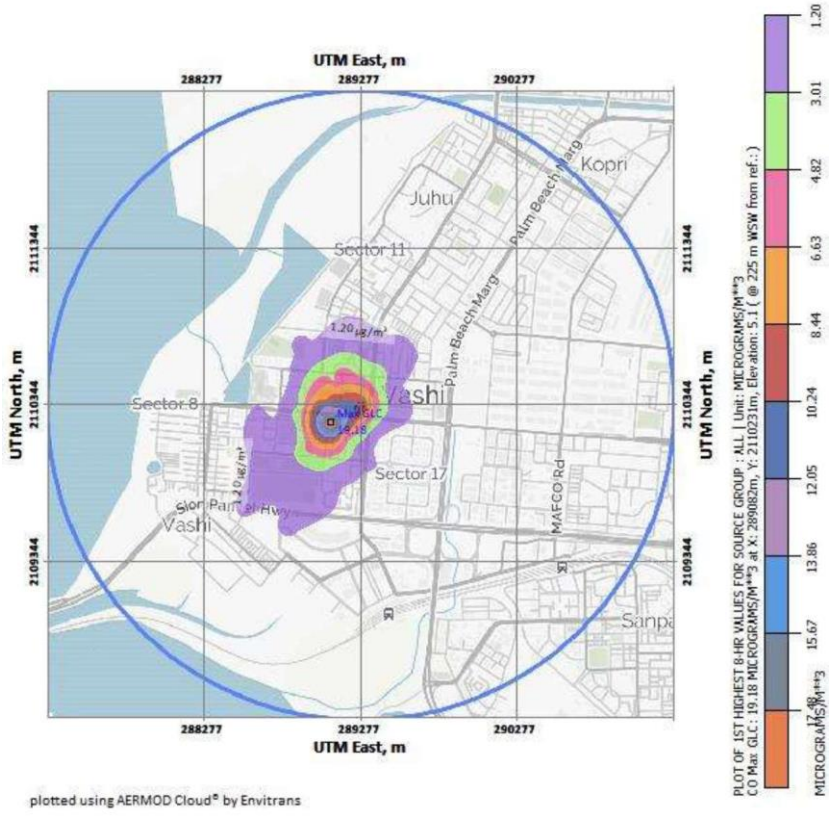


Figure 7-1: Isopleth for predicted CO Concentration

The colour shown in the isopleth corresponds to the average 8-hour CO concentration & the value of which is shown in the legend given along with the isopleth.

7.1.2 Modelling Results for NO_2

The predicted max GLC of pollutant NO2 is found as 2.5 µg/m3 at 5.1 m height and 225 m WSW from centre of the grid. The width of the emission spread for conc. 0.25 µg/m3 to 0.48 µg/m3 is found larger than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 80µg/m3 & is shown in Table 7-2.

Table 7-2: Predicted and Resultant NO2 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
60.38	2.5	62.88	80

The maximum resultant GLC 62.88 µg/m3 is found at 225m WSW from centre of grid. The resultant GLC is within the NAAQ standard of 80µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 7-2.

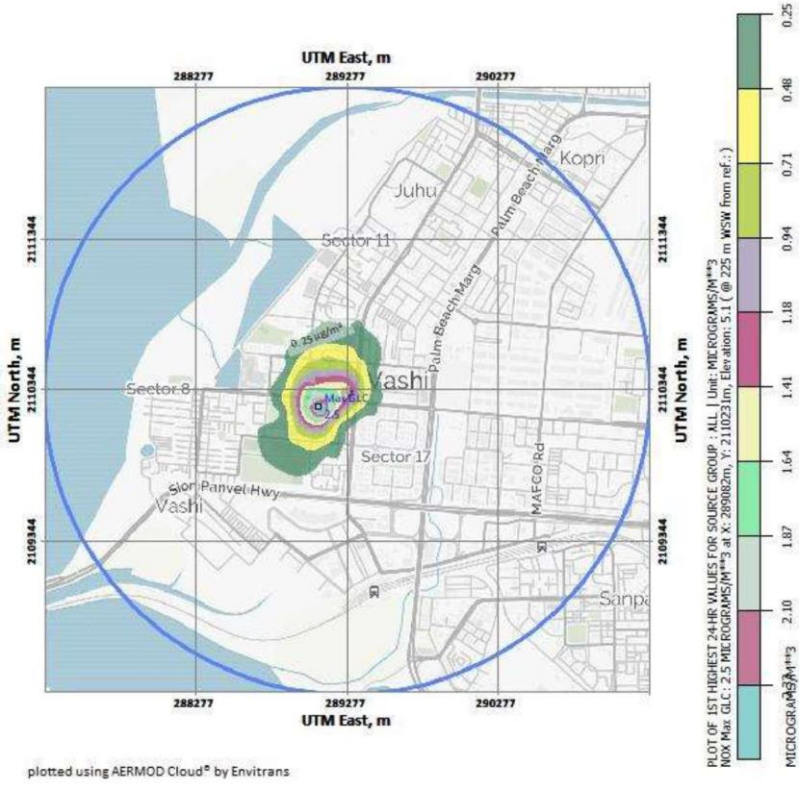


Figure 7-2: Isopleth of predicted NO2 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour NO2 concentration & the value of which is shown in the legend given along with the isopleth.

7.1.3 Modelling Results for PM10

The predicted max GLC of pollutant PM10 is found as 0.03 µg/m3 at 5.1 m height and 225 m WSW from centre of the grid. The width of spread for conc. 0.001 µg/m3 to 0.01 µg/m3 is more than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 100µg/m3 & is shown in Table 7-3.

Table 7-3: Predicted and Resultant PM10 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
122.43	0.03	122.46	100

The maximum resultant GLC 122.46 µg/m3 is found at 225m WSW from centre of grid. The resultant GLC is exceeding the NAAQ standard of 100µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 7-3.

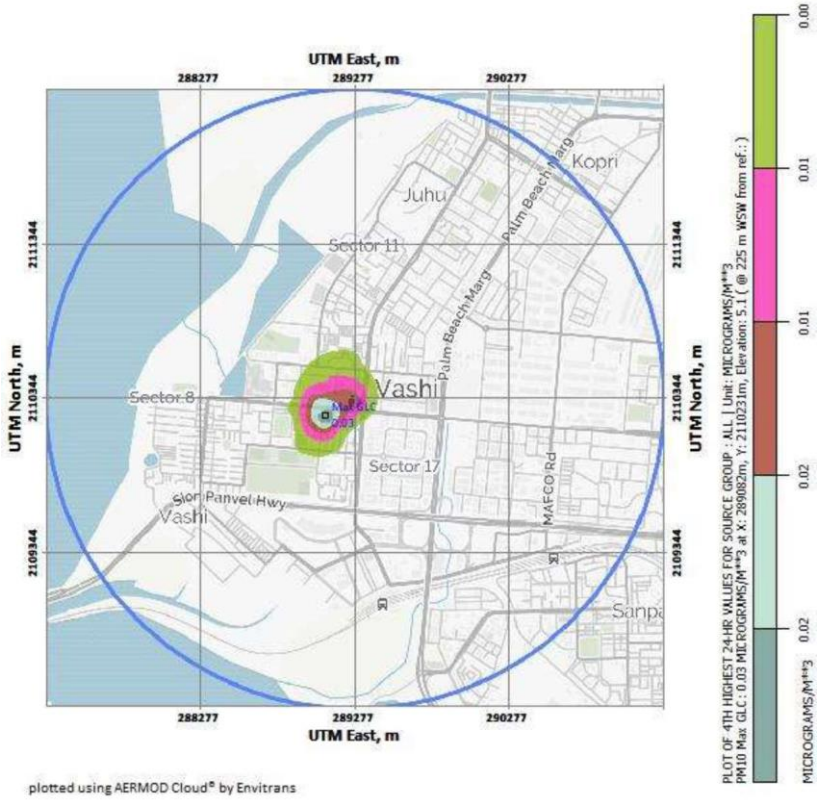


Figure 7-3: Isopleth of predicted PM10 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour PM10 concentration & the value of which is shown in the legend given along with the isopleth.

7.2 Scenario 2: Diesel Gen-set & Commercial vehicles inside project area

Modal input data and methodology is used as mentioned above. For determination of air quality impact due to project related emission sources in operation phase such as CO, NOx and PM10.

7.2.1 Modeling Results for CO

The predicted max GLC of pollutant CO is found as 19.18 µg/m3 at 5.1 m height and 225m WSW from centre of grid. The width of spread for emission dispersion is 1.2 µg/m3 to 3.01 µg/m3 which is larger than other emission contour levels. The observed 8 hourly max GLC conc is found within the prescribed NAAQ standard of 2000µg/m3 & is shown in Table 6-9 Table 7-4.

Table 7-4: Predicted and Resultant CO Concentration

Baseline max CO (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
400	19.18	419.18	2000

The maximum resultant GLC 419.18 µg/m3 is found at 225m WSW from centre of the grid. The resultant GLC is within the NAAQ standard of 2000µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 7-4.

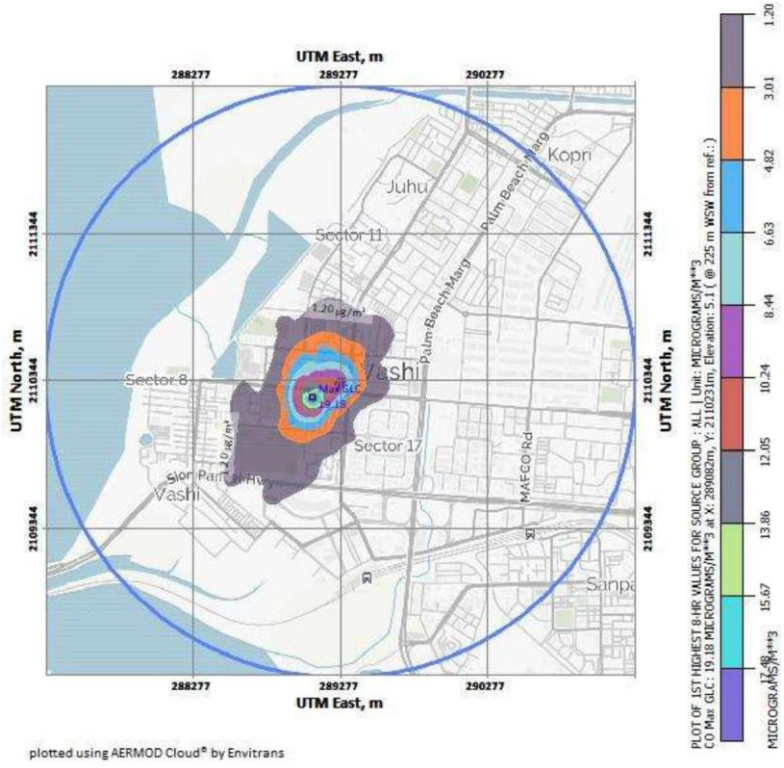


Figure 7-4: Isopleth for predicted CO Concentration

The colour shown in the isopleth corresponds to the average 8-hour CO concentration & the value of which is shown in the legend given along with the isopleth.

7.2.2 Modelling Results for NO_2

The predicted max GLC of pollutant NO2 is found as 2.76 µg/m3 at 5.1 m height and 225 m WSW from centre of the grid. The width of the emission spread for conc. 0.25 µg/m3 to 0.48 µg/m3 is

found larger than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 80µg/m3 & is shown in Table 7-5.

Table 7-5: Predicted and Resultant NO2 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
60.38	2.76	63.14	80

The maximum resultant GLC 63.14 µg/m3 is found at elevation 5.1m and 225m WSW from centre of grid. The resultant GLC within the NAAQ standard of 80µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 7-5.

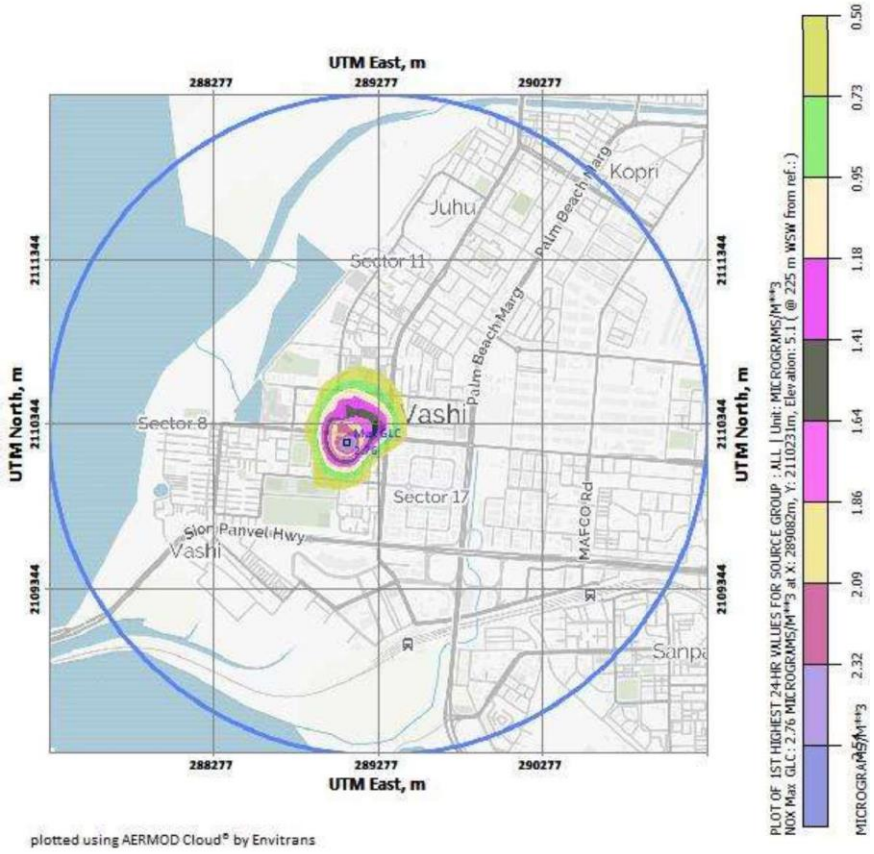


Figure 7-5: Isopleth of predicted NO2 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour NO2 concentration & the value of which is shown in the legend given along with the isopleth.

7.2.3 Modelling Results for PM10

The predicted max GLC of pollutant PM10 is found as 0.04 µg/m3 at 5.1 m height and 225 m WSW from centre of the grid. The width of spread for conc. 0.001 µg/m3 to 0.01 µg/m3 is more

than other emission contour levels. The observed 24 hourly max GLC conc is found within the prescribed NAAQ standard of 100µg/m3 & is shown in Table 7-6.

Table 7-6: Predicted and Resultant PM10 Concentration

Baseline 98th percentile (µg/m3)	Predicted max GLC (µg/m3)	Resultant GLC conc (µg/m3)	NAAQ Standard (µg/m3)
122.43	0.04	122.47	100

The maximum resultant GLC 122.47 µg/m3 is found at 225m WSW from centre of grid. The resultant GLC is exceeding the NAAQ standard of 100µg/m3. The emission isopleths generated by AERMOD Cloud is illustrated in the Figure 7-6.

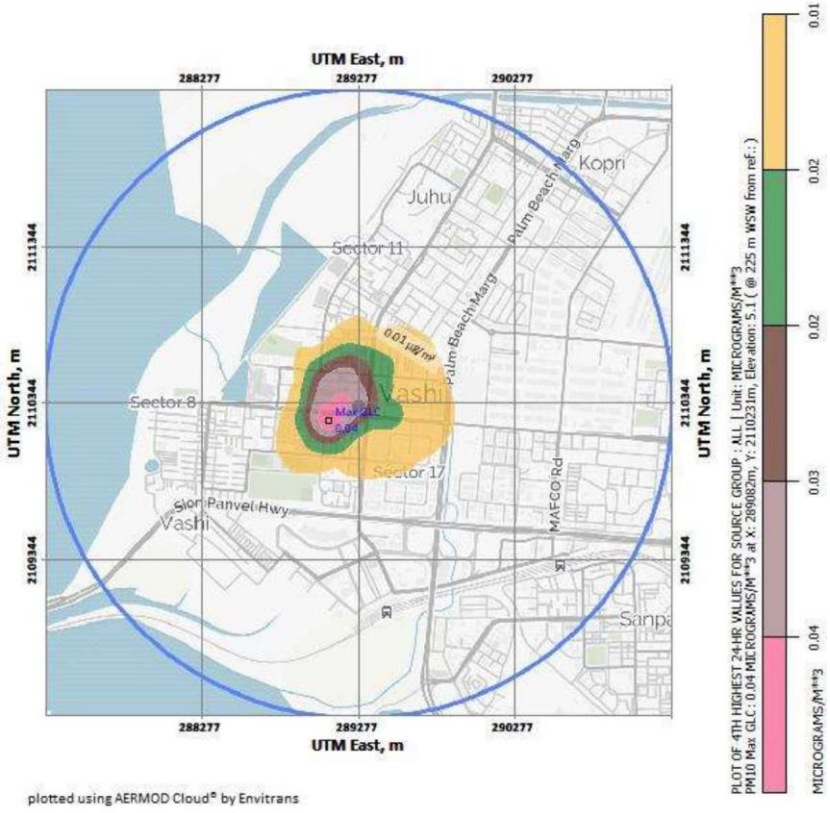


Figure 7-6: Isopleth of predicted PM10 Concentration

The colour shown in the isopleth corresponds to the average daily 24-hour PM10 concentration & the value of which is shown in the legend given along with the isopleth.

ANNEXURE-B

A. **General details along with documentary proof:**

• Name of City:	**Navi Mumbai**
• The population of the city	As Per Census 2011- 11,20,547 Est. on 2018 -1.58 Million
• Vehicular density (Number of buses per 10,000 persons)	03
• The average level of pollutant PM 2.5 of the city over 2018	74.64
• No. of Vehicles Registered in City	510884
• Road density (Road length per100 sq.km.)	5.06
• Do state have separate EV Policy	Yes Attached a copy of EV Policy
• Category wise Registration charges of EVs	Charges Nil for EV's Attached a copy of EV policy
• Information about Parking Fee of EVs	Not exempted
• Information about Toll Tax applicable to EVs	Not exempted
• The number of Diesel/CNG buses running on a wet lease model.	Diesel 114 Buses on GCC Agreement Copy attached.
• The average cost of leasing of buses if taken on lease including fuel along with documentary proof	**GCC Contract (2016 Rates):** Standard Bus: Rs 38.25 / km Midi Bus: Rs 30.24 / km Premium Segment AC Rs 56.70 /km **Avg. Rs 41.73 /km** **Current Rates (June 2019):** Standard Bus: Rs 47.69 / km Midi Bus: Rs 37.70 / km Premium Segment AC Rs 70.70 /km **Avg. Rs 52.03 /km**
• Expected number of E3W and E4W to be registered in the city during 2019-20	E3W - 50 Nos E4W- 50 Nos.
• Number of Electric Buses rolled out by the city from its resources	Ordered 30 Nos of Midi (9.5 Mtr) Electric Buses to JBM Electric Vehicles Pvt Ltd and delivery expected by 15th August 2019.
• Number of charging stations installed in the city from its resources	Proposed - 3 Nos in Depot

- Break-up of existing Diesel/CNG buses based on its total run per day in the following table:

No of Buses	Less than 125 km	125 to 175 km	175 to 225 km	More than 225 km
Bus owned and run by Govt Entity				471
Buses hired by STUs and run for city buses.				
Buses own and run by a private entity on route permit				
Total Buses	-	-	-	471

Details of information about Parking depot

Name of Parking Depot	Maintained by	No of buses being parked
Turbhe Depot	OWN	210
Koudgaon Depot	OWN	147
Ghansoli	Operator	114

B. **Description of Project Proposal**

NMMT has been the trendsetter for public transportation in Maharashtra. NMMT was torch bearer for introducing the high end city buses, Hybrid Buses & Electric Buses and onwards incorporating latest technological features like automatic transmission, fire detection, electronic braking systems and electronic control air suspensions.

The plan and design of the city of Navi Mumbai (formerly known as New Bombay) was initiated as a result of the increasing congestion of Mumbai which had grown manifold by the 70s making it impossible to accommodate any more people. Hence, Navi Mumbai was built as a twin city of Mumbai so that its population could be managed as Mumbai, composed of seven islands, had major limitations with respect to physical expansion. Navi Mumbai shall get a boost in its image of being one of the pioneers to introduce these zero emission buses in its fleet. Furthermore these comfortable and safe buses shall attract urban commuters to switch to public transport there by reducing number of private vehicles on the road. This initiative shall reduce the ambient air pollution considerably which have risen to an alarming level already.

By introducing and executing Electric bus project in Navi Mumbai will sustain its pioneering position among global cities to provide access to zero emissions public transportation on mass scale.

Tangible and intangible benefits of this will take Navi Mumbai to next pedestal.

C. **Number of Buses for which funding is sought under the scheme:**

Length of Bus	Guaranteed Run per year	Total Contract Period	Number of Buses
12 M	81600	12 Years	140
9 M	72600	12 Years	60
		Total	200

D. **Funding commitment:**

The Buses will be operated on GCC Basis (Wet Lease). Hence, 60% of Bus Cost will be arranged by the Operator.

Presently, Rs 6 Cr per month Viability Gap Funding (VFG) is reimbursed by Municipal Corporation to Transport Undertaking. As well as it is also applicable for this project.

E. **Details about depot available for parking of electric buses.**

Two Depots are available for parking of Electric Bus.

1. Turbhe : 26953 Sq. Mtr.
2. Asudgaon : 19146 Sq. Mtr.
3. Rabale : 14500 Sq. Mtr.

F. **Details about the arrangement of upstream electricity supply for charging of electric buses.**

Required High Voltage electric supply is already available at Depot level.

G. **Any other information in support of proposal submitted by STU**

Detailed Project Report is attached for more information.

H. **Details of Annexure:**

i) Census Data of Navi Mumbai City
ii) Maharashtra Pollution Control Board Data about Pollution Level
iii) RTO Data regarding registration of vehicles
iv) State EV Policy Copy
v) Existing GCC (Wet Lease) Contract Agreement

(Dr. Ramaswami N.)
Municipal Commissioner
Navi Mumbai Municipal Corporation