



8. ENVIRONMENTAL STATUS OF THE CITY

1. Ambient Air Quality Monitoring

In Nashik, as a fast developing city, there is rapid growth in industrial sector and urban development subsequently along with transportation as one of the major influencing factor. Ambient Air Quality is an alarming issue in cities with special reference to traffic and industrial activities giving rise to serious health

hazards. Taking this point into consideration, the air quality is monitored by local authorities / government organizations and private agencies individually or in association with each other.

Ambient Air Quality Monitoring conducted during "Kumbh Mela" at Nashik



1.1 Current Status:

Air Micro flora study carried during "Kumbh Mela" at Nashik



During the last 2 to 3 years, Nashik Municipal Corporation is monitoring the ambient air quality in the city through recognized laboratory at various commercial spots e.g. Pathardi Phata, Mumbai Naka, Dwarka Circle and CBS for the parameters viz. Respirable Suspended Particulate Matter (RSPM), Sulphur Dioxide (SO₂), Oxides

of Nitrogen (NO_x) and Carbon Monoxide (CO). The RSPM level is found to be in the range of 65 to 80 µg/m³ at Pathardi Phata and Mumbai Naka whereas 90 to 95 µg/m³ at CBS and Dwarka Circle. The CO level is also exceeding the prescribed limit. This is mainly due to heavy traffic conditions. NMC is also monitoring the air quality at Municipal Solid Waste Management Project i.e. Compost Factory in order to assess the impact of the same on the surrounding environment.

Ambient Air Quality including Noise levels are also monitored during various festivals like Diwali and Ganesh Utsav for assessing its impact. During such festivals the noise level is almost found to be in range of 85 to 100 dB, which is harmful for public health. The air quality was specially monitored during Kumbhmela including microbiological testing in ambient air.

Ambient Air Quality Monitoring conducted at NMC's "Compost Project" Nashik.



Ambient Air Quality to be maintained in accordance with National Ambient Air Quality Standards as per Environment (Protection) Rules, 1986 under Environment (Protection) Act, 1986.





**Monthly Ambient Air Quality Status under NAMP Project
For Nashik - V.I.P - Apr – 2006**

Station: V.I.P Location: Nashik

Type: Industrial Operating Agency: K.T.H.M. Science College, Nashik

Sr. No.	Date	Concentration of Air Pollutants								
		SO ₂ (µg/m ³)			NO _x (µg/m ³)			RSPM (µg/m ³)		
Standards		120.00			120.00			150.00		
1	01-04-2006	29			27			94		
2	05-04-2006	34			28			86		
3	12-04-2006	33			28			96		
4	15-04-2006	32			55			97		
5	19-04-2006	29			23			100		
6	22-04-2006	32			27			97		
7	26-04-2006	33			28			94		
8	29-04-2006	33			27			91		
Monthly Statistics		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
		29	34	31.88	23	55	30.38	86	100	94.38

**Monthly Ambient Air Quality Status under NAMP Project
For Nashik - R.T.O. - Apr - 2006**

Station: R.T.O. Location: Nashik

Type: Residential Operating Agency: K.T.H.M. Science College, Nashik

Sr. No.	Date	Concentration of Air Pollutants								
		SO ₂ (µg/m ³)			NO _x (µg/m ³)			RSPM (µg/m ³)		
Standards		80.00			80.00			100.00		
1	04-04-2006	29			25			69		
2	07-04-2006	31			27			81		
3	11-04-2006	28			22			68		
4	14-04-2006	29			22			80		
5	18-04-2006	31			22			70		
6	21-04-2006	31			22			77		
7	25-04-2006	30			24			75		
8	28-04-2006	28			25			76		
Monthly Statistics		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
		28	31	29.63	22	27	23.63	68	81	74.50

**Monthly Ambient Air Quality Status under NAMP Project
For Nashik - Nashik Municipal Corporation - Apr - 2006**

Station: Nashik Municipal Corporation Location: Nashik

Type: Commercial Operating Agency: K.T.H.M. Science College, Nashik

Sr. No.	Date	Concentration of Air Pollutants								
		SO ₂ (µg/m ³)			NO _x (µg/m ³)			RSPM (µg/m ³)		
Standards		80.00			80.00			100.00		
1	03-04-2006	34			26			95		
2	06-04-2006	37			27			99		
3	10-04-2006	42			33			100		
4	13-04-2006	37			27			88		
5	17-04-2006	33			29			100		
6	20-04-2006	33			27			100		
7	24-04-2006	34			30			98		
8	27-04-2006	36			29			101		
Monthly Statistics		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
		33	42	35.75	26	33	28.50	88	101	97.63



**Monthly Ambient Air Quality Status under NAMP Project
For Nashik - V.I.P - Jan - 2006**

Station :V.I.P Location: Nashik

Type : Industrial Operating Agency : K.T.H.M. Science College, Nashik

Sr. No.	Date	Concentration of Air Pollutants								
		SO ₂ (µg/m ³)			NO _x (µg/m ³)			RSPM (µg/m ³)		
Standards		120.00			120.00			150.00		
1	04-01-2006	38			34			103		
2	07-01-2006	35			30			101		
3	11-01-2006	37			31			99		
4	14-01-2006	33			26			103		
5	18-01-2006	36			28			103		
6	21-01-2006	30			28			101		
7	25-01-2006	34			30			103		
8	28-01-2006	37			32			105		
Monthly Statistics		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
		30	38	35.00	26	34	29.88	99	105	102.25

**Monthly Ambient Air Quality Status under NAMP Project
For Nashik - R.T.O. - Jan – 2006**

Station: R.T.O. Location: Nashik

Type : Residential Operating Agency : K.T.H.M. Science College, Nashik

Sr. No.	Date	Concentration of Air Pollutants								
		SO ₂ (µg/m ³)			NO _x (µg/m ³)			RSPM (µg/m ³)		
Standards		80.00			80.00			100.00		
1	03-01-2006	32			26			94		
2	06-01-2006	32			25			99		
3	10-01-2006	32			24			98		
4	13-01-2006	34			28			101		
5	17-01-2006	31			26			92		
6	20-01-2006	32			24			88		
7	24-01-2006	29			26			101		
8	27-01-2006	30			27			103		
9	31-01-2006	32			30			97		
Monthly Statistics		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
		29	34	31.56	24	30	26.22	88	103	97.00

**Monthly Ambient Air Quality Status under NAMP Project
For Nashik - Nashik Municipal Corporation - Jan – 2006**

Station :Nashik Municipal Corporation Location: Nashik

Type : Commercial Operating Agency : K.T.H.M. Science College, Nashik

Sr. No.	Date	Concentration of Air Pollutants								
		SO ₂ (µg/m ³)			NO _x (µg/m ³)			RSPM (µg/m ³)		
Standards		80.00			80.00			100.00		
1	02-01-2006	37			29			98		
2	05-01-2006	42			31			103		
3	09-01-2006	40			28			105		
4	12-01-2006	37			31			106		
5	16-01-2006	39			30			104		
6	19-01-2006	41			31			104		
7	23-01-2006	39			32			102		
8	30-01-2006	37			33			103		
Monthly Statistics		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
		37	42	39.00	28	33	30.63	98	106	103.13

Ref: Website. <http://mpcb.mah.nic.in>



Noise Monitoring during Diwali Festival for the year 2004-2005
for Nashik City

Sr. NO	Location	Date	Time	Noise Levels in dB		
				Minimum	Maxium	Avarage
1	C.B.S.	11/11/04	19:00	89	96	92.5
		12/11/04	19:15	96	108	102
		13/11/04	19:00	88	96	92
		14/11/04	18.30	83	88	85.5
		15/11/04	19:00	83	85	84
2	Ravivar Karanja	11/11/04	19:15	87	99	93
		12/11/04	19:30	94	109	101.5
		13/11/04	19:15	93	98	95.5
		14/11/04	18:45	82	87	84.5
		15/11/04	19:15	80	86	83
3	Panchvati Karanja	11/11/04	19:30	88	93	91
		12/11/04	19:45	98	100	99
		13/11/04	19:30	87	99	93
		14/11/04	19:05	87	93	90
		15/11/04	19:30	85	93	89
4	Dwarka	11/11/04	19:45	89	93	91
		12/11/04	20:00	98	107	102.5
		13/11/04	19:45	98	101	99.5
		14/11/04	19:30	88	95	91.5
		15/11/04	19:45	83	95	89
5	Shalimar Chowk	11/11/04	19:35	85	88	87
		12/11/04	19:55	85	110	97.5
		13/11/04	20:00	96	98	97
		14/11/04	19:40	85	96	90.5
		15/11/04	20:00	85	90	87.5



Sr. NO	Location	Date	Time	Noise Levels in dB		
				Minimum	Maxium	Avarage
6	Gangapur Road / Akashwani Tower	11/11/04	19:50	97	98	97.5
		12/11/04	20:30	96	104	100
		13/11/04	20:30	87	96	91.5
		14/11/04	20:00	80	89	84.5
		15/11/04	20:40	80	87	83.5
7	Udyog Bhavan	11/11/04	20:00	83	96	89.5
		12/11/04	20:50	88	99	93.5
		13/11/04	21:00	89	98	93.5
		14/11/04	20:30	81	90	85.5
		15/11/04	21:00	85	89	87
8	CIDCO (Ranapratap Chowk)	11/11/04	20:15	96	102	99
		12/11/04	21:15	98	108	103
		13/11/04	21:30	93	108	101
		14/11/04	21:00	89	99	94
		15/11/04	21:30	87	93	90
9	Bytco point	11/11/04	20:30	88	93	90.5
		12/11/04	22:00	96	93	101
		13/11/04	22:00	90	106	94
		14/11/04	21:15	80	98	86
		15/11/04	22:00	88	92	90.5
10	Jail Road	11/11/04	21:00	90	95	92.5
		12/11/04	22:15	90	104	97
		13/11/04	22:15	89	96	92.5
		14/11/04	21:30	83	88	85.5
		15/11/04	22:15	86	88	87

Note: Ambient Air Quality Standards in respect of Noise as per Noise Pollution (Regulation & Control) Rules, 2000 under Environment (Protection) Act, 1986 are 65 dB, 55 dB & 50 dB for Commercial, Residential & Silence Zone respectively during day time i.e. from 6.00 a.m. to 10 p.m. and night time i.e. from 10 p.m. to 6.00 a.m.



1.2. Action to be taken:

- The Air quality should be monitored on continuous basis along with meteorological data and data to be displayed on Pollution Watch Boards in order to increase public awareness.
- Continuous monitoring stations to be set up in the city including industrial, commercial and residential zones. Meteorological station to be set up.
- The electrical countdown mechanism has to be implemented at major traffic intersections, which will help in switching on and off vehicles.
- Widening of roads in order to prevent traffic congestion and hence pollution.
- End to end asphaltting of roads in order to avoid congestion.
- The concerned authority like R.T.O. has to ensure assessment of vehicular exhaust quality by adopting proper methodology.
- Promotion of proper maintenance of vehicles. Use of 2T oil in excess to be avoided.
- Promotion of use of pool car system, sharing of vehicles, utilization of public transport and use of bicycles for short distances.
- Avoid / minimize use of loud speakers.
- P.U.C. check of auto-rickshaws to be done periodically and ensure that adulterated fuel is not being used.
- Check adulteration of fuel in petrol pumps.
- Prohibition of open incineration / combustion.
- Increase in green cover.
- The construction of flyovers, subways and underground ways can play a vital role in having control over traffic and unnecessary accidents.
- Mass awareness is to be done at local level by the way of advertisements on local TV channels, theaters and at public stations like bus stops, libraries etc. The public has to be promoted for using CNG pattern in vehicles.

2 Municipal Solid Waste Management:

Municipal Solid Waste contains the waste generated from commercial and residential areas (paper, plastic, vegetable parts, cloths, bags, rubber, glass etc.). Its management includes proper collection, segregation, storage, transportation, processing and disposal.

2.1 Current Status:

In Nashik Municipal Corporation area around 225 MT of solid waste is generated per day. A compost factory has been established by the corporation for converting garbage into valuable compost /manure. The garbage is collected with the help of special vehicles named "Ghantagadi". Nashik Municipal Corporation has established one laboratory at the site, where garbage and compost is analysed for general parameters.



In accordance with Municipal Solid Waste (Management & Handling) Rules, 2000, leachate quality is monitored and also Ground Water Quality within 50 m of periphery of landfill is monitored. The Ambient air quality is monitored at the site for assessing the impact. The reports of the same are maintained with concerned authorities.

The compost obtained thereafter is sold off at reasonable rates.



2.2 Action to be taken:

- Segregation of solid waste by Nashik Municipal Corporation is involving expenditure. In order to reduce on the expenditure and abide by MSW rules, the waste should be segregated at the source of generation. The biodegradable waste should be put into green bins, recyclable waste in white bins whereas other waste including hazardous things like battery, medicines, pesticides, chemicals should be collected in black bins. This can be done through public awareness.
- The waste could be treated by housing societies, hotels etc. which will ultimately bring down the load on Nashik Municipal Corporation compost facility.
- The consumers are to be promoted to repair, resell, exchange, or donate unwanted product as much as possible to avoid disposal.
- Reduced use of plastic shall be encouraged. This can be achieved by making awareness in public by the way advertising at school level, on local TV channels, in theatres with help of govt. and non-govt. agencies.
- The leachate, which is generated at compost site, should be given proper treatment in order to protect surrounding groundwater quality.
- Each batch of compost to be analysed w.r.t. parameters laid down in Municipal Solid Waste (Management & Handling) Rules, 2000 and Fertilizer (Control) Amendment Order, 2006.
- Ambient Air Quality at Compost Project to be monitored for Microbial Load.
- Ban on plastic bags below 20 microns and size 8"X12".
- There are several ideas like "Nirmalya Kunda" for collecting solid waste on river sides and near temples & avoiding disposal of idols in the water bodies which will help in protecting natural resources from getting polluted.

3. Biomedical Waste Management

Bio-medical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals.

3.1. Current Status:

The biomedical waste which is generated in the municipal corporation area is collected in specific vehicle and specific type of coloured plastic bags are being used for collection as per Biomedical Waste (M & H) Rules, 1998. This waste is treated at Common Biomedical Waste Management Project (CBWTF) by Municipal Corporation near Dwarka on Mumbai Agra Highway. The waste is segregated at the source of generation based upon its characteristics. Incinerator Monitoring is done as specified in Biomedical Waste (M & H) Rules, 1998.

3.2. Action to be taken:

- The collection and transportation of bio-medical waste shall be carried out in a manner so as to avoid any possible hazard to human health and environment.
- Collection and transportation are the two operations where the chances of segregated bio-medical waste coming in contact with the public, rag pickers, animals/birds, etc are high. Therefore, all care shall be taken to ensure that the segregated bio-medical waste, handed



over by the healthcare units, reach CBWTF without any damage, spillage or unauthorized access by public, animals etc.

- A responsible person from the CBWTF operator shall always accompany the vehicle to supervise the collection and transportation of bio-medical waste.
- The vehicle being used shall be dedicated for transportation of bio-medical waste only.
- The facility where the biomedical waste is treated/disposed off is to be monitored for microbiological presence and is to be fumigated accordingly for disinfection of air.
- The fuel which is used for burning is to be checked for adulteration and exhaust gas is to be monitored regularly.

4. Municipal Waste Water Management:

Municipal waste water i.e. sewage includes the waste water generated from residential and commercial areas.

4.1 Current Status:

Nashik Municipal Corporation has developed the system for treatment of sewage generated from the urban area. This includes development of conveyance system, collection points, pumping towards the designated area, appropriate treatment, disposal of treated sewage, sludge disposal and maintaining data of related aspects. Nashik Municipal Corporation is operating Sewage Treatment Plants through private agencies on contract basis by



adopting methods like Activated Sludge Process, UASB etc. Corporation has taken important steps towards the development of underground drainage system for collection of sewage from environmental safety and hygiene point of view. The treated sewage water quality is being analysed routinely.

4.2 Action to be taken:

- The newly established sewage treatment plants are running in good condition. But the old ones are facing some problems as sewage collected for treatment is exceeding the designed capacity of the treatment plants resulting in the undesired quality of treated sewage. The increase in quantity of sewage is mainly due to urban population growth and overuse of water.
- Public awareness is to be done regarding wise use of water as water is one of the important natural resource.
- The treated sewage from treatment plants is to be analysed chemically as well as microbiologically before. Tertiary treatment and disinfection is to be followed wherever necessary in order to have control over river water pollution.
- There is need to check possibility of the use of treated waste water for tree plantation and toilet flushing instead of fully disposing into the river.
- It should be ensured that 100 % domestic effluents are collected and diverted through sewage pumping stations to the sewage treatment plants and not directly into the river.



**Water Quality under GEMS- MINARS Project for the year 2006-2007**

Sr. No	Station Code	Station Name	Parameter	Apr-06
1	1095	Godavari River U/s of Gangapur Dam, Nashik	BOD	5.00
			DO	7.10
			pH	7.32
			TC	9.00
2	1096	Godavari River Panchavati at Ramkund	BOD	14.00
			DO	5.50
			pH	6.70
			TC	1600.00

4.3. Key Issues

- In order to overcome the problem of various water borne diseases, quality of water is to be monitored daily for chemical as well as microbiological parameters through Public Health labs and should be cross checked through private recognized labs.
- Leak detection and preventive maintenance of water distribution system to be carried out.
- Efforts are to be made to prevent leakages in underground water supply pipelines in order to have control over microbial contamination.
- Awareness is necessary in community regarding wise use and safe handling of water.
- To conduct activities like roof water harvesting during rainy season as a measure towards water conservation.

5 Public Health**5.1 Hospitals**

- Microbial surveillance monitoring to be carried out in operation theatres of public hospitals on monthly basis in order to take corrective action so that hospital infection can be minimized.
- EtO sterilizers to be installed in public hospitals for effective sterilization. Biological indicators to be used to ensure effective sterilization.
- HEPA filters to be installed in operation theatre to minimize infections.
- Generation of Biomedical Waste is to be minimized.
- Water quality checks to be carried out periodically.

5.2 Hotels

- There is tremendous growth in hotel industry., which are playing vital role in refreshing peoples after weekly tense.
- It should be made compulsory for hotels, food service stations and cold drink houses to analyze their water quality either from government or recognized laboratories. NMC has to look after the assessment of food and food product quality under the jurisdiction of health department and to take actions in the cases of food adulteration by giving surprise visits and collecting the samples for analysis.

6. Urban Infrastructure Development:

Overall development of city depends upon its infrastructure. It includes construction and development of highways, flyover development on highways where traffic is generally high leading to accidents and establishment of signals at appropriate places from safety point of view. In Nashik city, it most necessary to have flyover bridge on Mumbai Agra Highway covering Dwarka and Mumbai Naka. Maintaining proper parking areas is also one of the most important factor. Public Transport system to be augmented so that use of individual vehicle is avoided. Bus frequency on various routes to be improved



and also buses to be operating on CNG basis. Underground way for crossing of highway near Rane Nagar is also very necessary in order to avoid accidents.

Development of footpath on roadside is necessary as a measure towards public safety. Adequate numbers of playgrounds, gardens also play an important role in maintaining social and cultural environment in the city. Roadways in most of the areas of city are affected during rainy season. So it is necessary to development concrete road as a long term option.

The encroachments along the bank of river Godavari are required to be removed so as to avoid the risks due to floods. In this regard the Irrigation authorities should also be directed to take proper steps for removal of encroachments in the river basin.