

PROFORMA FOR SUBMITTING INFORMATION ON SOLID WASTE MANAGEMENT

Name of City/Town:	Navi Mumbai	District:	Thane
Name of Municipal Body:	Navi Mumbai Municipal corporation	Division:	Konkan
Address:	Belapur Bhavan, 8 <sup>th</sup> floor, Belapur, Navi Mumbai	State:	Maharashtra
Telephone:	7571733, 751728,7553782	Fax:	7573785
Email:		Website:	
<ul style="list-style-type: none"> <li>• <b>DEMOGRAPHY</b></li> </ul>			
.1	Name of Officer In-Charge	Commissioner, Navi Mumbai, Municipal Council	
.2	Area of Municipal Corporation /Council (Please provide map showing legal limits of municipal body) (km <sup>2</sup> )	162.5	
.3	No. of wards / zones	09	
.4	Total population (as per 1991 census)	3,18,447	
.5	Total population (as per 2001 census)	7,26,195	
.6	Population		
	<ul style="list-style-type: none"> <li>• Urban</li> <li>• Slums &amp; Urban poor</li> </ul>	3,00,359	
.1	Floating population	70,000	
.2	Total no. of household	1,87,000	
.3	Average maximum temperature (°C)	-	
.4	Average minimum temperature (°C)	-	
.5	Average yearly maximum rainfall (mm)	-	
.6	Average maximum humidity	-	
.7	Average minimum humidity	-	
.8	Average depth of water table	-	
.9	Altitude ( <i>i.e.</i> mean sea level)	-	

•	<b>GENERATION OF MUNICIPAL SOLID WASTE</b>	
.1	Total MSW generation (MT/day)	400
.2	MSW generation (gms/capita/day) per person	400
.3	Of the total MSW generated	
•	Quantity of domestic MSW (MT/day)	270
•	Quantity of commercial MSW (MT/day)	80
•	Quantity of industrial (non-toxic and non-hazardous) waste (MT/day)	50
•	Quantity of waste from markets (MT/day)	70 from APMC
•	Quantity of waste from hotels and restaurants (MT/day)	50
.1	Composition of MSW (Attach separate sheet)	
•	Physical characteristics	
○	Biodegradable (%)	
○	Paper (%)	11
○	Plastic (%)	17.03
○	Glass (%)	0.86
○	Metal (%)	2.16
○	Inert, ash, debris (%)	-
○	Rags (%)	13
○	Stone (%)	-
○	Rubber / Tyre (%)	-
○	Coconut shell (%)	-
•	Chemical characteristics	
○	Carbon (%)	-
○	Nitrogen (%)	-
○	Phosphorous as P <sub>2</sub> O <sub>5</sub> (%)	-
○	Potassium as K <sub>2</sub> O (%)	-
○	C/N ratio	-
○	Calorific value (kCal/kg)	3156.50
○	Density of MSW (kg/m <sup>3</sup> )	-
○	Moisture content (%)	66.58
○	Organic (%)	11.17

•	<b>SWEEPING</b>	
.1	Total length of roads (with or without footpath) (km)	353.94
	• Total length of cement-concrete roads (km)	0.275
	• Total length of asphalted roads (km)	290.56
	• Total length of Kutchha roads (km)	63.105
.1	Total no. of sweepers employed	2000 (privatised)
	• Departmental	-
	• Contracted	-
.1	Working hours of sweepers	-
.2	Norms of sweeping (e.g. one sweeper per ... population, or one sweeper per ... sq. m. area, or one sweeper per ... RMT road)	700 RMT for road sweeping and 500 RMT gutter cleaning
.3	Sweeping carried out at a location by	-
.4	Sweeping waste is put in a...	<b>In a roadside bin</b>
.5	Frequency of sweeping	Everyday
.6	Total no. of wheel barrows provided	Wheel barrows are provided by contractor
.7	Total no. of containerised handcarts provided	-
.8	Total capacity of wheel barrow (kg)	-
.9	No. of containers and its capacity in kg	-
.10	Type of broom provided	<b>Provided by contractor</b>
.11	Any other equipment provided (e.g. spade, shovel, tikow)	All equipments which are essential for sanitation provided by contractor
.12	Protective gear provided (e.g. leather hand gloves, gumboots, mask)	-
•	<b>COLLECTION, STORAGE AND TRANSPORTATION</b>	
.1	Area covered for collection of MSW	162.5
.2	No. of households covered	1,87,000
.3	No. of households covered under door-to-door collection (bell ringing)	This is implemented in sector 4, Airoli by use of three wheel Tempo through contractor
.4	Is the collection carried out by municipal authority or private contractor or NGO?	Garbage collection through private agency
.5	Is the segregation is carried out at source?	No, Mixed waste
	If no, what steps have been taken?	-
.6	Total quantity collected (MT/day)	400

.7	MSW collected in mixed form (MT/day)	-
.8	MSW collected in segregated form (MT/day)	-
.9	Whether littering is prohibited by the municipality?	-
.10	Whether litterbins are provided?	150 Nos
.11	Frequency of waste collection	-
.12	Is waste collected every day <i>i.e.</i> 7 days a week and 365 days a year?	Yes
	If no, give details	-
.13	Total number, type, size, and capacity of storage bins / container / trailers provided	RC - 997, DP - 81
.14	Whether the bins are open or closed?	-
.15	Whether all bins are attended/cleaned daily? <i>(i.e.</i> 7 days a week and 365 days a year)	-
	If no, mention details	-
.16	Whether the lifting of waste from the bins is manual or mechanical?	RC & DP containers garbage disposes mechanically. Hanging garbage disposed by sanitary contractor

.17 Vehicle details					
Dumper placer (with 4.5 m <sup>3</sup> / 8 m <sup>3</sup> containers)					
Open truck					
Open truck with tipping					
Tractor-trailer without tipping					
Auto rickshaw with or without tipping					
Tricycle with or without tipping					
Any other type (please mention)					

.18 Collection details								
Type of vehicle	No. of vehicles used	No. of shifts	Capacity (MT)	No. of trips/ shift	Distance travelled / shift	Quantity of MSW carried / shift (MT)	Quantity of MSW carried out / day (MT)	No. of workers / vehicle
Compactor (mobile)	-	-	-	-	-	-	-	-
Dumper placer (with 2.5 m <sup>3</sup> containers)	18	-	5CUM	82	100	-	120	-
Dumper placer (with 4.5 m <sup>3</sup> / 7 m <sup>3</sup> containers)	-	-	-	-	-	-	-	-
Open truck	-	-	-	-	-	-	-	-
Open truck with tipping	-	-	-	-	-	-	-	-
Tractor-trailer with tipping	-	-	-	-	-	-	-	-
Tractor-trailer without tipping	-	-	-	-	-	-	-	-
Auto rickshaw with/ without tipping	-	-	-	-	-	-	-	-
Tricycle with/without tipping	-	-	-	-	-	-	-	-
Refuse collector	23	-	8 CUM	20	453	-	140	-
<b>Total</b>								
.19	If the vehicles are open to atmosphere, are they covered with temporary plastic sheet?				Yes/No			
<ul style="list-style-type: none"> <li>• <b>COLLECTION SYSTEM</b></li> </ul>								
.1	Approximate MSW collected (MT)							
	o Household (urban)			120				

	o Slums	60
	o Street sweeping	30
	o Shops & commercial establishments	50
	o Markets	80
	o Hotels, restaurants, eating housesGardens, parks, fairs	60
	o Slaughter houses	-
	o Building sites (debris, earth, etc.)	-
.2	No. of premises / establishments	-
	o Households	-
	o Shops, commercial establishments	-
	o Slums, households, population	-
	o Vegetable and fruit markets	-
	o Fish and meat markets	-
	o Hawkers	-
.3	No. of hotels, restaurants, eating houses	-
	o Grade / class I	-
	o Grade / class II	-
	o Grade / class III	-
	o No. of star hotels	-
.4	Guesthouses	-
.5	Marriage halls	-
.6	Hostels	-
.7	Cinema halls	-
.8	Theatres	-
.9	Stables and no. of animals	-
.10	Hospitals/ clinics/ nursing homes Total no. of beds	-
.11	Parks, gardens, recreation places like lakes, amusement parks	-
.12	Building sites (under construction)	-
.13	Slaughter houses	-

•	<b>PROCESSING AND DISPOSAL OF MSW</b>	
.1	Total quantity of MSW processed (MT/day)	400
.2	Technology / technologies adopted	-
o	Composting (MT/day)	50 MT APMC
o	Vermiculture (MT/day)	Tender for 250 MT process unit is under preparation
o	Pelletisation (MT/day)	-
o	Waste to energy (MT/day)	70 MT Bermaco waste management
.3	Composting	-
	Compost produced (MT/year)	-
	Is it done mechanically?	-
	Is it the compost sold?	-
	If yes, the quantity sold (MT/year)	-
•	Total revenue generated (Rupees/year)	-
.1	Vermi-composting	-
	Vermi-compost produced (MT/day)	-
	Is the vermi-compost sold?	-
	If yes, the quantity sold (MT/year)	-
•	Total revenue generated (Rupees/year)	-
.1	Pelletisation	-
	Pellets produced (MT/day)	-
	Are the pellets sold?	-
	If yes, the quantity sold (MT/year)	-
•	Total revenue generated (Rupees/year)	-
.1	Waste to energy	-
•	Energy produced (MW/MT/day)	-
	Incineration	-
	Pyrolysis	-
	Bio-methanation	-
	Any other (Please mention)	-
•	Revenue generated (Rupees/year)	-
.1	Dumping grounds/landfill sites	Two sites



• MSW disposed off by open dumping (MT/day) [mixed/inert]	400
• MSW disposed off by controlled dumping (MT/day) [mixed/inert]	-
• MSW disposed off by sanitary landfill (MT/day) [mixed/inert]	-
• No. of dumping grounds/ landfill sites	2
Whether municipality legally owns them?	-
• Area of each dumping ground/ landfill site	Koparkhairane area 15-20 acres in possession. The Turbhe land not handed over yet –90-95 acres
• Whether the area will be sufficient for next 25 years	-
• If no, then what steps have been taken to acquire land?	-
• Distance (in km) of dumping ground / landfill site from ...	-
o Habitation	-
o Drinking water source	-
o Religious or monument places	-
• Distance from airport or airbase	-
• Has it been designed scientifically	-
• Has the existing dumping ground been upgraded as required by MSW Rules, 2000	-
If no, what steps have been taken (provide details)	-
.1 Whether the following facilities are provided	-
• Weighbridge	-
• Fencing	-
• Approach roads/ internal roads	-
• Lighting facility	Yes
• Site office with monitoring equipment	-
• Managerial staff and manpower	Yes
• Covering material used daily as per Rules 2000	Yes, adequately available
Is it available in sufficient quantity?	-

•	Gas venting arrangement	No
•	Leachate collection system	Provision made
•	<b>INSTITUTIONAL ARRANGEMENTS</b>	
.1	SWM services provided in the city/town by	Health officer
.2	Total no. of Supervisory Staff provided (e.g. Health officer/ Assistant Health officer/ Chief Sanitary Inspector/ sanitary Inspector/ Sanitary Supervisors, etc.)	15 - SI
.3	Total no. of sweepers/ Pourakarmikas/ labourers/ Mukadam/ Jathedars/ Daffedars, etc.	13 – Mukadam, 2000 – contractors sweepers
.4	Organisational structure	-
•	<b>PRIVATISATION</b>	
.1	Whether any of the following service is privatised?	
•	Sweeping	Yes
•	Door-to-door collection	Yes
•	Community collection	-
•	Transportation	Yes
•	Processing of MAW	Yes
•	Sanitary landfilling	-
	If yes, provide details	-
	If no, whether any future plans for privatisation	-
•	Details of NGO/ CBO/ Residential groups involved in any schemes/ projects initiated by municipal body in SWM/ clean city program	NGO's & Residential groups are involved in Advanced Locality Management for this purpose
	Waste to energy project	
•	<b>COST IMPLICATIONS IN SWM</b>	
.1	Expenditure (in Rupees/Year)	

	• Total cost of SWM services under various heads	Through Contractor
	• Establishment including salaries, uniforms, <i>etc</i>	950 lakhs
	• Tools, equipment, and consumables including disinfectant	40 lakhs
	• Operation and maintenance of garbage vehicles including fuel, oil, spare parts, tyres, batteries, <i>etc</i>	150 lakhs
	• Hiring charges for contractors' vehicle & machinery, bulldozers, JCBs, <i>etc</i>	17.13
	• Other miscellaneous expenses	-
.1	The above total cost in terms of following activities (Rupees/Year)	
	• Sweeping cost	950 lakhs
	• Collection cost	-
	• Transportation cost	150 lakhs
	• Processing cost	-
	• Disposal / sanitary landfill cost	36.42
.1	Cost recovery	
	• Tipping fee or trade refuse charges (Rupees/Year)	N A
	• Revenue generation (by sale of compost, vermi-compost, energy/ gas, <i>etc.</i> (Rupees/Year)	-
	• Annual expenditure for SWM services	11 crore
	Cost of SWM services in Rupees per capita per year	-
	Cost of SWM services in Rupees per tonne of MSW	-
	• <b>OTHER FACILITIES</b>	
.1	What facilities are provided for the following?	-

• Biomedical waste	There are one 500-bed Hospital, 13 UHP, 5 MCH under control of corporation. A separate Bio- medical waste management has started since February 1, 2003
• Diary related activities	-
• Slaughter house and unauthorised slaughtering	No slaughter house in NMMC area
• Construction, demolition, debris and silt	Silt
• Encroachments on footpaths, in parks	-
• How many slums have been identified and whether there are provided with sanitation facilities?	-
• Is there any enforcement wing for taking renal actions?	No
Recovery of administrative charges	The power under Bombay Police Act 1951 is not given to NMMC. Proposed Recovery of Administrative charges
Fines under Municipal/Police Act	
Recourse to Municipal Act bye-laws	
• Whether any cases are registered and settled during last three years?	Nil
No. of cases registered during last three years	-
No. of cases settled during last three years	-
Total recovery during last three years	-
• <b>SPECIAL/ UNIQUE SCHEMES OR INITIATIVES<sup>1</sup></b>	
.1 Recycling schemes for plastic, PET bottles	-
.2 Encouraging community activity such as ALM <sup>2</sup> formation	Yes
.3 Encouraging people's participation by building-wise or building complex-wise waste segregation and processing of organic waste by vermi-composting or composting	Yes
.4 Training needs for sanitary workers on health and safety issue	Yes
.5 Development of tools and implements	Yes

<sup>1</sup> Details of schemes can be provided on a separate sheet

<sup>2</sup> Advance Locality Management

.6 Please provide list of potential NGO for implementing any of the initiatives (any association registered with municipal body/ unregistered local area management) -

• **AWARENESS**

.1 Are you aware of the various notifications of the Ministry of Environment and Forests, Government of India -

- Municipal Solid Waste (Management and Handling) Rules, 2000 -
- Recycled Plastics Manufacture and Usage Rules, 1999 -
- Biomedical Waste (Management and Handling) Rules, 1998 -
- Coastal Regulatory Zones Rules, 1991 (amended up to 2002) -

Place: Mumbai

Date: 24-01-05

Signature of the Municipal Commissioner /  
The Health Officer/ The Chief Engineer (SWM)

Stamp

Note: Please provide small note on the geographical and historical background of the city, tourist places, monuments, pilgrimage places, main industrial areas, industries, GNP, GDP, Airport, Airbase, main events and main people of national and international importance, etc.