MUNICIPAL SOLID WASTE MANAGEMENT PLAN FOR NASHIK MUNICIPAL CORPORATION
1. Objective .......................................................................................................................... 3
2. City Overview: .................................................................................................................. 3
3. Legal Background: ........................................................................................................... 3
4. Roles and Responsibilities for Solid Waste Management in NMC: .............................. 4
5. Current status of SWM in Nashik: ................................................................................ 4
7. Financial Sustainability for Solid Waste Management: .............................................. 12
8. Other Waste Streams in Nashik: .................................................................................. 12
9. Service Level Benchmarking for SWM of Nashik ......................................................... 13
10. Immediate Actions ....................................................................................................... 15
Annexure – I Nashik Solid Waste Management Awareness Programme ....................... 16
Annexure – II Location of current compost plant/SLF vis-a-vis City ............................... 18
Annexure – III Process Flow of Current Municipal Solid Waste Streams in Nashik . 19
Annexure – IV Communication Material for Source Segregation ................................. 20
1. Objective
This document describes the current status, relevant planning figures and the future steps for improvement of MSWM in Nashik. It therefore forms a planning document for sustainable Municipal Solid Waste Management in Nashik with special reference to 3R strategy – Reduce, Reuse, Recycle. It also aims at informing the public about current and future services, its environment and health benefits as well as the costs it incurs. This document also describes rules and regulations pertaining to MSW and fines for non compliance. This document is therefore part of NMCs communication strategy for SWM.

2. City Overview:
Nasik, a city located in the northwest of Maharashtra State in India, is 180 km away from Mumbai and 202 km from Pune. Nashik is the administrative headquarters of Nashik District and Nashik Division. Nashik, which has been referred to as the “Wine Capital of India”, is located in the Western Ghats, on the western edge of the Deccan peninsula on the banks of the River Godavari. According to the Census of India, 2001, Nashik had a population of 1,076,967 and present population is estimated to be 1,590,000 (projected in year 2008) with a total area of 259 km² which makes it the fourth largest urban area in Maharashtra in terms of population. Nashik is the third most industrialized city in Maharashtra after Mumbai and Pune. Nashik has been on the tourist map of India, especially Hindu religious tourism, because of the legend that Lord Rama lived here during his exile.

3. Legal Background:
In 2000, the Ministry of Environment and Forest, GoI, (MoEF) notified the Municipal Solid Waste (Management and Handling) Rules (MSW (M&H) Rules) for all Indian cities. The Rules contained directives for all ULBs to establish a proper system of waste management. To improve the MSWM systems in the cities the following seven directives were given:
1. Prohibit littering on the streets by ensuring storage of waste at source in two bins; one for biodegradable waste and another for recyclable material.
2. Primary collection of (segregated) biodegradable and non-biodegradable waste from the doorstep, (including slums and squatter areas) at pre-informed timings on a day-to-day basis using containerized tri-cycle/hand carts/pick up vans.
3. Street sweeping covering all the residential and commercial areas on all the days of the year irrespective of Sundays and public holidays.

4. Abolition of open waste storage depots and provision of covered containers or closed body waste storage depots.

5. Transportation of waste in covered vehicles on a day to day basis.

6. Treatment of biodegradable waste using composting or waste to energy technologies meeting the standards laid down.

7. Minimize the waste going to scientifically engineered landfills (SLFs) and dispose of only rejects from the treatment plants and inert material at the landfills as per the standards laid down in the rules.

Different rules are applicable for hazardous waste and biomedical waste, which should not be mixed with household waste.

Under The Bombay Provincial Municipal Corporations Act, 1949, Commissioner Nashik has given powers to Divisional Sanitary Inspectors and Sanitary Inspectors to charge fines and to take actions against citizens who are not following SWM rules.

4. Roles and Responsibilities for Solid Waste Management in NMC:

Departments Responsible for Solid Waste Management

1. Collection, Segregation and Transportation of MSW
   Dept.: Health Department, NMC
   Officer In charge: Dr. Kondiram Pawar (Medical Officer of Health)

2. Processing and landfill
   Dept.: Mechanical Division
   Officer In Charge: Mr. R. K. Pawar (Superintending Engineer)

5. Current status of SWM in Nashik:

The Nashik Municipal Corporation is collecting 300-350 Tons MSW per day. According to DPR for SWM, 2007 the average waste generation is only 218 gm/capita per day. This situation is either due to collection inefficiencies or due to high proportion of agriculture/horticulture farming, which helps in utilization of green waste for in-situ composting. With better collection and transportation measures, the collection efficiency should increase.
The city is registering almost 20% extra growth rate compared to similar other cities in India. This is leading to rapid development of real estates, housing, complexes, shopping malls etc. Consequently the per capita MSW quantity has been estimated to reach 400 gm/day by 2011 as per DPR (2007). The population growth rate of the city during the last decade has been 63.98%. This type of growth rate may be witnessed in the current decade also. Keeping above factors in view the projected quantity of MSW is 750 TPD by the year 2015 and 1628 TPD by the year 2031.

**Figure 1: Projected Solid Waste Generation in Nashik**

![MSW generation will quadruple in 20 years](image)

**Table 1: Generation of Municipal Solid Waste (projections):**

<table>
<thead>
<tr>
<th>Year</th>
<th>MSW MT/ day</th>
<th>Quantity MT / year</th>
<th>Remnants @ 15 % MT for Sanitary Land Fill</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300</td>
<td>109500</td>
<td>16425</td>
</tr>
<tr>
<td>6</td>
<td>421</td>
<td>153665</td>
<td>23050</td>
</tr>
<tr>
<td>16</td>
<td>827</td>
<td>301855</td>
<td>45278</td>
</tr>
<tr>
<td>26</td>
<td>1628</td>
<td>594220</td>
<td>89133</td>
</tr>
<tr>
<td>Total</td>
<td>7520095</td>
<td>1128015</td>
<td></td>
</tr>
</tbody>
</table>

Source: DPR for SWM, 2007

Analysis of city waste carried out recently, reveals 37.8% easily compostable (short-term biodegradable) materials, 19.50% hard lignites and long term biodegradables and 16.20% textiles, plastic, rubber etc. These last two components having 35.70% content in the MSW have become a major cause of concern. These materials are a negative contributor to the processing plant efficiency and rapidly exhaust available land for landfilling.
Mounting heaps of high volumes of – low density waste is a common scene around each compost plant. This has necessitated re-thinking of the integrated technological approach to solve MSW disposal problem towards a total solution in a sustainable manner.

Looking to the recent trend of changing waste characteristics, increasing quantities of combustible materials and infrastructural bottlenecks, it became essential to upgrade overall MSW collection, storage, transportation and processing through integrated technological facility at Khat Prakalp site. This plant came into operation in 2000. However, this plant was small and could not deal with the entire 350 TPD waste reaching the plant and a backlog of >2.50 lakh MT waste was generated, which was piled put in two heaps close to the plant. Under JNNURM, NMC sought more funds and upgraded the plant to a capacity of 500 to 600 TPD. The plan is that by the time backlog is cleared, fresh arrivals will reach this level of plant capacity.

Nashik is an important part of “Mumbai-Pune-Nashik Gold Triangle” development plan. For this business the city has to gear up for growth, expansion, socio-economical and business developments. Keeping the above facts in view overall integrated solid waste management facility was created.

Nashik is the only city in Maharashtra which has taken lead towards scientific management of MSW in abidance of MSW rules 2000. With the upgradation of entire SWM system, this facility could act as a lime-light training and development Centre for the State of Maharashtra.

NMC has given contract of collection and transportation of solid waste of the 6 divisions of the city to two contractors. Contract of collection and transportation includes door to door collection of solid waste through Ghanta Gadi and transportation to Municipal Solid Waste Treatment Facility. Solid waste is collected from 2.9 lakh households of 108 wards of the city through 124 Ghanta Gadi’s and ownership of the Ghanta Gadi’s is with NMC.

Table 2: No. of establishments covered by door to door service

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Establishment type</th>
<th>Total No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Households</td>
<td>2,97,890</td>
</tr>
<tr>
<td>2</td>
<td>Hotels and Restaurants</td>
<td>1806</td>
</tr>
<tr>
<td>3</td>
<td>Commercial Establishment</td>
<td>300</td>
</tr>
</tbody>
</table>
Table 3: Details of Solid Waste Transportation Vehicles

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Types of Vehicles</th>
<th>Total No.</th>
<th>Capacity (T)</th>
<th>Tons/ month</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lorries/Trucks</td>
<td>4</td>
<td>3</td>
<td>360</td>
</tr>
<tr>
<td>2</td>
<td>Mini Lorries/Trucks</td>
<td>3</td>
<td>1</td>
<td>90</td>
</tr>
<tr>
<td>3</td>
<td>Tracer Trailers</td>
<td>18</td>
<td>3</td>
<td>1620</td>
</tr>
<tr>
<td>4</td>
<td>Tipper Trucks (Ghanta Gadi)</td>
<td>124</td>
<td>3</td>
<td>10890</td>
</tr>
</tbody>
</table>

Photo 1: Ghanta Gadi doing MSW collection

**Processing of MSW**

The new processing plant includes the following:

- **Pre-sorting Unit:**
  It is electromechanical segregation system for incoming non segregated MSW with the capacity of 500 TPD and it comprises of two lines with all necessary requirements and materials. After mechanical segregation compostable material will go to windrow composting, material with calorific value goes to RDF plant and inert will be further processed at Inert Processing plant.
• **Aerobic Composting Unit:**
  Composting is done through windrow composting method and sheds have been constructed for windrows. Today out of total MSW 3 to 5% is converted into compost. The compost has already become popular amongst the farmers within 100 km radius of Nashik. By maintaining the price line of Rs2000/MT Ex-factory level for loose form and Rs. 2450/- for packed form with necessary backup support, entire quantity of compost will be saleable in this belt. Once segregation at source will be practiced then the quantity of generation of compost will increase up to 10 to 15% of total MSW.

• **Inert processing unit**
  Inert processing unit, with capacity of 50 TPD, comprises of mechanical sieve and air density separator. Main purpose of inert processing plant is to recover the construction material from the waste and to recycle it by selling or utilizing it for in-house construction activities. This is mainly to minimize landfill burden on O&M cost and also saving of land.

• **Leachate treatment plant:**
  Leachate treatment plant with capacity of 0.4mld leachate or 10 TPD organic wastes has been installed for treatment of leachate coming out from the windrows, the solid waste dumps and sanitary landfill site. Proper arrangement for collection and transportation of leachate has been made. As leachate is primarily generated in monsoon season and during other period, same plant is utilized for bio gas generation from organic waste. 40 KW power is generated through the plant and utilized for operation of pumps at MSWM facility.

• **Refuse Derived Fuel (RDF) Plant:**
  The high calorific energy containing materials present in MSW are to be handled separately from the stage of receiving at the tipping floor onwards. RDF plant with capacity of 150 TPD is installed for generation of fuel pellets from high calorific value materials. Woody materials, paper products, textiles, jute etc forms the main constituents of RDF which is a valuable source of alternate energy. The technology for RDF primarily focuses on refinement of MSW through material re-combinations, segregation, drying, size reduction, blending and homogenization. This material is further refined for separation of sand, dust, metals, glass etc before grinding or shredding. The shredded material is obtained as fluff (<2 cm size) which is further processed into pellets, briquettes or bailing. NMC is exploring the possibilities for marketing of fuel pellets and nearby industries have shown their interest for fuel pellets.

• **Animal Carcass Incinerator:**
  Dead animal carcass incinerator with the capacity of 250Kg per hour is installed for the incineration of dead animals such as dogs, cattle’s etc.
• **Sanitary Landfill:**
  The solid waste that is not suitable for any processing is transported to the sanitary landfill site. For this purpose, a sanitary landfill in an area of 2 hector has been developed. All the necessary aspects of scientific land filling were considered during creation of sanitary landfill. Proper arrangement for leachate is also provided and this is connected to the leachate treatment plant for further processing.

Photo 2: MSW Treatment Plant and Sanitary Landfill site at Khat Prakalp, Nashik
Photo 3: Ancillary/ Supporting Infrastructure at MSW Treatment Plant at Khat Prakalp, Nashik

Photo 4: MSW Training Centre, located at Khat Prakalp, Nashik
Complaint Redressal System, NMC has appointed six Divisional Sanitary Inspectors (DSI) and below them there are Sanitary Inspectors (SI). Most of the complaints are addressed by DSI and SI at division level. A 24 hrs toll free numbers 145 is operational for receiving complaints. All the complaints will be addressed within 72 hours. In addition citizens can file their complaints in written either to divisional office or to NMC headquarters.

6. Current Activities to reduce/recycle/reuse/ of MSW Waste Streams in Nashik:

1. Glass, paper, metal: A substantial amount is collected by Ghantagadi workers and informal rag pickers and this is further handed over to scrap merchants in the city.

2. Organic Waste: Organic waste is segregated at the processing facility through the mechanical segregation process and it is then converted to compost through aerobic composting. Most of the organic waste is converted in compost and sold to farmers. Waste from permanent and temporary vegetable markets is collected and transported to the composting plant and reused as organic manure.

3. Construction Debris: NMC has identified sites for dumping the construction debris. This waste stream is currently not entering the MSW stream. The responsibility for disposing the construction debris is with the waste generators and not with the Corporation.

4. Street Sweeping/ Drain Cleaning: This material is collected by the safai karamcharis and transported to the Ghanta Gadis in the respective wards.

Further need for improvement: Source Segregation of Municipal Solid Waste:

Source segregation of waste is a statutory requirement as per the MSW (M&H) Rules, 2000. As mixed wet and dry waste loses value and makes it very difficult to handle the waste or to segregate it further.

There is a thus need to segregate waste at source into wet and dry fractions. Wet can be defined as vegetable peels, food waste, garden waste, etc. Dry can be defined as metal, paper, wood, cloth, etc. Segregated waste is easier to handle by the waste collectors. Treatment of segregated waste is less energy intensive, reduces the burden to the environment, improves quality of compost and increases the production of compost and recyclables.
There is a further need to segregate and keep separately Hazardous and Hospital waste as per the MSW (M&H) Rules 2000, Hazardous Waste Management Rules 2008, and Biomedical Waste (M& H) Rules 1998.

7. Financial Sustainability for Solid Waste Management:

In order to sustain a MSW management according to the rules it is necessary to recover costs for collection, treatment and disposal. Through JNNURM the Corporation was able to spend Rs. 60 Crores on necessary technical infrastructure, which, as one of the first cities in India, is already in place. In addition to this it is compulsory as per JNNURM to recover 100% of O&M costs by 2012.

Currently the SWM cost is borne by NMC through part property tax, part octroi and capital cost is from the JNNURM funds.

8. Other Waste Streams in Nashik:

Hazardous Waste

Hazardous waste is waste that poses substantial or potential threats to public health or the environment and which is ignitable (i.e., flammable), reactive, corrosive and toxic. In the industrial sector, the major generators of hazardous waste are the metal, chemical, paper, pesticide, dye, refining, and rubber goods industries. Household waste that can be categorized as hazardous waste include old batteries, shoe polish, paint tins, old medicines, and medicine bottles. The process of handling and management of this waste stream is currently planned by NMC and will be informed in due time.

Bio-medical Waste:

‘Bio-medical waste’ means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biological. It means any solid or liquid waste which may present a threat of infection to humans, including non-liquid tissue, body parts, blood, blood products, and body fluids from humans and other primates; laboratory and veterinary wastes which contain human disease-causing agents; and discarded sharps. This is currently being handled by M/s SMS Water Grace BMW Pvt. Limited in Nashik. However, the nursing homes and dispensaries are still to be addressed for separate handling of bio-medical waste.
9. Service Level Benchmarking for SWM of Nashik

The aim of the MSW activities of NMC is to implement an efficient and cost effective municipal solid waste management system which leads to waste minimization, environmentally sound reuse and recycling processes as well as scientific disposal of solid waste.

The Ministry of Urban Development (MoUD), GoI has introduced Service Level Benchmarking as one of the appropriate systems for information management, performance monitoring and benchmarking.

MSWM is one of the 4 basic urban services which MoUD has identified as a performance parameter. These are indicators to measure the stepwise performance in MSWM on ULB level. Table 2 below explains the benchmark; status of service (as on Dec 09) and the reliability of the data and the figure 4 is graphical representation of the MSWM service levels in Dec 2009 compared to the benchmarks

Table 4: Service Level Benchmark Indicators for SWM

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Benchmark</th>
<th>Status</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household Level Coverage</td>
<td>100%</td>
<td>86.88%</td>
<td>D</td>
</tr>
<tr>
<td>Eff. in Collection of Solid Waste</td>
<td>100%</td>
<td>86.50%</td>
<td>B</td>
</tr>
<tr>
<td>Extent of Segregation of MSW</td>
<td>100%</td>
<td>34.68%</td>
<td>B</td>
</tr>
<tr>
<td>Extent of MSW Recovered</td>
<td>80%</td>
<td>100%</td>
<td>B</td>
</tr>
<tr>
<td>Extent of Scientific Disposal of MSW</td>
<td>100%</td>
<td>0.00%</td>
<td>NA</td>
</tr>
<tr>
<td>Extent of Cost Recovery</td>
<td>100%</td>
<td>33.10%</td>
<td>B</td>
</tr>
<tr>
<td>Eff. in Redressal of Customer Complaints</td>
<td>80%</td>
<td>100%</td>
<td>B</td>
</tr>
<tr>
<td>Eff. In Collection of SWM Charges</td>
<td>90%</td>
<td>35.05%</td>
<td>D</td>
</tr>
</tbody>
</table>

Source: NMC and GoI, 2010

Note: Reliability Scale:
- A- Highest/Preferred Level of reliability
- B- Intermediate Level
- C- Intermediate Level
- D- Lowest Level of Reliability
Figure 2: Pictorial Representation of Service Level Benchmarks above

Source: Service Level Benchmarking, NMC and GoI, 2010
10. Immediate Actions

Nashik Municipal Corporation:

- Nashik Municipal Corporation plans to introduce segregation at source stepwise in the city. Due to this the awareness raising strategy will take place (refer to Annex I).
- For this purpose communication material is being prepared in Marathi/English (see Annexure IV)
- Segregation at Source will start in ward No. 26

Citizens:

- Citizens will need to segregate waste in three forms mainly wet, dry and toxic waste in separate bins in their households
- The segregated waste collected thus has to be handed over to the Ghanta Gadi’s.
- Store your waste at your home, if not able to give waste on a particular day.

For any Complaints, contact your local ward committee office. All the complaints will be addressed within 72 hours.

For further details and contact address:

| Mr. R. K. Pawar, Superintending Engineer  |
| Nashik Municipal Corporation  |
| Rajiv Gandhi Bhavan |
| Purandare Colony |
| Sharanpur Road, Nashik |
| Phone: 0253 2312752 |
| Toll Free No.-145 |

| Dr. Kondiram Pawar, Health Officer  |
| Nashik Municipal Corporation  |
| Rajiv Gandhi Bhavan |
| Purandare Colony |
| Sharanpur Road, Nashik |
| Phone: 0253 2572062 (Health Department) |
| Toll Free No.-145 |
| Mobile Numbers of Divisional Sanitary Inspectors: |
| Satpur: 9423179171 |
| Nashik East: 9423179172 |
| Nashik Road: 9423179173 |
| Nashik West: 9423179174 |
| Cidco: 9423179175 |
| Panchavati: 9423179176 |
Annexure – I Nashik Solid Waste Management Awareness Programme

1. Introduction:
Every citizen should be made aware of the duty to keep neighbourhoods and city clean. Creation of awareness is the first step to bring an attitudinal change among people. Most of the people are ignorant about the various ways in which waste can be stored, transported and safely disposed and also about their ill effects to health and environment. Therefore it is necessary, to create awareness among the people about the entire process of Municipal Solid Waste Management system i.e. from generation to safe disposal.

Waste comprises of 3 different categories wet waste (vegetable peels, food waste etc), dry (paper, plastic, metal etc) waste and toxic waste (batteries, CFLs etc). Source segregation of waste into different categories and its effective collection system is the key to success in MSWM system, and the role of common man as a responsible citizen is very crucial in implementing effective and efficient system.

2. Aims and objectives:
The aims and objectives of this awareness programme are very broad, which throws a light on a complete solid waste management system by educating and creating awareness on the following aspects:

- Importance of Source Segregation
- Why is it necessary to give the waste to Safai karamcharis?
- Do not Litter: Keep your neighbourhood and your city clean
- Health impacts of unhygienic environment
- Solid Waste Management Process- from generation to safe disposal
- Introducing 3 R Principle- Reducing, Recycling and Reuse of Waste
- Role of Citizen’s active participation in improving SWM system
- Fines and Penalties for non- compliance with legal provisions

3. Target Groups
The main target groups are:
1. General Public (Residents/ market/commercial/ hotels etc)
2. School Children
3. Corporators
4. Municipal Corporation Workers

4. Strategy:
The strategy is to carry out focused awareness programme for the specific target groups in 6 pilot wards identified by NMC. These awareness programs on SWM have been conducted in the month of Dec 2010 for residents, Safai Karamcharis and for the school in one of the identified pilot ward (ward No. 26).
The identification of Schools, Municipal workers and Community representatives will be in the responsibility of NMC. NMC will be responsible for identification of the staff within their organization who needs training. 15-20 dedicated persons would also be identified by the NMC, for receiving the training as Trainers in future program. The 2 Ghanta Gadi Contractors and 3-4 identified persons from each of the contractors will also need to be trained as trainers. The awareness program would rely on the tools especially developed for this purpose.

These identified trainers would undergo the Trainer of Trainers (TOT) workshop. They would be provide the opportunity to assist the GIZ/Paradigm Team in the awareness program for the other pilot wards.

The trainers who have been trained in the activity are expected to repeat the awareness among the target groups, until the compliance is achieved. The funding for this extension will be from NMC. The way forward for replication of the training by trainers will be discussed with NMC. The training will be replicated by NMC.
Annexure – II Location of current compost plant/SLF vis-a-vis City

Source: NMC 2010
Annexure – III Process Flow of Current Municipal Solid Waste Streams in Nashik

[Diagram showing process flow]
Annexure – IV Communication Material for Source Segregation

Dear Nashikians,

NMMC takes this opportunity to thank all the Nashikians for the cooperation extended to us for successful implementation of the door to door collection through Ghaustagadi.

Due to your active participation and cooperation Nashik has achieved and maintained the status of a clean city since 1990 and has become a role model for other Indian cities.

Nashik City generates about 400 tonnes of solid waste every day. To manage this waste, Nashik has already established a state of art waste processing plant at Khat Pindali under the SWM project.

NMMC is now taking a big step to segregate Municipal Solid Waste at SOURCE in compliance with the Municipal Solid Waste Act 30 November 2000. Therefore, I sincerely appeal to every Nashikian to take this step for better solid waste management and hence (environmentally and voluntarily participate in making Nashik green again.

All Nashikians will need to segregate waste in three forms namely Dry waste / Wet waste and Toxic waste in separate bins in their own households / establishments.

In this leaflet NMMC inform you about our collective efforts for keeping the city clean and achieving this goal.

We seek your cooperation to make this initiative a grand success and make the pre-eminent position of Nashik as a pioneering city in India.

Kamal Kishor
Chairman, NMMC

Municipal Solid Waste Management
What’s NEW??

- NMMC introduces collection of segregated waste as an extension of its already successful door to door collection of waste by the Ghaustagadi workers.
- All citizens have to handover the waste separately as Dry waste / Wet waste and Toxic waste to the Ghaustagadi.
- Ghaustagadi workers will keep the segregated waste separately. The waste would be deposited in the Ghaustagadi separately.
- If you are not able to handle the waste to your Ghaustagadi on a particular day then instead of littering it along roadsides or open spaces store it at your home and hand it over to Ghaustagadi the very next day.
- NMMC will convert the wet waste at the processing facility into compost.
- NMMC will recover as much as possible recyclable material from the dry waste; the residues will be disposed off as per the rules.

How To Segregate The Waste??
- Maintain Separate bins for Wet waste /Dry waste / Toxic waste
- Segregated Wet / Biodegradable waste that is vegetable peels, food wastes etc.
- Segregated Dry, recyclable, Non Bio-Degradable such as plastic, paper, metal etc

Why Do We Have To Segregate The Waste??
- Avoid waste and dry waste less value.
- Mixed Waste is very difficult to handle and to segregate further.

Treatment of segregated waste
- Needs less energy
- Reduces burden to the environment
- Improves quality of compost and
- Increases the production of compost and recyclables.
Annexure V: Sources:

1. Municipal Solid Waste Management and Handling Rules (MSW (M&H) Rules), 2000
2. CPHEEO manual, Ministry of Urban Development, Government of India
3. DPR for SWM Nashik 2007
5. Service Level Benchmarking 2010