

4.5 Solid Waste Management

4.5.1 Sources & Quantity of Solid Waste Generated

The Urban Agglomeration generates around 604.2 tons of solid waste every day out of which VMC contributes to 573.2 tons and surrounding municipality contributes towards 31 tons at a per capita generation rate of 600 gms/cap/day. VMC shows a collection efficiency of over 87%, whereas, surrounding municipality shows a collection efficiency of 100%. Apart from this, about 2.76 MT of bio-medical waste is also being generated in the city daily. The bio-medical waste is handled and disposed of separately. The major sources of solid waste generation in the Urban Agglomeration are household domestic waste, commercial establishments, markets, hotels and restaurants, etc. Around 70% of the city's solid waste generated is organic in nature which is in parts given to Excel industries and Sriram industries for manure and power generation. The remaining 30% inorganic waste after extracting the recyclable portion is disposed of through open dumping in railway open dump yard.

4.5.2 Present Practices of Solid Waste Management

Primary Collection

VMC and surrounding areas have 2265 and 240 primary collection points respectively for collecting waste from various generation points. The waste is collected through RCC bins of 0.25 MT capacities each. In addition to this the corporation has supplied 145 tri-cycles, wherein the people will deliver the waste to these rickshaw pullers, who in turn convey it to the collection points. As per the survey, 61% of the HHs use the garbage bins, 10% dump the garbage on the roads while 29% of the HHs have door to door collection arrangement. Households dump the waste directly into the nearest community bin from where it is collected for disposal. Municipal Corporation has handed over the collection of solid waste in hilly areas to private (DWACUA and CMEY) parties in the city. Door to door collection is practised in hilly areas (sanitary division 2, 3, 4, 5, 6, 7, 9, 10, 30, 31, 31A and 32) through private parties who use special baskets for waste collection. The salient features are presented in Table 4.4

Table 4.4 Salient Features of Solid Waste Management

Item	Details-VMC	Mangalagiri town
Estimated Quantity of waste generation, t/ day	573.2 T	31 T
Quantity of waste collected	498 T	31T
Collection Efficiency	87%	100%
Frequency of waste collection	65% once a day	Once a day
	20% once in 2 days	
	4% in every three days	
	11% even exceeds once in a week	
Garbage collection centers	2265	240

Secondary Collection

The waste from the primary collection points are transported by the conservancy workers (ULBs or private) to the secondary collection points and dumper placers through wheel borrows and hand carts. From the secondary collection points, collection vehicles of capacities varying from 6 tons to 1 tons pick up the waste and transport to nearest transfer stations. Half of the city area is privatized for lifting from the collection points (RCC bins) and transportation of the waste. In the other half of the city area, VMC vehicles are used for the purpose of collection, lifting and transportation of the waste.

Disposal

There is no engineered landfill site in Vijayawada Urban Agglomeration. However, the current disposal facility is located at

- Open dumping at Railway Dumping yard – about 150 MT per day is dumped here.
- Dumping at Ajitsingh nagar for treatment of solid waste:
 - Excel Industries – 125 MT per day is being processed for compost.
 - Sriram Energy Systems Pvt. Ltd. – 225 MT per day is being processed for power generation.
 - Bio – Methanation Plant – 20 MT per day of vegetable waste and slaughterhouse waste is processed for Methane Gas and power generation.

Administrative Structure

The Vijayawada Municipal Corporation (VMC) area is divided into three sanitary circles to facilitate efficient administration and delivery of services. The three circles are further divided into 41 sanitary divisions. Each circle is headed by a Sanitary Supervisor and, at division level, it is headed by a sanitary inspector (S.I). On the whole, there are around 46 SIs in VMC including two Malaria Sanitary Inspectors.

Treatment and processing

Generation of Organic Manure Using MSW by Excel Industries Ltd

Excel plant was established in the year 1995-96 for manufacturing organic manure from municipal solid waste. VMC transports around 125 MT/day of garbage to the industry which is converted into organic manure.

The solid waste, unloaded in the premises of the plant, is stacked as heaps. A specific chemical, manufactured by the Excel Industries is sprayed on the heaps to accelerate the bacteriological decomposition, to reduce the volume and to control odour nuisance. These chemicals also decompose plastics and polythenes. The processed heap is sorted manually for removal of glass, stones and then allowed on to the sieves for separation of sand, dust and other inorganic substances. These screened materials are allowed on to the magnetic separators for segregation of iron pieces and the finely screened waste is loaded on the grinders for generation of organic manure.

The compost plant generates 30 to 40 tonnes of organic manure from the raw municipal solid waste which is sold to farmers of several coastal districts in A.P. Turn over of this project is about Rs.1.20 crores/annum. VMC has allotted 3.33 ha of land to Excel industries in Ajitsingh Nagar. Excel Industries pay royalty and land lease rent around Rs.8 lakh per annum to VMC.

Power Generation with MSW by Sriram Energy Systems Limited

Of the 450 MT of waste collected, 225 MT is transported to M/s Sriram Energy Systems Ltd., Hyderabad which came up with a proposal to set up a power generation plant duly converting solid waste into pellets. The solid waste is converted to RDF pellets which are then loaded on to the boiler for burning along with other fuels to generate 6 MW of power per day. The

generated electricity is sent to power grid of APSTRANSCO through transmission lines. The plant pays royalty and land rent to the VMC of about Rs 12 to 15 lakhs per annum.

Key Issues

- Irregular garbage collection in all the areas of the city
- Inefficient collection and disposal
- Street sweeping is confined to only main roads and junctions of the city
- Inadequate machinery and manpower
- Inadequate sweeping staff in electoral wards 1 and 12
- Inadequate community bins in wards 2, 4, 6, 10, 11, 12, 14, 24, 27, 29, 33, 35, 37, 38 and 49
- Establishment of Sri Ram Energy Plant has led to increase in noise pollution, air pollution, mosquito problem and foul smell in the surrounding areas of ward 28
- Disposal of waste not adhering to SWM rules 2000