



Clean visakha green visakha

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Introduction

Visakhapatnam is a port city on the southeast coast of India and is often called as “The Jewel of the East Coast”. With a population of 20,91,811 and occupying 681.96 sq.km(proposed), it is the second largest city in the state of Andhra Pradesh and the third largest city on the east coast of India after Chennai and Kolkata. The Vizag(Visakhapatnam) Municipality was set up as early as in 1858. The Vizag Municipality was formed in order to full fill the basic infrastructural needs of the people of the city and was converted into Municipal Corporation in 1979. With the inclusion of nearby municipalities and villages, the Greater Visakhapatnam Municipal Corporation was formed in the year 2005. The Public Health and Sanitation Department of GVMC is responsible for collection, transportation and disposal of solid waste generated in Visakhapatnam City. Visakhapatnam was adjudged as the 3rd Cleanest City in the Swachh Survekshan Survey 2017.

Description of solid waste

The waste collected from the GVMC area were segregated into dry waste, wet waste, bio-medical waste and e-waste.

How was it done?

Dry and wet waste management

a. Source segregation and door to door collection

Primary collection of waste from the houses (door to door waste collection) is practiced in 100% households with the help of pushcarts that are deployed across all the micro pockets (350 households). There are nearly 2000 pushcarts in operation across the city for collecting the waste. The segregated garbage collected is transported to the transfer stations and then to the processing plants with the help of a fleet of 346 vehicles.

There are almost 950 dumper bins and 1500 compactor bins placed all around the city to collect the waste.

b. Sanitation - Road Sweeping and Drain Cleaning

There are around 5239 sanitary workers involved in regular sweeping and drain cleaning and their time of operation is from 6.00 A.M to 11.00 A.M and from 2.00 P.M to 5.00 P.M. For the night sweeping of main roads, about 802 workers are appointed and their timings are from 10.00 P.M to 5.00 A.M.

c. Transportation and Storage of Waste

Using tricycles/push carts, wastes from the households are collected and tip the waste in metal dumper bins and compactors. Transportation of waste is done partly by mechanized Dumper placers and partly through open trucks. Dumper placer vehicles lift the metal dumper bins, transport the waste to the transfer station. At the transfer station, 14 ton capacity Taurus Tipper vehicles collect the waste from dumper vehicles and transfer it to the processing plants. Wet waste collected are processed at Windrows composting and Vermi composting plants at locations namely MSF-1, MSF-5, MSF-6, KRM Colony, Bheemili. The dry waste collected are processed at the Recycling centers at KRM Colony, MSF-3, Nadupuru, Anakapalli and Bheemili. The Inert waste and unsegregated waste is dumped into the dumping yard at Kapuluppada. The following table lists the assets owned by GVMC for the purpose of collection and transportation of wastes.

Table 1. Assets owned by GVMC for the collection and transportation of wastes

Material		Machinery	
Pushcarts	: 2000 Nos.	Mini Tippers (3.5 CMT)	: 44 Nos.
1 Tub Wheel Barrows	: 323 Nos.	Big Tippers (10 MTS)	: 33 Nos.
2 Tub Wheel Barrows	: 158 Nos.	JCB's	: 19 Nos.
Compactor bins	: 1500 Nos.	Tractors	: 16 Nos.
Dumper Bins	: 950 Nos.	Sweeping Machine	: 01 Nos.
Tata Aces	: 144 Nos.	Small Compactors	: 50 Nos.
Bob-Cat machine	: 14Nos.	Big Compactors	: 20 Nos.

The wastes from fish/meat/poultry/vegetable markets and that from the commercial areas are collected separately by corporation vehicles. The waste generated from the cleaning of the roads, footpaths, and open places, collection of sweeping and other solid wastes, transport of the solid wastes and disposal at the landfill sites are organized by the Public Health Section of GVMC.

d. Beach Cleaning

All the beaches coming under GVMC (Greater Visakhapatnam Municipal Corporation) has contractual arrangement for regular collection of litter either by employing people

to collect litter manually during (10 - 12pm) and early mornings or by employing Beach sand cleaning machine in the morning hours. Dust bins are also made available on the beach road.

Bio-Medical Waste Management

- Bio Medical Waste from Hospitals are being collected by private agency by name M/s.Maridi Eco and treated as per the norms of Pollution Control Board.
- GVMC has given 5 acres of land at Kapuluppada Dumping Yard to install incineration unit. Land leased for installing incineration unit for 33 years @ Rs.25000/- per annum.
- In GVMC limits nearly 320 Health Care Institutions covered nearly 5,200 beds.

Total Biomedical waste generation	850kg / per day
Incinerator	250kg/per day
Autoclave	10kg / per hour
Shredder	50kg / per hour
E.T.P	10 tons

The Impact

After the huge devastation caused by Cyclone Hudhud in October 2014 GVMC worked hard to bring back the city to its present glory. Due to the sincere efforts of dedicated staff, Visakhapatnam had a 360° transformation from the 205th rank in 2014-15 to 3rd rank in the 2017 SwachhSurvekshan Survey, which also enabled it to enter the premium league of 20 Smart Cities

Year	Rank
2009 - 10	91
2014 - 15	205
2015 - 16	5
2016-17	3

Visakhapatnam district has achieved the distinction of being Number One in the state in terms of efficient garbage disposal. In April 2016, the municipal staff aggregated about 33,727 metric tonnes (99.96 per cent) of garbage in Visakhapatnam district against the target of 33,741 metric tonnes.

Adoption of this method by others

Many other cities have approached GVMC seeking guidance as to how to implement such a waste management system, as Vishakapatnam has been considered as the model city. In this regard several workshops were also conducted by GVMC. About 27 urban local bodies and 50 NGOs from various places attended the workshop concentrating on the best practices performed by the Municipal Corporation to make the city one of the leading model cities in the country.

Economic aspects

This project was funded by, Directorate of Municipal Administration, Government of Andhra Pradesh, The Ministry for Urban Development AMRUT Scheme 'Atal Mission for Rejuvenation and Urban Transformation, Smart City challenge and CSR funds of the Private firms.

A small user charge was also collected from the public

Corporation resolution on user charges collection

- Rs.15/- Minimum per Month
- Rs.20/- Shared Independent Residence
- Rs.30/- Posh Residence & Small Shops

Bulk garbage collection

- Rs.100/- per ton

Conclusion

- GVMC is planning to install a recycling plant for the processing and demolition (C&D) of waste. It is a move which is expected to reduce the load at landfills and massive dumping of construction debris in and around the city.
- As per the projections, the quantum of household garbage is likely to double in the next 10 years and alternatives, such as waste-to-energy plants, have to be found. A GVMC official said, "We have already entered into a MoU with the Jindal Group to establish a 15 MW waste-to-energy plant, which will further improve the city's cleanliness and sound solid waste management which is currently under construction."



- Taking Swacch Bharat a step forward, Vizag city is soon going to get Andhra Pradesh's first authorized e-waste collection and handling unit for safe disposal of electronic junk or waste. The eco bins will be provided free of cost by private company and installed in colonies, institutes and industries.
- All the apartments, gated communities, and industries (that generate waste on a large scale) separate dustbins will be kept which are catered to the respective categories. Those who fail to follow the same will be charged with a fine ranging from Rs. 100 to Rs. 500. Also, gated communities and large-scale organizations must mandatorily make arrangements to prepare compost.

