

The usual approach to the carry out Solid Waste Management in the Vadodara City is as below:

- **Integration of SWM with other activities viz. sewerage, water supply, health care, engineering departments, etc.**
- **Emphasis was laid on Complaint redressal system, Grievance redressal system, Litter prevention system, Slum Upgradation & Rehabilitation, Field work, Daily meeting in this regard, etc.**
- **Financial commitment: Equipment, Vehicles, communication.**
- **Involving citizens: Positive involvement, penalizing truant, creating public awareness.**

Present Status:

- Quantity of M.S.W. generation : 750.00 M.T. Per Day.
- Collection and transportation : 730.00 M.T. per day (Yearly average)
- System of collection and transportation:

a) Primary collection & its transportation:-

- Sweeping during day and night time.
- Container lifting.
- Door to Door Garbage collection vehicles with GPS System.
- Night scraping & brushing activity

b) Secondary transportation:-

- Waste transportation is being carried out with the help of dumper trucks, container lifting vehicles, refuse compactors and transportation vehicles. The collected waste is transported from the storage receptacles to the landfill site in dumper placer and closed dumper trucks. A dumper truck is fully covered with plastic/tarpaulin sheets during transportation. In view of the present city population and area, the total number of containers required for collecting city waste should be around 650. Since VMC has commenced door-to-door waste collection, the collected waste is being transported directly to the compost plant/disposal site. The existing 261 containers are/would be sufficient for city waste storage.

c) Disposal of M.S.W.:-

- Vadodara Municipal Corporation has also developed its second processing plant adjoining to the landfill cell phase I site of 300 MT/day (expandable up to 700 TPD) capacity based on Integrated Processing Technology with the intention to minimize waste load on the landfill site and to increase the life span of the landfill site thereby. The work is allotted to M/s. Hanjer Biotech Energies Pvt. Ltd. on PPP basis. **The Integrated Processing facility is consisting of composting of biodegradable matter, pelletization, recovery of recyclables such as metals, rubber, plastics etc, RDF and manufacturing of sand and eco bricks. Only 20% of the total incoming waste is**

going for the landfilling by this technology. The processing plant is operationalized from February-2010. The tenure of the agreement is of 10 years which will expire in 2018. The capacity of plant is now expanded to 500 TPD

Coming up:-

- 1) The first waste processing facility (compost plant) is located at Atladara STP premises running on BOOT basis. The capacity of this plant for treating un-segregated solid waste is 250 TPD. The biodegradable waste is segregated and composted in the plant and the reject is transported to the secured sanitary landfill site. Solid waste is processed by Mechanical Aerobic Windrow composting method. Compost/Manure is manufactured from this processed solid waste. At present with reference to the change in characteristics of waste and with intention to minimize processing reject waste to the secured sanitary landfill, revamping and upgrading the treatment process by implementing advanced technology and adopting profit sharing model is carried out which will result in the production of combination of easily marketable by products including green energy besides compost, resulting in enhancing the viability of the project and consequently its sustainability on long term basis. The tenure of the agreement is of 20 years which will expire in 2024.
- 2) Construction of Elevated Transfer Station for Centralized collection of Municipal Solid Waste under JnNURM Scheme is under progress.
- 3) Municipal Solid Waste treatment facility:-
 - a) The first waste processing facility of Atladara is under upgradation on Waste to Energy Concept.
 - b) The second processing plant adjoining to the landfill cell phase I site of 300 MT/day (expandable up to 700 TPD) capacity based on Integrated Processing Technology with the intention to minimize waste load on the landfill site and to increase the life span of the landfill site thereby
- 4) Sanitary land fill cell: - The Sanitary Land Fill cell (SLF) of capacity 4 Lakh Metric Tonns is in use and expected life of the same is 5 to 7 years adjacent to the processing facility near Jambuva.

Door to Door collection of garbage:

- As per the Municipal Solid Waste (Management and Handling) Rules 2000, notified by the Ministry of Environment and Forests, Government of India, Vadodara Municipal Corporation has introduced Door-to-Door Garbage collection system from March-2006. The garbage from residential and commercial area is directly collected from the door-step by specially designed closed body vehicles. All four zones of the city are covered by Door-to-Door Garbage collection system. More than 50% of the total waste of the city is collected by this system. The Door to Door Garbage Collection system vehicles are equipped with GPS monitoring system from November, 2010.

Modernisation of Refuse Transfer Station

No. of Transfer	1 (Elevated Transfer Station concept is approved from the standing committee of
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Station	VMSS and is under execution stage)
Facility at Transfer Station	All the primary collecting vehicles from Door to Door Garbage collection and sweeping activity will reach to transfer station from where secondary transportation vehicles are loaded for the purpose of transferring it to disposal site.
Concept of Modern transfer station	<ul style="list-style-type: none"> o Primary collecting vehicles sent to the Elevated Platform through Ramp. o Chutes are provided at Elevated Platform to receive the MSW from where it will be unloaded by primary collection vehicles. o Secondary transport vehicle is kept underneath the chutes. o MSW unloaded from primary collection vehicles will be transferred into the closed container provided with compactor system. o The chute portion of transfer station is covered on the top with FRP sheet and whole structure is kept closed with concrete louvered blocks. o Transportation of container will be carried out on Hook lifting vehicles. o Containers will be fully closed with leak proof door opening system
Results Achieved	<ul style="list-style-type: none"> o MSW received through closed vehicles will be dropped to closed containers without secondary handling. o Covered leak proof container prevents spillage of garbage on the road. o No foul odour, as transfer station is semi-closed and transport containers are fully closed. o No MSW storage, permanently or temporary, at transfer station as it will be directly transferred to containers without secondary handling, therefore no flies nuisance & animals entry is restricted. o Separate leachate collecting system is provided in the planning.

Treatment and final disposal of Bio Medical Waste:

The Indian Medical Association (IMA) is dealing with bio-medical waste in Vadodara. Approximately, two per cent of the total waste generated is biomedical waste which is handled by an incinerator, auto calving and waste shredding facility. About 800 hospitals and private clinics have been registered under this facility. The Gujarat Pollution Control Board monitors the disposal of the biomedical waste.