Chapter-IV

Segregation, Collection and Transportation of Municipal Solid Waste

4.1 Segregation

The Solid Waste Management Rules, 2016 define segregation as sorting and separate storage of various components of Solid Waste namely biodegradable wastes including agriculture and dairy waste, non-biodegradable wastes including recyclable waste, non-recyclable combustible waste, sanitary waste and non-recyclable inert waste, Domestic Hazardous Waste (DHW). Segregation shall take place at different levels such as source/household level; TS[104] or centralised sorting facility; waste processing site and landfill site to segregate waste into different streams such as dry recyclables, biodegradable waste, hazardous waste, *etc.*, to minimise waste and ensure reduction in landfill space for final disposal besides ensuring appropriate processing. Audit observed the following in the test-checked ULBs on segregation of waste.

4.1.1 Segregation of waste at source/household level

Segregating Solid Waste at source ensures that waste is less contaminated and can be collected and transported for further processing. Section 2.2.1.1 of MSWM, Manual, 2016 (Part-II) stipulates that ULBs must accord highest priority for segregation of waste at source. Segregation of Solid Waste is required for separating recyclable material, organic waste for processing and residual inert material for disposal.

4.1.1.1 Issue of bins for source segregation

Section 2.2.1.2.1 of MSWM Manual, 2016 (Part-II) stipulates that the household level, dry waste, wet waste, and Domestic Hazardous Waste[105] should be stored in separate garbage bins, of appropriate capacity and colour[106]. SLB Handbook issued by MoUD, GoI (*Para 2.3.3*) mandates that waste segregated at the source is not to be mixed but again is to be transported through the entire chain in a segregated manner.

In GHMC: The State Government accorded (July 2015)[107] administrative sanction for ₹41.40 crore towards procurement of 44,04,568 domestic garbage bins of 12 liters capacity each for wet and dry MSW segregation at household level covering 19,57,585 households as per Samagra Kutumba Survey[108], with provision for 12.5 *per cent* extra bins as standby for additional requirements.

Greater Hyderabad Municipal Corporation supplied 44,04,568 bins of 12 liters capacity during 2015-16 to 19,57,585 households by incurring an expenditure of ₹28.93 crore.

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[104] TS is a permanent set up in adequate land space with required infrastructure facilities to handle higher load of MSW and is a centralised secondary collection point

[105] Sub-rule 17 of Rule 3 of SWM Rules 2016 defines Domestic Hazardous Waste as discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge, *etc.*, generated at the household level

[106] Blue for dry waste, Green for wet waste and Black for DHW as per SWM Rules, 2016

[107] G.O.Ms.No.90 dated 22 July 2015 of MA&UD (F1) Department

[108] A comprehensive integrated household survey conducted in Telangana on 19 August 2014

Audit observed that MSW from households was being transferred to primary collection vehicles by the waste collectors/waste pickers in a mixed manner and was being transported to intermediate storage facilities[109] like TS, SCTP[110] and Refuse Compactor Vehicles[111] (RCVs). The TS, SCTPs and RCVs do not have provision for storing dry and wet MSW separately and hence mixed waste was being transported to Jawaharnagar T&D facility.

Detailed Audit observations on JPV of TS, SCTP in selected Zones of GHMC are discussed in *Para 4.3.4.1* and on DHW segregation are discussed in the succeeding paragraph.

Greater Hyderabad Municipal Corporation informed that though source segregation was being done to a certain extent, the MSW was being transported in a mixed manner to Jawaharnagar T&D facility. Hence, it was stated that there was no segregation of MSW at TS and SCTP and also segregation at source was not considered. In the Annual Report of TSPCB on SWM for the year 2021-22, it was mentioned that only 63 *per cent* households in the State are practicing source segregation.

Thus, despite incurring an expenditure of ₹28.93 crore on procurement and supply of bins for source segregation of MSW, the desired objective was not achieved.

The State Government replied (September 2023) that the purpose of giving twin bins was to sensitise and motivate the citizen towards source segregation and the same was achieved to certain extent.

In test-checked other 14 ULBs: The details of supply of bins for household source segregation of MSW and community/litter bins for placement at strategic points for segregation of MSW are given in **Appendix-4.1** and **Appendix-4.2** respectively.

Audit observed during JPV of the dumpsites of test-checked ULBs that Solid Waste was transported to the dumpsites without segregation and in a mixed manner (*Para 5.3.3 refers* and *also Table-5.6*). Further, in Khammam (**Exhibit No.1 (A)**) and Mahabubnagar ULBs (**Exhibit No.1 (B)**), it was noticed that (i) mixed waste was kept in bins in front of houses for collection by waste collectors, (ii) mixed waste was placed by the households in vehicles due to lack of compartments for wet and dry waste and (iii) vehicles were carrying mixed waste along with silt and transported to the dumpsite.

Hence, despite the issue of bins for source segregation and placement of community/litter bins at strategic collection points, the objective of source segregation was not achieved, as the MSW collected was either transported in vehicles in a mixed manner or dumped in the dumpsites in a mixed manner without segregation. Thus, despite incurring an expenditure of ₹3.37 crore[112] on procurement and supply of bins for source segregation of MSW, the desired objective was not achieved.

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[109] A facility created to receive Solid Waste from collection areas and transport in bulk in covered vehicles or containers to final disposal point (dumping yard/landfill site)

[110] SCTP is a mini–TS set up in limited space for decentralised secondary collection to minimise the load on TS. Minimum two Portable Compactor Cabins (PCCs) are placed in the platforms of SCTPs and MSW from the primary collection vehicles are transferred to the PCCs. A hook mounted vehicle carries the MSW loaded PCCs directly to the Jawaharnagar T&D facility

[111] Refuse Compactor Vehicle is a mobile secondary collection vehicle placed at suitable places to reduce the load on TS and SCTPs. The MSW transferred to RCVs from primary collection vehicles get compacted in the RCVs and MSW is directly transported to Jawaharnagar T&D facility by the RCVs

[112] ₹2.87 crore towards procurement of bins for household source segregation (**Appendix-4.1**) and ₹50.31 lakh towards procurement of community/litter bins for placement at strategic points for segregation of MSW (**Appendix-4.2**)

Exhibit No.1 (A), Para No.4.1.1.1

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Khammam ULB-Mixed waste was kept in bins in front of houses for collection by waste collectors (JPV dated 20 March 2023)</td><td>Khammam ULB-Mixed waste was placed by the households in vehicles due to lack of partition provision for wet and dry waste (JPV dated 20 March 2023)</td></tr>
<tr><td colspan="2"> 
Khammam ULB-Vehicles were transporting mixed waste along with silt to the dumpsite (JPV dated 20 March 2023)</td></tr>
</table>

Exhibit No.1 (B), Para No.4.1.1.1

	
	
Mahabubnagar ULB-Mixed waste was kept in bins in front of houses for collection by waste collectors (JPV dated 24 March 2023)	**Mahabubnagar ULB- MSW collection vehicles overloaded with mixed waste (JPV dated 24 March 2023)**

4.1.1.2 Non-segregation of Domestic Hazardous Waste and non-establishment of separate deposition centre for Domestic Hazardous Waste

Rule 15(i) of SWM Rules 2016 stipulates that ULBs are required to establish waste deposition centres for DHW and give directions to waste generator to deposit DHW at the centres for its safe disposal. Further, Rule 15(j) stipulates that the ULBs should ensure safe storage and transportation of the DHW to the hazardous waste disposal facility or as may be directed by the State Pollution Control Board or the Pollution Control Committee.

Section 2.2.1.4 of MSWM Manual, 2016 (Part-II) stipulates that ULBs should establish a minimum of one domestic hazardous deposition centre per ward or per zone, for ease of deposition of the users.

In GHMC: It was stated that quantity of DHW was minimal and it was collected from the households along with Solid Waste. It was also stated that primary collection vehicles are provided with separate collection boxes, in black colour for DHW collection and that it was being disposed separately in the existing Jawaharnagar landfill site.

Audit observed that there were no separate deposition centres for disposal of DHW and also black box was not attached to the primary collection vehicles (**Exhibit No.1 (C)**).

In test-checked other 14 ULBs: Except for Peerzadiguda ULB, DHW bins were not procured in other 13 ULBs for household source segregation of DHW (*Appendix-4.1 refers*). Documentary evidence of having conducted IEC activities for awareness of citizens on the segregation of domestic hazardous waste was not produced to Audit, except Khammam (**Exhibit No.1 (D)**) and Mahabubnagar ULBs. Further, domestic hazardous deposition centre per ward or per zone was not established in all the test-checked other 14

ULBs. It was observed during JPV of dumpsite in Khammam ULB that DHW was mixed with MSW and dumped at dumpsite (**Exhibit No.1 (E)**). Despite, procurement and supply of separate bins for DHW segregation, mixed waste was being transported from Peerzadiguda ULB to the Jawaharnagar T&D facility.

Telangana State Pollution Control Board did not issue necessary directions to the ULBs for storage and transportation of the DHW though mandated as per SWM Rules, 2016. Hence, due to non-establishment of domestic hazardous deposition centres per ward or per zone, segregation of DHW was found deficient in all the test-checked 14 ULBs.

The State Government replied (November 2023) that –

- In Bollaram ULB, mechanism for processing DHW was put in place
- In Chandur, Haliya, Khammam, Mahabubnagar, Mancherial, Nagaram and Zaheerabad the procurement of DHW bins would be made.

Exhibit No.1 (C), Para No.4.1.1.2

Peoples Plaza SCTP Station in GHMC-Black colour box was not attached to the primary collection vehicles for collecting DHW separately though stated by GHMC as attached to the collection vehicles (JPV dated 16 December 2022)

Exhibit No. 1 (D), Para No.4.1.1.2

Khammam ULB-Awareness programme on segregation of MSW (evidence provided by Khammam ULB)

Khammam ULB- Awareness programme on segregation of MSW (evidence provided by Khammam ULB)

Exhibit No. 1 (E), Para No.4.1.1.2

Khammam ULB-DHW (tube lights) was mixed with MSW and dumped at dumpsite (JPV dated 20 March 2023)

4.1.1.3 Non-segregation of Sanitary waste

Section 2.2.1.1 of MSWM Manual, 2016 (Part-II) stipulates that sanitary waste[113] generated by households was to be wrapped in old newspaper/pouches provided by the manufacturers and handed over to the waste collectors separately. Once collected separately, it should be sent either directly to the biomedical waste incineration facility or to Material Recovery Facility (MRF)[114] for collection and then sending to the biomedical waste incinerator when sufficient quantities are collected, as per the arrangements of the city.

The State Government had not notified and publicised the list of items classified as sanitary waste to be segregated at source for implementation by the ULBs.

Audit observed that separate collection centres with incinerators for disposing sanitary waste were not established in any of the test-checked ULBs including GHMC and segregation of sanitary waste was not practiced.

The State Government replied (November 2023) that in seven ULBs[115] the practice of segregating Sanitary waste was initiated. It was also stated that in Kothagudem ULB Sanitary waste collected was disposed with incinerators at remediation plant, but no documentary evidence was furnished to Audit.

4.1.2 Segregation of waste for sorting of recyclable materials

Section 15 (h) of SWM Rules, 2016 stipulates that the local authorities shall set up MRFs or secondary storage facilities for sorting of recyclable materials.

Dry Resource Collection Centers are a form of MRFs, which are established in the ULBs to facilitate segregation, sorting and recovery of recyclables[116] from various components of MSW. Audit observations on DRCCs are as follows:

[113] Waste comprising used diapers, sanitary towels or napkins, tampons, incontinence sheets and any other similar waste

[114] SWM Rules, 2016 defines "Materials Recovery Facility" as a facility where non-compostable Solid Waste can be temporarily stored by the local body or any other entity as mentioned in the Rules or any person or agency authorised by any of them to facilitate segregation, sorting and recovery of recyclables from various components of waste by authorised informal sector of waste pickers, informal recyclers or any other work force engaged by the local body or entity mentioned in the Rules for the purpose, before the waste is delivered or taken up for its processing or disposal

[115] Chandur, Haliya, Khammam, Mahabubnagar, Mancherial, Nagaram and Peerzadiguda

[116] Cardboard boxes, plastic bottles, glass bottles, mixed plastic, books, waste papers, iron/metal items, used slippers, *etc.*

In GHMC: GHMC informed (June 2023) that 14 DRCCs were established for recovery of recyclable materials at TS/SCTP.

In GHMC area, 17 TS and 28 SCTPs were established as intermediate storage facilities for MSW collection from primary collection vehicles (*Para 4.3.4 refers*). Audit observed from the data on establishment of DRCCs furnished by GHMC that out of 17 TS and 28 SCTPs (*Appendix-4.6 refers*), DRCCs were established in 13 TS and in only one SCTP at Auto Nagar, covering 89 Wards out of 150 Wards in GHMC limits.

When the reasons for non-establishment of DRCCs in the remaining 4 TS and 27 SCTPs covering 61 Wards was called for, the State Government replied (September 2023) that due to space constraints, the DRCCs were not established in other TS/SCTPs. However, it was stated that the waste collectors operating SATs are recovering the material during door-to-door collection of waste and are depositing the recyclables at nearest DRCC/ directly selling to recyclers.

In test-checked other 14 ULBs: DRCCs were established in ten ULBs[117] at dumpsites, except Chandur and Wardhannapet, while in Haliya ULB, construction of DRCC was under progress (November 2022). Audit observed during JPV of dumpsite in Yellareddy ULB that DRCC was not put to use (January 2023), resulting in mixed waste being deposited in the dumpsite **(Exhibit No.2 (A)).** In Bollaram ULB, the existing DRCC was not in operation due to a fire accident and no measures had been taken by the ULB to renovate/reconstruct the DRCC.

The Dry Resource Collection Centres in the test-checked ULBs are run by SHGs[118], private agencies[119] (**Exhibit No.2 (B)**) on non-revenue sharing basis and also by ULBs themselves[120], in the existing dumpsites. However, official circular/orders for permitting these SHGs and private agencies to run the DRCCs in dumpsites of ULBs were not furnished to Audit. The waste collectors/waste pickers segregate/sort recyclable items **(Exhibit No.2 (C))** from the MSW and hand them over to the operators of DRCCs **(Exhibit No.2 (D))** and collect amount as per the price list **(Exhibit No.2 (E))** for the sorted recyclable items.

The recyclable items collected from the waste collectors/waste pickers are in turn sold in the wholesale market/scrap dealers by the SHGs/private agencies/ULBs. This methodology of segregation, sorting and recovery of recyclables at DRCCs was one of the waste processing methods to reduce to some extent the burden on final MSW disposed at the dumpsites.

[117] Bollaram, Kalwakurthy, Khammam, Khanapur, Kothagudem, Mahabubnagar, Mancherial, Nagaram, Peerzadiguda and Zaheerabad ULBs
[118] In Khammam, Mahabubnagar and Zaheerabad ULBs
[119] In Kothagudem, Nagaram and Peerzadiguda ULBs
[120] In Kalwakurthy, Khanapur. and Mancherial ULBs

Exhibits: Para No.4.1.2

	
Exhibit No. 2 (A) Yellareddy ULB-DRCC not put to use (JPV dated 12 January 2023)	**Exhibit No. 2 (A) Yellareddy ULB-Mixed waste dumped in dumpsite due to non-operation of DRCC (JPV dated 18 October 2022)**

Exhibits: Para No.4.1.2

		
Exhibit No. 2(B): Khammam DRCC run by private agency Ecotech Enviro Solutions (JPV dated 20 March 2023)	**Exhibit No2 (C): Mahabubnagar ULB-Plastic and Glass were segregated from MSW at DRCC in dumpsite (JPV dated 24 March 2023)**	
		
Exhibit No. 2(D): Mahabubnagar ULB-Waste collectors/waste pickers handing over the segregated/sorted recyclable items to DRCCs (JPV dated 24 March 2023)	**Exhibit No. 2(E): Mahbubnagar ULB-Price list board for recyclable items on display in DRCC (JPV dated 13 December 2022)**	

4.2 Collection

Section 2.3.2 of MSWM Manual, 2016 (Part-II) stipulates that collection of segregated municipal Solid Waste is an essential step in MSWM. Inefficient waste collection services have an impact on public health and on the aesthetics of towns and cities. Audit observed the following in collection of MSW.

4.2.1 Inadequate collection of waste generated

The quantum of waste generated and collected during the period 2017-18 to 2021-22 in the State, GHMC and in the test-checked other 14 ULBs is shown in **Table-4.1**.

Table-4.1: Statement showing the status of quantum of waste generated and collected in the State, GHMC and in the test-checked other 14 ULBs during 2017-22

(in TPD)

Year	State			GHMC			Test-checked other 14 ULBs		
	Generated	Collected	Uncollected	Generated	Collected	Uncollected	Generated	Collected	Uncollected
2017-18	7,871	7,814	57	4,864	4,864	0	337	308	29
2018-19	8,497	8,360	137	5,298	5,298	0	382	345	37
2019-20	9,285	9,270	15	5,799	5,799	0	437	414	23
2020-21	9,965	9,965	0	5,668	5,668	0	494	477	17
2021-22	11,057	11,057	0	6,166	6,166	0	538	525	13
Total	**46,675**	**46,466**	**209**	**27,795**	**27,795**	**0**	**2,188**	**2,069**	**119**

Source: Annual Reports on SWM submitted by TSPCB to CPCB. Information furnished by GHMC and test-checked other 14 ULBs

It could be observed from the **Table-4.1** that there was 100 *per cent* collection of generated waste in GHMC during 2017-22. However, in the absence of weighbridge at all the TS/SCTPs, the quantity of waste collected cannot be accurately known.

In test-checked other 14 ULBs: Audit observed that there were gaps in generation and collection of MSW during the years 2017-22 in six ULBs[121] leading to uncollected MSW (*Appendix-2.1 refers*). Further, it is seen that out of 14 ULBs test-checked, in 12 ULBs weighbridges are not installed at the dumpyard and in the absence of weighbridges, correctness of quantity of waste collected and shown in the records cannot be ensured.

It can be observed from **Table-4.1** above that there were discrepancies in the data on uncollected MSW which was included in the TSPCB Annual Reports on SWM *vis-à-vis* the data furnished by the 14 test-checked ULBs for the years 2019-20 to 2021-22.

It is recommended that TSPCB should reconcile the data on Municipal Solid Waste with the figures available with the ULBs before it is incorporated in the Annual Report on SWM.

The State Government accepted (November 2023) that there was inadequate collection of MSW due to shortage of vehicles in Mahabubnagar and Wardhannapet ULBs. Further, replied that 100 *per cent* collection of MSW was being done in Chandur and Haliya ULBs. Documentary evidence for 100 *per cent* MSW collection, however, was not furnished though stated as enclosed to their reply.

(a) Inadequate coverage of Wards in door-to-door collection of MSW in Wardhannapet ULB: It was observed from the information on door-to-door collection of waste during 2017-18 to 2021-22 furnished by the test-checked 14 ULBs that in Wardhannapet ULB (constituted in August 2018), door to door collection of waste was not fully done in the wards during the years 2018-22 as detailed in the **Table-4.2**.

[121] Chandur, Haliya, Kalwakurthy, Khammam, Mahabubnagar and Wardhannapet

Table-4.2: Inadequate coverage of wards in door-to-door collection of waste in Wardhannapet

Year	No. of wards in the ULB	No. of wards actually covered in door-to-door collection of MSW	No. of wards not covered in door-to-door collection of MSW
2018-19	12	3	9
2019-20	12	6	6
2020-21	12	9	3
2021-22	12	10	2

Source: Information furnished by Wardhannapet ULB

(b) Inadequate coverage of Hotels, Restaurants, Shops *etc.*, in door-to-door collection of MSW in Bollaram and Yellareddy ULBs: Audit observed that in two ULBs (Bollaram and Yellareddy) there was also inadequate coverage in door-to-door collection of waste from Hotels, Restaurants, Shops, *etc.*, during 2019-22 as detailed in **Table-4.3**

Table-4.3: Inadequate coverage of Hotels, Restaurants, Shops, *etc.*, in door-to-door collection of waste in Bollaram and Yellareddy

Description	Bollaram			Yellareddy		
	2019-20	2020-21	2021-22	2019-20	2020-21	2021-22
Number Hotels, Restaurants, Shops *etc.*, in the ULB	182	196	215	252	252	252
Number of Hotels, Restaurants, Shops *etc.*, actually covered	15	22	29	203	203	203
Number of Hotels, Restaurants, Shops *etc.*, not covered	167	174	186	49	49	49

Source: Information furnished by Bollaram and Yellareddy ULBs

(c) Assessment of vehicles requirement: Section 2.3.5 of MSWM Manual, 2016 (Part-II) stipulates that the specific requirement for equipment or vehicles should be calculated based on waste generation projections of the city (at least for the coming 5 years). The details of vehicles available in the test-checked 14 ULBs are given in **Appendix-4.3**. Details of vehicles available with three ULBs (Bollaram, Wardhannapet and Yellareddy), where there was inadequate door-to-door collection of MSW during 2017-22 are given in **Table-4.4**.

Table-4.4: Details of vehicles utilised for SWM activities by the three test-checked ULBs along with MSW collected during 2017-18 to 2021-22

Sl. No	Name of the ULB	MSW collected during 2017-22 (in MT)	Type of vehicles available	No. of Vehicles available for primary collection (Autos and Tractors)
1.	Bollaram	17,520	Tractors-2 Sewer- cum- Jetting Machine-1 Autos-12 , JCB-1, Sweeping Machine-1	14
2.	Wardhannapet	20,750	Autos-4, Tractors-1	5
3.	Yellareddy	4,549	Autos-5, Tractors-2	7

Source: Information furnished by the test-checked three ULBs

From the above, it is noticed that no uniform policy was followed for assessing the requirement for vehicles. The ULBs need to assess the requirement of vehicles for the management of solid waste.

4.2.2 Street sweeping/street cleaning

Street cleaning is one of the primary services rendered by municipal authorities to ensure clean and hygienic urban conditions. Section 2.4.2 of MSWM Manual, 2016 (Part-II) stipulates that it is necessary to have a well-planned, time-bound daily system for street sweeping including adequate staffing and equipment.

In GHMC: GHMC informed that a total road length of 9,013 Km spread in 150 wards in 30 Circles is being covered on a daily basis.

In test-checked other 14 ULBs: One ULB (Yellareddy) did not furnish to Audit, data on street sweeping. Audit observed in the remaining test-checked other 13 ULBs that out of 2,685.9 km of road, ULBs covered 1,019 km of road in daily street sweeping and did not carry out street sweeping of 1,666.9 km (62 *per cent*) on daily basis **(Appendix-4.4**). In seven ULBs[122], the non-coverage of roads for daily sweeping was more than 50 *per cent*.

4.2.3 Personal Protection Equipment

Rule 15 (zd) of SWM Rules, 2016 stipulates that ULBs shall ensure that the operator of a facility provides Personal Protection Equipment (PPE) including uniforms, fluorescent jackets, hand gloves, raincoats, appropriate footwear and masks to all workers handling Solid Waste and the same are used by workforce. Audit observed the following on utilisation of PPE kits in the test-checked ULBs:

In GHMC: It was observed from the data furnished by GHMC that PPE kits excluding uniforms were provided to the workforce of 20,775 in 2021-22 handling MSW.

In test-checked other 14 ULBs: The 14 test-checked ULBs furnished information to Audit stating that PPE kits were provided to the workforce engaged in waste handling. However, Audit observed during JPV in Haliya, Khammam and Mahabubnagar ULBs that MSW was handled and transported in vehicles by the workforce without wearing PPE kits (**Exhibit No.3**). Further, during JPV of the dumpsites in six ULBs[123], Audit pointed out that the workforce was handling MSW without wearing PPE kits.

The Urban Local Bodies replied that the workforce handling MSW were provided with PPE kits and that some of them are not wearing them. The ULBs stated that wearing of PPE kits by the workforce would be ensured henceforth.

Non-utilisation of PPE is risky and may lead to serious health hazards. Hence, the ULBs need to take necessary steps to ensure utilisation of PPE by the workforce.

Further, the SAT drivers involved in handling MSW are prone to health hazards, health check-ups and vaccinations are required to be provided to them against preventive diseases.

Greater Hyderabad Municipal Corporation replied (May 2023) that no health check-ups were conducted and no vaccinations were provided to SAT drivers except COVID-19 vaccination.

[122] Khammam, Khanapur, Kothagudem, Mancherial, Nagaram, Wardhannapet and Zaheerabad
[123] Chandur, Khammam, Kothagudem, Mancherial, Nagaram and Peerzadiguda

Exhibit No. 3, Para No.4.2.3
Handling of MSW by workforce without PPE kits

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Haliya ULB (JPV dated 10 January 2023)</td><td>Mahabubnagar ULB (JPV dated 24 March 2023)</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Khammam ULB (JPV dated 20 March 2023)</td><td>Khammam ULB (JPV dated 20 March 2023)</td></tr>
</table>

4.2.4 Non-integration of informal waste workers in Solid Waste management

Rule 11(c) of SWM Rules, 2016 requires the State Government to provide broad guidelines regarding integration of waste pickers or informal waste collectors with SWM system. As per Rule 15(c), it is the duty of ULBs to establish a system to recognise organisations of informal waste collectors and establish a system to facilitate their participation in SWM including door to door collection. Further, ULBs should facilitate formation of SHGs, provide identity cards and thereafter encourage integration in SWM including door to door collection of waste. State policy (Para 6.6) mandates that all the ULBs have a scheme for registration of waste pickers and waste dealers.

In GHMC: There was no integration of SHGs and organisation of waste pickers as observed from the information furnished to Audit.

The State Government replied (September 2023) that the present SAT vehicle drivers and their assistants were once informal waste collectors and they were provided with SATs and integrated into waste collection system.

The State Government is yet to frame broad guidelines and put in place an established system for recognition of organisations and for informal waste collectors as per SWM Rules, 2016 *ibid.*

In test-checked other 14 ULBs: In Mahabubnagar ULB, identification of informal waste workers was done in field surveys conducted (2018, 2020 and 2021) and 27 informal waste pickers were identified and allotted wards for taking up SWM activities. In the remaining 13 test-checked ULBs there was no such integration of SHGs and waste pickers.

Audit observed that the State Government did not issue guidelines for involvement of waste pickers/ rag pickers and there was no scheme for registration of waste pickers and waste dealers. In the absence of formal guidelines and or a scheme, services of the informal sector could not be utilised effectively.

Commissioner and Director of Municipal Administration replied (February 2023) that Audit observations were noted and the issue would be placed before State Level SWM Committee for incorporating necessary guidelines in the State policy. Later, it was stated (June 2023) that 12,273 rag pickers were identified by the ULBs and integrated with SWM activities. However, documentary evidence was not furnished to Audit.

4.3 Transportation of Solid Waste

Solid Waste Management Rules, 2016 defines "transportation" as conveyance of Solid Waste, either treated, partly treated or untreated from a location to another location in an environmentally sound manner through specially designed and covered transport system to prevent the foul odour, littering and unsightly conditions.

4.3.1 Transportation of Solid Waste in open vehicles

Section 2.3.2 of MSWM Manual, 2016 stipulates that vehicles used for transportation of waste should be covered so that waste is not visible to public and that they should have the facility for preventing spillage of waste. For this purpose, MSW vehicles need to be covered and provided with two separate containers or a single container with an effective partition.

In GHMC: Transfer Stations management was also handed over to the Concessionaire by GHMC in January 2021. Audit observed during JPV of TS that MSW brought to the TS in primary collection vehicles was unloaded into a tip cart from which it was transferred into hermetically sealed Compactor Cabin for compaction and then securely shifted in a hook mounted vehicle without leakage during transit, for transfer to Jawaharnagar T&D facility. Prior to handing over of TS to the Concessionaire, the MSW was transported to Jawaharnagar T&D facility by GHMC with its own vehicles. A comparative picture showing the practice before and after handing over is given in **Exhibit Nos.4 and 5**. In GHMC, prior to handing over of TS Management to the Concessionaire, the MSW was carried in open vehicles to the Jawaharnagar T&D facility.

In test-checked other 14 ULBs: Audit observed during JPV of dumpsites of five ULBs[124] that MSW was transported to the dumpsites without cover (**Exhibit No.6**). These uncovered vehicles emanate bad odour during transportation and also scatter the waste causing inconvenience to public besides defeating the very purpose of hygienic transfer of Solid Waste from one place to another.

[124] Khammam, Kothagudem, Mahabubnagar, Mancherial and Zaheerabad

The Urban Local Bodies replied that measures would be taken to ensure that vehicles carrying MSW are provided with protection cover.

The State Government replied (November 2023) that Solid Waste was being transported through covered vehicles, but no documentary evidence was furnished.

Exhibit No. 4, Para No.4.3.1

Transportation of MSW in open vehicles without cover in GHMC prior to handing over of TS Management to the Concessionaire

Source: Photos provided by GHMC

Exhibit No. 5, Para No.4.3.1

Transportation of MSW in closed vehicles operated by the Concessionaire after handing over of TS Management by GHMC

Source: JPV conducted on 28 October 2022 and 18 January 2023

Exhibit No. 6, Para No.4.3.1
Transportation of MSW in vehicles without cover

Khammam ULB (JPV dated 20 March 2023)

Khammam ULB (JPV dated 24 March 2023)

Exhibit No. 6, Para No.4.3.1
Transportation of MSW in vehicles without cover

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Kothagudem ULB (JPV dated 20 December 2022)</td><td>Mahabubnagar ULB (JPV dated 24 March 2023)</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Mancherial ULB (JPV dated 03 November 2022)</td><td>Zaheerabad ULB (JPV dated 12 January 2023)</td></tr>
</table>

4.3.2 Use of transportation vehicles without authorisation

As per Section 39, 55 and 56 of Motor Vehicle (MV) Act 1988, a transport vehicle shall not be deemed to be validly registered for the purpose of Section 39 of MV Act, 1988, unless it carries a certificate of fitness issued by the prescribed authority to the effect that the vehicle complies with all the requirements of Act and rules made there under.

In GHMC: Transfer Station management was handed over to the Concessionaire by GHMC in January 2021. In compliance to the State Government Orders[125], GHMC handed over secondary collection and transportation of MSW to Concessionaire in entire GHMC area (all 30 Circles) in June 2022, including transportation of MSW to processing facilities component of work. The primary collection of MSW is still carried out by GHMC in all 30 Circles.

Instances of operation of transportation vehicles for SWM without valid authorisation were not noticed in audit in GHMC.

[125] G.O.Rt.No.173 dated 16 March 2022 of MA&UD (GHMC.II) Department

In test-checked other 14 ULBs: The details of vehicles utilised by the test-checked other 14 ULBs for SWM activities along with details of Registration Certificate (RC), valid Vehicle Fitness Certificate (VFC) and Vehicle Insurance Certificate (VIC) are detailed in **Appendix-4.5**.

Audit noticed that in Chandur ULB, all the four vehicles were being operated without RC, VFC and VIC. In Wardhannapet ULB, all the five vehicles were being operated without VFC and VIC. In Zaheerabad ULB, all the 47 vehicles were being operated without VFC. Further, it was observed that-

i. 42 vehicles out of 428 had no Registration Certificate (9.8 *per cent*).

ii. 198 vehicles out of 249 had no VFC (79.5 *per cent*). Information were not furnished in respect of the remaining 179 vehicles.

iii. 187 vehicles out of 259 had no VIC (72.2 *per cent*). Information not furnished in respect of the remaining 169 vehicles.

These lapses defeated the legislative intent of ensuring road safety, accountability, and risk management in the operation of transport vehicles and indicated absence of internal control mechanism within the ULBs.

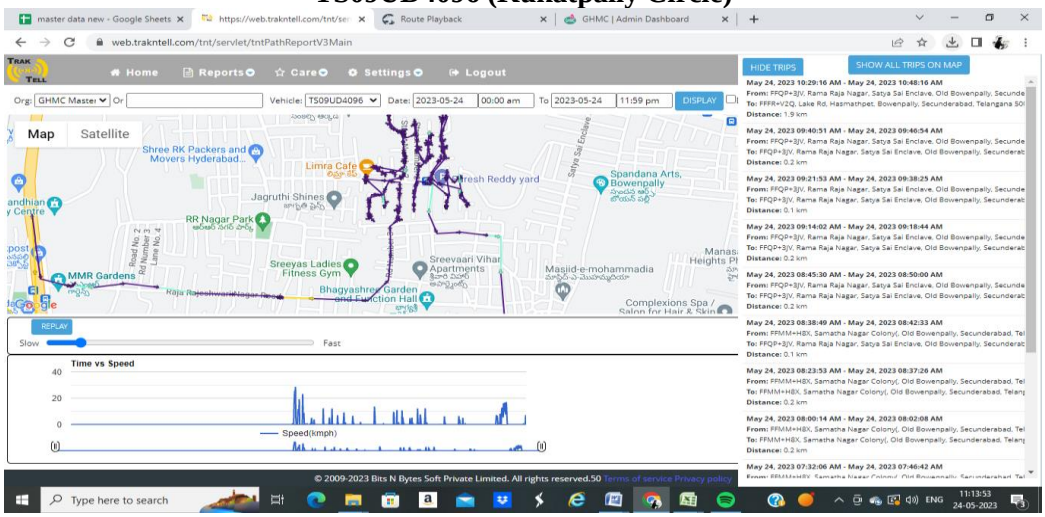
4.3.3 Management Information System for waste transportation

Transportation of Solid Waste from source of generation to the authorised destination is important to ensure its proper disposal. Section 2.3.12.1 of MSWM Manual, 2016 (Part-II) stipulates that communication technologies such as Global Positioning System (GPS), Geographic Information System (GIS) are to be integrated as part of monitoring of SWM system. A GPS can be synchronised with the GIS to monitor and track waste transportation vehicles and identify any irregularities in waste movement.

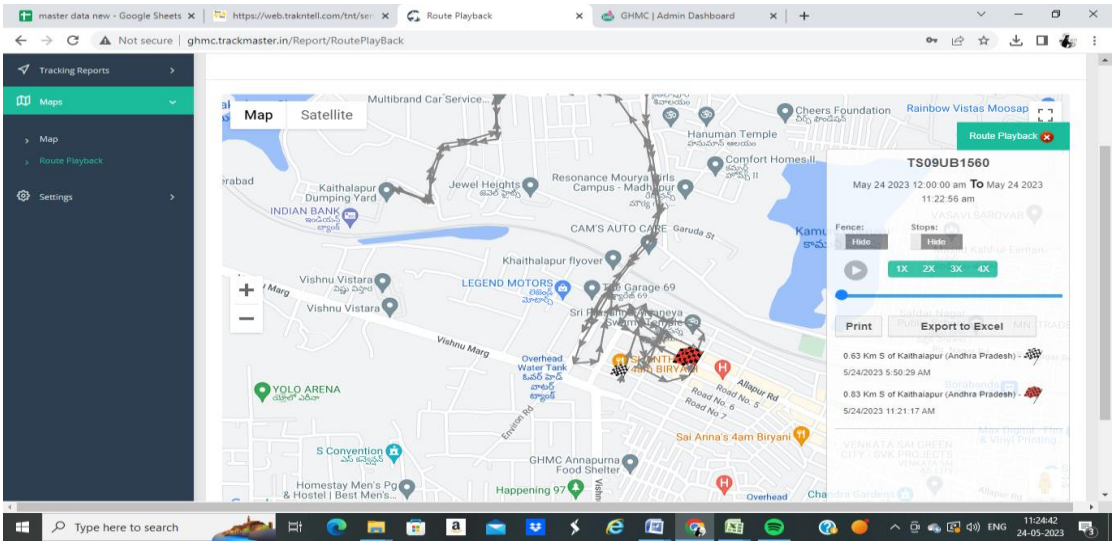
In GHMC: Out of 4,500 SATs supplied to the waste collectors covering 30 Circles of GHMC area for household MSW collection, only 4,274 were in operation and the reasons for non-operation of 226 SATs in 30 Circles were not furnished to Audit. Out of 4,274 SATs in operation, 4,146 were fitted with GPS device and GHMC stated (May 2023) that the balance 128 SATs would be fitted with GPS device shortly. SATs are monitored through GPS system/portal via a dedicated SAT control room (**Exhibit No.7**).

Exhibit No.7, Para 4.3.3
GPS Tracking of SATs in GHMC

TS09UD4096 (Kukatpally Circle)



TS09UB1560 (Moosapet Circle)



Source: Screenshots provided by GHMC

In test-checked other 14 ULBs: There are 428 vehicles in 14 other test-checked ULBs. The GPS devices were not installed in 65 vehicles[126] out of 193 vehicles of seven test-checked ULBs for which GPS devices information was furnished to Audit.

Hence, non-installation of GPS facility to 128 SATs in GHMC and to the 65 vehicles in the test-checked other 14 ULBs indicated deficient monitoring of MSW transportation vehicles and inadequate tracking system for monitoring SWM activities.

The State Government replied (November 2023) that in Chandur, Haliya, Kothagudem and Nagaram ULBs, the GPS tracking system was installed but not working and they would be rectified. The reply was, however, contrary to the information furnished to Audit by these four ULBs, wherein it was mentioned that GPS tracking was not provided to the vehicles.

[126] Chandur (4), Haliya (8), Kalwakurthy (15), Khammam (19), Kothagudem (2), Nagaram (12) and Wardhannapet (5)

The State Government also replied (November 2023) that in Khammam ULB, GPS tracking was installed to all the SWM vehicles and in Wardhannapet ULB, GPS tracking was installed recently. However, documentary evidence for installation of GPS tracking facility was not furnished to Audit.

4.3.4 Management of Transfer Stations in Greater Hyderabad Municipal Corporation

Primary transportation of Solid Waste involves movement from source generation to the intermediate storage facilities (TS, SCTPs and RCVs). Secondary transportation involves carriage of waste from intermediate storage facilities to the processing and disposal facilities. TS should be set up with sufficient space for segregation of waste with weighing facilities.

Article 2.1 (d) & (e) of the CA mandates that the Concessionaire had to upgrade[127], operate and maintain the existing three[128] TS and develop five[129] new TS. For construction of new TS, required land was to be provided by GHMC.

Audit observed from the information furnished by GHMC that the Concessionaire had developed and maintained 17 TS and in addition also established 28 SCTPs and deployed 66 Refuse Compactor Vehicles (RCVs-mobile SCTPs). The details of TS, SCTPs and RCVs for SWM in GHMC area are given in **Appendix-4.6**. Audit observations on land management for establishing TS are given in the succeeding paragraphs.

Greater Hyderabad Municipal Corporation replied (April 2023) that initially eight TS were operated in GHMC in the year 2009, later the number of TS were increased in view of increase in generation and collection of MSW. Further, TS/SCTPs at new places[130] were established in lieu of earmarked five locations envisaged in the CA to meet the corresponding requirements. It was also stated by GHMC that all the SCTPs were functioning on GHMC land.

4.3.4.1 Joint Physical Verification observations on Transfer Stations, Secondary Collection Transfer Points and Refuse Compactor Vehicles in the selected Zones of Greater Hyderabad Municipal Corporation

Audit conducted JPV of TS, SCTPs and RCV and the observations are detailed in **Table-4.5**.

[127] Preparation of drawings for the TS including details of layout, structural details *etc*., provision of weigh bridges, computerised system for billing and tracking vehicle movement, facilities for segregation

[128] Imbliban, Lower Tank bund and Yousufguda

[129] Fathullaguda, Gandhamguda, Kapra, Serilingampally and Shamshiguda

[130] TS at Nagole in place of Fathullaguda, TS at Katedan in place of Gandhamguda, TS at Saket in place of Kapra, Khajaguda and Nehru Nagar SCTPs in place of Serilingampally and Jagadgirigutta TS & Yellammabanda SCTP in place of Shamshiguda

Table-4.5: JPV observations on TS, SCTP and RCVs in test-checked Circles

Sl. No	Name of the Zone	Location of the TS/SCTP and RFC	JPV Audit observations
1.	Kukatpally	Fatehnagar- SCTP	➢ Primary collection of MSW is done through SATs and was transported to this SCTP without segregation of dry and wet waste (**Exhibit No.8 (A)**). ➢ There was no weighbridge, compound wall, and green belt. ➢ There was nala adjacent to SCTP with sewerage water flowing.
2.		Khaitlapur-TS	➢ This TS has two level RCC structure with ground floor housing Hiva Static Containers (HSCs) to receive the MSW through the hoppers which were placed in first floor and connected to the HSCs. The SATs bring the garbage and dump in hoppers for compaction in HSCs. The compacted Containers are then securely shifted in a hook mounted vehicle without leakage during transit, for transfer to Jawaharnagar T&D facility (**Exhibit No.8 (B)**). ➢ There was no segregation of wet and dry waste and the entire garbage received in mixed manner was being dumped in the HSCs. ➢ Weighbridge platform was constructed but not put to use. ➢ There was no green belt and compound wall.
3.		Machabolaram- TS	➢ There was no segregation of wet and dry waste and the entire garbage was received in mixed manner (**Exhibit No.8 (Ci)**). ➢ The TS was functioning in the open land without proper cover on its top (**Exhibit No.8 (Cii)**). ➢ There was no weighbridge installed. ➢ There was dispute on the ownership of the land on which the TS was set up.
4.		Kukatpally Metro Rail- SCTP	➢ There was no segregation of wet and dry waste and the entire garbage was received in mixed manner. ➢ There was no weighbridge, compound wall, and green belt.
5.	Khairatabad	Peoples Plaza- SCTP	➢ There was no segregation of wet and dry waste and the entire garbage was received in mixed manner. ➢ There was no weighbridge, compound wall, and green belt.
6.		JVR Park- SCTP	➢ There was no weighbridge, compound wall. ➢ Operations were carried out in open space without closed shed, thereby causing pollution and also inconvenience to the citizens visiting the adjacent park (**Exhibit No.8 (D)**).
7.		Yousufguda-TS	➢ The TS was not put to use despite establishment of required infrastructure (**Exhibit No.8 (Ei)**). ➢ The MSW brought in SATs was dumped on the approach road to TS (**Exhibit No.8 (Eii)**) and lifted by JCBs and placed in the Tipper vehicles of the Concessionaire. The mixed MSW was then transported with cover to Jawaharnagar T&D facility.
8.	Charminar	Katedan-TS	➢ There was no segregation of wet and dry waste and the entire garbage was received in mixed manner. ➢ There was no weighbridge and green belt. ➢ The TS was functioning within the closed sheds and was well supported by a compound wall.
9.		Katedan-SCTP	➢ DRCC was functioning for segregating dry waste such as pet bottles, glass, papers, iron *etc*. ➢ There was no weighbridge and green belt.
10.		Singareni Colony-RCV	➢ It is a mobile waste collection Compactor vehicle. The MSW brought in SATs was unloaded into the compactor vehicle and then self-compressed. The loaded Compactor vehicle will then transport the MSW to Jawaharnagar T&D facility (**Exhibit No.8 (F)**).

Further, JPV was conducted at three TS to be developed by the Concessionaire as per Article 2.1 (e) of CA and observations on one TS at Yousufguda were given at **Sl.No.7 of Table-4.5**. The observations on the remaining two TS during JPV are as follows:

(i) Transfer Station at Lower Tank Bund though was developed with necessary infrastructure facilities, was not operationalised (January 2023) **(Exhibit No.9 (A)**). Later, GHMC stated (April 2023) that the TS at Lower Tank Bund has been put into operation in March 2023.

(ii) Transfer Station at Imlibun was not provided with the required infrastructure facilities (ground floor housing Hiva Static Containers (HSCs) to receive the MSW through the hoppers to be placed on the first floor and connected to the HSCs). At present the SATs with collected MSW go through a ramp to the first floor and drop the MSW through a passage directly into the Tipper Lorries stationed on the ground floor. The Tipper lorries directly transport the MSW to Jawaharnagar T&D facility **(Exhibit No.9 (B)).**

Article 5 (Schedule-2) of the CA mandates establishment of two weighbridges (at the entrance and exit) at TS. However, Audit observed that there were no weighbridges at entry and exit points in the TS. There was no mechanism to assess the quantity of actual waste generated / collected in the GHMC before its transportation to Jawaharnagar T&D facility, as weighbridges were not provided even in SCTPs. Hence, the quantum of waste collected in GHMC was not accurately known.

Greater Hyderabad Municipal Corporation replied (April 2023) that civil works were completed for modernisation of TS at Imlibun and mechanical arrangements are pending due to non-availability of working space and hence open operations are undertaken at present. In respect of Yousufguda TS, it was stated that commencement of mechanised operations was delayed due to issues with SAT vehicle workers and GHMC Tipper driver unions, which were resolved and mechanised operations commenced from March 2023.

Greater Hyderabad Municipal Corporation stated that due to space constraints, weighbridges were not provided in the Transfer Stations and SCTPs. However, the MSW was being weighed at Jawaharnagar T&D facility.

Thus, out of three TS to be upgraded, operated and maintained by the Concessionaire as per CA, one TS at Imlibun was not provided with adequate infrastructure. Besides, three other Transfer Stations not envisaged in CA but established by the Concessionaire at Saket, Machabolaram and Neredmet to meet the increase in load of MSW were not modernised due to disputes/local issues/Court case.

Exhibits: Para No.4.3.4.1/Table-4.5
JPV observations on TS, SCTPs and RCV in the selected Zones of GHMC

Exhibit No.8 (A): Fatehnagar SCTP (JPV dated 27 October 2022): Transportation of MSW by SATs without segregation of dry and wet waste

Exhibit No.8 (B): Khaitlapur TS (JPV dated 26 October 2022): Mechanism showing transfer of MSW into the Hiva Static Containers

Exhibit No.8 (Ci): Machabolaram TS (JPV dated 21 October 2022): Mechanism showing shifting of Hiva Static Containers in a hook mounted vehicle for transfer to Jawaharnagar T&D facility

Exhibit No.8 (Cii): Machabolaram TS (JPV dated 21 October 2022): Functioning of TS in the open land without proper cover on its top

Exhibit No.8 (D): JVR Park SCTP (JPV dated 16 December 2022): Operations were carried out in open space affecting aesthetic appearance of surroundings and causing inconvenience to citizens visiting the park

Exhibits: Para No.4.3.4/Table-4.5
JPV observations on TS, SCTPs and RCV in the selected Zones of GHMC

Exhibit No.8 (Ei) Yousufguda TS (JPV dated 16 December 2022): Transfer Station not put to use despite establishment of required infrastructure

Exhibit No.8 (Eii) Yousufguda TS (JPV dated 16 December 2022): MSW brought in SATs was dumped on the approach road to TS

Exhibit No.8 (F) Singareni Colony RCV (JPV dated 02 November 2022): MSW brought in SATs unloaded into the compactor vehicle and then self-compressed. The loaded Compactor vehicle transports the MSW to Jawaharnagar T&D facility

Exhibit No. 9 (A), Para 4.3.4.1

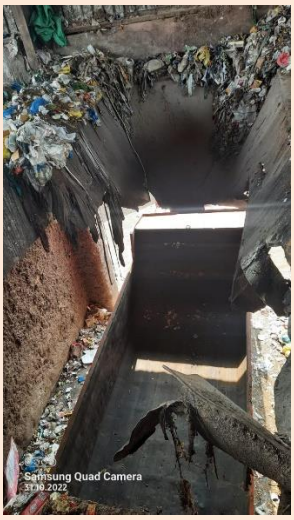
Transfer Station at Lower Tank Bund developed by the Concessionaire not put to use as on date of JPV (18 January 2023)

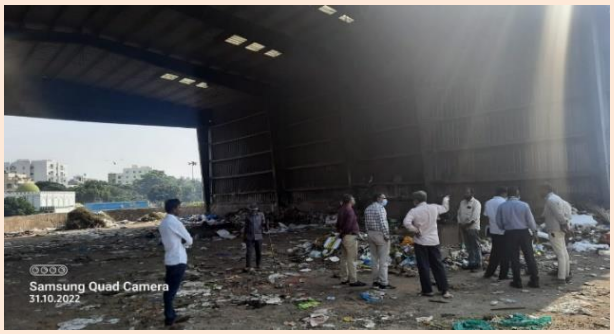
<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>New Transfer Station covered with rooftop</td><td>Hiva Static Containers connected to hoppers in Ground floor</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Vertical Hoppers in first floor</td><td>Existing open site where MSW transfer operations were carried out during JPV</td></tr>
</table>

Exhibit No. 9 (B), Para 4.3.4.1

Transfer Station at Imlibun not provided with required infrastructure (JPV on 31 October 2022)

<table>
<tr><td colspan="2"> 




</td></tr>
<tr><td colspan="2">SATs with collected MSW go through a ramp to first floor and drop the MSW through a passage directly into the Tipper lorries stationed in the ground floor</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>In operative weighbridge</td><td>Transfer station at Imlibun without infrastructure</td></tr>
</table>

4.3.4.2 Land management in establishment of Transfer Stations in Greater Hyderabad Municipal Corporation

Audit observed from the information furnished by GHMC on location of 17 TS set up at various places (*Appendix-4.6 refers*) that four[131] TS were set up in private society/Defence/disputed lands including one TS in Graveyard. Further, one TS at Jiyaguda was set up on the banks of Musi River. This indicated improper selection of sites for establishment of TS, posing risk of environmental hazards and also pollution of air and water in the surroundings areas.

The State Government replied (September 2023) that due to non-availability of Government sites, the available sites were developed as TS and SCTPs were developed as mini transfer points.

[131] Deepthisri Nagar, Machabolaram, Neredmet-Malkajgiri and Saket

4.3.5 Other Audit Findings – E-autos kept idle

Section 2.3.4 of MSWM Manual, 2016 (Part-II) stipulates that for primary collection, vehicles should meet local requirements. Before selecting a vehicle for primary collection, it is advisable to assess the amount of waste generated, local climatic conditions, topography of the area, and available facilities for repair and maintenance of vehicles.

Haliya ULB procured (November 2019) four e-Autos at total cost of ₹6.67 lakh for lifting and transportation of garbage. Audit observed that the e-Autos were not being used for the intended purpose and were lying idle (November 2022) at the office complex of the ULB **(Exhibit No.10)**.

The Commissioner, Haliya Municipality stated (November 2022) that the vehicles were kept idle from October 2020 as it was found that the vehicles were of less capacity and could not move properly in gradient roads, thereby taking lot of time for door-to-door garbage collection. Hence, the vehicles were kept idle without periodic maintenance.

The State Government accepted the Audit observations and replied (November 2023) that during usage it was known that these types of vehicles are not appropriate for MSW collection and Operation & Maintenance services.

It was further noticed in Peerzadiguda ULB that five e-autos were kept idle as shown in the **Exhibit No.10** below. Further details were not furnished by the ULB.

The State Government accepted the audit observation and replied (November 2023) that these five e-autos were procured before 2016, as a new initiative but during usage it was found not suitable (viable) for collection of MSW. These five e-autos were now made to look beautiful and being used as a selfie point in the park as part of 3R initiative.

Thus, improper assessment of requirement of vehicle with reference to quantum of waste generated, capacity of the vehicle and topography of the area had resulted in procurement of vehicles at a cost of ₹6.67 lakh becoming unfruitful without their usage for the intended purpose.

Exhibit No.10, Para 4.3.5

	
Haliya ULB: e-Autos for lifting and transporation of garbage lying idle (25 November 2022)	**Peerzadiguda ULB (JPV dated 04 October 2022): Five mini autos were lying idle at the dumpsite**

4.4 Contract Management with the Concessionaire

4.4.1 Escrow account not maintained

Article 7.2 (b) (ii) of Concession Agreement stipulates that GHMC should deduct/ withhold 10 *per cent* of the Treatment & Disposal TF amount payable to the Concessionaire, which shall be held in Escrow account[132] with a Nationalised Bank towards post-closure obligations[133]. The amount shall be released to the Concessionaire in equal quarterly instalments during post closure period, and to be detailed in Escrow Agreement with the bankers. In the event of termination due to any reasons whatsoever, the amounts in the Escrow account will be appropriated by GHMC to be utilised towards post-closure obligations.

Audit observed from the information furnished by GHMC that the deducted amount was deposited in a separate Current Account of GHMC with State Bank of India (Banker), Lower Tank Bund Branch, Hyderabad during the period from February 2012 to March 2022, instead of the mandated Escrow Account. Further, out of ₹114.32 crore deducted[134] from the tipping fee bills, an amount of ₹105.27 crore was credited to the Current Account and the balance amount of ₹9.05 crore was yet to be credited to this account by GHMC as of March 2022. Reasons for non-crediting of the balance amount were not furnished to Audit.

Greater Hyderabad Municipal Corporation stated (May 2023) that the existing Current Bank account would be converted into Escrow account as and when a Tripartite Agreement is entered between GHMC, the Banker and the Concessionaire.

4.4.2 Irregular payment of Tipping Fee for Treatment and Disposal component to the Concessionaire

Article 7.1(b) of CA stipulates that TF shall be paid by GHMC to the Concessionaire for performing the services under the Agreement covering three components of work, out of which 40 *per cent* of TF was to be paid for T&D component. The Commercial Operations Date (COD) for T&D facility at Jawaharnagar was declared on 18 February 2012. The details of the establishment and operation of waste processing facilities in Jawaharnagar T&D facility are given in **Table-4.6**.

Table-4.6: Details of establishment and operation of waste processing facilities in Jawaharnagar T&D facility

Sl. No	Name of the Waste Processing Facility	Consent for Establishment given by TSPCB	Consent for Operations given by TSPCB	Date of commencement of operation of facility as stated by GHMC
1.	Compost Plant	19.12.2012	28.02.2015	February 2012
2.	Bio-Methanation Plant			July 2018
3.	Recycling Complex			April 2015
4.	RDF Plant			February 2015
5.	Landfill with leachate collection and treatment system			April 2013
6.	WtE Plant	23.09.2017	15.07.2020	August 2020

Source: Information furnished by GHMC and TSPCB orders

[132] Escrow account is a temporary account held by a third party during the process of a transaction between two parties

[133] In the event of termination due to any reason whatsoever, the amounts in the escrow account would be appropriated by GHMC towards post-closure obligations

[134] 10 *per cent* of 40 *per cent* of TF for T&D Component, *i.e.*, 4 *per cent*

Audit observed from the information furnished by GHMC that it had paid full TF of ₹178.26 crore and ₹662.05 crore to the Concessionaire towards T&D during the period from 18 February 2012 to 28 February 2015 and from 1 March 2015 to 14 July 2020 respectively, even though the Concessionaire did not carry out processing of dry waste.

Greater Hyderabad Municipal Corporation replied (May 2023) that T&D operations commenced from 18 February 2012 in Jawaharnagar T&D facility with pre-sorting and composting activities in view of the Hon'ble High Court Orders for commencement of the T&D facility on account of the then existing conditions. Further, it was stated that the Concessionaire had separated wet and dry waste, disposed of the wet waste duly composting and treating leachate. The dry waste was disposed through cement industry, recycling industry to the extent possible and the balance was stockpiled for future disposal through WtE Plant.

Since WtE plant operations began in August 2020, the Concessionaire carried out only wet waste processing from February 2012 to July 2020 and not dry waste processing. As per Article 2.1(g) under the Scope of the Project in the Agreement with the Concessionaire "Processing and Treatment of MSW" means "to process MSW as per MSW Rules and other applicable regulations and transport and dispose the residual inert matter at the Landfill site". The breakup of TF for processing of wet waste and dry waste was not defined in the CA.

Audit analysed the data on total waste[135] furnished (September 2023) by GHMC for the period from 18 February 2012 to 31 July 2020 and found that an amount of ₹313.2 crore[136] was paid to the Concessionaire towards T&D of dry waste of 44.16 lakh MT during that period, despite the Concessionaire not processing the dry waste.

The State Government replied (September 2023) that payment towards T&D had nothing to do with disposal of Refuse Derived Fuel (RDF) (bye product from dry waste) since the Concessionaire was free to sell as per Article 5.21 (b) of the CA, if demand (or off take by cement plants *etc.*) was available at such time when it was produced or otherwise dispose of the RDF (duly storing it for future use in WtE plants/ off take by cement plants).

The reply was not in consonance with the fact that Article 5.21(b) of the CA permits only sale or otherwise disposal of the recyclables, compost or organic manure, energy (Power) and other material recovered prior to or after processing of MSW. However, the Article does not permit direct disposal of transported dry waste through either sale or otherwise. TF for T&D should be paid for the actual quantity of MSW processed by the Concessionaire. However, in the instant case, the dry waste was not processed by the Concessionaire, but payment was made for the total waste. This was irregular and resulted in undue benefit to the Concessionaire of ₹313.2 crore.

[135] GHMC furnished data on wet waste (83,85,963 MT) and dry waste (44,15,823 MT) received for Treatment and Disposal at Jawaharnagar T&D facility during the period from 18 February 2012 to 31 July 2020

[136] Based on the Tipping Fee rates furnished by GHMC for the period from February 2012 to March 2013 and for the years from 2013-14 to 2020-21 (taking 40 *per cent* of the total Tipping Fee as per CA for T&D payment)

4.5 Conclusion

Segregation of waste at different levels was either absent or was being done partially in all the test-checked ULBs. The State/ ULBs did not notify the classification of items as domestic hazardous waste and sanitary waste and consequently, the need to segregate them separately was not emphasised through IEC activities. Hence, mixed waste was transported to Jawaharnagar T&D facility in GHMC and to dumpsites in the test-checked other 14 ULBs. There were discrepancies in the data on uncollected MSW reported in the Annual Reports of TSPCB on SWM and the data furnished by the test-checked ULBs for the years 2019-20 to 2021-22. The State Government did not issue guidelines for involvement of and social inclusion of waste pickers/ rag pickers. Also, there was no scheme for registration of waste pickers and waste dealers. Greater Hyderabad Municipal Corporation paid an amount of ₹313.2 crore to the Concessionaire towards treatment and disposal (T&D) charges of dry waste of 44.16 lakh MT during the period February 2012 to July 2020, despite the Concessionaire not processing the dry waste.

4.6 Recommendations

(i) ***State Government should direct the ULBs to ensure 100 per cent collection, segregation of MSW at household level and transportation of segregated waste to the Treatment and Disposal facilities.***

(ii) ***State Government should direct the ULBs to notify the items classified as DHW and Sanitary waste and publicise the methodologies and appropriate strategies for their effective disposal in consonance with MSWM Manual provisions.***

(iii) ***State Government should direct the TSPCB to reconcile the data on Municipal Solid Waste with the figures available with the ULBs before it is incorporated in the Annual Report on implementation of SWM Rules, 2016.***

(iv) ***State Government should formulate guidelines for involvement of and social inclusion of waste pickers/ rag pickers of informal sector in SWM and also evolve a scheme for registration of waste pickers and waste dealers as mandated in the State Policy.***