
Chapter – V

Compliance Audit Paragraphs

Municipal Administration and Urban Development Department

5.1 Municipal Solid Waste Management

5.1.1 Introduction

Government of India notified “The Municipal Solid Waste (Management and Handling) Rules 2000” in September 2000 to manage the increasing quantum of waste generated due to urbanisation. Pursuant to this, Government of the composite State of Andhra Pradesh formulated guidelines in June 2005 to promote awareness among the public about the principles of waste management and ensure that the cities and towns in the State are clean with high quality of public health.

5.1.2 Audit Approach

Audit of implementation of Solid Waste Management (SWM) Rules 2000 by Urban Local Bodies (ULBs) in Andhra Pradesh was conducted during March - June 2015 covering the period 2010-11 to 2014-15. Audit methodology involved a test check of records of five Municipal Corporations (Guntur, Kadapa, Nellore, Tirupati and Vijayawada) and four Municipalities (Adoni, Machilipatnam, Nandyal and Vizianagaram) in the State. Audit findings were benchmarked against criteria sourced from Municipal Solid Waste (Management & Handling) Rules 2000, Guidelines for Municipal Solid Waste (MSW) Management issued by Commissioner and Director of Municipal Administration (CDMA), Hyderabad in June 2005, Bio Medical Waste (Management & Handling) Rules 1998, E-Waste (Management & Handling) Rules 2011 and orders and circulars issued by Government of Andhra Pradesh from time to time.

Audit findings

5.1.3 Fund Utilisation

The State Government did not earmark any specific budget allocation for implementation of the activities under MSW management rules. However, GoI released grants through Twelfth Finance Commission (TFC) for implementation of MSW management during the period from 2005-06 to 2009-10. Thereafter, ULBs have not allotted any specific funds for implementation of SWM, but the expenditure towards salaries of sanitation workers, maintenance of vehicles for transportation of garbage etc., was met from general fund of the ULBs concerned. The details of releases and expenditure incurred under 12th FC grants, in the nine test-checked ULBs are given below:

Table 5.1

(₹ in crore)

Name of the ULB	Grant received	Utilised	Unutilised
Guntur Municipal Corporation	14.02	12.41	1.60
Vijayawada Municipal Corporation	22.08	22.05	0.03
Nellore Municipal Corporation	9.97	9.97	0

Kadapa Municipal Corporation	8.03	7.46	0.57
Tirupati Municipal Corporation	11.01	6.87	4.14
Adoni Municipality	4.14	3.63	0.51
Vizianagaram Municipality	4.60	4.13	0.47
Machilipatnam Municipality	3.75	3.75	0
Nandyal Municipality	4.08	4.08	0

Source: Utilisation Certificates

Although the State Government had issued specific instructions for utilisation of TFC grants for implementation of SWM, the grants were not utilised fully. Besides the funds were expended on other unintended purposes by the test-checked ULBs. Specific instances in this regard are detailed below:

- i. In Machilipatnam Municipality, an amount of ₹1.53 crore was paid to the Revenue Department towards compensation to the farmers for alienation of land in Rudravaram village on behalf of the Municipality for utilising as dumping yard. Although this amount was paid during the period 2011-13, land was not alienated to the Municipality as of June 2015. However, reasons for the delay were not furnished by the ULB. Similarly, Kadapa Municipal Corporation paid an amount of ₹0.40 crore in July 2010 to the District Collector, YSR district towards compensation for acquisition of land of 21.09 acres¹ for setting up of dump yard at Kanumalopalli village in Sidhout Mandal. However, due to non-approval by the Andhra Pradesh Pollution Control Board, the ULB proposed to shift to an alternate site at Kolimulapalli of C.K. Dinne mandal. As of February 2015, neither the land was alienated nor was the amount refunded.
- ii. An amount of ₹35.95 lakh was transferred to CDMA, Hyderabad from TFC funds in respect of three ULBs² for meeting administrative expenditure of CDMA which was irregular.
- iii. Rupees 2 lakh of TFC funds was diverted (April 2012) to the Regional Director, Municipal Administration, Rajahmundry and Anantapur by two ULBs³ for incurring expenditure not related to SWM, which was irregular.
- iv. In Machilipatnam Municipality, four tractors purchased at a cost of ₹20.99 lakh from TFC grant were being utilised by the ULB for transportation of water.
- v. In Vizianagaram Municipality, an amount of ₹10 lakh from TFC grants was diverted to general fund account for meeting salary and other contingencies.
- vi. In Vijayawada Municipal Corporation, ₹54.60 lakh was transferred (September 2009) to Jawaharlal Nehru National Urban Renewal Mission (JNNURM) scheme in contravention of guidelines.

¹ 9.70 acres of Patta land and 11.39 acres of DKT land

² Machilipatnam Municipality: ₹14.37 lakh (June 2010), Tirupati Municipal Corporation: ₹21.58 lakh (November 2007 and July 2010)

³ Machilipatnam Municipality: ₹1.00 lakh and Tirupati Municipal Corporation: ₹1.00 lakh

5.1.4 Implementation stages of MSW

MSW Rules envisage collection, segregation, storage, transportation, processing and disposal of municipal solid waste. Guidelines were developed by the erstwhile Government of Andhra Pradesh for all these stages of municipal solid waste management in June 2005.

The MSW rules are to be implemented by every municipal authority within its territorial area. Parameters and criteria prescribed in MSW Rules 2000 in this regard are given below:

Parameter	Compliance criteria
Collection of Municipal Solid Waste (MSW)	Organising house-to-house collection and transfer to community bin.
Segregation of MSW	Organising awareness programmes for segregation of wastes and promote recycling or reuse of segregated material.
Storage of MSW	Accessible storage facilities based on quantities of waste generation and population densities. Colour coding system for different types of wastes.
Transportation of MSW	Covered vehicles for daily clearance of wastes and avoiding multiple handling of wastes.
Processing of MSW	Municipal authorities should adopt suitable technology or combination of such technologies to make use of wastes so as to minimise burden on landfill.
Disposal of MSW	Land filling should be restricted to non-biodegradable, inert wastes and other wastes that are not suitable either for recycling or for biological processing.

Audit findings with regard to planning for implementation of MSW rules are given below:

5.1.4.1 Collection and segregation of waste

(i) *Non-preparation of Action Plan for collection and disposal of waste*

State Government instructed (June 2006)⁴ all the ULBs to prepare Action Plans and get these approved by CDMA for specific operations like systematic segregation at source, collection and transportation from source to collection points, transportation from collection points to transfer stations and safe disposal of solid waste.

Audit scrutiny revealed that while six (Adoni, Kadapa, Nellore, Tirupati, Vijayawada and Vizianagaram) out of nine ULBs had prepared Action Plans, Guntur Municipal Corporation, Machilipatnam and Nandyal Municipalities had not prepared any Action Plan. Reasons for not preparing Action Plans were not on record.

⁴ Government of Andhra Pradesh, Department of Municipal Administration & Urban Development Memo No.11949/12/2006-1 Dated 27 June 2006.

5.1.4.2 Segregation and storage at source

Segregation and storage of solid waste is the most critical component in the whole process of MSW management since this guides the subsequent steps to be taken in handling solid waste, leading to the achievement of objectives as laid down in the MSW Rules 2000.

(i) Awareness among citizens

Generating awareness among the public with regard to the procedures and creation of an enabling environment is the key to success of proper segregation and storage at source. In order to encourage the citizens, municipal authorities should organise awareness programmes⁵ for segregation of wastes and promote recycling or reuse of segregated materials. However, in three⁶ test-checked ULBs, no such awareness campaigns have been carried out.

(ii) Non-segregation at source

Segregation of garbage at source is primarily meant to keep the two broad categories of solid waste generated separately in two different containers viz, biodegradable waste in one container and non-biodegradable waste in another. However, segregation of waste at source by adopting two bins system for bio-degradable and non-biodegradable waste was not implemented in the test-checked Corporations and Municipalities except Vijayawada Municipal Corporation and Nandyal Municipality.

Segregation and storage of solid waste at source will differ based on the type of solid wastes generated. Broadly the type of solid waste generated can be categorised into four types: (a) domestic and trade waste (b) construction waste (c) bio-medical waste and (d) industrial waste.

In the test-checked ULBs, there was no system for segregation and separate storage of waste generated at source in respect of the above categories.

(iii) Arrangements for primary collection points

Collection of MSW has to be done from dispersed sources of its generation/storage, taking into account the quantum of garbage generated in the municipal area. Quantum of garbage generated in the test-checked ULBs ranged from 2 MTs to 480 MTs per day. In these ULBs, garbage was collected door-to-door in tricycles through outsourced agencies. Since segregation was not done at the source point, door-to-door collection in two separate compartments for bio-degradable and recyclable waste was not done with the exceptions of Vijayawada Municipal Corporation and Nandyal Municipality. Further, rag pickers were not organised for improving MSW collection.

100 per cent door-to-door collection of garbage was not achieved in full in any of the test-checked ULBs. In Kadapa Municipal Corporation, door-to-door collection was

⁵ Sl. No.2 of Annexure 9 of State Guidelines on MSW issued in July 2005

⁶ Guntur Municipal Corporation, Machilipatnam and Nandyal Municipalities

not implemented in 30 out of 50 divisions as of February 2015. In Nellore Municipal Corporation, garbage was collected door-to-door in only 19 out of 54 divisions.

(iv) Non-levy of garbage collection fee

As per MSW Rules (Rule 5.4) issued by State Government in 2005, garbage collection fee should be collected from bulk garbage generators while simultaneously ensuring 100 per cent collection of garbage. Garbage collection fee is leviable on establishments such as hospitals and nursing homes, diagnostic centres, clinics, restaurants and hotels, function halls and lodges and private guest houses including clubs, private markets including agriculture markets, private commercial complexes with 20 and more shops inside, private hostels, cinema halls and places of entertainment, road side vegetable vendor addas and road side weekly markets, certain selected types of workshops etc.

In Guntur Municipal Corporation, there was loss of revenue to the tune of ₹2.20 crore due to non-collection of fee from such categories during the audit period 2010-11 to 2014-15. No other test-checked ULBs were levying fee from bulk garbage generators.

(v) Sweeping of streets and public places

As per MSW Guidelines (Rule 6) issued by State Government in 2005, all public roads, streets, lanes, bye-lanes etc., where there is habitation or commercial activity, should be swept daily. However, in exclusive public places, devoid of habitation or commercial activity like parks and huge open spaces, it can be done on a less frequent basis. MSW Guidelines, 2005 and Government circular dated 29 December 2009 specified the following normative formula for deployment/engaging of manpower through outsourcing/contract for collection of garbage and sweeping of streets and public places:

Sl. No	Average road width	Manpower required
i.	Average road width : 80ft	one worker / 350 mtrs length
ii.	Average road width : 60ft	one worker / 500 mtrs length
iii.	Average road width < or = 40 ft	one worker / 750 mtrs length
iv.	Street sweeping should include roadside drain cleaning	
v	Waste is to be collected by primary/secondary transport vehicle and to be sent to storage facility/processing unit	

Note: Sweeping of streets and public places and collection of solid waste from the households and shops and establishments etc., combined is to be taken while adopting the normative standards.

Audit observed that Guntur Municipal Corporation engaged workers in excess of the actual requirement during the period 2010-11 to 2013-14 resulting in avoidable excess expenditure of ₹8.29 crore.

5.1.4.3 Transportation of solid waste

Local bodies should identify the locations where the solid waste intermediate storage facilities should be created. Primary transportation of solid waste involves movement from source of generation to the intermediate storage facility. Secondary

transportation involves carriage of solid waste from intermediate storage facility to the waste treatment plants/landfill sites. Depending on the quantity of solid waste generated and nature of facilities at the final treatment/processing/landfill sites, a mix of transport devices should be put into place.

Audit observations in this regard are as follows:

- i. For Collection of waste, Machilipatnam Municipality had procured 23 tractors, 10 three wheeler autos and 50 tricycles with 12th Finance Commission (solid waste management) grants during 2008-09 and 2009-10. However, as per the prescribed norms (taking the minimum range of households), it was assessed in audit that 5 tractors were procured in excess of the requirement to cover the households. Excess procurement of tractors resulted in avoidable excess expenditure of ₹25.83 lakh.
- ii. In Kadapa Municipal Corporation, excess vehicles were assessed by audit based on their capacity for handling 219.70MT of garbage generated per day which resulted in avoidable excess expenditure of ₹0.55 crore⁷.
- iii. Machilipatnam Municipality had purchased 50 tricycles for door-to-door collection of garbage at a cost of ₹4.62 lakh during 2009-11. However, only 25 tricycles were being utilised and the remaining vehicles were kept idle resulting in wasteful expenditure of ₹2.22 lakh.
- iv. In Adoni Municipality, vehicle shed was constructed in February 2014 at a cost of ₹0.13 crore and compound wall to the vehicle shed was constructed in March 2014 at a cost of ₹0.26 crore. The shed is yet to be put to use resulting in the expenditure of ₹0.39 crore remaining unfruitful.

5.1.4.4 Processing of MSW

Suitable technology has to be adopted to make use of waste so as to minimise the burden on landfill. Bio-degradable wastes should be processed by composting, vermi-composting, anaerobic digestion or any other appropriate biological processing for stabilization of wastes. Mixed waste containing recoverable resources should follow the route of recycling. Incineration with or without energy recovery including pellatisation can also be used for processing wastes in specific cases.

- i. In the test-checked ULBs, no technology was in vogue for processing of waste to minimise burden on landfill. In Tirupati Municipal Corporation and Vijayawada Municipal Corporation it was observed that though vermi compost yards were constructed for processing of the waste, the same were not being utilised.
- ii. Vermi compost sheds were constructed at a cost of ₹0.30 crore in Vizianagaram Municipality (₹20.55 lakh) and Adoni Municipality (₹9.73 lakh), but these were not being utilised for processing of vermi compost.

⁷ 4 Tata Ace Autos and 12 four wheeler autos @₹1.80 lakh per vehicle and 12 three wheeler autos @₹2.16 lakh per vehicle.

- iii. In Adoni Municipality, watchman rooms and office rooms were constructed at a cost of ₹0.07 crore (January 2013) at compost yards, but these were not being used. Hence, the expenditure incurred remained unfruitful.
- iv. In Adoni Municipality, trash bank sheds were constructed by incurring an expenditure of ₹0.20 crore at two compost yards located at Yemmiganur road and Siriguppa road. The sheds were kept vacant and trash was not being separated.
- v. MSWM Rules envisage that manual handling of waste should be carried out only under proper protection with due care for safety of workers. In this regard, a World Bank Review Mission, during their visit to Kadapa in March 2014, raised concerns regarding lack of proper protection and care of workers with the Municipal authorities as detailed below:
 - Some of the rag pickers were living on the dump site in tents.
 - The workers were not wearing any gloves or protective equipment.
 - The dumping of solid waste was not being done systematically in accordance with a plan.
 - The shed constructed at the site was not being utilised for segregation.
 - The log books of the vehicles indicating the trips/quantity were not being maintained.

The World Bank Team also suggested taking necessary steps to protect the health of pig rearers and rag pickers who were working at the site. However, condition remained the same as observed by audit during joint physical verification.

- vi. ULBs did not issue any directions to Health Care Establishments/hospitals for constructing sewerage treatment plant and effluent treatment plant.
- vii. Adoni Municipality procured an electric bio-pulveriser in 2010 at a cost of ₹0.07 crore, which has not been put to use as of July 2015 since no vermi compost activity was being taken up, leading to idling of funds due to injudicious purchase.

(i) E-waste

The Hazardous Waste (Management and Handling) Rules 2003 define e-waste as “Waste Electrical and Electronic equipment including all components sub-assemblies and their fractions”. E-waste is considered dangerous to human health and environment as it contains certain materials like Lead, Cadmium and Mercury that are hazardous depending on their conditions and density. The ULBs should ensure that, e-waste/orphaned products, if found to be mixed with MSW, is properly segregated, collected and is channelised to either authorised collection centre or dismantler or recycler.

Further, the Municipal authorities are responsible for ensuring safe collection, storage, segregation, transportation, processing and disposal of plastic waste, setting up of plastic waste collection centres, take measures to encourage the use of plastic waste by adopting suitable technology such as in road construction etc.

Segregation of E-waste was not done either at source or at transfer station/dumping yard in any of the test check Municipalities/Corporations leading to environmental hazard.

5.1.4.5 Disposal of MSW

Waste disposal practices comprise (i) composting/energy production after segregation of bio-degradable waste (ii) recycling of recyclable solid waste for different activities and (iii) disposing inert materials such as dust, sand, silt, street refuses, bricks, stones, broken glass pieces etc., in a sanitary landfill.

- i. In all the test-checked ULBs, MSW was being disposed off in dumping yards affecting the environment. None of the above mentioned disposal practices were followed in any of these ULBs.
- ii. In violation of MSW Rules, no system was in vogue for generation of power from garbage in the test-checked ULBs.
- iii. Bio-menthanization plant for power generation was set up in 2004 by Union Ministry of Non-Conventional Energy Sources (MNES) through a contract agency on cost sharing basis with Vijayawada Municipal Corporation (75:25) at a cost of ₹3.04 crore for generation of 3,225 KW of power a day. In 2009, the plant stopped functioning due to non-availability of spares, software related issues in control unit etc., resulting in idling of machinery costing ₹3.04 crore and non-generation of power. VMC expressed difficulty to restore the plant due to its obsolete technology, however, efforts were being made for seeking assistance of experts for its restoration.

5.1.4.6 Monitoring mechanism

MSW Rules stipulate that Annual Reports in prescribed format should be furnished by the Municipal Authority to the District Magistrate or the Deputy Commissioner concerned indicating the quantity and composition of solid waste, storage facilities, transportation, details of slums etc., with a copy to the State Pollution Control Board or the Committee on or before 30th day of June every year. The Andhra Pradesh Pollution Control Board (APPCB), in turn, prepares annual report with regard to implementation of MSW Rules, 2000 and forward to Central Pollution Control Board (CPCB).

Scrutiny of records of test-checked ULBs revealed that there was no evidence of compliance with the procedure of forwarding annual reports to State Pollution Control Board. APPCB also confirmed that barring the reports for the year 2014-15 by Vizianagaram Municipality and 2013-14 by Nandyal Municipality, none of the other seven test-checked ULBs forwarded the annual reports. Pending reports from ULBs,

Board forwarded the annual report to CPCB. It was replied that meeting of the co-ordination committee was conducted to consider the observations of CPCB. However, action taken by APPCB was not forthcoming from the records produced to audit.

As per the annual report of APPCB for the year 2014-15, none of the ULBs (110) in the State adopted 'two bin' system and manual handling of waste was being carried out in most of the ULBs. Only 8 *per cent* of households in State were covered under source segregation. Further, only 18 out of 110 ULBs in the State set up vermi composts as part of processing of waste and disposal facilities, while 64 other ULBs proposed to establish vermi compost/windrow compost plants by end of 2015. As such, most of the ULBs were dumping the waste in existing dump sites.

5.1.5 Conclusion

The ULBs have not been compliant with the MSWM Rules in several regards. Segregation of MSW was not done at source point and door-to-door collection of wastes was practiced sporadically. Requisite fee was not levied on generators of bulk garbage. Absence of arrangements for segregation of MSW at source or at the transfer stations/disposal site burdened the dumping yard, leading to health hazards and inconvenience to citizens. Vehicles were procured and manpower was engaged in excess of requirement. Appropriate technology was not adopted for processing of waste to minimise burden on landfill. There was no system for generation of power from garbage. The monitoring mechanism was not adequate.

5.2 Avoidable late payment charges of ₹5.10 crore

Failure of Nellore Municipal Corporation to ensure payment of electricity bills in time resulted in avoidable late payment charges to the tune of ₹5.10 crore

The Municipalities and Municipal Corporations incur obligatory/discretionary expenditure which includes lighting of public streets, construction and maintenance of hospitals/dispensaries, of water works etc. In Nellore Municipal Corporation, electricity through High Tension (HT) services was utilised for water supply pumping stations, being a public amenity. Energy charges towards HT services are being paid monthly by Nellore Municipal Corporation to Andhra Pradesh Southern Power Distribution Company Limited (APSPDCL). As per Andhra Pradesh Electricity Regulatory Commission's regulation, in case the consumers do not pay the bills by the due date, additional charges (delayed payment surcharge) are payable for delayed payment.

Scrutiny (May 2015) of records pertaining to energy charges paid by Nellore Municipal Corporation revealed that the Corporation had not regularly made payments of energy charges and incurred penalty charges of ₹5.10 crore for late payment during the period 2009-15 in respect of eight⁸ HT services. Department

⁸ Service Nos. 012,026,224,315,374,449,457 and 465

attributed non availability of sufficient funds for non-payment of electricity charges in time. The reply of the Municipal Corporation was incorrect as it failed to make timely payments despite adequate budgetary provision and funds.

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