

CHAPTER 2

Performance Audit on “Municipal Solid Waste Management by Urban Local Bodies”

Executive Summary

Municipal Solid Waste (MSW) comprises residential and commercial wastes generated in a municipal area in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes. The Government of India (GoI), in exercise of the powers conferred under the Environment (Protection) Act, 1986, had framed Municipal Solid Wastes (Management and Handling) Rules, 2000 (MSW Rules) to regulate the management and handling of MSW to protect and improve the environment and to prevent health hazards to human beings and other living creatures. As per MSW Rules, every municipal authority is responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes.

A Performance Audit on Municipal Solid Waste Management (MSWM) was conducted covering 36 ULBs of ten districts for the period 2011-16. Significant audit observations are as follows:

- City plans were not prepared by the test checked ULBs but for NN Lucknow, NN Kanpur and NPP Sultanpur.

Paragraph 2.6.1

- Waste processing facilities were not sanctioned in 604 ULBs of the State. The facilities were operational in only 1.4 *per cent* of total ULBs. Out of 36 test checked ULBs, waste processing and disposal facilities was sanctioned only for seven, whereas only three of these were operational.

Paragraph 2.6.2

- Thirty five *per cent* (₹ 177.91 crore) of sanctioned cost (₹ 505.30 crore) of MSW management projects in the State remained unutilised as installation works of 19 MSW processing and disposal facilities were held up due to various reasons.

Paragraph 2.7.1

- The fund released by GoI (₹ 37.56 crore) and the State (₹ 30.39 crore) for construction of Solid Waste Management projects under *Swachhh Bharat* Mission was not utilised and remained blocked at State level.

Paragraph 2.7.3

- Regarding operation of waste treatment plants, concessionaires at NPP Etawah, NPP Kannauj, NPP Mainpuri and NN Kanpur did not deposit Performance Security and Additional Performance Security of ₹ 9.12 crore.

Paragraph 2.7.4

- Improper selection of site led to time and cost overrun of ₹ 9.91 crore in MSW disposal project in NN Lucknow.

Paragraph 2.7.5

- Only five ULBs (NN Lucknow, NN Kanpur and NPP Kannauj, NPP Etawah, NPP Mirzapur) had implemented partial door-to-door collection of MSW.

Paragraph 2.8.1.2

- Segregation of waste at source as required was not being done in any of the test checked ULBs.

Paragraph 2.8.2.1

- Regarding number of vehicles for effective transport of waste, no assessment was done by test checked ULBs. Moreover, test checked ULBs, except NN Lucknow and NN Kanpur, were transporting MSW by uncovered vehicles.

Paragraph 2.8.4

- In NPP Sambhal and NPP Mirzapur, the plant operation had not commenced, even after payment of ₹ 3.22 crore and ₹ 6.46 crore respectively to the executing agency.

Paragraph 2.8.5.2

- The processing and disposal facilities of MSW were held up in NN Kanpur since February 2014, whereas the MSW plants in NN Lucknow and NPP Etawah could not be made operational to its full capacity. In NPP Kannauj the plant was found to be of inadequate capacity.

Paragraph 2.8.5.3, 2.8.5.4 and 2.8.5.5

- NN Lucknow and NN Kanpur irregularly paid ₹ 18.10 crore and ₹ 19.87 crore respectively as tipping fees to the Concessionaire before commercial operations date of the Project.

Paragraph 2.8.6.1

- Due to change in site for installation of MSW Plant in NN Lucknow, the rate of tipping fee was enhanced by 285 *per cent*, which was not proportionate to the circumstances arisen and hence irregular.

Paragraph 2.8.6.2

- Unnecessary procurement of equipment and vehicles resulted wasteful expenditure of ₹ 2.72 crore, with the objective of utilising these for the projects.

Paragraph 2.8.6.3

- Annual Reports, required to be submitted to Uttar Pradesh Pollution Control Board, were not submitted by the ULBs during 2011-15.

Paragraph 2.9.2

- Independent engineer to review and monitor the operations at MSW Plant was not appointed by the concerned ULBs and hence necessary monitoring of the plant operations was not being done.

Paragraph 2.9.4

2.1 Introduction

Municipal Solid Waste (MSW) comprises residential and commercial wastes generated in a municipal area in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes. Solid Waste Management (SWM) includes all activities that seek to minimise health, environmental, and aesthetic impacts of solid waste. The Government of India (GoI), in exercise of the powers conferred under the Environment (Protection) Act, 1986, had framed Municipal Solid Waste (Management and Handling) Rules, 2000 (MSW Rules) to regulate the management and handling of MSW to protect and improve the environment and to prevent health hazards to human beings and other living creatures. As per MSW Rules, every municipal authority is responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes.

Manual of MSW Management states that waste management involves collection, transportation, recovery of recyclable materials and disposal of waste, including the supervision of such operations and after care of disposal sites. It also provides that priority should be given to extract the maximum practical benefits from the waste, promote waste prevention and waste minimisations.

2.2 Organisational Set up

At State level the Secretary, Urban Development Department (UDD) is responsible for enforcing and overseeing the implementation of provisions of MSW Rules. Director, Local Bodies was to assist the State Government for release of grants and examination of budget of Urban Local Bodies (ULBs), organising and compiling data of review meetings *etc.* Besides, the District Magistrate of the concerned district has the overall responsibility for the enforcement of MSW Rules within the territorial limits of their jurisdiction with the help of *Nagar Ayukta* for *Nagar Nigams* (NNs) and Executive Officer for *Nagar Palika Parishads* (NPPs) and *Nagar Panchayats* (NPs). Member Secretary, Uttar Pradesh Pollution Control Board (UPPCB) is the prescribed authority to grant authorisation and oversee the implementation of the MSW Rules.

In each ULB unit, a Board is constituted with various elected members and a Mayor/ Chairman for management and policy decisions of Local Body.

The organisational set up and fund flow is given in paragraph 1.2 under Chapter 1 of this Report.

2.3 Audit Objectives

The objectives of the Performance Audit (PA) were to assess whether:

- Comprehensive plans for municipal solid waste management were prepared for systematic and regular collection of waste from all the municipal areas and for ensuring safe and proper disposal of waste in a timely manner;

- Adequate priority was accorded in allocation of funds for municipal solid waste management and the available funds were utilised economically, efficiently and effectively;
- Adequate infrastructure was created and effectively operational for proper collection, storage and transportation, segregation, processing and scientific disposal of municipal solid wastes;
- Pollution control norms were strictly adhered to during disposal of MSW; and
- Effective monitoring mechanism was in place to ensure compliance of MSW Rules.

2.4 Audit Criteria

Audit criteria for Performance Audit were drawn from the following sources:

- Municipal Solid Waste (Management and Handling) Rules, 2000;
- Environment (Protection) Act, 1986;
- Manual on Municipal Solid Waste Management issued by Ministry of Urban Development, GoI;
- Orders/ circulars issued by Government of Uttar Pradesh and the concerned local bodies from time to time for implementation of MSW Rules;
- Annual Reports and Budget Documents;
- Handbook of Service Level Benchmarking (SLB) issued by Ministry of Environment, GoI;
- Provisions of Financial Rules;
- Various reports and returns submitted and maintained in the Department; and
- Uttar Pradesh Municipal Corporation Act, 1959 and Municipalities Act, 1916.

2.5 Scope and Methodology of audit

There are 636 ULBs in 75 districts of Uttar Pradesh. For the Performance Audit, 10 districts (36 ULBs) were selected on the basis of Simple Random Sampling Without Replacement (SRSWOR) method. Details of test checked ULBs are in **Appendix 2.1**.

Audit methodology included scrutiny of basic records, registers and files, collection of information, audit enquiries, obtaining replies and interaction with the officials *etc.*, from the offices of the *Nagar Ayukta* and Executive Officer of the selected NNs/NPPs/NPs and operators of processing plants (the Concessionaire), during March-July, 2016. Besides, joint physical inspection of dumping sites, processing plants and landfill sites was also done. Also,

beneficiary survey for cleanliness of public places in each of the selected ULBs was carried out.

Information relating to planning, budget formulation, release of grants, sanction and implementation of MSW Rules 2000 *etc.*, was collected from the offices of the Director, Local Bodies, and the Secretary, UDD.

An Entry Conference was held with Secretary, UDD in March 2016 in which audit objectives, scope and methodology were explained. After the conclusion of field audit, the draft audit findings were discussed with Special Secretary, UDD during exit conference (February 2017), where the facts and figures of the draft were accepted. However, point-wise replies of PA as assured in the exit conference were not received till finalisation of the report.

Audit acknowledges the co-operation and assistance extended by UDD, ULBs and their officials at various stages during conduct of the performance audit.

Audit Findings

2.6 Planning

Effective management of solid waste requires a well-defined policy to establish waste management systems and to carry them forward in a sustainable manner. The policy should, *inter alia*, provide for the strategies to reduce, recycle, and reuse waste, which would lessen the amount of waste meant for final disposal and the cost of disposal.

2.6.1 Preparation of City Plan

As per chapter 26 of Solid Waste Management Manual, a city plan for solid waste management, should be a written document outlining activities to be undertaken with a definite time frame. Management of MSW involves activities associated with generation, storage, collection, transfer and transport, processing, recovery and disposal of solid waste which are environmentally sustainable adopting principles of economy, aesthetics, energy and conservation.

Audit observed that except NN Lucknow, NN Kanpur and NPP Sultanpur, none of the ULBs of ten test checked districts had prepared a city plan. Consequently, none of the ULBs could implement the MSW Rules properly, which are discussed in the succeeding paragraphs.

2.6.2 Status of functionality of Waste processing and disposal facilities

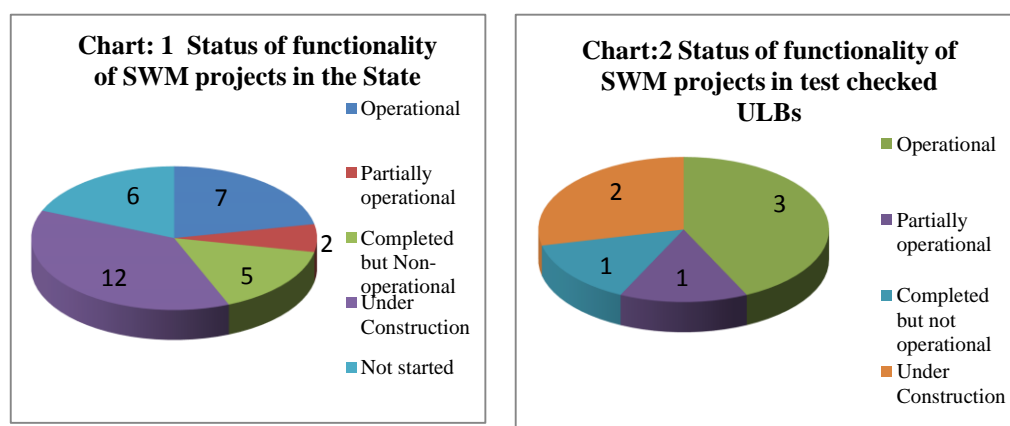
As per MSW Rules every municipal authority was to set up the facility after obtaining authorisation from State Pollution Control Board, by the stipulated date, *i.e.* 31 December 2003 or earlier for processing and disposing the waste generated within their jurisdiction.

Scrutiny of records of Directorate, Local Bodies revealed that out of total 636 ULBs in the State, waste processing and disposal facilities (projects) were sanctioned in only 32 ULBs, as on March 2016. Besides, none of the projects

could be set up by the stipulated date, as mentioned in the Rules. Thus, due to lack of planning by the Department to cover all ULBs of the State, waste processing facilities were not sanctioned in 604 ULBs (95 per cent), even after 16 years of MSW Rules being implemented in the State. Even out of 32 projects sanctioned, only nine projects (1.4 per cent of total ULBs in the State) were operational till March 2016 (*Appendix 2.2*).

Out of 36 test checked ULBs, waste processing and disposal facilities were sanctioned in only seven ULBs. However, the projects could be made operational in only three out of total 36 ULBs test checked, till March 2016.

The status of all 32 projects in the state as well as projects in the test checked ULBs is summarised in **Charts 1 and 2**.



(Source: Information provided by Director, LB)

2.6.3 Facilities working without authorisation

As per MSW Rules the municipal authority or an operator of a facility (Concessionaire) was to submit an application in prescribed form, for grant of authorisation for setting up waste processing and disposal facility including landfills from the UPPCB to comply with the implementation programme. Scrutiny of records, however, revealed that out of 32 projects sanctioned in the State, only five ULBs had obtained authorisation during 2011-16 as detailed in **Table 1**.

Table 1: Status of authorisation obtained during 2011-16

Sl. No.	Name of ULBs	Years in which authorisation obtained				
		2011-12	2012-13	2013-14	2014-15	2015-16
1.	NPP Raibareli	Obtained	Obtained	Not obtained	Obtained	Not obtained
2.	NN Bareilly	Not obtained	Obtained	Obtained	Not obtained	Not obtained
3.	NPP Barabanki	Not obtained	Obtained	Obtained	Obtained	Not obtained
4.	NN Lucknow	Not obtained	Not obtained	Obtained	Obtained	Obtained
5.	NN Allahabad	Not obtained	Not obtained	Not obtained	Not obtained	Obtained
Total		One obtained	Three obtained	Three obtained	Three obtained	Two obtained

(Source: Information provided by UPPCB)

It is evident from **Table 1**, that none of the ULBs or operators has obtained regular authorisation. Further the authorisation granted to operator of NN Lucknow plant was valid up to December 2015 only, which was not renewed till date (July 2016).

2.6.4 Unauthentic estimation of waste

Proper assessment of quantity and characteristic of waste generated is essential for correct planning and successful implementation of MSW Rules. The MSW Rules envisage the facility of Weigh Bridge at disposal sites in each ULB for accurate assessment of solid waste generated and its reporting in the Annual Returns. However, during joint physical inspection, it was noticed that out of 36 test checked ULBs, only three NPPs¹ and two selected NNS² had the facility of weighing the waste.

2.6.5 Manpower management

For proper management of MSW, there should be adequate manpower deployment. To oversee the implementation of MSW Rules, Sanitary Inspectors as supervisory staff were required. Audit scrutiny, however, revealed that during 2011-16, against the 144 sanctioned posts of Sanitary Inspectors in 36 test checked ULBs, there was a shortage ranging from 39 to 41 numbers of Sanitary Inspectors.

Thus, due to failure of proper planning for deployment of supervisory staff in the test checked ULBs, the implementation of MSW management was affected.

Recommendation: Government should prepare plans to ensure smooth implementation of the MSW Rules, 2000 and monitoring of MSW projects in the State.

2.7 Financial Management

ULBs used the funds from State Finance Commission (SFC), Thirteenth Finance Commission (13th FC) and other scheme funds/own funds for management of MSW. The position of expenditure incurred on MSW management by ULBs of the State and test checked ULBs during 2011-16 is given in **Table 2**.

Table2: Expenditure on MSW management by ULBs of the State and test checked ULBs
(₹ in crore)

Year	Expenditure in the State			Expenditure in test checked ULBs		
	Total	On MSW	Percentage of expenditure on MSW	Total	On MSW	Percentage of expenditure on MSW
2011-12	3,050.74	167.86	5.50	1,623.98	65.61	4.04
2012-13	2,874.32	203.09	7.07	1,559.38	66.06	4.24
2013-14	3,853.77	244.26	6.34	1,841.10	94.16	5.11
2014-15	5,324.68	344.68	6.47	2,200.30	104.58	4.75
2015-16	NA	NA	NA	2,420.65	144.66	5.98
Total	15,103.51	959.89		9,645.41	475.07	

(Source: Information published in departmental annual report-“Karyavivran” and test checked ULBs)

¹ Etawah, Kannauj and Mainpuri.

² Kanpur and Lucknow.

Table 2 shows that management of MSW works were not given due priority by ULBs of the State, as expenditure on management of MSW ranged between 5.5 and 7.07 *per cent* only, against total expenditure. The position in test checked 36 ULBs were also meagre ranging 4.04 to 5.98 *per cent* of total expenditure indicating that the allocation of funds for MSW management was not given due importance though it was very much essential and needed more emphasis for the sake of public health.

2.7.1 Sanctions of MSW management projects under schemes

Total 29 projects for solid waste management were sanctioned by GoI and three projects by Government of Uttar Pradesh (GoUP). Out of 29 projects sanctioned by the GoI, 27 were in schemes under Jawaharlal Nehru National Urban Renewal Mission (JNNURM) amounting to ₹ 419.61 crore and two projects³ amounting to ₹ 27.38 crore under Airfield Town Schemes. The funds sanctioned by GoUP for the three projects⁴ was ₹ 58.31 crore. Details of sanctioned cost of MSW management projects, release and expenditure against them are given in **Table 3**.

Table 3: Status of MSW projects in State as on March 2016

(₹ in crore)

Name of scheme	No. of projects sanctioned	Sanctioned cost	Total released amount	Expenditure	Unutilised amount against sanction		
					Amount	Per centage	
Government of India	UIDSSMT ⁵	19 ⁶	169.03	138.46	99.71	69.33	41.02
	UI&G ⁷	07 ⁸	241.60	227.44	202.77	38.82	16.07
	Satellite Town Scheme	01 ⁹	8.98	4.49	4.44	4.54	50.56
	Airfield Town Scheme	02	27.38	26.62	20.47	6.91	25.24
Government of UP	State sector scheme	03	58.31	13.80	0.00	58.31	100
Total		32	505.30	410.81	327.39	177.91	35.21

(Source: Information published in departmental annual report-“*karyavivran*”)

As may be seen from **Table 3**, 35 *per cent* of sanctioned cost of MSW management projects in the State remained unutilised as installation works of 19 MSW processing and disposal facilities were held up due to various reasons *viz.* dispute between contractor and sub-contractor, land dispute, unavailability of suitable land *etc.*

³ NN Bareilly and NN Ghaziabad.

⁴ NPPs Bhadohi, Nazibabad and Rampur.

⁵ Urban Infrastructure Development Scheme for Small and Medium Towns.

⁶ Aligarh, Ballia, Barabanki, Basti, Budaun, Etawah, Fatehpur, Firozabad, Gorakhpur, Jaunpur, Jhansi, Kannauj, Loni, Mainpuri, Mirzapur, Moradabad, Muzaffarnagar, Raebareli and Sambhal.

⁷ Urban Infrastructure and Governance.

⁸ Agra, Allahabad, Kanpur, Lucknow, Mathura, Meerut and Varanasi.

⁹ Pilkhuwa Solid Waste Management

2.7.2 Unproductive expenditure on incomplete and abandoned projects

Scrutiny of records of Director LB revealed that Executing Agency (Construction & Design Services, Uttar Pradesh Jal Nigam), entrusted the work of 15 projects (*Appendix 2.3*) to a firm, M/s A2Z Waste Management Ltd. (concessionaire), for construction of MSW processing and disposal plant and operation of plant for next thirty years. The concessionaire started (September 2008 to December 2010) the work in eleven projects, where land was available and could complete only two projects (Muzaffarnagar and Meerut). Due to “financial difficulties” the concessionaire stopped the works abruptly and requested (July 2013) to sublet the projects to another firm. After getting sanction from Executive Agency, the Concessionaire sublet nine¹⁰ projects to M/s Accord Hydroair Private Limited (Sublette firm) in July 2013. The Concessionaire and the Sublette firm could only complete three projects¹¹ upto December 2013. The work in remaining six projects could not re-start and was incomplete till date. Further, four¹² completed projects were operational for about one to three years, when concessionaire stopped their operation due to dispute with ULBs over tipping fee.

Thus, due to selection of a concessionaire firm having poor financial health, the waste management projects in ten ULBs failed, resulting in unproductive expenditure of ₹ 156.22 crore (*Appendix 2.3*).

2.7.3 Blocking of funds of Swachhh Bharat Mission

As per *Swachhh Bharat Mission* (SBM) guidelines Central Government incentive for the SWM projects was to be in the form of a maximum of 20 *per cent* Grant for each project. The State Government was to release funds along with State share to ULBs within 30 days of release of the central share. Urban Development Department of GoI released (March 2015) first instalment of ₹ 37.56 crore for construction of SWM projects under SBM. However, GoUP could not sanction any project for 18 months (up to September 2016). Although, GoUP sanctioned SWM work plans amounting to ₹ 116.49 crore and released ₹ 50.78 crore (Central Share: ₹ 20.39 crore and State Share: ₹30.39 crore) to the Directorate Local Bodies (October 2016), the same was not released to ULBs by the Director till January 2017. Thus, the fund released by GoI (₹ 37.56 crore) and the State (₹30.39 crore) remained blocked at State level (22 months)/directorate level (four months).

2.7.4 Performance Security/Additional Performance Security to be obtained

As per Concession Agreement, the Concessionaire was to submit bank guarantee as Performance Security for the entire concession period as per the rate/amount agreed in Concession Agreement. Status of Performance Security deposited by Concessionaire in respect of the projects in the test checked districts is summarised in **Table 4**.

¹⁰ NNS: Aligarh, Kanpur, Moradabad and Varanasi; NPPs: Badaun, Ballia, Fatehpur, Mirzapur and Sambhal.

¹¹ Fatehpur, Kanpur and Moradabad.

¹² Fatehpur, Kanpur, Meerut and Moradabad.

Table 4: Status of Performance Security

Name of ULBs	Name of concessionaire	Amount to be realised of Bank Guarantee (₹ in lakh)	Status of Performance Security
NN Kanpur	A2Z Infrastructure Private Limited	766.25	NN had not obtained Performance Security at all.
NPP Etawah	Accord Hydroair Private Limited	19.70	NPP had not obtained Performance Security at all.
NPP Mainpuri	Accord Hydroair Private Limited	NA	Copy of Articles and Schedules of details of Concession Agreement and details of Performance Security/ Bank Guarantee not available with NPP.
NPP Kannauj	Accord Hydroair Private Limited	28.22	Bank Guarantee deposited as Performance Security had not been renewed since November 2015.
Total		814.17	

(Source: Information provided by test checked ULBs)

It may be noticed from **Table 4** above that two ULBs (NN Kanpur, NPP Etawah) had failed to obtain the Performance Security whereas in NPP Mainpuri no details were available.

In NPP Kannauj, Concessionaire submitted (November 2011) a bank guarantee of ₹ 28.22 lakh to NPP, issued by Chartered Marchantile M B Ltd. Lucknow, as performance security. Audit scrutiny revealed that NPP neither verified the bank guarantee from bank nor the status of issuing bank. Later, Executing Agency intimated that this bank was not registered with the Reserve Bank of India. Thus, the bank guarantee proved to be fake; but NPP neither blacklisted the concessionaire nor took any action against erring firm. Bank Guarantee deposited as Performance Security had also not been renewed since November 2015.

Moreover, as per the Concession agreements the Concessionaire was to also submit an Additional Performance Security, subsequent to the completion of one calendar year from the Appointed Date, by way of bank guarantee for a sum as prescribed in agreements. Scrutiny of records of the aforementioned four ULBs revealed that three¹³ of them had not obtained Additional Performance Security amounting to ₹ 97.99 lakh. In NPP Mainpuri, details of additional performance security/bank guarantee were not available.

2.7.5 Extra expenditure of ₹ 9.91 crore due to wrong site selection

GoI sanctioned (March 2007) an amount of ₹ 42.92 crore for development of MSW processing and disposal facility in the NN Lucknow. The initially earmarked land for this purpose at Village *Dashahari* in 2010 was later revealed as *falpatti*¹⁴ area and hence restricted for construction. Later, new sites were identified in Village *Shivri* and *Palhenda* road and handed over to Concessionaire during April 2011 to December 2012. Due to time overrun,

¹³NPP Etawah, NPP Kannauj, and NN Kanpur had not obtained Additional Performance Security of ₹ 15.00 Lakh, ₹ 15.00 Lakh and ₹ 67.99 Lakh, respectively.

¹⁴ *Falpatti* area is an area where a micro climate provides good conditions for fruit growing.

cost overran by ₹ 9.91 crore, which was sanctioned by GoUP and additional amount was paid from the Thirteenth Finance Commission grant (August 2014). This led to an additional expenditure of ₹ 9.91 crore.

2.8 Execution

As per MSW rules every municipal authority was responsible for collection, segregation, storage, transportation, processing and disposal of waste within their area. The Municipal Corporation Act, 1959 and Municipalities Act, 1916 of Uttar Pradesh, *inter alia*, required the municipalities to make adequate arrangements for sweeping, cleaning of streets, removal of rubbish and provision of dustbins and vehicles for removal of filth.

2.8.1 Collection of MSW

2.8.1.1 Waste collection system

MSW Rules specify steps for collection of waste generated in the Municipal area such as organised house to house collection, collection from slums squatter areas or localities including hotels, restaurants, office complexes commercial areas *etc.* Scrutiny revealed that except NN Lucknow, none of the test checked ULBs had maintained records regarding collection of waste, *e.g.* proper log books of vehicles engaged for MSW collection, list of collection centres, schedule of collection *etc.* Further in NN Lucknow, records for 55 wards out of total 110, where collection of MSW was being done by the concessionaire, were not available. Thus, audit could not verify whether the specified system was implemented in the ULBs for collection of waste on regular basis.

2.8.1.2 Door-to-door collection of MSW

Scrutiny of records revealed that out of 36 test checked ULBs door-to-door collection of MSW was not done at all in 31 ULBs. Rest five¹⁵ ULBs had a system of partial collection of MSW.

The failure in implementing the system of door-to-door collection resulted in littering of garbage in open spaces, road-sides and overflowing open dustbins at collection centres.

2.8.1.3 Levy/recovery of user charges

As per GoUP order (June 2014), user charges were to be levied at the rates notified by the concerned ULB for the first three years and collected from the consumers by the Concessionaire. The user charges thus collected were to be used for payment of tipping fee to Concessionaire by the ULBs for door-to-door collection and transportation of MSW upto disposal site.

However, in violation of GoUP order, NPP Etawah paid a tipping fee of ₹ 1.24 crore (for the period August 2014 to January 2016) to the Concessionaire from

¹⁵ NN Kanpur, NN Lucknow, NPP Etawah, NPP Kannauj and NPP Mirzapur.

SFC/Town Fund without recovering any user charges from consumers for door-to-door MSW collection.

Further scrutiny of records in 36 test checked ULBs revealed that none of the ULBs except *Nagar Nigam* Lucknow and NN Kanpur had levied user charges. NN Lucknow started door-to-door collection of MSW in 55 wards from May 2010. However, rates of user charges to be levied were notified by *Nagar Nigam* only in September 2013. Further scrutiny revealed that against the provision in GoUP order, NN Lucknow did not issue bills to households; instead the same were being issued by concessionaire. It was also noticed that NN Lucknow was not maintaining records regarding collection of user charges (details of wards, number of houses, number of bills issued, amount due and recovered as user charges). In absence of these records, the amount of due and recovered as user charges could not be ascertained by Audit.

2.8.1.4 Collection of MSW from offices and commercial complexes

As per MSW rules, ULBs had to devise collection of waste from slums and squatter areas or localities including hotels, restaurants, office complexes and commercial areas. Scrutiny revealed that only eight¹⁶ out of 36 test checked ULBs had arrangements for collection of MSW from these areas on regular basis. However, user charges were not levied in these ULBs. Remaining 28 test checked ULBs were collecting MSW from these areas only by road sweeping.

2.8.1.5 Collection of bio-degradable waste

As per MSW rules, wastes from slaughter houses, meat and fish, fruits and vegetable markets *etc*, which are bio-degradable in nature, shall be managed to make use of such wastes. Scrutiny revealed that except NN Lucknow, none of other 35 test checked ULBs had made arrangements for collection of bio-degradable waste from fruits and vegetable markets.

2.8.1.6 Burning of MSW

MSW Rules provides that waste (garbage, dry leaves) shall not be burnt for which all ULBs should take measures to prevent burning of tree leaves and other waste by sweepers on the roadside and direct sweepers to take all waste to the community waste storage bins/sites only.

However, during joint physical inspection it was observed that MSW was being burnt in the open at various places in 18 ULBs¹⁷, whereas in NPP Kannauj and NPP Etawah MSW was being burnt within processing plant premises which was also not permitted.

¹⁶ NN Kanpur; NPPs Bilhaur, Etawah, Jaswantnagar, Sultanpur; NPs Bakewar, Bithoor, Shivrajpur.

¹⁷NPPs Chandausi, Chhibramau, Deoria, Etawah, GauraBarhaj, Jaswantnagar, Kannauj, Mirzapur, Padrauna, Sambhal, NPs Bakewar, BhatparRani, Bhogaon, Hata, Karkhana, Lakhna, Rampur, Ramkola, and Samdhan.



Burning of MSW was not only a violation of MSW Rules but also fraught with severe environmental and health risks.

2.8.1.7 Inadequate provision of community bins

As per Manual of MSW management, the municipalities were to provide community dustbins at a reasonable distance ranging from 25 to 250 metres of road length depending on local requirement. The details of community dustbins required and placed by the test checked ULBs are furnished in **Table 5**:

Table 5: Details of community dustbins

(In number)					
Years	Total road length in 36 ULBs (in meters)	Community dustbins required ¹⁸	Dustbins provided	Shortage	Percentage of shortage
2011-12	83,88,309	33,553	4,041	29,512	87.95
2012-13	84,36,784	33,747	4,190	29,557	87.58
2013-14	84,96,413	33,985	1,865	32,120	94.51
2014-15	85,57,199	34,228	2,970	31,259	91.32
2015-16	86,09,571	34,438	3,344	31,094	90.29
Total	4,24,88,276	1,69,951	16,410	15,3542	90.35

(Source: Information provided by concerned ULBs)

As evident from **Table 5**, the shortage of community dustbin ranged between 88 to 95 *per cent* in all test checked ULBs, during 2011-16. This resulted in wastes being thrown on the roadsides and also in municipal drains blocking flow of water.



¹⁸Considering upper range at the rate of one bin per 250 metres.

2.8.1.8 Roads/Streets Sweeping

Laws governing ULBs make it obligatory to ensure daily cleaning/sweeping of public roads/ streets/ other public places and disposal of waste collected through road sweeping and door-to-door collection. For the purpose, according to MSW Manual, a list of roads and streets together with their length and width should be prepared and a program for their daily cleaning should be worked out by the local body keeping in view the prescribed work norms. A time schedule should be prepared for cleaning of open public spaces daily or periodically to ensure that they do not become dump yards and remain clean.

Scrutiny of records of the test checked ULBs, however, revealed that such list was not prepared by 12 ULBs (33 *per cent*). Further, in 11 ULBs the time schedule for cleaning and sweeping of public places was not prepared. Hence the progress in this regard could not be established through records in audit.

Recommendation:

- ***Door-to-door collection of wastes from all households, Offices and commercial complexes and collection of bio-degradable waste should be achieved in a time bound manner. Proper policy for levying user charges and its recovery should be made by the State.***
- ***Each ULB should provide sufficient number of dustbins for collection of MSW. Burning of MSW should be strictly avoided.***

2.8.2 Segregation of MSW

2.8.2.1 Conducting public awareness programmes

The compliance criteria under MSW Rules for segregation of MSW provides that the municipal authority shall organise awareness programmes, meetings with local resident welfare associations and NGOs to encourage the citizens and community participation for segregation of various types of waste and for promoting recycling or reuse of segregated materials.

Scrutiny revealed that only nine¹⁹ ULBs out of the 36 test checked had organised awareness programmes to motivate local citizens through rallies, hoardings, banners, pamphlets, *etc.* However, none of the test checked ULBs held meetings with local resident welfare associations and NGOs to encourage community participation for segregation of various types of wastes at source. Thus, lack of public awareness, segregation of MSW was not being done at its origin. Scrutiny further revealed that in four²⁰ test checked ULBs where MSW processing plant was operational, segregation of MSW was not being done. Thus, segregation of waste of different nature at any stage of processing, prior to its transmission for final disposal was not being done in any of the test checked ULBs. Examples of dustbins placed but not being used due to lack of awareness among the citizens of NPP Chandausi and NP Narauli are depicted in photographs below:

¹⁹ NPPs: Ahraura, Etawah, Jaswant Nagar, Mirzapur, Padrauna, Sultanpur, NPs: Bakewar, Kachhwan and Lakhna.

²⁰ NPPs :Etawah, Kannauj, Mainpuri and NN Kanpur.



2.8.2.2 Mixing of other wastes with municipal solid waste

MSW Rules specifies that horticulture and construction/ demolition waste or debris are required to be separately collected and disposed-off following proper norms. However, Audit observed that these wastes were not being collected separately, thereby violating the provisions of the Rules.



MSW mixed with construction debris at open dump site in NN Lucknow

MSW Rules also provide that Bio-medical waste (BMW) shall not be mixed with MSW and such wastes shall be disposed-off following the rules separately specified for the purpose. However, audit scrutiny in test checked ULBs and joint field visit revealed that BMW was mixed with MSW, which could prove harmful to the environment.

Recommendation: *ULBs should arrange programme with the Resident Welfare Associations, Non-Government Organisations and school going children regularly for awareness regarding segregation of waste.*

2.8.3 Storage of MSW

As per MSW Rules, Municipal authorities were to establish and maintain storage facilities in such a manner that they do not create unhygienic and unsanitary conditions around it. Audit scrutiny revealed that in all test checked ULBs, open dustbins were found in violation of the MSW Rules.



MSW littered outside dustbin in Mainpuri

Further, 26 ULBs²¹ out of 36 test checked accepted that they were not ensuring proper and regular cleaning of dustbins.

MSW Rules also envisage that to prohibit littering of MSW in cities, the municipal authority was to ensure that collected and segregated waste is properly stored in a manner not to cause any hazard to public health or to the environment and to take steps for not allowing the stray animals to move around waste storage facilities.

Audit observed that intermediate collection centres were not developed or maintained regularly in test checked ULBs, except six²². Thus, these 30 ULBs were collecting MSW from unhygienic dump yards, roadsides, low lands, etc. During joint physical verification, it was observed that ULBs were not managing intermediate collection centres efficiently and regular lifting of garbage from there was not ensured, which posed a health hazard.



MSW Rules also envisage that the bins for storage of bio-degradable wastes were to be painted green, white for storage of recyclable wastes and black for storage of other wastes. But it was noticed that in violation of MSW Rules, none of the selected ULBs purchased dustbins adhering to colour coding norms or placed the different coloured containers at one particular place.

Recommendation: The State Government should draw up a time bound plan for providing storage facility; open storages should be replaced with covered storages.

2.8.4 Transportation of MSW

According to MSW Rules, vehicle used for transportation of waste shall be covered. Waste should neither be visible to the public nor exposed to the open environment to prevent its scattering. Transportation vehicles shall be so designed

²¹ NN Lucknow, NPPs Ahraura, Chandausi, Chibramau, Deoria, Gaura Barhaj, Jaswant Nagar, Kannauj, Mainpuri, Mirzapur, Padrauna, Sultanpur, NPs Babrala, Bakewar, Bakshi Ka Talab, Bhatpar Rani, Bhogaon, Hata, Kachhwa, Lakhana, Mahona, Naroli, Ramkola, Rampur Karkhana, Samdan and Talgram.

²² NN Lucknow, NPPs: Chandausi, Jaswant Nagar, Mirzapur, Sultanpur and NP Lakhna.

that multiple handling of waste prior to final disposal is avoided. Audit scrutiny revealed that in all test checked ULBs, except in NN Lucknow and NN Kanpur, MSW was transported by using uncovered vehicles.



Further scrutiny revealed that the assessment of required vehicles for effective transportation of MSW was not done by ULBs. Also, the norms for transportation vehicles were not laid down by the Director, Local Bodies.

It was also noticed that multiple handling of waste was common in all test checked ULBs. NN Kanpur and NPP Sambhal, however, stated that they were ensuring MSW transportation without multiple handling, but both these ULBs could not provide evidence in support of their contention. Hence, the ULBs failed to prevent littering of MSW on roads from the vehicles and spreading of foul odour and multiple handling could not be avoided.

Recommendation: ULBs should arrange covered vehicles for transporting MSW in an environment friendly manner.

2.8.5 Processing and disposal of Municipal Solid Waste

MSW Rules provide that municipal authorities shall adopt suitable technology or combination of such technologies to make use of wastes, so as to minimise burden on landfill. In this connection, bio-degradable wastes shall be processed by composting, vermicomposting, anaerobic digestion or by any other appropriate processing for stabilisation of wastes and shall ensure that compost or any other end product shall comply with standards as specified in the Rules.

2.8.5.1 Status of waste processing and disposal facilities

Upto 2015-16, in only seven out of 36 test checked ULBs works of waste processing and disposal facilities were sanctioned. Status of seven MSW Plants is furnished in **Table 6:**

Table 6: Status of MSW Plants in seven test checked ULBs

Name of ULBs	Sanctioned cost (₹ in crore)	Date of start	Due date for completion	Actual date of completion	Actual cost (₹ in crore)	Date of start of Operation	Present status
NPP Mirzapur	11.01	02/2011	31.03.14 (revised)	Not complete	6.46	Not complete	Not operational
NPP Sambhal	6.55	01.04.08	31.03.09	Not complete	3.22	Not complete	Not operational
NN Kanpur	56.24	07.08.08	04/2009	12.11.11	56.02	11.05.12	Abandoned
NN Lucknow	42.92	08.04.11	07.12.11	Not complete	39.38	Not complete	Partially operational
NPP Etawah	5.82	11.08.10	30.06.12	31.10.12	5.42	08.02.13	Operational
NPP Kannauj	4.62	01.01.09	31.03.11	30.04.11	4.57	17.11.11	Operational
NPP Mainpuri	4.28	10.06.10	NA	30.06.12	3.74	29.12.12	Operational

(Source: Information provided by concerned ULBs)

The **Table 6** indicates that none of the projects in these ULBs could be completed in due time. The status of the seven projects is discussed hereafter:

2.8.5.2 Wasteful expenditure and blockage of fund

As per agreement executed (February 2012) between the Concessionaire²³ and Executing Agency for installation of MSW Management project in NPP Sambhal, Concessionaire was to provide good quality motorable roads within the MSW Plant area and construction of approach road was not the liability of the Concessionaire. Besides, NPP Sambhal had to provide high tension (HT) line up to the MSW facility premises.

However, scrutiny revealed that NPP failed to provide the approach road and HT line connection from urban line feeder and hence the Concessionaire left (June 2012) the work of installation of MSW processing and disposal facility incomplete after incurring an expenditure of ₹ 3.22 crore. In reply, NPP stated that although correspondence for construction of approach road have been done with administration/GoUP; approach road could not be constructed.

In NPP Mirzapur, the Concessionaire²⁴ left the installation work of plant midway due to its poor financial position and the work could not be restarted and remained incomplete till date after incurring an expenditure of ₹ 6.46 crore. In reply, NPP accepted the fact stating that the work of construction was held up due to dispute between concessionaire and Sublette firm.

Further, in joint physical inspection of sites in Sambhal and Mirzapur, all the equipment and machineries were found lying in dilapidated condition at site and work for construction of boundary wall remained incomplete (March 2016).

²³M/s A2Z Waste Management (Sambhal) Private Limited.

²⁴M/s A2Z Waste Management (Mirzapur) Private Limited.



Thus, objective of installation/operation of MSW plant remained unfulfilled even after incurring an expenditure of ₹ 9.68 crore²⁵ by these ULBs.

Besides, ₹ 6.42 crore²⁶ were blocked with NPPs and ₹ 1.46 crore²⁷ remained blocked with executing agencies of these ULBs, as the work was abandoned and facilities were still incomplete (March 2016).

2.8.5.3 MSW processing and disposal facility not functional

In *Nagar Nigam* Kanpur, the MSW processing facility was installed and handed over to NN in May 2012 by the executing agency. During audit scrutiny it was observed that the Concessionaire²⁸ responsible for collection, segregation, transportation, processing and disposal of municipal solid waste for a 30-year period as per agreement was not doing its duties properly as the processing at plant was held up from February 2014 despite several notices (September 2014 to March 2015) issued by NN. The position of processing of MSW gradually deteriorated during 2013-15 (*Appendix 2.4*), which resulted in increase of quantum of MSW at plant site. Moreover, the Concessionaire left the work abruptly (April 2015) without assigning any reason.

As observed in joint physical inspection huge heaps of unprocessed MSW was lying at plant site.



²⁵ ₹ 3.22 crore and ₹ 6.46 crore by NPP Sambhal and NPP Mirzapur, respectively.

²⁶ ₹ 2.40 crore and ₹ 4.02 crore NPP Sambhal and NPP Mizapur respectively.

²⁷ ₹ 93.24 lakh and ₹ 52.72 lakh NPP Sambhal and NPP Mizapur respectively.

²⁸ M/s A2Z Infrastructure Private Limited.

In *Nagar Nigam* Lucknow, as per Concession Agreement (October 2010), the work of installation of MSW processing and disposal facility (plant) was to be completed within eight month (*i.e.* December 2011) after handing over of land (April 2011) to the concessionaire²⁹ at new identified site. The concessionaire had to install the plant and four transfer stations at four different centres in Lucknow. But, the concessionaire did not complete the work even by May 2016. Moreover, the MSW processing plant required 1500 KVA electric connection for smooth running of its all units which was to be managed by the Concessionaire. Audit scrutiny revealed that Concessionaire could get only 500 KVA connection as the Concessionaire had not deposited the required amount of ₹ 2.12 crore to electric department for additional electric connection. Due to insufficient power supply the plant could not be made operational to its full capacity.

Further, during physical inspection it was noticed that transfer station at Hardoi road, lacks boundary wall, gate, office site and site levelling work, whereas another transfer station at Sitapur road was running without gate. Further, Landfill site work at *Shivari* was incomplete.



Incomplete Transfer station at Hardoi Road, Lucknow

Incomplete Landfill site at MSW Plant at Shivari, Lucknow

2.8.5.4 MSW processing and disposal facility operating sub-optimally

In NPP Etawah, MSW plant started in August 2014, at *Kameth* but was not operational to its optimum capacity (2250 MT per Month) due to inadequate power supply.

Audit scrutiny revealed that as per agreement, the concessionaire³⁰ was responsible for making alternative arrangement for uninterrupted power supply to ensure smooth functioning of the plant. But concessionaire could not make such arrangement



Huge heaps of MSW dumped at plant site, Kameth, Etawah

²⁹M/s Jyoti Envirotech Private Limited.

³⁰M/s Accord Hydroair Private Limited.

and hence due to insufficient availability of uninterrupted power supply at plant, only 825 MT, out of total MSW 1675 MT generated per month in the municipal area, was being processed and the remaining was being dumped at plant site unprocessed. Accepting the fact, NPP stated that availability of electricity supply at the plant was only for three to four hours.

2.8.5.5 Inadequate capacity of MSW plant

In NPP Kannauj, average quantity of MSW generated in 2015-16 was 984 MT per month. However, capacity of MSW processing plant installed in NPP Kannauj was of only 750 MT per month. As per agreement, this tonnage of MSW was to be revised as mutually agreed between the ULB and the concessionaire periodically, keeping in view the actual growth in waste generated, and the requirement of MSW for processing. However, NPP had not initiated for revising the quantity of MSW to be processed at plant commensurate with the requirements of increased quantum of MSW generated and hence remaining 234 MT MSW per month was untreated and being dumped on road sides.

2.8.5.6 Dumping of MSW in improper places

Other than seven cases discussed above, audit noticed that the MSW processing facilities and proper dumping sites was not available in 29 test checked ULBs. In absence of proper dumping sites in 31 test checked ULBs (including two ULBs in which plant could not be installed), MSW generated (average 9007 MT per month during 2011-16) was being dumped on road sides, low land area *etc.* As the ULBs continued to dump the waste in open environment without scientific treatment, the risk to human beings due to contamination of soil and ground water remained high.

Further, GoUP ordered (June 2012) all the ULBs to identify 10 *acres* of land for setting up of waste processing plant and disposal of landfill site where such facility was not installed. But none of the remaining 29 ULBs (excluding 7 ULBs having operative/inoperative plant), except NPP Chhibramau, had identified the required land for the same (Mach 2016).

2.8.6 Other Miscellaneous issues

2.8.6.1 Irregular payment of Tipping Fee

As per concessionaire agreements of NN Kanpur and NN Lucknow, tipping fee was payable to the concessionaire for maintenance and operation commencing from the COD³¹ as per rates quoted by the selected bidder in its financial proposal.

Audit scrutiny revealed that NN Kanpur started paying tipping fee to the concessionaire from December 2010, whereas COD of this plant was May 2012. Thus, payment made by NN to the concessionaire amounting to ₹ 19.87 crore (from December 2010 to April 2012) as tipping fee was irregular.

³¹ As per concession agreement “COD” means the commercial operations date of the Project on which the Construction Supervisor has issued the Provisional Completion Certificate or Completion Certificate.

In reply, NN Kanpur stated that the work for collection and transportation of MSW was being taken from the concessionaire from October 2010, and the payment of tipping fee was made accordingly. Reply of the ULB is not tenable as the action was against the provision in the agreement.

Similarly, NN Lucknow irregularly paid an amount of ₹ 18.10 crore (for the period 2011 to 2015) as tipping fee to concessionaire without declaration of COD of the project since the project was yet to be completed as stated in *para 2.8.5.3*.

2.8.6.2 Irregular enhancement of rate of tipping fee

Scrutiny of records of NN Lucknow revealed that due to lowest quoted rate of tipping fee in its Financial Proposal among four bidders, the executing agency accepted the Request for Proposal of the Concessionaire and the rate of tipping fee was incorporated in the Concession Agreement.

As per Concession Agreement, the rate of tipping fee was set as ₹ 562 per MT for first three years and thereafter rates were calculated adding the price escalation in certain percentage³², upto next thirty years. As discussed in *para 2.7.5*, new land was identified and the distance was increased by 12 kilometres in comparison to earlier site. Keeping this in view the Concessionaire put up a revised business plan (February 2014) for installation/operation of MSW processing plant in which a revision in tipping fee rate was proposed. A Review Committee constituted (March 2014) by GoUP for reviewing this plan, added various components³³ while analysing the rate of tipping fee and recommended the revised rate as ₹ 1,604 per MT for the first three years, thereafter rates were calculated adding the price escalation in certain percentage³⁴, an increase of 285 *per cent* in the rate of tipping fee.

Scrutiny revealed that there was only one change (increase in distance of site) that affected the rate of tipping fee but while analysing the rate of tipping fee in revised business plan, the committee added various components in analysis of rate of tipping fee. Moreover, as per agreement these components belonged to the liability of Concessionaire. Thus, 285 *per cent* enhancement of rates was not proportionate to the circumstances arisen due to change of site and hence irregular.

2.8.6.3 Unnecessary procurement of equipment and vehicles

In Detail Project Reports (DPRs) of SWM projects of NPPs Sambhal, Mirzapur, Kannauj and Mainpuri, provision for procurement of Equipment and Vehicles was made for collection and transportation of MSW upto processing and disposal plant site.

Audit scrutiny revealed that in NPP Sambhal, the executing agency purchased and supplied (August 2008 to November 2008) Equipment and Vehicles worth ₹ 1.19 crore to the NPP before finalisation of tender for establishment of

³² Increasing the rate by 2.60 *per cent* to 1.68 *per cent* from fourth year upto 30 year.

³³ Ten *per cent* contractor profit, three *per cent* contingency and three *per cent* was the administrative expenditure, net loss in running the plant expenses towards vehicle tracking and GPS mobile phone, IEC and grievances redressal *etc.*

³⁴ Increasing the rate by 2.60 *per cent* to 1.68 *per cent* from fourth year upto 30 year.

MSW processing plant, on request of NPP (June 2008). These were neither entered into stock book of NPP nor put into use, as observed in joint physical inspection of store. The Equipment and Vehicles were lying idle in dilapidated condition since 2008.



Photograph of Tools & Equipment lying unused for eight years in NPP Sambhal

Similarly, in NPP Kannauj, two refuse collectors mounted on heavy duty double wheel trolley, were purchased by executing agency at a total cost of ₹ 21.70 lakh and supplied (February 2010 and June 2011) to NPP. The supplier did not organise any training for drivers of NPP to handle refuse collectors, even though it was a precondition in supply order. Further, tractors of sufficient capacity were not available with NPP to make these refuse collectors functional.



Refuse collectors lying idle in NPP Kannauj,

Consequently, both refuse collectors were not put in to use and were lying idle since purchase. Similarly, out of three other vehicles purchased and supplied to NPP (February 2010 to October 2011), two vehicles costing ₹ 5.70 lakh were lying idle for five years.

In NPP Mirzapur, executing agency procured equipment and vehicles costing ₹ 1.26 crore and handed over to NPP (February, 2011) much before the construction of the plant, without obtaining necessary consent/demand in confirmation of GoUP orders (May 2009). Further, installation of the plant got held up midway (August 2012) and remained incomplete, resulting in the equipment³⁵ and vehicles³⁶ lying unused and became decrepit as observed in audit.

³⁵Rickshaw trolley and Metallic container.

³⁶ Refuse collector, Hand cart, Dumper placer, Trolley tractor.

Thus, the unnecessary procurement of equipment and vehicles resulted in wasteful expenditure of ₹ 2.72 crore, defeating the objective of utilising these for the projects.

Further, in NPP Mainpuri, audit scrutiny revealed that 100 M.S. containers costing ₹ 17.80 lakh were purchased (March 2013) by executing agency on the request from NPP. However, details of utilisation or stock entries of these containers were not available with the NPP. In the absence of stock entries and details of utilisation of these containers, authenticity of actual purchase could not be ascertained in audit.

2.8.6.4 Penalty against short collection of MSW

In NN Kanpur, as per the agreement, the Concessionaire was to ensure supply of minimum Assured Incoming Waste (AIW) at the MSW Processing Facility on monthly basis, to be calculated at the rate of 80 *per cent* of the MSW generated during the operation period in accordance with the Operation & Maintenance (O&M) requirements. In the event, in any given month, aggregate quantity of incoming waste falls short of the AIW, the concessionaire was to pay a penalty equivalent to higher of (a) 50 *per cent* of the tipping fee payable for the shortfall in AIW quantity or (b) 120 *per cent* of the amount payable by the ULB to the MSW processing facility operator for its default under the agreement for O&M of the MSW processing facility and sanitary landfill.

Audit scrutiny, however, revealed that the firm did not maintain the AIW during May 2012 to January 2015 but the penalty from the tipping fee of the firm amounting to ₹ 14.60 crore (*Appendix 2.5*) was not imposed by NN, though, an amount of ₹ 37.42 lakh was withheld and not paid to the firm by the NN. Thus penalty from the tipping fee amounting to ₹ 14.23 crore, even after adjusting the withheld amount was not imposed.

The NN did not furnish any specific reply on not taking any action to collect the amount ₹ 14.23 crore from the Concessionaire.

2.8.6.5 Refuse Derived Fuel facility not established

Audit scrutiny of records revealed that in all the three ULBs where processing plant were operational, the executing agency reported that the facility for Refuse Derived Fuel³⁷ (RDF) was established, in their handing over reports. Moreover, availability of RDF facility was also reported by these ULBs in Service Level Benchmark report submitted annually to the Director, LB. However, joint physical inspection of processing and disposal plant, revealed that no such facility was available at site in all the three ULBs, resulting in no further processing after getting waste.

³⁷ Refuse derived fuel refers to as small cubes or cylindrical pieces made out of solid wastes.

2.8.6.6 No development of Buffer Zone

MSW Rules specifies that a buffer zone of no-development shall be maintained around landfill site and shall be incorporated in the Town Planning Department's land-use plans. However, Audit scrutiny revealed that any notification issued by the NN/NPP/State Government or any record regarding declaration of the adjoining areas of Sanitary Land Fills as buffer zone of no-development was not available and habitats were not far from the plant. It was noticed that a school was functioning just adjoining the landfill site in NN Kanpur.



School functional just adjoining the landfill site in NN Kanpur.

2.8.6.7 Vehicle Tracking and Monitoring System

In NN Lucknow, as per agreement, the Concessionaire was to install a Vehicle Tracking and Monitoring System (System) at its own cost and expense in all the vehicles used by the Concessionaire for collection of MSW including the vehicles provided by NN.

Audit scrutiny, however, revealed that the System was not installed in any of the vehicles through which transportation of MSW was done by either ULB or Concessionaire.

2.8.6.8 Doubtful tendering process and supply of sub-standard buckets

For door-to-door collection of MSW, NPP Mainpuri initiated tender process (July 2014) for purchase of 2500 buckets of 30 litre capacity each. Scrutiny of records revealed that sale, deposit and opening of tender date were the same (11 July 2014). It was further noticed that an affidavit³⁸ which was to be submitted by successful bidder after finalisation of tender (11 July 2014), was submitted one day before the same (10 July 2014), indicating doubts over the tender process.

Further scrutiny revealed that the material of buckets was not mentioned in sanction note, tender notice, tender documents and work order. In spite of this, bidders quoted their rate and selected bidder supplied the plastic buckets (March 2015) and a bill for ₹ 10 lakh on an ordinary letter head without any bill-book number or serial number, was raised by the supplier. Against this bill, a sum of ₹ 8.75 lakh was paid after deducting ₹ 50 per bucket for sub-standard supply of buckets. Thus, an expenditure of ₹ 8.75 lakh was

³⁸ Regarding execution of agreement between bidder and the NPP, on a ₹ 100 stamp paper.

incurred for the purchase of sub-standard buckets and through a tendering process that was not transparent.

2.8.6.9 Joint survey of beneficiaries

During performance audit a beneficiary survey involving 1,688 beneficiaries was conducted in test checked 36 ULBs. Issues raised and responses of beneficiaries and the outcome of the survey are summarised in **Table 7**:

Table 7: Beneficiary Survey Outcomes

Sl. No.	Issues Raised	Beneficiaries accepted	
		In numbers	In per cent
1	Regular streets sweeping was not being done in ward.	347	21
2	Regular waste was not being lifted from roads/ streets in ward.	386	23
3	Door-to-door collection of waste was not being done in ward.	422	25
4	Sufficient number of dustbins were not available in wards.	769	46
5	Different colour dustbins were not available in ward for collection of different type of waste.	1,636	97
6	Awareness programs were not organised in ward for segregation of different types of waste.	1,537	91
7	Waste was not being transported in covered vehicles.	1,235	73
8	Beneficiaries were not satisfied with ULB works.	341	20
9	Necessary action had not been taken by ULB regarding complaint for disposal of waste.	363	22

2.9 Monitoring

2.9.1 Lack of monitoring

As per Municipal Solid Waste Manual of GoI, the State Governments should frame appropriate policies to guide the local bodies and take a lead role in activating the local bodies to perform their obligatory duties effectively. MSW Rules also stipulates that the District Magistrates within the territorial limits of their jurisdiction shall have the overall responsibility for the enforcement of the Rules. The municipal authority should, comply with MSW Rules as per implementation schedule laid down in schedule-I and monitor the performance of waste processing and disposal facility every six months.

However, it was noticed that no monitoring records, such as consolidated monitoring reports and ULB-wise implementation status were maintained at the State level. Also norms and periodicity of monitoring and inspections at various levels were not determined by the State. Test checked ULBs having waste processing and disposal facilities also did not have any system of regular periodic monitoring regarding performance of facilities on the records.

2.9.2 Submission of annual report of MSW to UPPCB

The MSW Rule 4 (4) prescribes that every municipal authority shall furnish its Annual Report (AR) to the District Magistrate of concerned district, with a

copy to the UPPCB on or before the 30th June every year, and UPPCB, in turn, shall prepare and submit its AR to the Central Pollution Control Board (CPCB) with regard to the implementation of the MSW Rules by 15 September every year.

Audit scrutiny revealed that none of the test checked 36 ULBs submitted the ARs to UPPCB during the period 2011-15. Despite that, UPPCB submitted the ARs to CPCB consisting of data as per standard norms of per capita waste generation. Thus, authenticity of the data in the ARs submitted by UPPCB could not be verified by Audit.

2.9.3 Pollution control norms in disposal process of MSW

The pollution control norms for disposal process of MSW as detailed in *Appendix 2.6* were not being adhered to by any of the test checked ULBs. However, audit observed that none of the five³⁹ test checked ULBs except NN Kanpur, where processing plants were installed, covered the MSW with soil or developed the leachate collection system. Periodical monitoring of landfill site for ensuring control on ground water contamination and air pollution was not being done by any of these ULBs. Further, in the rest 31 ULBs where MSW processing plant was not installed or operational, MSW was dumped wherever possible in the municipal area, posing hazard to human life.

2.9.4 Independent Engineer for waste processing facility not appointed

Independent Engineers were to be appointed by ULBs to review and monitor the operations at waste processing plant. However, in NPP Kannauj, NPP Mainpuri, and NPP Etawah, where plants were operational, engineers were not appointed at the plant and hence necessary review/monitoring of operations at waste processing plant, as envisaged, was not being done.

2.9.5 Compost quality specifications

MSW Rules provide to ensure safe application of compost, and hence the specifications for compost quality as mentioned in Schedule IV (*Appendix 2.7*), were to be met.

However, audit observed that at three⁴⁰ test checked ULBs, where plant was operational, compost was piled as a product and there were no records to verify the quantum of produce, its sale to farmers, examination of the concentration of manure on above parameters and the steps to ensure safe application of compost. Audit also observed that health check-ups of waste handlers were not being done by the test checked ULBs.

2.9.6 Achievements against Service Level Benchmarks

The Ministry of Urban Development, GoI issued eight performance indicators in MSWM in Hand Book of Service Level Benchmarking (SLB) (July 2008). The achievements reported against the SLBs prescribed by GoI on the eight

³⁹ NPPs:Etawah, Kannauj and Mainpuri, NNs: Kanpur and Lucknow.

⁴⁰ NPPs:Etawah, Kannauj and Mainpuri.

performance indicators in MSW by 17 out of 36 test checked ULBs (two NNs and 15 NPPs) are shown in **Table 8**. The remaining ULBs (19 NPs) did not submit the SLB report.

Table 8: Achievements reported against SLBs of GoI during 2012-16

Service Level Benchmark Indicators	National benchmarks (per cent)	No. of NNs/NPPs who achieved National Benchmark	Range of SLB achievement (in per cent)
Household level coverage of MSW	100	None	2 to 82 per cent in seven ULBs, 10 NPPs have zero achievement
Efficiency of collection of MSW	100	Nine	79 to 99 per cent achievement in only eight ULBs
Extent of segregation of MSW	100	One	11 to 68 per cent in two ULBs, 14 ULBs have zero achievement
Extent of MSW recovered	80	One	47 to 73 per cent in four ULBs, 12 ULBs have zero achievement
Extent of scientific disposal of MSW	100	Two	Rest 15 ULBs have zero achievement
Efficiency in redressal of consumer complaints	80	Sixteen	79 per cent achievement in one ULB
Extent of cost recovery in SWM services	100	None	Two ULBs achieved 59 to 82 per cent, 15 ULBs have zero achievement.
Efficiency in collection of SWM charges	90	One	One ULB achieved 80 per cent, 15 ULBs have zero achievement

(Source: SLB reports submitted by concerned ULBs to the Director, Local Bodies)

It may be seen that none of the 17 NNs/NPPs were able to achieve the national benchmarks with regards to collection, segregation, scientific disposal of MSW, cost recovery of services, *etc.*

Recommendation: Monitoring system should be strengthened at State as well as ULB level for effective implementation of MSWM.

2.10 Conclusion

- The State Government had not sanctioned MSW processing and disposal facilities in 95 per cent of ULBs of the State. The facility was made operational in only 1.4 per cent of total ULBs in the State.
- Absence of well-defined policy, contingency plans and reliable/complete data about quantum of waste generated in the ULBs rendered waste management programmes ineffective and resulted in unscientific disposal of waste.

- Door-to-door collection of MSW from all households, offices and commercial complexes and collection of bio-degradable waste was not proper in all the test checked ULBs. User charges were not levied by any of the test checked ULBs except NN Lucknow and NN Kanpur.
- MSW collection centres were open and not developed properly. Colour coding norms for bins were not adhered to.
- Shortage of dustbins for collection of MSW was found in all test checked ULBs. Burning of MSW was observed in most of the test checked ULBs.
- Segregation of waste at source, prior to its transmission for final disposal was not being done at any stage of processing, in any of the test checked ULBs.
- All test checked ULBs except NN Lucknow and NN Kanpur transported MSW by uncovered vehicles.
- Monitoring system for MSW Management at State level and also in the test checked ULBs was deficient.

These matters were reported to the Government (October 2016), their reply was awaited (March 2017).