SUPREME AUDIT INSTITUTION OF INDIA
लोकहितार्थ सत्यनिष्ठा
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Report of the Comptroller and Auditor General of India on Solid Waste Management in Urban Areas

Government of Uttar Pradesh

Report No. 1 of 2025

(Performance Audit-Civil)

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TABLE OF CONTENTS

Preface

This Report of the Comptroller and Auditor General of India has been prepared for submission to the Governor of Uttar Pradesh under Article 151 of the Constitution of India.

The Report contains results of the Performance Audit of Solid Waste Management in Urban Areas covering the period 2016-17 to 2021-22.

The instances mentioned in this Report are those which came to notice in the course of test audit for the period 2016-17 to 2021-22 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Reports; matters subsequent to the year 2021-22 have also been included, wherever necessary.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Executive Summary

Solid Waste Management (SWM) is an organized process of segregation, collection, storage, transportation, processing and disposal of solid waste in an environmentally sustainable manner. Today SWM is an aggravating problem in urban areas leading to different kinds of environmental problems and adverse social impacts within urban areas.

The various waste management rules which were framed during 2016 under the Environment (Protection) Act, 1986 provide a legal framework for disposal and management of waste. Guidelines for preparation of comprehensive plan for the prevention, control or abatement of pollution by using scientific waste management have been issued by Government of India from time to time.

The Performance Audit of Solid Waste Management in Urban Areas covering the period from April 2016 to March 2022 was conducted to assess the efficiency and effectiveness of solid waste management in Uttar Pradesh. The major audit findings are given in the following paragraphs:

The State policy, which should have been prepared within one year from the date of notification (April 2016) of the SWM Rules, 2016 was actually prepared in June 2018. Further, SWM plan was prepared in only three out of 45 test-checked Urban Local Bodies (ULBs). SWM related bye-laws were framed in only 12 ULBs out of 45 test-checked ULBs. The bye-laws framed by these ULBs lacked uniformity. The ULBs had also reported similar figures for solid waste generation over multiple years raising concerns about the reliability of the data provided. State Government neither issued operational guidelines for waste pickers nor initiated the scheme for their registration. The shortage of sanitary workers was addressed in 35 test-checked ULBs through outsourcing, in remaining test checked (seven) ULBs shortage remained even after outsourcing of sanitary workers. Besides, there was shortage of supervisory staff in test-checked ULBs.

Awareness (IEC&PA) activities were conducted through wall painting and hoardings. Moreover, IEC&PA activities through social media and mass communication were also adopted in four and two test-checked ULBs respectively. Against proposed 112 training programmes for capacity building of human resources in ULBs, only 53 training programs were organised due to delay in administrative approval by the State Government and inadequate funding.

During 2016-22, percentage of fund released to ULBs vis-a-vis available fund under SWM component ranged between zero and 63 *per cent*. Further, this percentage was zero to 20 *per cent* and three to 62 *per cent* respectively in Capacity Building and Administrative & Office Expenses (CB & AOE) and IEC&PA components, leaving a substantial unutilised balance during all years of the audit period at the level of State Mission Director (SMD), Swachh Bharat Mission (SBM) (Urban). Moreover, State Government had released funds to the SMD with a delay ranging from 55 to 236 days and 11 to 1,098 days under SWM and CB & AOE

components respectively during the period 2017-21. Test-checked ULBs utilised SBM (Urban) fund under SWM, CB &AOE and IEC which ranged from zero to 25 *per cent*, 17 to 60 *per cent* and 36 to 55 *per cent* respectively during the years 2016-22.

Test-checked ULBs were collecting and transporting mixed waste to the plant, landfill or dumpsite. No instances of source segregation were found during the public survey of households in the test-checked ULBs. Waste deposition centres for domestic hazardous waste (DHW) were not set up in any of the test- checked ULBs. Material Recovery Facility (MRF) centres for sorting of recyclable material from solid waste could not be made functional in 38 test-checked ULBs despite the passage of more than three years since the release of fund. Further, 89 *per cent* test-checked ULBs did not have weighbridge facilities for weighing of waste. Only 67 *per cent* tippers had partitions for the collection of segregated waste. Inadequate coverage of households (HHs) under door-to-door collection (DTDC) was noticed in test-checked ULBs. Due to erroneous gap analysis at SMD level during the year 2019-20, excess provision for tricycles and LCV/mini tippers was made in seven test-checked ULBs.

Range of waste processed against waste collected during 2016-22 at the State level and at test-checked ULBs level was 26 to 71 *per cent* and zero to 63 *per cent* respectively. Against 32 solid waste processing plants sanctioned under various schemes during 2005-15, only 20 plants were established by the executive agency of which only 15 plants were operational. Further, 36 processing plants were sanctioned under SBM (Urban) scheme in 2021-22. Of these, the civil work of 19 plants was completed. However, these could not be made functional due to non-release of fund for the purchase of machinery. In remaining 17 plants, civil work was not completed (July 2023). Land allocated for SWM was deficient as per norms in 36 ULBs. Estimation of legacy waste was completed in 72 out of 651 ULBs revealing a total of 84,57,782 metric tons of legacy waste dumped. However, the quantity of legacy waste in the remaining 579 ULBs was not assessed.

State Level Advisory Body was formed in January 2017 to review the implementation of SWM Rules, 2016 and only six out of 10 prescribed meetings were held during 2017-22. UPPCB prepared annual report with deficient details/information, which resulted in the unavailability of the required data on the category wise quantity of bio-medical waste, *viz*., yellow, red, white and blue and the details of treatment and disposal methods (such as incineration, autoclave, *etc.*). Significant number of occupiers handling bio-medical waste ranging from 17 to 43 *percent* in the State, were operating without proper authorization. The existing capacity for disposal of plastic waste was 722.50 tonnes per day (TPD) against estimated generation of 1,030 TPD plastic waste in the State during 2020-21. UPPCB did not receive any application for authorization for construction and demolition (C&D) waste processing facility during 2016-21. Test-checked ULBs, except Nagar Nigam Ghaziabad and Nagar Nigam Lucknow, failed to manage the disposal of C& D waste.

Recommendations

- *The State Government needs to devise better information systems on generation, collection and processing of solid waste to assist ULBs in preparation of SWM plans for effective waste management.*
- *The State Government should ensure that bye-laws incorporating the provisions of SWM Rules, 2016 are framed and implemented by ULBs in a time bound manner.*
- *The State Government should ensure proper utilisation of funds for Information, Education & Communication and Public Awareness (IEC&PA) activities to effectively sensitize citizens for behavioural changes in managing solid wastes.*
- *Funds earmarked by the State Government for SWM projects should be released to ULBs within the stipulated time and it should be ensured that the funds do not remain parked with the State Government.*
- *The State Government should encourage segregation of waste at source by devising a system for incentivising waste generators and collectors for segregation of waste and should prevent mixing of segregated waste during various stages of SWM through strict monitoring and implementation regime.*
- *Use of Material Recovery Facility centres should be ensured with proper functioning and weighbridge facilities.*
- *The State Government should ensure that there is proper arrangement for door-to-door collection of solid waste and all the households in the ULBs are covered by door-to-door collection services.*
- *The State Government should ensure scientific disposal of the solid waste generated regularly and legacy waste dumped in the ULBs at the earliest.*
- *The State Government should ensure the operation of solid waste processing plants sanctioned to various ULBs under the various schemes.*
- *The State Government should ensure proper collection, transportation and processing/disposal of bio-medical waste, e-waste, plastic waste and C&D waste. They should also ensure proper implementation of the respective Waste Management Rules in ULBs.*
- *The State Government should ensure that the prescribed monitoring meetings are conducted and issues raised in State/District level meetings should be implemented effectively.*

Chapter - I

Introduction

Chapter-I: Introduction

This chapter deals with the regulatory framework for management of waste and overall status of solid waste management (SWM) in Uttar Pradesh. Audit objectives, criteria, scope and methodology of audit have also been discussed in this chapter.

Brief snapshot of the Chapter:

- SWM is an organised process of segregation, collection, storage, transportation, processing and disposal of solid waste in an environmentally acceptable manner complying with the SWM Rules, 2016.
- Average solid waste processing in the State of Uttar Pradesh was 35 *per cent* of solid waste collected which was below the national average of 46 *per cent* during the period 2018-21.

1.1 Introduction

As per the Twelfth Schedule of Constitution of India, 'Solid Waste Management' is a municipal function to be performed by Urban Local Bodies (ULBs). 'Solid Waste' is defined[1] as solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweepings, silt removed or collected from the surface drains, horticulture waste, agriculture and dairy waste, treated bio-medical waste, excluding industrial waste, bio-medical waste and e-waste, battery waste, radio-active waste that are covered under separate rules framed under the Environment (Protection) Act, 1986.

Solid Waste Management (SWM) is an organised process of segregation, collection, storage, transportation, processing and disposal of solid waste in an environmentally acceptable manner. Today SWM is an aggravating problem in urban areas leading to different kinds of environmental problems and adverse social impacts within urban areas.

Uttar Pradesh is the most populous State with about 17 *per cent* of India's population. As per population projections[2], 5.58 crore (24 *per cent*) population live in urban areas of the State as of March 2022. The local governing bodies, *Nagar Nigam*, *Nagar Palika Parishads* and *Nagar Panchayats* are responsible for providing SWM services in the urban areas of the State.

1.2 Regulatory framework for management of waste

Swachh Bharat Mission (Urban), a flagship programme launched by the Government of India (GoI) in October 2014, *inter alia* aims for modern and scientific solid waste management in urban areas. Swachh Bharat Mission Municipal Solid Waste Management Manual, 2016 (MSWM Manual) provides guidance to ULBs on the planning, design, implementation and monitoring of solid waste management systems.

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1 Under Solid Waste Management Rules, 2016 notified in April 2016 by the Government of India.

2 Population Projections for India and States 2011-2036, Report of the Technical Group on Population Projections. (July 2020), National Commission on Population, Ministry of Health and Family Welfare, Government of India.

At the policy level, GoI framed various Waste Management Rules[3] during the year 2016 under the Environment (Protection) Act, 1986 which provide a legal framework for management of wastes. The regulatory framework governing the management of different types of wastes is detailed in ***Appendix 1.1***. SWM Rules, 2016 notified (April 2016) by GoI provide regulatory framework for management of waste and define roles and responsibilities of different stakeholders, *viz*., Central Government, State Government, District Administration, ULBs and waste generators.

Government of Uttar Pradesh had notified 'Uttar Pradesh State Solid Waste Management Policy' in June 2018 to achieve high standards of cleanliness in the towns and cities of Uttar Pradesh for healthy, hygienic and liveable environment.

1.3 Overall status of solid waste management in Uttar Pradesh

The status of assessed generation, collection and processing of solid waste in Uttar Pradesh vis-à-vis national level average has been depicted in **Table 1.1.**

Table 1.1: Overall status of solid waste in Uttar Pradesh vis-à-vis national level

Year	Particulars	Quantity of waste in metric ton per day	
		Uttar Pradesh	National average
2018-19	Generation	17377	152077
	Collection	17329	149749
	Processing/Treatment	4615	55759
	Percentage of treatment against collection	27	37
2019-20	Generation	14468	150847
	Collection	13955	146054
	Processing/Treatment	5395	70973
	Percentage of treatment against collection	39	49
2020-21	Generation	14710	160039
	Collection	14292	152750
	Processing/Treatment	5520	79956
	Percentage of treatment against collection	39	52
Average percentage of treatment against collection		**35**	**46**

(Source: Annual Report of CPCB on Implementation of SWM Rules, 2016)

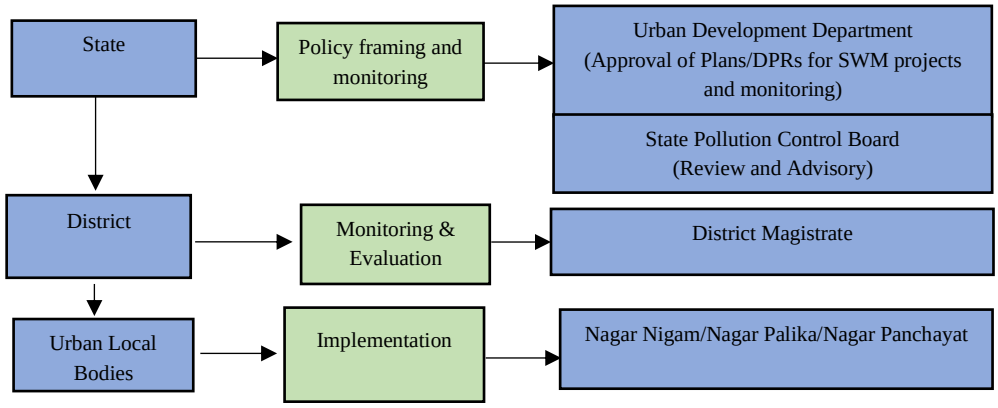
It is evident from **Table 1.1** that average solid waste processed in the State during 2018-21 was 35 *per cent* which was lower than the national average of 46 *per cent*. State Government had reported decreasing trend of solid waste generation during 2018-21. The issues regarding generation and assessment of solid waste have been discussed under Paragraph 2.6 of this Report.

[3] Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016, E-waste (Management) Rules, 2016, Bio-Medical Waste Management Rules, 2016, Construction and Demolition Waste Management Rules, 2016 and Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016..

1.4 Organisational set-up

At Government Level, Additional Chief Secretary, Urban Development Department and at Directorate level, Director Urban Local Bodies are responsible for policy framing, financing and monitoring of SWM related works being implemented by ULBs. At ULBs level, Nagar Ayuktas for Nagar Nigam (NN) and Executive Officers for Nagar Palika Parishads (NPP) and Nagar Panchayats (NP) are responsible for execution of these works. In each ULB, a Board is constituted with various elected members and Mayor/ Chairman for management and policy decision of local bodies. **Chart 1.1** depicts the role of various authorities at all levels in planning, execution and monitoring of solid waste management in urban areas.

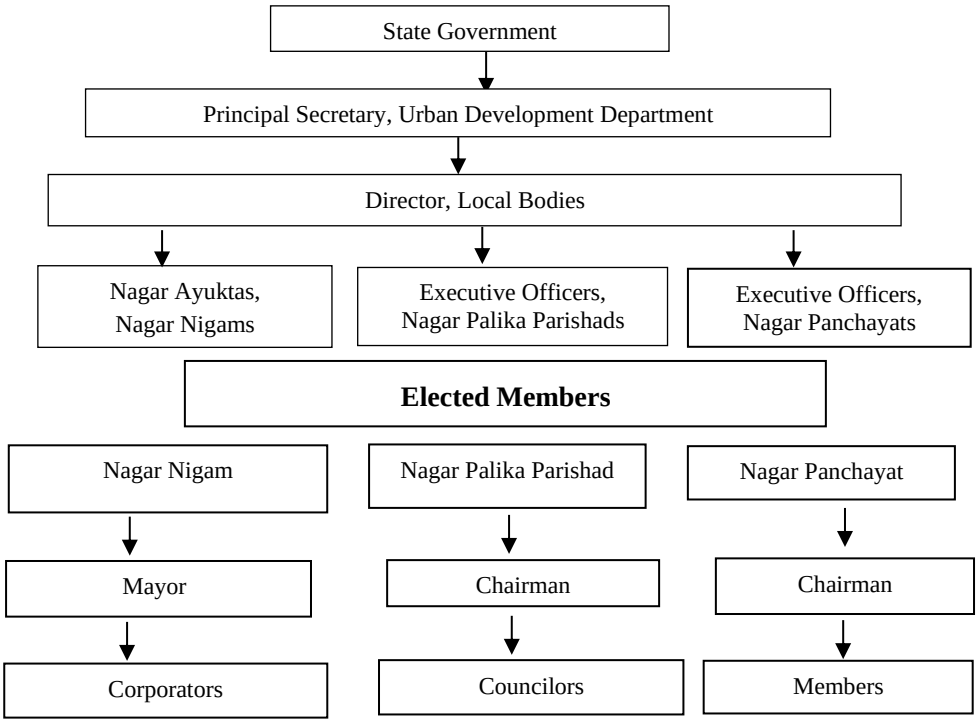
Chart 1.1: Role of various authorities in solid waste management



(Source: SWM Rules 2016 and Uttar Pradesh State Solid Waste Management Policy 2018)

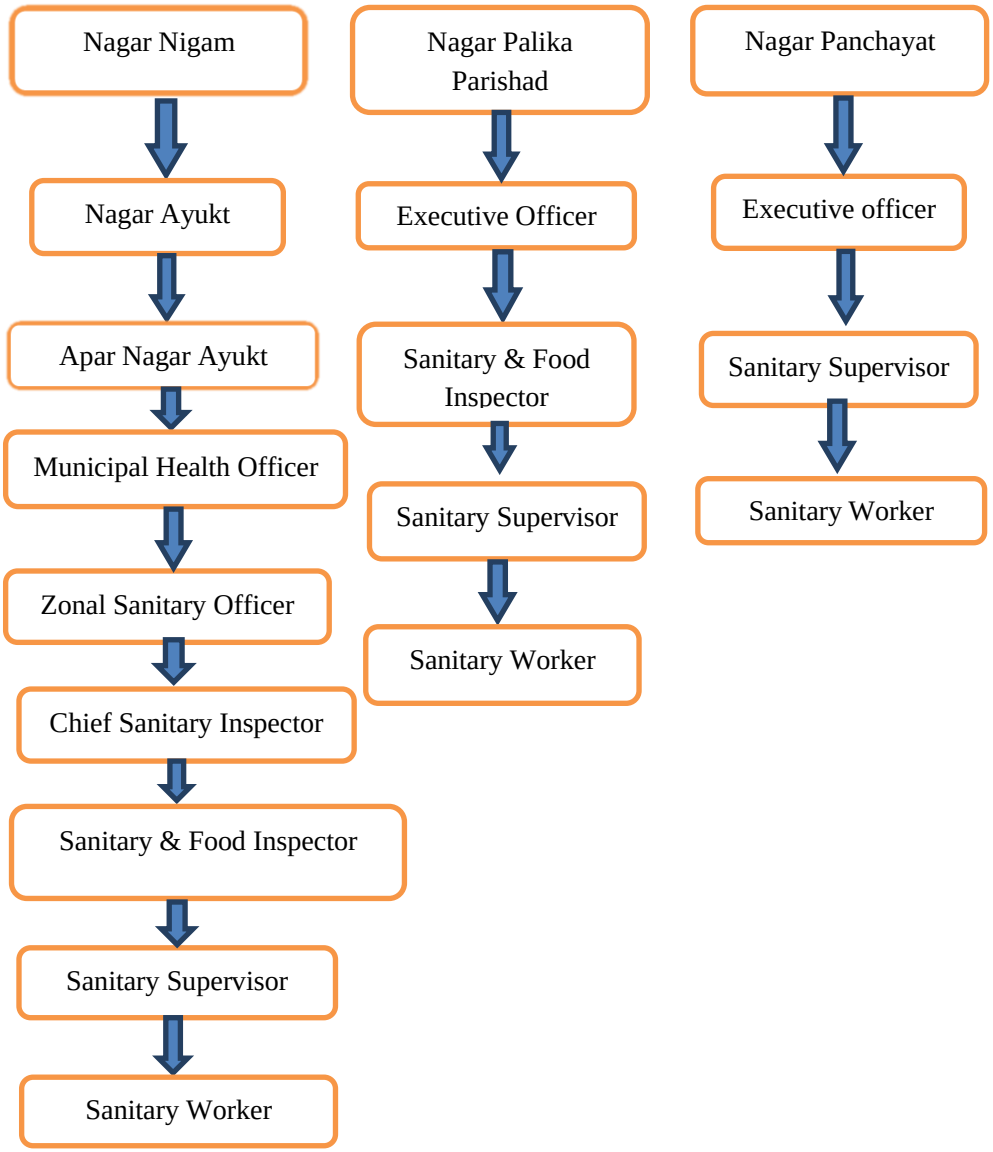
The administrative set up and the organisational structure of the ULBs pertinent to SWM is given in **Chart 1.2** and **Chart 1.3** respectively.

Chart 1.2: Administrative set up of ULBs



(Source: Director ULB)

Chart 1.3: Organisational structure of the ULBs for SWM activities



(Source: Director ULB)

1.5 Audit framework

The audit objective, audit criteria, audit scope and methodology for the Performance Audit on Solid Waste Management in Urban Areas are discussed in the succeeding paragraphs.

1.5.1 Audit objective

The objectives of the performance audit were to ascertain whether:

- Strategy and planning of waste management in ULBs was commensurate with the waste generated and concurrent with the prevailing legal framework;
- Municipal tasks associated with SWM including collection, segregation, storage, transportation, disposal and social inclusion of informal waste workers were effective, efficient and economical;

- Planning, construction, commissioning, operation and maintenance of solid waste management projects in ULBs were effective, efficient and financially sustainable;
- Monitoring and evaluation of waste management system including adequacy of awareness creation, citizen engagement for effective behavioral change, complaint redressal mechanism for citizens, assessment of environmental impacts and implementation of the internal control and monitoring mechanism was adequate and effective.

1.5.2 Audit criteria

The criteria for evaluating performance of SWM were derived mainly from:

- The Environment (Protection) Act, 1986;
- The Solid Waste Management Rules, 2016;
- Municipal Solid Waste Management Manual (MSWM), 2016;
- The Plastic Waste Management Rules, 2016;
- The E-Waste (Management) Rules, 2016;
- The Construction and Demolition Waste Management Rules, 2016;
- The Bio-Medical Waste Management Rules, 2016;
- Guidelines for Swachh Bharat Mission (Urban), 2014 (revised in October 2017)
- Handbook of Service Level Benchmarking, 2008 issued by Ministry of Urban Development, GoI;
- Instructions, guidelines, policies issued by Government of India, Central Pollution Control Board, Government of Uttar Pradesh and Uttar Pradesh Pollution Control Board on SWM from time to time.

1.5.3 Audit scope

The Performance Audit of 'Solid Waste Management in Urban Areas' covers examination of records for the period from April 2016 to March 2022 relating to management of Solid Waste. Besides, overall status of collection and disposal of Bio-Medical Waste, Plastic Waste, E-Waste and Construction and Demolition Waste (C&D Waste) were also examined.

Related records were examined in offices of Additional Chief Secretary of Urban Development Department, Directorate of Urban Local Bodies, State Mission Director SBM (Urban), Uttar Pradesh Pollution Control Board and 45 sampled ULBs[4] in 34 districts depicted in **Map 1.1.**

[4] ULBs were selected for performance audit using probability proportional to size and without replacement (PPSWOR) from each tier of ULBs based on quantity of solid waste generated in the ULBs.

Map 1.1: Districts of sampled ULBs

The list of sampled ULBs is given in ***Appendix 1.2.*** The selected ULBs accounted for 31 *per cent* of waste generated in the State during the period 2016-22. Information was also collected from Director General Medical & Health at the State level and Chief Medical Officers (CMOs), District Magistrates (DMs) and District Urban Development Agencies (DUDAs) of 34 districts in which sampled ULBs were located.

1.5.4 Audit methodology

An entry conference was held on 25 November 2021 with the Additional Chief Secretary, Urban Development Department (UDD), in which the audit methodology, scope, objectives and criteria were explained. The audit methodology involved document analysis, scrutiny of responses to audit queries, joint physical verifications (JPV) with municipal staff, public survey[5] and collection of photographic evidence. The audit was carried out during November 2021 to July 2022 and December 2022 to January 2023. The exit conference was held on 18 April 2023 in which significant audit findings were discussed with Director Local Bodies/State

[5] Five wards in each NN, two wards in each NPP/NP were covered in public survey wherein five beneficiaries in each ward were covered.

Mission Director, SBM. Replies (June 2023) of the State Government have been suitably incorporated in the report.

A revised report was again sent (March 2024) to the State Government, however, reply of the State Government was awaited (December 2024) despite reminder (April 2024).

1.6 Structure of the report

This report has been structured in following seven Chapters:

Chapter-I: Introduction covers the regulatory framework for management of waste, overall status of solid waste management in Uttar Pradesh, audit objectives, scope and methodology of audit.

Chapter II: Planning and strategy for solid waste management deals with the planning for SWM, human resources, Information, Education & Communication (IEC) for managing waste.

Chapter III: Financial management covers sources of funding for SWM in ULBs and their utilisation.

Chapter IV: Segregation, collection and transportation of waste covers status of segregation of solid waste at source, door-to-door collection (DTDC) of solid waste from households and secondary transportation of waste to landfill sites.

Chapter V: Processing and disposal of solid waste covers status of establishing and operation of solid waste processing plants, landfill sites and legacy wastes.

Chapter VI: Management of special waste covers management of bio-medical wastes, electric and electronic waste, plastic waste and Construction and Demolition Waste.

Chapter VII: Monitoring of solid waste management provides status of monitoring efforts at State level and ULBs level for solid waste management in urban areas, besides achievement of ULBs against service level benchmarks as per prescribed standards.

1.7 Acknowledgement

Audit acknowledges the cooperation and assistance extended by the State Government, all the test-checked ULBs and UPPCB in conducting the performance audit.

Chapter - II

Planning and strategy for solid waste management

Chapter II: Planning and strategy for solid waste management

This chapter deals with the planning for SWM, availability of human resources, Information, Education & Communication and Public Awareness (IEC&PA) for behavioural changes among citizens for managing their waste and training of human resources deployed for SWM activities.

Brief snapshot of the Chapter:

- Due to lack of SWM plan in 93 *per cent* test-checked ULBs, there was absence of systematic approach for solid waste management from generation to disposal.
- Only 27 *per cent* test-checked ULBs framed bye-laws, even these bye-laws framed lacked uniformity and did not cover all the issues outlined in SWM Rules, 2016. Besides, ULBs were unable to levy user charges for waste management impacting their revenue.
- The sanctioned posts remained vacant, particularly at supervisory level ranging from 16 *per cent* (Sanitary & Food Inspector) to 50 *per cent* (Chief Sanitary Inspector).
- IEC&PA activities witnessed less utilisation of funds as more than 50 *per cent* IEC&PA fund remained unutilised in one third test-checked ULBs. Further, there was diversion of fund from IEC&PA component of SBM (Urban) Scheme.
- Targeted training of human resources for SWM was not organised due to inadequate funding.

2.1 Entities involved in SWM

The framework for administration and management of SWM in India is broadly divided into three tiers - Central, State and Urban Local Bodies (ULBs). Other stakeholders that play a crucial role are households, businesses, industries, informal sector, non-governmental organizations (NGOs), community-based organizations (CBOs), self-help groups (SHGs), *etc*. Involvement of all these stakeholders is necessary at several stages of SWM.

Under SWM Rules, 2016, the Ministry of Environment, Forest and Climate Change, Government of India is responsible for overall monitoring of implementation of these rules in the country. Further, Ministry of Urban Development is responsible to take periodic review of the measures taken by the States and local bodies for improving SWM services. Central Pollution Control Board (CPCB) is responsible to co-ordinate with the State Pollution Control Board (SPCB) and prepare an annual report on implementation of these rules. The list of major roles and responsibilities of State Government and ULBs in SWM is detailed in **Table 2.1**.

Table 2.1: Roles and responsibilities of State Government and ULBs in SWM

Authority/ Responsible Institution	Significant Roles and responsibilities in SWM
Urban Development Department (UDD)	• prepare a state policy and solid waste management strategy in consultation with stakeholders. State policies and strategies should acknowledge the primary role played by the informal sector of waste pickers, lay emphasis on waste reduction, reuse, recycling, recovery and optimum utilisation of various components of solid waste to ensure minimisation of waste going to the landfill and minimise impact of solid waste on human health and environment; • ensure identification and allocation of suitable land to the local bodies; • arrange for capacity building of local bodies in managing solid waste; • notify buffer zone for the solid waste processing and disposal facilities of more than five tons per day; • start a scheme on registration of waste pickers and waste dealers; • ensure implementation of provisions of SWM Rules by all local authorities.
State Pollution Control Board	• responsible for enforcement of SWM Rules through local bodies; • monitor environmental standards; • may give direction to local bodies for safe handling and disposal of domestic hazardous waste;
District Magistrate	• facilitate identification and allocation of suitable land for setting up solid waste processing and disposal facilities to local authorities; • review the performance of local bodies, at least once in a quarter on waste segregation, processing, treatment and disposal and take corrective measures ;
Local Authorities (ULBs)	• primarily responsible for provision of municipal SWM services; • prepare SWM plan, arrange door-to-door collection (DTDC) services, recognise waste pickers or informal sector waste collectors, frame bye-laws, set up material recovery facility, establish waste deposition centres, impart training to waste pickers and waste collectors, *etc*.

(Source: Paragraph 1.4.1.4 of MSWM Manual 2016)

2.2 State policy and strategy of SWM

Rule 11 (a) of the SWM Rules, 2016 stipulates that the Secretary-in-charge of the Urban Development Department shall prepare a State policy and SWM strategy for the State in consultation with stakeholders including representatives of waste pickers, self-help groups and similar groups working in the field of waste management. This should be done within a period not later than one year from the date of notification of the SWM Rules, 2016.

Audit observed that the State policy, which should have been prepared within one year from the date of notification (April 2016) of the SWM Rules, 2016, was actually prepared in June 2018, *i.e.*, with a delay of 14 months. However, the State policy could not be effectively put into

operation leading to ineffective implementation of various waste management activities, such as segregation at source, recycling, disposal, decentralised waste management and waste to composting/energy. These issues are discussed in the succeeding Chapters of this report.

The State Government stated (June 2023) that after the promulgation of SWM Rules in 2016, the same were immediately adopted in the State and instructions were issued to all the ULBs to immediately initiate action on various SWM matters. State Government further stated that approach towards developing SWM policy involved multiple interaction with stakeholders which was an elaborate and exhaustive process, hence the delay.

2.3 Absence of SWM plan

Rule 15(a) of the SWM Rules, 2016 stipulates that the local authorities should prepare a solid waste management (SWM) plan within six months from the date of notification of the State policy and strategy on SWM. MSWM Manual 2016 provides a seven-step approach for developing SWM plan in ULBs, which *inter alia* includes identification of overall goals for ULBs, assessment of current situation of SWM and gap analysis, stakeholder consultation and preparation/approval of SWM plan.

Audit observed that SWM plans were prepared by three ULBs, *viz*., NPP Bulandshahr[1] (November 2017), NPP Deoria (December 2021) and NPP Ramnagar Varanasi (May 2022). However, in remaining 42 test-checked ULBs, SWM plans were not prepared. Due to lack of SWM Plan, test-checked ULBs did not adopt systemic approach in respect of collection, transportation, treatment and disposal of solid waste. Shortcomings noticed have been discussed in succeeding paragraphs.

The State Government stated (June 2023) that letter was issued (May 2019) to all ULBs for preparation of action plan for SWM. Gap assessment was carried out in all ULBs which supplemented the preparation of comprehensive SWM action plans. Out of 762 ULBs, action plans for 536 ULBs have been prepared and remaining are scheduled to be completed by June 2023.

The reply is not tenable, as the action plans of 536 ULBs are gap analysis of resources under SBM (Urban) 2.0 scheme whereas as per MSWM Manual, SWM plans are required to be prepared for 20-25 years embedded with several short term plans (five years).

2.4 Status of Detailed Project Report for SWM

As per Paragraph 7.2 of SBM (Urban) Guidelines (October 2017), ULBs were to prepare Detailed Project Reports (DPRs) for SWM of their cities in consultation with the State Government.

Audit observed that during the fifth meeting of the State High Powered Steering Committee (SHPSC) in June 2018, the Detailed Project Reports

[1] For collection, storage and transportation of Solid Waste.

(DPRs) for the collection and transportation of solid waste in 17[2] Urban Local Bodies (ULBs) were approved. It was also decided in the meeting that the DPRs for the remaining ULBs would be prepared in the near future.

Audit observed that out of 45 test-checked ULBs, DPRs for SWM were prepared in three[3] ULBs. In other nine[4] ULBs, DPRs were prepared for processing of solid waste and one ULB (NPP Bulandshahr) had prepared DPR for the collection, secondary storage and transportation of solid waste to processing plant. Thus, 32 test-checked ULBs (71 *per cent*) had not prepared DPRs for SWM in their cities as required under SBM (Urban) Guidelines.

In reply (June 2023), the State Government informed that the preparation of DPR was under progress in three test-checked ULBs (NP Baldeo Mathura, NPP Mahmudabad Sitapur and NPP Muzaffarnagar).

2.5 Framing of bye-laws

Rule 15 (e) of the SWM Rules, 2016 stipulates that ULBs should formulate bye-laws incorporating the provisions of SWM Rules 2016 within one year from the date of notification (April 2016) and ensure timely implementation.

Audit observed that SWM bye-laws were formulated in only five[5] out of the 45 test-checked ULBs. Further, seven[6] other ULBs formulated bye-laws only relating to user charges for collection of solid waste and penalty for littering. Thus, bye-laws framed by these 12 ULBs lacked uniformity as detailed in ***Appendix 2.1***. The remaining 33 ULBs did not formulate SWM bye-laws. Due to the absence of bye-laws in these ULBs, the provisions specified in the SWM Rules 2016, such as levy of penalty for violation of SWM Rules and levy of user charges for collection of solid waste, were not implemented. This also resulted in the ULBs being unable to generate revenue for SWM activities as user charges could not be levied in these ULBs in the absence of bye-laws.

The State Government stated (June 2023) that presently Uttar Pradesh Solid Waste Management Rules, 2021 has been notified and its provisions were implemented as bye-laws in 35 ULBs.

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[2] NN Allahabad, NPP Khurja Bulandshahr, NPP Bulandshahr, NPP Shikandarabad Bulandshahr, NPP Jahangirabad Bulandshahr, NPP Saina Bulandshahr, NPP Galauthi Bulandshahr, NPP Muradnagar Ghaziabad, NPP Modinagar Ghaziabad, NP Niwari Ghaziabad, NP Patla Ghaziabad, NP Faridnagar Ghaziabad, NP Dasana Ghaziabad, NP Bugrasi Ghaziabad, NP Kithaur Meerut, NP Kharkhoda Meerut, NP Babugarh Hapur.

[3] NPP Raebareli, NPP Shamli and NP Kaptanganj Kushinagar.

[4] NN Kanpur, NN Lucknow (also prepared DPR for collection/transportation of waste), NPP Deoband Saharanpur, NPP Deoria, NPP Etah, NPP Hatharas, NPP Loni Ghaziabad, NPP Muzaffarnagar and NPP Pilibhit..

[5] NN Ghaziabad, NPP Muzaffarnagar, NPP Sahabad Hardoi, NPP Bulandshahr and NP Khanpur Bulandshahr.

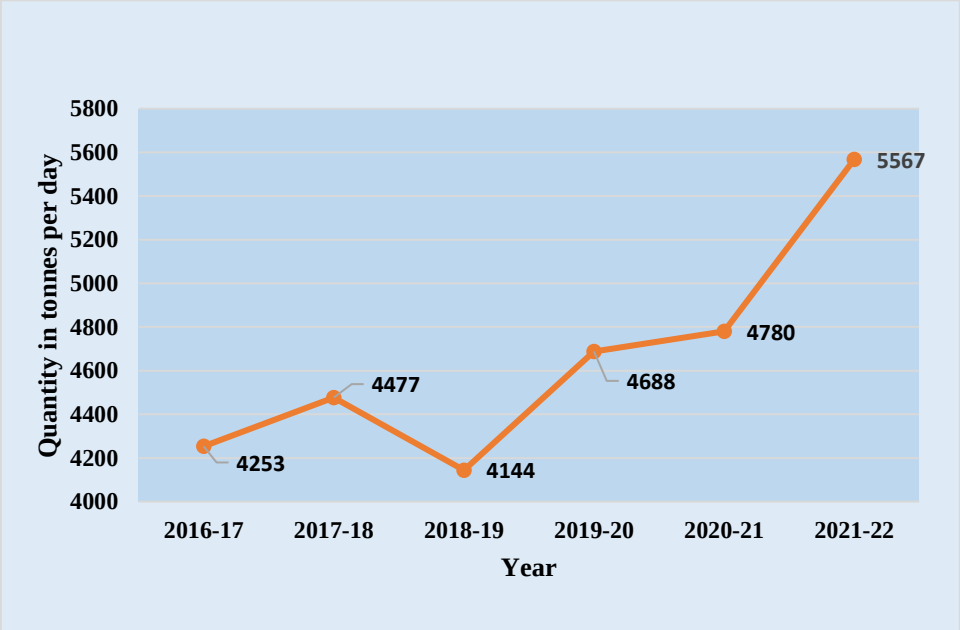
[6] NN Kanpur, NPP Loni Ghaziabad, NPP Hathras, NPP Deoria, NPP Chitrkootdham Karwi Chitrakoot, NPP Baheri Bareilly and NPP Raebareli.

The reply is not tenable as the cited notification (October 2021) was not for SWM bye-laws of ULBs rather it was for seeking objections/suggestion on the draft Uttar Pradesh Solid Waste Management Rules, 2021. Further, the information provided by 31 out of 35 ULBs (as received with the State Government's reply) mentioned that 15 ULBs were yet to notify SWM bye-laws. Besides, audit did not find evidence in respect of notification of bye laws during audit nor was evidence furnished with reply.

2.6 Generation and assessment of waste

Section 1.4.3.3 of the MSWM Manual 2016 stipulates that each Urban Local Body (ULB) should assess the quantity and composition of waste generated as an essential requirement to effectively plan for and design Municipal Solid Waste Management (MSWM) systems. The details of MSW generated by the 45 test-checked ULBs in the State from 2016 to 2022 are depicted in **Chart 2.1** and ***Appendix 2.2***.

Chart 2.1: Solid waste generated in test-checked ULBs



(Source: information furnished by test-checked ULBs)

Chart 2.1 indicates that solid waste generation increased by 31 *per cent* in 2021-22 as compared to 2016-17. Further, there was decrease of solid waste generation during 2018-19 by 333 tonnes per day (TPD) mainly due to decrease of 586 TPD solid waste generation reported by NN Kanpur as compared to previous year. However, the information provided by test-checked ULBs could not be verified in audit due to the lack of maintenance of weighbridge records or volumetric measurements based on the number of trips made by vehicles on a day-to-day basis. Moreover, the ULBs had also reported similar figures for solid waste generation over multiple years raising concerns about the reliability of the data provided.

In reply (June 2023), the State Government stated that due to time constraints for planning MSW processing facilities, waste generation was

assessed based on proven studies mentioned in the CPHEEO[7] (MSWM) manual. However, weighbridges are being installed at all processing facilities to accurately measure the waste being collected and processed. State Government further stated that due to reduce and reuse campaigns by the ULBs, the per capita waste generation has also slightly reduced.

The reply is not tenable, as test-checked ULBs had not adopted provisions of MSWM Manual 2016 prescribing five *per cent* annual increase in waste quantities per year for forecasting waste generation rates due to which similar figures for solid waste generation were reported over multiple years.

2.7 Decentralised Waste Management Systems

Rule 15 (m) of the SWM Rules 2016 provides that ULBs shall collect waste from vegetable, fruit, flower, meat, poultry and fish markets on a daily basis and promote establishment of decentralized compost plants or bio-methanation plants at suitable locations within or near the markets ensuring hygienic conditions.

Audit observed that none of the test-checked ULBs (except NN Ghaziabad[8]) had set up decentralized compost plants or bio-methanation centres for the proper disposal of waste generated from the markets. Consequently, waste collected from vegetable, fruit, flower, meat, poultry and fish markets was dumped directly in the landfill, as evidenced during the joint physical verification of the dumping ground or waste dumping site.

In reply (June 2023), the State Government stated that Material Recovery Facility[9] (MRF) centers had been established for the disposal of dry waste and provisions were made for the establishment of compost pits for the disposal of wet waste in all Urban Local Bodies (ULBs). Additionally, efforts were underway to establish processing plants, bio-CNG plants and waste-to-energy plants in large ULBs so that generated waste could be processed safely.

The reply is not tenable, as test-checked ULBs (except NN Ghaziabad) had informed during the performance audit that decentralized compost plants or bio-methanation centres had not been established.

2.8 Non-integration of the Informal Sector

Rule 11 (m) of the SWM Rules 2016 stipulated that the State government would initiate a scheme for the registration of waste pickers and waste dealers.

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7 Central Public Health & Environmental Engineering Organisation (CPHEEO) is a technical wing of the Ministry of Housing and Urban Affairs, Government of India

8 Five TPD pit composting atSanjay Nagar, one TPD flower composting at Sai Upvan Sanjay Nagar, one TPD vermi composting in Nandi Park and one TPD waste to compost at Jatwara.

9 Materials Recovery Facility (MRF) is a facility where non-compostable solid waste is temporarily stored by ULBs to facilitate segregation, sorting and recovery of recyclables from various components of waste before the waste is delivered or taken up for its processing or disposal.

Audit observed that although the State Policy aimed to integrate informal sector workers into formal waste management processes as of June 2018, the State Government neither issued operational guidelines for waste pickers nor initiated the scheme for their registration. Additionally, the test-checked ULBs (except NN Ghaziabad[10]) failed to recognize informal waste collectors and integrate them into SWM activities.

In reply (June 2023), the State Government stated that ULBs were directed to identify informal waste pickers and issue identity cards after their registration. State Government further stated that this process had been completed in most of the ULBs. State Government also forwarded the response of 31 test-checked ULBs out of which 13 ULBs[11] mentioned that the identification and registration of waste pickers were carried out by them and five ULBs mentioned that the process of identification was under progress. However, these ULBs did not provide any documentary evidence for identification/registration of waste pickers.

2.9 Manpower for SWM activities in ULBs

According to Section 1.4.5.4 of the MSWM Manual 2016, the planning of an efficient and advanced MSWM system necessitates the presence of an efficient institutional structure in addition to adequate infrastructure and equipment. It further recommends that ULBs should have an SWM cell or SWM department having staff with technical and managerial skills specific to MSW management.

Audit observed that none of the test-checked ULBs had a dedicated SWM cell to handle SWM activities exclusively. The existing staff members managed both SWM and sanitation activities. Further, shortfall of manpower was noticed in 43 out of 44[12] test-checked ULBs in respect of personnel for SWM and sanitation activities as detailed in ***Appendix 2.3*** and summarised in **Table 2.2**.

Table 2.2: Shortfall of personnel for SWM cum sanitation activities in test-checked ULB as of March 2022

Post	Particulars	NN	NPP	NP
Zonal Sanitary Officer (ZSO)	Sanctioned Strength (SS)	9	0	0
	Persons-in-position (PIP)	5	0	0
	Vacancy in percentage	44	0	0
Chief Sanitary Inspector (CSI)	SS	20	1	0
	PIP	10	1	0
	Vacancy in percentage	50	0	0

[10] NN Ghaziabad identified informal sector workers (rag pickers) in five zones of the city. Waste pickers (named as Safai Mitra) were associated with door to door collection vehicles.

[11] NN Ghaziabad, NN Lucknow, NPP Deoband Saharanpur, NPP Deoria, NPP Mahoba, NPP Mahmudabad Sitapur, NPP Raebareli, NPP Sahabad Hardoi, NPP Shamli, NP Bithoor Kanpur Nagar, NP Jarwal Bahraich, NP Kapatanganj Kushinagar and NP Kulpahar Mahoba.

[12] Out of 45 test-checked ULBs, in NP Rudhauli Bazar Basti had no sanctioned strength of personnel for SWM cum sanitation activities and 75 sanitary workers were outsourced for the purpose. Further, NP Usawan Budaun had no shortfall *vis-à-vis* sanctioned strength.

Post	Particulars	NN	NPP	NP
Sanitary & Food Inspector (SFI)	SS	81	24	0
	PIP	68	18	0
	Vacancy in percentage	16	25	0
Sanitary Supervisor (Safai Nayak) (SS)	SS	305	132	16
	PIP	177	92	10
	Vacancy in percentage	42	30	38
Sanitary Worker (SW)	SS	14729	5473	916
	PIP	9957	3328	564
	Vacancy in percentage	32	39	38

(Source: information furnished by test checked ULBs)

Audit noticed that out of 45 test-checked ULBs, 42 ULBs had shortage of sanitary workers which was addressed through outsourcing, except in seven[13] ULBs where shortage remained even after outsourcing of sanitary workers. However, the shortage of supervisory staff was not outsourced in test-checked ULBs.

In reply (June 2023), State Government stated that SBM Cells had been formed in nine test-checked ULBs for effective institutional mechanism and implementation of SWM.

2.9.1 Avoidable expenditure due to excess engagement of sanitation workers in *NPP Hathras*

According to the 2011 census, the population of NPP Hathras was 1.43 lakh. Using the incremental increase method, the estimated population of NPP Hathras for 2021 worked out to 1.58 lakh, as detailed in ***Appendix 8***. Based on norms[14], a maximum of 440[15] and 444[16] sanitation workers in 2020-21 and 2021-22 respectively were required to serve the current population for sanitation work. However, NPP Hathras deployed excess number of outsourced sanitation workers ranging between 49 and 280 during the period of 2020-22[17]. This resulted in avoidable expenditure of ₹ 2.33 crore, as detailed in ***Appendix 2.4***, which could have been avoided if the norms for engagement of sanitary workers were followed.

In reply (June 2023), the State Government stated that due to the addition of 30 villages, the population of NPP increased to 2,57,487 in 2021-22 and 724 sanitation workers were required to serve the current population.

[13] NN Kanpur (2,101 outsourced against shortage of 4730 SWs), NPP Sahabad Hardoi (96 outsourced against shortage of 119 SWs), NPP Mahmudabad Sitapur (46 outsourced against shortage of 54 SWs), NPP Ramnagar Varanasi (80 outsourced against shortage of 90 SWs), NP Bithoor Kanpur Nagar (10 outsourced against shortage of 12 SWs), NP Chitbaragaon Ballia (22 outsourced against shortage of 24 SWs) and NP Sahaspur Bijnor (22 outsourced against shortage of 34 SWs).

[14] As per norms recommended (July 1992) by the Committee constituted at the State Government level, 28 sanitation workers per 10,000 population were to be engaged by ULBs.

[15] Required no of sanitation workers in 2020-21= (1,57024 x 28)/10000 = 440.

[16] Required no of sanitation workers in 2021-22= (1,58,461 x 28)/10000 = 444.

[17] Audit could not assess the avoidable expenditure during 2018-20 due to deficient information in the vouchers for payments related to outsourced sanitation workers, viz., number of days/mandays and rate of payment per mandays.

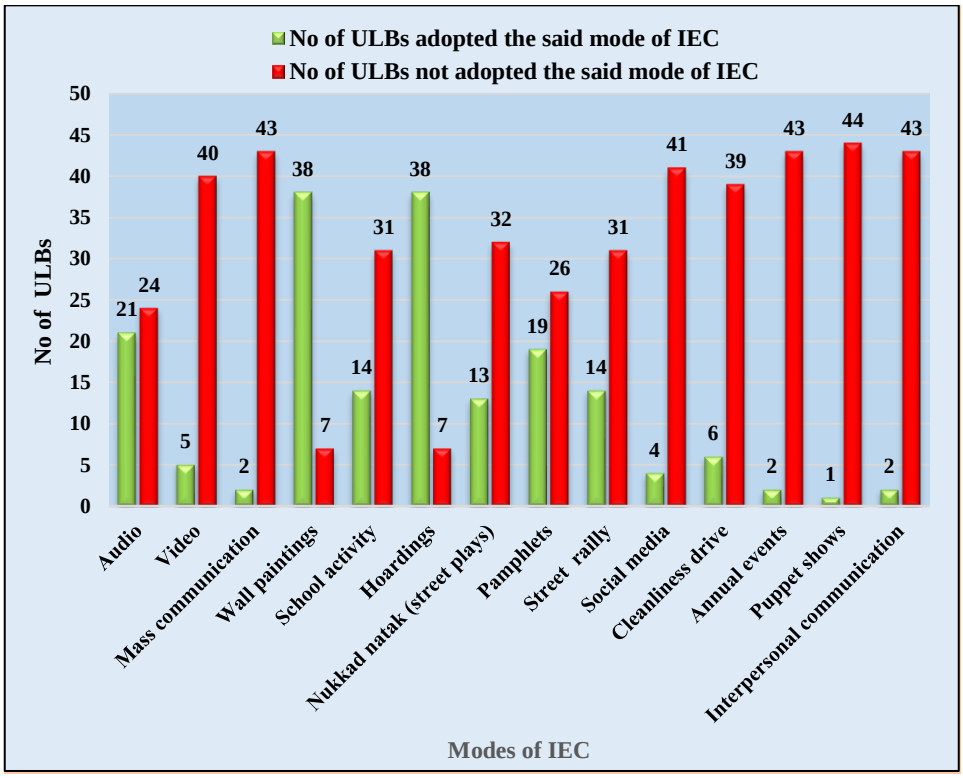
This reply is not tenable as the notification[18] for the reconstitution of wards of NPP Hathras became effective in November 2022 and the excess engagement of sanitation workers pertains to the period of 2020-22.

2.10 Information, Education & Communication and Public Awareness (IEC&PA) activities

Section 1.4.5.13 of MSWM Manual stipulates that awareness and education campaigns are crucial for fostering behavioral change among citizens in managing their waste. Further, IEC&PA is one of the components of SBM (Urban) scheme for which Annual Action Plan is to be prepared by the State Government.

Audit noticed that Annual Action Plans for IEC&PA during 2016-22 provided for public awareness in ULBs through hoardings, pamphlets, wall writings, thematic drive, activity in schools, road shows, *nukkad natak etc*. The status of various modes of IEC&PA activities used in 45 test-checked ULBs was as depicted in **Chart 2.2**.

Chart 2.2: IEC&PA activities conducted in test-checked ULBs



(Source: information furnished by test-checked ULBs)

It is evident from **Chart 2.2** that in most of the test- checked ULBs, IEC&PA activities were conducted through wall painting and hoardings. Moreover, IEC&PA activities through social media and mass communication were adopted in four and two test-checked ULBs respectively.

The State Government stated (June 2023) that IEC&PA activities was being carried out through various medium since 2017, such as radio jingle,

[18] Notification No 3408/9-1-2022-56 Pari./22 dated 04 November 2022 issued by UDD.

posters, newspaper advertisement, hording, wall painting, *etc*. Participation of all stakeholders, viz., executive officers of municipalities, elected representatives, schools, non-government organisations and media, was ensured in the IEC campaign. Information for behavior change has been/is being continuously given through various means.

Fact remains that outcomes of IEC&PA activities carried out by the State Government or ULBs was yet to yield desired result. As discussed in the succeeding chapters, no effort was made by 49 *per cent* of 34 test-checked ULBs[19] to distribute bins for encouraging households to ensure source segregation of waste, waste was not segregated at source in 98 *per cent* of test-checked ULBs and mixed waste was being dumped at landfill sites polluting environment.

- ***Less Utilisation of fund for IEC&PA activities***

Audit observed that State Mission Director (SMD), SBM (Urban) had ₹ 256.88 crore available for IEC and public awareness activities under the SBM (Urban) scheme during the years 2016-22. Out of this, ₹ 21.19 crore was utilised at SMD level and ₹ 212.54 crore was released to ULBs. The balance amount ₹ 23.15 crore was neither utilised at the State level nor released to ULBs as of March 2022 ***(Appendix 2.5***).

In reply (June 2023), the State Government stated that ₹ 23.15 crore remained unutilized as of March 2022 due to Covid-19 restrictions during 2019-20 and 2020-21. State Government further stated that the funds were released to ULBs based on their demands and in accordance with the instructions issued by the Government of India.

Fact remains that unutilized fund for IEC & PA activities was 78 *per cent* in 2016-17, 96 *per cent* in 2017-18, 29 *per cent* in 2018-19 and 37 *per cent* in 2021-22, thus, even prior to or after Covid-19 pandemic affected years (2019-20 and 2020-21) available funds under IEC & PA activities could not be utilized at the State level nor released to ULBs.

Pendency of Utilisation Certificates (UCs) against ULBs

During October 2014 (since beginning of SBM (Urban) scheme) to March 2022, SMD released ₹ 218.19 crore to ULBs for IEC&PA activities. However, ULBs had submitted utilization certificate (UCs) of ₹ 121.82 crore (55.83 *per cent*) to SMD.

Audit further noticed that out of available fund of ₹ 39.93 crore during 2016-22 in 45 test-checked ULBs for IEC&PA activities, ₹ 7.87 crore (20 *per cent*) could not be utilised in 44 ULBs as of March 2022 (***Appendix 2.6***). Unutilized amount under IEC&PA ranged from 53 to 80 *per cent* of total fund available during 2016-22 in 15 out of 45 test-checked ULBs.

In reply (June 2023), the State Government stated that most of the UCs in respect of fund released to ULBs for IEC&PA activities during October 2014 to March 2022 had been obtained. However, State Government did not provide information on the amount for which UCs had been received.

[19] Out of 45 ULBs, 11 ULBs did not provide information on distribution of bins to households for source segregation of waste.

In the absence of UCs, there is no assurance that funds disbursed were actually incurred for the purpose for which these were sanctioned/ authorised by the Legislature.

- ***Diversion of IEC&PA fund***

Audit noticed that out of expenditure of ₹ 1.58 crore incurred by NN Ghaziabad on IEC&PA activities during 2020-21, ₹ 15.98 lakh was utilised for purposes other than IEC&PA, *viz*., maintenance of toilets and purchase of fixtures and other consumable items.

In reply (June 2023), the State Government accepted that expenditure was incurred on cleanliness and sanitation. Thus, NN Ghaziabad diverted ₹ 15.98 lakh of IEC&PA fund for other than IEC&PA activities in contravention with the guidelines of SBM (Urban) scheme.

- ***Suspicious payment of ₹ 10.90 lakh in NP Chitbaragoan Ballia***

Scrutiny of records revealed that SMD released ₹ 14.41 lakh (April 2018 to November 2021) to NP Chitbaragoan Ballia for IEC&PA activities. NP invited quotations on 11 occasions during October 2020 to March 2021 for hoarding and poster in all wards, wall painting and wall writing, videography and photography, nukkad natak and distribution of lunch packets. Against these notices seeking quotations, same three[20] firms participated in each quotation process and the work was awarded to the same firm (M/s Om Computers and Supplirs, Ballia) on all occasions. Further, the firm M/s Om Computers and Supplirs, Ballia was paid ₹ 10.90 lakh during August 2021 against work orders for above IEC&PA activities. Out of 11 bills of firms, payment of ₹ 3.97 lakh was made without verification of four bills and remaining seven bills of ₹ 6.93 lakh were verified by Executive Officer, NP Chitbaragoan Ballia. However, the work order, bills of firm and the records of the NP did not have details of schools in which nukkad natak was performed and lunch packets distributed, spots for fixing hording/posters, places of wall painting and wall writing and photography/videography evidence of works executed.

In reply (June 2023), State Government stated that as per NP Chitbaragoan Ballia, the work was sanctioned by the then EO and Chairman and payment of ₹ 10.90 lakh was made to the firm M/s Om Computers and Supplirs, Ballia, however, no evidence regarding execution of work was available.

Unutilised amount (₹ 51.41 lakh) not refunded to SMD

SMD released (November 2018) ₹ 3.75 crore to Prayagraj Mela Pradhikaran for IEC&PA activities under 'Paint My City campaign' during Kumbha Mela 2019. Out of this, ₹ 3.24 crore was utilized. However, Prayagraj Mela Pradhikaran did not refund unutilized balance of ₹ 51.41 lakh to SMD.

[20] M/s Maa Sharada Enterprises (GSTN No. 09BYMP83966A120 – audit noticed that this GSTIN was invalid), M/s Sanjay Kumar Singh Ballia (GSTN No. 09BQAPS7565RIZQ) and M/s Om Computers and Supplirs Ballia (GSTN No. 09AVDPD5774G1ZH).

In reply (June 2023), the State Government stated that Prayagraj Mela Pradhikaran had been requested to refund ₹ 51.00 lakh to SMD.

2.11 Status of Capacity Building

Rule 11(k) and 15(zc) of the SWM Rules, 2016 mandate the Urban Development Department (UDD) and Urban Local Bodies (ULBs) to organize training and capacity building programmes for their staff, including contract workers.

Audit noticed following issues with respect to efforts of SMD and ULBs for Capacity Building activities:

- A proposal for conducting 112 training programmes[21] by RCUES[22] for capacity building of officers/personnel of ULBs was approved in the second meeting (August 2016) of the State High Power Steering Committee (SHPSC). However, RCUES organized only 53 training programmes[23]. The shortfall in training programme was attributed (June 2023) by RCUES to delay in administrative approval by the State Government for the training programme and delay in advance payment/non-payment of bills for the training programme.

- Government of India directed (October 2017) implementation of a new Integrated Capacity Building Framework encompassing all urban missions including SBM. RCUES was designated as the nodal agency responsible for conducting training, workshops and exposure visits for which a Memorandum of Understanding (MoU) was executed (August 2018) between the State Government and RCUES. Each participant was to receive training through a total of three Capsules of three days each.

Audit observed that only 10 training programmes for Capsule 1 were conducted during October 2018 to January 2019 with 180 participants out of the 300 nominated participants. RCUES incurred an expenditure of ₹ 23.36 lakh for these programmes, which remained unpaid as of March 2022. RCUES stated (June 2023) that the remaining training programmes could not be conducted due to the non-payment for 10 training programmes.

The State Government stated (June 2023) that GoI was being requested for release of fund for 10 training courses conducted by RCUES. The action plan approved by SHPSC could not be implemented due to non-receipt of fund from GoI.

[21] Sanitation & Solid Waste Management: 56 training programmes; Public Private Partnership for Infrastructure Development and Asset Management under SBM: 35 training programmes; Hands on Training programme on SBM portal:21 training programmes.

[22] Regional Centre for Urban & Environmental Studies, Lucknow (established by Ministry of Housing and Urban Affairs, Government of India).

[23] Hand Holding Workshop on ODF: 11 programmes; Hand Holding Workshop on waste collection and transportations equipment for SWM DPR preparation: Nine programmes; Hand Holding Woprkshop on Swachh Survekshan /ODF: 27 programmes; Study tours: six programmes.

The reply is not acceptable, as funds for the capacity building component were available at SMD level.

- Audit noticed that ₹ 3.46 crore was released to 39 out of 45 test-checked ULBs during the period of 2016-22 for capacity building and Administrative & Office Expenses (CB & AOE) as detailed in ***Appendix 2.7***. Out of this release of fund, 32 ULBs incurred expenditure of ₹ 2.93 crore. However, only two test-checked ULBs[24] provided details of training imparted to their staff. Nine other ULBs[25] said they imparted training, but did not provide any detail in this regard. Out of six ULBs which were not provided fund for CB & AOE, one ULB[26] stated that training was conducted based upon the module prepared by the SBM portal. Thus, training efforts at the ULBs level remained lacking.

To sum up, the State policy on SWM was prepared in 2018 with delays of 14 months. However, SWM plans, which was to be prepared within six months of notification of State's SWM policy, were not prepared in 93 *per cent* of test-checked ULBs. Further, 73 *per cent* of test-checked ULBs did not formulate SWM bye-laws for implementation of SWM Rules. ULBs were not maintaining records for measuring solid waste generated in cities. There was shortage of manpower for management of solid waste in ULBs. Funds for IEC&PA were not fully utilised. The training programmes were not organized according to the set targets.

Recommendation 1: *The State Government may expedite effective implementation of the State policy for waste minimisation and management.*

Recommendation 2: *The State Government needs to devise better information systems on generation, collection and processing of solid waste to assist ULBs in preparation of SWM plans for effective waste management.*

Recommendation 3: *The State Government should ensure that bye-laws incorporating the provisions of SWM Rules, 2016 are framed and implemented by ULBs in a time bound manner.*

Recommendation 4: *The State Government should ensure proper utilisation of funds for Information, Education & Communication and Public Awareness (IEC&PA) activities to effectively sensitize citizens for behavioural changes in managing solid wastes.*

[24] NN Ghaziabad and NPP Deoria.
[25] NPP Chitrakootdham Karwi Chitrakoot, NPP Bulandshahr, NPP Pilibhit, NPP Shamli, NPP Sahabad Hardoi, NP Kulpahar Mahoba, NP Jiyanpur Azamgarh, NP Chitbaragaon Ballia and NP Reoti Ballia.
[26] NP Rudhauli Bazar Basti.

Chapter - III

Financial management

Chapter III: Financial management

This chapter covers various sources of funding for SWM in ULBs and their utilisation. The effort of ULBs for collection of user charges against door-to-door collection of waste is also discussed.

Brief Snapshot of the Chapter:

- Fund released to ULBs in SBM (Urban) scheme under SWM, Capacity Building and Administrative & Office Expenses (CB and A&OE) and IEC&PA component ranged between zero and 63 *per cent*, zero and 20 *per cent* and three and 62 *per cent* respectively during the period 2016-22 leaving a substantial balance at State Mission Director level.
- State Government had released funds of SBM (Urban) scheme to the State Mission Director with a delay ranging from 55 to 236 days and 11 to 1,098 days under SWM and CB and A&OE components respectively during the period 2017-21.
- Out of ₹ 1,378.83 crore released to ULBs in the State under SWM component of SBM (Urban) scheme during the period October 2014 to March 2022, utilisation certificates of only ₹ 307.17 crore (22 *per cent*) was received as on March 2022.
- Despite availability of fund, State Government could not implement action plan approved by the State High Power Steering Committee for decentralised waste management for the towns on the bank of river Ganga.
- Nagar Nigam Ghaziabad and Nagar Nigam Lucknow did not realise user charges of at least ₹ 71.50 crore for door-to-door collection of solid waste.

3 Source and utilisation of fund for solid waste management

Solid waste management activities in ULBs are funded by grants-in-aid received under Swachh Bharat Mission (Urban) (SBM (Urban)) scheme, the Central Finance Commission (CFC) and the State Finance Commission (SFC), besides own resources. Capital expenditure for solid waste management is mainly covered under grants-in-aid SBM (Urban) and the CFC, while SFC grants are primarily utilised for revenue expenditure. The funding of SWM under SBM (Urban) and other sources and their utilisation are discussed in succeeding paragraphs.

3.1 Funds for SWM activities under SBM (Urban)

The Government of India launched its flagship scheme of SBM (Urban) in October 2014 with SWM as one of its six components. Further, SWM related activities are covered under two other components of the SBM scheme, *viz.*, Information, Education & Communication and Public Awareness (IEC&PA) and Capacity Building and Administrative & Office

Expenses (CB and A&OE) for conducting public awareness and training programs regarding sanitation[1] respectively.

As per Paragraph 10.1(e) of SBM (Urban) scheme guidelines, State will contribute a minimum of 25 *per cent* funds towards all components of the scheme to match 75 *per cent* Central Share. Paragraph 10.4.6 of the guidelines further provides that the State Governments should establish a suitable mechanism to release funds, including the State share, to ULBs within 30 days of release of the Central share. The status of receipt and utilisation of fund for SWM, capacity building and IEC&PA under SBM (Urban) scheme during 2016-22 was as given in **Table 3.1**.

Table 3.1: Status of receipt and utilisation of funds for SWM, capacity building and IEC&PA components under SBM (Urban) scheme

(₹ in Crore)

Component	Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
SWM	Total available fund	74.49	217.27	933.23	828.06	962.81	1650.67
	Fund released to ULBs	0.08	64.04	160.19	522.76	0.06	471.01
	Expenditure at SMD level	0.00	0.00	169.68	27.95	0.00	2.66
	Closing balance	74.41	153.23	603.36	277.35	962.75	1177.00
	Percentage of fund released to ULBs against total available fund	0.10	29	17	63	0.006	29
Capacity Building and Administrative & Office Expenses	Total available fund	1.87	47.80	40.28	30.05	24.70	26.98
	Fund released to ULBs	0.38	5.25	0.00	3.75	0.42	0.00
	Expenditure at state level	0.25	2.27	10.23	17.12	11.78	11.95
	Closing balance	1.24	40.28	30.05	9.18	12.50	15.03
	Percentage of fund released to ULBs against total available fund	20	11	0	12	2	0
IEC&PA	Total available fund	7.48	130.50	125.58	134.45	75.14	62.94
	Fund released to ULBs	1.49	4.15	77.58	81.08	10.72	37.51
	Expenditure at SMD level	0.18	0.77	11.65	4.81	1.48	2.29
	Closing balance	5.81	125.58	36.35	48.56	62.94	23.14
	Percentage of fund released to ULBs against total available fund	20	3	62	60	14	60

(Source: Information provided by Director LB)

It is evident from **Table 3.1** that the percentage of fund released to ULBs vis-a-vis available fund under SWM, Capacity Building and Administrative & Office Expenses (CB and A&OE) and IEC&PA components ranged between zero[2] to 63 *per cent*, zero to 20 *per cent* and three to 62 *per cent* respectively during the period 2016-22 leaving a substantial balance at State Mission Director (SMD) level. Further scrutiny revealed that the State Government released funds (central share along with state share) to SMD with delays ranging from 55 to 236 days for

[1] As per National Urban Sanitation Policy, sanitation is defined as safe management of human excreta including its safe confinement treatment, disposal and associated hygiene-related practices. It is recognised that integral solution need to take account of other elements of environmental sanitation, *i.e.*, solid waste management; generation of industrial and other specialized/hazardous wastes; drainage; as also the management of drinking water supply.

[2] 0.006 *per cent* during 2020-21.

SWM and 11 to 1,098 days for the CB and A&OE components during the period 2017-21. Consequently, central share ranging from ₹ 10.43 crore to ₹ 245.67 crore remained parked at the State Government level up to 172 days as detailed in ***Appendix 3.1.***

The State Government stated (June 2023) that funds were not released proportionately to the ULBs due to non-submission of action plans and DPRs by the ULBs. The State Government further stated that funds were transferred to ULBs after submission of action plans and DPR from 2019 onwards.

The fact remains that State Government failed to monitor timely submission of action plan and DPRs by ULBs which affected SWM despite availability of fund at SMD level.

3.1.1 Utilisation of SBM (Urban) fund at the test-checked ULBs level

The details of total available fund and their expenditure in respect of various components under SBM (Urban) scheme in the test-checked ULBs during the period from 2016-22 are given in **Table 3.2**.

Table 3.2: Status of total available fund and expenditure under SBM (Urban) scheme in the test-checked ULBs as of March 2022

(₹ in crore)

Year	Component	Total available fund	Total expenditure/ utilisation	Closing Balance	Percentage of utilisation of fund
2016-17	SWM	0.00	0.00	0.00	-
	CB and A&OE	0.54	0.20	0.34	37
	IEC&PA	1.34	0.48	0.86	36
2017-18	SWM	5.30	0.00	5.30	0
	CB and A&OE	1.97	0.55	1.42	28
	IEC&PA	2.17	1.10	1.07	51
2018-19	SWM	20.16	3.62	16.54	18
	CB and A&OE	1.74	1.05	0.69	60
	IEC&PA	10.62	5.82	4.80	55
2019-20	SWM	81.74	13.34	68.40	16
	CB and A&OE	1.50	0.60	0.90	40
	IEC&PA	23.67	11.85	11.82	50
2020-21	SWM	68.63	17.09	51.54	25
	CB and A&OE	0.97	0.43	0.54	44
	IEC&PA	14.28	6.59	7.69	46
2021-22	SWM	98.30	23.86	74.44	24
	CB and A&OE	0.63	0.11	0.52	17
	IEC&PA	14.08	6.21	7.87	44

(Source: information furnished by test-checked ULBs)

It is evident from **Table 3.2** that the utilization percentage of funds under SWM, CB and A&OE and IEC&PA ranged from zero to 25 *per cent*, 17 to 60 *per cent*, and 36 to 55 *per cent* respectively. Since grants-in-aid under SWM component of SBM (Urban) scheme are mainly for capital expenditure on SWM, substantial balance during 2017-22 indicated that ULBs were deficient in implementation of SWM projects.

Audit further noticed that SMD released ₹ 1,378.83 crore to ULBs in the State under SWM component of SBM (Urban) scheme during the period

October 2014 to March 2022. Out of this, utilisation certificates of only ₹ 307.17 crore (22 *per cent*) were received by SMD and utilisation certificates of remaining amount of ₹ 1,071.66 crore were yet to be received (March 2022).

In case of test-checked ULBs, audit noticed that NP Chitbaragaon Ballia had not utilised ₹ 25.15 lakh[3] released under SBM (Urban) in October 2018 and August 2019 for purchase of equipment and vehicles for collection and transportation of solid waste. NP had subsequently purchased (May 2020) transportation vehicles (20 tricycles with bins and two tippers) under 14th FC grants. However, the amount released under SBM (Urban) was neither utilised by the NP nor refunded to SMD resulting in blocking of fund.

The State Government stated (June 2023) that due to a lack of guidance regarding the amount released for SWM, the ULBs could not incur the expenditure proportionately between 2016-18. State Government also accepted that NP Chitbaragaon Ballia had not utilised ₹ 25.15 lakh for collection and transportation of solid waste.

The reply is not acceptable, as the utilisation of available fund even during the period 2019-22 was not encouraging and it ranged between 16 to 25 *per cent*.

3.2 Funding for SWM from other than SBM (Urban) grants

SWM activities in ULBs are also financed in ULBs through CFC and SFC grants. Release of fund under CFC and SFC grants to all ULBs in the State during 2016-22 was as detailed in **Table 3.3**.

Table 3.3: Details of fund released to ULBs in the State under CFC and SFC grants

(₹ in crore)

Grant name	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
CFC	1167.42	2213.56	1817.65	2455.99	4338.00	1761.25
SFC	6085.46	6939.92	7312.50	8700.00	8525.00	9900.00

(Source: Information provided by Director LB)

The amount released to ULBs in the State for SWM activities out of total release of SFC/CFC grants was not provided by Director LB.

3.2.1 Expenditure on SWM in test-checked ULBs from other than SBM (Urban) grants

As per Rule 15(x) of the SWM Rules 2016, ULBs are required to allocate sufficient funds in the annual budget for capital investments, as well as the operation and maintenance of SWM services ensuring that funds for discretionary functions of the local body are allocated only after meeting the necessary funding requirements for SWM and other obligatory functions of the local body, as stipulated by these rules.

[3] ₹ 5.25 lakh for purchase of twin bins with stand (October 2018) and ₹ 19.90 lakh for collection and transportation of equipment and vehicles (17 Tricycle with bins, two Mini tipper and 40 PPE kits) in August 2019.

Total fund available in 45 test-checked ULBs (excluding SBM-Urban grant) and SWM expenditure vis-à-vis overall expenditure during 2016-22 are given in **Table 3.4**.

Table 3.4: Details of overall expenditure vis-à-vis expenditure on SWM in test-checked ULBs as of March 2022 (excluding SBM – Urban grants)

(₹ in crore)

Year	Total available fund including own revenue of ULBs (excluding SBM – Urban grants)	Total expenditure	Expenditure on SWM	Expenditure on SWM as a *per cent* of total expenditure
2016-17	4006.10	2785.31	574.27	21
2017-18	4374.41	3041.49	660.62	22
2018-19	3874.04	2520.58	784.51	31
2019-20	4253.59	2794.09	789.83	28
2020-21	4976.82	3037.57	886.98	29
2021-22	5064.65	3480.41	1042.84	30
Total	**26549.61**	**17659.45**	**4739.05**	

(Source: information furnished by test-checked ULBs)

It is evident from **Table 3.4** that the expenditure on SWM ranged between 21 to 31 *per cent* as compared to the overall expenditure in test-checked ULBs during the period 2016-22. However, this expenditure remained inadequate in view of deployment of less than required number of human resources for SWM, less achievement in door-to-door collection and inadequate processing and disposal of solid wastes as discussed in this Report.

3.3 Release of funds to firm without entering into agreement and non-refund of ₹ 15 lakh by firm

State Government issued an order (May 2019) for disposal of legacy waste of 10,000 metric tonnes (MT) generated during Kumbh Mela 2019 held during 15 January 2019 to 4 March 2019. SMD released (May 2019) ₹ 95.28 lakh[4] directly to M/s Hari Bhari Recycling Pvt Limited[5] (firm) for disposal of legacy waste without entering into agreement with the firm. The released amount included ₹ 15.00 lakh as loan to the firm for packaging of compost which was to be refunded by the firm to SMD after sale of compost. Though, in an earlier reply (May 2020)[6], State Government stated that after processing of Kumbh Mela waste, approximately 1,345 MT of compost was produced of which 604 MT was sold by the firm for ₹ 15.10 lakh. However, the amount (₹ 15 lakh) was

[4] ₹ 35.00 lakh for disposal of legacy waste (May 2019), ₹ 40.00 lakh for making the plant functional (May 2019) and ₹ 15.00 lakh for compost packing (June 2019) and ₹ 5.28 lakh for GST (July 2019).

[5] A concessionaire firm working in Prayagraj for solid waste management.

[6] Paragraph 3.3 of Audit Report No. 2 of the year 2021 – Government of Uttar Pradesh (Audit of Kumbh Mela 2019).

still not recovered (June 2023). Further, the release of fund to the firm without agreement was in contravention of financial rules[7].

State Government stated (June 2023) that correspondence with firm was being made and the amount would get refunded shortly.

3.4 SWM projects for ULBs located alongside river Ganga not executed

The State High Power Steering Committee (SHPSC) approved (November 2018) an action plan of ₹ 164.49 crore for decentralised waste management[8] in 18 ULBs located alongside the river Ganga. For implementation of the action plan, SMD SBM (Urban) transferred ₹164.49 crore to State Mission for Clean Ganga (SMCG) in December 2018. The projects were to be implemented by respective ULBs.

Audit noticed that out of ₹164.49 crore, SMCG transferred ₹ 8.79 crore (February 2019) to four ULBs[9] against total approved project cost of ₹ 22.14 crore for these ULBs[10]. Remaining balance of ₹ 155.69 crore was refunded (August 2019) to SMD anticipating delays in implementation of action plan by SMCG. The reason for these anticipated delays was not on record. Further, as per records of SMCG[11] (March 2022), interest amounting to ₹ 4.21 crore earned by SMCG was not transferred to SMD.

In reply (June 2023), the State Government stated that the process of obtaining comments from SMCG was in progress. SMD SBM (Urban) further informed (August 2023) that out of 18 ULBs located alongside the river Ganga, funds have been transferred to 14 ULBs after obtaining their proposal for collection and transportation of waste.

3.4.1 Failure of NP Saidpur, Ghazipur in implementation of action plan approved by SHPSC

Audit noticed that SMCG transferred (March 2019) ₹ 1.02 crore as mentioned in Paragraph 3.4 to one of the test-checked ULBs (NP Saidpur) for establishing two Solid Liquid Resource Management (SLRM) centres and bio-digester for gaushala/dairy, purchasing bins/tricycles and providing training. NP Saidpur awarded (August 2019) work for the construction of a SLRM facility at the cost of ₹25.03 lakh. However, NP subsequently started construction of a Material Recovery Facility (MRF) centre in place of SLRM. In this context, the NP informed (June 2022)

[7] Paragraph 212 (vii) (4) of Uttar Pradesh Budget Manual and Paragraph 455 of Financial Handbook.

[8] Capital cost ₹ 80.02 crore (for Household bins, Tricycle, Solid & Liquid Resource Management Centre, Bio digester, Leachate treatment plant, faecal sludge treatment, duck and duck shed units) and operational cost ₹ 84.47 crore.

[9] NP Hastinapur Meerut, NPP Anupshahar Bulandshahr, NPP Gangaghat Unnao and NP Saidpur Ghazipur.

[10] Hastinapur(Meerut)- Approved cost (₹ 3.95 crore)/ Transferred (₹ 1.10 crore); Anupshahar (Bulandshahr)- Approved cost (₹ 4.25 crore)/ Transferred (₹ 1.09 crore); Gangaghat (Unnao)- Approved cost (₹10.02 crore)/ Transferred (₹ 5.59 crore); Saidpur (Ghazipur)- Approved cost (₹ 3.92 crore)/ Transferred (₹ 1.02 crore).

[11] Ledger of Solid Waste Management maintained by SMCG.

Audit that MRF was being constructed in view of verbal instructions[12] given in a meeting held in February 2020. Further, the NP requested (October 2020) SMD for approval of extra expenditure of ₹ 13.34 lakh[13] from the SWM component of SBM (Urban) for construction of the MRF, upon which no response was received from the SMD as of June 2022.

Audit further noticed that NP Saidpur had utilised ₹ 19.39 lakh on construction of MRF, ₹ 17.40 lakh on purchase of twin bins and ₹ 5.57 lakh on purchase of tricycles. The remaining amount (₹67.44 lakh[14]) out of the released fund (₹ 101.78 lakh) was neither utilized by the NP for its intended purpose[15] nor returned to SMD. Thus, NP Saidpur Ghazipur failed to implement action plan approved (November 2018) by SHPSC for SWM under decentralised waste management approach in the towns situated on the banks of river Ganga.

In reply (June 2023), the State Government stated that a Detailed Project Report (DPR) amounting to ₹ 391.94 lakh was prepared by NP Saidpur for solid waste management, which was approved by SMCG Directorate and an amount of ₹ 101.78 lakh was transferred to the NP in April 2019. However, the reply did not address non-implementation of the action plan approved by SHPSC.

3.5 Irregular payment on account of GST to outsourcing firm

Notification No 12/2017 Central Tax (Rate) dated 28 June 2017 issued by Government of India, Ministry of Finance (Department of Revenue) provides that services (excluding work contract service or other composite supplies involving supplies of any goods) provided to the local authority by way of any activity in relation to any function entrusted to a municipality under article 243W of the Constitution are exempted from Goods and Services Tax (GST). Further, solid waste management is being performed by ULBs according to the functions entrusted to them under 12th Schedule of the Constitution.

Audit observed that three[16] test-checked ULBs made payments to outsourcing agencies for the supply of manpower for SWM services which included payment of ₹ 60.09 lakh towards GST, though SWM is exempt from GST. This resulted in excess payment of ₹ 60.09 lakh to the contractors as detailed in ***Appendix 3.2***.

The State Government did not furnish reply (June 2024) in respect of audit observation.

3.6 Recovery of user charges

Section 1.4.5.6.4 of the MSWM Manual, 2016 provides that ULBs are expected to strive for the recovery of 100 *per cent* of the service cost for

[12] NP did not mention on whose verbal instruction they had acted upon.
[13] Estimated cost for MRF center (₹ 38.37 lakh) minus approved cost for SLRM centre (₹ 25.03 lakh) = ₹ 13.34 lakh.
[14] Available fund (₹ 101.79 lakh being released amount *plus* ₹ 8.01 lakh being bank interest) *minus* utilised fund (₹ 42.36 lakh) = ₹ 67.44 lakh.
[15] SLRM and ward level training; SLRM centre and Bio-gas digester; Toolkit.
[16] NP Rudhauli Bazar Basti, NP Jewar GB Nagar and NP Kulpahar Mahoba.

door-to-door collection, transportation, processing and final disposal of waste at the landfill through the imposition of user charges based on the 'polluter pays' principle. Rule 15 (f) of the SWM Rules, 2016 provides that ULBs shall prescribe user fees as they deem appropriate and collect the fees from waste generators either directly or through an authorized agency. Rule 15 (zf) further provides that ULBs shall frame bye-laws and prescribe criteria for imposing spot fines for violations of the SWM Rules, 2016.

The collection of user charges ensures financial viability of MSWM services by the ULBs. However, as discussed in paragraph 2.5, only 10 ULBs[17] (22 *per cent*) out of 45 test-checked ULBs framed bye-laws for recovery of user charges for door-to-door collection of waste. Further, in view of the resolution passed by the Executive Council, NN Lucknow was also collecting user fee despite bye-laws not having been framed.

In public survey involving 495 HHs conducted in test-checked ULBs, audit noticed that only eight *per cent* respondents were paying user charges for door-to-door collection of waste indicating inadequate efforts of ULBs for raising their revenue. Deficiencies in the recovery of user charges are discussed in the succeeding paragraphs.

3.6.1 Unrealised user charges in NN Lucknow

As per the Selectee Concessionaire Agreement (March 2017) for door-to-door collection (DTDC), transportation and processing of waste, the concessionaire[18] was responsible to collect user charges on behalf of NN Lucknow. Concessionaire had to ensure minimum collection efficiency of the total amount of user charges billable on a monthly basis as prescribed in the agreement[19]. If the concessionaire fails to collect the user charges as required, NN Lucknow had the authority to withhold the shortfall from the tipping fee[20] payable to the concessionaire for that particular month.

Audit observed that the concessionaire presented the tipping fee bills to NN Lucknow for SWM in Lucknow city from April 2017 onwards. However, out of the total recoverable user charges of ₹ 49.15 crore for the period 2017-21 based on the minimum rates[21] for residential and non-residential properties, the concessionaire recovered only ₹ 32.88 crore as detailed in ***Appendix 3.3***. As a result, at least ₹ 16.27 crore user charges

[17] NN Ghaziabad, NN Kanpur, NPP Bulandshahr, NPP Chitrakootdham Karwi Chitrakoot, NPP Deoria, NPP Hathras, NPP Loni Ghaziabad, NPP Muzaffarnagar, NPP Shahabad Hardoi and NP Khanpur Bulandshahr.

[18] Eco Green Private Limited.

[19] 50 *per cent*, 60 *per cent* and 75 *per cent* of total amount of user charges was billable on the monthly basis for first year, second year and third year respectively. The concessionaire was responsible for collection of minimum user charges with effect from 1 July 2017.

[20] Tipping fee is a fee or support price determined by the local authorities or any State agency authorised by the State Government to be paid to the concessionaire or operator of waste processing facility or for disposal of residual solid waste at the landfill.

[21] Recoverable user charges were calculated in Audit on the basis of minimum rates for households (₹ 40/- per households per month) and other establishment (₹ 100/- per other establishment per month) during the period 2017-22.

remained unrealised. Further, tipping fee was paid to the concessionaire during this period without withholding the shortfall of user charges as provided under the agreement.

In reply (June 2023), the State Government stated that the concessionaire had failed to execute IEC&PA activity for the collection of user charges for which several notices were issued and few penalties were also imposed on the concessionaire. It was further stated that appropriate legal action would be taken against the concessionaire.

3.6.2 Short realisation of user charges in NN Ghaziabad

NN published (August 2017) bye-laws for the collection of user charges for DTDC services. The rates mentioned in the bye-laws were determined based on the plinth area of the building ranging from a minimum of ₹ 30 per month for pucca residential houses below the poverty line to a maximum of 14,000 per month for 3-star or other high-rated hotels with an area exceeding 1,000 square meter. The minimum rate of user charges for non-residential properties was set at ₹ 70 per month for small mohalla shops.

Audit observed that the number of residential houses in the area of NN Ghaziabad ranged from 2.93 lakh to 4.20 lakh whereas the number of non-residential properties ranged from 26,220 to 32,541 during 2018-22. In view of minimum rates prescribed in the bye-laws for residential and non-residential properties, user charges of ₹ 60 crore was recoverable against which only ₹ 4.77 crore was recovered ***(Appendix 3.4)***. Thus, NN fell short of realizing user charges amounting to at least ₹ 55.23 crore during the period of 2018-22**.**

In reply (June 2023), the State Government stated that NN Ghaziabad was continuously making efforts for increasing user charges which is evident from the details of collected user charge from year to year.

The reply is not acceptable, as NN Ghaziabad was not able to recover user charges as worked by applying minimum rates prescribed in the bye-laws for residential and non-residential properties. Thus, further efforts are required to realise user charges in compliance of related bye-laws to cover cost of providing DTDC.

To sum up, the State Government released funds to the State Mission Director under SBM (Urban) scheme with substantial delays up to 1,098 days. Further, audit noticed less utilisation of fund under SBM (Urban) scheme during the period 2016-22 indicating ULBs were deficient in implementation of SWM projects. The expenditure on SWM from other than SBM (Urban) grants ranged between 21 and 31 *per cent* as compared to the overall expenditure of test-checked ULBs during the period 2016-22. However, this expenditure remained inadequate as audit noticed less achievement in door-to-door collection, processing and disposal of solid waste. Further, proper recovery of user charges was not ensured for financial viability of SWM services. Only 22 *per cent* test-checked ULBs had framed bye-laws for recovery of user charges for door-to-door

collection of solid waste. Besides, there was less recovery of user charges by ULBs.

Recommendation 5: *Funds earmarked by the State Government for SWM projects should be released to ULBs within the stipulated time and it should be ensured that the funds do not remain parked with the State Government.*

Recommendation 6: *State Government should ensure that ULBs incur adequate expenditure on SWM as per SWM Rules, 2016.*

Chapter - IV

Segregation, collection and transportation of waste

Chapter IV: Segregation, collection and transportation of waste

This chapter covers status of segregation of solid waste at source, door-to-door collection (DTDC) of solid waste from households and secondary transportation of waste to landfill sites.

Brief snapshot of the Chapter:

- Test-checked ULBs were collecting and transporting mixed waste to the waste processing plant, landfill or dumpsite and no instances of source segregation were found during the public survey of 495 households conducted by audit in the test-checked ULBs.
- In 38 test-checked ULBs (84 *per cent*), Material Recovery Facility centre for sorting of recyclable wastes could not be made functional despite the passage of more than three years since the release of fund.
- Inadequate coverage of DTDC facility for households was noticed in test-checked ULBs. Further, 61 *per cent* respondents of the public survey were not satisfied with DTDC in test-checked ULBs.
- Audit also noticed excess payment/avoidable payments amounting to ₹ 4.06 crore to firms engaged for DTDC in two ULBs. Besides, four ULBs incurred unfruitful/avoidable expenditure of ₹ 58.75 lakh on purchase of bins for collection/secondary storage of waste.
- Weighbridges were not installed at processing facilities/landfill sites to ensure accurate monitoring of transportation and disposal of solid waste by the test-checked ULBs, except in case of three ULBs.
- ULBs were using vehicles without partition/open vehicles for transportation of waste. Further, majority of ULBs were not using GPS technology for tracking of movements of waste transportation vehicles to improve the transportation and collection efficiency.

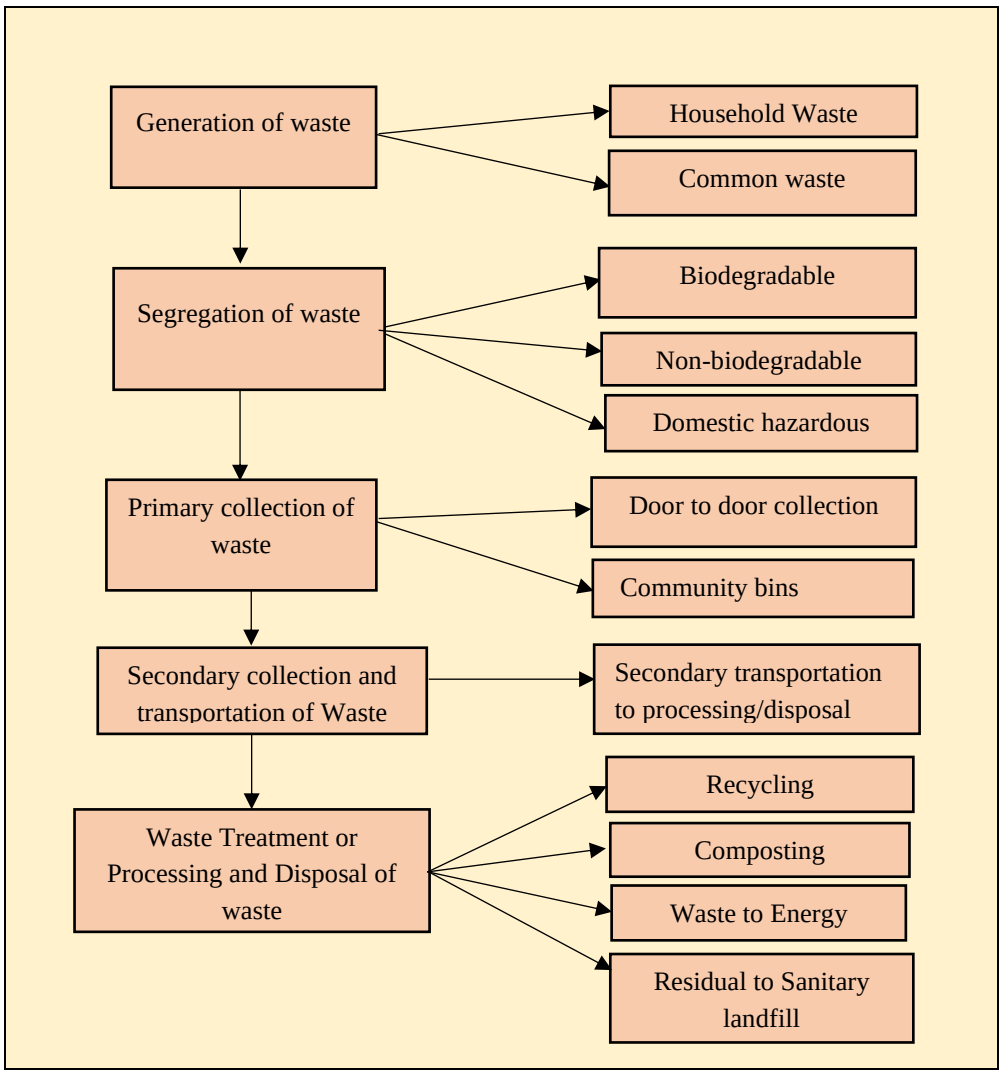
4.1 Segregation

SWM Rules, 2016 has made every waste generator responsible for segregation of waste. Segregation refers to the process of sorting and separating various components of solid waste, *viz*., biodegradable waste or wet waste, non-biodegradable waste or dry waste (including recyclable waste, combustible waste, sanitary waste, and non-recyclable inert waste), domestic hazardous waste, e-waste and construction and demolition waste.

Collection of segregated municipal waste is an essential step in Municipal Solid Waste Management (MSWM). Waste collection services are divided into primary and secondary collection. Primary collection refers to the process of collecting, lifting and removal of segregated solid waste from source of its generation. Secondary collection includes picking up waste from community bins, waste storage depots or transfer stations and transporting it to waste processing sites or to the final disposal site.

The process of SWM is detailed in **Chart 4.1**:

Chart 4.1: Process of SWM



(Source: SWM Rules, 2016 and MSWM Manual 2016)

4.1.1 Segregation of waste

Rule 4 (a) of SWM Rules 2016 stipulates that every waste generator shall segregate and store the waste generated by them into three separate streams, *viz*., biodegradable, non-biodegradable and domestic hazardous waste (DHW)[1], using suitable bins. Rule 15 (i) of SWM Rules 2016 stipulates that ULBs shall establish waste deposition centres for domestic hazardous waste and direct waste generators to deposit DHW at these centres for safe disposal.

As per information provided by 44 out of 45 test-checked ULBs during the performance audit, waste was not being segregated at source by households/generators in separate bins for biodegradable, non-biodegradable and DHW, whereas one ULB (NN Lucknow) informed that

[1] DHW includes discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles, gauge and syringes, *etc.* generated at the household level.

waste was partly segregated at source. Audit further noticed that 12 test-checked ULBs had distributed bins for encouraging household for source segregation of wastes whereas no such effort was made by 22 ULBs and remaining 11 ULBs did not provide related information to Audit. Further, waste deposition centres for DHW were not set up in any of the test-checked ULBs.

In the Joint Physical Verification of 45 test-checked ULBs, audit noticed that test-checked ULBs were collecting and transporting mixed waste including DHW to waste processing plants, landfill or dumpsites. Further, in public survey involving 495 HHs conducted in test-checked-ULBs, audit noticed that 32 *per cent* respondents did not use dustbin for storing waste whereas no instance of source segregation was found. Thus, there was no monitoring to ensure collection of segregated waste at source. Some instances are indicated in the following photographs:

Photograph 4.1

<table>
<tr>
<td> 
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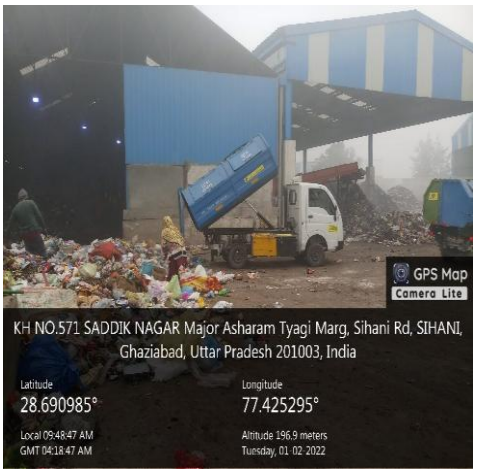
<td> 
</td>
</tr>
<tr>
<td>Unsegregated waste was being dumped at solid waste processing plant site in Lucknow</td>
<td>Unsegregated waste was being dumped at Material Recovery Facility (MRF) centre in Ghaziabad</td>
</tr>
<tr>
<td> 
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<td> 
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</tr>
<tr>
<td>Domestic hazardous waste segregated at MRF centre from mixed waste transported in NP Saidpur Ghazipur</td>
<td>Domestic hazardous waste segregated at MRF centre from mixed waste transported in NP Khanpur Bulandshahr</td>
</tr>
</table>

In reply (June 2023), the State Government stated that all ULBs have been funded to procure collection and transportation vehicles equipped with

different components for collecting segregated waste. To improve and ensure 100 *per cent* segregated waste collection, a State-wide campaign based on persuasion and penalties had been launched. State Government further stated that Ghaziabad Nagar Nigam (GNN) was making continuous effort for source segregation of waste through IEC activities, school programmes, rallies on days of national importance, *etc*. It further stated that segregation is a civic responsibility and it failed whenever some households during the process of door-to-door collection mix the waste in segregated waste. In respect of DHW, State Government stated that DHW collected was being stored at the MRF centers in two[2] ULBs whereas collection of DHW was being ensured at household level through additional bins attached to DTDC vehicles in GNN.

Fact remains that concerted efforts for educating waste generators is required through IEC for behavioural changes to ensure source segregation of waste. Further, failure of ULBs to frame and implement SWM bye-laws also led to non-levy of penalty for violation of SWM Rules, 2016 regarding source segregation of waste.

4.1.2 Status of establishment of Material Recovery Facility (MRF) centre

As per clause 15(h) of SWM Rules 2016, it is the duty and responsibility of the local authority to establish MRF centre or secondary storage facilities with sufficient space for sorting recyclable materials. These facilities should enable informal or authorized waste pickers and waste collectors to separate recyclables from the waste. MRF centre should also provide easy access for waste pickers and recyclers to collect segregated recyclable waste, such as paper, plastic, metal, glass and textile either from the source of generation or from MRF centre itself.

Audit observed that SMD had released funds amounting to ₹ 247.48 crore[3] to 734 Urban Local Bodies (ULBs) for the construction of 735 MRF centres[4] under SBM (Urban) scheme. Additionally, ₹ 83.35 crore was released (November 2021) to 491 ULBs for the procurement of machinery, such as weighing scale machines, conveyor belts, shredders, *etc.*, for the operation of MRF centres. However, out of these, civil work was not commenced for 124 MRFs centre whereas 127 MRF centres were under construction. In case of 439 MRF centres, civil work was completed but these MRF centres were not functional. Further, as per information provided by SMD, only 45 MRF centres were functional[5] in the State,

[2] NPP Bulandshahr and NP Khanpur (Bulandshahr).

[3] ₹ 219.5284 crore was released to 651 ULBs in August 2019 and ₹ 27.95 crore was released to 83 ULBs in November 2021.

[4] Amount released to NN Prayagraj and NP Jhunsi for establishment of MRF centres while later NP Jhunsi was merged with NN Prayagraj.

[5] List of 45 functional MRF centres provided by SMD included five MRF centres in five test-checked ULBs. However, audit noticed that MRF centres in only two ULBs (NN Kanpur and NN Lucknow) out of these five test-checked ULBs were functional. Remaining three MRF centres in NN Ghaziabad, NP Jewar GB Nagar and NP Saidpur Ghazipur were yet to be made functional as detailed in *Appendix 4.1*.

where sorting of recyclable waste/material was being carried out as of March 2022.

SMD informed (March 2024) that utilization certificates are submitted by ULBs after consolidating expenditures from various sub-components of SWM, therefore, it was not possible to provide information of the funds utilised for the civil construction of MRF centres separately. As a result, utilization status of fund released for establishment of MRF centres in the State could not be examined in Audit.

Stages of MRF centres such as availability of land, status of construction, purchase and installation of machinery and functional position, *etc.*, in 45 test-checked ULBs are detailed in ***Appendix 4.1*** and summarised in **Table 4.1**.

Table 4.1: Status of establishment of MRF centres in test-checked ULBs as on March 2022*

Sl. No.	Description	No of ULBs	Name of ULBs
1	Land not available for construction of MRF centre	5	NPPs: Chitrakootdham Karwi Chitrakoot, Raebareli. NPs: Jarwal (Behraich), Bakewar (Etawah), Chitbaragaon (Ballia)
2	Land available but civil work not started	3	NPPs: Utraula (Balarampur), Ramnagar (Varanasi). NP: Katra (Shahjahanpur)
3	Civil work in progress	8	NPPs: Etah, Shamli, NPs: Bithoor (Kanpur Nagar), Bilsanda (Pilibhit), Jhalu. (Bijnor), Anandnagar (Maharajganj), Reoti, (Ballia), Rajapur (Chitrakoot)
4	Construction work started but was stopped	3	NPPs: Dataganj (Budaun), Sikandra Rao (Hathras), Loni (Ghaziabad).
5	Civil work completed but machinery was not purchased	12	NN: Ghaziabad; NPPs: Mahoba, Hathras, Pilibhit Shahabad (Hardoi), Baheri (Bareilly), Muzaffarnagar, Auraiya, NPs: Saidpur (Ghazipur), Rudhauli Bazar (Basti), Kulpahar (Mahoba) Jahanabad (Pilibhit).
6	Civil work completed and machinery purchased but not installed	2	NPP: Deoria; NP: Baldeo (Mathura)
7	Civil work completed and machineries were installed but MRF centre was not functional	5	NPP: Mahmudabad (Sitapur), NP: Khanpur (Bulandshahr) Jewar (GB Nagar), Sahaspur (Bijnor), Tikri (Bagpat)
8	Functional MRF centre	7	NNs: Lucknow, Kanpur; NPP: Deoband (Saharanpur), Bulandshahr NP: Kaptanganj (Kushinagar), Usawan (Budaun), Jiyanpur (Azamgarh)

(Source: Information provided by test-checked ULBs)

** Status updated as per State Government reply (June 2023) and information received (July 2024) from ULBs.*

In reply (June 2023), the State Government provided status of establishing MRF centres in 14 ULBs and further updated information was received (July 2024) from ULBs according to which seven MRF centres were functional.

Thus, despite the passage of more than three years since the release of funds, MRF centres in 38 test-checked ULBs could not be made functional.

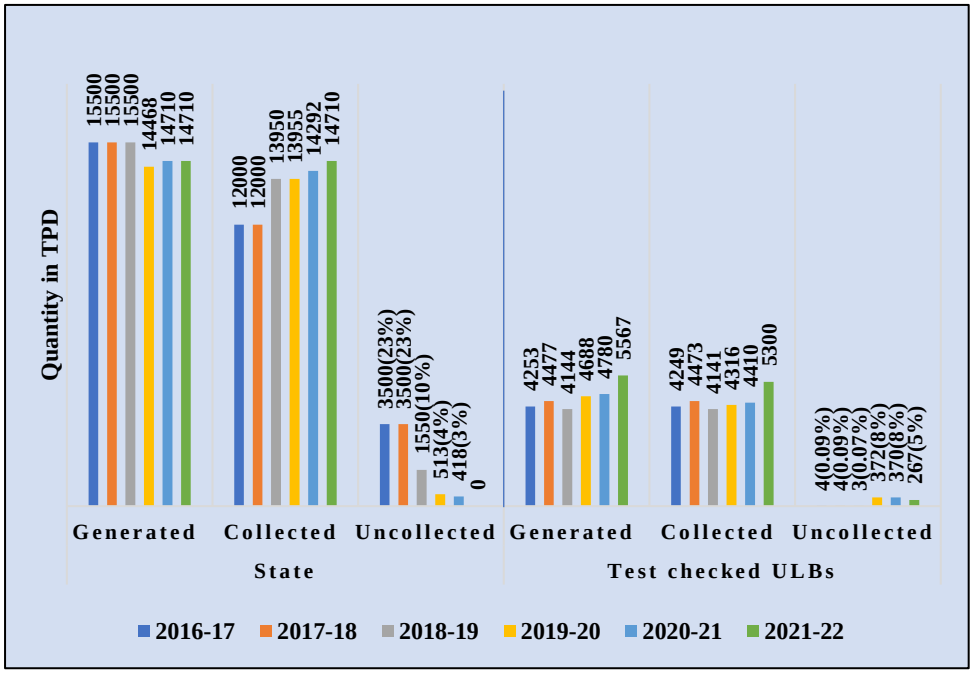
4.2 Collection

Section 2.3.2 of the MSWM Manual 2016 stipulates that the collection of segregated municipal waste is a crucial step in Municipal Solid Waste Management (MSWM). Inefficient waste collection services can have negative impacts on public health and the aesthetics of towns and cities. The separate collection of wet, dry and domestic hazardous waste enables maximum recovery of recyclables. It also enhances the potential for cost-effective treatment of such waste.

4.2.1 Status of waste collection

The quantum of waste generated and collected during the period 2016-22 in the State and in the test-checked ULBs is detailed in **Appendices 4.2 (A)** and **4.2 (B)** and also depicted in **Chart 4.2**.

Chart 4.2: Quantum of waste generated and collected in the State and the test-checked ULBs during 2016-22



(Source: Information provided by Director LB and test-checked ULBs)

Chart 4.2 indicates that the collection of generated waste in the State had improved over the years between 2016-22. However, as discussed in Paragraph 2.6, the data on generation of waste was not reliable as ULBs forecasted similar figures of waste generation over multiple years. In test-checked ULBs, the data on waste generation and collection were same in

41 out of the 45 test-checked ULBs (excluding NN Kanpur, NPP Bulandshahr, NP Katra, Shahjhanpur, and NP Bilsanda, Pilibhit) in the year 2021-22, as detailed in ***Appendix 2.2*** and ***Appendix 4.2(A)***. Further, the public survey carried out during the performance audit revealed that 46 *per cent* of households were not provided door-to-door waste collection facility. Thus, the data provided by the State Government and test-checked ULBs on waste collection was not realistic.

In reply (June 2023), State Government stated that all ULBs had been funded for purchasing collection and transportation vehicles. However, the reply did not address the audit observation on unreliable data on waste collection.

4.2.2 Absence of weighbridge

According to section 1.4.3.3.1 of the MSWM Manual 2016, waste generated from households, markets and other commercial establishments and institutions should be quantified. The entire waste collected from the city should be weighed at weighbridges established at transfer stations or along the route to processing and disposal facilities.

Audit observed that out of 45 test-checked ULBs, only five[6]ULBs had weighbridges for weighing the waste. Additionally, the ULBs did not quantify the collected waste based on the volume of the vehicle multiplied by the number of trips made per day. Due to absence of weighbridges, the authenticity of the quantity of waste transportation and disposal provided by ULBs could not be verified during the audit.

In reply (June 2023), the State Government stated that weighbridges were being installed at all processing facilities to ensure accurate monitoring. State Government further stated that Form IV reports[7] were prepared using CPHEEO norms for per capita waste generation based on proven studies.

The reply is not acceptable, as waste collection data should be based on weighing of actual collection rather than on waste generation norms as per CPHEEO guidelines.

4.2.3 Door-to-door collection (DTDC) of waste

Rule 15 (b) of the SWM Rules 2016 stipulates that the local authorities are responsible for arranging DTDC of segregated solid waste from all households, including slums and informal settlements, as well as commercial, institutional and other non-residential premises. In the case of multi-storied buildings or apartments, large commercial complexes, malls, housing complexes, *etc.*, the waste may be collected from the entry gate or any other designated location.

Ten[8] out of the 45 test-checked ULBs had partially outsourced DTDC services. In public survey involving 495 HHs conducted in test-checked

[6] In NN Lucknow, NN Kanpur NN Ghaziabad, NPP Muzaffarnagar (non-operational) and NPP Raebareli (non-operational).

[7] Annual report on SWM to be submitted by ULBs.

[8] NN Lucknow, NN Kanpur, NN Ghaziabad, NPP Raebareli, NPP Muzaffarnagr, NPP Baheri, NPP Loni, NPP Hathras, NPP Shamli and NPP Mahoba.

ULBs, audit noticed that 61 *per cent* respondents were not satisfied with DTDC in test-checked ULBs indicating insufficient service by these ULBs. Audit observations on DTDC of waste in test-checked ULBs are discussed in succeeding paragraphs.

4.2.3.1 Inadequate coverage of DTDC facility

Nagar Nigam Lucknow

Audit observed that in March 2017, a tripartite agreement was executed among NN Lucknow, Construction and Design Services (C&DS) Jal Nigam and M/s Eco Green Private Limited for DTDC, transportation and processing of waste in Lucknow city. The firm was to receive a tipping fee of ₹ 1,604 per metric ton[9] for the services. However, as per information provided by NN Lucknow, all households in the city were not covered by the DTDC facility during 2017-22 (***Appendix 4.3***). The coverage of households under DTDC ranged improved from 47 *per cent* in 2017-18 to 79 *per cent* in 2021-22. Thus, 21 *per cent* of households in the city were deprived of the DTDC facility as of March 2022.

In reply (July 2023), the State Government stated that as per the concessionaire agreement, the concessionaire was supposed to cover 100 *per cent* households, but due to failure of the concessionaire in performing the duties, legal action is taken against the concessionaire. State Government further stated that the new plan for DTDC is ready.

Fact remains that DTDC was not fully covered in the city.

Nagar Nigam Kanpur

NN Kanpur selected (October 2016) M/s JTN Service Private Limited, Kanpur for DTDC services to 5.22 lakh households across 110 wards in six zones of Kanpur city. However, audit observed that DTDC service was only partially covered in certain wards during the period from 2017 to 2022. DTDC coverage was in 75 wards (68 *per cent*) during 2017-18, 74 wards (67 *per cent*) during 2018-19, 77 wards (70 *per cent*) during 2019-20, 66 wards (60 *per cent*) during 2020-21 and 44 wards (40 *per cent*) during 2021-22. Thus, the firm did not provide DTDC services in 30 to 60 *per cent* of the wards during the period from 2017 to 2022.

In reply (June 2023), the State Government stated (June 2023) that presently for the year 2022-23, DTDC was being done in 100 *per cent* wards. State Government further added that NN Kanpur had issued notices to the firm for partial door-to-door collection in previous years.

[9] ₹ 1,439 per MT for DTDC and ₹ 165 per MT for processing of the waste.

Nagar Palika Parishad Raebareli

According to the records provided by NPP, DTDC of waste in the city was carried out by three firms[10] intermittently during 2016-21[11]. The NPP did not have information regarding the number of households covered by these firms under DTDC. Further, the firms had collected user charges of ₹ 22.19 lakh[12]. NPP stated (February 2022) that user charges were not collected from all households, but NPP was not aware of the number of defaulters. However, all 34 wards were covered under DTDC during 2021-22.

In reply (June 2023), the State Government stated that DTDC facility is provided in all 34 wards. State Government further stated that user charges were collected from households by the firm and deposited in NPP accounts which was returned to the firm for expenditure in DTDC and IEC work.

The reply is not acceptable, as NPP Raebareli did not ensure coverage of all households under DTDC during 2016-21. The NPP did also not monitor the realisation of user charges for DTDC by private firms engaged for the DTDC service. As a result, NPP was not aware of the actual recovery of user charges by these firms and the number of defaulting households from whom the outstanding user charges could not be recovered.

Nagar Palika Parishad Muzaffarnagar

Audit noticed that DTDC of waste was not carried out in any of the 50 wards of NPP Muzaffarnagar during the period from 2016 to 2020. For the year 2020-21, an agreement was executed (March 2020) between the NPP and a contractor for DTDC and road cleaning from commercial establishment in the city area. As per the agreement, vehicles for DTDC was to be provided by the NPP and the contractor was to collect user charges from commercial shops/establishment. However, the contractor only partially performed the work in the year 2020-21 as only three vehicles were provided by the NPP and also no user charge was recovered by the contractor. The contractor had stopped work since March 2021.

Additionally, an agreement was executed (June 2020) between the NPP and another contractor for DTDC services in 10 wards of the city. The contractor carried out DTDC in these wards in the year 2020-21 and 2021-22. Thus, no ward in the city was covered under DTDC facility from 2016-20 and households in only 10 out of 50 wards were covered during 2020-22.

[10] M/s Accord Hydro Air Private Limited, M/s Intance Security and Facility Private Limited and M/s Prakriti Paryavarn Sanrakshan Sansthan.

[11] Wards covered: 15 out of 31 wards (48 *per cent*) in 2016-17, 14 out of 31 wards (45 *per cent*) in 2017-18, 20 out of 31 wards (65 *per cent*) in 2020-21 and 34 out of 34 wards (100 *per cent*) in 2021-22.

[12] ₹ 14.12 lakh in 2017-18, ₹ 4.85 lakh in 2020-21 and ₹ 3.22 lakh in 2021-22.

In reply (June 2023), the State Government stated that NPP Muzaffarnagar published a bid for DTDC in 2022-23 on the GeM portal. However, no firm participated in the bidding process.

The fact remains that despite these efforts, DTDC facility was not provided in all wards of the city during the period from 2016-22.

Nagar Palika Parishad Hathras

Municipal Board of NPP Hathras granted (February 2019) administrative and financial approval for DTDC of waste in all 27 wards of the city. Subsequently, an agreement was executed (February 2020) between NPP and M/s Arva Associates Jhansi for DTDC of 27 wards. However, NPP issued (August 2020) work order to the firm for DTDC in 17 wards. As a result, 10 wards of the city remained uncovered by DTDC service. NPP did not provide reason for not covering remaining wards under DTDC.

Audit further observed that the firm submitted monthly bills during October 2020 to March 2022 claiming coverage of varying numbers of households ranging from 16,950 to 19,483 and commercial properties ranging from 4,399 to 5,056. NPP made payments to the firms as per claims submitted in the monthly bills. However, as per information provided (March 2022) by NPP, there were 15,716 households and 2,503 commercial properties in these 17 wards during 2020-21 and 15802 households and 2571 commercial properties in 2021-22. This resulted in an overpayment of ₹ 30.22 lakh to the firm, as detailed in ***Appendix 4.4 (A***).

Further, according to the agreement, the firm was required to collect a minimum of 40 *per cent* of the user charges from serviced households in the first year, with a subsequent 10 *per cent* increase from the second year onwards. Further, NPP was to made payment to the firm based on the bills submitted, covering 60 *per cent* of the charges claimed in the bills plus the actual user charges collected and deposited by the firm. Audit noticed that instead of the mandated minimum collection of ₹ 75.44 lakh, the firm only collected ₹ 12.34 lakh (16 *per cent*) from September 2020 to March 2022. Audit further noticed that payments were made to the firm as per contract in the first year. However, during the second year, the NPP deducted only 40 *per cent* from the bills submitted by the firm instead of required deduction of 50 *per cent*. This led to an overpayment of ₹ 7.29 lakh between September 2021 and March 2022 as detailed in ***Appendix 4.4 (B)***.

In reply (June 2023), the State Government stated that verification of residential/commercial properties were carried out by the firm in supervision of Sanitary Inspector/Safai Nayak.

Reply is not tenable, as payment was made for higher number of HHs/commercial establishments as per details of HHs/commercial properties provided by NPP to audit. Further, payment during the second year was not made after required deduction for adjustment of higher mandatory collection of user charges.

4.2.3.2 Avoidable payment of ₹3.68 crore due to over provisioning of vehicles and sweepers for DTDC in NPP Loni

Section 2.3.5, Table 2.3 of MSWM Manual, 2016 states that one light commercial vehicle (LCV) can cover 1,000 households (in case LCV having 500 to 700 kg capacity) or 1,500 to 2,000 households (in case LCV having more than 700 kg capacity) with one driver and two helpers. Based on this parameter, State Government had also delineated (August 2019) that on an average, LCV can cover 1,200 to 1,500 households.

NPP Loni entered into an agreement (August 2018) with a firm, M/s Aryan Group of Guard Services, Lucknow for DTDC in all wards with an agreed monthly payment of ₹ 1.54 crore. According to the firm's accepted proposal[13], 33,000 households were supposed to be covered using 55 TATA Ace tippers with one driver and three sweepers assigned to each tipper. The payment rates for the tipper, driver and sweeper were ₹ 18,000, ₹12,762 and ₹9,162 per month respectively.

The proposal submitted by the firm contradicted the aforementioned prescribed norms in MSWM Manual, 2016, as only 600 households were proposed to be covered using one LCV with one driver and three sweepers against the norms of minimum 1,200 households with one driver and two helpers. However, the NPP did not consider this overestimation of required LCV and manpower while evaluating the proposal from the outsourced firm. Consequently, NPP missed the opportunity to cover an additional 600 households per tipper and an extra sweeper was provisioned for each tipper.

Audit observed that estimated coverage of 33,000 households required 55 tippers, 55 drivers and 165 sweepers as per the accepted proposal of the firm, whereas this could have been covered[14] with only 28 tippers, 28 drivers and 56 sweepers. This excess provision of 27 tippers, 27 drivers and 109 sweepers for the coverage of 33,000 households led to an avoidable payment of ₹ 3.68 crore[15] made by the NPP to the firm for DTDC services between November 2018 and November 2020, as detailed in ***Appendix 4.5(A) and (B)***.

In reply (June 2023), State Government stated that the response of NPP Loni was awaited.

[13] 55 TATA Ace tippers x 3 sweepers =165 sweepers x 200 Households (HHs) = 33,000 HHs; 110 E-Rickshaw trolley x 2 sweepers = 220 sweepers x 200 HHs = 44,000 HHs; 13 tractor trolley x 10 sweepers = 130 sweepers x 200 HHs = 26,000 HHs (Total 1,03,000 HHs).

[14] Required number of tippers= (No of HHs/HHs covered with each tipper) = 33000/1200 =28; Drivers = 28 and sweepers= 28 x 2 sweepers per tipper = 56.

[15] Sum of excess payment of ₹ 98.46 lakh on hiring tippers and excess payment of ₹ 269.23 lakh on excess deployed manpower.

4.2.4 Irregularities in purchase of community bins/storage bins

Audit observed that test-checked ULBs purchased bins for collection of wastes and secondary storage of waste in which following irregularities were noticed:

4.2.4.1 Unfruitful expenditure on purchase of twin bin in Nagar Palika Parishad Dataganj Budaun

SMD (SBM) sanctioned (October 2018) procurement of 250 green and blue color twin bin dustbins with stand and released ₹13.13 lakh to NPP Dataganj Budaun. These dustbins were intended for separate collection of wet and dry waste from households and commercial establishments.

Audit observed that NPP Dataganj Budaun placed supply order (January 2020) for 250 dustbins to M/s Capital Reseller Kasganj through GeM portal. The supply of 188 dustbins was received in March 2020. NPP released (April 2020) payment of ₹ 12.78 lakh to the firm after the supply was certified (April 2020) as satisfactory by Junior Engineer, Construction Division, Public Works Department Budaun and Jalkal Abhiyanta, NPP Budaun. However, the supplied dustbins were found to be of substandard quality in an enquiry conducted (January 2021) on the direction of District Magistrate (DM) Budaun following a complaint (May 2020) regarding the supply of substandard dustbins in the NPP. Subsequently, with reference to the directions (January 2021) of DM Budaun, Executive Officer, NPP Dataganj issued (January and May 2021) notices to the responsible officers and the firm to deposit ₹ 12.78 lakh[16] in the NPP's bank account in view of supply of substandard dustbins. However, as of June 2023, the amount had not yet been deposited.

Audit further noticed that the purchased dustbins were not used and these were dumped in an open area on the office roof leading to their deterioration and rusting as depicted in the following photographs:

Photograph 4.2

Dustbins lying on the roof of the office of NPP Dataganj Budaun

[16] M/s Capital Reseller: ₹ 6,39,200; Junior Engineer, Construction Division, PWD Budaun: ₹ 4,79,400 and Jalkal Abhiyanta, NPP Budaun: ₹ 1,59,800.

Thus, expenditure of ₹ 12.78 lakh on purchase of twin bin dustbins in Nagar Palika Parishad Dataganj Budaun remained unfruitful.

In reply (June 2023), the State Government and the NPP acknowledged that 170 dustbins were not used so far and recovery for purchase of substandard dustbins was pending.

4.2.4.2 Unwarranted procurement of storage dustbins

Section 2.3.12 of the MSWM Manual 2016 outlines indicative models for the deployment of different equipment and vehicles based on the quantity of Municipal Solid Waste (MSW) as shown in Tables 2.4 and 2.5 of MSWM Manual, 2016. According to these tables, ULBs with a population of up to 1,00,000 should procure three to four cubic meter containers for secondary collection of waste. These containers should be provided at a rate of four per square kilometer of area or one per 5,000 population.

Audit observed that NP Chitbaragaon Ballia, NP Reoti Ballia and NPP Hathras did not adhere to the aforementioned guidelines for procurement of storage bins for secondary collection which led to avoidable expenditure of ₹ 45.97 lakh, as discussed below.

- NP Chitbaragaon Ballia purchased (May 2020) 15 metal bins with a capacity of 4.5 cubic meters, which was in excess of the required five bins according to the norms delineated in Section 2.3.12 of the MSWM Manual 2016. Similarly, NP Reoti Ballia purchased (December 2019 and April 2020) 18 bins exceeding the required six bins. As a result, an avoidable expenditure of ₹ 24.52 lakh was incurred on the excess purchase of bins as detailed in ***Appendix 4.6***. Further, the NP Reoti Ballia did not have motorised vehicle to handle this bin, raising question on its use for the intended purpose.

In reply (June 2023), the State Government stated that NP Reoti Ballia required extra secondary dustbins with compare to MSWM Manual 2016 due to limited availability of land for secondary waste collection.

The reply was not acceptable, as the waste generation depends on population and criteria for the number of secondary dustbins has been given in MSWM Manual 2016 considering population in a city.

- The estimated population of NPP Hathras was 1.58 lakh in the year 2021. As per the norms delineated in Section 2.3.12 of the MSWM Manual 2016, 32[17] bins of 3-4 cubic meter capacity were required to accommodate estimated waste generated by the current estimated population. Audit noticed that NPP had purchased 170[18] metal bins with a capacity of 1.1 cubic meters during 2019-21. Thus, the total available capacity of storage dustbin in the NPP was 84.15 metric tons[19] which was

[17] Required bins=158461/5000= 32 Nos.

[18] 120 bins purchased in 2019-20 and 50 purchased in 2020-21.

[19] Total available capacity=170 x 1.1 cum = 187 cum = 187 x 0.450 MT/cum = 84.15 MT (assuming the density of solid waste 450 Kg/cum as per MSWM Manual, 2016).

261 *per cent* of 32.25 metric tons per day solid waste being generated in the NPP during 2020-21 and 114 *per cent* of 74 metric tons per day solid waste being generated in the NPP during 2021-22. Despite this, NPP purchased (March 2022) additional 25 metal bins with a capacity of 4.5 cubic meters each at a cost of ₹ 21.45 lakh, which could have been avoided.

In reply (June 2023), State Government stated that the population of NPP increased in 2021 due to delimitation, which resulted in an increase in waste generation and the need for additional bins. State Government further stated that NPP Hathras purchased 4.5 cubic meter bins due to lack of awareness of the rules and such occurrences would be avoided in the future.

The reply is not acceptable, as the delimitation of NPP Hathras was notified by the State Government in November 2022[20] whereas the additional secondary storage bins were purchased in March 2022. Thus, the reply of NPP Hathras was an afterthought.

4.3 Transportation

Transportation of waste plays a vital role in SWM services. Depending on the local conditions and location of landfill site, ULBs use different types of vehicles, such as pushcarts, auto tippers, tractors, tipper trucks and compactors for collection and transportation of waste.

4.3.1 Use of vehicles without partition/open vehicles for transportation of municipal solid waste

Source segregation is considered successful only when the segregated waste streams remain separate throughout the entire transportation process, whether directly to the processing or disposal facility or through a transfer station. Additionally, Section 2.3.2 of MSWM Manual, 2016 specifies that vehicles used for waste transportation should be covered to prevent waste from being visible to the public and equipped with measures to prevent waste spillage.

Audit observed that out of the 1,659 tippers used for waste collection in the test-checked ULBs, only 1,118 tippers (67 *per cent*) had partitions for the collection of segregated waste as detailed in ***Appendix 4.7***. Additionally, these ULBs utilised 362 tractors for waste collection and transportation, out of which 324 tractors were lacking partitions and 334 tractors were uncovered. The mixed waste was being transported by open vehicles as shown in the following photographs, thereby defeating the very purpose and the entire exercise of waste segregation.

[20] *vide* notification No /9-1-2022-56 Pari./22 dated 04 November 2022 issued by Urban Development Department.

Photograph 4.3

NPP Chitrakootdham Karwi Chitrakoot

NN Ghaziabad

4.3.2 Use of transportation vehicles without authorisation

Rule 39, 56, and 146 of the Motor Vehicle Act specify that all motor vehicles must possess a registration certificate, a fitness certificate, and valid insurance for their operation.

Information furnished by 45 test-checked ULBs ***(Appendix 4.8)*** as of March 2022 showed that vehicles used for transportation of MSW were deficient in:

(i) **Fitness certificate from Regional Transport Office (RTO)** - Out of 2350 vehicles, 1620 vehicles (69 *per cent*) were without fitness certificate; and

(ii) **Registered vehicles from RTO** – 529 (23 *per cent*) were not registered with RTO; and

(iii) **Valid insurance for the vehicles** – 1441 (61 *per cent*) vehicles were without valid insurance.

Thus, ULBs were found to be using vehicles for SWM purposes without fitness certificates (69 *per cent*), registration (23 *per cent*) and insurance (61 *per cent*) indicating a general lack of internal control on the part of test-checked ULBs. These deficiencies underscore the absence of an internal control mechanism within the department and a violation of the Motor Vehicle Act.

4.3.3 Monitoring of transportation vehicles

MSWM Manual, 2016 stipulates that communication technologies, such as the global positioning system (GPS), should be integrated into the monitoring of the SWM system.

Information provided by the test-checked ULBs revealed that out of the 2350 transportation vehicles in 45 test-checked ULBs, 1677 vehicles (71 *per cent*) were equipped with GPS devices in 12 ULBs (27 *per cent* ULBs) as detailed in ***Appendix 4.9***. In case of NN Kanpur, all 178 vehicles were GPS enabled. However, test-checked ULBs, except NN Ghaziabad and NN Lucknow, did not provide documentary evidence, such as

monitoring reports, to the audit in support of the effective monitoring of the GPS system installed on vehicles.

Audit further noticed that in NPP Etah, 50 GPS devices were procured (July 2020) at a cost of ₹ 4.14 lakh, but these devices were not installed in the transportation vehicles and were lying in store. As a result, NPP was not tracking waste transportation vehicles despite GPS devices.

In reply (June 2023), the State Government stated that installation of GPS devices were in progress in NPP Etah. State Government further informed that NN Lucknow, NN Kanpur, NN Ghaziabad, NPP Deoband Saharanpur, NPP Sahabad Hardoi, NPP Utraula Balarampur and NP Kaptanganj Kushinagar had GPS enabled vehicles which were monitored.

Fact remains that even as per reply of the State Government, GPS devices were installed in vehicles of only 11 ULBs, partially installed in vehicles of two ULBs and not installed in any vehicles of 18 ULBs, whereas the remaining 14 ULBs did not provide the status of GPS enabled vehicles. Thus, majority of ULBs were not using communication technology for tracking of movements of waste transportation vehicles to improve the transportation and collection efficiency.

4.3.4 Erroneous gap analysis for assessment of Vehicles

4.3.4.1 Erroneous gap analysis of vehicles for primary transportation at SMD level

Section 2.3.12, Table 2.5 of the MSWM Manual 2016 specifies that 75 *per cent* of DTDC should be carried out using LCV and the remaining 25 *per cent* should be done using tricycles based on the specified criteria[21].

During the year 2019-20, SMD carried out a gap analysis of transportation vehicles in ULBs to assess the current vehicle requirements. Audit observed that the gap analysis for tricycles and LCV in seven out of the 45 test-checked ULBs was incorrect as detailed in ***Appendix 4.10***, as the existing infrastructure during 2018-19 in these ULBs was not taken into consideration for the gap analysis. As a result, SMD had made excess provision for tricycles and LCV ranging from 12 *per cent* to 252 *per cent* and 55 *per cent* to 182 *per cent* respectively. Audit further noticed that out of these seven ULBs, there were excess number of LCVs in six ULBs ranging from 87 *per cent* to 173 *per cent* and excess number of tricycles in two ULBs ranging from 82 *per cent* to 117 *per cent* as of March 2022, as detailed in ***Appendix 4.11***. During the JPV, two out of the 15 LCVs purchased (March 2020) in NPP Sahabad Hardoi were not being used and were kept idle in the NPP premises.

In reply (June 2023), the State Government stated that the additional tippers were being used to transport waste collected by rickshaws to the processing site. State Government further stated some ULBs were funded for extra rickshaws on their demand as they had more narrow lanes than

[21] Section 2.3.5, Table 2.3 of MSWM Manual, 2016 provides estimated population expected to be served using various types of DTDC vehicles.

average. However, the reply does not address the issue of erroneous gap analysis without taking into account existing number of vehicles in ULBs.

4.3.4.2 Erroneous gap analysis for estimation of vehicles for secondary transportation

As per Section 2.3.12, Table 2.4 and Table 2.5 of MSWM Manual, 2016, a refuse compactor should be used for the secondary transportation of waste in ULBs with a population of more than one lakh.

Audit observed that in three[22] out of 45 test-checked ULBs with a population less than one lakh, SMD released fund for one refuse compactor in each ULB at the rate of ₹ 30.00 lakh per compactor during 2019-20, as detailed in ***Appendix 4.12***. Out of these, two ULBs (NPP Shahabad Hardoi and NPP Sikandara Rao Hathras) purchased compactors at a cost of ₹ 59.76 lakh in March 2020 and January 2021 respectively. Further, in joint physical verification during audit[23], both compactors were found lying unused since their purchase indicating erroneous gap analysis by SMD.

In reply (June 2023), State Government stated that both compactors were being used in ULBs.

The reply is not acceptable, since both ULBs had accepted that compactors were not in use. Further, State Government did not respond to issue raised in the audit observation on sanction and purchase of compactor for ULBs having population less than one lakh.

To sum up, mixed waste including domestic hazardous waste and sanitary waste was collected and transported to the solid waste processing plant, landfill or dumpsite defeating the entire purpose and exercise of waste segregation. Material Recovery Facility centres could not be made functional. The vehicles procured by the ULBs were not suitably designed to collect and transport segregated waste efficiently. Inadequate coverage of door-to-door collection facility for households was noticed in test-checked ULBs.

Recommendation 7: *The State Government should encourage segregation of waste at source by devising a system for incentivising waste generators and collectors for segregation of waste and should prevent mixing of segregated waste during various stages of SWM through strict monitoring and implementation regime.*

Recommendation 8: *Use of Material Recovery Facility centres should be ensured with proper functioning and weighbridge facilities.*

Recommendation 9: *The State Government should ensure that there is proper arrangement for door-to-door collection of solid waste and all the households in the ULBs are covered by door-to-door collection services.*

[22] NPP Shahabad (Hardoi) NPP Sikandara Rao (Hathras) and NPP Utraula (Balrampur).
[23] May 2022 in NPP Sahabad (Hardoi) and March 2022 in NPP Sikandara Rao (Hathras).

Chapter - V

Processing and disposal of solid waste

Chapter V: Processing and disposal of solid waste

SWM Rules, 2016 defines processing of waste as any scientific process by which segregated solid waste is handled for the purpose of reuse, recycling or transformation into new products. Indian laws and rules do not permit disposal of organic matter into sanitary landfills and mandate that only inert rejects (residual waste) from processing facilities, inert street sweepings, etc. can be landfilled. This chapter covers status of establishing and operation of solid waste processing plants, landfill sites and legacy wastes.

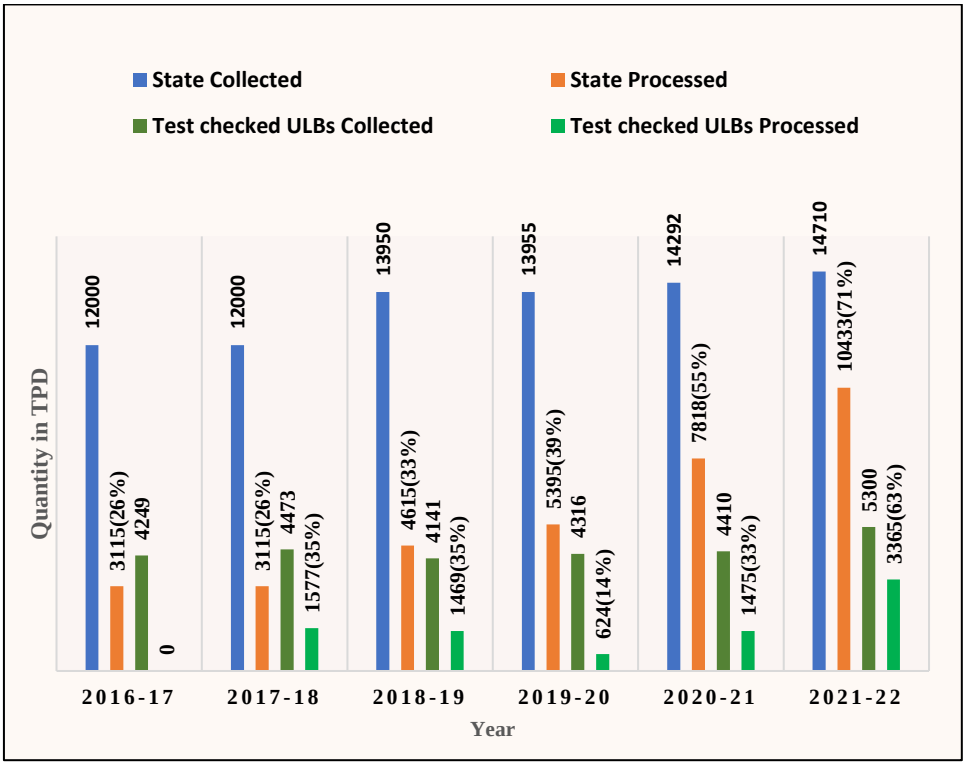
Brief snapshot of the Chapter:

- At the State level between 26 to 71 *per cent* of waste was processed during the year 2016-22 out of the total waste collected and at the ULBs level, between zero to 63 *per cent* waste was processed during the year 2016-22.
- Against the sanctioned 32 solid waste processing plants under Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Air Field Town scheme and State Sector scheme during 2005-15, only 20 plants were established of which only 15 plants were operational.
- Against 36 solid waste processing plants under Swachh Bharat Mission (Urban) scheme, the civil work of 19 plants was completed, however, these plants could not be made functional as machinery was not purchased.
- Operation and maintenance of solid waste processing plants were found deficient in test-checked ULBs.
- Out of 45 test-checked ULBs, 42 ULBs were allocated land for establishment of processing and disposal facilities for solid waste. However, in 36 ULBs, the allocated land was found to be insufficient as compared to the norms.
- Quantity of legacy waste had increased due to lack of proper disposal of waste in ULBs. The estimated legacy waste in 72 ULBs was 84.58 lakh metric ton. The quantity of legacy waste in the remaining ULBs could not be assessed due to not conducting of survey.

5.1 Status of processing of solid waste

The status of solid waste collected and processed in the State and in test-checked ULBs during the period 2016-22 is detailed in ***Appendices 5.1 (A)*** and ***5.1 (B)*** and depicted in **Chart 5.1**.

Chart 5.1: Status of waste processing against collection at State and test-checked ULB levels



(Source: Information furnished by Director LB and test- checked ULBs)

As detailed in **Chart 5.1**, during 2016-22, solid waste processed against waste collected at the State level ranged between 26 and 71 *per cent* and at the test-checked ULBs level, it ranged between zero and 63 *per cent* respectively**.** Thus, the status of waste processing in the State improved over the years from 26 *per cent* (2016-17) to 71 *per cent* (2021-22). Further, as detailed in ***Appendix 5.1 (A)***, during 2016-22, solid waste processed against waste generated at the State level ranged between 20 and 71 *per cent* and at the test-checked ULBs level, it ranged between zero and 60 *per cent* respectively**.**

5.2 Establishment of solid waste processing plant

As per Rule 15 (v) of the SWM Rules, 2016, local authorities are responsible for facilitating construction, operation and maintenance of solid waste processing facilities and associated infrastructure. These facilities can be developed by the local authorities themselves with private sector participation or through any agency with the aim of maximizing the utilization of different components of solid waste and adopting suitable technologies. The local authorities must adhere to the guidelines issued by Ministry of Urban Development and the standards prescribed by Central Pollution Control Board (CPCB). Preference should be given to decentralized processing methods[1] to minimize transportation costs and environmental impacts.

[1] Bio-methanation, microbial composting, vermi-composting, anaerobic digestion or any other appropriate processing for bio-stabilization of biodegradable wastes.

Further, according to Rule 22 of the SWM Rules, 2016, all local bodies with a population of one lakh or more are required to establish a solid waste processing facility within two years.

During the period of 2004-2015, State Government sanctioned 32 solid waste processing plants[2] with cumulative capacity of 8,550 TPD under various schemes[3]. Additionally, in the year 2020-22, 36 solid waste processing plants with cumulative capacity of 4,305 TPD were sanctioned under SBM (Urban) scheme for 36 ULBs of the State. Furthermore, three plants in NN Ghaziabad and one screening/processing machine in NP Khanpur Bulandshahr were to be established, which was funded by under the Central Finance Commission (CFC) grant.

5.2.1 Status of processing plants sanctioned under JNNURM, AFT and State Sector Schemes

Construction & Design Services (C&DS), Uttar Pradesh Jal Nigam was nominated as executive agency for setting up 32 solid waste processing plants sanctioned under JNNURM, AFT and State Sector Schemes during 2005-15. However, only 20 plants were established by C&DS, of which only 15 plants were operational and five plants were non-operational. Remaining 12 plants were not established. The status of these plants is given in ***Appendix 5.2*** and summarised in **Table 5.1**.

Table 5.1: Status of solid waste processing plant as on March 2022 sanctioned under JNNURM, AFT and State Sector Schemes

(₹ in crore)

Status of solid waste processing plant	Number of plant	Sanctioned amount
Established plants		
Operational plants	15	325.75
Non-operational plant[4]	5	41.55
Total	**20**	**367.30**
Not established plants		
Civil work completed but machinery not installed	1	11.81
Under construction	6	58.27
Land unavailable	2	23.13
Land dispute	3	54.89
Total	**12[5]**	**148.10**
Grand Total	**32**	**515.40**

(Source: Information provided by C&DS UP Jal Nigam and Directorate LB)

[2] 2004-05 (one plant), 2005-06 (one plant), 2006-07 (16 plants), 2007-08 (11 plants), 2011-12 (one plant) and 2014-15 (two plants).

[3] 27 plants were sanctioned under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) scheme, two plants were sanctioned under Air Field Town (AFT) scheme and remaining three projects under State Sector.

[4] Directorate LB did not provide reason for not operational plants at NPP Barabanki, Mainpuri and Raebarelli. Further, as per information provided by Directorate LB: (i) After operation of the plant in NN Bareili for about one year, plant was shut down due to objection of the NGT and (ii) In case of NPP Fatehpur, the plant ceased to operate due to dispute with the operator.

[5] Directorate LB stated in its reply (July 2023) that target for completion of 12 plants is December 2024.

Furthermore, audit observed that a total amount of ₹ 421.68 crore was released to C&DS Jal Nigam for the establishment of 32 solid waste processing plants. Out of this amount, ₹ 361.95 crore was utilised, while ₹ 59.73 crore remained unutilised with C&DS Jal Nigam due to various reasons[6]. As of July 2023, the remaining balance amount earned interest of ₹ 29.97 crore. Consequently, a total amount of ₹ 89.70 crore was blocked at the executing agency level, as detailed in ***Appendix 5.3***.

In reply (June 2023), the State Government stated that the issues causing the plants to be stuck or non-operational had been resolved between 2019 and 2022. State Government further stated that 10 plants had been constructed and the Detailed Project Reports (DPRs) for two other plants had been approved. Additionally, a new tender has been floated for operating the MSW processing plant in NPP Raebareli.

However, the response provided by the State Government is not acceptable, as the further status of these processing plants provided (July 2023) by the Directorate Local Body specified that 12 plants could not be established till date and five plants remained non-operational despite establishment. Furthermore, the reply did not address the issue of the fund blockade at the executing agency level. Deficiencies in case of these processing plants are discussed in Paragraphs 5.3.1, 5.3.2, 5.3.3 and 5.3.4.

5.2.2 Status of processing plants sanctioned under SBM scheme

Audit observed that C&DS UP Jal Nigam was executing agency for 36 solid waste processing plants sanctioned to be set up under SBM (Urban) scheme in 36 ULBs of the State. Out of the sanctioned cost[7] of ₹ 370.41 crore, a total of ₹ 323.38 crore was released[8] to the ULBs for civil works and an expenditure of ₹ 278.01 crore was incurred as detailed in ***Appendix 5.4*** and summarised in **Table 5.2**.

Table 5.2: Status of civil work of solid waste processing plants sanctioned under SBM scheme in the State

Status of plant	No. of ULBs	Capacity of plant (in TPD)	(₹ in crore)		
			Sanctioned cost	Released amount	Expenditure
Civil work completed and handed over	14	1370	119.87	118.75	110.55
Civil work completed	5	395	43.56	42.38	37.05
Civil work in progress	14	2390	188.97	153.24	129.96
Civil work not started	2	100	10.59	5.30	0
Civil work stopped due to dispute	1	50	7.42	3.71	0.45
Total	**36**	**4305**	**370.41**	**323.38**	**278.01**

(Source: Information provided by Directorate LB)

[6] Land dispute, land unavailable, plant under construction, completion of plant in less than released amount.

[7] The amount was sanctioned to various ULBs during October 2021, November 2021 and December 2021.

[8] The amount was released in instalments to various ULBs in the months of November 2021, December 2021, May 2022, August 2022, October 2022, January 2023, February 2023, March 2023 and June 2023.

As evident from **Table 5.2**, civil work of 17 solid waste processing plants was yet to be completed. Further, the remaining 19 plants where the civil work was completed, still could not be made functional as of June 2023 as machinery for these plants were not purchased.

Audit observed that in case of six[9] ULBs, where processing plant was of more than 200 TPD capacity, plants were to be operated under public-private partnership (PPP) model and machinery was to be purchased by ULBs/concessionaire. However, machinery for these six processing plants were not purchased till date (July 2023). In remaining 30 ULBs, funds for purchase of machinery were to be provided by the State Government. However, the State Government was yet to release fund to ULBs (July 2023).

Furthermore, in the case of one plant in Tanda, Ambedkar Nagar, an amount of ₹ 45.32 lakh was spent on civil work for the plant. However, the work was stopped (April 2022) due to land dispute.

In reply (June 2023), the State Government stated that 14 plants would become functional from June 2023 and an additional 22 plants would be operational by December 2023. However, the provided response lacks basis as the civil work of 17 plants was still incomplete and no funds had been released for the installation of machinery in any of the plants up to July 2023. Further, the alternative site for Tanda Ambedkar Nagar plant was yet to be provided to the executing agency (August 2023).

5.2.3 Status of processing plants funded under CFC grants

5.2.3.1 Unfruitful expenditure on solid waste processing plant, Pratap Vihar, Ghaziabad

Treatment and disposal plant with a capacity of 300 metric tons per day was sanctioned (September 2014) at an estimated cost of ₹ 4.61 crore in Pratap Vihar, Ghaziabad. The funds were released[10] to the executing agency, C&DS, UP Jal Nigam. The construction of the plant was scheduled to be completed by March 2016.

Audit observed that C&DS reported (May 2017) completion of the work at a cost of ₹ 4.61 crore. In view of inventory furnished by the executing agency, a joint committee consisting of representatives of NN and the executing agency was formed in May 2017 to assess the functionality and physical condition of the plant. The committee's report highlighted deficiencies[11] of equipment and machinery and the non-functional status of the plant, which prevented its takeover. However, the construction agency did not take any initiative to make the plant functional. In December 2021, the *Nagar Ayukt* requested C&DS UP Jal Nigam to hold the responsible officers accountable and hand over the project to the NN as per the original proposal. During a JPV conducted (January 2022) by the audit team and the NN, it was confirmed that the plant was non-functional and

[9] NN Bareilly, NN Firozabad, NN Gorakhpur, NN Jhanshi, NN Saharanpur, NPP Loni Ghaziabad.

[10] ₹ 2.30 crore in March 2013 and another instalment of ₹ 2.30 crore in November 2014.

[11] Sewer pump uninstalled, one JCB (cost ₹ 27 lakh) and two tractors (cost ₹ 12 lakh) not purchased, electric supply line damaged.

the trommel[12] at the site was in a deteriorated condition. However, as of January 2023, the plant was not made operational.

As a result, a substantial amount of legacy waste, approximately five lakh metric tons accumulated at the Pratap Vihar dump site and an expenditure of ₹ 15.40 crore was incurred for the disposal of this waste during December 2021 to July 2022.

In reply (June 2023), the State Government stated that NN had requested the executive agency to make the plant functional and hand it over to the NN.

5.2.3.2 Abnormal delay in setting up waste to energy project in NN Ghaziabad

GoUP made the decision to establish[13] a Waste to Energy plant (W2E) and a letter of acceptance was issued to G C International Netherland (Developer) in November 2018. In October 2019, a lease deed was executed between the developer and NN Ghaziabad to setup the plant. NN leased out 1,21,082 sqm of land to the developer for a period of 30 years, at an estimated annual rent of ₹ 1.21 lakh. The plant was projected to have a daily capacity of around 2,300 MT of solid waste, which would generate 50 to 60 MW of power to be exported to the grid under a power purchase agreement on PPP model.

Audit observed that Ghaziabad Development Authority (GDA) transferred 39.29 acres of land to the NN, and the NN acquired an additional 4.96 acres of land from farmers, incurring an expenditure of ₹ 14.28 crore. In spite of repeated correspondences by the NN, the developer did not respond and the work could not be commenced. As a result, in October 2020, the NN referred the matter to the GOUP, requesting their intervention to direct the developer to commence the work. Additionally, the NN raised (February 2021) concerns about the financial viability of the project[14], i.e., only after the acceptance of the proposal, the execution of the lease deed and incurring expenditure of ₹ 14.28 crore for land acquisition from farmers.

In reply (June 2023), the State Government without addressing the issue merely quoted the reply of NN Ghaziabad stating that the developer firm had not initiated the work to set up the waste to energy plant on the designated land and the matter had been forwarded to State Government for issuing direction to the developer.

Thus, the work on the Waste to Energy plant could not commence in NN Ghaziabad even after a lapse of over four years and incurring expenditure of ₹ 14.28 crore on land acquisition.

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[12] A trommel screen is a rotating circular mesh drum that can sort solid waste materials based on their size.

[13] At Galand in district Hapur.

[14] Rates quoted in proposal submitted (July 2019) by the developer for processing the solid waste was ₹ 1,711.00 per MT. As per the NN, the rates proposed being too high, NN was incapable to bear an estimated expenditure of ₹ 93.68 crore per year from own resources for disposal of 1,500 MT per day waste generated in the municipal area.

5.2.3.3 Injudicious expenditure of ₹ 13.02 crore on establishment of decentralised processing facility in NN Ghaziabad

In September 2020, NN decided to establish a decentralized system, known as a Garbage Factory (GF), for the scientific disposal of solid waste generated in its municipal area based on a PPP model. M/s Geron Engineering Private Limited was selected as the concessionaire to execute the project for a 25-year concession period.

As per agreement (October 2020), NN was to provide the land with completed civil work[15] infrastructure and some vehicles[16] to the concessionaire, while the concessionaire would install the required machinery[17] at its own cost for waste processing. Initially, the project was planned to operate at two locations, Sihani and Ret ki Mandi/Hindon Vihar, with a combined capacity[18] of 700 tons per day (TPD), which could be extended to 1,500 TPD at two additional locations. NN incurred expenditure of ₹ 13.02 crore[19] on construction of processing facilities at both locations (January 2023).

Audit further observed that GF established at both the locations could not be made functional for the purpose of waste processing. Moreover, the concessionaire displaced the machinery from the site of GF to Morta site in Ghaziabad and started (July 2022) waste processing. Whereas, NN was now using part of the GF (Sihani) as MRF and GF at Ret Ki Mandi was being used for sorting recyclables by rag pickers. Thus, despite incurring expenditure of ₹ 13.02 crore, NN failed to operationalize the decentralized processing facilities.

In their reply in June 2023, the State Government stated that NN had initiated the construction of the garbage factory with the intention of processing biodegradable waste, assuming that segregated waste would be collected from households and other establishments for processing at the facility. However, segregated waste was not being delivered to the garbage factory. As a result, the NN began utilizing the facility as a Material Recovery Facility (MRF).

Fact remains that GF was not being used for intended purpose of decentralised waste processing despite incurring expenditure of ₹ 13.02 crore on the project.

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[15] Boundary wall, processing shed, concrete floor, machine foundation, storage room, administrative block with fully operational office, conference room, toilet, weighbridge room, worker canteen and toilet, horticulture and green area, fire tank and high pressure fire hydrant system, borewell, painting, electrical, plumbing.

[16] JCBs, tractors, trollies and dumpers.

[17] Mechanised segregation machinery to achieve size and density segregation, electrical panel, digital weighbridge, IT software system, CCTV surveillance, IoT sensor wherever required.

[18] Sihani: 200 TPD and Ret ki Mandi/Hindon Vihar: 500 TPD.

[19] Expenditure- Sihani: ₹ 3.65 crore and Ret Ki Mandi/Hindon Vihar: ₹ 9.37 crore from 14th FC grant.

5.2.3.4 Inoperative solid waste screening machine at NP Khanpur Bulandshahar

Audit observed that a screening machine[20] with a conveyor, capable of processing 10 TPD was procured (March 2021) at a cost of ₹ 26.84 lakh in NP Khanpur Bulandshahr under the 15th FC grant for processing of solid waste. However, it was installed in an area without a proper shed and the machine was found to be inoperative and idle during JPV (January 2023). Additionally, no electric connection was available to operate the machine, though ULB had applied for the electric connection, indicating a lack of concern on the part of the ULBs regarding the operation of the machine.

In reply (June 2023), the State Government stated that NP Khanpur Bulandshahr did not furnish reply to the audit observation.

5.3 Operation and maintenance of solid waste processing plant

Audit observed that in test-checked ULBs, six[21] plants were commissioned, wherein only two[22] plants were currently operational and remaining four[23] plants were found to be closed, as discussed in succeeding paragraphs.

5.3.1 Status of solid waste processing plants at Lucknow

There are two processing plants in Lucknow city: the first is the Asia Bioenergy India Limited (ABIL) plant located at Barawan Khurd, Lucknow (Lucknow-Hardoi road) and the second is the solid waste processing plant situated at Shivri, Lucknow. However, the ABIL plant was shut down in February 2004 and has remained closed since then[24]. On the other hand, the solid waste processing plant at Shivri, Lucknow, is currently operational as discussed in the following paragraph.

5.3.1.1 Solid waste processing plant located at Shivri in Lucknow city

The firm M/s Jyoti Envirotech Private Limited was selected for a period of 30 years to handle waste transportation and the operation and maintenance of a solid waste processing plant with a capacity of 1,200 TPD located in Shivari, Lucknow. A tripartite concessionaire agreement was executed (October 2010) between NN Lucknow, C&DS UP Jal Nigam and M/s Jyoti Envirotech Private Limited. However, the services of the firm were terminated (March 2017) due to a breach of contract. Subsequently, another firm, Ecogreen Energy Private Limited (EEPL), was selected for the same purpose, and a tripartite agreement was executed (March 2017) between NN Lucknow, M/s EEPL and C&DS UP Jal Nigam. As per the

[20] For screening of compost converted from garbage.

[21] Two plants in Lucknow, one plant in Kanpur , one plant in Raebareli, one plant in Muzaffarnagar and one plant in Reoti Ballia. These plants (except ABIL plant Lucknow and Reoti Ballia) were included in the 32 sanctioned. plants mentioned in paragraph 5.2.1.

[22] One plant in Lucknow (Shiveri plant) and one plant in Kanpur.

[23] One plant in Lucknow (ABIL), one plant in Raebareli, one plant in Muzaffarnagar and one plant in Reoti Ballia.

[24] The Plant was established 20 years ago with the requirement of 300 TPD segregated bio-waste. The firm claimed dearth of organic content in the waste being supplied by the NN and therefore, closed the plant.

contract, NN was to pay a tipping fee to EEPL at a rate of ₹ 1,604 per metric ton.

The deficiencies observed in the plant have been discussed in subsequent paragraphs as well as in ***Appendix 5.5*** and status of the same on the basis of Joint Physical Verification is shown in ***Appendix 5.6.***

Generation of bill by concessionaire and payment thereof by NN

As per Article 10.2 (c) of the agreement, monthly invoice of the concessionaire was required to be supported by the original copy of daily weighment statement duly signed by the authorised representative of ULB responsible for verifying the weighment of incoming waste and Independent Engineer.

Audit noticed that the firm EEPL commenced waste transportation and processing work in the city from April 2017, with the presentation of tipping fee bills starting from that period. However, due to the absence of an Independent Engineer[25] or any other alternative arrangement to monitor the quantity of waste transported and processed at the plant, it was impossible to verify the actual quantity of waste handled.

Audit further observed that there was a significant difference between the bills submitted by the firm (amounting to ₹ 215.89 crore) and the bills paid (amounting to ₹ 169.21 crore) after verification by Environment Engineer in the NN for the period January 2018 to March 2022, as detailed in ***Appendix 5.7***. Thus, it was apparent from the bills presented by the firm that the quantity of solid waste mentioned in the bills was arbitrary. Further, there was concern regarding the authenticity of the processed waste and the tipping fee paid as the payment of ₹ 169.21 crore towards tipping fee was not made as per procedure prescribed under Article 10.2 (c) of the agreement.

NN accepted (June 2023) that bills submitted by the firm were not supported by daily weighment statement duly signed by the authorised representative of ULB and Independent Engineer. ULB, however, stated that the payment was made on the basis of weighing bridge record of the plant monitored by command control centre. The State Government did not furnish (June 2023) reply on the audit observation.

Payments of ₹ 5.28 crore for doubtful processing of waste

Audit further observed that during inspections conducted by UPPCB on various dates[26], the waste processing plant at Shivri, Lucknow was found to be non-functional.

[25] Independent Engineer had to be appointed for the review/oversee/supervision of operation and maintenance of the project.

[26] Plant inspection dates: 03.09.2019, 23.11.2019, 01.12.2019, 02.06.2020, 04.07.2020, 14.07.2020 and 28.10.2020.

Therefore, UPPCB imposed environmental compensation of ₹ 14.41 crore[27] and ₹ 25.33[28] crore on the firm for a total of 409 days of non-operation between September 2019 and October 2020. However, the firm presented the bills for processing charges for this period and NN paid totalling ₹ 5.28 crore to the concessionaire for processing of 3.20 lakh metric tons of waste during September 2019 to September 2020, as detailed in ***Appendix 5.8***. Thus, NN paid the bill for processing waste even for the period when the plant was not operational.

During Joint Physical Verification conducted by audit with the representative of NN Lucknow on January 14, 2022, it was found that the plant was inoperative and had not been in use for several months though employees of the plant informed that it was inoperative since approximately one month. Audit further observed a significant accumulation of waste/legacy waste having environmental impact[29].

In reply (June 2023), the State Government stated that according to records, the UPPCB visited the Shivri plant on 28 October 2020 for regular monitoring and observed the plant was not in operational condition. The plant restarted on 3 November 2020. The State Government further mentioned that no payment was made for the period of October-November 2020 by NN Lucknow. If any payments were made during the non-operational phase of the plant as per reports of UPPCB, NN Lucknow would deduct the amount from the upcoming bills of the concessionaire.

The reply is not acceptable, as UPPCB had found that the plant was not operating between September 2019 to October 2020 and accordingly imposed a total compensation of ₹ 39.74 crore for the period 3 September 2019 to 28 October 2020. Further, NN Lucknow have also stated in reply to audit observation that the plant was not operated during the period for which compensation was imposed by UPPCB. Additionally, a processing fee of ₹ 41.81 lakh was paid to the firm for November 2020. The State Government, therefore, should investigate and fix the responsibility of erring officers for payment of ₹ 5.28 crore made to the firm for processing of waste during the period when plant was not operating.

[27] UPPCB had imposed (July 2020) an environmental compensation of ₹ 14.41 crore on the firm on default of 107 days (from 03.09.2019 to 18.12.2019).

[28] UPPCB had issued a show cause notice (November 2020) against the firm for imposition of environmental compensation of ₹ 25.33 crore for default of 302 days (01.01.2020 to 28.10.2020). However, after receiving non-satisfactory reply from the firm, UPPCB had imposed (January 2023) environmental compensation of ₹ 25.33 crore on default of the period. The compensation was yet to be deposited (February 2023).

[29] At the time of inspection (July 2020) by authorized officials of UPPCB, a sample of leachate was collected from the leachate accumulated in the plant premises and the quantity of various constituents in the analysis report was found to be higher than the prescribed standards. UPPCB inspection (August 2022) further revealed that there was unregulated and unsegregated solid waste accumulated in the form of heaps or mounds. Thus, the provisions for pollution control was being severely violated in the plant.

5.3.2 Status of solid waste processing plant at Kanpur

A solid waste processing plant with a capacity of 1,500 TPD was established at Panki Bhausingh in February 2011 under the JNNURM scheme. In October 2010, a tripartite concessionaire agreement was signed between NN Kanpur, C&DS UP Jal Nigam and A2Z Infra Ltd Gurgaon for the operation and maintenance of the plant. However, A2Z Infra Ltd completely ceased operations in April 2014. Consequently, GoUP appointed a new concessionaire, M/s Earth Environmental Management Services Private Limited (EEMSPL) in March 2016. EEMSPL was a special purpose vehicle (SPV) under the technical management of M/s IL&FS Environmental Infrastructure and Services Limited (IEISL). This appointment was valid for a period of 30 years replacing A2Z. In December 2016, a Project Implementation Agreement was signed among GoUP, C&DS UP Jal Nigam, NN Kanpur, M/s EEMSPL and ILFS.

Audit observed that the SPV, M/s EEMSPL, did not come into existence. In response to M/s IEISL's request in September 2017, NN Kanpur approved the operation of the Panki solid waste processing plant by M/s IEISL. However, M/s IEISL also discontinued the operation and maintenance of the plant in October 2019 due to insufficient financial support from IL&FS Financial Services. Thereafter, the plant was being operated by NN Kanpur.

According to the agreement, the concessionaire (M/s EEMSPL) was supposed to establish a waste-to-energy plant in 83 weeks of the project implementation agreement, which was executed in December 2016. However, the waste-to-energy plant had not been established (January 2022). Moreover, the power connection to the plant was disconnected from September 2014 to June 2019 and the NN informed (January 2022) Audit that the firm was using its own generator for processing of waste. The Commercial Operation Date (COD) had not been obtained and the Consent to Operate (CTO) was issued to NN Kanpur by UPPCB in January 2021 with the condition to deposit the environmental compensation[30]. Moreover, significant deficiencies noticed during JPV (January 2022) of the plant are shown in ***Appendix 5.9.***

The State Government stated (June 2023) that for remediation of legacy waste a new contract has been made under which approximately 6.60 lakh MT of legacy waste out of 14.50 lakh MT was already remediated and the process was undergoing, also entire fresh waste arriving daily at solid waste management plant was processed. However, State Government did not provide specific reply to deficiencies noticed during JPV and not establishing waste-to-energy plant.

5.3.3 Status of solid waste processing plant at Raebareli

A solid waste processing plant with a capacity of 70 TPD was established (October 2008) by the executive agency C&DS UP Jal Nigam in village Jaitpur, Raebareli under the JNNURM scheme. In November 2011, an

[30] Show cause notice (January 2020) for environmental compensation of ₹ 19.73 crore was issued by UPPCB, but due to non-compliance of notice and subsequent reminders, UPPCB imposed (July 2023) penalty of ₹ 19.73 crore.

agreement was signed among NPP Raebareli and M/s Accord Hydro Air Private Limited Lucknow (firm) for the operation and maintenance of the plant, as well as waste disposal for the city, for a duration of 30 years. The firm began operating the plant in November 2011.

During a JPV on February 10, 2022, it was noticed that the plant was completely closed. The condition of the plant indicated that it had been non-functional for several years. There were many houses in close proximity of the plant. The installed machinery and vehicles were in a deteriorated state. Additionally, there was a legacy waste dump of 76,000 metric tons both inside and outside the plant.

In reply (June 2023), the State Government stated that the plant had been operational until mid-2021. However, after 2021, when the plant ceased operations, multiple letters were sent to the firm requesting an explanation and urging them to restore the functionality of the plant. Unfortunately, no response was received from the firm. Consequently, the NPP issued a termination letter to the firm in July 2022. Furthermore, despite written and verbal communication with the Raebareli Development Authority (RDA) regarding the establishment of a buffer zone, the construction of habitats continued.

The State Government's reply is not acceptable, as there was no documentary evidence of the plant's operation till mid-2021. Further, as per information provided (August 2023) by NPP Raebareli, the NPP had made payment to the firm only up to March 2016 for door-to-door collection of waste and transportation indicating firm had not provided service in the NPP thereafter.

5.3.4 Status of solid waste processing plant at Muzaffarnagar

A plant with a capacity of 120 TPD was established in Kidwai Nagar, Muzaffarnagar, in October 2011. It was operated by M/s A to Z Infrastructure Private Limited. However, the plant was shut down in November 2018. As a result of the prolonged shutdown, the machinery of the plant deteriorated significantly.

Recognizing the need to repair the machinery to resume plant operations, the tender of ₹ 39.50 lakh from M/s Rollz Material Handling Systems Private Limited Ghaziabad was accepted. An agreement was executed[31] between the ULB and the firm in October 2020 for the operation and maintenance of the plant.

During JPV on July 5, 2022, the plant was found closed. Furthermore, since the plant was in a low-lying area, water logging had occurred inside, making it inaccessible. Additionally, there was a significant amount of mixed/legacy waste dumped at the plant site, the exact quantity of which was difficult to calculate.

[31] As per the agreement, processing fee was to be paid to the firm at the rate of ₹ 297 per MT.

Photograph 5.1

Non-operational plant at Kidwai Nagar, Muzaffarnagar (NPP Muzaffarnagar)

The State Government stated (June 2023) that at present, solid waste processing plant is functioning properly. However, the reply did not address the issue why the plant was non-functional till July 2022 and no information was furnished with respect to dumped legacy waste.

5.3.5 Status of solid waste processing plant at Reoti Ballia

In July 2020, NP invited bids for the development and operation of an integrated municipal solid waste facility with a capacity of 10 TPD. The contract for the installation of machinery and equipment was awarded to M/s AFC India at a lump-sum cost of ₹ 49.99 lakh[32]. The tipping fee for processing the municipal solid waste was approved at ₹ 297.00 per ton. The work order was issued to the firm in August 2020 and the plant became operational in January 2021. NP incurred an expenditure of ₹ 165.88 lakh[33] on the construction of the processing plant.

Audit noticed that the waste processing work had commenced without obtaining the necessary statutory clearances from UPPCB (Uttar Pradesh Pollution Control Board). These clearances, including consent to establish and consent to operate, were required as per Rule 19(3) of the Solid Waste Management Rules, 2016. The firm began waste processing in January 2021 and processed only 564 MT of waste, for which a tipping fee of ₹ 1.68 lakh was paid to the firm in January and February 2021. However, waste processing was halted in March 2021 and remained suspended until June 2022 due to waterlogging issues in the plant premises, as disclosed in JPV.

[32] NP paid ₹ 19.03 lakh to firm (August 2020) and ₹ 30.96 lakh was initially invested by firm which was to be returned by NP to firm with interest.

[33] Civil work: ₹ 115.89 lakh, Expenditure on purchase of machinery: ₹ 19.03 lakh (NP) and ₹ 30.96 lakh (firm).

The JPV conducted in June 2022 revealed that although the machinery was installed at the plant site, it was not operational, and the processing of waste was hindered due to waterlogging inside the premises. Additionally, important infrastructure elements such as drains, windrow platform and latchets tank were not constructed.

In reply (June 2023), the State Government stated that an online application had been submitted for the issuance of a No Objection Certificate (NOC), inspection had been carried out by the zonal UPPCB office and the NOC would be issued shortly.

5.4 Disposal of Waste

All the waste that cannot be reused, recycled or further processed ultimately ends up in landfills, which serve as the final destination for solid waste. Landfills are designed with the objective of minimizing the environmental impact of the waste through proper containment.

5.4.1 Status of landfill

Rule 15(w) and 22 of SWM, Rules, 2016 state that ULBs are required to construct, operate, and maintain sanitary landfills and associated infrastructure within three years from the date of notification of these rules, either by themselves or through any other agency.

Audit observed that out of the 45 ULBs examined, processing plants were established in only five[34] ULBs for the purpose of processing the generated municipal solid waste. However, out of these five plants, only two[35] were found to be functional. It is noteworthy that in the ULBs where processing plants were established, sanitary landfills were not developed. Furthermore, the remaining ULBs examined did not have any sanitary landfills in place.

In reply (June 2023), the State Government stated that sanitary landfills have been made a part of DPR of every MSW being set up in the State. The land for the same is to be provided by the concerned district administration.

5.4.1.1 Failure to designate land for setting up landfills

The provisions outlined in Rule 11(f) and 12(a) of SWM Rules, 2016 state that the State and District authorities are responsible for facilitating the identification and allocation of suitable land for the establishment of solid waste processing and disposal facilities to local bodies. This process should be completed within one year from the date of notification of the Rules.

According to the report of UPPCB for the year 2020-21, out of 651 ULBs, 592 ULBs have identified and allocated land for the purpose of setting up processing and disposal facilities in the State. However, during the audit, it was observed that three[36] out of the 45 test-checked ULBs had not yet

[34] NN Kanpur, NN Lucknow, NPP Raebareli, NPP Muzaffarnagar and NP Reoti Ballia.
[35] NN Kanpur and NN Lucknow.
[36] NP Bilsanda Pilibhit, NP Chitbadagaon Ballia and NP Bakewar Etawah.

identified land for the establishment of processing facilities as of March 2022.

These ULBs, which lacked designated landfill sites, resorted to improper waste disposal practices such as dumping waste alongside roads, near ponds, rivers and open areas within wards. This unauthorized and unhygienic dumping of mixed municipal solid waste observed during the joint physical verification with ULB staff, would pose significant health and environmental hazards in the affected areas.

In reply (June 2023), the State Government stated that all ULBs and District Magistrates have been directed in 2016 to identify and acquire land according to their population which was reiterated in 2019.

Fact remains that 59 ULBs were not allocated land for establishment of processing facilities as of March 2022.

5.4.1.2 Instances of allocation of insufficient land for SWM by district authorities

According to Rule 12(a) of the SWM Rules, 2016, it is the responsibility of the State and District level authorities to facilitate the identification and allocation of appropriate land for the establishment of solid waste processing and disposal facilities by local bodies. Further, the State Mission Director of SBM (Urban) issued directions (June 2016) to the District Magistrates of various districts instructing them to arrange land for the ULBs to set up solid waste management projects. The order also outlined the norms for land requirements for ULBs, which are detailed in **Table 5.3**.

Table 5.3: Norms for allotment of land for SWM

Population	Land for processing plant	Land for Sanitary Landfill (SLF) for 10 years
Upto 1 lakh	1 hectare	4 hectare
1 lakh to 5 lakh	1 hectare per lakh population	2.5 hectare per lakh population
More than 5 lakh population	1 hectare per lakh population	1.5 hectare per lakh population

(Source: State Mission Director, SBM (Urban))

Audit further noticed that out of 45 test-checked ULBs, only 42 ULBs were allocated land by the district authorities for SWM purposes. However, in 36 ULBs (18 NPPs and 18 NPs), the allocated land was found to be insufficient as compared to the norms mentioned in Table 5.3. The shortage of land against the requirement ranged from six to 98 *per cent* for NPPs and from 47 to 96 *per cent* for NPs, as detailed in ***Appendix 5.10*.**

The State Government stated (June 2023) that district administration has been entrusted to provide the required land for SWM. The land mentioned in ***Appendix 5.10*** where the shortfall is large was identified for other projects (MRF, pit composting, *etc*.) and SLF land was still in the process of being procured.

5.4.1.3 Non-authorisation from UPPCB for setting up of Landfill/ processing plants

As per Rule 15(y) of SWM Rules 2016, ULBs are required to obtain authorization from the UPPCB for disposal facility if the volume of waste generated exceeds five metric tons per day.

The report from the UPPCB for the year 2020-21 revealed that out of the 17 functional MSW processing facilities in the State, only three[37] had obtained authorization from UPPCB.

During the audit, it was observed that out of the 45 test-checked ULBs, 36 ULBs were generating solid waste exceeding five tons per day. However, only five[38] ULBs had established processing facilities, and out of those, only two[39] were found to be functional. Further, the plants in Muzaffarnagar and Raebareli, which were reported as functional in the UPPCB report, were found to be non-functional during the audit. None of these ULBs[40] had obtained authorization from the UPPCB for the functional processing facilities or for the establishment of a landfill.

In reply (June 2023), the State Government stated that application for authorization was under process in case of NPP Muzaffarnagar and No Objection Certificate (NOC) would be obtained from the UPPCB for processing facility in NPP Raebareli.

5.4.1.4 Buffer zone not notified

Rule 11(l) of SWM Rules 2016 states that the secretary-in-charge of the Urban Development Department (UDD) is responsible for notifying the buffer zone for solid waste processing and disposal facilities in consultation with UPPCB for ULBs generating more than five tons per day of waste. Additionally, Rule 14(h) mandates that the Central Pollution Control Board (CPCB) should publish guidelines for maintaining buffer zones, which restrict any residential, commercial, or other construction activities outside the outer boundary of waste processing and disposal facilities for different facility sizes handling more than five tons per day of solid waste.

Further, CPCB had issued guidelines for maintaining buffer zones in April 2017, followed by subsequent clarifications in April 2019. According to the clarification, a land area of 200-500 meters from the boundary of the processing unit should be excluded from facility setup, and it should be designated as a "No development area" for 30 years. However, this land can be utilized for agricultural purposes.

Out of the 45 test-checked ULBs, 36 ULBs were found to be generating solid waste exceeding five metric tons per day, as detailed in ***Appendix 5.11***. Land for solid waste management projects was allocated to 35 ULBs (excluding Bilsanda Pilibhit). However, Director Local Body informed (November 2021) that buffer zone had not been notified at

[37] Mainpuri, Etawah and Prayagraj.
[38] NN Kanpur, NN Lucknow, NPP Raebareli, NPP Muzaffarnagar and NP Reoti Ballia.
[39] NN Kanpur and NN Lucknow.
[40] NN Kanpur, NN Lucknow, NPP Raebareli, NPP Muzaffarnagar and NP Reoti Ballia.

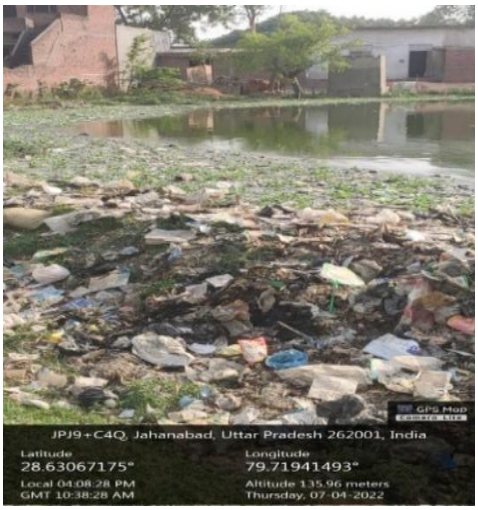
present and directions had been issued for declaring buffer zone. Subsequently, the State Government informed (June 2023) that NN Lucknow, NPP Raebareli and NP Reoti Balia have declared buffer zone. Thus, 33 ULBs were yet to notify the buffer zone.

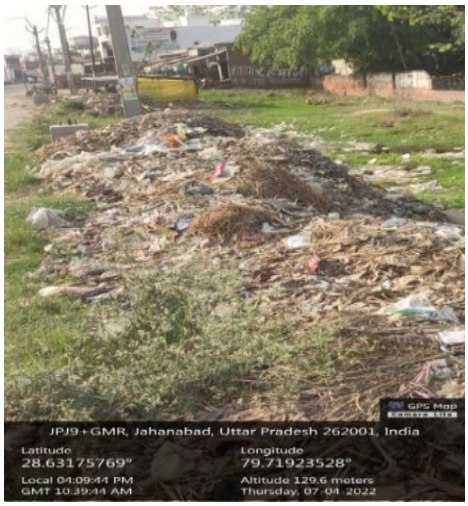
5.4.1.5 Irregularities in selection/operation of landfill sites

Schedule I (A) (VII) of the Solid Waste Management (SWM) Rules, 2016 provides the criteria for the selection of sites for landfills. According to these criteria, a landfill site should be located 100 meters away from rivers, 200 meters away from ponds, highways, habitations, public parks, and water supply wells, and 20 km away from airports or airbases. However, several irregularities were observed in the selection and operation of landfill sites and open dumpsites as follows:

- In the case of NP Jahanabad, Pilibhit, 0.54 hectare of land located in village Jahanabad (Gata number 830) was allocated for the landfill. However, this land was disputed and the matter was sub-judice in court. In December 2019, the NP pursued the matter with the District Magistrate for the allocation of another suitable land for solid waste management. As of January 2023, alternative land parcel had not yet been allocated. Consequently, due to the unsuitable site selection, the NP resorted to dumping solid waste along roadsides, near water bodies and in close proximity to residential areas, as revealed during the JPV conducted with the staff of NP Jahanabad.

Photograph 5.2





NP Jahanabad, Pilibhit

- NP Katra, Shahjahanpur purchased 0.740 hectare land at a cost of ₹19.09 lakh in village Bhamauri, tehsil Tilhar for SWM in February 2020. Due to opposition of local farmers this land was not being used either for construction of MRF or for dumping of waste. JPV disclosed that NP was dumping mixed waste along the roadside, which was against the provisions of SWM Rules 2016.

Photograph 5.3

NP Katra, Shahajahanpur

- NP Rudhauli Bazar, Basti started (June 2020) construction of MRF at Rudra Nagar. There was no approach road to this site. The transportation vehicles could not reach at this site due to unavailability of approach road. JPV (February 2022) disclosed that MRF was under construction and NP was dumping mixed waste along the road side which was against the provisions of SWM Rules, 2016.

Photograph 5.4

NP Rudhauli Bazar , Basti

- DM had allocated (November 2020) one hectare land at Gram Sabha Sikandra Rao Dehat to NPP Sikandra Rao, Hathras for developing sanitary landfill site but approach road was not available for reaching the landfill site. Therefore, NPP requested (March 2022) the DM for providing approach road for transporting the waste at landfill site, however, the same was not provided so far (November 2022).

- NP Rajapur, Chitrakoot was allocated one hectare land for SWM at village Majhgawan, tehsil Rajapur by DM Chitrakoot. The allocated land was situated adjacent to the river Yamuna and the Solid Waste accumulated on this land was likely to mix in the river during floods and the leachate seeped out during rainy season might contaminate the water of the river. Due to unsuitability and soil condition of land, the Executive Officer of NP requested DM Chitrakoot either to allocate free of cost land for SWM or to permit NP to purchase land from SWM tied grant under

15th FC. Audit noticed that neither suitable land was allocated by DM nor permission to purchase land was granted to NP and the NP continued to dump the solid waste at this site which was not suitable. During JPV, it was revealed that a heap of waste was piled up at the allocated site in close proximity to the river. It was observed that there were no arrangements in place to prevent the mixing of solid waste with the river water during rainfall.

Photograph 5.5

NP Rajapur, Chitrakoot, solid waste dumped in the close proximity of the river Yamuna

In reply (June 2023), the State Government stated that land for establishment of MRF centre has been provided by the DM at other site and SWM dumped at the land of village Majhgawan, tehsil Rajapur has been disposed of.

- In December 2020, the NP of Jarwal, Bahraich was allocated 0.500 hectares of land by the District Magistrate (DM) of Baharaich for Solid Waste Management (SWM) purposes. This land was located adjacent to the river Saryu. Dumping of solid waste along with construction of MRF was proposed at this site. However, the allocated land was sandy and prone to flooding during the rainy season due to the water from the river. In June 2021, the Executive Officer of NP sent a proposal for the allocation of another suitable land for SWM to the DM, Bahraich. As of May 2022, no alternative land for SWM had been allocated.

As noticed during JPV (May 2022), as a result of the lack of suitable land for SWM, the NP resorted to dumping waste along the roadside of the Lucknow-Bahraich state highway and in close proximity to residential areas at Mill Road Chauraha.

Photograph 5.6	
	
NP Jarval, Baharaich	NP Jarval, Baharaich

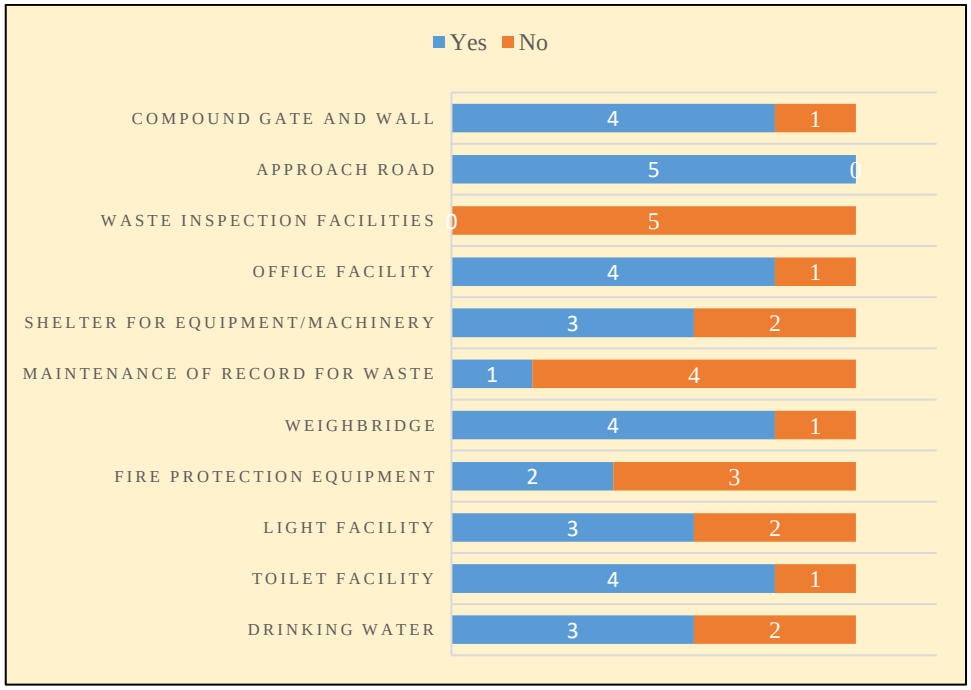
- DM Auraiya allocated (November 2019) 1.2 hectares of land in Saundhemau village for SWM purposes. Since the allocated site was remote (15 km) from the town, the NPP was not transporting the solid waste to this location. As a result, the waste was being disposed of in close proximity to residential areas along the Gursahayganj-Jalaun road and alongside the roadside in village Saba Khanpur on the Jalaun main road. Consequently, the allocated site was not being utilized for its intended purpose.

5.4.1.6 Absence of basic facilities in landfills/processing plants

Schedule I of the Solid Waste Management (SWM) Rules, 2016 outlines the necessary facilities that should be present at landfill sites or processing plants. **Chart 5.2** illustrates the status of the availability of these facilities in the five solid waste processing plants established in five[41] test-checked ULBs. Further, no plants were set up in the remaining 40 ULBs and there were no prescribed basic facilities available at the dump sites being used in violation of SWM Rules, 2016.

[41] NN Kanpur, NN Lucknow, NPP Raebareli, NPP Muzaffarnagar, NP Reoti Ballia.

Chart 5.2: Status of basic facilities at landfill site



(Source: Information furnished by test-checked ULBs)

It is evident in **Chart 5.2** that the landfills or processing plants in test-checked ULBs lacked basic facilities as specified in the SWM Rules 2016.

The State Government did not furnish (June 2023) the reply on the audit observation.

5.4.2 Disposal of legacy waste

Clause 'J' of Schedule I of SWM Rules 2016 states that solid waste dumps that have reached their full capacity or will not receive additional waste after the establishment of new and properly designed landfills should be closed and rehabilitated[42].

Audit observed that during the period from April 2020 to June 2021, UPPCB issued notices to impose environmental compensation of ₹110.40 crore[43] on 650 out of 651 ULBs due to the non-establishment of prescribed facilities and the failure to remediate and safely dispose of legacy waste. This indicates that the State Government did not adequately arrange for the disposal of legacy waste in the ULBs.

Audit further observed that the estimation of legacy waste had been completed in 72 out of 651 ULBs revealing a total of 84,57,782 MT of legacy waste dumped ***(Appendix 5.12)***. However, the quantity of legacy

[42] Rehabilitation has to done by examining following option: (i) Reduction of waste by bio mining and waste processing followed by placement of residues in new landfills or capping as in (ii) below; (ii) Capping with solid waste cover or solid waste cover enhanced with geomembrane to enable collection and flaring/utilisation of greenhouse gases; (iii) Capping as in (ii) above with additional measures (in alluvial and other coarse grained soils) such as cut-off walls and extraction wells for pumping and treating contaminated ground water; (iv) Any other method suitable for reducing environmental impact to acceptable level.

[43] ₹ 14.55 crore on 15 NNs and ₹ 95.85 crore on 635 NPPs/NPs.

waste in the remaining 579 ULBs could not be assessed due to not conducting of a survey. Thus, the State Government made no significant efforts towards the disposal of legacy waste.

In addition, tenders were invited in November 2021 for the bio-remediation (disposal) and clearing of legacy waste sites in 20 ULBs. Out of these, bio-remediation of legacy waste was in progress in 17 ULBs. However, in one[44] ULB, despite the selection of a firm, the bio-remediation of legacy waste could not commence due to the unavailability of land for machinery establishment. Furthermore, in the remaining two[45] ULBs, firm for bio-remediation of legacy waste had not yet been selected ***(Appendix 5.13)***. The status of bio-remediation of legacy waste in the test-checked ULBs are discussed in the subsequent paragraph.

Status of legacy waste in NPP Muzaffarnagar

- ***North Rampuri Roorkee road, Muzaffarnagar***

During the JPV conducted in July 2022, it was observed that previously the solid waste was dumped on the sides of Roorkee road within the densely populated area of the city. Presently, this landfill site is situated in the middle of the city, which poses significant challenges due to its proximity to residential areas. The site has accumulated a substantial amount of legacy waste over time, and no action has been taken thus far for its disposal.

Photograph 5.8

Legacy waste (North Rampuri Roorkee road Muzaffarnagar)

- ***Kidwainagar, Muzaffarnagar***

Audit noticed that the State High-Powered Committee had in its meeting held on 17 November 2021 approved a detailed project report for disposal of legacy waste in NPP Muzaffarnagar. Accordingly, tender was invited (November 2021) for the bio-remediation of legacy waste and the tender of M/s Environmental Techno, Agra and M/s Daya Charan and Company, New Delhi, amounting to ₹986.24 lakh (₹439 per metric ton excluding

[44] NPP Ballia.
[45] NPP Bahriach and NPP Sitapur.

GST) was accepted for the bio-remediation of 2.25 lakh MT of dumped legacy waste in Prempuri Near Fish Talab Kidwai Nagar, Muzaffarnagar. The scheduled date for commencing and completing the work of bio-remediation by the said firm was 5 January 2022 and 4 September 2022 respectively.

After the said firm disposed of 41,041.56 MT of legacy waste, a bill amounting to ₹ 2.02 crore was presented to NPP Muzaffarnagar for payment in May 2022. However, as of July 2022, the NPP had not made the payment. Furthermore, during the JPV conducted on 5 July 2022, it was observed that the plant was closed and, instead of proper disposal, the RDF (Refuse Derived Fuel), inert materials and soil were segregated and dumped at the same site, which raised concerns about the justification of the bio-remediation of legacy waste.

In reply (June 2023), the State Government stated that the plant for the bio-remediation of legacy waste was currently functioning properly and a total of 58,341 metric tons of legacy waste had been processed as of July 2022. However, the reply does not provide the current status of the bio-remediation of legacy waste.

To sum up, against the sanctioned 32 solid waste processing plants sanctioned under JNNURM, AFT and State Sector schemes, only 20 plants were established by the executive agency, of which five plants were non-operational. Against the 36 solid waste processing plants sanctioned under SBM (Urban) scheme, the civil work of 17 plants could not be completed and remaining 19 plants where the civil work was completed, still could not be made functional as of June 2023 as machinery for these plants were not procured. Operation and maintenance of solid waste processing plants in test-checked ULBs were found deficient. Further, ULBs were lacking designated land for SWM activities and in case of 36 test-checked ULBs, allocated land was found insufficient. Quantity of legacy waste had increased due to lack of proper disposal of waste in ULBs which subsequently attributes for the environment getting polluted and surroundings becoming filthy.

Recommendation 10: *The State Government should ensure scientific disposal of the solid waste generated regularly and legacy waste dumped in the ULBs at the earliest.*

Recommendation 11: *The State Government should ensure the operation of solid waste processing plants sanctioned to various ULBs under the various schemes.*

Recommendation 12: *The State Government should ensure allotment of sufficient land to ULBs at suitable places for solid waste management activities.*

Chapter - VI

Management of special waste

Chapter VI: Management of special waste

This chapter covers management of bio-medical wastes, electric and electronic waste (e-waste), plastic waste and construction & demolition waste.

Brief Snapshot of the Chapter

- Bio medical waste (BMW) generated by households was not segregated at source in any of the test-checked ULBs. Consequently, mixed waste, including household BMW, was being transported and dumped in landfill or plant sites.
- Except Nagar Nigam Ghaziabad, ULBs did not establish contractual arrangements with Common Bio-medical Waste Treatment Facility for management of BMW.
- Uttar Pradesh Pollution Control Board (UPPCB) did not have details regarding the generation, collection and disposal of e-waste in the State from 2016-17 to 2020-21.
- No activity was being carried out in ULBs to collect and channelise e-waste to authorised dismantlers/recyclers, except in case of NN Ghaziabad. Further, e-waste was found dumped in the premises of four test-checked ULBs.
- A total of 298.82 MT of banned plastic was seized and a penalty amount of ₹ 3.24 crore was collected in 35 test-checked ULBs. However, only 203.88 MT of the seized banned plastic was disposed of, while the remaining 94.95 MT was in the possession of the test-checked ULBs as of March 2022.
- Test-checked ULBs failed to make arrangements for designated suitable places or provide receptacles for the collection of construction and demolition waste, except for NN Ghaziabad and NN Lucknow.

6 Management of Special Waste

As per Section 7.1 of MSWM Manual, 2016, Special waste includes Bio-medical waste (BMW), Electric and Electronic waste (e-waste) and Plastic waste. Further, construction and demolition waste comprising building materials, debris and rubble resulting from construction and demolition of any civil structure are covered under the Construction and Demolition Waste Management Rules, 2016.

Special wastes are also generated at household level, quite frequently they end up in the mixed MSW stream due to improper collection systems or lack of segregation at source. Management of these special wastes is discussed in succeeding paragraphs.

6.1 Bio-Medical Waste (BMW)

Bio-medical waste (BMW) is defined as any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining thereto or in the production or

testing of biological or in health camps. The management of BMW is governed by BMW Management Rules, 2016 and BMW Management (Amendment) Rules, 2018. Common Bio-medical Waste Treatment Facility (CBMWTF) are responsible to ensure timely collection of BMW from the premises generating BMW (Occupier) and take all necessary steps to ensure that the collected BMW is transported, handled, stored, treated and disposed of without any adverse effect to the human health and the environment.

6.1.1 Non-segregation of BMW generated by households

As per Part 2(12) of Schedule I of BMW Management Rules, 2016, ULBs were required to collect segregated BMW generated by households and establish an arrangement with the Common Bio-medical Waste Treatment Facility (CBMWTF) to collect this waste either from the Material Recovery Facility or directly from households for final disposal.

Audit observed that BMW generated by households was not segregated at source in any of the test-checked ULBs. Additionally, except for NN Ghaziabad, ULBs did not enter into contractual arrangements with CBMWTFs. Consequently, mixed waste, including household BMW, was being transported and dumped in landfill or plant sites, in violation of the BMW Management Rule, 2016.

The State Government did not provide response to the audit observation as of June 2024.

6.1.2 Unauthorised Occupiers

As per Rule 10 of the BMW Management Rules, 2016, every occupier or operator handling bio-medical waste should obtain authorization from UPPCB.

Audit observed that during the calendar years 2017-21, a significant number ranging from 17 to 43 *per cent* of occupiers in the State were operating without proper authorization from UPPCB as detailed in ***Appendix 6.1***.

In reply (June 2023), the State Government stated that UPPCB had issued notices to all unauthorized occupiers through respective Regional Offices and directions were given to ensure compliance with the rules.

6.1.3 Incomplete Annual Report

As per the BMW Management Rules, 2016 and BMW Management (Amendment) Rules, 2018, State Pollution Control Boards are responsible for compiling and submitting an annual report to CPCB in a prescribed format (Form IVA) by 31 July of every year for the period from January to December of the preceding calendar year.

Audit observed that the UPPCB prepared annual report with deficient details/information, which resulted in the unavailability of the required data on the category wise quantity of BMW, *viz*., Yellow, Red, White and Blue and the details of treatment and disposal methods (such as incineration, autoclave, *etc*.). The specific details of BMW generation and disposal during the calendar years 2016-21 are provided in ***Appendix 6.2***.

In reply (June 2023), the State Government stated that UPPCB was preparing Annual Report as per BMW Rules, 2016. State Government further stated directions were given to Regional Offices of UPPCB for providing details on the category wise quantity of BMW. However, State Government did not provide reply addressing the issue raised in the audit for not preparing Annual Report in the prescribed format.

6.1.4 Third party audit of common bio-medical waste treatment facility

As per Schedule III, Clause 6(xi) of the BMW Rule 2016, UPPCB was responsible for undertaking and supporting third-party audits (TPA) of common bio-medical treatment facilities in the State.

According to the information provided by UPPCB for the year 2021, there were 22 operational CBWTFs in the State. However, UPPCB did not provide information regarding TPA conducted in CBWTFs. As a result, conduct of TPA of CBWTFs could not be assessed in Audit.

In reply (June 2023), the State stated that UPPCB had issued (May 2023) directions to all its regional offices to ensure regular compliance with the prescribed rules.

6.2 Electric and electronic waste (e-waste)

The e-waste Management Rules, 2016 were notified by Government of India in March 2016 which became effective from 1 October 2016. Under the Rules, the responsibilities of State Pollution Control Boards include inventorisation of e-waste, grant and renewal of authorisation to manufacturers, dismantlers, recyclers and refurbishers and maintenance of online information regarding authorisation granted to manufacturers, dismantlers, recyclers and refurbishers.

According to the information ***(Appendix 6.3)*** provided by UPPCB, the number of manufacturer, refurbisher, collection centres, dismantlers and recyclers for management e-waste in the State increased from 30 in the year 2017 to 116 in the year 2021. All 116 units were registered by UPPCB during 2021, though unregistered establishment ranged between 13 to 24 *per cent* during 2017-20.

Audit observed that UPPCB did not have details regarding the generation, collection and disposal of e-waste in the State from 2016-17 to 2020-21. As per Annual Report for the period up to March 2022 submitted (October 2022) to CPCB, UPPCB did not receive information from industries on category wise waste collected along with their quantities on a monthly average basis, details of material recovered from recycling of e-waste and quantity of CFL received at treatment, storage and disposal facilities.

In reply (June 2023), the State government stated that annual report was prepared and compiled as per format of CPCB.

Reply is not acceptable, as the requisite information in respect of e-waste collected, material recovered from recycling of e-waste *etc*., was not provided in the annual report as envisaged in E-waste Management Rules 2016.

6.2.1 Status of compliance to e-waste Management Rules

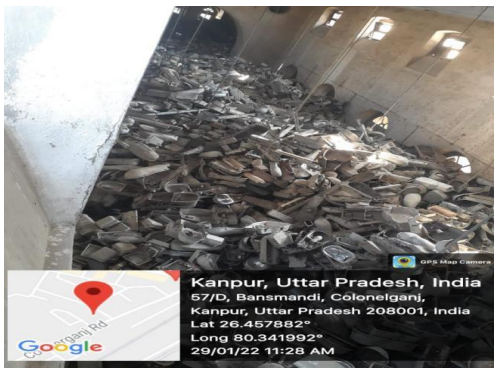
The status of compliance in the test-checked ULBs with the provisions of e-waste management rules is as discussed below:

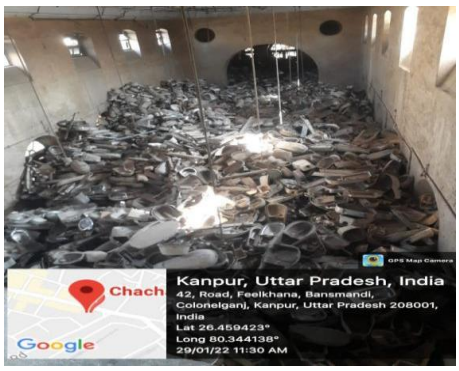
6.2.1.1 Retention of e-Waste by test-checked ULBs

Rule 15 of the e-Waste Management Rules, 2016 stipulates that every manufacturer, producer, bulk consumer, collection center, dealer, refurbisher, dismantler and recycler may store e-waste for a maximum period of one hundred and eighty days.

Audit observed that e-wastes were dumped in their premises by four[1] test-checked ULBs over the course of several years as indicated in following photographs:

Photograph 6.1





NN Kanpur (e-waste dumped more than 3 years)

NN Ghaziabad (e-waste dumped since approximately 3 years)

[1] NN Kanpur, NN Ghaziabad, NPP Auraiya and NPP Utraula

	
NPP Auraiya (e-waste dumped from last several years)	NPP Utraula Balrampur (e-waste dumped from last several years)

Audit noticed that aforementioned four test-checked ULBs did not dispose of the e-waste and dumped it in their premises instead of channelizing these through authorized agencies for proper disposal. Retention of e-waste by ULBs was in violation of the E-Waste Management Rules, 2016.

In addition, test-checked ULBs did not maintain the required records indicating the nature and quantity of e-waste generated, stored and disposed. Thus, ULBs did not plan or monitor management of e-waste effectively.

The State Government stated (June 2023) that necessary action would be started for disposal/auction of e- waste in NN Kanpur.

6.2.1.2 Responsibility of ULBs

Schedule IV of E-waste Management Rules, 2016 stipulate the following responsibilities of ULBs:

(i) To ensure that e-waste if found to be mixed with MSW, it is properly segregated, collected and channeled to registered recyclers or refurbishers.

(ii) To ensure that e-waste pertaining to orphan products[2] is collected and channelised to authorised registered recyclers or refurbishers.

Audit observed that e-waste was not handed over separately by the households in any test-checked ULBs, but instead was mixed with MSW. However, no activity was being carried out in ULBs to collect and channelise e-waste to authorised dismantlers/recyclers, except in case of NN Ghaziabad[3]. Further, test-checked ULBs did not possess any information regarding quantity of e-waste generated.

[2] 'Orphaned products' are defined under E-Waste Management Rules, 2016 as non-branded or assembled electrical and electronic equipment as specified in Schedule-I of the Rules or those produced by a company which has closed its operations.

[3] NN Ghaziabad made contractual agreement with M/s Attero Recycling Private Limited for collection, transportation and recycling/processing/disposal of e-waste since August 2022.

The State Government did not furnish (June 2024) reply on the audit observation.

6.3 Management of Plastic Waste

The Plastic Waste Management Rules, 2016 were notified by Government of India on 18 March 2016. Rule 6 (1) of the Plastic Waste Management Rules, 2016 stipulates that every local body is responsible for the development and establishment of infrastructure for the segregation, collection, storage, transportation, processing and disposal of plastic waste, either independently or by engaging agencies or producers.

According to the information provided by UPPCB, the existing disposal capacity for plastic waste in the year 2020-21 was 722.50 TPD, whereas the estimated generation was 1,030 TPD ***(Appendix 6.4)***. Thus, the existing infrastructure in the State had inadequate disposal capacity as compared to estimated generation of plastic waste.

Furthermore, the audit did not find proper management practices for the disposal of plastic waste in the test-checked ULBs. Plastic waste was not being segregated in any test-checked ULB (except NN Ghaziabad)[4]. In the absence of segregation, all the test-checked ULBs were collecting and transporting mixed waste to the landfill site. These ULBs also did not ensure channelization of recyclable plastic waste fraction to recyclers. Awareness among all stakeholders about their responsibilities was not satisfactory in any test-checked ULBs and no evidence/documentation regarding campaigning of plastic waste management was found in any test-checked ULBs, except NN Ghaziabad.

In reply (June 2023), the State Government stated that all ULBs in the State have received funding for the civil construction and machinery of Material Recovery Facilities (MRF) for the segregation of plastic waste for resource recovery. Additionally, Waste-to-Energy plants with a total capacity of 3,850 TPD are being set up in Ghaziabad, Muzaffarnagar and Agra. However, State Government did not provide specific response to the audit observation regarding failure of ULBs to comply with Plastic Waste Management Rules 2016.

6.3.1 Disposal of banned plastic seized by ULBs

The Uttar Pradesh Plastic and Other Non-Biodegradable Garbage (Regulation) Act, 2000 was enacted (November 2000) to regulate the use and disposal of plastic and other non-biodegradable garbage. The Government of Uttar Pradesh issued a notification (July 2018) under the Uttar Pradesh Plastic and Other Non-Biodegradable Garbage (Regulation) Act, 2000 for prohibiting the use, manufacture, sale, distribution, storage, transport, import or export of plastic carry bags, irrespective of their thickness. Additionally, it also prohibited the use, manufacture, sale, distribution, storage, transport, import, or export of cups, glasses, plates, spoons, tumblers, *etc.*, made of plastic or thermocol, intended for disposable use after one-time use.

[4] Segregation of plastic waste was being carried out at MRF level in NN Ghaziabad.

Audit observed that during raids conducted in 36 out of 45 ULBs, a total of 298.82 MT of banned plastic was seized and a penalty amount of ₹ 3.24 crore was collected as detailed in ***Appendix 6.5***. However, only 203.88 MT of the seized banned plastic were disposed of, while the remaining 94.95 MT was in the possession of the test-checked ULBs. Furthermore, nine[5] out of the 45 test-checked ULBs did not conduct any raid. During the Joint Physical Verification, it was observed that banned plastic waste was being thrown into dumping sites indicating ineffective implementation of the ban on prohibited plastic.

In reply (June 2023), the State Government stated that all banned and seized plastics were sent to cement factories for disposal, as well as provided to NHAI and other road construction organizations for use as charcoal. However, the reply is in contradiction of information provided by test-checked ULBs regarding undisposed seized plastics.

6.4 Construction and Demolition (C&D) Waste

The Construction and Demolition Waste Management Rules, 2016 were notified by the Central Government on March 29, 2016. These rules are applicable to all waste generated from the construction, remodelling, repair, and demolition activities of any civil structure by individuals, organizations or authorities. This includes waste such as building materials, debris and rubble.

6.4.1 Status of generation of C&D waste

Audit noticed that none of the test-checked ULBs have prepared any plans or bye-laws for the collection, transportation and processing of C&D waste. Furthermore, UPPCB does not have a systematic[6] database on C&D waste. ULBs were not furnishing annual information on C&D waste to UPPCB as required under the C&D Waste Rules, 2016. Consequently, the information regarding the quantity of C&D waste generated in the State and test-checked ULBs was not available. Moreover, none of the test-checked ULBs (except NN Ghaziabad) could provide records or reports pertaining to the generation, collection, transportation and processing/disposal of C&D waste. As a result, the audit could not ascertain the quantity of C&D waste generated in the State. Absence of quantifying the C&D waste adversely impacts the capacity planning for processing facilities required for its disposal.

In reply (June 2023), the State Government stated that C&D waste policy has been formulated. The State Government further stated that Uttar Pradesh Municipal Solid Waste (Management & Handling) and Sanitation Rules, 2021 include a clause about C&D waste. However, the specific issue raised in the audit, *viz.*, non-submission of annual information by ULBs to UPPCB and unavailability of records for generation/processing of

[5] NPP Pilibhit, NPP Sahabad Hardoi, NPP Mahmudabad Sitapur, NPP Shamli, NPP Deoband Saharanpur, NP Bithoor Kanpur, NP Baldeo Mathura, NP Katra Shahjanhapur and NP Kaptanganj Kushinagar.

[6] As per C&D Waste Management Rules 2016, each ULB requires to submit the systematic data regarding generation collection, transporatation, processing, landfilling etc. through Form III to SPCB annually.

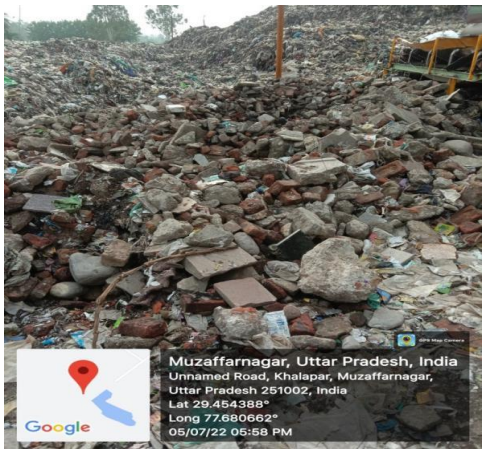
C&D wastes in test- checked ULBs, was not addressed in the replies of the State Government.

6.4.2 Non-identification of site for disposal of C&D waste

As per Rule 8 (2) of the Construction and Demolition Waste Management Rules, 2016, the State Pollution Control Board or Pollution Control Committee is responsible for granting authorization to C&D waste processing facilities.

As per information provided (December 2021) by UPPCB to Audit, UPPCB did not receive any applications for authorization for the C&D waste processing facilities during 2016-21. Audit further observed that test-checked ULBs failed to make arrangements for designate suitable places or provide receptacles for the collection of C&D waste, except for NN Ghaziabad and NN Lucknow. During the Joint Physical Verification conducted in the test-checked ULBs, it was observed that due to the absence of a debris disposal site, C&D waste was left on roadsides and mixed with Municipal Solid Waste (MSW) at the MSW dumping site in NPP Utraula. Further, C&D waste was found dumped at the solid waste processing plant in NPP Muzaffarnagar, as depicted in the following photographs:

Photograph 6.2



C&D waste dumped at plant level in Muzaffarnagar (NPP Muzaffarnagar)

C&D waste lying on road side in Utraula (NPP Utraula)

Thus, it is evident that compliance with the disposal of C&D waste was not ensured at the State level or by the test-checked ULBs.

In reply (June 2023), the State Government stated that UPPCB had issued directions to all its regional offices for the authorization of C&D Waste processing facilities. C&D Waste processing plant was being established by Urban Development Department in seven Million plus Cities. State Government further stated that as per Annual Reports 2021-22 of UPPCB, 800 TPD capacities of C&D waste processing facilities are operational in

Noida and 400 TPD capacities C&D waste processing facility is partially operational in Ghaziabad[7].

6.4.3 Status of establishment of C&D waste processing plant

State High Powered Committee (SHPC) approved (November 2021) Detailed Project Report (DPR) of ₹ 36.47 crore for the establishment of C&D waste processing plants with a cumulative capacity of 720 MT for the disposal of C&D waste in nine ULBs of the State ***(Appendix 6.6)***. Out of these nine proposed plants, tenders had been awarded for processing plants at Moradabad, Gorakhpur and Mathura (Vrindavan), while in six ULBs, the tendering was under process as of June 2023. Thus, the establishment of C& D waste processing plants was delayed despite approval of SHPC in November 2021.

The State Government did not furnish (June 2024) reply on the audit observation.

To sum up, The mixed waste, including household bio-medical waste, was being transported and dumped in landfill or plant sites. Details of generation, collection and disposal of e-waste in the State were not maintained. Further, banned plastic waste was being thrown into dumping sites, indicating ineffective implementation of the ban on prohibited plastic. ULBs failed to make arrangements for designate suitable places or provide receptacles for the collection of construction and demolition waste except NN Ghaziabad and NN Lucknow.

Recommendation 13: *The State Government should ensure proper collection, transportation and processing/disposal of bio-medical waste, e-waste, plastic waste and C&D waste. They should also ensure proper implementation of the respective Waste Management Rules in ULBs.*

[7] UPPCB informed (December 2021) Audit that applications were not received for granting authorization to C&D waste processing facilities at Ghaziabad and NOIDA, however, UPPCB had issued Consent and NOC to these plants.

Chapter - VII

Monitoring of solid waste management

Chapter VII: Monitoring of solid waste management

This Chapter provides status of monitoring efforts at State level and ULBs level for solid waste management in urban areas, besides achievement of ULBs against service level benchmarks as per prescribed standards.

Brief snapshot of the Chapter:

- State Level Advisory Body was formed in January 2017. However, only six out of 10 prescribed meetings were held during the period 2016-22.
- District Level Review and Monitoring Committee was not constituted in any of the 34 districts in which 45 test-checked ULBs are located.
- There was lack of regular monitoring of service level benchmark indicators in test-checked ULBs, making it difficult to assess the achievement of solid waste management services in ULBs.
- No monitoring mechanism was found in the test-checked ULBs to assess the air and water quality at landfill sites.

7.1 Lack of monitoring at State level

Rule 23 of SWM Rules, 2016 stipulate that the State Government should constitute a State Level Advisory Body (SLAB), which is required to convene meetings at least once every six months. The purpose of these meetings is to review the implementation of SWM Rules, 2016, the state policy and strategy on solid waste management and provide advice to the state government on measures necessary for expeditious and appropriate implementation of the rules.

Audit observed that SLAB was established in the State in January 2017. However, only six[1] meetings were held during the period 2017-22 as only one meeting was held in each year except during 2018-19.

Furthermore, records related to SWM monitoring, such as quarterly progress reports under SBM (Urban) scheme[2], availability of sanitary landfill/land for dumpsites and the status of constituting district level review and monitoring committees under SBM (Urban) scheme were not maintained at the Directorate level.

The State Government stated (June 2023) that district level committees under the chairmanship of District Magistrate had been constituted for monitoring of environmental issues including Solid Waste Management. Approximately 1,000 meetings had been conducted at district level and the data has been compiled at State level. Performance of operational facilities

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1 Dates of SLAB meetings: 23.01.2018, 31.07.2018, 15.3.2019, 27.12.2019, 24.11.2020 and 28.7.2021.

2 As per paragraph 12.1 of SBM (Urban) guidelines, States/UTs were required to send Monthly Progress Reports (MPRs)/Quarterly Progress Reports (QPRs) in prescribed format to GOI with regard to target and achievements.

had been monitored by Regional Officials of UPPCB. Based on the reports of ULBs and the report of Regional Offices, Annual Report had been sent to CPCB incorporating the ULB wise data.

The fact remained that meetings of SLAB were not held as per prescribed periodicity.

7.2 District Level Review and Monitoring Committee

Paragraph 12.4 of the SBM (Urban) Guidelines states that a District Level Review and Monitoring Committee (DLRMC) should be formed with the aim of ensuring effective monitoring of projects. This committee should be chaired by a Member of Parliament to fulfil its objective. Besides, State Government directed (May 2016) all District Magistrate to constitute the DLRMC in each district.

Audit observed that the DLRMC was not constituted in any of the 34 districts in which 45 test-checked ULBs are located.

The reply of State Government was awaited (June 2024) despite reminder.

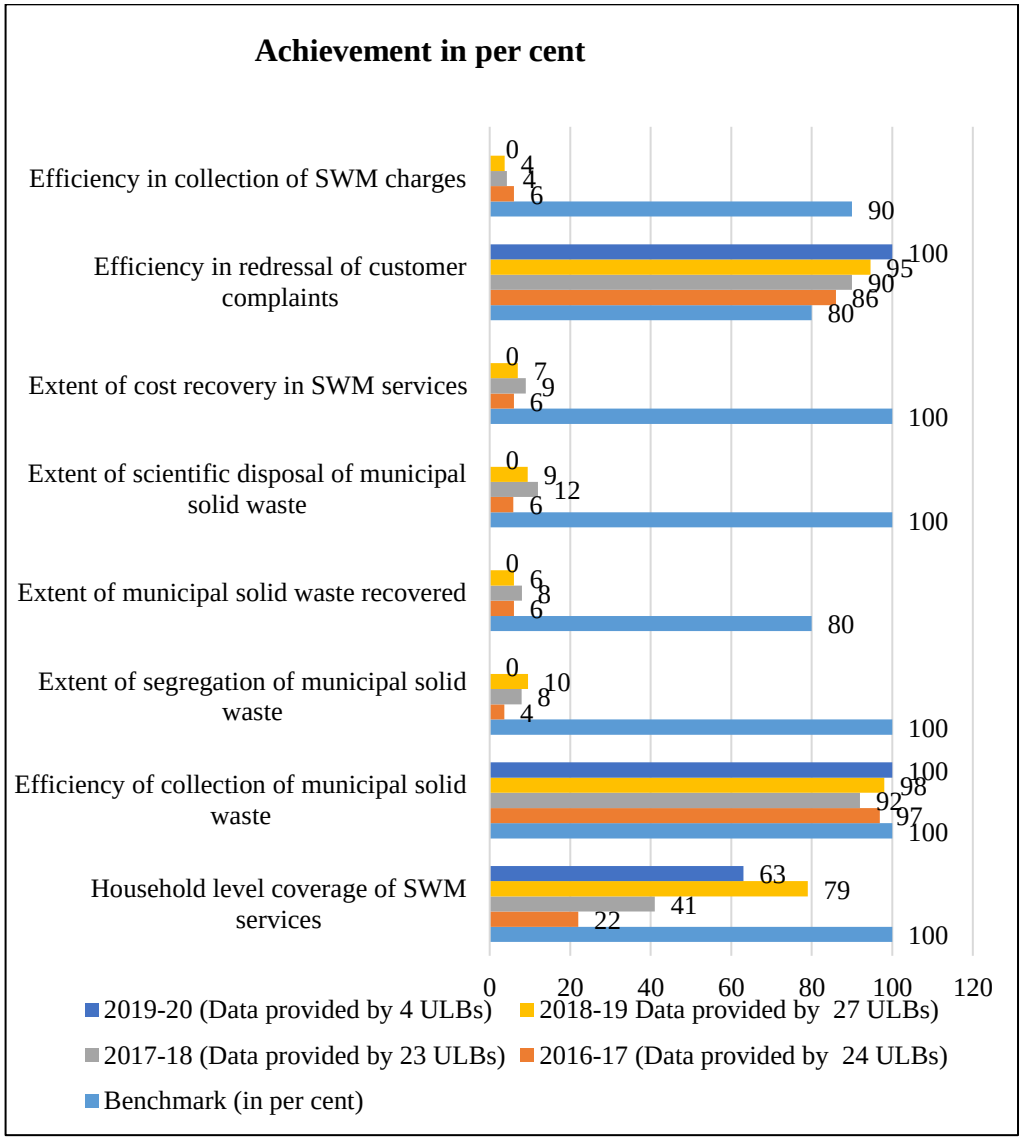
7.3 Achievements against Service Level Benchmarks

Handbook of Service Level Benchmarking published by Ministry of Urban Development, Government of India provides performance parameters for basic urban services, *viz*., water supply, sewage, solid waste management (SWM) and stormwater drainage. The 14th and 15th Finance Commissions have also recommended grants-in-aid to ULBs for publishing and meeting the performance indicators of Service Level Benchmarks (SLBs). The achievement against SLBs indicate level of services delivered by respective ULBs.

Out of 45 test-checked ULBs, SLB reports were provided to the audit by 24 ULBs in respect of the year 2016-17, 23 ULBs in respect of the year 2017-18, 27 ULBs in respect of the year 2018-19 and four ULBs in respect of the year 2019-20. However, none of the test-checked ULBs made the SLB report for 2020-22 available. This indicates a lack of regular monitoring of SLB indicators in these ULBs, making it difficult to assess the achievement of SWM services in ULBs that did not submit the SLB reports.

The achievements against the prescribed benchmarks were assessed in Audit based on the available SLB reports, as depicted in **Chart 7.1**.

Chart 7.1: Average of achievements of the test-checked ULBs against SLB regarding SWM



(Source: Information provided by test-checked ULBs in their SLB reports)

It is evident from **Chart 7.1** that as per SLB reports, there were reasonable achievements in two benchmarks, *viz.*, efficiency of collection of municipal solid waste and efficiency in redressal of customer complaints. However, the achievement against six other performance indicators was significantly below the prescribed benchmarks. The accuracy of the achievements declared by ULBs could not be verified during the audit, as the ULBs did not provide any documentary evidence to support their claims.

In reply (June 2023), the State Government provided status of preparation of SLB report in respect of 30 ULBs, according to which 17 ULBs prepared the SLB report for the period 2016-21 and in respect of remaining 13 ULBs specific reply was not furnished. However, State Government did not furnish SLB reports in support of its statement. Further, the fact remains that all test-checked ULBs were not preparing SLB reports.

7.4 Pollution control norms in disposal process of MSW

The pollution control norms for the disposal of solid waste, as specified in the SWM Rules, 2016 are provided in ***Appendix 7.1***.

Audit observed that none of the test-checked ULBs were adhering to norms to prevent pollution from landfill operation. Further, two[3] of the test-checked ULBs had operational processing plants, but they lacked a leachate collection system[4]. In the remaining 43 test-checked ULBs, solid waste was being dumped in open dump sites or within municipal areas without proper processing which posed risks to human health and the environment. None of the ULBs provided documentary evidence of regular monitoring of the landfill sites to ensure control over groundwater contamination. Additionally, no monitoring mechanism was found in the test-checked ULBs to assess the air and water quality at landfill sites, highlighting the lack of monitoring.

In reply (June 2023), the State Government stated that out of 18 operational integrated solid waste management plants, 17 plants had obtained authorization. The Uttar Pradesh Pollution Control Board (UPPCB) had conducted monitoring at operational sites in Mathura, Meerut and Noida. However, the reply did not address the issues raised in the audit on not following the pollution control norms at landfill site.

7.5 Compost quality specifications

Schedule II of SWM Rules, 2016 provides specification of compost quality to ensure its safe application. Compost exceeding the specified quality are not to be used for food crops, however, it may be utilized for purposes other than growing food crops. Section 3.2.11 of MSWM Manual, 2016 provides that Compost quality should be monitored by the operator of the compost facility per batch of compost being sold to the market.

Audit observed that two[5] of the test-checked ULBs had operational plants where compost was produced. However, no records were provided to audit to verify the quality of compost produced in these plants nor was there any evidence of examination of the concentration of manure based on the prescribed parameters. Both ULBs stated (December 2021) that information regarding quality/composition of compost was not available.

In its reply (June 2023), the State Government did not provide reply on the issue and merely stated that reply of this para does not belong to UPPCB.

[3] NN Lucknow and NN Kanpur.
[4] Network of pipes or geotextiles/geonets placed at low areas of the landfill liner to collect leachate from a landfill for storage and treatment.
[5] NN Lucknow and NN Kanpur.

To sum up, Periodic monitoring meetings of State Level Advisory Board were not conducted which led to lack of monitoring for various waste management activities. District level committee for review of solid waste management activities was not constituted as envisaged under SBM (Urban) scheme. ULBs were not monitoring achievement against service level benchmarks regularly. No monitoring mechanism was found in the test- checked ULBs to assess the air and water quality at landfill sites.

Recommendation 14: *The State Government should ensure that the prescribed monitoring meetings are conducted and issues raised in State/District level meetings should be implemented effectively.*

(RAM HIT)
Principal Accountant General (Audit-I)
Uttar Pradesh

PRAYAGRAJ
THE 27 MAR 2025

COUNTERSIGNED

(K. SANJAY MURTHY)
Comptroller and Auditor General of India

NEW DELHI
THE 02 APR 2025

Appendices

Appendix 1.1

Regularity framework governing management of waste

(Reference: Paragraph 1.2)

Sl. No.	Type of Waste	Regulatory framework
1	Solid Waste	• Solid Waste Management Rules, 2016 • Manual of Municipal Solid Waste Management, 2016 issued by GoI in April 2016.
2	Plastic Waste	Plastic Waste Management Rules, 2016
3	E-Waste	E-Waste (Management) Rules, 2016
4	Bio-Medical Waste	Bio-Medical Waste Management Rules, 2016
5	Construction and Demolition Waste	Construction and Demolition Waste Management Rules, 2016
6	Hazardous Waste	Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

(Source: Rules and Manuals issued by GoI)

Appendix 1.2

Details of ULBs sampled for the Performance Audit

(Reference: Paragraph 1.5.3)

Sl No	District	Nagar Nigam	Nagar Palika Parishad	Nagar Panchayat
1	Auraiya		Auraiya	
2	Azamgarh			Jiyanpur
3	Bagpat			Tikri
4	Bahraich			Jarwal
5	Balrampur		Utraula	
6	Ballia			Chitbaragaon
				Reoti
7	Bareilly		Baheri	
8	Basti			Rudhauli Bazar
9	Bijnor			Jhalu
				Sahaspur
10	Budaun		Dataganj	Usawan
11	Bulandshahr		Bulandshahr	Khanpur
12	Chitrakoot		Chitrakootdham Karwi	Rajapur
13	Deoria		Deoria	
14	Etawah			Bakewar
15	Etah		Etah	
16	Gautam Buddh Nagar			Jewar
17	Ghaziabad	Ghaziabad	Loni	
18	Ghazipur			Saidpur
19	Hardoi		Shahabad	
20	Hathras		Sikandra Rao	
			Hathras	
21	Kanpur Nagar	Kanpur		Bithoor
22	Kushinagar			Kaptanganj
23	Lucknow	Lucknow		
24	Maharajganj			Anandnagar
25	Mahoba		Mahoba	Kulpahar
26	Mathura			Baldeo
27	Muzaffarnagar		Muzaffarnagar	
28	Pilibhit		Pilibhit	Jahanabad
				Bilsanda
29	Raebareli		Raebareli	
30	Saharanpur		Deoband	
31	Shamli		Shamli	
32	Shahjahanpur			Katra
33	Sitapur		Mahmudabad	
34	Varanasi		Ramnagar	
	Total Units	**3**	**20**	**22**

Appendix 2.1

Details of notified bye-laws and their provisions in test-checked ULBs

(Reference: Paragraph 2.5)

Sl No	Name of ULB	Name of bye – laws	Date of Notification	Provisions under bye-laws
ULBs which notified SWM bye-laws				
1	NN Ghaziabad	Solid Waste (Management and Handling) bye-laws, 2016	19 June 2017	Incentive and penalty clauses for segregation of waste, penalty for littering, provisions for recovery of user charges.
2	NPP Muzaffarnagar	Solid Waste Management and Cleanliness bye-laws, 2020	22 September 2021	Penalty clauses for segregation of waste, collection of waste, penalty for littering and burning, provisions for recovery of user charges.
3	NPP Sahabad Hardoi	Solid Waste Management and Polyethene Prohibition along with Caring charge bye-laws, 2019	09 March 2019	Duty of waste producer and fee recovery from waste generator, penalty for using prohibited polyethene, provision of penalty including for open littering burning.
4	NPP Bulandshahr	Solid Waste Management and Cleanliness bye- laws, 2017	06 January 2020	Duty of waste generator, collection, segregation, storage and transportation of solid waste, penalty and incentive clauses for segregation of waste, penalty for littering and burning, provisions for recovery of user charges.
5	NP Khanpur Bulandshahr	Solid Waste Management and Cleanliness bye-laws, 2020	29 December 2020	Incentive clause for composting from bio-degradable waste, provision for segregation and collection of solid waste, user charge recovery and penalty clauses for littering and burning.
ULBs which formulated bye-laws of user charges and caring/penalty charges				
1	NN Kanpur	User charges bye-laws, 2006	29 March 2006	Provisions for recovery of user charges.
2	NPP Loni Ghaziabad	User charges bye-laws, 2018	04 October 2018	Provisions for recovery of user charges for door-to-door collection and penalty for littering and burning.
3	NPP Hathras	User and Caring charges bye-laws, 2018	06 June 2019	Provision for segregation, collection and dumping of waste in processing plant, provisions for recovery of user charges, penalty clauses for littering/burning and incentive clause.
4	NPP Deoria	Miscellaneous fee bye-laws, 2018	27 February 2020	Penalty clauses for littering, use of prohibited polyethene and user charges recovery for door-to-door collection.
5	NPP Chitrkootdham Karwi Chitrakoot	Miscellaneous fee bye-laws, 2017	06 October 2017	Penalty clauses for littering, penalty for using prohibited polyethene and user charges recovery for door-to-door collection.
6	NPP Baheri Bareilly	Caring charges bye-laws, 2017	13 February 2018	Provision of penalty for littering.
7	NPP Raebareli	Caring charges bye-laws, 2019	02 July 2020	Provision of penalty for littering and burning on waste generator.

(Source: Test-checked ULBs)

Appendix 2.2

Status of waste generation in test-checked ULBs during the years 2016-22

(Reference: Paragraph 2.6)

(Qty. in TPD)

Sl. No.	Name of ULB	Waste generation					
		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1.	NN Lucknow	865.21	944.60	1051.94	1110.69	1145.47	1634.84
2.	NN Ghaziabad	852.95	886.03	880.27	1035.62	1035.62	1280.00
3.	NN Kanpur	1500.00	1595.00	1009.00	1370.00	1370.00	1370.00
4.	NPP Raebareli	50.68	53.00	58.00	62.00	65.00	70.00
5.	NPP Baheri Bareilly	23.90	23.90	23.90	23.90	23.90	23.90
6.	NPP Dataganj Budaun	5.66	5.66	5.66	9.19	9.19	9.19
7.	NPP Auraiya	16.00	19.00	19.00	21.00	22.00	24.00
8.	NPP Utraula Balrampur	8.06	8.25	8.44	8.64	8.86	9.06
9.	NPP Chitrakootdham Karwi Chitrakoot	14.10	14.30	14.35	15.20	15.50	15.78
10.	NPP Muzaffarnagar	150.00	153.00	153.00	160.00	160.00	170.00
11.	NPP Loni Ghaziabad	285.00	285.00	305.00	305.00	310.00	310.00
12.	NPP Sikandara Rao Hathras	14.00	15.00	16.00	16.50	17.00	19.87
13.	NPP Hathras	45.26	47.64	50.16	50.16	32.25	74.00
14.	NPP Etah	44.28	44.88	45.00	48.12	48.12	49.77
15.	NPP Mahoba	29.09	30.54	32.07	33.67	35.35	37.11
16.	NPP Deoria	48.00	50.00	54.00	56.00	58.00	60.00
17.	NPP Ramnagar Varanasi	18.08	18.44	18.82	19.21	19.60	20.00
18.	NPP Bulandshahr	12.98	12.98	106.85	67.50	90.00	90.08
19.	NPP Pilibhit	88.76	88.76	88.76	64.95	64.95	47.74
20.	NPP Shamli	30.00	32.00	33.00	35.00	36.00	36.00
21.	NPP Deoband Saharanpur	18.00	18.00	18.00	25.00	50.00	50.00
22.	NPP Sahabad Hardoi	15.00	16.00	16.50	17.35	22.57	26.10
23.	NPP Mahmudabad Sitapur	22.19	13.64	22.84	22.78	19.55	19.55
24.	NP Jhalu Bijnor	4.26	4.26	4.26	5.34	5.34	5.34
25.	NP Sahaspur Bijnor	4.75	4.90	5.20	5.75	6.30	6.80
26.	NP Jarwal Baharaich	3.20	3.22	3.23	3.25	3.28	3.30
27.	NP Anandnagar Maharajganj	3.50	3.80	4.00	4.00	7.78	7.78
28.	NP Rajapur Chitrakoot	1.78	1.87	1.97	2.07	2.17	2.27
29.	NP Usawan Budaun	2.85	3.32	3.80	4.27	4.75	5.22
30.	NP Bakewar Etawah	1.80	1.80	1.80	1.99	2.00	2.00
31.	NP Rudhauli Bazar Basti	3.00	3.20	3.80	4.00	4.20	3.90
32.	NP Jewar G B Nagar	10.55	11.00	12.00	13.00	13.50	10.37
33.	NP Tikri Bagpat	3.00	3.00	5.00	5.00	5.00	5.00
34.	NP Kulpahar Mahoba	5.50	6.00	6.30	6.60	6.90	7.20
35.	NP Jiyanpur Azamgarh	2.08	2.12	2.17	2.21	2.25	2.30
36.	NP Chitbaragaon Ballia	3.80	3.90	3.95	4.20	4.20	4.20
37.	NP Reoti Ballia	7.40	7.53	7.67	8.00	8.00	8.00
38.	NP Katra Shahjahanpur	8.20	8.31	8.42	9.17	9.29	9.42
39.	NP Saidpur Ghazipur	8.87	8.87	9.76	9.90	9.90	9.90

Sl. No.	Name of ULB	Waste generation					
		2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**
40.	NP Khanpur Bulandshahr	3.97	4.10	4.73	3.60	5.30	5.30
41.	NP Jahanabad Pilibhit	3.55	3.55	3.55	3.23	3.23	2.89
42.	NP Bilsanda Pilibhit	4.10	4.10	7.66	3.32	6.44	6.77
43.	NP Baldeo Mathura	2.50	2.50	4.00	2.07	2.07	2.07
44.	NP Bithoor Kanpur Nagar	0.20	3.00	3.00	2.18	2.18	2.25
45.	NP Kaptanganj Kushinagar	7.00	7.00	7.08	7.16	7.24	7.32
Total		**4253.06**	**4476.97**	**4143.91**	**4687.79**	**4780.25**	**5566.59**

(Source: Test-checked ULBs)

Appendix 2.3

Details of sanctioned post, person-in-position and vacant post in test-checked ULBs as of March 2022

(Reference: Paragraph 2.9)

Sl No	Name of ULB	ZSO			CSI			SFI			SS/Safai Nayak			Sanitary worker			
		SS	PIP	shortage	SS	PIP	Shortage	SS	PIP	shortage	SS	PIP	shortage	SS	PIP	shortage	Outsourced
1	NN Lucknow	3	2	-1	6	4	-2	35	34	-1	95	48	-47	5196	2881	-2315	10258
2	NN Kanpur	5	3	-2	12	4	-8	42	30	-12	184	104	-80	8105	3375	-4730	2101
3	NN Ghaziabad	1	0	-1	2	2	0	4	4	0	26	25	-1	1428	3701	2273	634
Total (NNs)		**9**	**5**	**-4**	**20**	**10**	**-10**	**81**	**68**	**-13**	**305**	**177**	**-128**	**14729**	**9957**	**-4772**	**12993**
1	NPP Loni Ghaziabad	0	0	0	0	0	0	0	0	0	1	1	0	432	153	-279	920
2	NPP Raebareli	0	0	0	0	0	0	2	2	0	8	5	-3	433	374	-59	181
3	NPP Baheri Bareilly	0	0	0	0	0	0	1	1	0	5	5	0	190	112	-78	101
4	NPP Dataganj Budaun	0	0	0	0	0	0	0	0	0	1	0	-1	76	17	-59	59
5	NPP Utraula Balrampur	0	0	0	0	0	0	0	0	0	1	0	-1	79	46	-33	37
6	NPP Chitrakootdham Karwi Chitrakoot	0	0	0	0	0	0	1	1	0	4	3	-1	162	67	-95	137
7	NPP Muzaffarnagar	0	0	0	1	1	0	3	0	-3	19	19	0	818	659	-159	252
8	NPP Auraiya	0	0	0	0	0	0	1	1	0	5	3	-2	205	155	-50	145
9	NPP Bulandshahr	0	0	0	0	0	0	2	2	0	15	3	-12	455	241	-214	308
10	NPP Pilibhit	0	0	0	0	0	0	2	2	0	18	11	-7	338	175	-163	250
11	NPP Shamli	0	0	0	0	0	0	2	2	0	6	1	-5	330	174	-156	177
12	NPP Sahabad Hardoi	0	0	0	0	0	0	1	1	0	4	3	-1	228	109	-119	96
13	NPP Mahmudabad Sitapur	0	0	0	0	0	0	0	0	0	1	1	0	134	80	-54	46
14	NPP Deoband Saharanpur	0	0	0	0	0	0	1	1	0	6	6	0	202	137	-65	207
15	NPP Sikandara Rao Hathras	0	0	0	0	0	0	1	0	-1	5	2	-3	111	66	-45	88
16	NPP Hathras	0	0	0	0	0	0	3	3	0	10	8	-2	335	201	-134	523
17	NPP Etah	0	0	0	0	0	0	1	0	-1	6	6	0	286	187	-99	120
18	NPP Mahoba	0	0	0	0	0	0	1	0	-1	3	3	0	160	121	-39	141
19	NPP Deoria	0	0	0	0	0	0	2	2	0	9	8	-1	351	196	-155	203
20	NPP Ramnagar Varanasi	0	0	0	0	0	0	0	0	0	5	4	-1	148	58	-90	80
Total (NPPs)		**0**	**0**	**0**	**1**	**1**	**0**	**24**	**18**	**-6**	**132**	**92**	**-40**	**5473**	**3328**	**-2145**	**4071**
1	NP Jhalu Bijnor	0	0	0	0	0	0	0	0	0	1	0	-1	59	32	-27	27
2	NP Sahaspur Bijnor	0	0	0	0	0	0	0	0	0	0	0	0	71	37	-34	22
3	NP Jarwal Bahraich	0	0	0	0	0	0	0	0	0	1	0	-1	49	12	-37	46

Sl No	Name of ULB	ZSO			CSI			SFI			SS/Safai Nayak			Sanitary worker			
		SS	PIP	shortage	SS	PIP	Shortage	SS	PIP	shortage	SS	PIP	shortage	SS	PIP	shortage	Outsourced
4	NP Anandnagar Mahrajganj	0	0	0	0	0	0	0	0	0	3	1	-2	42	24	-18	51
5	NP Rajapur Chitrakoot	0	0	0	0	0	0	0	0	0	1	0	-1	45	12	-33	36
6	NP Bakewar Etawah	0	0	0	0	0	0	0	0	0	1	1	0	40	28	-12	40
7	NP Katra Shahjahanpur	0	0	0	0	0	0	0	0	0	0	0	0	38	19	-19	80
8	NP khanpur Bulandshahr	0	0	0	0	0	0	0	0	0	1	1	0	40	21	-19	30
9	NP Bithoor Kanpur Nagar	0	0	0	0	0	0	0	0	0	1	1	0	37	25	-12	10
10	NP Baldeo Mathura	0	0	0	0	0	0	0	0	0	1	1	0	32	24	-8	30
11	NP Bilsanda Pilibhit	0	0	0	0	0	0	0	0	0	1	1	0	39	23	-16	25
12	NP Jahanabad Pilibhit	0	0	0	0	0	0	0	0	0	0	0	0	28	24	-4	36
13	NP Saidpur Ghazipur	0	0	0	0	0	0	0	0	0	1	1	0	37	30	-7	40
14	NP Kaptanganj Kushinagar	0	0	0	0	0	0	0	0	0	1	1	0	15	11	-4	70
15	NP Jewar G B Nagar	0	0	0	0	0	0	0	0	0	0	0	0	83	82	-1	59
16	NP Tikri Bagpat	0	0	0	0	0	0	0	0	0	0	0	0	44	10	-34	38
17	NP Kulpahar Mahoba	0	0	0	0	0	0	0	0	0	0	0	0	32	25	-7	29
18	NP Jiyanpur Azamgarh	0	0	0	0	0	0	0	0	0	1	0	-1	37	14	-23	35
19	NP Chitbaragaon Ballia	0	0	0	0	0	0	0	0	0	1	1	0	63	39	-24	22
20	NP Reoti Ballia	0	0	0	0	0	0	0	0	0	1	1	0	67	54	-13	50
21	NP Usawan Budaun	0	0	0	0	0	0	0	0	0	0	0	0	18	18	0	45
22	NP Rudhauli Bazar Basti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
Total (NPs)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**10**	**-6**	**916**	**564**	**-352**	**896**

(Source:Test-checked ULBs)

Appendix 2.4

Status of avoidable expenditure due to excess engagement of sanitation workers in NPP Hathras

(Reference: Paragraph 2.9.1)

Year	Month	Sanitation workers required as per norms	Existing sanitation workers (regular and contractual)	Sanitation workers required to be outsourced	Sanitation workers actually outsourced	Excess number of sanitation workers engaged	Number of days for which outsourced and payment was made	Required number of mandays	Number of mandays for which actually outsourced (as per bill)	Excess number of mandays for which sanitation workers outsourced and paid	Rate of payment per mandays (in ₹)	Total avoidable payment (in ₹)
(1)	(2)	(3)	(4)	(5) = (3)-(4)	(6)	(7) = (6)-(5)	(8)	(9) = (5)X(8)	(10)	(11) = (10) - (9)	(12)	(13) = (12)X(11)
2020-21	Jun-20	440	203	237	286	49	26	6162	8161	1999	308	615692
	Aug-20	440	203	237	301	64	26	6162	7727	1565	308	482020
	Oct-20	440	203	237	301	64	24	5688	7224	1536	308	473088
	Nov-20	440	203	237	301	64	23	5451	7382	1931	308	594748
	Dec-20	440	203	237	301	64	27	6399	7926	1527	308	470316
	Jan-21	440	203	237	301	64	26	6162	7735	1573	308	484484
	Mar-21	440	203	237	412	175	27	6399	10896	4497	308	1385076
	Sub-total											**45,05,424**
2021-22	May-21	444	201	243	436	193	26	6318	11124	4806	308	1480248
	Jun-21	444	201	243	443	200	26	6318	11350	5032	308	1549856
	Jul-21	444	201	243	454	211	27	6561	12042	5481	308	1688148
	Aug-21	444	201	243	460	217	26	6318	11730	5412	308	1666896
	Sep-21	444	201	243	462	219	26	6318	11827	5509	308	1696772
	Oct-21	444	201	243	478	235	26	6318	12130	5812	336	1952832
	Nov-21	444	201	243	458	215	26	6318	11724	5406	336	1816416
	Dec-21	444	201	243	515	272	27	6561	13698	7137	336	2398032
	Jan-22	444	201	243	523	280	26	6318	13425	7107	336	2387952
	Feb-22	444	201	243	523	280	24	5832	12400	6568	336	2206848
	Sub-total											**1,88,44,000**
Grand total												**2,33,49,424**

(Source: NPP Hathras)

Appendix 2.5

Status of fund utilised at State level and transferred to ULBs for IEC&PA activities

(Reference: Paragraph 2.10)

(₹ in crore)

Year	Opening balance	Fund received	Fund available	Fund transferred to ULBs	Expenditure at SMD level	Fund utilised/ transferred	Closing balance	Percentage of fund transferred to ULBs
Col. (1)	Col. (2)	Col. (3)	Col. (4) = Col. (2+3)	Col. (5)	Col. (6)	Col. (7) = Col. (5+6)	Col. (8) = Col. (4-7)	Col. (9)
2016-17	7.49	0.00	7.49	1.50	0.18	1.68	5.81	20.03
2017-18	5.81	124.69	130.50	4.15	0.77	4.92	125.58	3.18
2018-19	125.58	0.00	125.58	77.58	11.66	89.24	36.34	61.78
2019-20	36.34	98.11	134.45	81.08	4.81	85.89	48.56	60.30
2020-21	48.56	26.59	75.15	10.72	1.48	12.20	62.95	14.26
2021-22	62.95	0.00	62.95	37.51	2.29	39.80	23.15	59.59
Total		**249.39**		**212.54**	**21.19**	**233.73**		

(Source: Director ULB)

Appendix 2.6

Status of utilisation of fund for IEC&PA activities in test-checked ULBs during 2016-22

(Reference: Paragraph 2.10)

(₹ in lakh)

SI. No.	Name of ULB	Opening balance as on 01.04.16	Fund received	Total	Fund utilised	Closing balance (un -utilised fund as of 31.03.2022)	Unutilised fund (in *per cent*)
1	NN Lucknow	31.45	1003.35	1034.80	964.11	70.69	7
2	NN Ghaziabad	18.40	500.93	519.33	503.94	15.39	3
3	NN Kanpur	28.00	873.67	901.67	830.02	71.65	8
4	NPP Raebareli	0.00	81.74	81.74	38.45	43.29	53
5	NPP Baheri Bareilly	0.00	40.92	40.92	40.17	0.75	2
6	NPP Dataganj Budaun	0.29	24.36	24.65	17.54	7.11	29
7	NPP Auraiya	0.00	42.84	42.84	33.45	9.39	22
8	NPP Utraula Balrampur	0.00	28.17	28.17	9.42	18.75	67
9	NPP Chitrakootdham Karwi Chitrakoot	0.00	30.85	30.85	9.71	21.14	69
10	NPP Muzaffarnagar	4.39	104.66	109.05	96.83	12.22	11
11	NPP Loni Ghaziabad	0.00	131.33	131.33	47.00	84.33	64
12	NPP Sikandara Rao Hathras	0.64	28.87	29.51	22.81	6.70	23
13	NPP Hathras	1.89	132.56	134.45	57.86	76.59	57
14	NPP Etah	1.32	55.56	56.88	40.15	16.73	29
15	NPP Mahoba	1.06	40.54	41.60	8.44	33.16	80
16	NPP Deoria	1.44	64.65	66.09	59.12	6.97	11
17	NPP Ramnagar Varanasi	0.55	52.12	52.67	17.09	35.58	68
18	NPP Bulandshahr	2.48	90.71	93.19	32.50	60.69	65
19	NPP Pilibhit	0.00	82.83	82.83	38.00	44.83	54
20	NPP Sahabad Hardoi	0.90	37.12	38.02	30.71	7.31	19
21	NPP Mahmudabad Sitapur	0.00	32.36	32.36	19.05	13.31	41
22	NPP Shamli	1.20	52.09	53.29	28.38	24.91	47
23	NPP Deoband Saharanpur	0.00	30.53	30.53	30.09	0.44	1
24	NP Usawan Budaun	0.15	12.82	12.97	12.30	0.67	5
25	NP Jhalu Bijnor	0.23	13.56	13.79	6.49	7.30	53
26	NP Sahaspur Bijnor	0.27	15.58	15.85	12.69	3.16	20
27	NP Bakewar Etawah	0.17	13.00	13.17	11.62	1.55	12
28	NP Jarwal Baharaich	0.22	14.58	14.80	8.11	6.69	45
29	NP Anandnagar Maharajganj	0.11	15.30	15.41	10.12	5.29	34
30	NP Rajapur Chitrakoot	0.15	12.20	12.35	4.48	7.87	64
31	NP Rudhauli Bazar Basti	0.00	13.64	13.64	12.14	1.50	11
32	NP Jewar G B Nagar	0.36	19.05	19.41	15.58	3.83	20
33	NP Tikri Bagpat	0.16	13.53	13.69	5.52	8.17	60
34	NP Kulpahar Mahoba	0.22	14.72	14.94	10.79	4.15	28
35	NP Jiyanpur Azamgarh	0.00	13.38	13.38	12.18	1.20	9
36	NP Reoti Ballia	0.29	15.94	16.23	13.77	2.46	15
37	NP Chitbaragaon Ballia	0.00	14.52	14.52	10.68	3.84	26
38	NP Bithoor Kanpur Nagar	0.11	25.06	25.17	19.84	5.33	21
39	NP Baldeo Mathura	0.13	15.37	15.50	9.51	5.99	39
40	NP Khanpur Bulandshahr	0.84	14.81	15.65	15.65	0.00	0
41	NP Jahanabad Pilibhit	0.20	15.30	15.50	5.54	9.96	64
42	NP Bilsanda Pilibhit	0.22	11.94	12.16	10.75	1.41	12
43	NP Katra Shahjahanpur	0.00	8.50	8.50	6.56	1.94	23
44	NP Saidpur Ghazipur	0.34	28.07	28.41	13.20	15.21	54
45	NP Kaptanganj Kushinagar	0.27	10.89	11.16	3.69	7.47	67
Total		**98.45**	**3894.52**	**3992.97**	**3206.05**	**786.92**	**20**

(Source: Test-checked ULBs)

Appendix 2.7

Details of fund received and expenditure incurred under Capacity Building and Administrative & Office Expenditure in test-checked ULBs during the years 2016-22

(Reference: Paragraph 2.11)

(₹ in lakh)

SI. No.	Name of ULB	Period	Fund received	Expenditure	Balance
	Details of ULBs which training was imparted				
1	NN Ghaziabad	2016-22	6.11	2.79	3.32
2	NPP Chitrakootdham Karwi Chitrakoot	2016-22	12.21	11.74	0.47
3	NPP Deoria	2016-22	12.12	9.89	2.23
4	NPP Bulandshahr	2016-22	13.37	12.49	0.88
5	NPP Pilibhit	2016-22	13.37	11.48	1.89
6	NPP Sahabad Hardoi	2016-22	0.29	0.29	0.00
7	NPP Shamli	2016-22	12.30	4.74	7.56
8	NP Kulpahar Mahoba	2016-22	0.07	0.00	0.07
9	NP Jiyanpur Azamgarh	2016-22	122.00	115.76	6.24
10	NP Reoti Ballia	2016-22	0.10	0.10	0.01
11	NP Chitbaragaon Ballia	2016-22	0.10	0.00	0.10
12	NP Rudhauli Bazar Basti	2016-22	0.00	0.00	0.00
Total			**192.04**	**169.28**	**22.77**
	Details of ULBs which training was not imparted				
1	NN Lucknow	2016-22	10.46	9.86	0.60
2	NN Kanpur	2016-22	3.27	3.27	0.00
3	NPP Raebareli	2016-22	13.24	11.86	1.38
4	NPP Baheri Bareilly	2016-22	13.81	13.45	0.36
5	NPP Dataganj Budaun	2016-22	0.19	0.19	0.00
6	NPP Auraiya	2016-22	13.16	13.16	0.00
7	NPP Utraula Balrampur	2016-22	0.12	0.06	0.06
8	NPP Muzaffarnagar	2016-22	14.55	8.09	6.46
9	NPP Loni Ghaziabad	2016-22	0.48	0.48	0.00
10	NPP Sikandara Rao Hathras	2016-22	0.21	0.21	0.00
11	NPP Hathras	2016-22	0.49	0.47	0.02
12	NPP Etah	2016-22	12.98	12.79	0.19
13	NPP Mahoba	2016-22	26.01	25.74	0.27
14	NPP Ramnagar Varanasi	2016-22	12.73	0.96	11.77
15	NPP Mahmudabad Sitapur	2016-22	0.00	0.00	0.00
16	NPP Deoband Saharanpur	2016-22	16.59	11.91	4.68
17	NP Usawan Budaun	2016-22	0.06	0.05	0.01
18	NP Jhalu Bijnor	2016-22	0.08	0.08	0.00
19	NP Sahaspur Bijnor	2016-22	0.08	0.08	0.00
20	NP Bakewar Etawah	2016-22	0.05	0.00	0.05
21	NP Jarwal Baharaich	2016-22	0.07	0.07	0.00
22	NP Anandnagar Maharajganj	2016-22	0.10	0.00	0.10
23	NP Rajapur Chitrakoot	2016-22	0.10	0.10	0.00
24	NP Jewar G B Nagar	2016-22	0.12	0.00	0.12
25	NP Tikri Bagpat	2016-22	0.05	0.00	0.05
26	NP Bithoor Kanpur Nagar	2016-22	0.08	0.00	0.08
27	NP Baldeo Mathura	2016-22	12.04	10.94	1.10
28	NP Khanpur Bulandshahr	2016-22	0.12	0.12	0.00
29	NP Jahanabad Pilibhit	2016-22	0.00	0.00	0.00
30	NP Bilsanda Pilibhit	2016-22	0.00	0.00	0.00
31	NP Katra Shahjahanpur	2016-22	2.45	0.49	1.96
32	NP Saidpur Ghazipur	2016-22	0.00	0.00	0.00
33	NP Kaptanganj Kushinagar	2016-22	0.00	0.00	0.00
Total			**153.69**	**124.43**	**29.26**
Grand total			**345.73**	**293.71**	**52.03**

(Source: Test-checked ULBs)

Appendix 3.1

Details of delay in release of central share along with state share to SMD

(Reference: Paragraph 3.1)

(₹ in crore)

Component		Details of release of central share		Details of release of central share along with state share to SMD by State Government		Delay release of fund[1] (in days)
	(1)	(2)		(3)		(4)
	Sl. No.	Amount	Date	Amount	Date	
SWM	1.	94.49	30.03.2018	269.97	04.07.2018	65
	2.	245.67	09.04.2018	510.02	04.07.2018	55
	3.	10.43	24.03.2020	10.43	13.10.2020	172
	4.	190.00	30.04.2020	190.00	13.10.2020	135
	5.	189.72	01.05.2020	189.72	13.10.2020	134
	6	0	0	209.84*	23.01.2021	236
CB and A&OE	7	46.56	23.10.2017	46.56	16.12.2017	23
	8	0	0	15.52**	25.11.2020	1098
	9.	19.94	23.12.2020	26.59	03.02.2021	11
Total		**796.81**		**1468.65**		

(Source: Director ULB)

***** State share of ₹ 209.84 crore was released to match central share of ₹ 10.43 crore, ₹ 190.00 crore and ₹ 189.72 crore mentioned in sl. no. 3, 4 & 5 of the Table.

** State share of ₹ 15.52 crore was released to match central share of ₹ 46.56 crore mentioned in sl. no. 7 of the table.

[1] Fund was to be released to ULBs within 30 days of release of the central share.

Appendix 3.2

Details of irregular payment of GST to outsourcing firms

(Reference: Paragraph 3.5)

(₹ in lakh)

Name of ULB	Year	Name of contractor	Total amount of the bill	Payment to sanitary workers	Amount of GST paid to contractor
NP Rudhauli Bazar Basti	2/2019 to 3/2019	Lakshya Foundation Basti	29.99	12.41	2.23
	4/2019 to 03/2020	Lakshya Foundation Basti	212.43	90.59	19.29
	4/2020 to 3/2021	Lakshya Foundation Basti	224.19	112.31	20.59
NP Jewar GB Nagar	7/2018 to 03/2019	S K Associates MS Gautam Buddh Nagar	57.02	37.29	6.05
	04/2019 to 05/2019	S K Associates MS Gautam Buddh Nagar	15.15	9.93	1.79
NP Kulpahar Mahoba	04/2019 to 03/2020	Mexono Securities Service Pvt. Ltd., Kulpahad, Mahoba	76.20	26.30	4.73
	04/2020 to 03/2021	Mexono Securities Service Pvt. Ltd., Kulpahad, Mahoba	89.66	28.11	5.06
	04/2021	Mexono Securities Service Pvt. Ltd., Kulpahad, Mahoba	7.33	1.95	0.35
Total			**711.97**	**318.89**	**60.09**

(Source: Test-checked ULBs)

Appendix 3.3

Status of short recovery of user charges in NN Lucknow

(Reference: Paragraph 3.6.1)

(Amount in ₹)

Year	For households		For other establishment		Total recoverable user charges (col 3 + col5)	User charges recovered (in ₹)	User charges not recovered (col. 6 - col. 7)
	Number of residential households covered from DTDC	Recoverable user charges by minimum rate @ ₹ 40/per HH per month (col. 2 x 40 x 12)	No. of other establishment	Recoverable user charges by minimum rate @ ₹ 100/per establishments per month (col.4 x 100 x 12)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2017-18 (July 2017 to March 2018)	231787	41721660	22924	10315800	52037460	50857101	1180359
2018-19	290499	83663712	28731	20686320	104350032	88945831	15404201
2019-20	342489	123296040	33873	30485700	153781740	63257194	90524546
2020-21	403950	145422000	39951	35955900	181377900	125793610	55584290
Total		**394103412**		**97443720**	**491547132**	**328853736**	**162693396**

(Source: NN Lucknow)

Note: (1) 50 *per cent*, 60 *per cent* and 75 *per cent* of total amount of user charges billable on the monthly basis for first year, second year and third year respectively. The concessionaire was responsible for collection of minimum user charges/billable with effect from 1 July 2017.
(2) Recoverable user charges was calculated on the basis of minimum rates for households (₹ 40/- per households per month) and other establishment (₹100/- per other establishment per month) during the period 2017-21.

Appendix 3.4

Short recovery of user charges in NN Ghaziabad

(Reference: paragraph 3.6.2)

(₹ in lakh)

Year	Number of residential HHs	Recoverable annual user charges at minimum rate of ₹ 30/month	Number of other establishments	Recoverable annual user charges from other establishments at minimum rate of ₹ 70/month	Total recoverable amount	User charges recovered	User charges short realised
(1)	**(2)**	**(3) {= (col 2) x ₹ 30 x 12}**	**4**	**(5) {=(col. 4) x ₹ 70 x 12}**	**(6) = col. (3) + col. (5)**	**7**	**Col. 8=(col. 6-col. 7)**
2018-19	292868	1054.32	32541	273.34	1327.66	27.94	1299.72
2019-20	338474	1218.51	26220	220.25	1438.76	161.88	1276.88
2020-21	340969	1227.49	27427	230.39	1457.88	168.66	1289.22
2021-22	420230	1512.83	31314	263.04	1775.87	118.57	1657.30
Total		**5013.15**		**987.02**	**6000.17**	**477.05**	**5523.12**

(Source: NN Ghaziabad)

Appendix 4.1
Status of MRF centre in test-checked ULBs
(Reference: Paragraph 4.1.2)

(₹ in lakh)

Sl. No.	Name of ULBs	Fund for civil work		Fund for machinery		Status as per State Government reply (June 23)
		Fund received	Expenditure	Fund received	Expenditure	
Land not available						
1	NPP Chitrakootdham Karwi Chitrakoot	33.67	0	0	0	Status not furnished.
2	NPP Raebareli	33.67	0	0	0	Status not furnished.
3	NP Jarwal Bahraich	33.67	0	0	0	Status not furnished.
4	NP Bakewar Etawah	33.67	0	0	0	Status not furnished.
5	NP Chitbaragaon Ballia	33.67	0	0	0	Status not furnished.
Total		**168.35**	**0**	**0**	**0**	
Land available but civil work not started						
1	NPP Utraula Balrampur	33.67	0	0	0	Status not furnished.
2	NPP Ramnagar Varanasi	33.67	0	0	0	Status not furnished.
3	NP Katra Shahjahanpur	33.67	0	0	0	Status not furnished.
Total		**101.01**	**0**	**0**	**0**	
Civil work in progress						
1	NPP Etah	33.67	14.85	16.98	0	Status not furnished.
2	NPP Shamli	33.67	0	0	0	Status not furnished.
3	NP Bithoor Kanpur Nagar	33.67	23.30	0	0	Status not furnished.
4	NP Bilsanda Pilibhit	33.67	27.70	0	0	Status not furnished.
5	NP Jhalu Bijnor	33.67	0	0	0	Status not furnished.
6	NP Anandnagar Maharajganj	33.67	0	0	0	Status not furnished.
7	NP Reoti Ballia	33.67	21.94	16.98	0	Status not furnished.
8	NP Rajapur Chitrakoot	33.67	5.40[2]	0	0	Civil work was in progress at new site.
Total		**269.36**	**93.19**	**33.96**	**0**	
Construction work started but was stopped						
1	NPP Dataganj Budaun	33.67	33.22	16.98	0	Status not furnished.
2	NPP Sikandra Rao Hathras	33.67	11.56	16.98	0	Status not furnished.
3	NPP Loni Ghaziabad	33.67	0	0	0	State Government stated that purchase of machinery for four MRF centres was in progress. However, as per information furnished by NPP (July 2024), work of MRF centre stopped due to public protest.
Total		**101.01**	**44.78**	**33.96**		
Civil work completed but machinery was not purchased						
1	NN Ghaziabad[3]	33.67	31.43	0	0	Status of MRF centre at Vaishali not furnished,
2	NPP Mahoba	33.67	34.06	16.98	0	Status not furnished.
3	NPP Hathras	33.67	33.67	16.98	0	Status not furnished.
4	NPP Pilibhit	33.67	37.53	16.98	0	Status not furnished.
5	NPP Shahabad Hardoi	33.67	27.99	16.98	0	Status not furnished.
6	NPP Baheri Bareilly	33.67	35.71	16.98	0	Status not furnished.
7	NPP Muzaffarnagar	33.67	33.67	16.98	0	The work of MRF centre was in progress.
8	NPP Auraiya	33.67	43.10	16.98	0	Machinery not purchased.

[2] Civil work was initially commenced on an unsuitable site near river Yamuna. The site was later changed rendering expenditure of ₹ 5.40 lakh on civil work wasteful. The work has now been commenced on another site.

[3] NN informed (January 2023) that the MRF centre constructed in Vaishali Sector -1 Ghaziabad could not be made functional due to public protest. However, State Government stated (June 2023) that MRF centres were established at five other locations.

Sl. No.	Name of ULBs	Fund for civil work		Fund for machinery		Status as per State Government reply (June 23)
		Fund received	Expenditure	Fund received	Expenditure	
9	NP Saidpur Ghazipur	33.67	0[4]	16.98	0	Status not furnished.
10	NP Rudhauli Bazar Basti	33.67	31.77	16.98	0	Status not furnished.
11	NP Kulpahar Mahoba	33.67	34.95	16.98	0	Status not furnished.
12	NP Jahanabad Pilibhit	33.67	33.67	16.98	0	Status not furnished.
Total		**404.04**	**377.55**	**203.76**		
Civil work completed and machinery purchased but not installed						
1	NPP Deoria	**33.67**	34.04	16.98	16.95	Status not furnished.
2	NP Baldeo Mathura	33.67	39.23	16.98	16.97	Status not furnished.
Total		**67.34**	**73.27**	**33.96**	**33.92**	
Civil work completed and machineries were installed but MRF centre was not functional						
1	NPP Mahmudabad Sitapur	33.67	33.67	16.98	16.97	Action underway for electric connection, manually operated presently.
2	NP Khanpur Bulandshahr	33.67	54.20	16.98	16.97	Status not furnished.
3	NP Jewar GB Nagar	33.67	33.28	16.98	0	Manually operated presently.
4	NP Sahaspur Bijnor	33.67	8.65	16.98	15.96	Machinery purchased.
5	NP Tikri Bagpat	33.67	33.67	16.98	16.98	State Government stated that civil work MRF centre was completed. NPP further informed (July 2024) that MRF centre was being operated manually.
Total		**168.35**	**163.47**	**84.90**	**66.88**	
Functional						
1	NN Lucknow	33.67	33.67	16.98	16.97	-
2	NN Kanpur	33.67	0[5]	16.98	0	Construction of 10 MRF centres in different location was in progress.
3	NPP Deoband Saharanpur	33.67	33.59	16.98	16.97	-
4	NPP Bulandshahr	33.67	33.67	16.98	16.98	State Government stated that work of MRF centre was in progress. NPP further informed (July 2024) that MRF centre was functional.
5	NP Kaptanganj Kushinagar	33.67	33.67	16.98	16.98	State Government stated that work of MRF centre completed. NPP further informed (July 2024) that MRF centre was functional.
6	NP Usawan Budaun	33.67	33.67	16.98	16.98	State Government stated that machinery was purchased for MRF centre. NP further informed (July 2024) that MRF centre was functional.
7	NP Jiyanpur Azamgarh	33.67	33.15	16.98	16.50	State Government stated that work of MRF centre was in progress. NPP further informed (July 2024) to MRF centre was functional.
Total		**235.69**	**167.75**	**118.86**	**101.38**	

(Source: State Government and test-checked ULBs)

[4] Amount of ₹ 50.65 lakh of SBM grant was blocked at ULB level while a MRF centre was constructed utilising the fund from Namami Gange scheme in NP Saidpur (Ghazipur)

[5] Overall fund received from SBM grant was returned to Directorate by NN Kanpur. However, a MRF centre was functional under the ambit of plant area using the fund from 15th FC.

Appendix 4.2 (A)

Status of waste collection in test-checked ULBs during the years 2016-22

(Reference: Paragraph 4.2.1)

(Quantity in TPD)

Sl No	Name of ULB	Waste collection					
		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1	NN Lucknow	865.21	944.60	1051.94	1110.69	1145.74	1634.84
2	NN Ghaziabad	852.95	886.03	880.27	1035.62	1035.62	1280.00
3	NN Kanpur	1500.00	1595.00	1009.00	1000.00	1000.00	1104.00
4	NPP Raebareli	50.68	53.00	58.00	62.00	65.00	70.00
5	NPP Baheri Bareilly	23.90	23.90	23.90	23.90	23.90	23.90
6	NPP Dataganj Budaun	5.66	5.66	5.66	9.19	9.19	9.19
7	NPP Auraiya	16.00	19.00	19.00	21.00	22.00	24.00
8	NPP Utraula Balrampur	8.06	8.25	8.44	8.64	8.86	9.06
9	NPP Chitrakootdham Karwi Chitrakoot	13.30	13.70	14.15	15.20	15.50	15.78
10	NPP Muzaffarnagar	150.00	153.00	153.00	160.00	160.00	170.00
11	NPP Loni Ghaziabad	285.00	285.00	305.00	305.00	310.00	310.00
12	NPP Sikandara Rao Hathras	14.00	15.00	16.00	16.50	17.00	19.87
13	NPP Hathras	45.26	47.64	48.50	48.50	32.25	74.00
14	NPP Etah	44.28	44.88	45.00	48.12	48.12	49.77
15	NPP Mahoba	29.09	30.54	32.07	33.67	35.35	37.11
16	NPP Deoria	48.00	50.00	54.00	56.00	58.00	60.00
17	NPP Ramnagar Varanasi	18.08	18.44	18.82	19.21	19.60	20.00
18	NPP Bulandshahr	12.98	12.98	106.85	67.50	90.00	90.00
19	NPP Pilibhit	88.76	88.76	88.76	64.95	64.95	47.74
20	NPP Shamli	30.00	32.00	33.00	35.00	36.00	36.00
21	NPP Deoband Saharanpur	18.00	18.00	18.00	25.00	50.00	50.00
22	NPP Shahabad Hardoi	15.00	16.00	16.50	17.35	22.58	26.10
23	NPP Mahmudabad Sitapur	21.50	13.41	22.48	22.48	19.55	19.55
24	NP Jhalu Bijnor	4.26	4.26	4.26	5.34	5.34	5.34
25	NP Sahaspur Bijnor	4.75	4.90	5.20	5.75	6.30	6.80
26	NP Jarwal Baharaich	3.20	3.22	3.23	3.25	3.28	3.30
27	NP Anandnagar Maharajganj	3.50	3.80	4.00	4.00	7.78	7.78
28	NP Rajapur Chitrakoot	1.76	1.86	1.96	2.07	2.17	2.27
29	NP Usawan Budaun	2.85	3.32	3.80	4.27	4.75	5.22
30	NP Bakewar Etawah	1.80	1.80	1.80	1.99	2.00	2.00
31	NP Rudhauli Bazar Basti	3.00	3.20	3.80	4.00	4.20	3.90
32	NP Jewar G B Nagar	10.55	11.00	12.00	13.00	13.50	10.37
33	NP Tikri Bagpat	3.00	3.00	5.00	5.00	5.00	5.00
34	NP Kulpahar Mahoba	5.50	6.00	6.30	6.60	6.90	7.20
35	NP Jiyanpur Azamgarh	2.08	2.12	2.16	2.21	2.25	2.30
36	NP Chitbaragaon Ballia	3.80	3.90	3.95	4.20	4.20	4.20
37	NP Reoti Ballia	7.40	7.53	7.67	8.00	8.00	8.00
38	NP Katra Shahjahanpur	8.20	8.31	8.42	9.17	9.29	9.29
39	NP Saidpur Ghazipur	8.66	8.67	9.76	9.90	9.90	9.90
40	NP Khanpur Bulandshahr	3.97	4.10	4.73	3.60	5.30	5.30
41	NP Jahanabad Pilibhit	3.55	3.55	3.55	3.23	3.23	2.89
42	NP Bilsanda Pilibhit	1.58	1.58	6.67	3.32	6.38	6.46
43	NP Baldeo Mathura	2.50	2.50	4.00	2.07	2.07	2.07
44	NP Bithoor Kanpur Nagar	0.20	3.00	3.00	2.18	2.18	2.25
45	NP Kaptanganj Kushinagar	7.00	7.00	7.08	7.16	7.24	7.32
Total		**4248.82**	**4473.41**	**4140.68**	**4315.83**	**4410.47**	**5300.07**

(Source:Test-checked ULBs)

Appendix 4.2 (B)

Status of quantum of waste generated and collected in the State and in test-checked ULBs

(Reference: Paragraph 4.2.1)

(Quantity in TPD)

Year	State				Test-checked ULBs			
	Generated	Collected	Uncollected	Percentage of uncollected	Generated	Collected	Uncollected	Percentage of uncollected
2016-17	15500	12000	3500	23	4253	4249	4	0.09
2017-18	15500	12000	3500	23	4477	4473	4	0.09
2018-19	15500	13950	1550	10	4144	4141	3	0.07
2019-20	14468	13955	513	4	4688	4316	372	8
2020-21	14710	14292	418	3	4780	4410	370	8
2021-22	14710	14710	0	0	5567	5300	267	5
Total	**90388**	**80907**	**9481**		**27909**	**26889**	**1020**	

(Source: Director ULB & test-*checked* ULBs)

Appendix 4.3

Details of households covered under door-to-door waste collection facility in Lucknow city

(Reference: Paragraph 4.2.3.1)

Year	Total no. of households	Total no. of households covered with door-to-door collection facility	Total no. of households, not covered with door-to-door collection facility	Percentage of households, not covered with door-to-door collection facility
2017-18	538149	254711	283438	53
2018-19	553839	319230	234609	42
2019-20	558172	376362	181810	33
2020-21	566037	443901	122136	22
2021-22	571697	451984	119713	21

(Source: NN Lucknow*)*

Appendix 4.4 (A)

Details of excess payment made to firm due to claim for higher number of households (HHs) and commercial properties in NPP Hathras

(Reference: Paragraph 4.2.3.1)

(Amount in ₹)

Month	Number of properties claimed in the bill		Actual number of properties		Excess payment calculated at the rate of 60 *per cent* of the prescribed rate (HHs @ ₹ 50 per month and commercial @ ₹ 100 per month) as allowed by the NPP in view of agreement			Coverage of household as per bill		Penalty imposed by the NPP on bill (in %)	Amount of Penalty	Excess payment
	HHs	Commercial	HHs	Commercial	HHs = (b-d) x ₹50 x 60%	Commercial (c-e)* ₹100 x 60%	Total (f+g)	%	Amount (h x i%)		J x K%	J-L
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(L)	(M)
Oct-20	19483	5056	15716	2503	113010	153180	266190	85	226262	10	22626	203636
Nov-20	19483	5056	15716	2503	113010	153180	266190	87	231585	10	23159	208426
Dec-20	16950	4399	15716	2503	37020	113760	150780	100	150780	12	18094	132686
Jan-21	17145	4449	15716	2503	42870	116760	159630	100	159630	12	19156	140474
Feb-21	17535	4550	15716	2503	54570	122820	177390	100	177390	10	17739	159651
Mar-21	18119	4702	15716	2503	72090	131940	204030	100	204030	5	10202	193828
Apr-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
May-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
Jun-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
Jul-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
Aug-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
Sep-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
Oct-21	18119	4702	15802	2571	69510	127860	197370	100	197370	5	9869	187501
Nov-21	18119	4702	15802	2571	69510	127860	197370	100	197370	40	78948	118422
Dec-21	18119	4702	15802	2571	69510	127860	197370	100	197370	40	78948	118422
Jan-22	18119	4702	15802	2571	69510	127860	197370	100	197370	40	78948	118422
Feb-22	18119	4702	15802	2571	69510	127860	197370	100	197370	20	39474	157896
Mar-22	18119	4702	15802	2571	69510	127860	197370	100	197370	20	39474	157896
Total					**1266690**	**2325960**	**3592650**		**3518117**		**495851**	**3022266**

(Source: NPP Hathras)

Appendix 4.4 (B)

Details of excess payment made to firm due to deduction of 40 *per cent* instead of 50 *per cent* from the bills of the firm contrary to the terms of RFP

(Reference: Paragraph 4.2.3.1)

(Amount in ₹)

Month	Bill amount	Deduction		Provision of excess payment	Penalty imposed on bill (in percentage)	Amount of penalty (in ₹)	Net excess payment made to the firm
		Allowed in bills (40 *per cent*)	Due as per RFP (50 *per cent*)	(iv-iii)		(v) x (vi)/100	(v-vii)
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Sept 2021	1376168	550467	688084	137617	5	6881	130736
Oct 2021	1376150	550460	688075	137615	5	6881	130734
Nov 2021	1376160	550464	688080	137620	40	55048	82572
Dec2021	1376160	550464	688080	137620	40	55048	82572
Jan 2022	1376150	550460	688075	137615	40	55046	82569
Feb 2022	1376150	550460	688075	137615	20	27523	110092
March 2022	1376150	550460	688075	137615	20	27523	110092
Total				**963317**		**233950**	**729367**

(Source: NPP Hathras)

Appendix 4.5 (A)

Details of avoidable payment made to firm for tippers engaged in DTDC in NPP Loni

(Reference: Paragraph 4.2.3.2)

(Amount in ₹)

Month	No. of tippers for which payment was made	Required number of tippers	Excess no. of tippers for which payment was made	Excess payment on hiring tippers @ ₹ 18,000 per tipper per month
(A)	**(B)**	**(C)**	**(D) = (B) – (C)**	**(E) = (D)*18000**
November 2018	55	28	27	486000
December 2018	55	28	27	486000
January 2019	55	28	27	486000
February 2019	55	28	27	486000
March 2019	55	28	27	486000
April 2019	55	28	27	486000
May 2019	55	28	27	486000
June 2019	Bill not available			
July 2019	55	28	27	486000
August 2019	55	28	27	486000
September 2019	53	28	27	486000
October 2019	53	28	27	486000
November 2019	55	28	27	486000
December 2019	55	28	27	486000
January 2020	53	28	25	450000
February 2020	51	28	23	414000
March 2020	53	28	25	450000
April 2020	54	28	26	468000
May 2020	44	28	16	288000
June 2020	45	28	17	306000
July 2020	44	28	16	288000
August 2020	44	28	16	288000
Sept. 2020	Bill not available			
October 2020	44	28	16	288000
November 2020	44	28	16	288000
Total				**9846000**

(Source: NPP Loni Ghaziabad)

Appendix 4.5 (B)

Details of avoidable payment made to firm for manpower engaged in DTDC in NPP Loni

(Reference: paragraph 4.2.3.2)

(Amount in ₹)

Month	Details for excess posted drivers and payment their against						Details for excess posted sweepers and payment their against						Total payment on excess posted manpower
	Required no. of drivers	No of drivers actually posted	Excess posted drivers	Details as per paid bill		Excess payment on excess posted drivers	Required no. of sweepers	No. of sweepers actually posted	Excess posted sweepers	Details as per paid bill		Excess payment on excess posted sweepers	
				No. of drivers	Amount					No. of sweepers	Amount		
(A)	*(B)*	*(C)*	*(D)= (C-B)*	*(E)*	*(F)*	*(G)= (F*D)/E*	*(H)*	*(I)*	*(J)= (I-H)*	*(K)*	*(L)*	*(M)= (L*J)/K*	*(N)= (G+M)*
November 2018	28	55	27	60	749112	337100	56	165	109	956	8389644	956560	1293660
December 2018	28	55	27	60	707424	318341	56	165	109	993	8540511	937478	1255819
January 2019	28	55	27	62	788673	343454	56	165	109	943	8334366	963357	1306811
February 2019	28	55	27	62	711678	309924	56	165	109	932	7651492	894863	1204787
March 2019	28	55	27	60	781016	351457	56	165	109	926	8333450	980935	1332392
April 2019	28	55	27	61	762724	337599	56	165	109	945	8299245	957267	1294866
May 2019	28	55	27	60	781442	351649	56	165	109	914	8233584	981904	1333553
June 2019	Bill not available												
July 2019	28	55	27	59	765277	350212	56	165	109	921	8371319	990742	1340954
August 2019	28	55	27	55	715506	351248	56	165	109	939	8521576	989193	1340441
September 2019	28	53	27	57	717206	339729	56	159	109	944	8315737	960186	1299915
October 2019	28	53	27	57	729505	345555	56	159	109	944	8647222	998461	1344016
November 2019	28	55	27	59	745708	341256	56	165	109	994	8578806	940734	1281990
December 2019	28	55	27	58	754641	351298	56	165	109	994	8825351	967770	1319068
January 2020	28	53	25	58	739328	318676	56	159	103	944	8584045	936607	1255283
February 2020	28	51	23	58	707849	280699	56	153	97	950	8212381	838527	1119226
March 2020	28	53	25	59	771231	326793	56	159	103	950	8683280	941450	1268243
April 2020	28	54	26	59	752940	331804	56	162	106	1050	9707670	980012	1311816
May 2020	28	44	16	59	736775	199803	56	132	76	1050	8470635	613113	812916
June 2020	28	45	17	58	658504	193010	56	135	79	1050	8099587	609397	802407
July 2020	28	44	16	59	733372	198881	56	132	76	1050	8964957	648892	847773

Month	Details for excess posted drivers and payment their against						Details for excess posted sweepers and payment their against						Total payment on excess posted manpower
	Required no. of drivers	No of drivers actually posted	Excess posted drivers	Details as per paid bill		Excess payment on excess posted drivers	Required no. of sweepers	No. of sweepers actually posted	Excess posted sweepers	Details as per paid bill		Excess payment on excess posted sweepers	
				No. of drivers	Amount					No. of sweepers	Amount		
(A)	*(B)*	*(C)*	*(D)= (C-B)*	*(E)*	*(F)*	*(G)= (F*D)/E*	*(H)*	*(I)*	*(J)= (I-H)*	*(K)*	*(L)*	*(M)= (L*J)/K*	*(N)= (G+M)*
August 2020	28	44	16	58	732096	201958	56	132	76	1050	8820728	638453	840411
September 2020	Bill not available												
October 2020	28	44	16	58	749112	206652	56	132	76	1050	9189003	665109	871761
November 2020	28	44	16	58	728693	201019	56	132	76	1050	8891610	643583	844602
Total						**6888117**						**20034593**	**26922710**

(Source: NPP Loni Ghaziabad)

Appendix 4.6

Details of expenditure incurred on excess procurement of bins in NP Chitbaragaon and NP Reoti

(Reference: Paragraph 4.2.4.2)

(₹ in lakh)

Sl No	Name of ULB	Population 2011	Estimated population 2021	Norm as per MSWM manual	No. of bins required as per norms	Bins purchased	Date of payment	Excess bins purchased	Rate per bin	Excess expenditure
1	NP Chitbaragaon Ballia	21879	24132	1 bin for 5000 population	5	15	08.05.2020	10	1.18	11.80
2	NP Reoti Ballia	26359	30693		6	15	17.12.2019	9	1.00	9.00
						3	13.04.2020	3	1.24	3.72
Total										**24.52**

(Source: NP Chitbaragaon & NP Reoti Ballia)

Appendix 4.7

Details of partitioned/covered vehicles used for transportation of MSW in test-checked ULBs

(Reference: Paragraph 4.3.1)

Sl. No.	Name of ULB	Tipper			Tractor			Status of vehicle as per Government Reply (June 2023)
		Total number of vehicles	Number of partitioned vehicles	Number of covered vehicles	Total number of vehicles	Number of partitioned vehicles	Number of covered vehicles	
1	NN Lucknow	883	604	714	116	0	0	The ULB had compartmented DTDC vehicles and other tipping trucks are covered during transportation of MSW. However, the reply was in contradiction of data furnished by NN Lucknow that 279 tippers were not partitioned.
2	NN Ghaziabad	232	138	232	28	0	0	GNN is using majority of partitioned vehicle and in three zone DTDC is outsourced using partitioned vehicle. The reply is not acceptable, as only partial tippers were partitioned and tractors were neither covered nor partitioned.
3	NN Kanpur	123	0	0	0	0	0	As far as possible partitioned vehicles are used. The reply is not tenable, as no vehicle was partitioned/covered.
4	NPP Loni Ghaziabad	25	25	25	33	0	0	No reply.
5	NPP Deoria	20	20	20	0	0	0	DTDC vehicles are compartmented and other tipping trucks are properly covered while transporting MSW.
6	NPP Ramnagar Varanasi	6	0	6	4	0	0	All partitioned vehicles are being used. The reply is not acceptable, as none of the tippers were partitioned and tractors were neither covered nor partitioned.
7	NPP Sikandara Rao Hathras	7	7	7	3	0	0	No reply.
8	NPP Hathras	30	27	27	18	0	0	Segregated waste is being collected through 27 tippers.
9	NPP Etah	30	30	30	3	0	0	25 tippers are partitioned. However, reply is not tenable, as none of the tractors were neither partitioned nor covered.
10	NPP Mahoba	7	7	7	6	0	0	DTDC vehicles are compartmented and covered while transporting waste. The reply is not acceptable, as no tractor was partitioned or covered
11	NPP Bulandshahr	43	43	43	7	0	0	No reply.
12	NPP Shamli	3	0	0	8	0	0	DTDC vehicles are compartmented and other tipping trucks are properly covered while transporting MSW. The reply is not tenable, as neither tractor nor tipper was partitioned and covered.
13	NPP Deoband Saharanpur	13	13	13	16	16	16	DTDC vehicles are compartmented and other tipping trucks

Sl. No.	Name of ULB	Tipper			Tractor			Status of vehicle as per Government Reply (June 2023)
		Total number of vehicles	Number of partitioned vehicles	Number of covered vehicles	Total number of vehicles	Number of partitioned vehicles	Number of covered vehicles	
								are properly covered while transporting MSW
14	NPP Mahmudabad Sitapur	3	3	3	3	0	0	No vehicle is being used without partition. However, the reply is in contradiction to the fact that none of the tractors were either partitioned or covered.
15	NPP Pilibhit	28	28	24	7	7	0	No reply.
16	NPP Shahabad Hardoi	17	17	17	7	0	0	No reply.
17	NPP Raebareli	36	36	36	6	6	0	DTDC vehicles are compartmented and other tipping trucks are covered while transporting MSW. The reply is not tenable, as no tractor was covered.
18	NPP Baheri Bareilly	9	9	8	5	0	0	No reply.
19	NPP Dataganj Budaun	6	6	6	8	0	8	No reply.
20	NPP Auraiya	10	10	10	2	0	0	No partitioned vehicle is available for source segregation.
21	NPP Utraula Balrampur	5	5	2	1	0	0	Compartmented vehicles are being used for DTDC. The reply is not tenable, as only a few tippers were covered and tractor was neither partitioned nor covered.
22	NPP Chitrakootdham Karwi Chitrakoot	12	5	5	4	0	0	Tippers are with partition and other vehicles are covered during transportation of MSW. However, the reply is in contradiction of the data furnished by the ULB.
23	NPP Muzaffarnagar	40	40	40	18	0	0	Partitioned and covered vehicles are being used. However, the reply is not acceptable, as none of the tractors were either partitioned or covered.
24	NP Jiyanpur Azamgarh	2	0	0	2	0	0	No reply.
25	NP Reoti Ballia	7	0	0	2	0	0	Seven partitioned vehicles used for source segregation. However, the reply is in contradiction of the data furnished by the ULB.
26	NP Kulpahar Mahoba	6	2	2	3	0	0	Compartmented vehicles are being used for DTDC and tractors are being covered while transporting waste. However, the reply is in contradiction of the data furnished by the ULB.
27	NP Chitbaragaon Ballia	2	2	2	1	0	0	Segregated waste is being transported. The fact remains that tractor was neither partitioned nor covered.
28	NP Jewar G B Nagar	6	6	6	4	0	0	No reply
29	NP Tikri Bagpat	3	3	3	3	0	0	No reply
30	NP Rudhauli Bazar Basti	6	2	2	2	0	0	No reply
31	NP Kaptanganj	2	2	2	3	0	0	DTDC vehicles are compartmented and other tipping trucks

Sl. No.	Name of ULB	Tipper			Tractor			Status of vehicle as per Government Reply (June 2023)
		Total number of vehicles	Number of partitioned vehicles	Number of covered vehicles	Total number of vehicles	Number of partitioned vehicles	Number of covered vehicles	
	Kushinagar							are covered while transporting MSW. The reply is not tenable, as no tractor was partitioned/covered.
32	NP Saidpur Ghazipur	4	4	0	2	0	0	No partitioned vehicle is available for source segregation.
33	NP Katra Sahjahanpur	5	5	1	4	0	0	DTDC vehicles are compartmented and other tipping trucks are properly covered while transporting MSW. The reply is not tenable, as only one out of five tippers was covered and no tractor was partitioned/ covered.
34	NP Baldeo Mathura	2	2	0	3	0	0	No vehicle is being used without partition. The reply is not tenable, as no tipper was covered and none of the tractors were neither partitioned nor covered.
35	NP Bithoor Kanpur Nagar	2	0	0	1	0	0	NP Bithoor operates two tippers with separate bins. However, the reply is in contradiction to the fact that none of the vehicles were either partitioned or covered.
36	NP Khanpur Bulandshahr	3	0	1	3	0	0	No reply.
37	NP Jahanabad Pilibhit	4	4	4	2	2	0	No reply.
38	NP Bilsanda Pilibhit	0	0	0	2	0	0	No reply.
39	NP Usawan Budaun	3	3	3	3	3	0	No reply.
40	NP Jhalu Bijnor	2	2	2	7	0	0	There is no partitioned vehicle for source segregation.
41	NP Sahaspur Bijnor	3	3	3	4	4	4	Vehicles are partitioned for source segregation.
42	NP Bakewar Etawah	2	2	2	2	0	0	No partitioned vehicle is available.
43	NP Jarwal Bahraich	3	1	1	2	0	0	Motorized vehicles are being used for separate collection of waste.
44	NP Anandnagar Mahrajganj	2	0	0	2	0	0	DTDC vehicles are compartmented and other tipping trucks are properly covered while transporting MSW. However, the reply is in contradiction of the data furnished by the ULB.
45	NP Rajapur Chitrakoot	2	2	2	2	0	0	No reply.
Total		**1659**	**1118**	**1311**	**362**	**38**	**28**	

(Source: Test-checked ULBs)

Appendix 4.8

Details of transportation vehicles used without authorisation in test-checked ULBs as of March 2022

(Reference: Paragraph 4.3.2)

Sl No.	Name of ULB	Details of vehicle					Total number of vehicles	Number of vehicle registered	Number of vehicle insured	Number of vehicle with fitness certificate	Status of vehicle as per Government reply (June 2023)
		Tipper	Tractor	Dumper	Dumper placer	Compactor					
1	NN Lucknow	883	116	0	73	74	1146	931	324	108	Vehicles are registered and insured. The reply is not acceptable, since as per data furnished by the ULB, a number of vehicles remained unregistered and uninsured
2	NN Ghaziabad	232	28	20	12	26	318	318	110	318	No reply.
3	NN Kanpur	123	0	0	35	20	178	177	177	177	As far as possible, NN was trying to use vehicle with fitness certificates.
4	NPP Loni Ghaziabad	25	33	0	4	1	63	62	62	62	No reply.
5	NPP Deoria	20	0	0	0	3	23	23	3	0	Vehicles are registered and insured. The reply is not acceptable, as a number of vehicles remained uninsured.
6	NPP Ramnagar Varanasi	6	4	1	0	0	11	2	3	0	Vehicles are registered. The reply is not acceptable, as a number of vehicles remained unregistered.
7	NPP Sikandara Rao Hathras	7	3	0	0	1	11	2	7	0	No reply.
8	NPP Hathras	30	18	0	2	2	52	35	33	0	No reply.
9	NPP Etah	30	3	0	1	3	37	34	37	0	Timely vehicles are insured and fitness certified. The fact remains that none of the vehicles were fitness certified.
10	NPP Mahoba	7	6	2	0	1	16	9	7	7	Vehicles are registered and

Sl No.	Name of ULB	Details of vehicle					Total number of vehicles	Number of vehicle registered	Number of vehicle insured	Number of vehicle with fitness certificate	Status of vehicle as per Government reply (June 2023)
		Tipper	Tractor	Dumper	Dumper placer	Compactor					
											insured. The reply is not acceptable, as vehicles were registered only partially, insured and fitness certified.
11	NPP Bulandshahr	43	7	0	0	5	55	3	0	0	No reply.
12	NPP Shamli	3	8	0	0	0	11	0	0	0	Vehicles are registered and insured. However, the reply is in contradiction to the data provided by ULB.
13	NPP Deoband Saharanpur	13	16	0	0	2	31	13	0	13	Vehicles are registered and insured. The reply is not tenable, as only a few vehicles were registered and no vehicle was insured.
14	NPP Mahmudabad Sitapur	3	3	0	0	0	6	0	0	0	The process of obtaining fitness certificate after registration for the remaining vehicles is in progress. The fact remains that none of the vehicles were registered, insured and fitness certified.
15	NPP Pilibhit	28	7	0	1	3	39	32	32	32	No reply.
16	NPP Shahabad Hardoi	17	7	0	1	1	26	22	0	0	Vehicles are registered and insured. The reply is not tenable, as only partial vehicles were registered and no vehicle was insured.
17	NPP Raebareli	36	6	0	5	3	50	25	50	0	Vehicles are registered and insured. The fact remains that only a few vehicles were registered.
18	NPP Baheri Bareilly	9	5	0	1	0	15	8	11	0	No reply.
19	NPP Dataganj Budaun	6	8	0	1	0	15	14	0	0	No reply.

Sl No.	Name of ULB	Details of vehicle					Total number of vehicles	Number of vehicle registered	Number of vehicle insured	Number of vehicle with fitness certificate	Status of vehicle as per Government reply (June 2023)
		Tipper	Tractor	Dumper	Dumper placer	Compactor					
20	NPP Auraiya	10	2	0	2	1	15	0	1	0	No reply.
21	NPP Utraula Balrampur	5	1	0	0	0	6	3	6	3	Four vehicles are registered and for remaining vehicles registration and fitness certificate work is under progress.
22	NPP Chitrakootdham Karwi Chitrakoot	12	4	0	0	2	18	9	11	0	No reply.
23	NPP Muzaffarnagar	40	18	0	6	2	66	42	17	0	Registration, insurance and fitness certification work is under progress.
24	NP Jiyanpur Azamgarh	2	2	0	0	0	4	2	0	0	No reply.
25	NP Reoti Ballia	7	2	0	0	0	9	2	0	0	No reply.
26	NP Kulpahar Mohaba	6	3	0	0	0	9	9	0	0	Registration, insurance and fitness certification work is under progress.
27	NP Chitbaragaon Ballia	2	1	1	1	0	5	5	0	0	Insurance and registration work is under process.
28	NP Jewar G B Nagar	6	4	0	1	0	11	6	6	0	No reply.
29	NP Tikri Bagpat	3	3	0	0	0	6	1	2	0	No reply.
30	NP Rudhauli Bazar Basti	6	2	0	0	0	8	0	0	0	No reply.
31	NP Kaptanganj Kushinagar	2	3	0	0	0	5	0	0	0	Vehicles are registered and insured. The reply is contradictory to the information provided by the ULB.
32	NP Saidpur Ghazipur	4	2	0	0	0	6	3	0	0	No reply.
33	NP Katra Sahjahanpur	5	4	0	1	0	10	0	0	0	No reply.
34	NP Baldeo Mathura	2	3	0	1	0	6	0	0	0	Registration and fitness work is under process.
35	NP Bithoor Kanpur Nagar	2	1	0	0	0	3	1	1	0	No reply.
36	NP Khanpur Bulandshahr	3	3	0	0	0	6	3	0	0	No reply.
37	NP Jahanabad Pilibhit	4	2	0	0	0	6	6	6	2	No reply.

Sl No.	Name of ULB	Details of vehicle					Total number of vehicles	Number of vehicle registered	Number of vehicle insured	Number of vehicle with fitness certificate	Status of vehicle as per Government reply (June 2023)
		Tipper	Tractor	Dumper	Dumper placer	Compactor					
38	NP Bilsanda Pilibhit	0	2	0	0	6	8	0	0	0	No reply.
39	NP Usawan Budaun	3	3	0	0	0	6	2	0	2	No reply.
40	NP Jhalu Bijnor	2	7	0	0	0	9	4	0	2	No reply.
41	NP Sahaspur Bijnor	3	4	0	0	0	7	5	0	3	No reply.
42	NP Bakewar Etawah	2	2	0	0	0	4	4	3	1	No reply.
43	NP Jarwal Bahraich	3	2	0	0	0	5	0	0	0	Four vehicles are registered and registration of one vehicle is under process. The reply is contradictory to the information provided by the ULB.
44	NP Anandnagar Mahrajganj	2	2	0	1	0	5	2	0	0	No reply.
45	NP Rajapur Chitrakoot	2	2	0	0	0	4	2	0	0	No reply.
Total		**1659**	**362**	**24**	**149**	**156**	**2350**	**1821**	**909**	**730**	

(Source: Test-checked ULBs)

Appendix 4.9

Details regarding monitoring of waste transportation vehicles through GPS in test-checked ULBs

(Reference: Paragraph 4.3.3)

Sl. No.	Name of ULB	Details of vehicle					Total number of vehicles	GPS enabled vehicle
		Tipper	Tractor	Dumper	Dumper placer	Compactor		
1	NN Lucknow	883	116	0	73	74	1146	1056
2	NN Ghaziabad	232	28	20	12	26	318	300
3	NN Kanpur	123	0	0	35	20	178	178
4	NPP Loni Ghaziabad	25	33	0	4	1	63	0
5	NPP Deoria	20	0	0	0	3	23	20
6	NPP Ramnagar Varanasi	6	4	1	0	0	11	0
7	NPP Sikandara Rao Hathras	7	3	0	0	1	11	0
8	NPP Hathras	30	18	0	2	2	52	0
9	NPP Etah	30	3	0	1	3	37	0
10	NPP Mahoba	7	6	2	0	1	16	7
11	NPP Bulandshahr	43	7	0	0	5	55	0
12	NPP Shamli	3	8	0	0	0	11	0
13	NPP Deoband Saharanpur	13	16	0	0	2	31	0
14	NPP Mahamudabad Sitapur	3	3	0	0	0	6	0
15	NPP Pilibhit	28	7	0	1	3	39	0
16	NPP Shahabad Hardoi	17	7	0	1	1	26	17
17	NPP Raebareli	36	6	0	5	3	50	0
18	NPP Baheri Bareilly	9	5	0	1	0	15	10
19	NPP Dataganj Budaun	6	8	0	1	0	15	0
20	NPP Auraiya	10	2	0	2	1	15	0
21	NPP Utraula Balrampur	5	1	0	0	0	6	5
22	NPP Chitrakootdham Karwi Chitrakoot	12	4	0	0	2	18	14
23	NPP Muzaffarnagar	40	18	0	6	2	66	61
24	NP Jiyanpur Azamgarh	2	2	0	0	0	4	0
25	NP Reoti Ballia	7	2	0	0	0	9	0
26	NP Kulpahar Mahoba	6	3	0	0	0	9	0
27	NP Chitbaragaon Ballia	2	1	1	1	0	5	0
28	NP Jewar GB Nagar	6	4	0	1	0	11	0
29	NP Tikri Bagpat	3	3	0	0	0	6	0
30	NP Rudhauli Bazar Basti	6	2	0	0	0	8	0
31	NP Kaptanganj Kushinagar	2	3	0	0	0	5	0
32	NP Saidpur Ghazipur	4	2	0	0	0	6	0
33	NP Katra Sahjahanpur	5	4	0	1	0	10	0
34	NP Baldeo Mathura	2	3	0	1	0	6	0
35	NP Bithoor Kanpur Nagar	2	1	0	0	0	3	0
36	NP Khanpur Bulandshahr	3	3	0	0	0	6	0
37	NP Jahanabad Pilibhit	4	2	0	0	0	6	0
38	NP Bilsanda Pilibhit	0	2	0	0	6	8	0
39	NP Usawan Budaun	3	3	0	0	0	6	6
40	NP Jhalu Bijnor	2	7	0	0	0	9	0
41	NP Sahaspur Bijnor	3	4	0	0	0	7	0
42	NP Bakewar Eatawah	2	2	0	0	0	4	3
43	NP Jarwal Bahraich	3	2	0	0	0	5	0
44	NP Anandnagar Mahrajganj	2	2	0	1	0	5	0
45	NP Rajapur Chitrakoot	2	2	0	0	0	4	0
Total		**1659**	**362**	**24**	**149**	**156**	**2350**	**1677**

(Source: Test-checked ULBs)

Appendix 4.10

Details of vehicles required in ULBs and gap analysis for SWM

(Reference: Paragraph 4.3.4.1)

Sl. No.	Name of ULB	Forecast population of 2019[6]	No of vehicles required in the ULBs, as per norm[7]		No of Vehicles available in the ULBs as of 2018-19		No of vehicles required in the ULBs as per gap analysis of 2019-20 at directorate level		Total number of vehicles in the ULBs including the number of vehicles on the basis of gap analysis		Percentage of excess provision of vehicles in gap analysis	
									(6)+(8)	(7)+ (9)	(10-4) *100/(4)	(11-5) *100/(5)
			Tri-cycle	LCV	Tri-cycle	LCV	Tri-cycle	LCV	Tri-cycle	LCV	Tri-cycle	LCV
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	NPP Bulandshahr	262313	52	22	60	9	35	25	95	34	83	55
2	NPP Pilibhit	133353	27	11	80	2	15	22	95	24	252	118
3	NPP Shahabad Hardoi	90972	15	8	0	3	20	15	20	18	33	125
4	NPP Muzaffarnagar	445883	89	38	0	26	100	75	100	101	12	166
5	NPP Deoria	148717	30	13	0	5	25	20	25	25	NA	92
6	NPP Etah	131003	26	11	0	6	30	25	30	31	15	182
7	NPP Hathras	155570	31	13	50	8	25	22	75	30	142	131

(Source: Director ULB & test-checked ULBs)

[6] Estimated population given in ***Appendix 8***

[7] Considering 75 *per cent* coverage of door-to-door waste collection through LCV/mini tripper and 25 *per cent* through tricycle if city population is more than one lakh and 80 *per cent* of door-to-door waste collection through LCV/mini tripper and 20 *per cent* through tricycle, if a city population is less than one lakh (Tricycle 1 per 1,250 population and LCV 1 per 8,750 population).

Appendix 4.11

Details of availability of vehicles for primary transportation in test-checked ULBs

(Reference: Paragraph 4.3.4.1)

Sl. No.	Name of ULB	Population as per 2011 census	Forecasted population 2021[8]	No. of required vehicles, as per norms[9]	No. of vehicles available as of 2021-22	Excess vehicles as of 2021-22 (6)-(5)	Percentage of excess of vehicles 7*100/(5)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Details of excess LCV/mini tipper for primary transportation of waste							
1	NPP Hathras	143339	158461	14	30	16	114
2	NPP Bulandshahr	222519	273378	23	43	20	87
3	NPP Deoria	129479	153467	13	25	12	92
4	NPP Etah	118517	133461	11	30	19	173
5	NPP Pilibhit	127988	133978	11	28	17	155
6	NPP Shahabad Hardoi	80305	93753	9	17	8	89
Details of excess Tricycle for primary transportation of waste							
1	NPP Muzaffarnagar	392454	458489	92	200	108	117
2	NPP Bulandshahr	222519	273378	55	100	45	82

(Source: Test-checked ULBs)

Appendix 4.12

Details of funds released to ULBs for purchase of refuse compactors

(Reference: Paragraph 4.3.4.2)

(₹ in lakh)

Name of ULB	Population as per census 2011	Population (2019[10])	Compacters sanctioned		Expenditure incurred
			Number	Amount	
NPP Utraula Balrampur	32171	35091	1	30.00	0
NPP Shahabad Hardoi	80305	90972	1	30.00	29.97
NPP Sikandara Rao Hathras	46155	52706	1	30.00	29.79
Total			**3**	**90.00**	**59.76**

(Source: Test-checked ULBs)

[8] Estimated population given in ***Appendix 8***

[9] Considering 75 *per cent* coverage of door-to-door waste collection through LCV/mini tripper and 25 *per cent* through tricycle if city population is more than one lakh and 80 *per cent* of door-to-door waste collection through LCV/mini tripper and 20 *per cent* through tricycle, if a city population is less than one lakh (Tricycle 1 per 1250 population and LCV 1 per 8750 population)

[10] Estimated population given in ***Appendix 8***

Appendix-5.1 (A)

Status of waste processed in the State and test-checked ULBs during the years 2016-22

(Reference: paragraph 5.1)

(Quantity in TPD)

Year	State					Test-checked ULBs				
	Generated	Collected	Processed	Percentage of processing against generation	Percentage of processing against collection	Generated	Collected	Processed	Percentage of processing against generation	Percentage of processing against collection
2016-17	15500	12000	3115	20	26	4253	4249	0	0	0
2017-18	15500	12000	3115	20	26	4477	4473	1577	35	35
2018-19	15500	13950	4615	30	33	4144	4141	1469	35	35
2019-20	14468	13955	5395	37	39	4688	4316	624	13	14
2020-21	14710	14292	7818	53	55	4780	4410	1475	31	33
2021-22	14710	14710	10433	71	71	5567	5300	3365	60	63
Total	**90388**	**80907**	**34491**			**27909**	**26889**	**8510**		

(Source: Director ULB & test-checked ULBs)

Appendix 5.1 (B)

Status of waste processed in test-checked ULBs during the years 2016-22

(Reference: Paragraph 5.1)

Sl No	Name of ULB	Processing (in TPD)					
		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1	NN Lucknow	0	937.00	627.00	622.00	1016.00	1020.85
2	NN Ghaziabad	0	0	0	0	0	1280
3	NN Kanpur	0	640.00	842.00	0	455.00	1062.00
4	NPP Raebareli	0	0	0	0	0	0
5	NPP Baheri Bareilly	0	0	0	0	0	0
6	NPP Dataganj Budaun	0	0	0	0	0	0
7	NPP Auraiya	0	0	0	0	0	0
8	NPP Utraula Balrampur	0	0	0	0	0	0
9	NPP Chitrakootdham Karwi Chitrakoot	0	0	0	0	0	0
10	NPP Muzaffarnagar	0	0	0	0	0	0
11	NPP Loni Ghaziabad	0	0	0	0	0	0
12	NPP Sikandara Rao Hathras	0	0	0	0	0	0
13	NPP Hathras	0	0	0	0	0	0
14	NPP Etah	0	0	0	0	0	0
15	NPP Mahoba	0	0	0	0	0	0
16	NPP Deoria	0	0	0	0	0	0
17	NPP Ramnagar Varanasi	0	0	0	0	0	0
18	NPP Bulandshahr	0	0	0	0	0	0
19	NPP Pilibhit	0	0	0	0	0	0
20	NPP Shamli	0	0	0	0	0	0
21	NPP Deoband Saharanpur	0	0	0	0	0	0
22	NPP Shahabad Hardoi	0	0	0	0	0	0
23	NPP Mahmudabad Sitapur	0	0	0	0	0	0
24	NP Jhalu Bijnor	0	0	0	0	0	0
25	NP Sahaspur Bijnor	0	0	0	0	0	0
26	NP Jarwal Baharaich	0	0	0	0	0	0
27	NP Anandnagar Maharajganj	0	0	0	0	0	0
28	NP Rajapur Chitrakoot	0	0	0	0	0	0
29	NP Usawan Budaun	0	0	0	0	0	0
30	NP Bakewar Etawah	0	0	0	1.99	2	2
31	NP Rudhauli Bazar Basti	0	0	0	0	0	0
32	NP Jewar G B Nagar	0	0	0	0	0	0
33	NP Tikri Bagpat	0	0	0	0	0	0
34	NP Kulpahar Mahoba	0	0	0	0	0	0
35	NP Jiyanpur Azamgarh	0	0	0	0	0	0
36	NP Chitbaragaon Ballia	0	0	0	0	0	0
37	NP Reoti Ballia	0	0	0	0	1.55	0
38	NP Katra Shahjahanpur	0	0	0	0	0	0
39	NP Saidpur Ghazipur	0	0	0	0	0	0
40	NP Khanpur Bulandshahar	0	0	0	0	0	0
41	NP Jahanabad Pilibhit	0	0	0	0	0	0
42	NP Bilsanda Pilibhit	0	0	0	0	0	0
43	NP Baldeo Mathura	0	0	0	0	0	0
44	NP Bithoor Kanpur Nagar	0	0	0	0	0	0
45	NP Kaptanganj Kushinagar	0	0	0	0	0	0
Total		**0.00**	**1577.00**	**1469.00**	**623.99**	**1474.55**	**3364.85**

(Source: Test-checked ULBs)

Appendix 5.2

Status of establishment of 32 solid waste processing plants under JNNURM, AFT and State sector schemes in the State

(Reference: Paragraph 5.2.1)

(₹ in crore)

Sl. No.	Name of ULB	Name of district	Name of scheme	Capacity of plant	Date of sanction	Sanctioned cost
Operational Plant						
1	NN Lucknow	Lucknow	UI&G[11]	1300	3.12.07	52.83
2	NN Varanasi	Varanasi	UI&G	600	26.10.07	48.68
3	NN Prayagraj	Prayagraj	UI&G	600	13.12.07	30.41
4	NN Aligarh	Aligarh	UIDSSMT	220	8.9.06	16.07
5	NPP Muzaffarnagar	Muzaffarnagar	UIDSSMT	120	10.11.06	6.58
6	NPP Etawah	Etawah	UIDSSMT	75	10.11.06	5.82
7	NPP Kannauj	Kannauj	UIDSSMT	25	8.9.06	4.62
8	NPP Pilkhua	Hapur	UIDSSMT	45	1.7.11	8.98
9	NN Kanpur	Kanpur Nagar	UI&G	1500	3.12.07	56.24
10	NN Agra	Agra	UI&G	750	12.3.07	30.84
11	NPP Jaunpur	Jaunpur	UIDSSMT	80	16.7.07	12.20
12	NN Mathura	Mathura	UI&G	180	26.02.08	9.91
13	NN Moradabad	Moradabad	UIDSSMT	280	10.11.06	13.16
14	NN Meerut	Meerut	UI&G	600	23.1.07	22.59
15	NPP Ballia	Balia	UIDSSMT	40	9.8.06	6.82
					Total	**325.75**
Non-operational plant						
16	NPP Raebareli	Raebareli	UIDSSMT	70	10.11.06	8.78
17	NPP Barabanki	Barabanki	UIDSSMT	30	16.7.07	5.25
18	NPP Mainpuri	Mainpuri	UIDSSMT	30	10.11.06	4.28
19	NPP Fatehpur	Fatehpur	UIDSSMT	55	16.7.07	9.38
20	NN Bareilly	Bareilly	Air field Town	300	28.3.05	13.86
					Total	**41.55**
Civil work completed but machinery not installed						
21	NPP Loni	Ghaziabad	UIDSSMT	120	16.7.07	**11.81**
Under construction						
22	NN Gorakhpur	Gorakhpur	UIDSSMT	280	10.11.06	15.63
23	NN Jhansi	Jhansi	UIDSSMT	200	8.9.06	12.16
24	NN Firozabad	Firozabad	UIDSSMT	130	10.11.06	7.14
25	NPP Sambhal	Sambhal	UIDSSMT	75	8.9.06	6.55
26	NPP Budaun	Budaun	UIDSSMT	55	8.9.06	5.78
27	NPP Mirzapur	Mirzapur	UIDSSMT	100	16.7.07	11.01
					Total	**58.27**
Land unavailable						
28	NPP Basti	Basti	UIDSSMT	40	8.9.06	5.86
29	NPP Nazibabad	Bijnaur	State Sector	60	Not provided	17.27
					Total	**23.13**
Land dispute						
30	NPP Bhadohi	Bhadohi	State Sector	40	21.11.14	17.35
31	NN Ghaziabad	Ghaziabad	Air field Town	300	27.9.05	13.52
32	NPP Rampur	Rampur	State Sector	150	17.11.14	24.02
					Total	**54.89**

(Source: Director ULB and C&DS UP Jal Nigam)

[11] UI&G: Urban Infrastructure and Governance, UIDSSMT: Urban Infrastructure Development Scheme for Small and Medium Towns, both were sub components of Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

Appendix 5.3

Blockade of funds released for establishment of 32 solid waste processing plants of the State

(Reference: Paragraph 5.2.1)

(₹ in crore)

Sl. No.	Name of ULBs	Name of district	Name of scheme	Capacity of plant	Amount released	Amount utilized	Balance amount	Interest on balance amount
1	NN Lucknow	Lucknow	UI&G	1300	52.83	50.12	2.71	0.00
2	NN Varanasi	Varanasi	UI&G	600	40.16	32.97	7.19	2.01
3	NN Prayagraj	Prayagraj	UI&G	600	30.41	29.51	0.9	0.00
4	NN Aligarh	Aligarh	UIDSSMT	220	16.06	15.98	0.08	0.28
5	NPP Etawah	Etawah	UIDSSMT	75	5.78	5.42	0.36	0.19
6	NPP Barabanki	Barabanki	UIDSSMT	30	5.25	5.25	0	0.01
7	NPP Kannauj	Kannauj	UIDSSMT	25	4.61	4.56	0.05	0.00
8	NPP Mainpuri	Mainpur	UIDSSMT	30	4.22	3.74	0.48	0.09
9	NPP Muzaffarnagar	Muzaffarnagar	UIDSSMT	120	6.58	5.80	0.78	0.09
10	NPP Raebareli	Raebareli	UIDSSMT	70	8.14	7.38	0.76	0.00
11	NPP Pilkhua	Hapur	UIDSSMT	45	8.98	8.78	0.2	0.00
12	NN Kanpur	Kanpur Nagar	UI&G	1500	56.24	56.02	0.22	3.80
13	NN Agra	Agra	UI&G	750	30.84	22.01	8.83	8.08
14	NN Moradabad	Moradabad	UIDSSMT	280	13.12	12.24	0.88	0.59
15	NPP Fatehpur	Fatehpur	UIDSSMT	55	9.38	9.38	0	0.00
16	NN Mathura	Mathura	UI&G	180	9.91	9.90	0.01	0.44
17	NN Bareilly	Bareilly	Air field town	300	13.86	13.84	0.02	0.03
18	NN Meerut	Meerut	UI&G	600	15.36	9.01	6.35	2.38
19	NN Gorakhpur	Gorakhpur	UIDSSMT	280	8.07	2.98	5.09	1.54
20	NN Jhansi	Jhansi	UIDSSMT	200	10.79	5.95	4.84	2.60
21	NN Firozabad	Firozabad	UIDSSMT	250	3.05	1.53	1.52	0.56
22	NPP Basti	Basti	UIDSSMT	40	2.93	0.51	2.42	0.97
23	NPP Nazibabad	Bijnaur	State Sector	40	6.90	6.90	0.00	0.00
24	NPP Loni	Ghaziabad	UIDSSMT	120	5.91	5.91	0	2.64
25	NPP Bhadohi	Bhadohi	State Sector	40	0.51	0.12	0.39	0.08
26	NN Ghaziabad	Ghaziabad	Air field town	300	6.76	6.76	0.00	0.35
27	NPP Jaunpur	Jaunpur	UIDSSMT	80	12.04	10.89	1.15	0.00
28	NPP Sambhal	Sambhal	UIDSSMT	75	4.15	3.26	0.89	1.15
29	NPP Budaun	Budaun	UIDSSMT	55	5.78	4.51	1.27	0.58
30	NPP Mirzapur	Mirzapur	UIDSSMT	100	6.98	6.46	0.52	0.47
31	NPP Ballia	Ballia	UIDSSMT	40	6.48	4.26	2.22	1.04
32	NPP Rampur	Rampur	State sector	150	9.60	0	9.60	0.00
Total				**8550**	**421.68**	**361.95**	**59.73**	**29.97**

(Source: Director ULB)

Appendix 5.4

Status of civil work of solid waste processing plants sanctioned under SBM (Urban) scheme in the State

(Reference: paragraph 5.2.2)

(₹ in lakh)

Sl. No.	Name of the ULB	Capacity of plant (in TPD)	Financial sanction of civil works		Instalment released			Expenditure	Physical progress (in *per cent*)
			Date	Amount	Date	Amount	Total		
	Civil work not started								
1	NPP Kasganj	50	22.10.2021	675.55	10.12.2021	337.78	337.78	00 .00	00
2	NPP Shamli	50	18.10.2021	383.48	30.10.2021	191.74	191.74	00.00	00
Total		**100**		**1059.03**			**529.52**		
	Civil work stopped due to dispute								
1	NPP Tanda	50	24.11.2021	742.36	03.12.2021	371.18	371.18	45.32	12
	Civil work in progress								
1	NN Firozabad	250	24.11.2021	1710.98	30.11.2021 06.10.2022 13.03.2023	427.75 427.75 427.75	1283.25	1080.00	70
2	NPP Etah	60	08.10.2021	558.68	30.10.2021 13.02.2023	279.34 279.34	558.68	363.73	90
3	NN Ayodhya	140	24.11.2021	1749.98	30.11.2021 25.08.2022 18.01.2023 27.06.2023	437.50 437.50 437.50 350.00	1662.50	1312.47	95
4	NPP Maunath Bhanjan	130	01.12.2021	1407.24	10.12.2021 16.03.2023	351.81 351.81	703.62	351.81	63
5	NN Bareilly	500	12.10.2021	2404.18	11.11.2021 10.03.2022 02.05.2022 13.03.2023	601.05 601.05 601.05 480.84	2283.99	2082.99	95
6	NPP Bahraich	75	24.11.2021	969.53	03.12.2021 27.02.2023	484.77 484.77	969.5	762.21	90
7	NN Gorakhpur	500	09.12.2021	2840.16	15.12.2021 25.02.2023	710.04 710.04	1420.08	1420.08	80
8	NPP Kushinagar	55	12.10.2021	614.77	11.11.2021 25.02.2023	307.39 307.39	614.78	575.48	95
9	NPP Lakhimpur	65	12.10.2021	686.19	11.11.2021 14.11.2022	343.10 343.10	686.20	536.00	78
10	NPP Bhadohi	55	12.10.2021	566.59	03.11.2021	283.30	283.30	215.64	62
11	NPP Kairana	50	12.12.2021	473.97	30.10.2021 22.03.2023	236.99 236.99	473.98	412.15	95
12	NPP Rampur	140	08.12.2021	1568.76	10.12.2021 18.01.2023 22.06.2023	392.19 392.19 392.19	1176.57	1170.26	81
13	NPP Ghazipur	50	01.12.2021	583.52	10.12.2021 09.06.2023	291.76 291.76	583.52	291.76	70
14	NN Jhansi	320	24.11.2021	2762.41	06.01.2022	1709.31 914.99	2624.30	2421.17	98
Total		**2390**		**18896.96**			**15324.27**	**12995.75**	

Sl. No.	Name of the ULB	Capacity of plant (in TPD)	Financial sanction of civil works		Instalment released			Expenditure	Physical progress (in *per cent*)
			Date	Amount	Date	Amount	Total		
	Civil work completed								
1	NN Shahjahanpur	130	24.11.2021	1269.71	03.12.2021 02.05.20222 5.08.2022 15.02.2023	317.43 317.43 317.43 253.94	1206.23	932.11	100
2	NPP Deoria	75	12.10.2021	748.02	11.11.2021 16.01.2023	374.01 374.01	748.02	650.45	100
3	NPP Orai	90	01.12.2021	1094.40	10.12.2021 15.02.2023 14.03.2023 06.06.2023	273.60 273.60 273.60 218.88	1039.68	1018.00	100
4	NPP Gangaghat	50	12.10.2021	516.43	30.10.2021 06.10.2022	258.22 258.22	516.44	425.03	100
5	NPP Chandausi	50	01.12.2021	727.73	10.12.2021 16.01.2023	363.87 363.87	727.74	679.32	100
	Total	**395**		**4356.29**			**4238.11**	**3704.91**	
	Civil work completed and handed over								
1	NPP Hathras	60	12.10.2021	577.06	12.10.2021 25.02.2023	288.53 288.53	577.06	527.00	100
2	NPP Pilibhit	60	12.10.2021	616.51	30.10.2021 23.08.2022	308.26 308.26	616.52	523.84	100
3	NPP Banda	55	01.12.2021	727.71	10.12.2021 03.11.2022	363.86 363.86	727.72	616.59	100
4	NPP Padrauna	50	12.10.2021	504.17	30.10.2021 16.01.2023	252.09 252.09	504.18	504.17	100
5	NPP Lalitpur	75	12.10.2021	808.44	11.11.2021 03.11.2022	404.22 404.22	808.44	808.44	100
6	NPP Farrukhabad	120	12.10.2021	1273.30	30.10.2021 02.05.2022 25.08.2022 03.11.2022 28.06.2023	318.33 318.33 318.33 254.66 63.67	1273.32	1209.65	100
7	NPP Hardoi	50	12.10.2021	511.50	30.10.2021 16.08.2022	255.75 255.75	511.50	511.50	100
8	NPP Unnao	65	12.10.2021	672.57	11.11.2021 18.01.2023	336.29 336.29	672.58	588.38	100
9	NPP Khurja	50	12.10.2021	524.86	30.10.2021 07.10.2022	262.43 262.43	524.86	402.43	100
10	NPP Sikandrabad	50	12.10.2021	526.52	30.10.2021 16.01.2023	263.26 263.26	526.52	360.60	100
11	NPP Khoda Makanpur	90	12.10.2021	783.82	30.10.2021 03.11.2022	391.91 391.91	783.82	695.95	100
12	NPP Nagina	50	12.10.2021	496.73	30.10.2021 25.08.2022	248.37 248.37	496.74	496.73	100
13	NN Saharanpur	320	24.11.2021	2235.57	30.11.2021 02.05.2022 14.11.2022 25.02.2023	558.89 558.89 558.89 447.11	2123.78	2123.79	100
14	NPP Loni Ghaziabad	275	21.10.2020	1728.00	27.05.2021 21.09.2021 30.03.2022 21.07.2022	432.00 432.00 432.00 432.00	1728.00	1686.00	100
	Total	**1370**		**11986.76**			**11875.04**	**11055.07**	
	Grand total						**32338.12**	**27801.05**	

(Source: Director ULB)

Appendix 5.5

Shortcomings noticed in the solid waste processing plant at Shivri, Lucknow

(Reference: Paragraph 5.3.1.1)

Sl. No.	Title of the shortcomings	Details of shortcomings
1	**Deficient capacity of processing plant**	The solid waste processing plant of 1,200 MTD capacity had been established since 2009 located at Shivri in Lucknow city. As per census 2011, the population of Lucknow city was 28.17 lakh and projected population in 2021 was 34.80 lakh, thus, population increased by 6.63 lakh from 2011 to 2021. The estimated quantity of waste generation in the city during 2021-22 was 1,635 ton per day. However, the existing capacity of the plant was not increased due to which quantity of legacy waste was increasing day by day at the plant level. In reply (June 2023), State Government stated that DPR was prepared for legacy waste management and C&DS was in process of issuing the NIT for biomining activities.
2	**Non- maintenance of processing plant by the concessionaire**	As per schedule II (A) (c) of SWM Rules 2016, in case of breakdown or maintenance of plant, waste intake shall be stopped and arrangements be worked out for diversion of waste to the temporary processing site or temporary landfill sites which will be again reprocessed when plant is in order. Clause 6.30.4 of Concession agreement stipulated that the concessionaire shall be responsible for maintaining the project facilities, which shall include but is not limited to all day-to-day maintenance and repairs of the project facility and replacement of equipment/consumables. During joint physical verification of the plant, it was found that most of the machines of the processing plant were in a dilapidated condition, indicating that the firm was negligent towards the maintenance of the plant. In reply (June 2023), State Government stated that several notices were issued against the concessionaire and legal actions would be taken against the same.
3	**Operation of plant against CPCB guidelines**	Rule 19 (5) of SWM Rules 2016 stipulates that the operator of the facility shall be responsible for the safe and environmentally sound operations of the solid waste processing as per the guidelines issued by the CPCB from time to time and the Manual on MSWM published by the MoUD and updated from time to time. During joint physical verification, it was found that leachate treatment sub-plant was not established due to which toxic water was spreading inside the plant and foul odour was diffusing in the entire plant and surrounding areas. In reply (June 2023), State Government stated that several notices were issued against the concessionaire and legal actions would be taken against the same.
4	**New Vehicles/ equipment used without verification**	As per Section II (6.5 & 7.2) of the concessionaire agreement, before using any vehicle, it shall be subject to inspection by the Independent Engineer and shall be used only after obtaining the "Fit for Use" certificate from the Independent Engineer. Audit observed that no inspection was carried out before using any vehicle and equipment, since Independent Engineer was not appointed for the plant.
5	**Non disposal of RDF and INERT**	As per schedule II (A) (d) of SWM Rules 2016, pre-process and post process rejects shall be removed from the processing facility on regular basis and shall not be allowed to pile at the site. Recyclables shall be routed through appropriate vendors. The non-recyclable high calorific fractions to be segregated and sent to waste to energy or for RDF production, co-processing in cement plants or to thermal power plants. Only rejects from all processes shall be sent for sanitary landfill site.

Sl. No.	Title of the shortcomings	Details of shortcomings
		Audit noticed that 7.71 lakh MT of RDF and 3.89 lakh MT of INERT were dumped at the plant area. However, during joint physical verification, it was found that RDF and inert were not being segregated in the plant before being dumped in the plant area. Neither waste to energy plant was established nor RDFwas transported to any cement plant *etc*. Moreover, the facility of sanitary landfill was not available in order to dispose off INERT. Consequently, RDF and INERT could not be disposed off yet.

(Source: NN Lucknow)

Appendix 5.6

Results of Joint Physical Verification of the solid waste processing plant at Shivri, Lucknow

(Reference: Paragraph 5.3.1.1)

- The approach road leading to the plant was not in proper condition.
- The internal road of the processing plant was damaged and soil was swampy due to which the movement of vehicles was not possible.
- Due to the prolonged closure and lack of maintenance, all the machines installed in the plant were deteriorating and rusting day by day.
- The power supply system in the plant was not satisfactory.
- Despite the plant being non-operational, the processing of waste was being shown in the records, due to which the ambiguity of the data was clear in the records.
- Leachate treatment plant was not installed due to which leachate was spreading throughout the plant.
- There was foul odour inside and outside the plant.
- At a distance of about 500 meters from the plant, there was a dumping ground, where waste collected from the city was being dumped.
- INERT and RDF were not in separated form in the plant.
- There was no system to prevent fire in the plant.

(Source: NN Lucknow)

Appendix 5.7

Details of difference between bill submitted and payment to the firm in NN Lucknow

(Reference: Paragraph 5.3.1.1)

Month	As per bill submitted by the firm				After deduction by NN Lucknow			
	Details of bills of tipping fee presented against transportation and processing of waste				Details of bills of tipping fee paid against transportation and processing of waste			
	Collection and transportation charges of waste from all zones	Transportation and processing of waste	Processing charges	Bill amount (₹ in lakh)	Collection and transportation charges of waste from all zones	Transportation and processing of waste	Processing charges	Amount paid (₹ in lakh)
Jan 2018	26047.58	0.00	0.00	417.80	15305.69	10741.69	0.00	332.16
Feb 2018	23738.22	0.00	110.16	381.65	12755.90	10982.32	110.16	293.39
Mar 2018	23101.47	2476.47	1406.24	392.85	14122.60	11455.30	1406.24	321.27
Apr 2018	18567.54	7957.51	1089.54	363.82	11563.20	14961.85	1089.54	307.98
May 2018	21055.51	7018.50	13.11	394.37	11537.83	16536.18	7021.78	283.70
Jun 2018	21584.48	7194.83	2076.74	407.69	10031.00	18748.31	7714.00	277.36
Jul 2018	25519.10	10936.76	380.52	498.19	15269.73	21186.12	9209.09	370.85
Aug 2018	25197.15	8399.05	9703.05	474.07	5957.33	26177.49	8386.91	267.52
Sep 2018	20370.70	6790.23	4630.76	389.18	2240.04	24908.19	7944.75	205.16
Oct 2018	24628.48	8209.50	15.84	461.30	12686.81	20126.03	24621.51	352.34
Nov 2018	20929.06	6976.35	1741.78	394.86	9466.30	18439.11	22235.39	291.24
Dec 2018	14589.56	0.00	12211.67	254.19	7876.58	6712.98	20100.92	189.60
Jan 2019	14857.28	0.00	13709.09	269.21	10728.38	4074.52	30160.79	230.32
Feb 2019	17345.64	0.00	18512.57	308.80	5950.28	11395.36	32272.39	212.03
Mar 2019	16187.49	0.00	18859.00	290.96	7477.92	8709.57	31631.84	215.72
Apr 2019	17213.69	0.00	15775.41	302.16	4767.50	12375.16	29625.89	196.93
May 2019	18192.00	3958.21	13799.17	346.52	4656.92	17493.29	32354.49	232.68
Jun 2019	17539.94	2973.04	15294.04	330.58	3284.40	17228.58	25064.91	199.20
Jul 2019	19056.89	2320.09	18790.62	355.43	8161.89	13575.09	4052.76	211.23
Aug 2019	19532.72	0.00	19927.70	346.22	9452.21	10080.51	3946.04	207.19
Sep 2019	17989.37	0.00	19408.64	320.61	4177.60	13881.77	3739.60	154.89
Oct 2019	17215.04	0.00	15202.62	301.24	3985.98	13229.06	29175.39	190.42
Nov 2019	16788.68	0.00	14920.86	293.94	3724.08	13064.60	3170.96	142.64
Dec 2019	12586.78	773.20	13099.13	229.77	3361.14	9998.84	13229.55	134.37
Jan 2020	15679.79	1216.36	13485.86	283.59	3044.94	13851.21	22786.51	170.32
Feb 2020	14192.30	1191.48	12909.86	258.58	4865.27	10518.51	25464.28	179.55
Mar 2020	14495.14	4831.98	15043.44	296.35	11524.14	7803.76	34371.34	272.66
Apr 2020	13978.40	4659.47	10107.03	278.50	11828.64	6809.23	10107.03	261.36
May 2020	14914.69	4971.56	14668.75	303.57	12157.00	7690.69	14707.31	281.34
Jun 2020	14977.63	4992.54	14981.83	305.27	13053.42	6916.75	14981.83	286.29
Jul 2020	16939.06	5646.35	14765.60	341.64	7750.00	14835.41	14765.60	272.02
Aug 2020	12753.22	4251.07	13980.71	261.95	8060.00	8944.29	25967.63	216.24
Sep 2020	11400.27	9986.76	10906.97	281.45	9008.10	12378.93	26321.00	252.51
Oct 2020	12894.67	5526.29	0.00	251.41	9422.57	8998.38	0.00	193.30

Month	As per bill submitted by the firm				After deduction by NN Lucknow			
	Details of bills of tipping fee presented against transportation and processing of waste				Details of bills of tipping fee paid against transportation and processing of waste			
	Collection and transportation charges of waste from all zones	Transportation and processing of waste	Processing charges	Bill amount (₹ in lakh)	Collection and transportation charges of waste from all zones	Transportation and processing of waste	Processing charges	Amount paid (₹ in lakh)
Nov 2020	20500.86	0.00	13245.10	350.71	9938.28	10562.58	25309.47	252.57
Dec 2020	27907.97	0.00	8045.03	460.93	17019.74	10888.23	30140.00	364.53
Jan 2021	28474.84	0.00	10821.16	474.61	22477.37	5678.79	11355.78	425.11
Feb 2021	27583.37	0.00	12362.75	463.03	21370.23	5711.03	39946.12	409.53
Mar 2021	29911.16	0.00	19136.90	513.04	21746.69	6907.09	50048.06	439.88
Apr 2021	28950.59	0.00	66146.09	573.63	19339.02	7781.70	95096.68	485.26
May 2021	31732.25	0.00	64780.66	617.64	22192.34	7291.08	97513.00	527.16
Jun 2021	33424.08	0.00	49950.00	563.45	29123.80	4289.08	49950.00	529.07
Jul 2021	36885.54	0.00	3999.00	596.77	31887.14	4998.40	15214.10	516.00
Aug 2021	36463.94	1982.24	36608.00	585.11	34008.14	2455.77	15405.00	530.52
Sep 2021	39220.78	0.00	50958.00	648.56	33432.77	5788.39	50998.00	602.41
Oct 2021	42030.86	0.00	11472.85	693.13	36753.47	5277.25	53503.71	651.05
Nov 2021	38291.29	0.00	10820.15	632.06	34672.91	3618.36	0.00	522.10
Dec 2021	40806.76	0.00	45963.10	730.46	34309.58	6497.19	0.00	535.34
Jan 2022	42427.95	0.00	7171.61	692.39	33200.38	9227.57	0.00	536.90
Feb 2022	49950.32	0.00	0.00	801.20	46487.68	3462.64	0.00	691.09
Mar 2022	50440.75	0.00	47918.71	804.90	46758.67	3682.08	0.00	696.40
Total	**1217062.85**	**125239.84**	**810927.42**	**21589.34**	**783973.60**	**548946.31**	**1072217.35**	**16920.70**

(Source: bills of EEPL processed for payment by NN Lucknow)

Appendix 5.8

Details of doubtful payments to the firm for processing of solid waste

(Reference: Paragraph 5.3.1.1)

Period	Quantity of the waste (in MT)	Rate per MT (in ₹)	Payment (in ₹)
01.09.2019 to 30.09.2019	3739.601	165.18	617707.29
01.10.2019 to 31.10.2019	29175.394	165.18	4817274.17
01.11.2019 to 30.11.2019	3170.964	165.18	523779.83
01.12.2019 to 31.12.2019	13229.555	165.18	2185257.89
01.01.2020 to 31.01.2020	22786.508	165.18	3763875.39
01.02.2020 to 29.02.2020	25464.276	165.18	4206189.00
01.03.2020 to 31.03.2020	34371.34	165.18	5677457.94
01.04.2020 to 30.04.2020	28744.9	165.18	4748082.58
01.05.2020 to 31.05.2020	34555	165.18	5707794.90
01.06.2020 to 30.06.2020	34952	165.18	5773371.36
01.07.2020 to 31.07.2020	37351.01	165.18	6169639.83
01.08.2020 to 31.08.2020	25967.632	165.18	4289333.45
01.09.2020 to 30.09.2020	26321.895	165.18	4347851.00
Total	**319830.075**	**Total**	**52827614.63**

(Source: NN Lucknow)

Appendix 5.9

Significant deficiencies noticed during Joint Physical Verification of the solid waste processing plant at Kanpur

(Reference: Paragraph 5.3.2)

1. Leachate treatment plant was not established in the plant area due to which the leachate was spreading throughout the plant area.
2. The boundary wall was constructed on only two sides of the plant area, due to which stray animals were wandering in the plant area.
3. The mixed waste was being dumped at the plant level.
4. RDF was dumped at the plant area but no action was taken for disposal.

(Source: NN Kanpur)

Appendix 5.10

Insufficient land allocated to ULBs for SWM against requirement

(Reference: Paragraph 5.4.1.2)

Sl No	Name of ULB	Population as per census 2011[12]	Requirement of land for (hectare)			Availability of land (hectare)	Percentage of shortage of land against requirement
			Processing plant	SLF	Total		
Nagar Palika Parishads							
1	NPP Bulandshahr	222519	2.23	5.56	7.79	2.24	71
2	NPP Pilibhit	130428	1.3	3.26	4.3	4.06	6
3	NPP Shamli	107233	1.07	3	4.07	1.62	60
4	NPP Deoband Saharanpur	97037	1	4	5	0.61	88
5	NPP Shahabad Hardoi	80305	1	4	5	0.86	83
6	NPP Mahmudabad Sitapur	50777	1	4	5	0.67	87
7	NPP Loni Ghaziabad	516082	5.16	7.74	13.16	8.29	37
8	NPP Sikandra Rao Hathras	46155	1	4	5	1.00	80
9	NPP Hathras	143339	1.43	4	5.43	4.04	26
10	NPP Etah	118517	1.19	3	4.19	2.04	51
11	NPP Mahoba	95454	1	4	5	1.72	65
12	NPP Deoria	129479	1.29	3	4.29	1.59	63
13	NPP Ramnagar Varanasi	49132	1	4	5	0.166	97
14	NPP Dataganj Budaun	26279	1	4	5	0.822	84
15	NPP Utraula Balrampur	32171	1	4	5	0.1250	98
16	NPP Auraiya	87785	1	4	5	1.2000	76
17	NPP Chitrakootdham Karwi Chitrakoot	89677	1	4	5	4.371	13
18	NPP Baheri Bareilly	68413	1	4	5	1.007	80
Nagar Panchayats							
1	NP Bithoor Kanpur Nagar	11298	1	4	5	0.42	92
2	NP Baldeo Mathura	13559	1	4	5	2.53	49
3	NP Khanpur Bulandshahar	17252	1	4	5	0.45	91
4	NP Jahanabad Pilibhit	14328	1	4	5	0.54	89
5	NP Katra Sahjahanpur	32430	1	4	5	0.74	85
6	NP Kaptanganj Kushinagar	23526	1	4	5	1.74	65
7	NP Saidpur Ghazipur	24438	1	4	5	0.6	88
8	NP Jewar GB Nagar	32269	1	4	5	1.486	70
9	NP Tikri Bagpat	14099	1	4	5	0.3	94
10	NP Kulpahar Mahoba	20108	1	4	5	1.00	80
11	NP Jiyanpur Azamgarh	11348	1	4	5	0.671	87
12	NP Rudhauli Bazar Basti	20165	1	4	5	0.253	95
13	NP Usawan Budaun	13327	1	4	5	2.638	47
14	NP Sahaspur Bijnor	24511	1	4	5	0.506	90
15	NP Jhalu Bijnor	21010	1	4	5	0.845	83
16	NP Jarwal Baharaich	19942	1	4	5	0.500	90
17	NP Anandnagar Mahrajganj	10113	1	4	5	0.201	96
18	NP Rajapur Chitrakoot	13439	1	4	5	1.000	80

(Source: Test-checked ULBs)

[12] Population given in ***Appendix 8***

Appendix 5.11

Details of ULBs in which more than five TPD solid waste generated

(Reference: Paragraph 5.4.1.4)

Sl. No	Name of ULB	District	Availability of land for solid waste management project (Yes/No)	Availability of processing facility (Yes/No)	Waste Generation of the year 2021-22 (Qty. in TPD)
1	NN Lucknow	Lucknow	Yes	Yes	1634.84
2	NN Ghaziabad	Ghaziabad	Yes	Yes	1280
3	NN Kanpur	Kanpur Nagar	Yes	Yes	1370
4	NPP Raebareli	Raebareli	Yes	Yes	70
5	NPP Baheri	Bareilly	Yes	No	23.9
6	NPP Dataganj	Budaun	Yes	No	9.19
7	NPP Auraiya	Auraiya	Yes	No	24
8	NPP Utraula	Balrampur	Yes	No	9.06
9	NPP Chitrakootdham Karwi	Chitrakoot	Yes	No	15.78
10	NPP Muzaffarnagar	Muzaffarnagar	Yes	Yes	170
11	NPP Loni	Ghaziabad	Yes	No	310
12	NPP Sikandara Rao	Hathras	Yes	No	19.87
13	NPP Hathras	Hathras	Yes	No	74
14	NPP Etah	Etah	Yes	No	49.77
15	NPP Mahoba	Mahoba	Yes	No	37.11
16	NPP Deoria	Deoria	Yes	No	60
17	NPP Ramnagar	Varanasi	Yes	No	20
18	NPP Bulandshahar	Bulandshahar	Yes	No	90
19	NPP Pilibhit	Pilibhit	Yes	No	47.74
20	NPP Shamli	Shamli	Yes	No	36
21	NPP Deoband	Saharanpur	Yes	No	50
22	NPP Shahabad	Hardoi	Yes	No	26.1
23	NPP Mahmudabad,	Sitapur	Yes	No	19.55
24	NP Jhalu	Bijnor	Yes	No	5.34
25	NP Sahaspur	Bijnor	Yes	No	6.8
26	NP Anandnagar	Maharajganj	Yes	No	7.78
27	NP Usawan	Badau	Yes	No	5.22
28	NP Jewar	G B nagar	Yes	No	10.37
29	NP Tikri	Bagpat	Yes	No	5
30	NP Kulpahar	Mahoba	Yes	No	7.2
31	NP Reoti	Ballia	Yes	Yes	8
32	NP Katra	Shahjahanpur	Yes	No	9.42
33	NP Saidpur	Ghazipur	Yes	No	9.9
34	NP Khanpur	Bulandshahar	Yes	No	5.3
35	NP Bilsanda	Pilibhit	No	No	6.77
36	NP Kaptanganj	Kushinagar	Yes	No	7.32

(Source: Test-checked ULBs)

Appendix 5.12

Status of legacy waste of 72 ULBs of the State

(Reference: Paragraph 5.4.2)

SI. No.	Division	District	ULB	Population (as per 2011 census)	Quantity of legacy waste (in MT)
1	Lucknow	Lucknow	NN Lucknow	2817105	650000
2	Kanpur	Kanpur Nagar	NN Kanpur	2765348	900000
3	Meerut	Ghaziabad	NN Ghaziabad	1643000	400000
4	Agra	Agra	NN Agra	1576138	600000
5	Meerut	Meerut	NN Meerut	1305429	50000
6	Varanasi	Varanasi	NN Varanasi	1201198	275000
7	Prayagraj	Prayagraj	NN Prayagraj	1142718	500000
8	Bareilly	Bareilly	NN Bareilly	938985	406975
9	Moradabad	Moradabad	NN Moradabad	887267	280000
10	Aligarh	Aligarh	NN Aligarh	874408	131424
11	Saharanpur	Saharanpur	NN Saharanpur	701401	200000
12	Agra	Firozabad	NN Firozabad	603797	135000
13	Meerut	Ghaziabad	NPP Loni	512296	72000
14	Jhansi	Jhansi	NN Jhansi	505693	500000
15	Agra	Mathura	NN Mathura &Vrindavan	411570	180000
16	Saharanpur	Muzaffarnagar	NPP Muzaffarnagar	367133	220400
17	Bareilly	Shahjahanpur	NN Shahjahanpur	344819	60000
18	Moradabad	Rampur	NPP Rampur	320573	500000
19	Azamgarh	Mau	NPP Maunath Bhanjan	278745	5000
20	Kanpur	Etawah	NPP Etawah	256790	16000
21	Mirzapur	Mirzapur	NPP Mirzapur	234170	6705
22	Meerut	Bulandsahar	NPP Bulandsahar	222519	10000
23	Moradabad	Sambhal	NPP Sambhal	221364	95000
24	Ayodhya	Ayodhya	NN Ayodhya	221330	77760
25	Meerut	Hapur	NPP Hapur	211983	72000
26	Moradabad	Amroha	NPP Amroha	197135	150000
27	Prayagraj	Fatehpur	NPP Fatehpur	193801	34000
28	Lucknow	Raebareli	NPP Raebareilly	191056	438000
29	Devipatan	Bahraich	NPP Bahraich	187188	35000
30	Varanasi	Jaunpur	NPP Jaunpur	181009	31025
31	Lucknow	Unnao	NPP Unnao	177658	160000
32	Bareilly	Budaun	NPP Badaun	159221	245280
33	Chitrakoot	Banda	NPP Banda	154428	16425
34	Jhansi	Jalaun	NPP Orai	139318	10000
35	Agra	Mainpuri	NPP Mainpuri	135284	10080
36	Jhansi	Lalitpur	NPP Lalitpur	133041	90000

SI. No.	Division	District	ULB	Population (as per 2011 census)	Quantity of legacy waste (in MT)
37	Meerut	Ghaziabad	NPP Modinagar	130325	10000
38	Aligarh	Hathras	NPP Hathras	126355	132300
39	Aligarh	Etah	NPP Etah	118517	34646
40	Basti	Basti	NPP Basti	114657	20000
41	Moradabad	Sambhal	NPP Chandausi	114254	4260
42	Ayodhya	Ambedkar Nagar	NPP Akbarpur	111594	9275
43	Varanasi	Ghazipur	NPP Ghazipur	110698	4500
44	Azamgarh	Azamgarh	NPP Azamgarh	110000	25603
45	Ayodhya	Sultanpur	NPP Sultanpur	107914	16650
46	Agra	Firozabad	NPP Shikohabad	107300	25850
47	Saharanpur	Shamli	NPP Shamli	107233	22000
48	Azamgarh	Ballia	NPP Ballia	104425	18883
49	Meerut	Bagpat	NPP Baraut	103764	12000
50	Meerut	Bulandsahar	NPP Sikandrabad	97379	51935
51	Chitrakoot	Mahoba	NPP Mahoba	95454	10000
52	Meerut	Ghaziabad	NPP Muradnagar	95074	10000
53	Meerut	GB Nagar	NPP Dadri	91189	175200
54	Lucknow	Hardoi	NPP Shahabad	80226	7300
55	Meerut	Bulandsahar	NPP Jahangirabad	59858	12000
56	Moradabad	Bagpat	NPP Khekada	48753	14600
57	Meerut	Hapur	NPP Garhmukhteshwar	46059	33778
58	Moradabad	Moradabad	NPP Thakurdwara	44069	15703
59	Saharanpur	Muzaffarnagar	NP Budhana	39867	25000
60	Moradabad	Amroha	NPP Dhanaura	29971	38333
61	Saharanpur	Muzaffarnagar	NP Mirzapur	29283	13000
62	Meerut	Bulandsahar	NPP Anupshahr	29082	38220
63	Saharanpur	Muzaffarnagar	NP Purquazi	27516	12000
64	Lucknow	Hardoi	NPP Sandi	26112	13000
65	Jhansi	Jhansi	NPP BaruaSagar	25086	8322
66	Azamgarh	Ballia	NP Belthara Road	20404	6500
67	Saharanpur	Muzaffarnagar	NP Bhokarhedi	17829	14000
68	Lucknow	Hardoi	NP KachhaunaPatseni	15647	20800
69	Meerut	Bulandsahar	NP Bugrasi	15008	8600
70	Basti	Siddharth Nagar	NP Barhani Bazar	14492	7000
71	Meerut	Bagpat	NP Tikri	13976	12500
72	Meerut	GB Nagar	NP Dankaur	12999	10950
Total					**8457782**

(Source: Director ULB)

Appendix 5.13

Status of bio-remediation in 20 ULBs

(Reference: Paragraph 5.4.2)

Sl No	Name of ULB	District	Estimated quantity of legacy waste (MT)	Agreement cost (₹ in crore)	Selected firm for remediation of legacy waste	Stipulated period for work commencement and completion		Physical progress (in *per cent*) (up to August 2022)	Paid amount (₹ in Crore) (up to August 2022)
						Date of work start	Date of work completion		
1	NPP Muzaffarnagar	Muzaffarnagar	224655	9.86	M/S Environmental Techno, Agra & M/S Daya Charan and company, New Delhi	5.1.22	4.9.22	30	00
2	NPP Mainpuri	Mainpuri	173343	8.06	M/S Environmental Techno, Agra & M/S Daya Charan and company, New Delhi	5.1.22	4.7.22	50	1.84
3	NPP Unnao	Unnao	42532	2.21	M/S Rekart Innovations Pvt Ltd Gurugram & M/S Hind Agro & Chemicals Kolhapur	5.1.22	4.5.22	80	00
4	NPP Hathras	Hathras	77184	3.67	M/S Environmental Techno, Agra & M/S Daya Charan and company, New Delhi	1.1.22	1.6.22	55	00
5	NPP Ballia	Balia	337715	15.20	M/S BVG India Ltd. Pune	7.1.22	6.12.22	0	0
6	NPP Lalitpur	Lalitpur	51739	2.79	M/S SR Map Technologies Gwalior & M/S Samarth Softech Solutions Pvt. Ltd. Mumbai	5.1.22	4.7.22	25	0
7	NPP Etawah	Etawah	81314	4.68	M/S SR Map Technologies Gwalior & M/S Samarth Softech Solutions Pvt. Ltd. Mumbai	5.1.22	4.8.22	25	0
8	NPP Raebareli	Raebareli	62770	3.08	M/S Rekart Innovations Pvt Ltd Gurugram & M/S Hind Agro & Chemicals Kolhapur	5.1.22	4.7.22	35	0
9	NPP Fatehpur	Fatehpur	41205	1.80	M/S Ecostan Infra Pvt Ltd Noida & M/S Om Sai Ventures Banglore	5.1.22	4.5.22	65	0

Sl No	Name of ULB	District	Estimated quantity of legacy waste (MT)	Agreement cost (₹ in crore)	Selected firm for remediation of legacy waste	Stipulated period for work commencement and completion		Physical progress (in *per cent*) (up to August 2022)	Paid amount (₹ in Crore) (up to August 2022)
						Date of work start	Date of work completion		
10	NPP Etah	Etah	88726	4.21	M/S Environmental Techno, Agra & M/S Daya Charan and company, New Delhi	5.1.22	4.7.22	35	1.38
11	NPP Hapur	Hapur	85171	3.37	M/S Ecostan Infra Pvt Ltd Noida & M/S Om Sai Ventures Banglore	5.1.22	4.8.22	45	00
12	NPP Amroha	Amroha	49061	1.67	M/S FR Engimech , Ahmadabad & M/S 3R Management Private Ltd.	6.1.22	5.6.22	68	1.04
13	NPP Sambhal	Sambhal	49061	1.84	M/S FR Engimech , Ahmadabad & M/S 3R Management Private Ltd.	5.1.22	4.8.22	5	0
14	NPP Budaun	Budaun	46247	1.93	M/S Saipro Infrastructure Pune	28.3.22	27.7.22	10	0
15	NPP Rampur	Rampur	163823	8.03	M/S Environmental Techno, Agra & M/S Daya Charan and company, New Delhi	17.3.22	16.9.22	42	0
16	NPP Pilibhit	Pilibhit	38645	1.77	M/S Puja Consultation Company Sonipat Haryana	27.3.22	26.7.22	76	00
17	NPP Mirzapur	Mirzapur	8804	0.28	M/S MJ Greens Infra Pvt. Ltd Pratapgarph & M/S Ecostan Infra Pvt Ltd Noida	28.3.22	27.6.22	75	00
18	NPP Kannoj	Kannaoj	33385	1.82.	Not provided by the unit	5.7.22	4.11.22	5	0
19	NPP Bahraich	Bahraich	30139	Firm not selected					
20	NPP Sitapur	Sitapur	20882	Firm not selected					

(Source: Director ULB and C&DS UP Jal Nigam)

Appendix 6.1

Details of occupier/operator for BMW in the State during 2017-21

(Reference: Paragraph 6.1.2)

Year	Total number of occupiers	Total number of operators of CBWTF plant	Total number of occupiers in operation without applying for authorization or whose application rejected	Percentage of unauthorized occupier
2017	12876	17	5232	41
2018	16075	18	6840	43
2019	25602	18	4950	19
2020	31474	21	5444	17
2021	37927	22	6772	18

(Source: UPPCB)

Appendix 6.2

Details of generation and disposal of BMW in the State

(Reference: Paragraph 6.1.3)

(Quantity kg/day)

Calendar Year	Generation	Disposal	Balance for disposal
2016	37655	36422	1233
2017	43554	42603	951
2018	46401	46401	0
2019	52500	52500	0
2020	64038	64038	0
2021	71264	71264	0

(Source: UPPCB)

Appendix 6.3

Details of manufacturer, refurbisher, collection centres, dismantlers and recyclers for management of e-waste in the State

(Reference: Paragraph 6.2)

Year	Total number of units established in the state	Total number of registered units	Total number of not registered units	Percentage of units not registered
2017	30	24	06	20
2018	43	37	06	14
2019	59	45	14	24
2020	68	59	09	13
2021	116	116	0	0

(Source: UPPCB)

Appendix 6.4

Details of estimated generation and recycling of plastic waste in the State

(Reference: Paragraph 6.3)

Year	Estimated plastic waste generation per year (in MT)	Plastic waste recycled per year (in MT)	Plastic waste generation per day (in MT)	Capacity of available disposal infrastructure (in TPD)
2016-17	152492.64	NIL	417.78	Not Available
2017-18	206733.45	NIL	566.39	Not Available
2018-19	254401.80	NIL	696.98	Not Available
2019-20	161147.50	159600	441.50	693
2020-21	375950.00	263712.5	1030	722.5
Total	**1150725.40**	**423312.5**		

(Source: UPPCB)

Appendix 6.5

Details of prohibited thermocol/plastic /carry bag seized in ULBs

(Reference: Paragraph 6.3.1)

Sl. No.	Name of ULB	Year	Seized quantity (in Kg)	Penalty recovered (in ₹.)	Disposed quantity (in Kg)	Method of disposl	Undisposed quantity (in Kg)
1	NN Lucknow	2018-22	51210	9551310	51210	Sent to LDA for road construction/cement factory	Nil
2	NN Ghaziabad	upto-2022	142697.09	14195190	142697	used in road construction	0.09
3	NN Kanpur	2016-22	79914.09	4901800	0	No disposal	79914.09
4	NPP Raebareli	2018-22	187	89000	187	Not provided	Nil
5	NPP Baheri Bareilly	2019-22	133.7	170460	133.7	Transferred to NN Bareilly	Nil
6	NPP Dataganj Budaun	2018-22	39.99	83200	0	No disposal	39.99
7	NPP Utraula Balrampur	2019-20	12	12000	12	Transferred to NN Ayodhya	Nil
8	NPP Loni Ghaziabad	2016-22	243.565	672450	243.565	Transferred to NN Ghaziabad	Nil
9	NPP Sikandara Rao Hathras	2016-22	326.3	269250	326.3	Burnt	Nil
10	NPP Hathras	2016-22	749.5	67800	749.5	Transferred to NN Aligarh	Nil
11	NPP Etah	2016-22	4762.3	602000	0	No disposal	4762.3
12	NPP Mahoba	2019-20	153.16	58000	153.16	Transferred to Satna Cement Factory	Nil
13	NPP Deoria	upto-2022	45.6	116800	0	No disposal	45.6
14	NPP Ramnagar Varanasi	2016-22	8.95	66000	0	No disposal	8.95
15	NPP Bulandshahr	2021-22	42.8	0	1.2	Not provided	41.6
16	NPP Muzaffarnagar	2018-22	824.74	486500	0	No disposal	824.74
17	NPP Auraiya	2018-19	15.69	107200	0	No disposal	15.69
18	NPP Chitrakootdham Karwi Chitrakoot	2018-19	0[13]	50000	0	Burried	Nil
19	NP Jhalu Bijnore	2018-22	60.6	35000	60.6	Transferred to NPP Bijnore	Nil
20	NP Sahaspur Bijnore	2018-22	48.98	70760	48.98	Transferred to NPP Bijnore	Nil
21	NP Jarwal Bahraich	2018-21	2.33	23250	0	No disposal	2.33
22	NP Anand Nagar Mahrajganj	2018-22	41.32	98000	0	No disposal	41.32
23	NP Rajapur Chitrakoot	2018-22	291.05	47900	291.05	Transferred to Nodal NPP	Nil

[13] In NPP Chitrakootdham Karwi Chitrakoot, 38 bundle of prohibited plastic cup and 118 bags of thermocol items were seized and burried in the ground.

Sl. No.	Name of ULB	Year	Seized quantity (in Kg)	Penalty recovered (in ₹.)	Disposed quantity (in Kg)	Method of disposl	Undisposed quantity (in Kg)
24	NP Usawan Budaun	2019-22	0.35	3500	0.35	Transferred to NPP Badaun	Nil
25	NP Bakewar Etawah	2018-19	5	15500	5	Transferred to NPP Etawah	Nil
26	NP Tikri Bagpat	2016-22	5.6	5350	5.6	Transferred to NPP Bagpat	Nil
27	NP Jewar G B Nagar	2016-22	3600	98500	3550	Transferred to NPP Dadri	50
28	NP Kulpahar Mahoba	upto-2022	31.37	121000	28.66	Not provided	2.71
29	NP Rudhauli Bazar Basti	upto-2022	145.02	157500	0	No disposal	145.02
30	NP Jiyanpur Azamgarh	2016-22	37.5	12000	0	No disposal	37.5
31	NP Chitbaragaon Ballia	2016-22	4.5	3100	4.5	Transferred to NPP Azamgarh	Nil
32	NP Reoti Ballia	2016-22	14.9	15000	0	No disposal	14.9
33	NP Khanpur Bulandshahr	2017-22	147.3	119200	147.3	Transfer to NPP Bulandshahr	Nil
34	NP Jahanabad Pilibhit	2021-22	1.2	0	1.2	Transferred to NN Bareilly	Nil
35	NP Bilsanda Pilibhit	2019-22	9000	0	0	No disposal	9000
36	NP Saidpur Gazipur	2019-22	4020	88000	4020	Transferred to NPP Gazipur	Nil
Total			**298823.495**	**32412520**	**203876.67**		**94946.83**
							Say 94.95 MT

(Source: Test-checked ULBs)

Appendix 6.6

Status of establishment of C&D waste processing plant

(Reference: Paragraph 6.4.3)

Sl. No.	Name of ULB	Capacity of C&D waste plant (in MT)	Approved cost (₹ in crore)
1	NN Aligarh	100	5.51
2	NN Meerut	100	5.51
3	NN Moradabad	100	5.51
4	NN Gorakhpur	50	2.65
5	NN Mathura	50	2.65
6	NN Firozabad	50	2.39
7	NN Jhansi	50	2.39
8	NN Ayodhya	20	1.91
9	NN Kanpur	200	7.95
Total		**720**	**36.47**

(Source: Director ULB)

Appendix 7.1

Pollution control norms

(Reference: Paragraph 7.4)

Schedule I (D) of SWM Rules 2016: Criteria for pollution prevention: In order to prevent pollution from landfill operations, the following provisions shall be made, namely:-
(i) The storm water drain shall be designed and constructed in such a way that the surface runoff water is diverted from the landfilling site and leachets from solid waste locations do not get mixed with the surface runoff water. Provisions for diversion of storm water discharge drains shall be made to minimise leachet generation and prevent pollution of surface water and also for avoiding flooding and creation of marshy conditions. (ii) Non-permeable lining system at the base and walls of waste disposal area. For landfill receiving residues of waste processing facilities or mixed waste or waste having contamination of hazardous materials (such as aerosols, bleaches, polishes, batteries, waste oils, paint products and pesticides) shall have liner of composite barrier of 1.5 mm thick high density polyethylene (HDPE) geo-membrane or geo-synthetic liners or equivalent. Overlying 90 cm of soil (clay or amended soil) having permeability coefficient not greater than $1x10^{-7}$ cm/sec. The highest level of water lable shall be at least two meter below the base of clay or amended soil barrier layer provided at the bottom of landfills. (iii) Provisions for management of leachets including its collection and treatment shall be made. The treated leachet shall be recycled or utilized as permitted, otherwise shall be released into the sewerage line, after meeting the standards specified in schedule-II. In no case, leachet shall be released into open environment. (iv) Arrangement shall be made to prevent leachet runoff from landfill area entering any drain, stream, river, lake or pond. In case of mixing of runoff water with leachet or solid waste, the entire mixed water shall be treated by the concern authority.
Schedule I (E) of SWM Rules 2016: Criteria for water quality monitoring:
(i) Before establishing any landfill site, baseline data of ground water quality in the area shall be collected and kept in record for future reference. The ground water quality within 50 meter of the periphery of landfill site shall be periodically monitored covering different seasons in a year that is, summer, monsoon and post-monsoon period to ensure that the ground water is not contaminated. (ii) Usage of groundwater in and around landfill sites for any purpose (including drinking and irrigation) shall be considered only after ensuring its quality.
Schedule I (F) of SWM Rules 2016: Criteria for ambient air quality monitoring:
(i) Landfill gas control system including gas collection system shall be installed at landfill site to minimize odour, prevent off-site migration of gases, to protect vegetation planted on the rehabilitated landfill surface. For enhancing landfill gas recovery, use of geo membranes in cover systems along with gas collection wells should be considered. (ii) The concentration of methane gas generated at landfill site shall not exceed 25 *per cent* of the lower explosive limit. (iii) The landfill gas from the collection facility at a landfill site shall be utilized for either direct thermal applications or power generation, as per viability. Otherwise, landfill gas shall be burnt (flared) and shall not be allowed to escape directly to the atmosphere or for illegal tapping. Passive venting shall be allowed in case if its utilisation or flaring is not possible. (iv) Ambient air quality at the landfill site and at the vicinity shall be regularly monitored. Ambient air quality shall meet the standards prescribed by the Central Pollution Control Board for Industrial area.

(Source: SWM Rule 2016)

Appendix 8

Projected population in test-checked ULBs[14] adopting incremental increase method as per section 1.4.5.1.2 of MSWM Manual 2016

(Reference: Paragraph 2.9.1, Appendix 4.10, Appendix 4.11, Appendix 4.12 and Appendix 5.10)

S. N.	Name of ULBs	Population				Average of increase in population (x)	Incremental increase in population (y)	Projected population					
		1981	1991	2001	2011			2016 (Population of 2011+0.5*x+ 0.5*(0.5+1)/ 2*y)	2017 (Population of 2011+0.6*x+ 0.6*(0.6+1)/ 2*y)	2018 (Population of 2011+0.7*x+ 0.7*(0.7+1)/ 2*y)	2019 (Population of 2011+0.8*x+ 0.8*(0.8+1)/ 2*y)	2020 (Population of 2011+0.9*x+ 0.9*(0.9+1)/ 2*y)	2021 (Population of 2011+n*x+n*(n+1)/2*y)
1	NN Kanpur	1486522	1879420	2551337	2765348	426275	-89444	2944944	2978180	3010521	3041968	3072521	3102179
2	NN Lucknow	947990	1619115	2185927	2817105	623038	-19974	3121134	3181340	3241347	3301154	3360761	3420169
3	NN Ghaziabad	275815	454156	968256	1648643	457609	251023	1971581	2043699	2118328	2195467	2275116	2357275
4	NPP Loni Ghaziabad	10259	36561	120945	516082	168608	184418	669543	705767	743836	783749	825507	869108
5	NPP Muzaffarnagar	171816	247624	331668	392454	73546	-7511	426410	432976	439467	445883	452223	458489
6	NPP Bulandshahr	103436	127201	176425	222519	39694	11165	246553	251695	256948	262313	267790	273378
7	NPP Raebareli	89697	129904	169333	191316	33873	-9112	204836	207266	209605	211854	214011	216077
8	NPP Hathras	92962	113285	126355	143339	16792	-1670	151109	152613	154100	155570	157024	158461
9	NPP Deoria	55720	82168	104227	129479	24586	-598	141548	143944	146333	148717	151095	153467
10	NPP Pilibhit	88548	106605	124245	127988	13147	-7157	131878	132441	132932	133353	133701	133978
11	NPP Etah	53784	78458	107110	118517	21578	-6634	126818	128279	129674	131003	132265	133461
12	NPP Shamli	51850	70853	90055	107266	18472	-896	116166	117919	119663	121398	123125	124842
13	NPP Deoband Saharanpur	51270	66208	81641	97037	15256	229	104751	106301	107852	109407	110963	112522
14	NPP Mahoba	39262	56247	78782	95454	18731	-157	104761	106617	108472	110326	112178	114028
15	NPP Auraiya	35815	50772	64740	87877	17354	4090	98088	100253	102458	104705	106993	109321
16	NPP Shahabad Hardoi	43386	53657	67751	80305	12306	1142	86886	88237	89599	90972	92357	93753
17	NPP Baheri Bareilly	29680	46008	58492	68744	13021	-3038	74115	75098	76051	76973	77865	78727
18	NPP Chitrakootdham Karwi Chitrakoot	27465	37595	48892	57402	9979	-810	62088	63001	63905	64802	65691	66571
19	NPP Mahmudabad	15945	32606	41920	50777	11611	-3902	55119	55871	56583	57256	57891	58486

[14] NP Usawan Badayun, NP Bakewar Etawah, NP Jahanabad Pilibhit and NP Rudauli Bazar Bast were newly constituted, hence, these ULBs are excluded from the appendix.

S. N.	Name of ULBs	Population				Average of increase in population (x)	Incremental increase in population (y)	Projected population					
		1981	1991	2001	2011			2016 (Population of 2011+0.5*x+ 0.5*(0.5+1)/ 2*y)	2017 (Population of 2011+0.6*x+ 0.6*(0.6+1)/ 2*y)	2018 (Population of 2011+0.7*x+ 0.7*(0.7+1)/ 2*y)	2019 (Population of 2011+0.8*x+ 0.8*(0.8+1)/ 2*y)	2020 (Population of 2011+0.9*x+ 0.9*(0.9+1)/ 2*y)	2021 (Population of 2011+n*x+n*(n+1)/2*y)
	Sitapur												
20	NPP Ramnagar Varanasi	23297	30116	40619	49132	8612	847	53756	54706	55664	56631	57607	58591
21	NPP Sikandra Rao Hathras	21659	29823	37938	46155	8165	27	50248	51067	51887	52706	53527	54347
22	NPP Utraula Balarampr	17593	24950	27502	32171	4859	-1344	34097	34441	34773	35091	35395	35686
23	Npp Dataganj Budaun	11088	15402	21685	26279	5064	140	28864	29385	29907	30431	30956	31483
24	NP Katra Sahjahanpur	14204	19187	26367	32430	6075	540	35670	36334	37004	37679	38359	39045
25	NP Saidpur Ghazipur	12937	18217	21568	24438	3834	-1205	25903	26160	26405	26638	26858	27067
26	NP Kaptanganj Kushinagar	7677	9525	11494	23526	5283	5092	28077	29140	30254	31419	32634	33901
27	NP Khanpur Bulandshahr	8311	11093	12789	17252	2980	841	19057	19444	19838	20242	20653	21073
28	NP Bilsanda Pilibhit	7137	9141	13472	16047	2970	286	17639	17966	18296	18629	18965	19303
29	NP Baldeo Mathura	6256	7709	9684	13559	2434	1211	15230	15601	15983	16378	16785	17204
30	NP Bithoor Kanpur Nagar	5318	7444	9652	11298	1993	-240	12205	12379	12550	12720	12887	13051
31	NP Tikari Bagpat	11315	12784	13427	14099	928	-399	14413	14464	14511	14554	14593	14628
32	NP Kulpahar Mahoba	11515	13814	17442	20108	2864	184	21609	21915	22222	22532	22843	23156
33	NP Jiyanpur Azamgarh	5246	7314	10305	11348	2034	-513	12173	12322	12467	12606	12740	12869
34	NP Jewar G.B. Nagar	15275	21376	27016	32269	5665	-424	34943	35464	35982	36496	37005	37510
35	NP Reoti Ballia	14384	17978	22082	26359	3992	342	28483	28918	29357	29799	30244	30693
36	NP Chitbadagaon Ballia	14885	16690	20229	21879	2331	-78	23015	23240	23464	23688	23910	24132

S. N.	Name of ULBs	Population				Average of increase in population (x)	Incremental increase in population (y)	Projected population					
		1981	1991	2001	2011			2016 (Population of 2011+0.5*x+ 0.5*(0.5+1)/ 2*y)	2017 (Population of 2011+0.6*x+ 0.6*(0.6+1)/ 2*y)	2018 (Population of 2011+0.7*x+ 0.7*(0.7+1)/ 2*y)	2019 (Population of 2011+0.8*x+ 0.8*(0.8+1)/ 2*y)	2020 (Population of 2011+0.9*x+ 0.9*(0.9+1)/ 2*y)	2021 (Population of 2011+n*x+n*(n+1)/2*y)
37	NP Jhalu Bijnor	12461	14808	18704	21010	2850	-21	22427	22710	22993	23275	23557	23839
38	NP Sahaspur Bijnor	14296	18198	22606	24511	3405	-999	25839	26074	26300	26516	26721	26917
39	NP Jarwal Bahraich	8543	11741	15780	19942	3800	482	22023	22453	22889	23329	23774	24224
40	NP Anandnagar Maharajganj	5951	7798	10214	10113	1387	-974	10441	10478	10504	10521	10529	10526
41	NP Rajapur Chitrakoot	10258	9871	12752	13439	1060	537	14170	14333	22790	14674	14852	15036

(Source: Compendium of Urban Data Uttar Pradesh available on RCUES website, Director ULB)

https://cag.gov.in/ag1/uttar-pradesh/en