

## 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<sup>1</sup> 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<sup>2</sup>, 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.

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

<sup>2</sup> 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<sup>3</sup> 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
<b>Average percentage of treatment against collection</b>		<b>35</b>	<b>46</b>

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

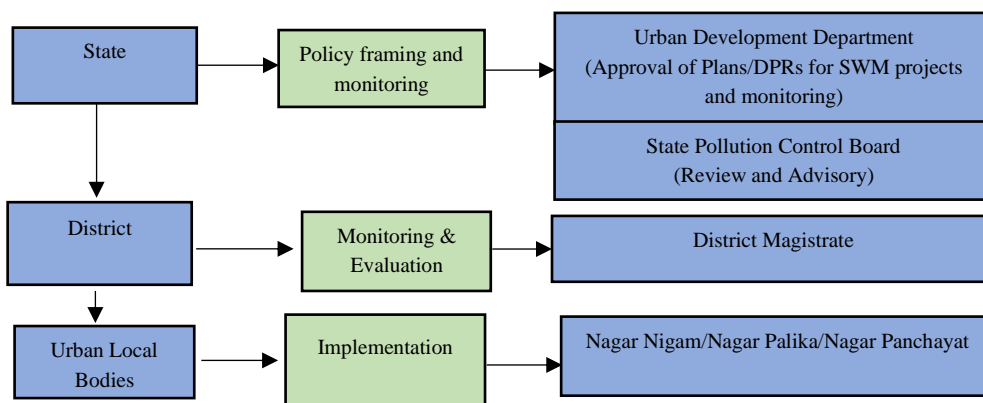
It is evident from **Table 1.1** that average solid waste processed in the State during 2018-21 was 35 *per cent* which was lower than the national average of 46 *per cent*. State Government had reported decreasing trend of solid waste generation during 2018-21. The issues regarding generation and assessment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

<sup>3</sup> 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.

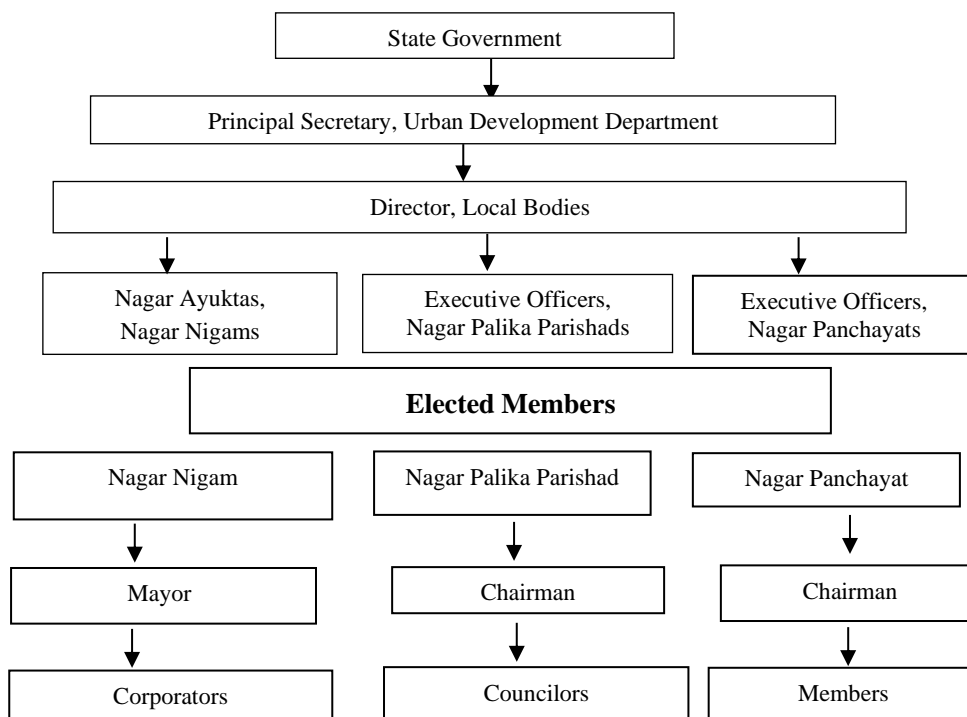
**Chart 1.1: Role of various authorities in solid waste management**



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

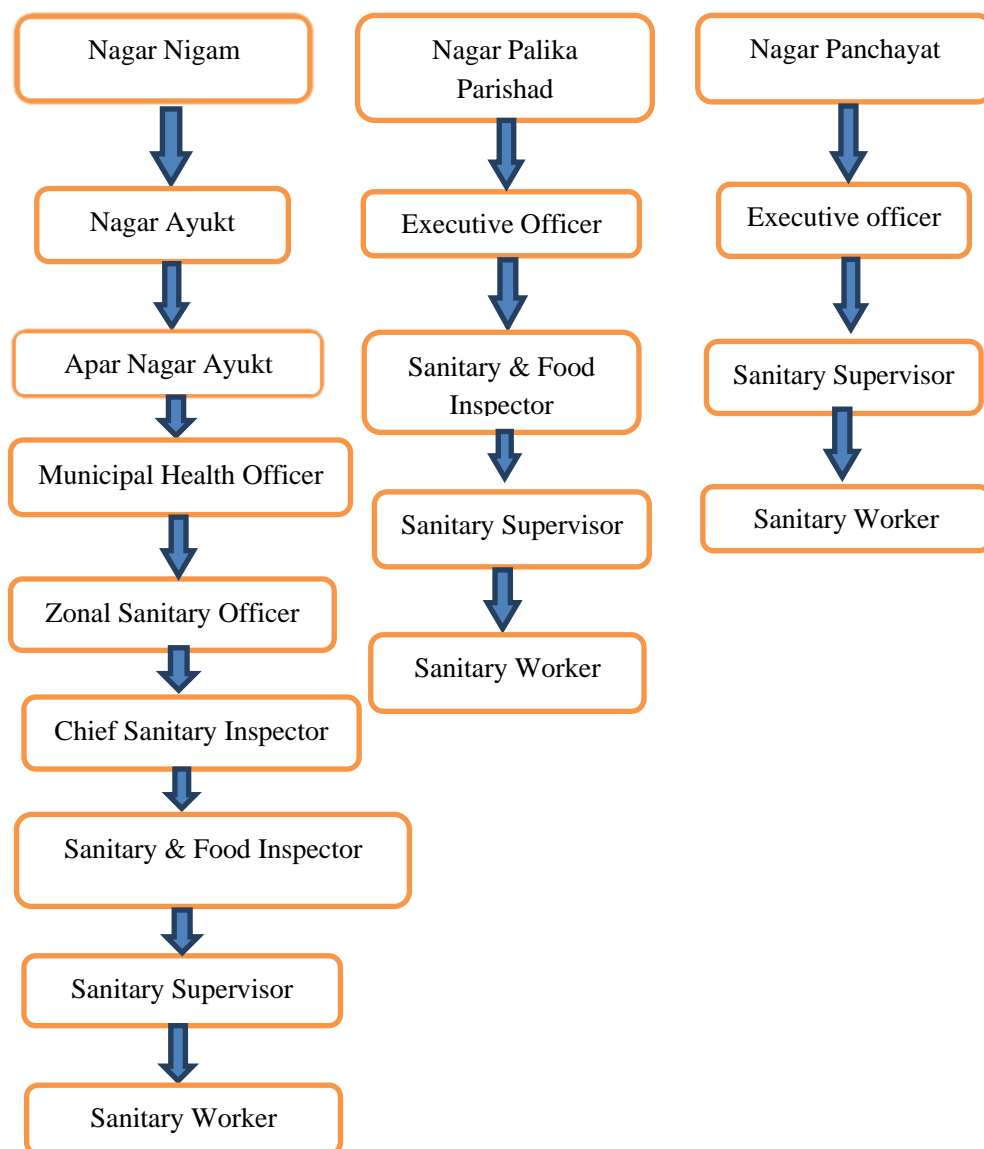
The administrative set up and the organisational structure of the ULBs pertinent to SWM is given in **Chart 1.2** and **Chart 1.3** respectively.

**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<sup>4</sup> in 34 districts depicted in **Map 1.1**.

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<sup>4</sup> 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<sup>5</sup> 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

<sup>5</sup> 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.