

**Action Plan**  
**for**  
**Monitoring of Waste Management in the State**



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**Directorate of Environment and Climate Change  
Department of Science, Technology and Environment,  
Government of Punjab**

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## Chapter 1 - Introduction

### 1.1 Solid Waste Management – A key challenge of rapid urbanization

1.1.1 There has been quantum increase in generation of solid waste and its quality with rapid population growth and urbanization. The composition of solid waste depends on number of factors such as lifestyle of people, their relative standards of living, general consumer patterns, and the level of technological advancement.

1.1.2 The lack of effective solid waste management creates serious health, safety, and environmental consequences. Poorly managed waste serves as a breeding ground for disease vectors, contributes to global climate change through methane generation, and even promotes urban violence.

### 1.2 Six Types of Solid Waste

The solid waste management in any city or state will cover the following:

- (i) **Municipal Solid Waste** covered under Solid Waste Management Rules, 2016
- (ii) **Construction and Demolition Waste** covered under Construction and Demolition Waste Management Rules 2016
- (iii) **Plastic Waste Management** covered under Plastic Waste Management Rules, 2016
- (iv) **Bio-Medical Waste** covered Bio-Medical Waste Management Rules, 2016
- (v) **Hazardous Waste** covered under Hazardous and Other Wastes (Management) Rules, 2016
- (vi) **E-Waste** covered under E-Waste (Management) Rules, 2016

### 1.3 Efforts of the State Government so far

The State Government has been taking various steps for managing solid waste and the key steps are listed below:

#### 1.3.1 Municipal Solid Waste

- (i) The State prepared a cluster approach for solid waste management on PPP model. The Private Partners were to be selected for collection, transportation, processing and disposal of solid waste. The approach has not been very successful and the Department is now following both centralized and decentralized model.
- (ii) A Common Action Plan for viable alternative measures for disposal of garbage till setting up of Solid Waste Management Plants, was prepared in 2012 on directions of the High Court. The Directorate of Local Government was the implementing body of the Action Plan and PPCB has been monitoring the same regularly.
- (iii) Department of Local Government has notified "Punjab State Solid Waste Management Policy 2018" to ensure scientific and systematic management of solid waste in all Urban Local

Bodies in the State. The policy provides guidance for preparation of SWM plans by ULBs and prescribes timelines for some of the key activities. The Department has constituted an Advisory Committee as mandated under the Rules.

### 1.3.2 **Construction & Demolition Waste**

Department of Housing & Urban Development has prepared action plan for monitoring of construction & demolition activities of the buildings within the State of Punjab. The Department of Local Government has taken steps to identify the land for the ULBs for collection of C&D waste.

### 1.3.3 **Plastic Waste Management**

The Department of Local Government, Punjab vide notification dated 18/02/2016 has completely prohibited manufacture, stock, distribute, recycle, sell or use of plastic carry bags in the urban areas. PPCB has played a pro-active role to get constituted a Special Purpose Vehicle (SPV) namely Punjab Plastic Waste Management Society consisting of brand owner companies as its members for management of Multi-layered plastic waste generated in the State.

### 1.3.4 **Bio-Medical Waste Management**

Punjab Pollution Control Board has devised a detailed plan for managing bio-medical waste. The bio-medical waste of all the Healthcare Facilities (HCF) in the State is being collected, transported, treated and disposed through 5 authorized Common Bio-Medical Waste Treatment Facilities (CBWTF) located at Ludhiana, SAS Nagar, Amritsar, Pathankot and Sri Muktsar Sahib. The Bio-Medical Waste generation in the State is in the range of 14-15 tons per day (TPD) depending upon patient load.

### 1.3.5 **Hazardous Waste Management**

Punjab Pollution Control Board has facilitated a Common Treatment, Storage and Disposal Facility (CTSDF) at Village Nimbuan, Tehsil Dera Bassi, Distt. SAS Nagar constructed by M/s Nimbuan Green Field Punjab Limited (NGPL) and commissioned in October, 2007. The facility has been designed for 15 years capacity considering the generation of storable quantity of hazardous waste as 36,000 MTA with total capacity as 5,40,000 MT. The capacity to store hazardous waste in the existing CTSDF is sufficient upto year 2030 at the present rate of generation.

### 1.3.6 **E-Waste Management**

The Board has already set up one dismantling facility by M/s Ramky Enviro Engineers Limited, Vill. Nimbua, Tehsil Dera Bassi, Distt. SAS Nagar and two such facilities are coming up, which are being established by M/s Black Diamond Cements Pvt. Ltd., Tehsil Dera Bassi, District SAS Nagar and M/s Spreco Recycling, Tehsil Raikot, District Ludhiana. The Board has invited Expression of Interest for setting up of e-waste recycling facility in the State and two parties of Amritsar and Jalandhar area have shown their interest for setting up of the same. After successful commissioning of these facilities, the E-Waste will be channelized in a proper manner. Till date, the Board has identified 936 bulk consumers in the State of Punjab and the Board has organized several awareness camps across the State for the bulk consumers.

**1.4 Directions issued by NGT**

- 1.4.1 National Green Tribunal (NGT) vide its order dated 22.12.2016 issued various directions to State Government, public authorities, concessionaire/operators in the interest of the environment and public health for management of Solid Waste. All the State were also directed to prepare action plan and to constitute the State Level Advisory Body, in terms of the Rules of 2016 for management and disposal of Solid Waste.
- 1.4.2 NGT vide order dated 18.12.2017 in matter of OA no. 21/2014 titled as Vardhman Kaushik versus Union of India & Others has directed that there shall be complete prohibition of burning of garbage, bio mass and/ or any kind of waste anywhere. Violation thereof would invite the penalty of Rs. 5000/- for each default. The respective Corporations, Local Authorities, Pollution Control Boards and police authorities would be responsible for ensuring this compliance.
- 1.4.3 NGT has further directed that the C& D waste shall be handled and managed as per the prescribed guidelines and directions issued by the Tribunal. In default, the concerned Govt., the Board and the local authority shall invoke the penal directions in regard to payment of environmental compensation at the rate of Rs. 5000/- per event for transporting material in violation of directions and Rs. 50,000/- in relation to storage of construction material of any kind.
- 1.4.4 NGT vide its orders dated 20.08.2018 in matter of OA No. 606/2018 titled as Compliance of Solid Waste Management Rules, 2016 has constituted Apex Monitoring Committee, Regional Monitoring Committee and State Level Monitoring Committee. Regular meetings of these committees shall be conducted.
- 1.4.5 The NGT vide its orders dated 16.01.2019 in matter of OA no. 606/2018 has directed that Regional Committee may be replaced by State Committees in the modified form.

## **Chapter 2 – Management of Municipal Solid Waste**

### **2.1 About Municipal Solid Waste**

Municipal Solid Waste covers every domestic, institutional, commercial and any other non-residential solid waste in urban areas and other such areas except industrial waste, hazardous waste, hazardous chemicals, bio medical wastes, e-waste, lead acid batteries and radio-active waste, which are covered under separate rules other than Solid Waste Management Rules 2016. It is one of the basic function of Urban Local Bodies to ensure collection, transportation, and processing of municipal solid waste for health and safety of the residents.

### **2.2 Solid Waste Management Rules 2016**

Government of India has notified Solid Waste Management Rules 2016 under Environment Protection Act, 1986. The role of various entities in successful implementation of the Rules has been given in the following paras.

### **2.3 Role of Various Stakeholders in Management of Solid Waste**

Following Stakeholders have been identified and their roles as per Solid Waste Management Rules 2016, the State Policy, NGT's directions and overall requirement for effective monitoring:

#### **2.3.1 Department of Environment**

The Department of Environment through Punjab Pollution Control Board shall mainly be responsible for:

- (i) Enforcement of SWM Rules 2016 through ULBs and review of implementation of Rules;
- (ii) Monitor environmental standards and conditions for waste processing and disposal sites;
- (iii) Authorization for Waste processing and disposal sites and Monitoring thereof;
- (iv) Standards for new technologies through CPCB;
- (v) Directions to ULBs for safe handling and disposal of domestic hazardous waste;

#### **2.3.2 Department of Local Government**

The Department of Local Government shall be responsible for the following activities:

- (i) Preparation of a state policy and solid waste management strategy;
- (ii) Inclusion of informal sector of waste pickers, waste collectors and recycling industry;
- (iii) Ensure implementation of SWM Rules 2016 by all ULBs;
- (iv) Ensure suitable land to the local bodies for setting up of processing and disposal facilities;
- (v) Ensure separate space for segregation, storage, decentralized processing of solid waste in the development plan for group housing or commercial, institutional or any other non-residential complex exceeding 200 dwelling or having a plot area exceeding 5,000 square meters;
- (vi) Direct the developers of Special Economic Zone, Industrial Estate, Industrial Park to earmark at least five percent of the total area of the plot or minimum five plots or sheds for recovery and recycling facility;

- (vii) Facilitate establishment of common regional sanitary land fill for a group of cities and towns falling within a distance of 50 km (or more) from regional facility;
- (viii) Arrange for capacity building of local bodies;
- (ix) Notify buffer zone for the solid waste processing and disposal facilities

### 2.3.3 Department of Rural Development and Panchayat

Department of Rural Development shall have the same duties as Department of Local Government for the areas which are covered under SWM Rules, 2016 and are under their jurisdictions.

### 2.3.4 Deputy Commissioner

The Deputy Commissioner shall be responsible for the following activities:

- (i) facilitate allocation of suitable land for solid waste processing and disposal facilities
- (ii) review the performance ULBs on waste segregation, processing, treatment and disposal

### 2.3.5 Bulk Waste Generators

Bulk Waste Generators have the following definition and responsibilities:

- (i) As per rules, departments or undertaking, local bodies, public sector undertaking or private companies, hospitals, nursing schools, colleges, universities, educational institutions, hostels, hotels, commercial establishments, markets, places of worship, stadia and sports complexes having average waste generation rate exceeding 100 kg per day are termed as bulk waste generators
- (ii) Ensure segregation of waste at source, handover recyclable material to either the authorized waste picker or authorized recycler. The bio-degradable waste shall be processed, treated and disposed off in an environmentally sound manner.

## 2.4 Current Status of Management of Solid Waste

2.4.1 There are about 167 ULBs in the State and as per estimates, these Urban Local Bodies in the State of Punjab generate solid waste to the tune of about 4100 Ton per day.

2.4.2 The cluster approach concept was developed to outsource collection, transportation, processing and disposal services to private partners. However, the cluster approach has shown much less than desired results.

2.4.3 The Department of Local Government, Punjab through its implementation agency PMIDC has initiated low cost and easy to operate – maintainable decentralized or on-site scientific waste management approach focusing on 100% source segregation as per SWM Rules, 2016 and ‘Star Rating of Garbage Free Cities’ protocol.

2.4.4 Segregation of waste at source has been started in 143 ULBs covering 1486 (48%) wards. Door-to-door collection of waste has also been initiated in 162 ULBs covering 2804 (90%) wards.



- 2.4.5 With this approach, decentralized composting has started at varying scale in the ULBs across the State. Further, processing of wet waste through honeycomb aerobic composting has started in 143 ULBs including Municipal Corporations.
- 2.4.6 Institutions, schools, religious organization have also been covered for management of their own park/ garden/ horticulture waste (green waste) and city parks have also been covered under the decentralized approach.
- 2.4.7 Preference shall be given to decentralized processing to minimize transportation cost and environmental impacts. The technology for scientific solid waste management will be prioritized as under:

Waste type	Management
Wet/ Bio-degradable waste	<ul style="list-style-type: none"> <li>• Composting (Aerobic compost/ vermi-compost) or</li> <li>• Biogas/ Bio-methanation or</li> <li>• Any other advance environment friendly technologies</li> </ul>
Dry/ Non-biodegradable waste	<ul style="list-style-type: none"> <li>• Adoption of 4Rs (refuse, reduce, re-use and recycle) principal</li> <li>• Maximum recovery of recyclables</li> <li>• Refused Derived Fuel (RDF) form non-recyclables combustible waste</li> <li>• Safe disposal of Domestic Hazardous waste</li> <li>• Any other advance environment friendly technologies</li> </ul>

- 2.4.8 Department of Local Government has notified Punjab State Solid Waste Management Policy 2018 as per the mandate of Solid Waste Management Rules 2016. The Policy envisages that the State shall work for attaining and sustaining the scientific solid waste management by adopting the systematic decentralized approach focusing on 6Rs principal i.e. refuse, reduce, reuse, recycle, redesign and research:
- (i) Waste reduction at source by discouraging the non-biodegradable materials like plastic bags, single use plastic & thermocol disposal items etc.
  - (ii) 100% source segregation i.e. biodegradables (wet waste), non biodegradable (dry waste) and domestic hazardous waste,
  - (iii) Proficient transportation of segregated waste,
  - (iv) Composting/ biogas and maximum material recovery closest to its generation (on-site/decentralized manner),
  - (v) Reclamation/ bio-mining of existing waste dump sites,
  - (vi) Integration of rag pickers, bulk waste generators and institutions (religious, educational, defence/ paramilitary/ police/ sports establishments),
  - (vii) Community awareness and active involvement of community from planning to execution phase

- (viii) Imparting the compulsory environment education in all classes/ grades focusing on scientific waste management mechanism

2.4.9 The key action points in the Punjab State Solid Waste Management Policy are:

- (i) Segregation of waste at source
- (ii) Door to door collection
- (iii) Single/ multi point aggregation
- (iv) Scientific processing
- (v) Bulk waste generators
- (vi) Promotion of home composting and kitchen gardening
- (vii) On-site management of park/ garden/ horticulture waste
- (viii) Marketing of compost and recyclables
- (ix) Integration of rag pickers and community based organization
- (x) Service charges and spot fine
- (xi) Prohibition on burning of waste
- (xii) Prohibition of one time use plastic/ thermocol items
- (xiii) Education strategy for sustained behaviour change and public participation
- (xiv) Strengthening the capacity of ULBs
- (xv) Safety measures
- (xvi) Institutional arrangements

## 2.5 Action Plan for Solid Waste Management

### 2.5.1 Timelines for Implementation of Solid Waste Management

Solid Waste Management Rules 2016 have laid down timelines for various activities to be completed. NGT in its judgement dated 22.12.2016 in OA No. 199/2014 extended the timelines to be applicable w.e.f. 1st July, 2017. Some of the extended timelines have also expired and the revised timelines for completion of various activities are given below:

Sl. No	Activity	Time limit w.e.f.	Revised Timelines
1	Identification of suitable sites for setting up solid waste processing facilities.	1 Year w.e.f. 01.07.2017	30 <sup>th</sup> Sep. 2019
2	Identification of suitable sites for setting up common regional sanitary landfill facilities for suitable clusters of local authorities under 0.5 million population and for setting up common regional sanitary landfill facilities or stand alone sanitary landfill facilities by all local authorities having a population of 0.5 million or more.	1 Year w.e.f. 01.07.2017	31 <sup>st</sup> Dec 2019

Sl. No	Activity	Time limit w.e.f.	Revised Timelines
3	Procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities.	2 Years w.e.f. 08.04.2016	(i) 31 <sup>st</sup> Dec 2019 – Solid Waste Processing facilities (ii) 30 <sup>th</sup> June 2020- Sanitary Landfill facilities
4	Enforcing waste generators to practice segregation of bio degradable, recyclable, combustible, sanitary waste domestic hazardous and inert solid wastes at source.	2 Years w.e.f. 08.04.2016	31 <sup>st</sup> March 2020 1. 50 ULBs (30.06.2019) 2. 125 ULBs (30.09.2019) 3. 150 ULBs (31.12.2019) 4. 167 ULBs (31.03.2020)
5	Ensure door to door collection of segregated waste and its transportation in covered vehicles to processing or disposal facilities.	2 Years w.e.f. 08.04.2016	31 <sup>st</sup> Dec. 2019 1. 107 ULBs (30.06.2019) 2. 150 ULBs (30.09.2019) 3. 167 ULBs (31.12.2019)
6	Ensure separate storage, collection and transportation of construction and demolition wastes.	2 Years w.e.f. 08.04.2016	31 <sup>st</sup> Dec. 2021 1. ULBs with population from 0.5-1 million (31.12.2020) 2. ULBs with population < 0.5 million (31.12.2021)
7	Setting up solid waste processing facilities by all local bodies having 100000 or more population.	2 Years w.e.f. 08.04.2016	31 <sup>st</sup> Dec 2019
8	Setting up solid waste processing facilities by local bodies and census towns below 100000 populations.	3 Years w.e.f. 08.04.2016	31 <sup>st</sup> Dec 2019 1. 50 ULBs (30.06.2019) 2. 125 ULBs (30.09.2019) 3. 151 ULBs (31.12.2019)

Sl. No	Activity	Time limit w.e.f.	Revised Timelines
9	Setting up common or stand alone sanitary landfills by or for all local bodies having 0.5 million or more population for the disposal of only such residual wastes from the processing facilities as well as untreatable inert wastes as permitted under the rules.	3 Years w.e.f. 08.04.2016	31 <sup>st</sup> Dec 2020
10	Setting up common or regional sanitary landfills by all local bodies and census towns under 0.5 million population for the disposal of permitted waste under the rules.	3 Years w.e.f. 08.04.2016	31 <sup>st</sup> Dec 2020
11	Bio-remediation or capping of old and abandoned dump sites.	5 Years w.e.f. 08.04.2016	No change (07.04.2021)

\* Deptt. of Rural Dev. & Panchayats will also achieve compliance of above timelines w.r.t census towns.

2.5.2 Punjab Municipal Infrastructure Development Company (PMIDC), Department of Local Government has prepared State Action Plan for Municipal Solid Waste management in Feb., 2019 in accordance with the SWM Rules, 2016 and considering Performance Indicators given vide para 16 of Hon'ble NGT orders dated 20.08.2018 in OA no. 606/2018. Salient features of the Action Plan for regular monitoring of the progress of solid waste management by ULBs are as under:

- (i) **SWM Action Plan by each ULB**  
Each ULB shall prepare SWM Action Plan with timelines and budgetary allocations. The action plan along with the approval of house shall be submitted to the Department of Local Government.
- (ii) **Regular meeting of District Level Committee**  
Ensure regular meeting of District Level Committees under Rule 12 of SWM Rules, 2016 and the Committee shall submit its report to the Department of Local Government.
- (iii) **Source Segregation of Waste**  
Each ULB to ensure source segregation of waste into biodegradable, non-biodegradable, domestic hazardous. This is the most essential part of the action plan and needs behavioral changes and provision of necessary infrastructure.
- (iv) **Door to Door Collection**  
Each ULB to ensure 100% Door to Door Collection of Segregated Solid Waste.
- (v) **Tracking of Collection and Transportation Vehicles**  
Ensure GPS Monitoring in case of mechanized collection and transportation vehicles.
- (vi) **Sweeping of Public Areas**

Each ULB to ensure sweeping of public areas such as Residential, Public and Commercial areas. The sweeping shall be twice daily including night sweeping.

- (vii) **Demarcation of Space for Waste Processing**  
Demarcation of separate space for segregation, storage, decentralized waste processing for establishment of systems for home/ decentralized and centralized composting of Wet Waste and setting up of MRF Facility for Dry Waste
- (viii) **Compliance by Bulk Waste Generators**  
Identification and compliance by Bulk Waste Generators through decentralized waste processing.
- (ix) **Green/Horticulture Waste Management**  
Ensure onsite green waste management for parks, gardens, green belts, institutions, organizations
- (x) **Inclusion of Rag Pickers/ Waste Collectors & Kabadis/ Safai Sewaks**  
Ensure inclusion of rag pickers, waste collectors & Kabadis and Safai Sewaks into solid waste management system. Efforts to be made to make their SHG and provide them other benefits such as health checkup, etc
- (xi) **Treatment of Legacy Waste**  
Setting up of systems for treatment of legacy waste and clean drives to remove waste from the roadsides, vacant plots, parks and public places, water bodies etc.
- (xii) **Citizen Grievance Redressal through SwachhApp**  
Setting up of Citizen Grievance Redressal system set up along with the Name, mobile No. email Id of Nodal Officer.
- (xiii) **Mechanism for stopping entry of solid waste into water bodies/ drains/ rivers etc.**
- (xiv) **Awareness mechanism for behaviour change**
- (xv) **Monitoring of the processing sites of solid waste**

## **Chapter 3 – Management of Construction and Demolition Waste**

### **3.1 About Construction and Demolition (C & D) Waste**

- 3.1.1 Construction and demolition waste means the waste comprising of building materials, debris and rubble resulting from construction, re-modeling, repair and demolition of any civil structure.
- 3.1.2 It is a challenging task to handle C&D waste because it is bulky, heavy and inert and also mixture of various materials of different characteristics. It is also difficult to choose any suitable disposal method, for example it cannot be incinerated due to its high density and inertness. With the advent of sustainable practices in the construction industry, C&D waste generation and handling issues have been in focus to achieve the sustainable goals for our common future.
- 3.1.3 Reduce, Reuse, Recycle (3Rs) philosophy is highly useful in handling of C&D waste. The better practice to handle C&D waste is to minimize generation of C&D waste, but sometimes, it is unavoidable due to various issues such as change orders or demolition requirements for re-development. Recycling of C&D waste is important as it helps to reduce the dependence on natural resources and eliminates adverse environmental impacts. Recycling of C&D wastes has the additional advantage of controlling the quantum of C & D waste destined for disposal at landfills besides reducing transportation costs.

### **3.2 Construction and Demolition Waste Management Rules 2016**

Government of India has notified Construction and Demolition Waste Management Rules 2016 for scientific management of C&D Waste. The roles of various stakeholders under the Rules have been described in the following paras.

### **3.3 Role of Various Stakeholders in Management of C&D Waste**

Various stakeholders and their role as per the C&D Waste Management Rules 2016 are as under:

#### **3.3.1 Department of Environment**

The Department of Environment through Punjab Pollution Control Board shall mainly be responsible for:

- (i) Enforcement and review of Implementation of C&D Waste Management Rules, 2016
- (ii) Monitoring of environmental standards and waste processing and disposal sites;
- (iii) Grant of authorization to construction and demolition waste processing facilities;
- (iv) Monitoring of the work zone air quality at processing or recycling site;
- (v) Compilation of the annual report sent by Local Bodies in Form-2;

### 3.3.2 Department of Local Government

- (i) Preparation of C&D Waste Management Policy and Plans,
- (ii) Seek detailed plans from generator of C&D waste,
- (iii) Chalk out stages, methodology, equipment, material involved for management of C&D waste,
- (iv) Place containers for C&D waste at appropriate places and remove at regular intervals,
- (v) Transportation of collected waste to appropriate sites for processing and disposal
- (vi) Appropriate incentives to generator for salvaging, processing and or recycling,
- (vii) Sanction of C&D waste management plan of the generators after approval of building plans,
- (viii) Tracking generation of C&D waste and establish a data base and update once in a year,
- (ix) Management of C&D waste including processing facility and promote recycled products,
- (x) Undertake IEC activities,
- (xi) Appropriate incentives for use of material made out of construction and demolition waste in the construction activity including in non-structural concrete, paving blocks, lower layers of road pavements, colony and rural roads
- (xii) Submission of Annual report in Form-2 to the Punjab Pollution Control Board.

### 3.3.3 Waste generators

Waste generators shall ensure the compliance of the C & D Waste Management Rules, 2016.

### 3.3.4 Service Providers and Contractors

- (i) Preparation of comprehensive C&D waste management plan
- (ii) Removal of Construction & Demolition waste and cleaning of the area on daily basis
- (iii) Removal of the C & D waste by taking up matter with authorized agencies, if the service provider has no logistics support for the same

### 3.4 Current Status of Management of C&D Waste

The Department of Local Government through 144 ULBs has identified 175 sites for storage of C&D waste being generated from these ULBs. The remaining ULBs are in the process of identifying such sites so that the C&D waste can be managed and handled in an environmentally sound manner.

### 3.5 Action Plan for Management of C&D waste

- 3.5.1 The C&D Waste Rules 2016 provide the following timelines w.e.f. the date of notification of Rules i.e. 29<sup>th</sup> March 2016:

Sr. no.	Activity	Cities with population of 1 million and above	Cities with population of 0.5-1 million	Cities with population of less than 0.5 million
1	Formulation of policy by State Government	12 months	12 months	12 months
2	Identification of sites for	18 months	18 months	18 months

	collection and processing facility			
3	Commissioning and implementation of the facility	18 months	24 months	36 months
4	Monitoring by SPCBs	3 times a year – once in 4 months	2 times a year – once in 6 months	2 times a year – once in 6 months

3.5.2 The Department of Housing and Urban Development has issued detailed instructions for construction/demolition activities of buildings within the State. Department of Local Government has identified 101 sites in 76 ULBs. The timelines for most of the activities have expired. The Revised timelines are as under:

Sr. no.	Activity	Cities with population of 1 million and above	Cities with population of 0.5-1 million	Cities with population of less than 0.5 million
1	Formulation of policy by State Government	30 <sup>th</sup> Sep. 2019	30 <sup>th</sup> Sep. 2019	30 <sup>th</sup> Sep. 2019
2	Identification of sites for collection and processing facility	30 <sup>th</sup> Sep. 2019	30 <sup>th</sup> Sep. 2019	30 <sup>th</sup> Sep. 2019
3	Commissioning and implementation of the facility	31 <sup>st</sup> Dec 2020	31 <sup>st</sup> Dec 2020	31 <sup>st</sup> Dec 2021
4	Monitoring by SPCBs	Once in 4 months	Once in 6 months	Once in 6 months

3.5.3 The Department of Local Government is accordingly undertaking the following activities, which will be monitored regularly:

- (i) Identification of sites for storage and processing or recycling facilities
- (ii) Notification of sites
- (iii) Awareness amongst the public in general for segregation of C&D waste and channelization to the storage / processing facility
- (iv) Collection and segregation of C&D waste
- (v) Setting up of processing or recycling facilities
- (vi) Channelization of C&D waste by the operator of the facility
- (vii) Issuance of detailed directions w.r.t proper management of C&D waste
- (viii) Sanctioning of waste management plans of generators



## Chapter 4 – Management of Plastic Waste

### 4.1 About Plastic Waste

- 4.1.1 The rapid rate of urbanization and development has led to increase in consumption of plastic products and plastic waste generation. Its sheer convenience -- lightweight and durable nature – has made this man-made material ubiquitous in every sphere of human existence.
- 4.1.2 Much of the growth in plastic production is driven by single use or disposable applications. Nearly 50 % of plastics used are single use products such as bottles, plastic bags, packaging material, plates, cups, straws, stirrers, spoons and forks. The use of plastic in packaging both as rigid and flexible forms has been increasing.
- 4.1.3 Plastic bottles, jars, and containers, also known as rigid packaging, find their way into the reusing and recycling economy through informal chain of rag pickers and kabaadi wallahs or scrap dealers.
- 4.1.4 But other single use plastics such as bags, candy wrappers, tobacco and pan masala sachets, soap wrappers and shampoo sachets are either too difficult or not lucrative enough to collect. These plastic items then find their way into landfills, unauthorised garbage dumps, or simply remain uncollected on road kerbs. Eventually, these single-use plastic items clog rivers and other water bodies. They when consumed by animals find their way into our food systems.
- 4.1.5 Plastics are non-biodegradable and remain on earth for thousands of years. The burning of plastic waste under uncontrolled conditions lead to generation of different hazardous air pollutants (HAPs), depending upon the type of polymers and additives used.
- 4.1.6 Plastics are generally categorized into two types:
- (i) Thermoplastics: Thermoplastics or Thermosoftening plastics are the plastics which soften on heating and can be moulded into desired shape such as PET, HDPE, LDPE, PP, PVC, PS, etc.
  - (ii) Thermosets: Thermoset or thermosetting plastics on heating, cannot be remoulded or recycled such as Sheet Molding Compounds (SMC), Fiber Reinforced Plastic (FRP), Bakelite etc. are the examples of the same.

Thermoplastics shall be channelized to registered plastic waste recycler for recycling. Thermoset plastics shall be processed and disposed off as per guidelines of CPCB.

### 4.2 Plastic Waste Management Rules, 2016

Government of India has notified Plastic Waste Management Rules, 2016 for effective management of Plastic Waste in the country. The roles of various stakeholders in the management of plastic waste have been given in the following paras.

### 4.3 Role of Various Stakeholders in Management of Plastic Waste

Role/responsibilities of various stakeholder departments in light of the Rules is given below:

- (i) **Department of Environment through Punjab Pollution Control Board**  
Enforcement of the provisions of PWM Rules, 2016, relating to registration, manufacture of plastic products and multi-layered packaging, processing and disposal of plastic wastes.
- (ii) **Department of Local Government and ULBs**
- (a) Ensure segregation, collection, storage, transportation, processing and disposal of plastic waste;
  - (b) Ensuring channelization of recyclable plastic waste fraction to registered recyclers;
  - (c) Ensuring processing and disposal of non-recyclable fraction of plastic waste;
  - (d) Creating awareness among all stake holders about their responsibilities;
  - (e) Ensuring no open burning of plastic waste;
  - (f) Framing of bye-laws incorporating the provisions of Rules;
  - (g) Setting up system for plastic waste management within one year.
- (iii) **Department of Rural Development and Gram Panchayat**
- (a) Setting up system, its operationalization for segregation, collection, storage, transportation, plastic waste in the rural areas
  - (b) Channelization of recyclable plastic waste fraction to recyclers having valid registration;
  - (c) Creating awareness among all stakeholders about their responsibilities;
  - (d) Ensuring no open burning of plastic waste.
- (iv) **Producers/Importers and Brand Owners under Extended Producers Responsibility**
- (a) Ensure collection of used multi-layered plastic (MLP) sachets/pouches / packaging through their own channel or concerned local body
  - (b) Phase out manufacture and use of non-recyclable MLP
  - (c) Maintain record of details of the person engaged in supply of plastic used as raw material to manufacture carry bags, MLP packaging material, etc.
- (v) **Waste Generators**
- (a) Minimize generation of plastic waste
  - (b) Ensure segregation of plastic waste at source, storage and handover segregated waste to ULB/Gram Panchayat or agency appointed by them or registered waste pickers/recyclers/waste collection agencies.
  - (c) All generators shall pay user fee/charge as specified by local bodies for plastic waste management
- (vi) **Deputy Commissioner or District Magistrate**
- To provide necessary coordination and support in enforcement of the Rules to the SPCBs, Deptt. of Local Govt. and Gram Panchayat.

#### 4.4 **Current Status of Management of Plastic Waste**

4.4.1 The State generates approximately 5,400 tons per annum of plastic waste. There are around 450 plastic units identified in the State falling in the category of Recyclers, Producers, Manufacturers and Brand-Owners. Out of these 450 plastic units, 139 are recyclers, 177 are producers, 98 are brand-owners and 36 are manufacturers. The status of registration of different category of plastic units is as under:

(i) **Recyclers**

139 recyclers identified, out of which 13 have valid registration, 23 units registrations have expired and 103 units have not obtained registration.

(ii) **Producers**

177 producer identified, out of which 1 has valid registration, 1 have applied for registration, 6 units registration have expired and 169 have not obtained registration

(iii) **Brand Owners**

98 brand-owners identified out of which 97 have not obtained registration and one has applied for registration

(iv) **Manufacturers**

36 manufacturers identified, out of which 2 have valid registration, 1 has applied for registration and 33 have not obtained registration.

4.4.2 The Government has amended the Punjab Plastic Carry Bags (Manufacture, Usage and Disposal) Control Act, 2005 in 2016 to enable the Government to completely prohibit, manufacture, stock, distribute, recycle, sale or use of plastic carry bags and containers made of virgin or recycled plastic and plastic items having one time use such as disposable plastic cups, tumblers, spoons, forks and straws after issuing notification in this regard. Department of Local Government and Department of Rural Development and Panchayat have accordingly put a complete ban on plastic carry bags in their respective jurisdictions w.e.f. 1<sup>st</sup> April 2016.

#### 4.4.3 **Disparity of the State Govt. Policy from the Central Govt. Policy**

As per Plastic Waste Management Rules, 2016, there is a complete ban on use, sale, manufacture, recycle of carry bag made of virgin or recycled plastic which is less than 50 microns. However, as per notification issued by the Department of Local Govt., Govt. of Punjab, there is a complete ban on use, sale, manufacture, recycling of plastic carry bags of any thickness wef 01.04.2016. Almost 15 states out of 29 States have announced ban on plastic carry bags. But the enforcement and effective implementation of the ban is a major concern.

4.4.4 Punjab Pollution Control Board initiated a Pilot Project for collection, sorting, compaction, weighing and storage of Multi-Layered Plastic (MLP) waste in Patiala city. A society namely "Punjab Plastic Waste Management Society" was formed as a Special Purpose Vehicle (SPV) with various stakeholders including Brand Owner Companies as its members for collection & management of multi-layered plastic waste in the State of Punjab. The Board allotted the work to M/s Singla Plastic

Industry, D-313, Focal Point, Patiala. About 225 Tons of MLP waste was collected from Patiala City. After Patiala city, the project has also been launched in Holy City Amritsar on 2<sup>nd</sup> October, 2018.

- 4.4.5 Now, the project is being looked after by the brand-owner companies which are the members of Punjab Plastic Waste Management Society. The Society has made agreement with Indian Pollution Control Association, New Delhi for collection, sorting, compaction, weighing and storage of Multi-Layered Plastic (MLP) waste in the State of Punjab in phased manner. The society has given following timeline regarding collection, compaction and disposal of Multi-layered plastic from the State:

Total MLP Gen. MT/Ann.	01.10.2018-31.03.2019	2019-20	2020-21	2021-22	2022-23
5300	550 MT (from Amritsar and Patiala)	2100 MT	3200 MT	4200 MT	5300 MT

- 4.4.6 Further, the Board also explored the possibility of using the MLP waste in road construction and extraction of fuel oil through pyrolysis process.
- 4.4.7 Two Public Interest Litigations regarding implementation on ban on manufacture, use, stock or distribution of plastic carry bags and single use plastic are pending before Hon'ble Punjab and Haryana High Court.

#### 4.5 Action Plan to Manage Plastic Waste

- 4.5.1 Timeline for ULBs to set up system for plastic waste management was accorded as one year from date of publication of Plastic Waste Management Rules, 2016 i.e by 17.03.2017. However, the time period has already lapsed. The revised timelines for completion of various activities are given below:

Sr. No	Activity	Revised Timelines
1	Framing of bye-laws by all ULBs incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	30 <sup>th</sup> Sep 2019
2	Enforcing waste generators to practise segregation of bio-degradable, recyclable and domestic hazardous waste	31 <sup>st</sup> Dec 2019
3	Door to Door collection of segregated plastic waste by all ULBs	31 <sup>st</sup> Dec 2019

4	Setting up of Material Recovery Facilities (MRF) by all ULBs	31 <sup>st</sup> Dec 2019
5	Segregation of Recyclable and Non-Recyclable plastic waste at MRF	31 <sup>st</sup> Dec 2019
6	Channelization of Recyclable Plastic Waste to registered recyclers	31 <sup>st</sup> Dec 2019
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction, or as RDF	31 <sup>st</sup> Dec 2019
8	Creating awareness among all the stakeholders about their responsibility by all ULBs	Regular activity
9	Surprise checking of littering, burning plastic waste or committing any other acts of public nuisance	Regular activity

#### 4.5.2 Timelines for Registration, Inspection and Annual Report

S. No.	Name of the activity	Prescribed Timelines
1	Grant of Registration to Recyclers, Producers, Importers, Manufacturers and Brand-Owners	90 days from receipt of application as per Rules
2	Random inspection of Recyclers, Producers, Importers, Manufacturers and Brand-Owners	Two visits per year of each unit
3	Submission of Annual Return by ULBs	30 <sup>th</sup> June of every year

#### 4.5.3 Timelines for Producers/Importers and Brand Owners under Extended Producer Responsibility

S. No.	Name of the activity	Revised Timelines
1	Working out modality for waste collection system	30 <sup>th</sup> June, 2019
2	Submission of Action Plan for collecting back the multi-layered plastic waste and other plastic waste	30 <sup>th</sup> June, 2019
3	Phasing out manufacture and use of non-recyclable / non-	31 <sup>st</sup> December, 2020

	energy recoverable multi-layered plastic	
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#### 4.5.4 **Social Awareness and public education**

Awareness / Sensitization campaigns to discourage use of single use plastic shall be organized throughout the State. Focused programmes will be undertaken for students and young adults to inculcate a behavioral change regarding plastic usage and to promote the use of plastic alternate materials such as jute and compostable bags. The ULBs and Gram Panchayats have to play an important role in this field.

#### 4.5.5 **Action by Government Offices**

State Government should serve as an ideal in the effort to combat single-use plastic by banning the use of single use plastic items/disposable plastic items in all Govt. offices and also discourage the use of plastic products like folders, trays, artificial flowers, PET plastic water bottles. The Government may notify the ban on use of single-use plastic in all State Govt. offices of Punjab to serve as a model for others.

#### 4.5.6 **Adoption of Plastic Ban in the bye Laws and provision of penalties**

Each ULB shall adopt ban on plastic in its byelaws and provide provisions for penalties against the offenders/violators.

#### 4.5.7 **Strengthening of the recycling sector**

Recycling, reuse, or alternative use of plastic waste can help reduce the amount of virgin plastic produced. There is a need to support up scaling of recycling of single-use plastic items and promote small scale or micro enterprises. The MoEF&CC through a Central Sector Scheme titled 'Creation of Management Structure for Hazardous Substances' provides financial assistance for innovative technologies and novel treatment options for better management of different waste streams

#### 4.5.8 **Registration under Plastic Waste Management Rules, 2016**

Registration of left over Recyclers, Producer, Manufacturer and Brand-Owners under the provisions of the Plastic Waste Management Rules, 2016, which have yet not obtained registration shall be done by PPCB.

## **Chapter 5 – Management of Bio-medical Waste**

### **5.1 About Bio-Medical Waste**

- 5.1.1 Biomedical waste means 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.
- 5.1.2 Bio-medical waste is generated from hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories, blood banks, ayush hospitals, clinical establishments, research or educational institutions, health camps, medical or surgical camps, vaccination camps, blood donation camps, first aid rooms of schools, forensic laboratories and research labs.
- 5.1.3 These biomedical wastes are capable of spreading infectious diseases in humans or in animals and are thus considered as hazardous. Biomedical Waste generation is increasing day by day, in amount and type due to advances in scientific knowledge and spread of diseases due to growing urbanization & unhygienic lifestyle.

### **5.2 Bio-Medical Waste Management Rules 2016**

GOI has notified Bio-Medical Waste Management Rules 2016. The salient features of the rules are:

- (i) Health Care Facilities (HCFs) have to ensure proper segregation of the bio-medical waste
- (ii) HCFs have to ensure pre-treatment and final treatment of liquid waste generated.
- (iii) HCFs & CBWTFs have to obtain authorization under the Rules and Consents under Act,
- (iv) CBWTFs have to ensure proper treatment and disposal of bio-medical waste,
- (v) PPCB shall be the prescribed authority for ensuring implementation of BMW Management Rules,
- (vi) State Advisory Committee and District Level Monitoring Committee to oversee the implementation of the Rules,

### **5.3 Role of Various Stakeholders in Bio-Medical Waste Management**

The State of Punjab envisages a comprehensive plan for management of bio-medical waste by involving all the Stakeholders namely:

- (i) Department of Environment and Punjab Pollution Control Board
- (ii) Department of Health and Family Welfare and Punjab Health System Corporation
- (iii) Department of Animal Husbandry
- (iv) Department of Medical Education & Research
- (v) Department of Rural Development and Panchayat
- (vi) Department of Local Government

(vii) District Administration

#### 5.4 Current Status of Management of Bio-Medical Waste

- 5.4.1 The Board has inventorized 8066 Health Care facilities; out of which 1013 are working in the Government Sector and the remaining 7053 are in private sector having total Bed Capacity of approx. 71,000. These HCFs are generating about 15.2 TPD of Bio-Medical Waste, which is being collected and transported to 5 authorized Common Bio-Medical Waste Treatment Facilities (CBWTF) for treatment.
- 5.4.2 For environmentally sound handling of Bio-Medical Waste, 5 CBWTFs are in operation at Mohali, Ludhiana, Amritsar, Pathankot and Sri Muktsar Sahib. Another CBWTF will be operational by March, 2020 at Distt. Jalandhar.
- 5.4.3 Regular trainings on management of bio-medical waste are being imparted by the Board for HCFs in coordination with IMA, Punjab and PHSC.
- 5.4.4 Out of 8,066 HCFs identified in the State, 3378 HCFs have valid authorization under Bio-Medical Waste Management Rules, 2016 and 4688 HCFs are operating without authorization under Bio-Medical Waste Management Rules, 2016.
- 5.4.5 Out of 8,066 HCFs, 4,197 HCFs are non-bedded institutions. As per Bio-Medical Waste Management (Amendment) Rules, 2018, such non-bedded HCFs have to provide chemical disinfection only for treatment of their liquid waste. 2,478 HCFs are having bed capacity less than or equal to 10 beds and as per Bio-Medical Waste Management Amendment Rules, 2018, such HCFs have to provide STP for treatment of liquid waste by 31/12/2019. Earlier, PPCB was pursuing HCFs with bed capacity of 50 and above to install ETP/STP for treatment of liquid waste and out of 205 HCFs with bed capacity of 50 and above, nearly 100 HCFs have installed STPs/ ETPs.
- 5.4.6 State Health Department vide order no. PHSC/BMW(Vol-III)/17/60-192 dated 09.05.2017 has constituted Advisory Committee under the chairmanship of Principal Secretary Health and District Level committee under the chairmanship of Deputy Commissioner.

#### 5.5 Action Plan for Management of Bio-medical Waste

- 5.5.1 Punjab Pollution Control Board (PPCB) has devised a detailed plan for managing bio-medical waste. About 14-15 tons per day of bio-medical waste generated in the State is collected, transported, treated and disposed through 5 authorized Common Bio-Medical Waste Treatment Facilities (CBWTF) located at Ludhiana, SAS Nagar, Amritsar, Pathankot and Sri Muktsar Sahib. Further, all HCFs including Govt. HCFs under DAH & DRDP will be covered as per prevailing Rules by complying following timelines:



Sr. No.	Name of the activity	Concerned Department	Timelines / targets
1	Setting up additional CBWTFs for treating the bio-medical waste	PHSC & PPCB	CBWTF capacity (existing/proposed) is sufficient for next 4-5 years
2	Covering HCFs under DAH and DRDP for proper treatment & disposal of BMW	PHSC, Deptt. of Animal Husbandry & DRDP	30 <sup>th</sup> June 2021
3	Setting up of effluent treatment plants by all Govt. HCFs under PHSC	PHSC, DHS & DRME	30 <sup>th</sup> June 2021
4	Grant of fresh Authorization to remaining HCFs	PPCB	90 days from receipt of application as per Rules
5	Random inspection of HCFs and CBWTFs		Once in a year for HCFs ≤ 50 beds Twice in a year for HCFs 51-199 beds Quarterly for HCFs > 200 beds & CBWTFs.
6	Submission of Annual Return by HCFs and CBWTFs		30 <sup>th</sup> June of every year

**5.5.2 Following measures will be undertaken to meet the challenges of pollution due to bio-medical waste:**

- (i) Creating awareness about the adverse impacts of bio-medical waste
- (ii) Identifying and covering the unidentified HCFs under the Rules
- (iii) Setting up additional CBWTFs for treating the bio-medical waste as per requirement
- (iv) Ensuring effective operations of the CBWTFs
- (v) Authorizing HCFs which have made agreement with the CBWTF
- (vi) Covering the HCFs under DAH & DRDP
- (vii) Installation of effluent treatment plants by all the HCFs

**5.5.3 Setting up CBWTFs for treating the bio-medical waste**

Earlier, there were 4 CBWTFs in operation at Ludhiana, SAS Nagar, Amritsar and Pathankot for about 71000 healthcare beds in the State. But due to the expansion of the healthcare sector, the no. of HCFs and correspondingly no. of beds are increasing from time to time. As per CPCB guidelines of CBWTFs, a CBWTF shall be allowed to cater healthcare units situated at a radial distance of 75 KM. However, in a coverage area where 10,000 beds are not available within a radial distance of 75 KM, existing CBWTF in the locality may be allowed to cater the healthcare units situated upto 150 KM. Due to shortage of CBWTFs in the State, the CBWTFs were handling BMW for more than 10000 beds and were covering HCFs beyond 150 kms. Accordingly, PPCB in the year 2014 invited Expression of

Interest for setting up of CBWTFs at Distt. Jalandhar and Distt. Sri Muktsar Sahib. Out of these two CBWTFs, one CBWTF at Distt. Sri Muktsar Sahib has been granted Authorization and Consent to Operate by the Board. Another CBWTF at Distt. Jalandhar is in process of setting up and is expected to start its operation by 31.03.2020. The bio-medical waste treatment capacity after the functioning of all these 6 CBWTF will be sufficient for next 4-5 years. However, up-gradation of the existing 6 facilities or new CBWTFs will be set up in the State for future growth of healthcare sector.

#### 5.5.4 **Covering the HCFs under Government Departments**

There are around 2800 HCFs under Department of Animal Husbandry and 1200 HCFs under Department of Rural Development and Panchayat, which have not made agreement with the CBWTF operators for proper treatment and disposal of BMW nor have obtained authorization from PPCB. Most of the Veterinary Institutions are located in rural areas and providing door-step service.

#### 5.5.5 **Setting up of effluent treatment plants by all the HCFs**

Health Care Facilities having less than ten beds have to install Sewage Treatment Plant by 31<sup>st</sup> December, 2019 to ensure liquid waste discharge as per standards, mentioned in the Schedule II of the BMW Rules, 2016. Non-bedded occupiers shall dispose of the infectious liquid wastes only after pre-treatment by disinfection. Regarding installation of ETPs in the Govt. HCFs with bed capacity more than 50 beds, Punjab Health System Corporation has initiated the tendering process for 15 HCFs with tentative completion time of one year. For remaining 47 HCFs, funds have been sought from the Govt. and tentative schedule for installation of ETPs has been given as 2 years.

#### 5.5.6 **Authorization of HCFs (clinics, dispensaries etc.) which have already made agreement with the CBWTF**

In order to ensure that all the HCFs follow the provisions of the rules, it is necessary to cover them under the purview of authorization under the Bio-Medical Waste Management Rules, 2016. Around 4000-5000 HCFs (clinics, dispensaries etc.) are there which have made agreement with the CBWTF for proper treatment and disposal of the bio-medical waste but have not obtained authorization from PPCB.

#### 5.5.7 **Ensuring effective operations of the CBWTFs**

For ensuring effective operations of the CBWTFs, PPCB has already taken many steps in this regard. All the collection vehicles of the CBWTFs are installed with Bar-code Based Software system and GPS system to track the collection of bio-medical waste and to track the movement of the vehicles. The stack of the Incinerator is equipped with Online Continuous Emission Monitoring System (OCEMS) to monitor the concentration of pollutants in the emissions online. Further, CCTV cameras have been installed in the processing areas of the CBWTF which are connected with PPCB.

## Chapter 6 – Management of Hazardous Waste

### 6.1 About Hazardous Waste

Hazardous waste means any waste, which by reason of characteristics, such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger to health, or environment. It comprises the waste generated during the manufacturing processes of the commercial products such as petroleum refining, production of pharmaceuticals, petroleum, paint, aluminum, electronic products etc.

### 6.2 Hazardous and Other Wastes (Management) Rules, 2016

The Government of India has framed Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 for the scientific handling of hazardous waste so that there should not be any illegal / unscientific disposal of such waste, which may cause environmental degradation and health hazard.

### 6.3 Role of Various Stakeholders in Management of Hazardous Waste

#### 6.3.1 Department of Environment through Punjab Pollution Control Board

- (i) Preparation of integrated plan for effective implementation of provisions of these Rules
- (ii) Inventorisation of Hazardous Wastes generating industrial units
- (iii) Grant and Renewal of authorization to Hazardous waste generating industrial units
- (iv) Monitoring of compliance of Rules
- (v) Implementation of programmes to prevent or reduce or minimise the generation of hazardous and other wastes.

#### 6.3.2 Responsibilities of occupier

- (i) Ensure compliance of Hazardous and Other Wastes Rules, 2016
- (ii) Safe storage of hazardous waste not exceeding specified days as per Rules
- (iii) Maintaining record in Form-3 on daily basis
- (iv) Submission of Annual Return in Form-4 to the Board
- (v) To take steps to prevent, minimize, reuse, recycle, recover, utilize the hazardous waste including co-processing and safe disposal
- (vi) To provide appropriate training and equipment to workers handling hazardous wastes

#### 6.3.3 Department of Industries

Allocation of industrial space or shed for recycling, pre-processing and other modes of utilization of wastes in the existing and up-coming industrial parks, estates and industrial clusters.

#### 6.3.4 Department of Labour

- (i) Ensure recognition and registration of workers involved in recycling, pre-processing and other utilization activities
- (ii) Assist in formation of groups of such workers to facilitate setting up of such facility

- (iii) Undertake industrial skill development activities for the workers
- (iv) Undertake annual monitoring and to ensure safety and health of workers

#### 6.3.5 Responsibilities of re-processor / co-processor / recycler / importer / exporter / transporter

Ensure compliance of Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016.

#### 6.4 Current Status of Management of Hazardous Waste

6.4.1 The Board has identified 3284 hazardous waste generating units. These industries are being monitored periodically for proper storage and disposal of hazardous waste generated by them. The recyclers / re-processor / co-processors are also being monitored by the Board from time to time.

6.4.2 A Common Treatment, Storage and Disposal Facility (CTSDF) at Village Nimbuan, Tehsil Dera Bassi, Distt. SAS Nagar was developed by M/s Nimbuan Green Field Punjab Limited (NGPL), which is an SPV of 10 leading industrialists of the State. This facility was commissioned in the month of October, 2007.

6.4.3 The facility has been designed for 15 years capacity considering the generation of storable quantity of hazardous waste as 36,000 MTA based on the assessment study carried out by M/s Tetrattech India Limited. The total capacity of the facility is 5,40,000 MT. The capacity to store hazardous waste in the existing CTSDF is sufficient upto year 2030 at the present rate of generation. The vehicles used by the common facility operator for transportation of hazardous waste are equipped with GPS system.

6.4.4 At present no common incinerator has been installed at CTSDF and the same is under planning. All the major industries generating incinerable hazardous waste have installed captive incinerators in their premises for disposal of incinerable waste. Eighteen such captive incinerators are in operation for the disposal of incinerable waste. In addition to the above, the incinerable waste from the remaining industries, received by the operator of CTSDF is being incinerated at its another CTSDF unit located at Kanpur.

6.4.5 The quantity of hazardous waste disposed to the CTSDF during last two years is as under:

S.No	Financial Year	Quantity disposed to CTSDF
1	2016-17	24583.6 MT
2	2017-18	27474 MT

#### 6.5 Action Plan for Management of Hazardous Waste

##### 6.5.1 Identification and authorization to the un-identified industries

The Board shall ensure that the left out hazardous wastes generating industries, if any, shall be identified and pursued to get authorization of the Board.

#### 6.5.2 **Inventory of Hazardous Waste Generation**

The Board shall update the inventory of hazardous waste generating industries from time to time.

#### 6.5.3 **IEC activities**

##### (i) **Waste minimization at source**

The Board shall pursue the industries to adopt waste minimization techniques for reduction of generation of waste at source and shall disseminate the information in this regard for replication by other units.

##### (ii) **Reuse, recovery and recycling of hazardous wastes**

The Board shall promote the industries to explore options of reusing, recovery and recycling of hazardous wastes in an Environmentally Sound Manner.

##### (iii) **Utilization of Hazardous and Other Wastes**

The Board shall promote the utilization of hazardous and other wastes as a resource or after pre-processing either for co-processing or for any other reuse including within the premises of generator.

##### (iv) **Safe Disposal of Hazardous Wastes**

The Board shall ensure that the wastes which cannot be recycled /reused shall be disposed off safely in Environmentally Sound Manner.

#### 6.5.4 **Gap in Generation and Disposal of Hazardous Wastes**

The Board shall ensure that hazardous wastes generated is stored as per Hazardous and Other Wastes Rules, 2016. If there is any gap in hazardous wastes generation and its disposal to common TSDF, the Board shall take action against the defaulting industries as per the provisions of Hazardous and Other Wastes Rules, 2016. The Board shall also keep regular check in the areas especially along the banks of the rivers /drains/choes etc. as well as Municipal Solid Waste dump sites for unauthorized disposal of hazardous wastes and shall take immediate necessary action against the violators.

#### 6.5.5 **Renewal of Authorization**

The Board shall ensure that all the hazardous waste generating industries should operate with valid authorization under Hazardous and Other Wastes Rules, 2016. The Board shall develop SMS alert system for the hazardous waste generating industries. The SMS alert shall be delivered to the concerned industries and concerned Regional/Zonal Offices well before the expiry of valid authorization, so that the concerned industries get its authorization renewed well in time.

#### 6.5.6 **Submission of Annual Return**

In order to ascertain the quantity of hazardous waste generated by the industry during the period 1<sup>st</sup> April to 31<sup>st</sup> March, it is required to ensure that the industries have submitted annual return in Form 4 and this return must be analyzed critically to look into any gap between the generation and disposal.

## **Chapter 7 – Management of E-Waste**

### **7.1 About E-Waste**

- 7.1.1 E-Waste means electrical and electronic equipment, whole or in part discarded as waste, rejects from manufacturing, refurbishment and repair processes, which are not fit for their originally intended use.
- 7.1.2 It covers obsolete electronic & electrical devices such as computers, servers, main frames, monitors, TVs, refrigerators, air-conditioners, telecommunications devices (such as cellular phones, landlines phones etc.), calculators etc.
- 7.1.3 Increasing use and dependence on Electrical and Electronic Equipment (EEE) resulting into generation of large quantity of e-waste. Since E-waste consists of items of economic value and poses environmental & health risks, it needs to be managed in an environmentally sound manner.
- 7.1.4 E-waste is potentially hazardous waste due to unscientific handling, treatment, incineration and dumping. E-waste contains significant quantities of hazardous waste including lead, mercury, cadmium, antimony nonyphenol, brominated flame retardants, polybrominated biphenyl ethers, polychlorinated biphenyls, triphenyl phosphate, chromium, barium and beryllium etc.
- 7.1.5 Government of India has notified E-Waste Management Rules 2016. These Rules are expanded to manufacturer, dealer, re-furbisher and Producer Responsibility Organization (PRO) of components, consumables, spares and parts of EEE in addition to equipment as listed in Schedule I appended with the Rules. Moreover, Compact Fluorescent Lamps (CFL) and other mercury containing lamps are brought under the provisions of these Rules.

### **7.2 E-Waste Management Rules 2016**

The Government of India has framed E-Waste Management Rules, 2016 for the scientific handling of E-waste so that there should not be any illegal / unscientific disposal of such waste, which may cause environmental degradation and health hazard.

### **7.3 Role of Various Stakeholders in E-Waste Management**

#### **7.3.1 Department of Environment through Punjab Pollution Control Board**

- (i) Identification of bulk consumers, manufacturers, producers, refurbishers, recyclers, dismantlers
- (ii) Inventorisation / quantification of E-Waste
- (iii) Monitoring compliance of Extended Producer Responsibility
- (iv) Grant of Authorization to manufacturers, dismantlers, recyclers and refurbishers
- (v) Conduct random inspection of dismantlers or recyclers or refurbishers
- (vi) Maintain online information regarding authorizations granted
- (vii) Submission of Annual Report to the CPCB
- (viii) Organizing awareness camps for the bulk consumers

### 7.3.2 Department of Local Government and Urban Local Bodies

- (i) To ensure E-waste is properly segregated, collected and is channelized to authorized dismantler or recycler
- (ii) To ensure that E-waste pertaining to orphan products is collected and channelized to authorized dismantler or recycler

### 7.3.3 Department of Industries & Commerce

To ensure earmarking or allocation of industrial space or shed for e-waste dismantling and recycling in the existing and upcoming industrial park, estate and industrial cluster.

### 7.3.4 Responsibilities of manufacture / producer / dealer / refurbisher / bulk consumer / recycler / dismantler

To channelise e-Waste in an environmentally sound manner as per the provisions of E-Waste Management Rules, 2016.

## 7.4 Current Status of Management of E-Waste

7.4.1 As of now only one dismantling facility has been established by M/s Ramky Enviro Engineers Limited, Vill. Nimbua, Tehsil Dera Bassi, Distt. SAS Nagar, which has capacity to handle 4 TPD of E-waste. The Board has also granted 'Consent to Establish' to M/s Black Diamond Cements Pvt. Ltd., Tehsil Dera Bassi, District SAS Nagar and M/s Spreco Recycling, Tehsil Raikot, District Ludhiana for setting up of recycling facility. Both these facilities are likely to be commissioned within six months.

7.4.2 Besides, the Board has invited Expression of Interest for setting up of e-waste recycling facility in the State and two parties of Amritsar and Jalandhar area has shown their interest for setting up of facility. The Board will make consistent efforts to get both these facilities installed within a period of two years so that the E-Waste already generated and being generated can be channelized in an environmentally sound manner.

## 7.5 Action Plan for Management of E-Waste

The department wise action plan for management of E-waste in compliance of E-Waste (Management) Rules, 2016 as amended in 2018 has been prepared and time lines have also been prescribed.

## 7.6 Department of Environment through Punjab Pollution Control Board

### 7.6.1 Identification of bulk consumers, manufacturer, producer, refurbisher, recycler, dismantler

#### (i) Bulk Consumers:

For identification multi-pronged strategy has to be adopted. The head of the various institutions / organizations / departments are to be roped in for the identification as follows:

- (a) State Govt. Offices – Administrative Secretaries of various departments, MDs/Chairperson of Boards / Corporations / PSUs.



- (b) Educational Institutes (Govt / Private) – Administrative Secretary / District Education Officers
  - (c) Financial institutions (Banks / Insurance Companies) – State / Zonal Heads.
  - (d) Central Govt. offices (Income Tax / BSNL / Customs / Provident Funds etc. – State / Zonal / District Heads.
  - (e) Industries (registered under the Factories Act, 1948 and the Companies Act, 2013) – Department of Industries/ Registrar of Companies / Department of Labour / PPCB
  - (f) Multinational Organization / International agency and stock exchanges - CEOs/MDs / Internet / Social Media.
  - (g) Health Care Facilities (with employee strength more than 20 and turnover more than 1 crore) – Department of Health / IMA / PPCB.
- (ii) **Manufacturer, producer, refurbisher, recycler, dismantler**
- (a) Large / Medium - Red / Orange Category industry through PPCB inventory.
  - (b) CPCB website
  - (c) Internet / Social media
  - (d) Department of Information Technology / Department of Industries
- (iii) **Inventorisation / quantification of E-Waste**
- (a) Outsourcing/ involving students of reputed institutes for the Inventorisation of bulk consumers.
  - (b) CPCB website for producers / manufacturer / refurbishers
- (iv) **Monitoring compliance of Extended Producer Responsibility**
- PPCB shall ensure the monitoring & compliance of EPR – Authorisation as per the provisions laid down under the E-Waste (Management) Rules, 2016 amended from time to time
- (v) **Grant of Authorization to manufacturers, dismantlers, recyclers and refurbishers**
- As per the time lines prescribed under E-Waste (Management) Rules, 2016 or as prescribed under the Punjab Transparency and Accountability in Delivery of Public Service Act, 2018, whichever is earlier.

**(vi) Conduct random inspection of dismantler or recycler or refurbishers**

At least two visits in a year to the dismantling / recycler facilities / refurbishers by the concerned Regional Office of the Board and special surprise checks by the teams constituted by the Head Office.

**(vii) Maintaining online information regarding authorization granted**

PPCB shall upload the information regarding authorization granted to manufacturers, dismantlers, recyclers and refurbishers for placing the same in the public domain.

**(viii) Submission of Annual Report to the CPCB**

The annual return submitted by the manufacturer, dismantler, recycler and refurbisher in Form-3 before 30<sup>th</sup> June of every year, shall be complied by the PPCB for further sending to CPCB by 30<sup>th</sup> September of every year in Form-5.

**(ix) Organizing awareness camps for the bulk consumers**

Each Regional Office of PPCB shall organize at least two awareness camps for Educational Institutions, Major Hospitals, Govt. Organizations, Large Scale Industrial Units etc. to make them aware about their responsibilities under the E-Waste Management Rules, 2016 for channelization of the such type of waste in an environmentally sound manner.

**7.6.2 Department of Local Government (ULBs)**

- (i) To ensure proper segregation/collection of e-waste mixed in MSW and its channelization to authorised dismantler or recyclers.
- (ii) To ensure that e-waste pertaining to orphan products is collected and channelized to authorised dismantler or recycler.
- (iii) Department of Local Bodies to issue instructions to all the municipal Corporations/ municipal councils regarding sound management of E-waste.
- (iv) Department of Local Bodies to make agreement/ sign MoU with the authorized dismantler/ recycler for channelizing the E-waste segregated from MSW.
- (v) Concerned municipalities to maintain such records of the E- waste, transferred to the recycler/ dismantler.

**7.6.3 Department of Industries & Commerce / Housing & Urban Development / any other Development Authority**

- (i) To ensure earmarking or allocation of industrial space or shed for E-waste dismantling and recycling in the existing and upcoming industrial park, estate and industrial cluster.

- (ii) For compliance of above, the concerned authority / department shall identify at least 10 cities where space or shed for e-waste dismantling and recycling shall have to be reserved. Preferably, the towns shall be selected on the basis of potential bulk consumers, like
- (a) Industrial predominance (e.g Ludhiana & Jalandhar)
  - (b) Educational predominance (Patiala, Ludhiana, Jalandhar, Amritsar)
  - (c) Commercial/ Govt Office dominance (Ludhiana, Jalandhar, Patiala, Mohali)
  - (d) Geographical Connectivity (Amritsar, Faridkot, Bathinda, Ludhiana, Mohali)
  - (e) IT Hub (Mohali)

#### 7.6.4 Timelines for E-Waste Management activities

S. No.	Name of the activity	Timeline / targets to complete the activity	Action Plan for next four years
1	Identification of Bulk Consumers & inventorisation of E-Waste (Tentatively 20,000 in Nos.) Exact figure after completion of identification process	About 20,000 bulk consumers to be identified / inventorized	20% by 2019-20 40% by 2020-21 60% by 2021-22 80 % by 2022-23 and so on
2	Monitoring compliance of Extended Producer Responsibility	All producers identified by CPCB to be monitored	50% by 2019-20 75% by 2020-21 100% by 2021-22
3	Grant of Authorization to manufacturers, dismantlers, recyclers and refurbishers	90 days from receipt of application as per Rules	Regular activity
4	Random inspection of Dismantler, Recycler, Refurbisher	Two visits in a year of each facility	Regular activity
5	Submission of Annual Return by manufacturer, dismantlers, recyclers and refurbisher	30 <sup>th</sup> June of every year	Regular activity
6	Submission of Annual Return by bulk consumers	30 <sup>th</sup> June of every year	10% by 2019-20 15% by 2020-21 20% by 2021-22 25% by 2022-23 and so on
7	Earmarking / allocation of industrial space for shed for dismantling and recycling in the existing and upcoming industrial park, estate and industrial cluster.	No such timelines specified in the E-waste management Rules, 2016	2 plots by 2019-20 4 plots by 2020-21 7 plots by 2021-22 10 plots by 2022-23

## **Chapter 8 – Monitoring Requirements and Formats**

### **8.1 Monitoring Requirements**

There is need to monitor the progress of compliance of waste management as prescribed under various Rules and envisaged under Action Plan for management of different types of waste.

### **8.2 Monitoring of Management of Municipal Solid Waste**

As envisaged in the Action Plan and Rules, a number of activities have to be undertaken for management of municipal solid waste. Following activities have been identified for monitoring as per proforma given at Annexure A:

**(i) Monitoring of monthly review meetings of district level committees**

The Department of Local Government will ensure regular monitoring of the review meetings of the District Level Committees constituted under the provisions of Solid Waste Management Rules, 2016. The meeting shall be conducted within first 7 days of the month and Department of Local Government shall ensure uploading of the proceedings of the same on the website by 15<sup>th</sup> day of the month.

**(ii) Monitoring of submission of SWM Action Plans by ULBs**

Each ULB shall prepare individual solid waste management action plan in compliance to the Solid Waste Management Rules, 2016 and progress shall be monitored.

**(iii) Monitoring of Door to Door Collection of Segregated Solid Waste**

The ULBs shall arrange for 100% door to door collection of segregated solid waste from all households including slums and informal settlements, commercial, institutional and other non-residential premises. The progress shall be monitored monthly.

**(iv) Monitoring of Source Segregation of Waste**

Each ULB shall ensure 100% source segregation of the solid waste into biodegradable, non-biodegradable and domestic hazardous waste and shall submit monthly progress of the same.

**(v) Monitoring of Public sweeping including night sweeping**

Each ULB shall submit the frequency of public roads sweeping including night sweeping for residential, commercial and public areas.

**(vi) Monitoring of Aerobic composting units/processing units/Material Recovery Facilities (MRFs)**

The ULBs are required to set up processing units and material recovery facilities for proper management of the waste. Each ULB submit monthly progress regarding setting up &

operational status of aerobic composting units/Material Recovery Facilities alongwith details of processing units set up by households and other establishments like colonies, welfare societies/ hotels/ marriage palaces etc.

(vii) **Monitoring of Waste Processing by Bulk Waste Generators**

All the bulk waste generators having an average waste generation rate exceeding 100 kg/day shall facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorized recyclers. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises. The ULBs shall submit the compliance of the same by the bulk waste generators on monthly basis.

(viii) **Monitoring of Onsite waste management of green/horticulture waste**

As per the Rules, the ULBs shall collect horticulture, parks and garden waste separately and process in the parks and gardens. Progress regarding the same shall be submitted by each ULB on monthly basis mentioning the number of parks/gardens/green belts where on site composting has been started.

(ix) **Monitoring of Integration of Rag Pickers/ Waste collectors/ Kabadis**

A system to recognise organisations of waste pickers or informal waste collectors shall be established by the ULBs including a system for integration of these authorised waste-pickers and waste collectors to facilitate their participation in solid waste management. The ULBs will submit progress regarding same on monthly basis.

(x) **Monitoring of GPS tracking of mechanized collection and transportation vehicles**

In case of mechanized waste collection and transportation of solid waste, the ULBs shall install GPS on the vehicles and data of same shall be submitted by each month.

(xi) **Monitoring of treatment of legacy waste**

The ULBs shall investigate and analyse all old open dumpsites and existing operational dumpsites for their potential of bio-mining and bio-remediation and wheresoever feasible, take necessary actions to bio-mine or bio-remediate the sites. Also, the garbage vulnerable points/vacant plots shall be identified and cleaned.

(xii) **Monitoring of Citizen Grievance Redressal through SwachhApp**

Total no. of complaints received and resolved during a month shall be monitored by the ULBs.

**(xiii) Monitoring of Mixing of solid waste into water bodies/ drains/ rivers etc.**

The local authorities shall make arrangements by providing fencing/boundary wall/wire mesh etc. at the points from where the solid waste is mixing into water bodies/ drains/ rivers etc.

**(xiv) Monitoring of Awareness mechanism for behavior change**

The ULBs shall create public awareness through information, education and communication campaign and educate the waste generators for management of solid waste by reuse of waste, avoiding littering, source segregation, composting etc.

**(xv) Monitoring of the Processing sites by the Board**

Monitoring of the Processing sites set up by the ULBs shall be done by Board through its Regional Offices on monthly basis.

**8.3 Monitoring of Management of Construction and Demolition Waste**

As envisaged in the action plan and rules, a number of activities have to be undertaken for management of C & D waste. Following activities have been identified for monitoring as per proforma given at Annexure B:

**(i) Identification & Notification of Sites for Construction and Demolition Waste**

The concerned ULB shall identify the suitable sites for setting up of storage, processing and recycling sites for C & D waste and shall notify the same.

**(ii) Monitoring of awareness**

The ULBs shall create public awareness through information, education and communication campaign and educate the waste generators for management of C&D waste.

**(iii) Monitoring of Collection, Segregation and channelization of C&D Waste on monthly basis**

The ULBs shall make arrangements for collection, segregation and channelization of C&D Waste either through their own resources or by appointing private operators.

**(iv) Monitoring of processing/ recycling of C&D waste**

The ULBs shall set up processing/recycling facilities for proper management of C&D waste within its jurisdiction.

**(v) Monitoring of Penalties by ULBs**

The ULBs shall impose penalties on the violators of the C&D waste Rules and shall submit the details of levying of penalties along with amount of fine recovered.

**(vi) Issuance of directions for proper management of C&D waste**

The ULBs shall issue detailed directions with regard to proper management of C&D waste within its jurisdiction in accordance with the provisions of the Rules.

**(vii) Sanctioning of waste management plans of generators**

The ULBs shall examine and sanction the waste management plan of the generators within a period of one month or from the date of approval of the building plan whichever is earlier from the date of its submission.

**(viii) Monitoring of the Processing Sites by PPCB**

Monitoring of the Storage/Processing sites set up by the ULBs shall be done by Board through its Regional Offices on quarterly basis.

**8.4 Monitoring of Management of Plastic Waste**

Following activities shall be monitored as per proforma given at Annexure-C:

**(i) Framing of bye-laws for plastic waste management by ULBs**

Local bodies are mandated under Plastic Waste Management Rules, 2016 to frame bye-laws incorporating the provisions of the Rules. Monitoring will be done on monthly basis.

**(ii) Setting up of Material Recovery Facilities by ULBs**

Local bodies are responsible for setting up of infrastructure for segregation and operationalization of the waste management system. Monitoring of MR facilities setup by ULBs and Gram Panchayat and their operational status will be done on monthly basis.

**(iii) Monitoring of MRFs for segregation and channelization of plastic waste**

It is the duty of ULB and Gram Panchayat to ensure segregation, collection, storage, transportation and disposal of plastic waste. Recyclable plastic waste out of this segregated waste has to be channelized to recycler registered with PPCB, while non-recyclable plastic waste has to be utilized in road construction, cement kilns, converting into fuel oil and through plasma pyrolysis. Monitoring will be done on monthly basis.

**(iv) Monitoring of the awareness programmes to discourage use of single use plastic.**

ULBs shall create awareness amongst the society either through interpersonal or electronic/print media to promote the use of jute bags & compostable bags in place to plastic carry bags and to discourage use of single use plastic items. Monitoring will be done on monthly basis.

**(v) Monitoring of littering / open burning of plastic waste**

ULB shall ensure that no littering /open burning of plastic waste takes place under its jurisdiction and impose penalties for such violations. Monitoring will be done on monthly basis.

**(vi) Monitoring of Registration under Plastic Waste Management Rules, 2016**

PPCB shall register producers, brand owners, recyclers and manufacturers in accordance with Plastic Waste Management Rules, 2016. Monitoring will be done on quarterly basis.

**(vii) Monitoring of Producers, Importers and Brand owners under Extended Producer Responsibility**

Producers, Importers and Brand owners need to establish a system for collecting back the plastic waste generated due to their products and submit plan for collection of used MLP sachets, pouches, packaging, etc. to PPCB. Monitoring to be done on quarterly basis by PPCB as per proforma.

**(viii) Monitoring of random inspection of Recyclers, Producers, Importers, Manufacturers and Brand-Owners (On half yearly basis)****(ix) Monitoring of Annual Return to be filed by ULBs (On yearly basis)****(x) Monitoring of the ban on plastic carry bags in the State**

Monitoring of the enforcement of the ban on plastic carry bags will be done on quarterly basis to ensure effective compliance.

**8.5 Monitoring of Management of Bio-Medical Waste**

Monitoring of progress on various action items will be done as per the proformas given in Annexure-D:

**(i) Monitoring of Identification & Authorization of the new HCFs**

Regional offices of PPCB will report progress on monthly basis.

**(ii) Monitoring of Coverage of HCFs under DAH and DRDP-**

On the basis of timelines given by Department of Animal Husbandry and Department of Rural Development & Panchayat for HCFs under its jurisdiction, progress regarding authorization will be monitored by PPCB on quarterly basis.

**(iii) Monitoring of the installation of the ETPs by Govt. HCFs**

On the basis of timeline given by Department of Health regarding installation of ETP/STP in Govt. HCFs, progress will be reported by Department of Health on quarterly basis for monitoring.



(iv) **Monitoring of HCFs and CBWTFs**

Progress will be reported by PPCB on quarterly basis for monitoring of HCFs and CBWTFs.

(v) **Monitoring of awareness programmes regarding segregation of BMW by house-holds**

Progress will be reported by ULB on quarterly basis.

(vi) **Monitoring of the Meetings of the Committees constituted under BMW Rules, 2016**

Under the BMW Rules, two committees have been constituted by the State Health Department, one at District Level and one at State Level. Progress on regular meetings of the committee will be monitored.

(vii) **Monitoring of Annual Return to be filed by HCFs and CBWTFs (On yearly basis)**

**8.6 Monitoring of Management of Hazardous Waste**

Progress will be monitored as per formats given at Annexure –E:

- (i) Monitoring of Identification of hazardous waste generating units (monthly basis)
- (ii) Monitoring of Hazardous Waste generating units (monthly basis)
- (iii) Monitoring of Common Hazardous Waste Treatment, Storage & Disposal Facility (quarterly basis)
- (iv) Monitoring of Installation of Incinerator at Common TSDF (quarterly basis)
- (v) Monitoring of quantum of hazardous waste generated by occupier (quarterly basis)
- (vi) Monitoring of interstate movement of hazardous waste for recycling/ reutilization / disposal (quarterly basis)
- (vii) Monitoring of quantum of hazardous wastes recycled and utilized (quarterly basis)
- (viii) Monitoring of quantum of hazardous waste disposed of (quarterly basis).
- (ix) Monitoring of submission of annual return.

**8.7 Monitoring of Management of E-Waste**

Progress will be monitored as per formats given at Annexure – F:

- (i) Monitoring of identification / inventorisation of bulk consumers and quantification of E-waste (monthly basis)
- (ii) Monitoring of compliance of Extended Producer Responsibility (quarterly basis)

- (iii) Monitoring of Grant of Authorization to Manufacturers, Dismantlers, Recyclers and Refurbishers and its online updation (monthly basis)
- (iv) Monitoring of random inspection of Dismantler, Recycler, Refurbisher (half yearly basis).
- (v) Monitoring of Annual Return to be filed by Bulk Consumers, Manufacturer, Refurbisher, Recycler, Dismantler (yearly basis).
- (vi) Monitoring of Segregation and channelization of E-waste from the MSW by the Deptt. of Local Bodies (quarterly basis).
- (vii) Monitoring of allocation of industrial space for industrial sheds / plots by the Deptt. of Industries/ other development agencies (quarterly basis).

## **Chapter 9 – Governance and Supervision**

### **9.1 Monitoring of Progress and Compliance with the Rules**

#### **9.1.1 Concerned Departments/ Agencies**

Monitoring will be done by the concerned Departments/ Agencies, which are executing or responsible for particular activities and it will be their primary responsibility to ensure compliance of the Rules and other actions.

#### **9.1.2 Department of Environment**

Department of Environment will organize three level of review to monitor the progress:

- (i) District Level Committee under Deputy Commissioner
- (ii) State Level Committee under Administrative Secretary, Department of Environment
- (iii) Apex Committee under Chief Secretary

### **9.2 District Level Committee under Deputy Commissioner**

#### **9.2.1 District level Committee under Chairmanship of Deputy Commissioner and comprising of the following:**

- (i) Senior Superintend of Police
- (ii) Representative of District Legal Services Authority
- (iii) Additional Deputy Commissioner
- (iv) Commissioner MC/ EO MC
- (v) District Education Officer (Secondary)
- (vi) Environmental Engineer, PPCB – Convener

#### **9.2.2 The Committee shall have the following functions:**

- (i) Review of progress of various stakeholders department involved in the implementation of the Waste Management Rules.
- (ii) The Committee shall meet and shall submit its report to State Level Committee on monthly basis.

### **9.3 State Level Committee under Department of Environment**

#### **9.3.1 State Level Committee under Chairmanship of Administrative Secretary, Department of Environment and comprising of the following:**

- (i) Director, Local Government
- (ii) Director, Rural Development
- (iii) Director, Industries and Commerce
- (iv) Director, Environment
- (v) Chairman, PPCB
- (vi) Joint Director, Environment – Convenor

9.3.2 The Committee shall have the following functions:

- (i) Review of Implementation of the Rules and NGT orders
- (ii) The Committee shall give its recommendations to Apex Committee on quarterly basis for effective implementation of the Waste Management Rules.

9.4 **Apex Committee under Chief Secretary**

9.4.1 **State Level Committee under Chairmanship of Administrative Secretary, Department of Environment and comprising of the following:**

- (i) Administrative Secretary, Local Government
- (ii) Administrative Secretary, Rural Development
- (iii) Administrative Secretary, Industries and Commerce
- (iv) Administrative Secretary, Housing and Urban Development
- (v) Administrative Secretary, Environment
- (vi) Chairman, PPCB
- (vii) Additional Secretary, Environment – Convenor

9.4.2 **The Committee shall have the following functions:**

- (i) Taking Policy decisions as per recommendations received from State Level Committee.
- (ii) The Committee shall meet once in six months.

9.5 **Standing Committees**

The above Committees are standing committees. These will also work as Special Task Force or any other name given by NGT or other courts. They may invite any other officer as part of the committee as may be required and similarly the functions can be added as may be required.

### Annexure A – Formats for Monitoring Progress of Solid Waste Management

#### 1. Monthly review meetings of District Level Committees

Sr. No.	Name of District	Date of meeting*	Date of upload of proceedings on the website**
<p>*Meeting to be conducted within first 7 days of the month.</p> <p>** Proceedings to be uploaded by 15th day of the month.</p>			

#### 2. Submission of SWM action plans by ULBs

Name of ULB	Date of Preparation of Action Plan	Date of approval of resolution by the House	Date of approval by PMIDC

#### 3. Door to Door Collection of Segregated Solid Waste

Name of ULB	Total no. of wards	Total Nos. HHs/ shops/ others	Status of Door to Door (D2D) collection of waste	
			Nos. of HHs/ shops/ others covered	% coverage

**4. Source Segregation of waste into biodegradable, non-biodegradable and domestic hazardous.**

Name of ULB	Total no. of wards	Total Nos. HHs/ shops/ others	Status of Source Segregation	
			Nos. of HHs/ shops/ others covered	% coverage

**5. Sweeping of Residential, Public and Commercial areas**

Name of ULB	Places	Total Nos.	Once a day (Nos.)	Twice a day (Nos.)	Night sweeping (Nos.)
	Residential areas				
	Commercial areas				
	Public places				

**6. Aerobic composting units/processing units/Material Recovery Facilities (MRFs)**

Name of ULB	Required nos. of Aerobic Compost Units	No. of Compost Units constructed			No. of processing units/compost units by individuals/others		No. of MRF built	No. of Functional MRF
		With shed	Without shed	Total	Home composting (No. of households)	Other establishments (Colonies, welfare societies/hotels /marriage palaces etc)		

**7. Identification and compliance status of Bulk Waste Generators (BWGs)**

Name of ULB	Total No. of Bulk Waste Generators	Compliance by BWGs (nos.)

**8. Horticulture/ green waste management**

Name of ULB	Places	Total No.	On site composting being done (Nos.)
	Public parks/gardens under jurisdiction of ULB		
	Public parks/gardens approved by other Govt. agencies		
	Green belt of institutions /organisations		

**9. Inclusion of Rag Pickers/ Waste collectors/ Kabadis**

Name of ULB	Particulars	Rag Pickers	Waste Collectors	Safai Sewaks (regular/ contract/ out sourced)	Volunteers (NGOs/CBOs)
	Total Nos. identified				
	Integrated in SWM (Nos.)				
	I-Card issued (Nos.)				
	Safety equipments provided (Nos.)				
	Health check up (Nos.)				
	Participated in trainings (Nos)				

	Self Help Groups formed under NULM				
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**10. GPS Monitoring in case of mechanised waste collection and transportation vehicles**

Name of ULB	Total No. of Mechanised vehicles	Total No. of Mechanised vehicles with GPS

**11. Cleanup drives for removal of legacy waste from littering/ Garbage vulnerable points/ vacant plots**

Name of ULB	Legacy waste		Identification and elimination of Garbage Vulnerable Points(GVPs)/Vacant Plots	
	Total no. of sites having legacy waste	No. of sites where remediation has been done	Total No. of GVPs /Vacant Plots identified	No. of GVPs /Vacant Plots cleared

**12. Citizen Grievance Redressal through SwachhApp**

Citizen Grievance Redressal system set up along with the Name, mobile No. email Id of Nodal Officer	No. of complaints received during the month	No. of complaints resolved during the month



**13. Prevention of mixing of solid waste into water bodies/drains/river etc.**

Name of ULB	Total no. of solid waste dumping points along water bodies/drain/rivers etc.	No. of sites where arrangements made to avoid entry of solid waste

**14. Awareness for behaviour change**

Name of ULB	No. of awareness programs conducted		
	Through interpersonal communication (face to face)/public meetings, etc.		Through electronic/print media
	No. of Programs	No. of participants	

**15. Monitoring of the Processing sites by the Board**

Name of Regional Office	No. of ULBs visited	No. of ULBs found violating	Action taken against the ULB

### Annexure B – Monitoring Proforma for C&D Waste Management

Name of ULB:

District:

Month

#### 1. Proforma for progress of allocation of Sites for Construction and Demolition Waste

Total no. of sites identified for processing of C&D waste	Name/Description of site	Location (Lat/Long)	Notified (Yes/No)

#### 2. Proforma for Monitoring of Awareness

No. of awareness programs conducted by ULB		
Through interpersonal communication (face to face)/public meetings, etc.		Through electronic/print media
No. of Programs	No. of participants	

#### 3. Proforma for progress on Collection and Segregation of C&D Waste

Total no. of bins placed / sites designated for collection of C&D waste	Total Quantity of waste collected (MT)	Quantity of waste segregated (MT)						
		Concrete	Soil	Steel	Wood & plastic	Bricks	Mortar	Others

4. **Proforma for progress of processing/ recycling of C&D waste**

No. of processing / recycling facilities required	No. of processing / recycling facilities already established	No. of processing / recycling facilities to be established during the month

5. **Proforma for levy of Penalties by ULBs on Violators of C&D Waste Rules**

No. of violations observed	Action taken against violators	
	No. of challans issued	Amount of fine collected (in Rs)

6. **Issuance of directions for proper management of C&D waste**

Whether directions have been issued by the ULB or not?	Date of issuance, if yes	Present status, if no

7. **Sanctioning of waste management plans of generators by ULBs**

Total no. of waste management plans received from generators	No. of waste management plans examined and sanctioned	Date of sanction

## 8. Monitoring of the Processing sites by the Board (on Quarterly basis)

Name of Regional Office	No. of ULBs visited	No. of ULBs found violating	Action taken against the ULB

### Annexure C – Monitoring Proforma for Plastic Waste Management

#### 1. Framing of bye-laws for plastic waste management (on monthly basis by ULBs)

Name of ULB	Date of Preparation of bye-laws	Date of approval of resolution by the House	Date of approval by PMIDC

#### 2. Setting up of Material Recovery Facilities (on monthly basis by ULBs)

Name of ULB	No. of MRFs required	No. of MRF constructed	No. of MRFs operational	No. of MRFs under construction

#### 3. Monitoring of MRFs for segregation and channelization of plastic waste (on monthly basis by ULBs)

Name of ULB	Segregation of Plastic Waste into Recyclable & Non-Recyclable Plastic Waste started (Yes/No)	If yes, Qty. of segregated plastic waste		Qty. of segregated recyclable plastic waste disposed		Qty. of non-segregated recyclable plastic waste disposed	
		Qty. of recyclable plastic waste collected (in kgs)	Qty. of non-recyclable plastic waste collected (in kgs)	Qty. of recyclable plastic waste disposed off to authorized recycler (in kgs)	Qty. of recyclable plastic waste disposed off through another means (in kgs)	Qty. of non-recyclable plastic waste used in road construction (in kgs)	Qty. of non-recyclable plastic waste used in cement kilns/RDF (in kgs)

#### 4. Monitoring of the awareness programmes to discourage use of single use plastic etc. (on monthly basis)

Name of ULB	No. of awareness programs conducted		
	Through interpersonal communication (face to face)/public meetings, etc.		Through electronic/print media
	Nos. of Programmes	No. of participants	

**5. Monitoring of littering/open burning of plastic waste (on monthly basis by ULBs)**

No. of violations regarding littering/open burning of plastic waste observed	Action taken against violators	
	No. of challans issued	Amount of fine collected in Rs.

**6. Monitoring of Registration under Plastic Waste Management Rules, 2016 (On quarterly basis by PPCB)**

Category	No. of units identified	No. of units obtained registration	Remaining no. of units yet to obtain registration	Action taken against the violator
Producer				
Brand Owner				
Recycler				
Manufacturer				

**7. Monitoring of random inspection of Recyclers, Producers, Importers, Manufacturers and Brand-Owners (On half yearly basis)**

Name of Regional Office	No. of Recyclers, Producers, Importers, Manufacturers and Brand-Owners identified	Monitoring Status		Action Taken against the violator
		Required to be visited in year	Visited in year	

**8. Monitoring of Annual Return to be filed by ULBs (On yearly basis)**

Name of Regional Office	Name of ULB	Whether Annual Return submitted or not by 30th June	Action taken against the ULB for not submitting Return

**9. Monitoring of Extended Producer Responsibility (on half yearly basis)**

Name of Regional Office	Name of Brand-Owner/Producer / Importer	Whether submitted Action Plan to PPCB & ULB	Whether obtained Registration or not	Action taken against the Brand-Owner/Producer/ Importer which have not submitted action plan or not obtained registration

**10. Monitoring of the ban on plastic carry bags in the State (on monthly basis by ULBs)**

Sr.No	Name of ULB	No. of violators found regarding use of plastic carry bags	Action taken against violators		
			Qty. of plastic carry bags confiscated in kgs.	No. of challans issued	Amount of fine collected in Rs

**Annexure D – Monitoring Proforma for Bio-Medical Waste Management****1. Monitoring of Identification and Authorization of new HCFs (on monthly basis by PPCB)**

Name of Regional Office of PPCB	No. of new HCFs		
	Identified	Authorized under the Rules	Yet to be Authorized

**2. Monitoring of Coverage of HCFs under DAH and DRDP (on quarterly basis by PPCB)**

Name of Regional Office of PPCB	Name of Department (DAH/DRDP)	No. of HCFs under DAH and DRDP		
		Total	which have obtained fresh authorization from the Board	which have not obtained authorization

**3. Monitoring of the installation of the ETPs by Govt. HCFs (On Quarterly basis by Health Deptt)**

No. of HCFs under the Department	No. of Govt. HCFs	
	which were required to install ETP / STP as per the timeline	which have installed ETP / STP



**4. Monitoring of HCFs and CBWTFs- (On Quarterly basis by PPCB)**

Name of RO, PPCB	HCFs with bed capacity of 200 & above			HCFs with bed capacity of less than 200 beds but more than 50 beds			HCFs with bed capacity of less than and equal to 50 beds			CBWTFs		
	Total	Visited	Not complying	Total	Visited	Not complying	Total	Visited	Not complying	Total	Visited	Not complying

**5. Monitoring of the awareness programmes regarding segregation of BMW by house-holds. (Quarterly by PPCB)**

Name of Regional Office	No. of awareness programmes organized	No. of participants

**6. Monitoring of the Meetings of the Committees constituted under BMW Rules, 2016 (On monthly basis by Health Deptt.)**

District Level

Name of District	Date of Meeting of the District Level Committee	Issues discussed during the meeting	Date of Submission of Report to State Level Committee

**State Level**

Date of Meeting of the State Level Committee	Issues discussed during the meeting	Any improvements suggested

**7. Monitoring of Annual Return to be filed by HCFs and CBWTFs (On yearly basis)**

Name of Regional Office	No. of HCFs and CBWTFs under the jurisdiction	Whether Annual Return submitted or not by 30th June	Action taken against the HCFs/CBWTFs for not submitting Return

### Annexure E – Monitoring Proforma for Hazardous Waste Management

#### 1. Monitoring of Identification of hazardous waste generating units (Monthly)

Name of Regional Office of PPCB	No. of new Hazardous Wastes Generating Units		
	Identified	Authorized under the Rules	yet to be Authorized

#### 2. Monitoring of Hazardous Waste generating units (Monthly)

Name of the Regional Office of PPCB	Total no. of hazardous waste generating units	No. of units inspected	No. of units complying as per Rules	No. of units non-complying as per Rules	Action taken against the non-complying units

#### 3. Monitoring of Common Hazardous Waste Treatment, Storage & Disposal Facility (Quarterly)

Quantity in Stock at the beginning of the Quarter (MT)	Quantity of Hazardous Waste Received during the quarter (MT)	Quantity of Hazardous Waste Disposed (MT)	Quantity Pre-Processing for utilization (MT)	Quantity in Stock at the end of the quarter (MT)	Cumulative HW disposed in SLF by the end of financial year (MT)

**4. Monitoring of Installation of Incinerator at Common TSDF (Quarterly)**

Name of Regional Office	Name and Address of CTSDf	Status of Environmental Clearance of Common Incinerator	Status of installation of machinery of Common Incinerator	Status of commissioning of Common Incinerator

**5. Monitoring of Submission of Quantity of Hazardous Waste Generation by Occupier (Quarterly)**

Name of the Regional Office	No. of Hazardous Waste Generating Industries	Quantity of Hazardous Waste generated (MT)				Quantity of HW Imported (MT)	Quantity of HW Exported (MT)
		Landfillable	Incinerable	Recyclable	Utilizable		

**6. Monitoring of Interstate Movement of Hazardous Waste for recycling/ utilization / disposal (Quarterly)**

Name of the Regional Office	No. of Hazardous Waste Generating Industries	Hazardous Waste	Hazardous Waste Received from other State / UT		Hazardous waste sent to other State/ UT	
			Name of State / UT from which waste received	Quantity received (MT)	Name of State/ UT where waste sent	Quantity sent (MT)
		For disposal at common secured landfill				
		For disposal at common incinerator				
		For recycling by Schedule IV recyclers				
		For utilization in co-processing (cement plants)				
		For utilization under Rules 9 (Other than co processing)				

**7. Monitoring of Quantity of hazardous wastes recycled and utilized (Quarterly)**

Name of the Regional Office No.	No. of Hazardous Waste Generating Industries	Recycling / Utilization of Waste (generated within State)				Recycling / Utilization of hazardous waste (received from other State /UT)			
		Quantity of waste recycled (listed under Schedule IV Hazardous Waste) (MT)	Quantity Utilized (MT)			Quantity of waste recycled (listed under Schedule IV Hazardous Waste) (MT)	Quantity Utilized (MT)		
			Co-processing in Cement Kiln	Under Rules 9 Other than Co-Processing)	Captive Utilization		Co-processing in Cement Kiln	Under Rules 9 Other than Co-Processing)	Captive Utilization

**8. Monitoring of Quantity of Hazardous Wastes Disposed (Quarterly)**

Name of the Regional Office No.	No. of Hazardous Waste Generating Industries	Disposal of hazardous waste (generated within the State)				Disposal of hazardous waste (received from other State /UT)			
		Quantity Disposed in Secured Landfill (MT)		Quantity disposed through Incinerator (MT)		Quantity Disposed in Secured Landfill (MT)		Quantity Disposed through incinerator (MT)	
		Common	Captive	Common	Captive	Common	Captive	Common	Captive

**9. Monitoring of submission of Annual Return (yearly)**

No. of industries identified	No. of industries obtained authorization	No. of industries submitted annual return for the period 1st April to 31st March	Action taken against the violators

### Annexure F – Monitoring Proforma for E-Waste Management

#### 1. Monitoring of identification / Inventorisation of bulk consumers and quantification of E-waste (monthly)

District	Identification of Bulk consumers		Bulk consumers for which inventorization process completed		Quantum of e-waste as per inventorization	
	During the month (In Nos.)	Total (In nos.)	During the month (In Nos.)	Total (In nos.)	During the month (In kgs)	Total quantity (In kgs.)

#### 2. Monitoring of compliance of Extended Producer Responsibility (quarterly)

District	Producers as per the information provided by CPCB on website		Monitoring of compliance by PPCB	
	Uploaded on website during the quarter (In Nos.)	Total (In nos.)	During the quarter (In Nos.)	Total (In nos.)

#### 3. Monitoring of Grant of Authorization to Manufacturers, Dismantlers, Recyclers and Refurbishers and its online updation (monthly)

District	Description	Manufacturers identified			Dismantlers /Recyclers		
		Identified (in nos.)	Authorizati on applied (in nos.)	Authoriz ation obtained (in nos.)	Identified (in nos.)	Authoriz ation applied (in nos.)	Authoriz ation obtained (in nos.)
	During the month						
	Total						
District	Description	Refurbishers					
		Identified	Authorization applied		Authorization obtained		
	During the month						
	Total						

**4. Monitoring of random inspection of Dismantler, Recycler, Refurbisher (half yearly)**

District	Name of Dismantler, Recycler, Refurbisher identified	Monitoring status (frequency once in six month)		
		Required to be visited in year	Visited during current six months	Visited during current year
		(In Nos.)	(In Nos.)	(In Nos.)
	Dismantler / Recycler			
	Refurbisher			

**5. Monitoring of Annual Return to be filed by Bulk Consumers, Manufacturer, Refurbisher, Recycler, Dismantler (annually)**

District	Bulk Consumers		Manufacturer		Refurbisher		Recycler		Dismantler	
	Identified	Returns filed	Identified	Returns filed	Identified	Returns filed	Identified	Returns filed	Identified	Returns filed

**6. Monitoring of Segregation and channelization of E-waste from the MSW by the Deptt. of Local Bodies (quarterly)**

E-Waste segregated from Municipal Waste or Collected Directly			E-Waste channelized through authorized recycler / dismantler		Whether records maintained or Not		Awareness camps organized for the rag pickers / agency or Municipal Staff	
During the quarter (In Kgs)	Total (In Kgs)		During the quarter (In Kgs)	Total (In Kgs)	For E-waste generated	E-Waste channelized	During the quarter (In Kgs)	Total (In Kgs)



**7. Monitoring of allocation of industrial space for industrial sheds / plots by the Deptt. of Industries/ other development agencies (quarterly)**

District	Earmarking / allocation of industrial space for shed for dismantling and recycling in the existing and upcoming industrial park, estate and industrial cluster			
	To be provided	Identified earmarked	/ Allotted notified	/ Possession given