GOVERNMENT OF JAMMU AND KASHMIR (UT)
DIRECTORATE OF AGRICULTURE JAMMU

To,

1-3. Joint Director Agriculture Inputs/Extn/SLUB Jammu
4. Agriculture Research Engineer, Talab Tillo, Jammu
5. Dy. Director Agriculture (Trg) Jammu.
6. Agriculture Chemist Jammu.
7. Agronomist Vegetable Jammu
8. Divisional Soil Survey Officer, Jammu
9. Dy.Director M&E (Office).
10-20. Chief Agriculture Officer Jammu/ Kathua/ Udhampur/ Doda/ Poonch/Rajouri/ Samba/Reasi/ Ramban/Kishtwar
21-23. Plant protection Officer (Office) /Accounts Officer (Office) /Incharge C.S.S. Scheme, Directorate of Agriculture Jammu
24-32. Divisional Seed Certification Officer Jammu/Potato Development Officer, Jammu / Asstt Director Law Enforcement /Seed Analyst/Spawn Production Officer /Mushroom Development Officer/Assistant Agrostologist Jammu/Assistant Soil Conservation Officer (I&P) / Asstt Entomologist Apiculture Jammu.
33-34. Farm Manager, S.M. Farm Chinore/Chakrohi

No: Agri.Dev-280/2019-20/**1473-1507** Dated: **14 -01-2020.**

Sub: Action Plan on Plastic Waste Management (Jammu & Kashmir).

Sir,

It is an established fact that plastic waste has a significant affect in Agriculture as it pollutes the basic resources of soil, water and air. Littering of Agriculture lands by the plastic waste creates ugly and unhygienic scene. It also choke the irrigation water channels besides reduced percolation which result in lowering of water lable and enhanced run-off.

In addition, the disposal of plastic waste containers of hazardous Agricultural chemicals such as pesticides (Insecticides / Fungicides / Weedicides) require special procedure developed for the disposal of left over portion of pesticide samples and their containers after analysis which can be carried only in **"Waste treatment, storage & Disposal facility"** (TSDF) Centre.

In this regard, please find enclosed the notification of the **Action plan on Plastic Waste Management (J&K) 2019**, for adoption and wider publicity in the matter.

Yours faithfully,

(K K Sharma)
Agriculture Economist
Directorate of Agriculture
Jammu

Copy to the:-

1. I/C website (**www diragrijmu.nic.in**) for uploading the Action Plan as a reference & record.

Government of Jammu and Kashmir
Housing and Urban Development Department,
Civil Secretariat, Srinagar / Jammu

-0-

Subject: - Action Plan on Plastic Waste Management (Jammu & Kashmir)

Government Order No. 13 – JK(HUD) of 2019

D a t e d: - 20 - 11 - 2019

Sanction is hereby accorded to the notification of the Action Plan on Plastic Waste Management (Jammu & Kashmir) 2019, enclosed as ***Annexure-A*** to this Order.

By order.

Sd/-
(Dheeraj Gupta), **IAS**
Principal Secretary to Govt.
Housing and Urban Dev. Deptt.

No:-HUD/Lit/114/2018-JMC/NGT Dated: - 20 - 11 - 2019

Copy to the:-

1. Principal Secretary to Hon'ble Lt. Governor.
2. All Administrative Secretaries to Government_____
3. Divisional Commissioner Jammu / Kashmir.
4. Director, Information J&K, Jammu with the request to give the wide publicity to this Government order through press and Electronic media.
5. Chairman, Central Pollution Control Board / JK Pollution Control Board.
6. All Head of Departments Director. Agriculture. Jammu.
7. All Deputy Commissioners_____.
8. Director Urban Local bodies Jammu / Kashmir.
9. Commissioner, Municipal Corporation Jammu / Srinagar.
10. Chief Town Planner, Town Planning Org. Jammu / Srinagar.
11. Vice Chairman SDA / JDA.
12. Vice Chairman LAWDA Srinagar.
13. Chief Architect, Architect, Organization J&K Jammu.
14. Pvt. Secretary to Chief Secretary for kind information of Chief Secretary.
15. Pvt. Secretary to Prpl. Secretary to Govt. H&UDD.
16. Website Master.
17. Government order file ((w.2.s.c)

AE (I<K<S)

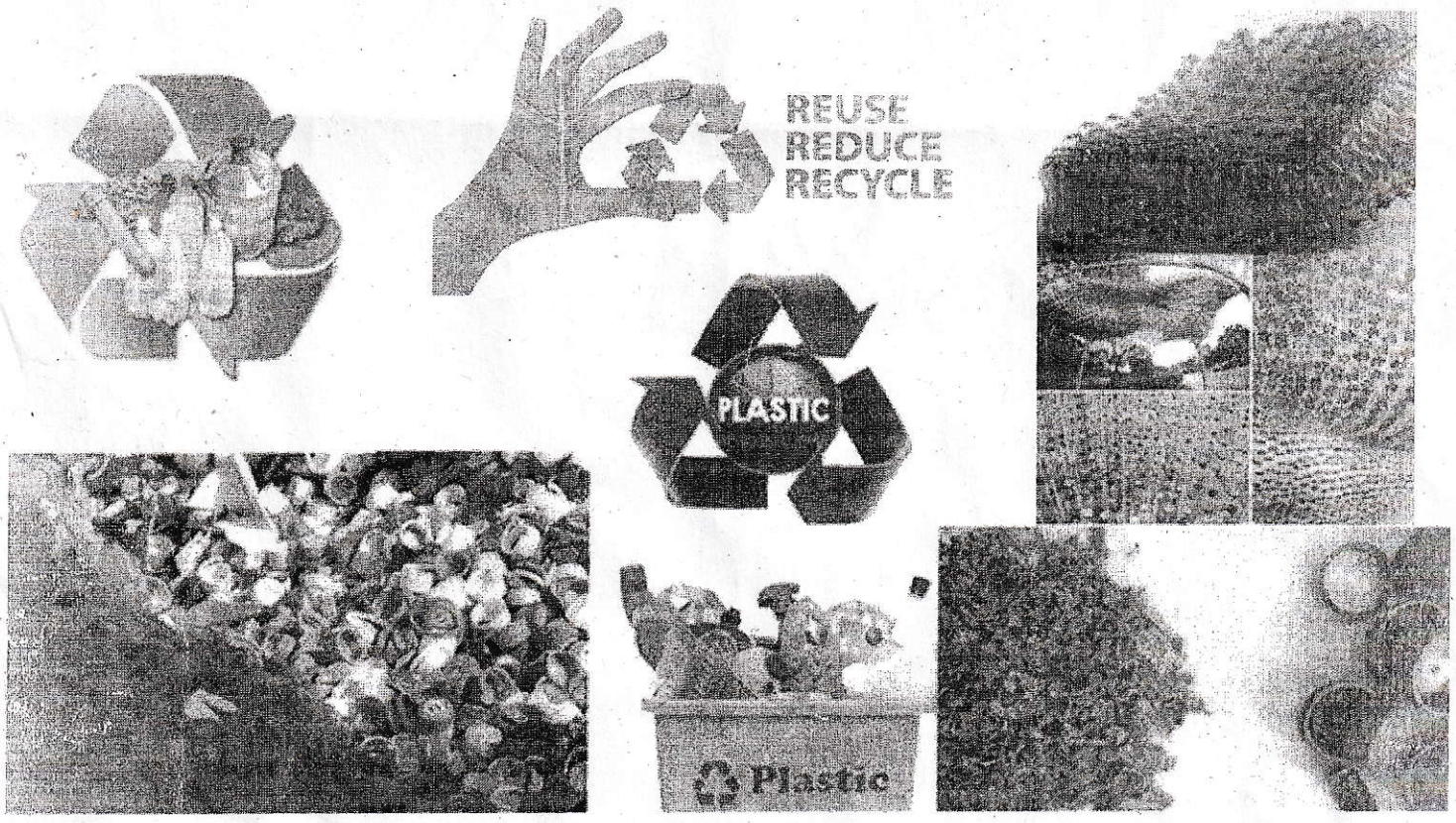
DAJ 30/12/19

1474 30-12-19 Endt 9/9

(Syed Nazir Ahmad)
Under Secretary to Government
Housing and Urban Dev. Deptt.

28/220

ACTION PLAN
ON
PLASTIC WASTE MANAGEMENT
(JAMMU & KASHMIR)



HOUSING AND URBAN DEVELOPMENT DEPARTMENT
(JAMMU & KASHMIR)

Table of Contents

Chapter 1

Introduction

1.1 Jammu & Kashmir

Jammu and Kashmir is home to several valleys such as the Kashmir Valley, Tawi Valley, Chenab Valley, Punch Valley, Sind Valley and Lidder Valley. The main Kashmir valley is about 100 Km (62 mi) wide and 15,520.3 Sq. Km. (5,992.4 sq.mi) in area. The Himalayas divide the Kashmir valley from Ladak while the Pir Panjal range, which encloses the valley from the west and the south, separates it from the Great Plains of northern India. Along the north eastern flank of the Valley runs the main range of the Himalayas. This densely settled and beautiful valley has an average height of 1,850 metres (6,070 ft) above sea-level but the surroundings Pir Panjal range has an average elevation of 5,000 metres (16,000 ft).

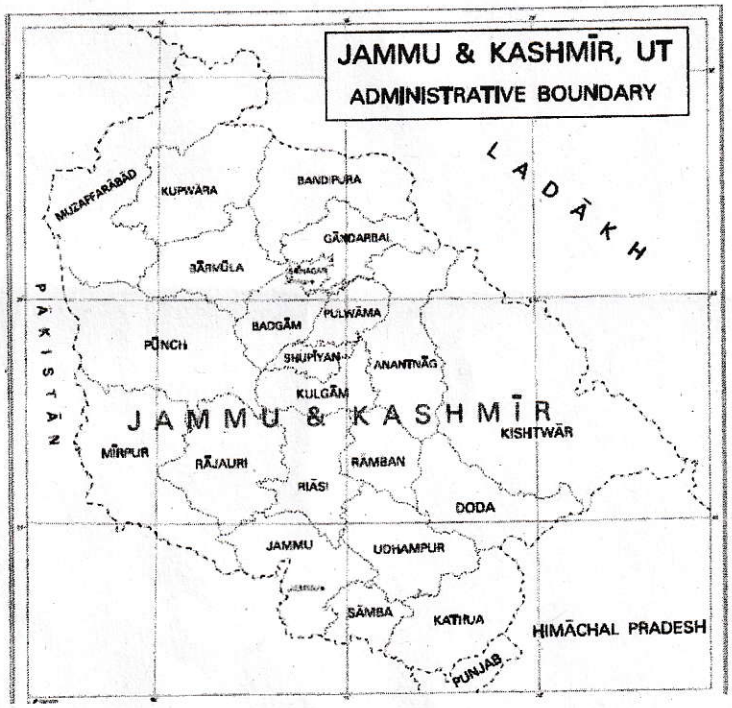


Figure 1: District Wise Map of UT of J&K

1.2 Urban Local Bodies in UT of J&K

There are 2 Municipal Corporations in the UT i.e. Srinagar Municipal Corporation (SMC) and Jammu Municipal Corporation (JMC). Under Jurisdiction of Directorate of Urban Local Bodies Jammu (DULBJ) there are 36 ULBs whereas under the Directorate of Urban Local Bodies Kashmir (DULBK) there are 40. The details of ULBs are as below:

Jammu Municipal Corporation (JMC)		
Srinagar Municipal Corporation (SMC)		
S.No.	**DULB Jammu (DULBJ)**	**DULB Kashmir (DULBK)**
1.	Akhnoor	Anantnag
2.	Arnia	Awantipora
3.	Bishnah	Achabal
4.	Bilawar	Ashmuqam
5.	Basholi	Bandipora
6.	Bhaderwah	Baramulla
7.	Bari-Brhamana	Beerwa
8.	Banihal	Bijbihara
9.	Batote	Budgam
10.	Chenani	Chadoora
11.	Doda	ChahariShareef
12.	Ghoumanhasan	DooruVerinag
13.	Hiranagar	Devsar
14.	Jourian	Frisal
15.	Khour	Ganderbal
16.	Kathua	Gulmarg
17.	Katra	Handwara
18.	Kishtawar	Hajin
19.	Kalakote	Khrew
20.	Lakhanpur	Kokernag
21.	Nowshera	Kupwara
22.	Parole	Kulgam
23.	Poonch	KhanSahib
24.	R.S.Pura	Kunzar
25.	Reasi	Langate
26.	Ramgarh	Magam
27.	Ramnagar	Mattan
28.	Ramban	Pampore
29.	Rajouri	Phalgam

30.	Surankote	Pulwama
31.	Samba	Pattan
32.	Sunderbani	Qazigund
33.	Thathri	Sumbal
34.	Thannamandi	Sopore
35.	Udampur	Seer Hamdan
36.	Vijaypur	Shopian
37.		Tral
38.		Uri
39.		Watergam
40.		Yaripora

Table 1: List of ULBs in J&K

1.3 Brief of Urban Local Bodies in J&K

	Urban Local Bodies		**Municipal Corporations**		
	Jammu	**Kashmir**	**Jammu**	**Srinagar**	**Total**
Total Area	109.73 Sq.Kms	271 Sq. Kms	189.43 Sq. Kms	274 Sq. Kms	849.14 Sq. Kms
Total Population	392585	711107	693284	1147000	2991184
Total No. of Households	78539	118518	122875	178000	487737
Total No. of Wards	446	529	75	35	1111
No. of Business Establishments	29599	64623	40000	86000	222302
Banquet Halls/ Marriage Halls	28	7	120	-	155
Dumping Sites of Garbage	22	31	1	1	56
Area of Dumping site in Hand	-	479.83 Kanals	156 Kanals	516 Kanals	1171.83 Kanals

Total Safai Karamcaharis	1607	1626	1895	3679	8890
No. of Rag Pickers Identified	58	64	117	134	58
Identified Scrap Dealers (kabariwalas)	91	45	85	119	431

Table 2: Brief of Urban local Bodies in J&K

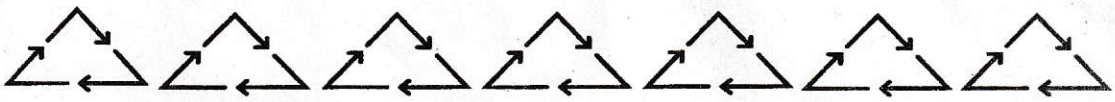
1.4 Definition of Plastic

Plastics are a group of materials, either synthetic or naturally occurring, that may be shaped when soft and then hardened to retain the given shape. Plastics are polymers. A polymer is a substance made of many repeating units.

1.5 Types of Plastic

The Society of the Plastic Industry, Inc. (SPI) introduced its resin identification coding system in 1988 at the urging of recyclers around the country. The seven types of plastic include:

1. Polyethylene Terephthalate (PETE or PET)
2. High- Density Polyethylene (HDPE)
3. Polyvinyl Chloride (PVC)
4. Low-Density Polyethylene (LDPE)
5. Polypropylene (PP)
6. Polystyrene or Styrofoam (PS)
7. Miscellaneous plastics (includes; polycarbonate, polylactide, acrylic, acrylonitrile, butadiene, styrene, fibreglass, and nylon)



Plastics are generally categorized into two types:

- **Thermoplastics:** Thermoplastics or Thermo-softening plastics are the plastics which soften on heating and can be moulded into desired shape such as PET, HDPE, LDPE, PP, PVC, PS etc.
- **Thermosets:** Thermoset or thermosetting plastics strengthen on heating, but cannot be remoulded or recycled such as Sheet Moulding Compounds (SMC), Fiber Reinforced Plastic (FRP), Bakelite etc. are the examples of the same.

1.6 Harmful Effects of Plastic

Plastic is versatile, lightweight, flexible, moisture resistant, strong, and relatively inexpensive. Those are the attractive qualities that lead to over- consumption of plastic goods. However, durable and very slow to degrade, plastic materials that are used in the production of so many products, ultimately, become waste. Our tremendous attraction to plastic, coupled with an undeniable behavioural propensity of increasingly over-consuming, discarding, littering and thus polluting, has become a lethal combination. The disposal of plastics is one of the least recognized and most highly problematic areas of plastic's ecological impact.

Ironically, one of plastic's most desirable traits: its durability and resistance to decomposition, is also the source of one of its greatest liabilities when it comes to the disposal of plastics. Natural organisms have a very difficult time breaking down the synthetic chemical bonds in plastic, creating the tremendous problem of the material's persistence. A very small amount of total plastic production (less than 10%) is effectively recycled; the remaining plastic is sent to landfills, where it is destined to remain entombed in limbo for hundreds of thousands of years, or to incinerators, where its toxic compounds are spewed throughout the atmosphere to be accumulated in biotic forms throughout the surrounding ecosystems.

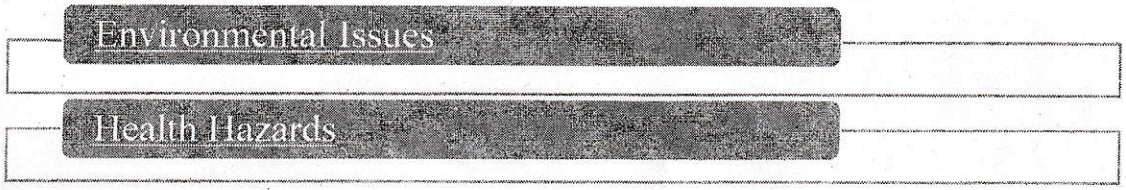


Figure 2: Harmful Effects of Plastic

1.6.1 Environmental Issues

1. Lack of proper collection and management.
2. The 'throw away culture' result in these bags finding their way in the city drainage system and thus choking the drains.

3. Littering of land by plastic bags presents an ugly and unhygienic scene
4. The littering also reduces rate of rain water percolation resulting in lowering water table levels.
5. Plastics go into the water bodies which are already polluted due to many sources. Fish and other aquatic animals swallow plastic garbage mistaken as food items.
6. Plastics become a nuisance because of their non-biodegradability.
7. Animals eating carry bags sometimes die.
8. Soil fertility deteriorates as plastic bags form part of manure and remain in soil for years.
9. Polythene bags if burnt release highly toxic gases like phosgene, carbon monoxide, chlorine, sulphur dioxide, nitrogen oxide beside deadly dioxins.
10. Requires large are for disposal and there are further waste disposal impacts related to landfills and incineration.

1.6.2 Health Hazards

During the manufacturing process of polythene carry bags various harmful components/chemicals like colorants, pigments, plasticizers, antioxidants, stabilizers and heavy metals are used. Colours used during the process are mostly non-food grade and leach out with other chemicals/components thus contaminating food and other items carried in these bags. These chemicals can cause diseases like cancer, degeneration of brain tissues, heart enlargement etc.

Most of us take following metals with ready-to-eat food items, if carried in the coloured polythene carry bags:

i) Lead through Black polythene carry bags.
ii) Chromium through Red polythene carry bags.
iii) Copper through Blue polyethene carry bags.
iv) Salt of Barium through Green polythene carry bags.

1.7 Directions issued by NGT

1) 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 for monitoring the implementation of Solid Waste Management Rules, 2016, Bio-medical Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016.

2) 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 Level Committee in the modified form.

3) The NGT vide its orders dated 07.03.2019 in matter of OA no. 606/2018 has directed to ensure compliance of Rules 22 and 24 of SWM Rules along with compliance of BMW Rules and PWM Rules. Further, NGT has directed to notify at least three major cities, three major towns in the State and at least three Panchayats in every District as model cities/towns/villages, which shall be made fully compliant within next six months. The remaining cities, towns and Village Panchayats of the State may be made fully compliant in respect of environmental norms within one year.

4) The NGT vide its orders to State of Bihar dated 15.03.2019 in matter of OA no. 606/2018 has also directed State of Punjab to develop a system of ranking of cities, town and villages based on level of compliance with environment laws and strengthen IEC strategies.

5) The NGT vide its order dated 12.03.2019 in the matter of OA no 247 of 2017 in EA no 13/2019 has directed all the States and Union Territories to ensure that reports in terms of Rule 13 are furnished to the CPCB positively within one month or 30th April, 2019, for the period the reports are due as per rules and not filed so far. The CPCB may furnish a status report of compliance of PWM Rules after proper analysis to this Tribunal within one month thereafter by e-mail at ngt.filing@gmail.com. It has also been directed that all the States may also prepare their respective action plans for compliance of Rules within one month and furnish the same to the Central Pollution Control Board by 30.04.2019.

environment. Various orders have been given by National green Tribunal with respect to Municipal Plastic Waste management which has made significant changes in society.

2.3 Jammu & Kashmir State Policy and Acts

1) The J&K Non-Biodegradable Material (Management, Handling and Disposal) Act 2007 was enacted to prohibit and regulate handling and disposal of non-biodegradable material in the State and mattes connected thereto.

2) Vide SRO-182 dated 18/6/2008 J&K Govt. imposed ban on polythene carry bags within the territorial limits of the State.

3) Govt. vide SRO 122 dated 11/5/2009 has framed rules for enforcement of various provision of the Act called J&K Non-Biodegradable Material (Management, Handling and Disposal) Rules, 2009.

4) Vide SRO-45 dated 03/02/2017 J&K Govt. imposed ban on the manufacture, stocking, distribution, sale and use of carry bags, plastic sheets or like, cover made of plastic sheet, plastic packaging and multi-layered packaging less than fifty microns in thickness within the territorial limits of the State of Jammu and Kashmir. (Annexure-2)

5) Govt. vide GAD-356 dated 08/03/2019 imposed ban of use of single use plastic water bottles in Government Offices. (Annexure-3)

6) Vide SRO-231 dated 26/03/2019 J&K Govt. imposed complete ban on articles made of non-biodegradable material like Disposable Plates, Disposable Cups, Bowls, Tumblers and Disposable Spoons, Forks, Knives listed in Schedule-1 of the J&K Non-Biodegradable Material (Management, Handling and Disposal) Act 2007. (Annexure-4)

2.4 Current Status of Management of Plastic Waste

	Recyclable	Non- Recyclable	Total MT/ Year
Jammu	1964.79	4584.54	6549.33
Kashmir	11581.45	4964	16545.45
Total	**13546.24**	**9548.54**	**23094.78**

Table 3: Plastic Waste Generation in the State (2018-19)

Chapter 2

Management of Plastic Waste

2.1 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 salient features of rules for management of plastic waste by the urban local bodies are as under:

a) Plastic waste, which can be recycled, shall be channelized to registered plastic waste recycler and recycling of plastic shall conform to the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time.
b) Local bodies shall encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction as per Indian Road Congress guidelines or energy recovery or waste to oil etc. The standards and pollution control norms specified by prescribed authority for these technologies shall be complied with.
c) Retailers or Street Vendors shall not sell, or provide commodities to consumers in carry bags, plastic sheet or multilayered packaging, which are not manufactured or labelled or marked, as prescribed under these rules.
d) Thermo set plastic waste shall be processed and disposed of as per the guidelines issued from time to time by the Central Pollution Control Board.
e) The inert from recycling or processing facilities of plastic waste shall be disposed of in compliance with the Solid Waste Management Rules, 2000 or as amended from time to time

2.2 National Green Tribunal Recommendations

National Green tribunal was established in 2010 under Article 21 of the Indian Constitution which guarantees the citizens of India the right to a healthy environment. The National Green Tribunal Act was an act of the Parliament which aimed at providing a healthy environment, conservation of forests and other natural resources. It also looks after the enforcement of legal rights for environment and offering relief for damages to people and property. This department handles the expeditious disposal of environmental issues and assures the citizens of India the right to a healthy environment. Since its inception, steps in different directions have been taken in order to reduce pollution and other activities that are impacting the

In general, all cities/ towns face similar problems about their Plastic waste management. Amount and contents of generated Plastic waste may differ among different cities/towns but problems related to collection, transport and disposal are same. Major part of generated Plastic waste remains unattended, which pollute the environment. In many towns nearly 25% of generated Plastic waste remains unattended, giving rise to unsanitary conditions especially in thickly populated areas which results in an increase in morbidity especially due to microbial and parasitic infections and infestations in all segments of population, with waste handlers being the worst affected. Plastic waste is being collected and transported in an inefficient way using outdated equipment and unscientific techniques. Collected Plastic waste is indiscriminately dumped at the outskirts of the towns at crude dumping sites. Availability of appropriate site for landfill is another crucial factor. Most of the urban local bodies including towns are suffering with the acute problem of non-availability of suitable landfill sites, coupled with the fact that there are public resentments on this account also.

The smaller municipalities have hardly any funds to meet their day-to-day requirements and have no capabilities to take measures for improving the level of service. Growing costs, shortage of funds, unorganized work force, etc. is making the situation worse with the passage of time. In large towns the situation is rather complicated and difficult. The infrastructural development is not in a position to keep pace with the population growth of such cities resulting in serious inadequacies in service.

With a view to improve the efficiency of MSWM including Plastic Waste Management system in towns of Kashmir Division, six places have been identified on cluster basis for establishment of Solid Waste Management (including Plastic Waste Management) and processing facilities.

	Name of Cluster	ULBs Covered	Status of Land	Cost of Project (Rs. In Lacs)	Plant Capacity (MT/Day)
1	Anantnag	Anantnag, Bijbehara, Mattan, Achabal, Ashmuqam	30 Kanals at Uranhall Batengoo	3,983.24	165

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1	Anantnag	Anantnag, Bijbehara, Mattan, Achabal, Ashmuqam	30 Kanals at Uranhall Batengoo	3,983.24	165

2	Baramulla	Sopore, Wattergam, Baramulla, Tangmarg, Uri & Pattan	22 Kanals at Delina Baramulla	3,277.06	234
3	Kupwara	Kupwara, Handwara, & Langate	92 Kanals and 14 Marlas, Natnusa Kandi	1,320.74	28.8
4	Bandipora	Sumbal, Hajin, & Bandipora	90 Kanals at Shalakhud, Sumbal	1,887.29	53.1
5	Kulgam	Kulgam, Devsar, Yaripora, Frisal, Qazigund & Seer-Hamdan	47.1 Kanals at Lirow	1,629.52	32.2
6	Pulwama	Pulwama, Awantipora, Pampore, Shopian & Khrew	90 Kanals at Lethpora	2,321.54	69.3
Total		**28 Municipal Institutions Covered**		**14,419.39**	**582.40**

The Municipal Institutions of Budgam (Budgam, Beerwah, Magam, Khansahib, Chadoora, and Charie-Sharief) and Ganderbal District are included in the Srinagar Cluster, which is the jurisdiction of Srinagar Municipal Corporation.

The Municipal Institutions of Dooru-Verinag, Kokernag, Tral, Kunzar and Pahalgam generating a total of 46.07 TPD have not been included in the Cluster basis establishment of Plastic Waste Management facility, hence individual decentralized facilities need to be developed in these towns.

Solid waste management projects of which Plastic Waste Management is a component, for Municipal Towns of Kashmir Division have been conceptualized and structured in a manner which enables efficient delivery of sanitation services at affordable user charges, ensures sustainable returns to the private operator and results in bearable burden of tipping fees at the level of the urban local body. Details of quantity of Plastic Waste and other details of ULBs of Kashmir Division are summarised in (Annexure-1). A Cluster based approach

towards Plastic Waste Management is a way forward especially in view of the small size of the various towns.

Jammu Municipal Corporation (JMC) has started the awareness for segregation of Solid Waste in which about 58 awareness programmes conducted w.e.f. 14.02.2019 by involving different Govt. Schools with the support of Directorate of School Education Jammu. JMC also involved the Resident Welfare Associations in this awareness program. JMC has involved 25 Nos. of Rag Pickers working at Kotbhalwal Dumping site for segregating recyclable plastic. The ragpickers recovering and selling the inorganic waste material around 70 qlts/day from the dumping site.

In addition to this, JMC has identified 85 Kabari walas who collect the inorganic waste through rag pickers (around 100-150 kg) daily from litter bins in JMC limits. JMC is in the process of registering them so that they may be available on call in their respective areas.

JMC in collaboration with Regional Indian Red Cross Society Jammu is going to start jute/cloth carry bags unit very shortly with the support of SHG's with the products bearing slogan of Polythene Hatao Paryavaran Bachao.

For outsourcing of sanitation including door to door collection of home waste. JMC has floated the E-NIT under No. 0067c (A) on 20.05.2019 for 19 wards of JMC.

JMC has also finalized the tender document for 26 wards which includes door to door collection, segregation at house hold level, transportation, segregation at secondary segregation centres and the transportation of inert material at Kot Bhalwal dumping site. The NIT document will be put to tenders shortly.

Srinagar Municipal Corporation (SMC) has conducted anti polythene drives on regular basis and the progress report has been submitted time to time to higher authorities:

1. From Jan 2018, 12.90 Qntls till date of banned polythene has been confiscated and destroyed in the SMC Office.
2. Total number of fine recovered Rs.1,80,000/-
3. Total number of Anti-Polythene Drives: 149.

Further SMC has constituted an Anti-Polythene Squad to check illegal manufacturing, stocking, sale of <50 microns thickness plastic carry bags and uncertified carry bags in market. (Annexure – 7).

Chapter 3

Training & Capacity Building

3.1 Importance

It is important to enhance the capability and skills of the officers of stakeholder departments for effective implementation of Plastic Waste Management Action Plan. Therefore, training and capacity building programmes related to various technical aspects are required to be conducted for different functionaries of relevant departments & organizations at various levels of hierarchies.

3.2 Objectives

a) Raising awareness and changing the mindset.

b) Building trust and appreciation for the purpose of various Environment Protection Plans, environmental concerns, issues, roles and responsibilities of different stakeholders.

c) Improving skills regarding existing practices, procedures and methodologies.

d) Promoting an integrated and holistic approach for addressing the concerns.

e) Enhancing core competencies of concerned stakeholders in relevant areas of environment improvement.

f) Strengthening institutional arrangements.

g) Reinforcing accountabilities and identifying aspects that require improvement.

h) Understanding new challenges and requirements.

3.3 Involvement of Institutions and Experts

Organizations of national & international repute having expertise in the area of environment in general and plastic waste management in particular shall be involved for conducting need specific trainings & capacity building programmes for various target groups and officials of stakeholder departments. Experts would also be involved in developing knowledge products and information material on various issues & technologies for creating mass awareness to build a responsible society with an aim of having proper waste management.

Chapter 4

Risk Mitigation Plan

4.1 Identification of Major Risks in the Action Plan

The Action Plan to manage plastic waste is a complex multi sectoral and multi-agency action plan. Successful implementation would face many challenges. Following major risks have been identified:

a) Accuracy and completeness of Baseline Data
b) Completeness of Project timelines
c) Financial closure and timely releases of funds
d) Tracking the Progress and program management

It is important to devise strategies and plans to mitigate the identified risks. Action plan will remain on paper if the bottlenecks and the risks are not dealt satisfactorily. Mitigation plan for each of the identified risk has been prepared in the following paras.

a) Accuracy and completeness of Baseline Data

Due to non-development of IT system for all the regulatory formats and monitoring information system, the information about the plastic waste generation viz a viz its channelization to registered recyclers and segregation & collection system could not be properly validated and there could be gaps in the same, which may lead to substantial alterations in the plans. In order to ensure accuracy and completeness of baseline data, the IT based MIS shall be developed.

b) Completeness of Project timelines

In order to ensure accuracy and completeness of proposed timelines, each Administrative Department has been asked to firmly adhere to the timelines for implementation of Action plan after taking into account all the relevant factors, in compliance to the orders of Hon'ble NGT. Further, the Departments have also been advised to involve civil society for concrete and substantial outcomes.

c) Financial closure and timely releases of funds

Availability of funds for completing the activities on time is a major risk. The activities such as setting up of Material Recovery Facilities (MRFs) and processing units for high calorific no recyclable waste including Refuse Derived Fuel (RDF) and Waste to Energy (WTE) plants and

100% coverage of D2D collection of segregated plastic waste have still not achieved financial closure.

d) Tracking the Progress and program management

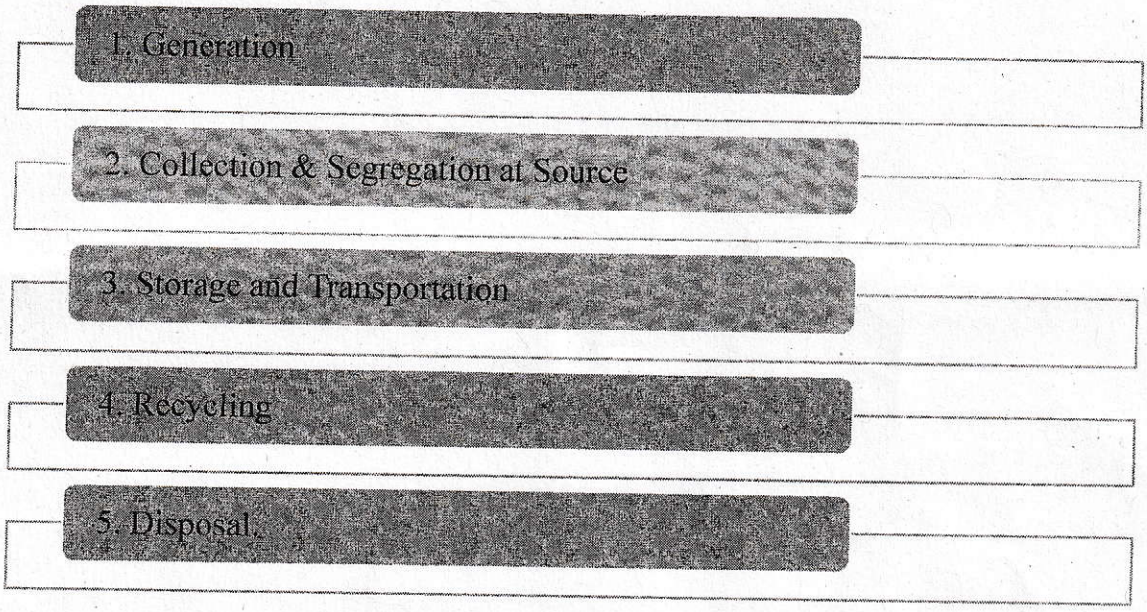
In order to mitigate the risk, a dedicated team with requisite Program Management and IT skills will be positioned to collate data, analyze the same, prepare status updates, escalate issues and assist various committees in review and issue resolution.

Chapter 5

Strategy for Plastic Waste Management in J&K

The NGT has directed the Government of India and all the State Governments to take necessary steps for the management of Plastic Wastes in a scientific manner, which is an important part of the Solid Waste Management. Urban local bodies are finding great difficulties in complying with the provisions of Plastic Waste Management (Amendment) rules 2018. Proper treatment and disposal of Plastic Waste is now a legal requirement provided under the Plastic Waste Management (Amendment) rules 2018 for all municipal bodies across the country.

The proposed Action Plan on Plastic Waste Management for Urban Areas will be taken up in the following order:



5.1 Generation - Minimization

While it may or may not be possible to control public behaviour to an extent that it would lead to changes in consumption habits, certain social and cultural phenomena may themselves lead to overall reduction of plastic waste material from certain sources, such as:

- Promotion of reusable bags for carrying goods, reducing the amount of polyethylene bags.

- Promotion of recycled paper bags as an alternative to polyethylene bags. At present, many stores charge a premium on polyethylene bags; under the proposed arrangement, such stores will now offer only recycled paper, reusable HDPE or cloth bags.
- Promotion of at least one marketplace in each municipality which observes a no-plastic zone.

While this would not per se reduce the incidence of plastic waste from municipal areas, efforts can be made to change the plastic waste composition in a manner such that (i) plastic waste can be reclaimed and (ii) it is possible to segregate Plastic Waste at source. Some of the measures to be followed:

- Introduction of local collection /deposition bins for Plastic waste at markets.
- Street vendors plastic items disposable can be safely and separately stored in common bins.
- Prominent display and announcements to guide users to use the appropriate bins for disposal of plastic waste items.

Research undertaken at National & International level shows that public at large participates willingly if the overall purpose of plastic waste management is explained to them. The above processes must be supplemented by a series of IEC (Information, Education & Communication) materials, which may be produced locally or at a State level. These materials may be used to convey the following and similar messages:

- "There is nothing called waste. Everything is reusable. Help us re-use everything."
- "A small item that you throw today becomes a larger problem for all of us tomorrow."

Such materials could also be used as supplementary learning material for children studying at schools, particularly govt. schools. Supplementary channels and modes of dissemination may include posters (including roadside poster painting), radio jingles, strip advertising on major advertisement sites, shorts prior to exhibition of cinematic or theatrical performances, ticker advertisements on local cable television etc.

5.2 Collection and Segregation

Collection will be carried out from specific premises in modified trolleys/push-carts, with two chambers - one for biodegradable waste, the other for non-biodegradable waste. While it will be desirable for citizens to keep two bins for storage of waste within premises, considerable behavioural change communication will be required for this.

For bulk producers, the producers themselves will be responsible for primary collection of the plastic waste, and deposition of the same at a designated point of the site. Municipal bye-laws will be suitably amended to include such a facility with separate bins for biodegradable and non-biodegradable at the producer level itself.

- Local Bodies will provide daily waste collection service to all households, shops and establishments for the collection of putrescible organic wastes from the doorstep. This service must be regular and reliable.
- Recyclable material can be collected at longer regular intervals as may be convenient to the waste producer and the waste collector, as this waste does not normally decay and need not be collected daily.
- Domestic hazardous waste is produced occasionally. Such waste need not be collected from the doorstep. People could be advised or directed to deposit such waste in special bins in the city for disposal or at same designated centres.
- Collection of waste can be done by Municipal workers themselves or contracting the collection of wastes to a competent organization or Privatizing through rag pickers and kabaris or any suitable agencies.
- Procedure of collection: The Municipal Institutions are divided into wards and each of the wards will be manned with adequate number of sanitary workers with adequate required facilities wheel barrows or similar vehicle will be provided to each of the sanitary workers. Each of the sanitary workers will be made responsible for 300 and 500 houses depending on the workload. These workers will go to the houses on pre-determined time to collect the waste.
- Community bins will be installed, if no door to door collection is possible in certain areas like congested narrow lanes or slums and residents will be made aware of putting their wastes into the bins in segregated manner as specified.

The segregation of the Plastic waste at source is very important and for segregation at source, it is necessary to impose the following duties upon the waste generators:

- Every waste generator shall segregate and store the waste generated by them in two separate streams namely bio-degradable and non-biodegradable in suitable bins and handover segregated wastes to authorize waste pickers or waste collectors as per the direction or notification by the local authorities from time to time;
- No waste generator shall throw, burn or burry the Plastic waste generated by him, on streets, open public spaces outside his premises or in the drain or water bodies.
- All waste generators shall pay such user fee for Plastic waste management, as may be prescribed by the authorities of the Local Body.
- No person shall organize an event or gathering or more than one hundred persons at any unlicensed place without intimating the local bodies, at least three working days in advance and such person or the organizer of such event shall ensure segregation of waste at source and handing over of segregated waste to waste collector or agency as specified by the local body.
- Every street vendor shall keep suitable containers for storage of waste generated during the course of his activity such as food waste, disposable plates, cups, wrappers coconut shells, leftover food, vegetables fruits etc. and shall deposit such waste at waste storage depot or container or vehicle as notified by the local body.
- All hotels and restaurants shall Owners will ensure segregation of waste at source, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorized waste pickers or the authorized recyclers. The bio-degradable waste shall be processed, treated and disposed of through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the collectors or agency as directed by the local body.

5.3 Storage and Transportation

All the waste collected through Primary Collection System, from the households, shops and establishments will be taken to the processing or disposal site either directly necessitating a large fleet of vehicles and manpower or through cost effective systems which are designed to ensure that all the waste collected from the sources of waste generation is transported within reasonable time. No system of providing waste generation is transported unhygienic and unscientific, posing a serious threat to the public health and environment. This means that is

will be:

- Out of reach of stray animals
- Will not obstruct the traffic or spread on road.
- Easily accessible in terms of distance for the user.
- Fully covered and not exposed.
- Able to hold the expected waste generated, depending on the size and population of the area.
- Aesthetically acceptable.
- Designated to be easy to operate, handle, transfer and transport.

Transportation will be done:

- Daily at community bins.
- Before they start overflowing, if required, twice or thrice a day.
- Depending on the characteristic of waste, they will follow different routes, as the disposable site may be different for the different type of wastes.

5.4 Recycling of Plastics

By managing waste from the point of the production all the way to disposal, several types of resources can be recovered from the waste like Recyclable waste, such as plastics, metals and organic waste; Combustible waste from energy production and Organic matter for composting.

1. PETE or PET (Polyethylene Terephthalate)

Commonly found in beverage bottles, perishable food containers and mouthwash, clear PET plastics are generally considered safe, but can absorb odours and flavours from foods and liquids stored in them. Most recycling programs accept this plastic. PET plastics are recycled into carpet, furniture, and fibre for winter garments.

2. HDPE (High Density Polyethylene)

HDPE is another commonly recycled plastic deemed safe. HDPE products have a very low risk of leaching into foods or liquids. You'll find this plastic in milk jugs, yogurt tubs cleaning product containers, body wash bottles and similar products. Many children's toys are also made from HDPE. Recycled HDPE is made into pens, plastic lumber, plastic fencing, picnic tables and bottles.

3. V or PVC (Polyvinyl Chloride)

Found in food wrap, plumbing pipes, tiles, windows and medical equipment, PVC is seldom recycled. PVC plastics contain harmful chemicals linked to a variety of ailments, including bone and liver diseases and developmental issues in children and infants. Keep PVC items away from foods and drinks. Specialized programs recycle PVC into flooring, panelling and roadside gutters to name a few.

4. LDPE (Low-Density Polyethylene)

More recycling programs are beginning to accept LDPE plastics. A very clean and safe plastic, LDPE is found in household items like plastic wrap, grocery bags, frozen food containers and squeezable bottles. Recycled LDPE is made into such items as garbage cans, panelling, furniture, flooring and bubble wrap.

5. PP (Polypropylene)

Another safe plastic, PP is quite sturdy and found in tupperware, syrup bottles, medicine bottles and yogurt containers. PP is recycled into heavy-duty items like pallets, ice scrapers, rakes and battery cables. Many recycling programs accept PP.

6. PS (Polystyrene)

An easily recognizable plastic, PS or Styrofoam is found in beverage cups, insulation, packing materials, egg cartons and disposable dinnerware. Styrofoam is notorious for leaching and poor recyclability, though some programs may accept it. PS is recycled into various items including insulation, school supplies and license plate framing.

7. Miscellaneous Plastics

SPI code 7 is a potpourri of plastics, one of which is polycarbonate. Sunglasses, computer casing, nylon, compact discs and baby bottles may contain #7. These types of plastics are hard to recycle and contain the toxic chemical BPA, a dangerous hormone disruptor that can cause health problems. Plastic #7 is primarily recycled into plastic lumber and specialized products.

5.4.1 Application of Recycled Plastics

1 PETE	PETE or PET	PET- Polyethylene Terephthalate used for many bottles application because they are inexpensive, lightweight, and shatter- resistant. (RECYCLED PRODUCTS: Mineral/ Drinking Water Bottles, Cosmetic Bottles)

	HDPE	HDPE- High Density Polyethylene used for in bottles, carry bags, milk pouches, recycle bins, etc. (RECYCLED PRODUCTS: Tubes, sewer pipes, pallets, boxes, buckets, toys, bottles for
	PVC	PVC- Polyvinyl Chloride used for pipes and fittings, Tarpaulins, Medical Apps., etc. (RECYCLED PRODUCTS: Sewer Pipes, Window frames, Construction, Flooring, Wallpaper, Bottles, Car Interiors, Medical products, Planks, etc.)
	LDPE	LDPE- Low Density Polyethylene used in Plastic bags, various containers, dispensing bottles, wash bottles, tubing, etc.
	PP	PP- Polypropylene used in Auto parts, Industrial Fibers, Food containers, etc. (RECYCLED PRODUCTS: Pipes, pallets, boxes, furniture, car parts, pots of yoghurt, buckets, butter, margarine, fibers, milk crates, etc.)
	PS	PS- Polystyrene is used in food service packaging, disposable cups, tray pitchers, refrigerators, liners, etc. It may also be used as cushioning materials for fresh produce, electronic or appliance industries, etc. (RECYCLED PRODUCTS: Clothes Hangers, Park Benches, Flower Pots, Toys, Spoons,
	Others	Others (usually, Mixed Plastic Waste, used in Thermoset Plastics, Multilayer and laminates, Bakelite, Polycarbonate, etc.) (RECYCLED PRODUCTS: CDs, Pallets, Floors, Roofs, Furniture, Sheeting, Benches, Shoe soles, etc.)

Table 4: Application of Recycled Plastics

5.4.2 Primary Recycling

The most popular process is represented by the primary recycling due to their simplicity and low cost. This process refers to the reuse of products in their original structure. The disadvantage of this process is represented by the existence of a limit on the number of cycles for each material.

5.4.3 Secondary/Mechanical Recycling

In this process, only the thermoplastic polymers can be used, because they can be re-melted and reprocessed into end products. The mechanical recycling does not involve the alteration of the polymer during the process. This process is represented by a physical method, in which the plastic wastes will be formed by cutting, shredding or washing into granulates, flakes or pellets of appropriate quality for manufacturing, and then melted to make the new product by extrusion. Also, the reprocessed material can be blended with virgin material to obtain superior results. After the plastic is sorted, cleaned, dried and then directly processed into end products,

the quantity of the waste plastic will be dramatically reduced. The disadvantages of this method refer to the heterogeneity of the solid waste and the deterioration of product's properties in each cycle which occurs due to the low molecular weight of the recycled resin. It happens because of chain-scission reactions caused by the presence of water and traces acidic impurities and to avoid lowering molecular weight intensive drying is recommended, the use of chain extender compounds or reprocessing with vacuum degassing. Also, this method is relatively inexpensive but needs substantial initial investment.

5.4.4 Feedstock or Chemical Recycling

This process can be used with mechanical recycling as a complementation. Chemical recycling is defined as the process in which polymers are chemically converted to monomers or partially depolymerized to oligomers through a chemical reaction. The resulted monomers can be used for new polymerizations to reproduce the original or a related polymeric product. This method is able to transform the plastic material into smaller molecules, suitable for use as feedstock material starting with monomers, oligomers, or mixtures of other hydrocarbon compounds. The chemical reactions used for decomposition of polymers into monomers are:

a) Hydrogenation
b) Glycolysis
c) Gasification
d) Hydrolysis
e) Pyrolysis
f) Methanolysis
g) Chemical Depolymerization
h) Thermal cracking
i) Catalytic cracking and reforming
j) Photo degradation
k) Ultrasound degradation
l) Degradation in microwave reactor.

5.5 Disposal

- ULBs shall adopt suitable technology or combination of such technologies to make use of wastes so as to minimize the burden on landfills.

- Land filling shall be restricted to non-biodegradable, inert waste and other waste that are not suitable either for recycling or for biological processing and incineration. Land filling shall also be carried out for residues of waste processing facilities as well as pre-processing rejects from waste processing facilities. Land filling of mixed waste shall also be avoided unless the same is found unsuitable for waste processing.
- Another alternative is recovering the energy stored in residual material. That means turning waste into fuel for manufacturing processes or equipment designed to produce energy. Various mechanical, biological and caloric systems and technologies can convert, reprocess or break up wastes into new materials or energy.

5.5.1 Plastic to Alternative Fuel

(Co-processing of Plastic Waste as Alternate Fuel and Raw Material (AFR) in cement Kilns and Power Plants) Co-processing refers to use of waste materials in industrial processes such as cement and power stations or any other large combustion plants. Co- processing indicate substitution of primary fuel and raw material by waste, and/or material from waste. Waste material such as plastic waste used for co- processing are referred to as alternative fuels and raw material (AFR). Co-processing of plastic waste offers advantages for cement industry as well as for the Municipal Authorities responsible for waste management. On other hand, cement producers or power plants can save fossil fuel and raw material consumption, contributing more eco-efficient production. In addition, one of the advantages of recovery method is to eliminate the need to invest on other plastic waste practices and to secure land filling. The schematic flow diagram of the process is shown in Figure below and protocol for Co-Processing of Plastic Waste is given in the table below:

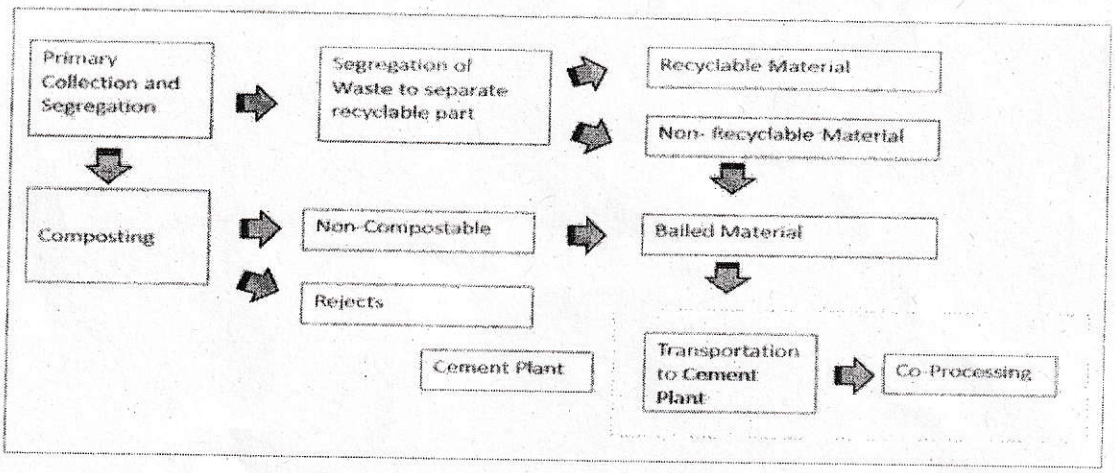


Figure 3: Flow chart Co-Processing of Plastic Waste

	Item Description		Action to be taken by
1	Collection of plastic waste	Concerned Municipal Authority will create a system for collection of plastics waste through Public Private Partnership (PPP) mode or any other feasible method.	ULB
2	Segregation & Pre-processing of plastics waste	Collected plastics can be reprocessed/sorted into recyclable and non-recyclable fractions. The Non-recyclable plastics waste will be transported to nearest cement kilns and power plants for co-processing by concerned Municipal Authority in consultation with concerned State Pollution Control Board (SPCB)/ Pollution Control Committee (PCC).	ULB
3	Identification of cement factory	Mapping of cement kilns and power plant for accepting co-processing of plastic waste in same State or neighboring State. An agreement shall be signed between Municipal Corporations and Cement kilns.	JKPCB
4	Modification for feeding plastic waste (PW) in cement kilns	Cement Industry/power plant to set-up storage facility, shredder, conveyor-belt, hopper, winch-machine and double-flap damper.	Concerned Cement Industries/
5	Setting-up of laboratory for plastics waste analysis	Cement industry/power plant shall set-up a lab facility to analyze plastics waste before sending for co-processing. The instrumentation include Thermo-Gravimetric Analyzer, Bomb- Calorimeter and C, H, N & S Analyzer.	Concerned Cement Industries/ power plant
6	Monitoring of emission by cement industry/ SPCBs	Cement Industry/power plant shall monitor the emission in respect of routine parameters and hazardous air pollutants (HAPs)	Concerned Cement Industry,
7	Forwarding progress Report to CPCB	Quarterly progress report of Co-processing of plastic waste shall be forwarded to CPCB.	JKPCB and Cement Industries/ Power Plant

Table 5: Protocol for Co-Processing of Plastic Waste

5.5.2 Use of Plastic in Construction of Roads

One of the ways that ULBs can consider using plastic waste especially non-recyclable plastic is to use them in making bituminous roads. CPCB in its study titled "Performance Evaluation of Polymer Coated Bitumen Built Roads" 2008, found that the utilization of plastic waste in bituminous mix enhances its properties and also its strength. According to Indian Road Congress, addition of waste plastics in bituminous construction in small doses (about 5-10%), helps in substantially improving the Marshall stability, strength, fatigue life and other desirable properties of bituminous mix, leading to improved longevity and pavement performance. Presently, several roads have been constructed by using plastic waste with bitumen in many of the Indian states such as Tamil Nadu, Karnataka, Himachal Pradesh, Nagaland and West

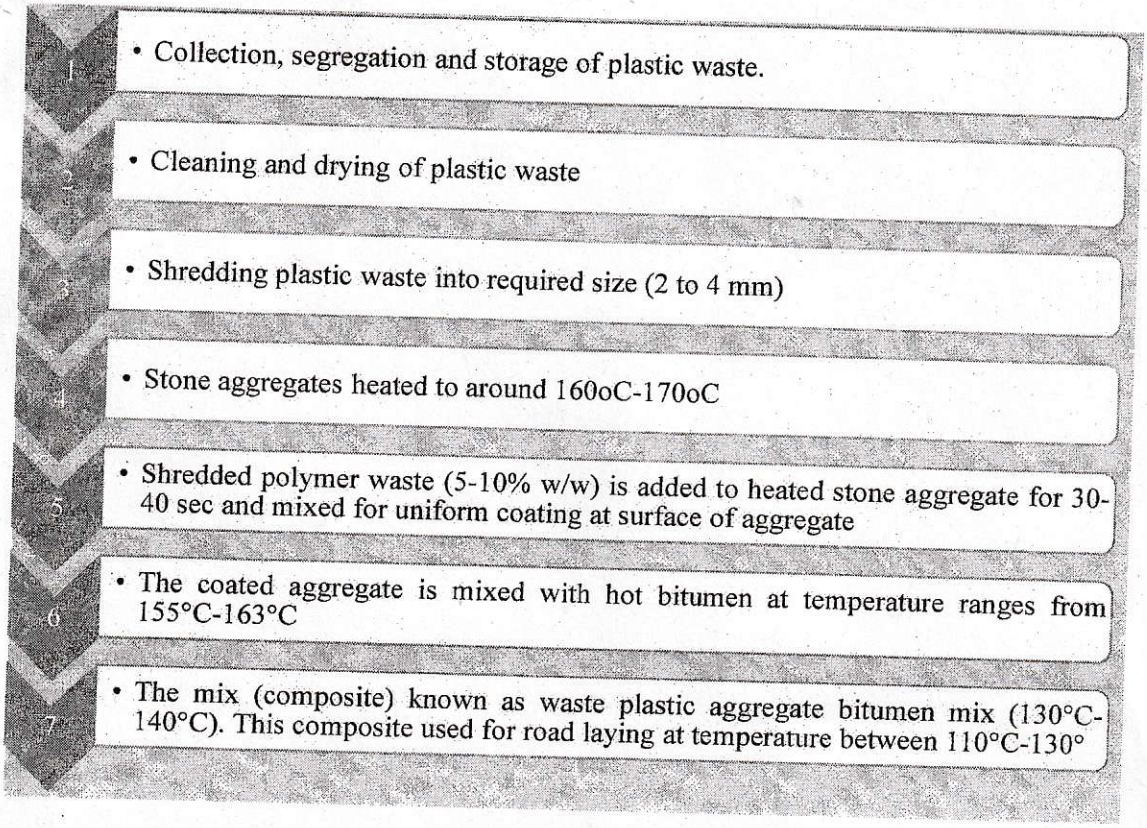


Figure 4: Process-Flow for Construction of Polymer-Bitumen Road

5.5.2.1 Advantages of Use of Plastic Waste in Road Construction

a) The process is comparatively easy and economical and does not require any new machinery.

b) For every 1 kg of stone, 50 gm. of bitumen is used and one-tenth of this is plastic waste which in turn reduces the amount of bitumen being used.

c) Plastic increases the aggregate impact value and improves the quality of roads. It also helps increase the strength of the road, reducing road fatigue and wear and tear of the roads. It has been observed that roads made with plastic coated bitumen have better resistance towards rain water and cold weather.

d) Since a large amount of plastic waste is required for a small stretch of road, it is a viable end destination for non-recyclable plastic waste which will reduce the amount of plastic waste going to dumpsites and landfills.

e) Use of plastic in roads could increase the market potential for plastic waste which may result in an opportunity for revenue for the informal waste sector such as waste pickers.

Bengal. These roads have shown improved performance and longevity as compared to bituminous roads where no plastic was added in the mix.

As per Rule 5 (b) of Plastic Waste Management Rules, 2016 local bodies are required to encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction as per Indian Road Congress guidelines IRC SP: 98-2013 titled as "Guidelines for the Use of Waste Plastic in Hot Bituminous Mixes (dry process) in Wearing Courses". CPCB in its Consolidated Guidelines of Collection, Segregation and Disposal of Plastic Waste 2017, has also quoted utilization of plastic waste in road construction as one of the technologies for disposal of plastic waste. In addition, the Ministry of Road Transport and Highways through Circular No RW-NH-33044/24/2015-S&R(R) dated November 09, 2015, has also decided to encourage the use of plastic waste in hot mix bituminous wearing coat (Annexure-6) According to this circular:

- Bituminous mix with waste plastic shall be the default mode for periodic renewal with hot mixes within 50 km periphery of urban area having population of more than 5, 00,000. Any relaxation on ground of non-availability of waste plastic, cost etc. shall involve approval of the ministry.
- All the agencies responsible for preparation of project reports/ estimates for the national highways and centrally sponsored works are expected to analyse and clearly bring out reasons for inclusion or otherwise of provision of use of waste plastic in wearing cost of disposal.
- There are two processes namely dry process and wet process for manufacturing bituminous mixes using plastic waste. In the dry process, processed (cleaned and dried) plastic waste is added after shredding in hot aggregates where as in the wet process, processed waste plastic in the form of powder is added in the hot bitumen. As the wet process is not as cost-effective as compared to the dry process and requires a lot of capital investment, it is preferable to use the dry process in the construction of roads using plastic waste. The process flow for construction of polymer bitumen road is as given below:

5.5.2.2 Limitations in Using Plastic Waste in Road Construction

a) As per the IRC guidelines, the plastic waste that can be used in bituminous mix will consist of only low-density polyethylene (LDPE), high-density polyethylene (HDPE), polyurethane (PU) and polyethylene terephthalate (PET). Black coloured plastic waste as a result of repeated recycling and PVC will not be used.

b) The Thermo Gravimetric Analysis (TGA) of thermoplastics has revealed gas evolution and thermal degradation may occur beyond 180°C. Thus, misuse or wrong implementation of this technology may result in release of harmful gases and premature degradation, if the temperatures are not maintained during construction

5.6 Integration and Formalization of Informal Sector

Rule 11(c) of the SWM Rules 2016 directs that each state must prepare a state policy and solid waste management strategy that acknowledges the primary role played by the informal sector of waste pickers, collectors and recycling industry in reducing waste and provide broad guidelines regarding integration of these groups in the waste management system. In addition, there are various policies, action plans and reports including the report of the Second National Labour Commission of 2002 that has recognized the role played by the informal sector in waste management and civic hygiene and they have all suggested that governmental authorities will take steps to provide legal recognition, social security, health and safety facilities and access to financial resources and technologies.

The informal sector is defined as the part of an economy that is characterized by private, usually small-scale, labour-intensive, unregistered, largely unregulated, and unregistered manufacturing or provision of services. In the waste management sector, they include the following players:

a) Waste collectors and/or pickers who collect mainly reusable and recyclable solid waste directly from waste generators or public bins, roadsides, public spaces, open dumpsites and landfills.

b) Itinerant buyers (or Kabaddiwala)/Scrap Dealers who

c) aggregate the waste collected by the waste pickers and/or

d) function as micro-entrepreneurs who buy reusable and recyclable material such as newspaper, metal, glass, and plastics from households, commercial establishments and other waste generators and then re-sell them to large wholesalers who then either sell to larger aggregators or sell to recyclers.

e) Informal recyclers who either clean, dismantle or further sort waste in more specific categories or use rudimentary technology to transform the collected waste into another product and/or raw material that could be used for producing new products.

5.6.1 Role played by Informal Sector and the Concerns

Waste collection and trade of recyclable non-biodegradable waste in India is largely managed by the informal sector consisting of waste pickers and scrap dealers. The informal sector is the backbone of the solid waste value chain in India, recovering nearly 50% of recyclables generated by households. In doing so, the work done by the informal system results in reduction of waste going to landfills and decreases the depletion of natural resources which would have otherwise been used in production of new products.

However, their contribution towards solid waste management is largely ignored and they instead suffer harassment at the hands of various government agencies and citizens at large where their work is often treated as unlawful. Further, living around dump sites or landfills and working long hours with no protective gear in very poor, often dangerous conditions, they heavily subsidise the cost of collection and recycling for the items they pick. It must also be noted that scrap dealers or waste pickers typically do not work with non-recyclable waste or recyclable waste which have negative economic value such as plastic packaging, textiles etc. Therefore, these types of waste continue to be dumped on the periphery of cities or towns or burned in the open. Therefore, the perception of efficiency in terms of cost therefore comes at a high price which communities and workers' pay in terms of health and environment issues.

It must be acknowledged that the informal sector has traditionally and uniquely looked at waste as 'resource' while people employed for just lifting and dumping waste treat it is as garbage. Over a period of time, the informal sector players have honed their abilities to be able to distinguish and sort different materials efficiently and their sorting accuracy is far better than most sophisticated sensor-based systems.

With the increased urbanization and related increase in waste, there is an urgent need to recognize the capacity of the informal sector and integrate them into main stream waste management activities. This will not only improve their livelihood conditions but also benefit the ULB. The approach suggested for inclusion of the informal sector consists of three parts:

a) **Identification**: The waste workers and the scrap dealers operating in the ULB including their area of work, residence, categories of waste they deal in and end

destination need to be identified. ULB can thereafter, issue identification cards and register them in the municipal records.

b) **Organization**: The waste workers will be courage and helped with getting organized as either SHGs or legal entities such as cooperatives, societies, trusts, partnerships or for-profit entities.

c) **Integration**: They can be absorbed as registered entities and can participate in outsourcing of certain activities such as operation of dry waste collection centres and material recovery facilities or in the tenders issued by ULB for other solid waste management activities.

5.7 Extended Producer Responsibility for Plastic Waste

The principle of waste minimization and/or reduction has been introduced as a legal requirement under the Extended Producer Responsibility (EPR) of producers, manufacturers, distributors and brand owners generating plastic waste. Under the PWM Rules, it is the responsibility of the producers, manufacturers, distributors and brand owners for the environmentally sound management of the products/packaging after the end of life. They can do this through their own distribution channels, jointly set up systems with other producers or any other arrangement in agreement with the ULB. The collection, processing and disposal program will also be in compliance with SWM Rules.

EPR is typically a product-centric approach through which producers/brand owners are encouraged to re-evaluate decisions concerning material selection, design, packaging, distribution and marketing strategies with waste reduction as the objective. A well-designed EPR policy can be the key driving force for circular economy by prioritizing waste avoidance throughout product lifecycle, from design to disposal. It must be understood that an EPR program that only drives collection and disposal will not achieve its real objective of waste reduction. The long-term goals of a well-rounded EPR model would include:

a) Waste reduction and safe disposal become a key efficiency parameter for the brands/producers.
b) Designing products and services for longer life, reuse and recycling.
c) Reducing packaging and promoting usage of reusable, recyclable packaging.
d) Reducing or eliminating the potentially hazardous chemicals in the products and packaging.

e) Promote recycling of products where brands and producers also invest in developing recycling technologies which is otherwise left typically for the public sector to work on. This would bring much needed support from companies working in cutting edge technological space.

f) Promoting more efficient use of natural resources.

g) Improving relations between communities and producers/brand owners as the latter would have to work closely with communities to operate the reverse supply chain for collecting end of life products and packaging.

A key feature of EPR is that brands/ producers are not mandated to manage only their specific branded products and packaging. Given that a brand-wise collection would be an uphill task, the EPR program can be brand agnostic i.e. the brand owner/producer can collect any other brand's product and packaging which is similar to their own product and packaging. The idea being that as all parties fulfil their responsibility, collectively, all plastic waste would be responsibly handled.

5.8 Compostable Plastic

These are defined under the PWM Rules as "plastic that undergoes degradation by biological processes during composting to yield CO2, water, inorganic compounds and biomass saturate consistent with other known compostable materials, excluding conventional petro-based plastics, and does not leave visible, distinguishable or toxic residue". These are also covered under EPR obligations and the producer/brands of such compostable plastic products need to ensure that these materials once disposed are collected and sent to the correct processing facilities. The concern around compostable plastics is that they often get mixed with regular recyclable plastic contaminating the down-stream recycling facilities. Secondly, they can be composted in only industrialised composting facilities at high temperature with pre-processing (such as shredding), however, most ULBs do not have industrialised composting facilities. Since they cannot go into the plastic recycling stream, and only to industrialised composting facilities, the producers and/or brand owners of compostable plastic under their EPR obligations, will specifically focus on:

a) Creating awareness among citizens and primary waste collectors to handle this as a separate category.

b) Set up/ support infrastructure for separate collection and processing of compostable plastic.

c) Set up/ support industrialised composting facilities in the ULB where such material can be composted.

5.9 Way Forward

1) ULBs will compare the options of processing of plastic waste in road construction and waste to energy options like co-processing in cement plants for non-recyclable plastic bearing in mind factors such as proximity to cement plant, infrastructure costs, manpower, technology, availability of infrastructure for shredding/baling, economic viability among others.
2) Training and awareness programs for various stakeholders will be conducted by the ULB to disseminate the information and process about use of plastics in construction of roads.
3) The ULBs will implement the directives of the Ministry of Road Transport and Highways regarding use of plastic in road construction and this will be done in coordination with all other government agencies and authorities involved such as Public Works Department and National Highway Authorities of India.
4) The ULB will establish processes to ensure that the non-recyclable waste is made available to the body undertaking the road construction. The non-recyclable waste can be aggregated at a single location and sent to the hot-mix plant.
5) Officials designated for SWM activities will monitor the use of plastic in roads and conformance with the standards issued by the Indian Road Congress and any other authority under the law.
6) While currently the IRC guideline specify low-density polyethylene (LDPE), high-density polyethylene (HDPE), polyurethane (PU) and polyethylene terephthalate (PET) as the only type of plastics that can be included in the bituminous mix, ULBK along with PWD, other relevant governmental authorities, educational institutions (NIT Srinagar) and R&D organizations will carry out research on the viability of use of multi-layered packing and other types of non-recyclable plastic as the input for road construction. If found technically viable and environmentally friendly, use of such plastic types will be encouraged and standards will be revised to include these plastic waste categories in bituminous mix as well.
7) ULBs will take lead in working pro-actively with producers, brand owners and JKPCB to use the EPR funds in most effective manner to address the issue of plastic waste management. This could be done by identifying the processors of plastic waste, negotiating

bulk rates with them and involving different producers/ brand owners to work out a comprehensive plan for management of plastic waste.

8) ULBs may also plan to incentivise producer/brand owners and retailers that use eco-friendly alternatives in their packaging such as tax rebate. Their models must be widely publicized so that other agencies can adopt similar practices.

9) ULBs shall setup adequately resourced monitoring systems that includes team for implementing, monitoring and auditing of EPR obligations of the producers/brand owners.

Chapter 6

Detailed Timeline of Action Plan

Sl. No.	Activity	Timeline	Responsible Department/ Officer
01.	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.	January 2020	All ULBs
02.	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	December 2019	All ULBs
03.	Door to Door collection of plastic waste by all ULBs	December 2019	All ULBs
04.	Setting up of Material Recovery Facilities (MRF) by all ULBs	December 2019	All ULBs
05.	Segregation of Recyclable and Non-Recyclable plastic waste at MRF	December 2019	All ULBs
06.	Channelization of Recyclable Plastic Waste to registered recyclers	January 2020	All ULBs

07.	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction, or as RDF	January 2020	All ULBs
08.	Creating awareness among all the stakeholders about their responsibility by all ULBs	November 2019	All ULBs
09.	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	February 2010	All ULBs / JKSPCB

Annexures

1. Details of quantity of Plastic Waste and other details of ULBs of Kashmir Division.

Details of Plastic waste, Population and other details of ULBs of Kashmir and Ladakh Division

S.No	Name of MC	Plastic Waste Generation in ULB in MT's	Recyclable	Non-Recyclable	Total Area in Sq. Km's	Total Population	Total No of House Holds	Total No of Wards	No of Business Establishments	Banquet Halls / Marriage Halls	Dumping sites of Garbage	Name of Dumping site	Area of dumping site in land (in kanals)	total	Safaikaramchario s	No of Rag Pickers indentified	identified scrap Dealers (Kabaries)	Roads identified for plastic road
1	MC Ganderbal	1.85	1.29	0.55	9	29000	2500	17	2000	0	0	Kohistan colony ganderbal	25	35	10	1		
2	MC Bandipora	2.26	1.58	0.68	9	35397	5405	17	1300	0	1	Zalwan Dumping site	30	87	2	0		
3	MC Watergam	0.53	0.37	0.16	3	8350	839	13	265	0	2	Anwarabad / Nesigund	15	25	0	0		
4	MC Frisal	0.33	0.23	0.10	4	5129	855	13	8	0	1	Aryabad Frisal	2	10	0	0		
5	MC Pampore	1.38	0.97	0.41	12.5	21680	3532	17	1500	1	1	Gelander	4.5	40	2	2		
6	MC Khrew	0.62	0.44	0.19	2.5	9748	1239	13	203	1	1	Wadgan Khrew	13	18	1	0		
7	MC Mattan	0.57	0.40	0.17	4.5	8930	1236	13	300	0	1	Kundpora Mattan	2	31	2	1		
8	MC Tral	1.01	0.71	0.30	8.8	15876	2253	13	799	0	1	Takya Razaq Shah	13	35	0	0		
9	MC Awntipora	0.48	0.34	0.14	5	7528	959	13	396	0	1	Kandizal	17	0	0	0		
10	MC Chadoora	0.41	0.29	0.12	3	6422	995	13	90	0	0	0	0	9	4	0		
11	MC Magam	0.35	0.24	0.10	2.5	5469	801	13	1210	0	1	Yagipora A	2	24	0	0		
12	MC Dooru Verinag	1.29	0.91	0.39	10.38	20281	3590	17	800	1	0	0	0	40	0	0		
13	MC Handwara	0.79	0.56	0.24	7	12460	1785	13	812	0	1	Bagatpora	24	39	0	4		
14	MC Pahalgam	0.47	0.33	0.14	5	7360	853	13	1532	0	1	Sarbal (PDA)	3.17	72	0	0		
15	MC Baramulla	4.55	3.19	1.37	19.55	71434	11335	21	3895	0	1	Jetty Baramulla	89	132	0	0		
16	MC Kokernag	0.52	0.37	0.16	3	8211	1643	13	205	0	0	0	0	23	0	0		
17	MC Anantnag	7.13	4.99	2.14	14.05	111883	15000	25	7000	0	1	Doonipawa	6	267	6	4		
18	MC Kupwara	1.24	0.87	0.37	8	19461	1663	13	1380	0	0	0	0	47	0	2		
19	MC Yaripora	0.35	0.24	0.10	4	5489	1504	6	450	0	1	0	2.4	10	0	0		
20	MC Beerwa	0.52	0.37	0.16	6	8188	922	13	112	0	0	0	0	0	0	0		
21	MC Kulgam	0.96	0.67	0.29	4.5	15090	2838	13	1343	0	1	Issoo kulgam	47.4	50	6	0		
22	MC Pulwama	1.10	0.77	0.33	8	17333	2447	13	29660	0	0	0	0	43	0	4		
23	MC Achabal	0.54	0.38	0.16	3	8500	1700	8	115	0	0	0	0	31	4	3		
24	MC Bijbihara	1.45	1.02	0.44	8	22789	3098	17	720	1	1	Khiriadal	29	60	0	5		
25	MC Langate	0.42	0.29	0.13	6	6585	912	13	210	0	1	Batakulla Langate	5	14	0	0		
26	MC Hajin	0.93	0.65	0.28	4	14655	1280	13	300	0	1	Gndbal	10	38	6	5		
27	MC Sumbal	0.88	0.62	0.26	5	13844	2138	13	450	0	1	Shalkd	42	46	2	0		
28	MC Sopore	4.36	3.05	1.31	16	68335	9094	21	3606	0	1	udpora	50	143	15	11		
29	MC Ashmuqam	0.42	0.29	0.12	5	6531	2250	13	67	0	1	Near Bus stand	2.5	26	0	0		
30	MC Qazigund	0.57	0.40	0.17	5	9000	1800	7	1130	1	1	Chamola Wanpora	7	21	3	3		
31	MC Seer Hamdan	0.53	0.37	0.16	3.7	8236	1633	13	106	1	1	Sandose	5.16	13	0	0		
32	MC Chrari Sharef	0.74	0.52	0.22	8	11623	1320	13	421	1	0	0	0	13	0	0		
33	MC Khansahib	0.14	0.10	0.04	1.5	2200	310	7	165	0	0	0	0	13	0	0		
34	MC Budgam	0.81	0.57	0.24	8	12706	2258	13	880	0	1	Manatbudgam	3.7	25	0	0		
35	MC Pattan	1.25	0.87	0.37	5	19538	1990	13	420	0	1	pattan	1.5	28	0	0		
36	MC Shoplan	1.70	1.19	0.51	16	26715	5343	17	258	0	1	Sofanaman	25	44	0	0		
37	MC Kunzer	0.32	0.22	0.10	1.5	5000	266	7	63	0	1	0	1.5	10	0	0		
38	MC Uri	0.60	0.42	0.18	5	9366	758	13	73	0	1	0	0	10	0	0		
39	MC Devsar	0.62	0.44	0.19	9	9765	991	8	32	0	0	0	0	16	0	0		
40	MC Gulmarg	0.32	0.22	0.10	8	5000	244	5	347	0	2	Gulmarg	2	38	1	0		
		42.32	29.61	12.7	271	711107	118510	59	64643	7	31		479.83	1626	64	45		

Nil

2. J&K Government Order (SRO-45) regarding complete ban on Manufacture, Stocking, Distribution, Sale and Use of polythene less than Fifty Microns in thickness.

Government of Jammu & Kashmir
Department of Forest, Environment & Ecology,
Civil Secretariat
www.jkforestadm.nic.in

Notification,

Jammu, the 3rd February,2017

SRO 45 .- In exercise of the powers conferred by sub-section(3) of section 7 of the Jammu and Kashmir State Non-Biodegradable Material (Management, Handling & Disposal) Act, 2007, and in supersession of Notification SRO 182 of 2008, dated 18th June, 2008, the Government after consultation with the Prescribed Authority (J&K State Pollution Control Board) hereby impose ban on the manufacture, stocking, distribution, sale and use of polythene carry bags, plastic sheets or like, cover made of plastic sheet, plastic packaging and multilayered packaging less than fifty microns in thickness within the territorial limits of the State of Jammu and Kashmir.

" Provided that this notification shall not be applicable to the Health Care Establishment to the extent of the use of polythene carry bags for handling and disposal of bio medical waste as per Bio Medical Waste (Management and Handling) Rules."

This notification shall come into force after thirty days from the date of publication in the Government Gazette.

By order of the Government of Jammu and Kashmir.

Sd/-
(Muhammad Afzal)IAS,
Commissioner/Secretary to Government,
Forest, Environment & Ecology Department.

NO:- FST/Lit/PCB/167/2016 Dated:03.02.2017.

Copy to the:-

1. Ld. Advocate General, J&K State Jammu.
2. All Financial Commissioners.
3. Director General, Police, J&K Jammu.
4. Principal Secretary to the Hon'ble Chief Minister.
5. All Principal Secretaries to Government.
6. Principal Secretary to the Hon'ble Governor.
7. All Commissioner/Secretaries to Government.
8. Secretary to the Government.
9. Pr. Chief Conservator of Forests, J&K Jammu.
10. Chairman, State Pollution Control Board.
11. All Head of Departments.
12. Vice Chairman Jammu Development Authority, Jammu/Srinagar.

3. **J&K Government Order (GAD-356) regarding Ban on Use of Single Use Plastic Water Bottles in Government Offices.**

Government of Jammu and Kashmir
General Administration Department
Civil Secretariat, Jammu

Subject: Use of single use plastic water bottles in Government Offices.

Reference: U.O. File No.FST/PCB/9/2019 dated 05.02.2019 from Forest, Environment & Ecology Department.

Government Order No.356-GAD of 2019
Dated: 08 .03.2019

Keeping in view, the adverse impact on health and in order to avoid environmental hazards, it is hereby ordered that henceforth:-

(I) All Government Offices/Boards/Corporations/Autonomous Bodies/Universities Units in the state of Jammu and Kashmir shall dispense with the use of single use plastic water bottles in their respective offices and make alternate arrangements for safe drinking water that does not generate plastic waste; and

(ii) Only multi-use water bottles/dispensers/containers will be allowed in Government Offices, instead water bottles of alternative materials like Glass, Steel, Aluminum, etc may be used.

All the concerned Departments/Organizations will ensure compliance of the above order in letter and spirit.

By order of the Government of Jammu and Kashmir.

Sd/-
(Hilal Ahmad), IAS,
Commissioner/Secretary to the Government

No-GAD(Adm)45/2018-III
Dated:- 08.03.2019

Copy to the:-

1. All Administrative Secretaries.
2. Commissioner/Secretary to the Government, Forest, Environment & Ecology Department. **His U.O. file is also returned herewith.**

4. **J&K Government Order (SRO-231) regarding complete Ban on articles made of Non-Biodegradable Material listed in Schedule-1 of the J&K Non-Biodegradable Material (Management, Handling and Disposal) Act, 2007.**

No. 51-n] The J&K Govt. Gazette, 26th March, 2019/5th Chai., 1941. Tue.

EXTRAORDINARY REGD. NO. JK—33

PART I–B

Jammu and Kashmir Government—Notifications.

GOVERNMENT OF JAMMU AND KASHMIR
CIVIL SECRETARIAT—FOREST, ENVIRONMENT AND ECOLOGY DEPARTMENT

Notification

Jammu, the 26th March, 2019.

SRO-231.—In exercise of the powers conferred by sub-section (3) of section 7 of the Jammu and Kashmir Non-Biodegradable Material (Management, Handling and Disposal) Act, 2007, the Government of Jammu and Kashmir, after consultation with the perscribed Authority (Jammu and Kashmir State Pollution Control Board) hereby bans completely, the following articles made of non-biodegradable material listed in Schedule-I of the said Act, within the territorial jurisdiction of the State of Jammu and Kashmir ; namely :—

a. Disposable plates ;

b. Disposable cups, bowls and tumblers ;

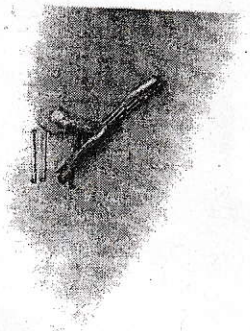
c. Disposable spoons, forks and knives.

This notification shall be deemed to have in force after one month from the date of its publication in the Government Gazette.

By order of the Government of Jammu and Kashmir.

(Sd.) MANOJ KUMAR DWIVEDI, IAS,
Commissioner/Secretary to Government,
Forest, Ecology and Environment Department.

5. Meeting of State Level Advisory Committee on Plastic Waste Management Rules '16



Government of Jammu and Kashmir
Housing & Urban Development Department
Civil Secretariat, Srinagar

Meeting Notice

Subject: - 2nd meeting of State Level Advisory Committee.
Reference:- Implementation of Plastic Waste Management Rules, 2016.

The 2nd meeting of State Level Advisory Committee constituted vide Govt. order No. 67-GAD of 2019 dated 11.01.2019 for implementation of Plastic Waste Management Rules, 2016 is being convened under the Chairmanship of Principal/Secretary to Govt., Housing & Urban Development Department on **23.09.2019 at 3.00 PM** to review the action taken on the decisions of the Ist meeting for effective monitoring/implementation of Plastic Waste Management Rules, 2016, in the State of J&K. The venue of the meeting shall be **Meeting Hall, 4th floor Civil Secretariat, Srinagar.**

The following Officers are requested to kindly make it convenient to attend the aforesaid meeting on the scheduled date and time.

1. Director Ecology, Environment and remote Sensing Department, J&K.
2. Member Secretary, State Pollution Control Board.
3. Commissioner, State Taxes Department.
4. Director Panning, H&UDD.
5. Director Urban Local Bodies, Jammu.
6. Director Urban Local Bodies, Kashmir.
7. Commissioner Jammu Municipal Corporation.
8. Commissioner Srinagar Municipal Corporation.
9. One expert from local body (to be nominated by the Housing & Urban Development Department).
10. Representatives of Plastic Association, Drug Manufacturers Association, Chemical Manufacturers Association.
11. One expert from the field of Industry (to be nominated by Industries & Commerce Department).
12. One expert from the field of academic institution (to be nominated by the School Education Department).

SWMO

(Mohd Akbar Dar)
Additional Secretary (legal)
Housing & Urban Development Department
Dated: 6 .09.2019

No.: HUD/LIT/114/2018/JMC

6. National Highways Authority of India HQ Order (18.36/2019) regarding the use of plastic waste in Hot Bitumen Mixes (wearing coat) for ongoing Highways construction as pilot project.

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार
NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport and Highways, Govt. of India)
PIU Ramban C/o RO Jammu, House No.315, Sector –1, Channi Himmat

BHARATMALA
ROAD TO PROSPERITY

NHAI/PIU-Ramban /2019/11001/ 207

23rd September 2019

To,

Member Secretary
J&K state Pollution control board,
Sheikh Ul Alam Campus,
Behind Govt .Silk factory
Rajbagh, Srinagar
Fax : 0194-2311165

Sub: Use of Waste Plastic obtain through Dry Process outlined in IRC :SP:98-2013 in Hot Bituminous Mixes (Wearing Course)-**Requirement of 5 ton waste Plastic .**

Ref : NHAI HQ Policy circular no 18.36/2019 dated 12.09.2019 (Copy enclosed)

Sir,

NHAI HQ vides circular under reference has been decided that use waste plastic in Hot Bitumen Mixes (wearing coat) for ongoing Highways constriction as pilot project.

2. As per IRC:SP:98-2013 the following plastic conforming :

S.N.	Waste Plastic	Origin
1.	Low Density polyethylene (LDPE)	Carry bags, sacks, milk pouches, bin lining, cosmetic and detergent bottles.
2.	High Density polyethylene (LHDPE)	Carry bags, bottle cap, house hold articles etc.
3.	Polyethylene Teryphthalate (PET)	Drinking water bottle etc.

However, black color plastic should not be used in these processes

3. In this regard, it requested to provide 5 tone waste plastic conforming to the requirements brought out here-in-above for incorporating into the road work initially for overlay of one Km road length under execution with NHAI in the state of J&K .

EG) to P.S.

Encl.: As Above

23/ Sept/2019.

Yours Sincerely,

Purshotam Kumar
Project Director
PIU Ramban

Copy to:

1. Regional Officer, RO Jammu
2. PD PIU Jammu -For information Please

7. **Srinagar Municipal Corporation Order (1439/2019) regarding constitution of Anti-Polythene Enforcement Squad.**

SRINAGAR MUNICIPAL CORPORATION,
Phone:0194-2470466; 2470465: Fax : 0194-2476931;
E-mail: commissioner@smcsite.org

Subject: Constitution of Anti-polythene Enforcement Squad.

ORDER NO: 1439 of 2019
Dated: 21st September, 2019

Whereas Hon'ble National Green Tribunal in its order dated 22/7/2019 passed in Original application No. 247/2017 in a case titled Central Pollution Control Board versus State of Andaman & Nicobar & Ors inter-alia directing the SPCBs/PCCs and Municipalities to constitute squads to check illegal manufacturing, stocking, sale of <50 microns thickness plastic carry bags and uncertified compostable carry bags/products in the market.

Therefore, in compliance of the said order passed by the Hon'ble Tribunal, the squad of following officials of Srinagar Municipal Corporation under the overall supervision of Health Officer, SMC is hereby constituted to implement the directions and/or other orders issued from time to time for enforcement of ban on manufacturing, sale & stocking of <50 microns thickness polythene, the squad shall ensure prohibition of littering of plastic waste at historical, religious, public places and dumping of plastic waste into open drains, water bodies & rivers, river banks within the territorial limits of Srinagar Municipal Corporation:-

S.No.	Name of the Officer	Designation	Cell No.
01.	Shakeel Ahmad	Anti Polythene Officer	8825096253
02.	Bashir Ahmad	Supervisor	
03.	Haroon Rather	Supervisor	
04	Aijaz Shafi	Supervisor	

All Zonal Sanitation Officers & Ward Officers shall be members of the squad in their respective Zones/Wards jurisdiction.

8. Jammu Municipal Corporation Order (859/62) regarding constitution of Anti-Polythene Enforcement Squad.

Government of Jammu & Kashmir
Jammu Municipal Corporation
Town Hall, Jammu

Ph. No. 0191-2542192(O)
0191-2547846(Fax)
e-mail:jmcjammu@rediffmail.com

Secretary,
J&K Pollution Control Board,
Jammu.

No. MJ/H/859/62 Dated: 29/7/19

Sir,

This is in reference to the recommendation no. 6 of the Hon'ble NGT's directions dated 22.07.2019 in the matter of CPCB V/s State of Andaman & Nicobar. In this connection, following two Sanitary Inspectors of JMC are recommended to be associated with joint squad of J&K SPCB and JMC for checking manufacture, stocking, distribution, sale and use polythene carry bags, plastic sheets or like cover made of plastic sheets, plastic packaging and multilayered packaging less than 50 microns in thickness and banned single use plastic disposables within the territorial limits of JMC.

1. Mr. Arun Nayar, Sanitary Inspector.
2. Mr. Joginder Singh, Sanitary Inspector.

Yours faithfully,

(Pankaj Magotra), KAS
Commissioner,
Municipal Corporation, Jammu

Copy to the:-

01. Health Officer, JMC, for information & n/a.
02. MVO, JMC, for information & n/a.
03. Concerned for immediate compliance.

FS(COM)-21

280

9. MoU signed between JMC and IPCA on Plastic Waste Management.

MEMORANDUM OF UNDERSTANDING
Between
JAMMU MUNICIPAL CORPORATION
And
INDIAN POLLUTION CONTROL ASSOCIATION
On
PLASTIC WASTE MANAGEMENT IN JAMMU

1. Background

The Indian Pollution Control Association (IPCA) and the Jammu Municipal Corporation (JMC) share a common goal of making the Jammu, Clean and improve the quality of life for its citizens. IPCA has more than 18 years of experience of working with different communities on waste management related issues, while JMC has its systems on ground to deliver basic services to its citizens. Specifically, drain cleaning; manage solid waste, parks and playgrounds.

JMC under the Swachh Bharat Mission (SBM) is also committed to provide waste management infrastructure and facilities in Jammu. Jammu being primarily an unplanned development with densely populated areas, JMC is facing many challenges to provide these services in its area.

Towards achieving its goals including obligations under the SBM, JMC seeks to undertake a series of awareness campaigns for public capacity building and behavior change. It also seeks to develop capacity of its ground staff to deliver services in a planned and efficient manner supported by planned and targeted infrastructure improvements and more effective monitoring. The level of coordination between various stakeholders will be the key success factor to determine if the sanitation services and solid waste can be made functional or not.

IPCA for over last eighteen years, has worked on various projects of solid waste management including door-to-door collection of waste, awareness on source segregation, strengthen secondary segregation through capacity building of waste pickers community, establish network of recyclers to increase rate of waste recycling. IPCA has developed self sustainable model of waste management and replicated the same in other parts of country with its associate partners.

This Memorandum of Understanding (MOU) establishes a **non-financial partnership** between JMC and IPCA (referred as partners hereon) for each partner to share their respective strength in order to achieve the following objectives.

2. Objectives

The objective of this partnership will be to:

2.1 Bring sense of responsibility among the citizens for their waste management.

2.2 Bring about behavior change and awareness among the communities on issues of waste management, particularly zero littering, segregation, waste collection ,

2.3 Put appropriate efforts for plastic waste management in Jammu, which include collection of non-recyclable plastic waste and channelize plastic waste to waste processing facility (waste to energy) of JMC

IPCA under this MOU with JMC shall do the following work, but not limited to:

1. Create awareness on plastic waste management with all stakeholders.
2. Identify and engage stakeholders, not limiting to RWAs and Market associations and vendors, to seek support in Plastic Waste Management.
3. Demonstrate a broad range of options and strategies to optimize available resources.
4. Arrange land required for setting up dry waste collection centre for the collection and storage of plastic waste.
5. Setting up of Dry waste collection centre for the collection and storage of plastic waste.
6. Facilitate knowledge sharing, capacity building and training sessions waste collectors/scrap dealers, JMC staff and all stakeholders involved in Solid Waste Management.
7. Facilitate the mobilization of resources from the private sector/ donor agencies having intent of supporting for improved waste management services in Jammu.
8. Channelize the plastic waste to waste to energy plant of JMC for end of life solution to the waste and for its energy recovery.

JMC shall undertake to do the following:

1. Extend support to IPCA in delivering the above tasks.
2. Providing the data and necessary information to develop the PWM Plan, if available.
3. Facilitate introductory meetings with the local/ground staff and other stakeholders.
4. Allocate land, if feasible to help IPCA in managing solid waste in the pilot areas.
5. Provide necessary sites and permissions for waste segregation and disposal of plastic waste at the waste to energy plant for its end of life processing.
6. Provide necessary document/certificate, which would state the receiving and processing of plastic waste delivered by IPCA to the waste to energy plant.

3. Monetary Support

IPCA shall not seek any monetary support from JMC in the implementation, and shall arrange its own resources. JMC would however may provide Information, Education, and Communication material to IPCA for the dissemination of

required knowledge and information about the plastic waste management in the community.

4. Implementation

IPCA and JMC agrees to set-up a Steering Committee under the assigned representative of JMC.

IPCA's representative would monthly update the undersigned or JMC's authorized representative about the activities undertaken through this MOU and would take their feedback and suggestions to meet the above mentioned objective in more meaningful manner.

5. General Provisions

1. The participants enter into this MOU while wishing to maintain their own separate and unique missions and mandates, and their own accountabilities. Unless specifically provided otherwise, the cooperation among the Participants as outlined in this MOU shall not be construed as a legal entity or personality. Each Party shall accept full and sole responsibility for any and all expenses incurred by itself relating to this MOU. Nothing in this MoU shall be construed as an exclusive working relationship. The Participants specifically acknowledge that this MOU is not an obligation of funds, nor does it constitute a legally binding commitment by any Parties or create any rights in any third parties.
2. Nothing in this MOU shall be construed as interfering in any way with any separate agreements or contracts entered into by or among the Participants in their individual capacities either prior or subsequent to the signing of this MOU.
3. This MOU becomes effective on the date of its signature by the Participants and shall remain valid until 31st March, 2022. However, the Participants may decide in writing prior to its expiry to extend this period. In addition, this MOU may be modified or amended if the Participants agree in writing. Either participant may terminate this MOU at any time after giving the other Participant at least 30 days' advance written notice.

The Participants, each acting through their duly authorized representatives, have caused this MOU to be signed in their names at Jammu as of this 1st day of August, 2019.

(signature) 1/8/2019

Commissioner
JMC

Commissioner
Municipal Corporation, Jammu.

(signature)
Mr. Ashish Jain
Director
IPCA

Annexure

Below is the list of activities that IPCA and JMC needs to do in order to execute effective and efficient waste management system in Jammu.

S.No.	Activities
1.	Awareness Campaign on zero littering and source segregation with different stakeholders including RWAs, Market Association, Corporate, Educational Institutes, Hotel Industries etc.
2.	Strengthen the collection and storage of plastic waste
3.	Strengthen Secondary Segregation of plastic waste through capacity building and training of waste picker community
4.	Decrease rate of plastic waste reaching to landfill through maximum recovery of plastic waste and channelize the same to waste to energy plant
5.	Set Up dry waste collection centre for MLP and other recyclable waste
6.	Organize Clean up drive under Swachch Bharat Mission

POLLUTION CONTROL DELHI

1/8/2019

Commissioner,
Municipal Corporation, Jammu.