



BENGALURU'S SWM ROAD MAP & VISION

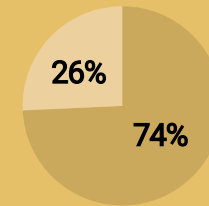
JULY 2019

CITY STATUS

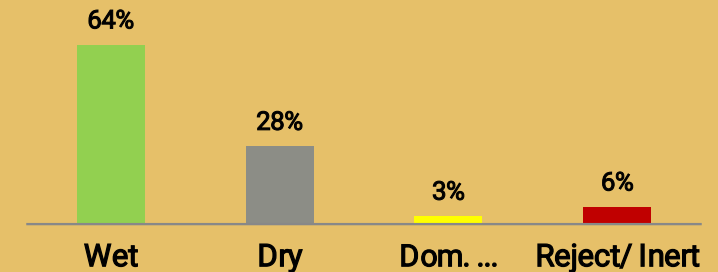
- Population (2019) - **1,30,88,022**
- No. of Wards - **198**
- Area of BBMP - **713 sq.km**
- Road length - **13,000 km**
- Households - **29 lakh**
- Commercial Establishments - **5 lakh**

Bengaluru's waste generation (2017)*

- Small residential & commercial generators, street sweeping (~4200 TPD)
- Bulk generators (~1500 TPD)



Percentage of waste by stream:



* Estimated as per Ground data & Normative standards

ROAD MAP & VISION

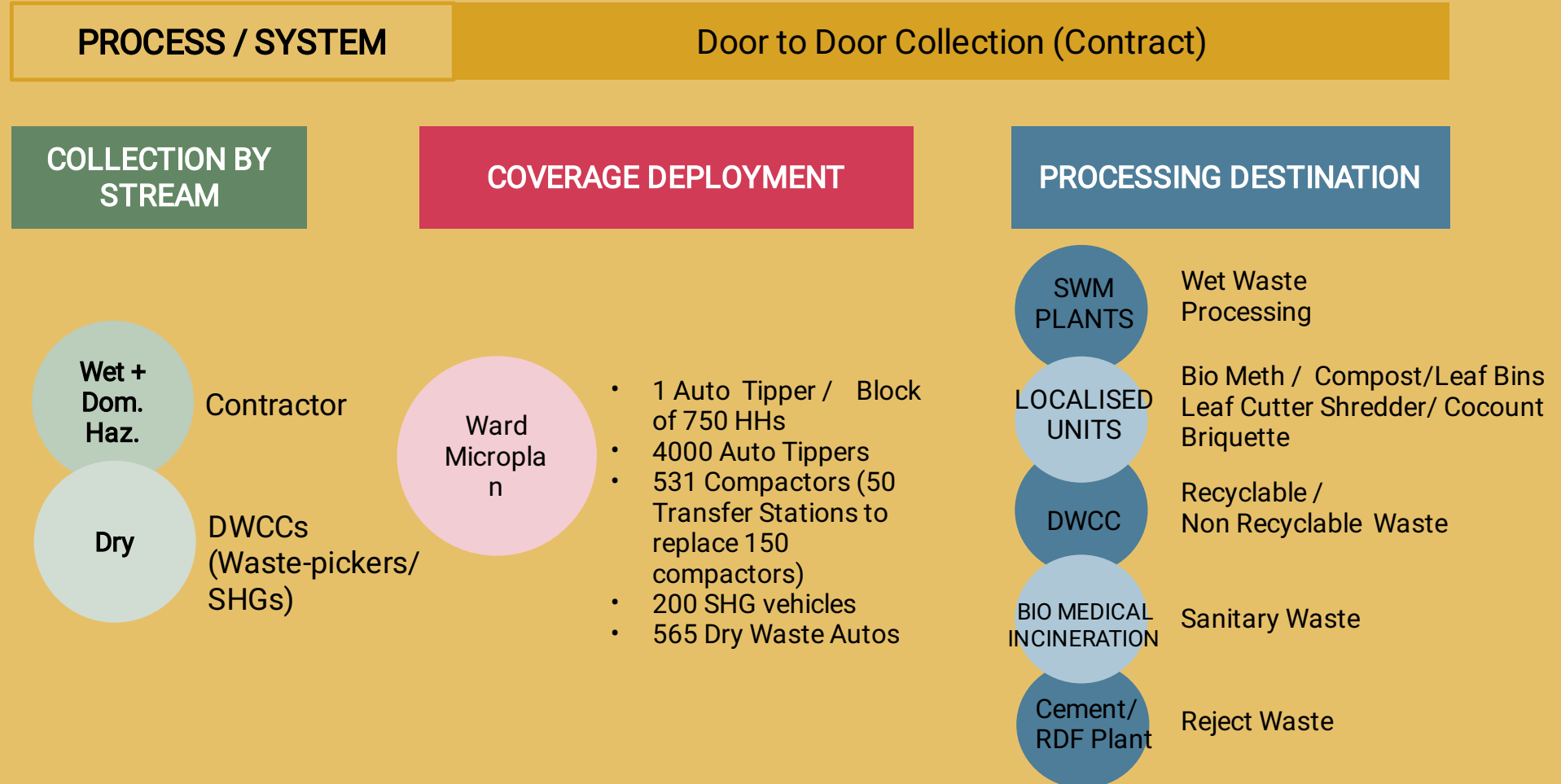
- Aim to Achieve **100% DOOR TO DOOR COLLECTION**
- Achieve **90% SEGREGATION LEVELS** by Sep 2019 and 100% by Dec 2019
- Ensuring the waste to landfill is minimized to 13-15% through **PROCESSING 100% OF WASTE** and encouraging decentralized and in-situ processing
- Improve **VISUAL CLEANLINESS** with zero tolerance for garbage black spots
- **Zero tolerance** for Plastic usage

STRATEGIES TO REACH THE ROAD MAP - GENERATOR TYPOLOGY

1. **Households & Small Commercial** – by BBMP's Contract Service Providers
2. **Optimal functioning of Waste Processing plants**
3. **Street Sweeping** – by Pourakarmikas & Mechanical Sweepers
4. **Bulk Commercial (10 to 100kgs per day)** – By Authorised Service Providers
5. **Bulk Generators (Above 100kgs)** – Insitu / Empanelled Vendors
6. **Animal waste (slaughter houses)**- By Authorised Service Providers
7. **C&D waste**- By Authorised Service Providers
8. **E-waste**- By Authorised Service Providers
9. **Banning of Plastic usage**- Enforcement by BBMP
10. **Framing of SWM Policy and SWM- Bye-Laws**

Strategy

1. Households and small commercial



ACTION PLAN

WET & DOMESTIC HAZARDOUS WASTE

1. **Tenders for Collection of Wet and domestic hazardous waste:** Tenders have been floated, under approval stages
2. **Salient features of tender:**
 1. 100% Stream wise Door to Door collection of wet and sanitary waste by contract service provider on a daily basis from each of the 198 wards. Dry waste would be collected primarily by waste pickers and SHGs.
 2. No more collection of mixed waste from households with strict penalty on waste generator and waste collector in case of violation.
 3. C&T of wet waste to be with Auto tipper only within the block as per microplan. Requirement of ATs and Compactors for wards shall be based on microplan.
 4. Along with DtD collection, mandate for collection of street sweeping waste and at garbage vulnerable points.
 5. Mandatory RFID / GPS tracking of collection vehicles and biometric attendance for drivers / helpers.
 6. Smart Control Room to monitor deviations in movement of ATs and Compactors and also receive Complaints on waste collection through phone or Sahaaya app.
 7. Waste Collector will report to BBMP those households which are not segregating for levy of penalty.
 8. There is 5% incentive in payment to waste collectors who ensure 100% DtD collection and more than 90% segregation in the ward..

Cont...

2. Establishment of Transfer Stations : Work has started for establishment of 50 Transfer stations

3. Centralised SWM processing Plants: Wet Waste supply to 8 plants will be increased (shown in separate table plant wise)

4. Decentralised SWM Plants:

a) 10 TPD Bio meth plant established in Koramangala

b) Revive the 5tpd Bio Meth plants – 3 plants are working, maintenance tender is under process for all 12 plants

c) Procurement of Leaf shredders – for parks, tenders for Procurement and maintenance has been finalised

5. Disposal of Domestic hazardous waste

(Biomedical and Sani waste): Tender has been floated to identify the service provider for collection, transportation and processing of Biomedical and Sani waste authorised by KSPCB.

ACTION PLAN:

DRY WASTE

1) Operationalisation of DWCCs

- 144 wards have Dry Waste Collection Centres.
- Auditing of existing DWCCs has been completed. Construction and upgradation will be taken up.
- Dry Waste Collection policy already exist , need to strengthen it by engaging wastepickers and SHGs.

2) Disposal plan for non recyclable dry waste , through Cement Plants/ RDF: Presently RDF generated is transported to the cement factories until the KPCL power plant at Bidadi will get established.

ACTION PLAN:

EFFECTIVE MONITORING & IMPLEMENTATION

- 1) **IEC by Link Workers**-Each ward has been deployed with **2 link workers** who are actively participating in giving awareness on source segregation and in-situ composting .
- 2) **Fining & Enforcement**-Action is taken to appoint **Marshals** in all 198 wards of BBMP as approved by Government
- 3) **Command and Control room**- For monitoring the SWM activities planned to establish Command and Control room for which Tender will be invited
- 4) **Compost Buy Back** -House hold composting encouraged. DWCC will facilitate buy back of Compost produced at household level – Policy will be brought for the rate fixation
- 5) **Visual cleanliness-Transfer stations to ensure no garbage on ground**
100% D2D Collection, incl. second and third shift cleaning
Dedicated street sweeping fleet (Manual - monitored by Biometric ,Mechanized sweeping through GPS)
- 6) **SWM Cess Enhancement**-
 - Presently only 50 crores per annum of SWM cess is being collected.
 - SWM cess of 15% of the total Property tax **has proposed to the BBMP Council** in order to cover atleast the minimum expenditure towards primary collection.

Strategy

2. Optimal functioning of Waste Processing plants

ACTION PLAN: Based on segregation level the processing plant will be made to receive optimal capacity

Name of the plant	Mixed Waste capacity (TPD)	Wet waste capacity (TPD)	Current Intake (TPD)
Kannahalli	500	350	40
Seegehalli	200	120	70
Chikkanagmangala	500	300	170
Lingadeeranahalli	200	150	90
Doddabidarakallu	200	150	150
Subbarayanapalya	200	150	50
KCDC	500	350	80
Mavallipura	0	0	0
MSGP	600		500
Total	2900	1570	1150

WASTE TO ENERGY PLANTS

- **KPCL – 400 MTPD RDF plant at Bidadi , Agreement signed and tender evaluation underway**
- **M/s 3 Wayste – 500 MTPD Agreement signed to set up WtE plant at Chikkanagamangala plant. Plant would be established within 7 months of obtaining all clearances.**
- **M/s Indium - Agreement executed to process 100 MTPD by setting up Nature Power Balance (NPB) Mixed Microbial, will start within 7 months**
- **M/s Firmgreen -1000MTPD, gasification technology will be started once GoK approval**
- **M/s Satarem –1000 MTPD will be started once GoK approval**
- **M/s Essel- 600 MTPD Combustion technology Proposal sent to govt. for approval for change of land**
- **M/s. National Environmental Group (NEG)- 500 MTPD Fluidised bed gasification technology will be started once GoK approval**
- **M/s Nexus Novus- 600 MTPD Bio-methanization and Bio-Gasification technology New Land allocation under process.**

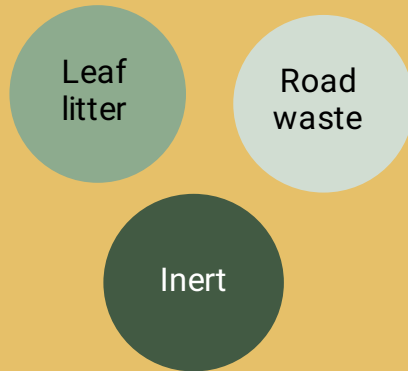
Strategy

3. Street Sweeping

PROCESS / SYSTEM

Manual Sweeping (BBMP) and Mechanical Sweeping (Contract)

COLLECTION BY STREAM



COVERAGE DEPLOYMENT

MANUAL STREET SWEEPING

- 1) 15,600 PKs under Biometric+2500 BBMP Pks
- 2) 14000 KM Road Length
 - Major road -986 km
 - Intermediate road -784 km
 - Minor -12350

MECHANICAL STREET SWEEPING

- 1) 9 nos operational covering 400 kms
- 2) 17 procurement under process - to sweep 850kms

PROCESSING DESTINATION

LOCALISED UNITS

Leaf Bin/ leaf composting facilities

C&D

Inert

LANDFILL

Reject waste

ACTION PLAN: STREET SWEEPING

- 1) **Pourakarmikas Street mapping** - PKs have been assigned with street Ids as per the norms which will **published in public domain** . The public can check the pourakarmika sweeping their streets and the frequency.
one day weekly off will be ensured for all pourakarmikas as per the Labour law.
- 2) **Street Sweeping equipments** - Collection bags for street sweeping waste (Jumbo Bags), Tools like mechanical weeders, scrapers to be provided
- 3) **Uniforms and safety gears**- To give corporate look ,New designs on uniforms and safety gears are made by M/s Foley Designers for Pourakarmikas, Supervisors and Health Inspectors Proposal sent to Govt.to procure through **KHDC, a Govt.entity**.
- 4) **Mechanical Sweepers** - 8 mechanical sweepers have been procured and procurement of another 17 mechanical sweepers are under process for sweeping arterial and sub arterial roads
- 5) **Pourakarmika Welfare programmes:**
 - Direct payment of wages based on biometric attendance is provided on timely basis with ESI and PF. from January 2018,
 - From May 2019, monthly payment to pourakarmikas is made through centralised online IFMS along with the disbursed wage slip.
 - Mid day meals are being provided through Indira canteen to about 25000 workers (PK's, helpers and drivers)
 - Health check up camps are being conducted regularly

Strategy

4. Bulk Commercial (10-100kgs/day)

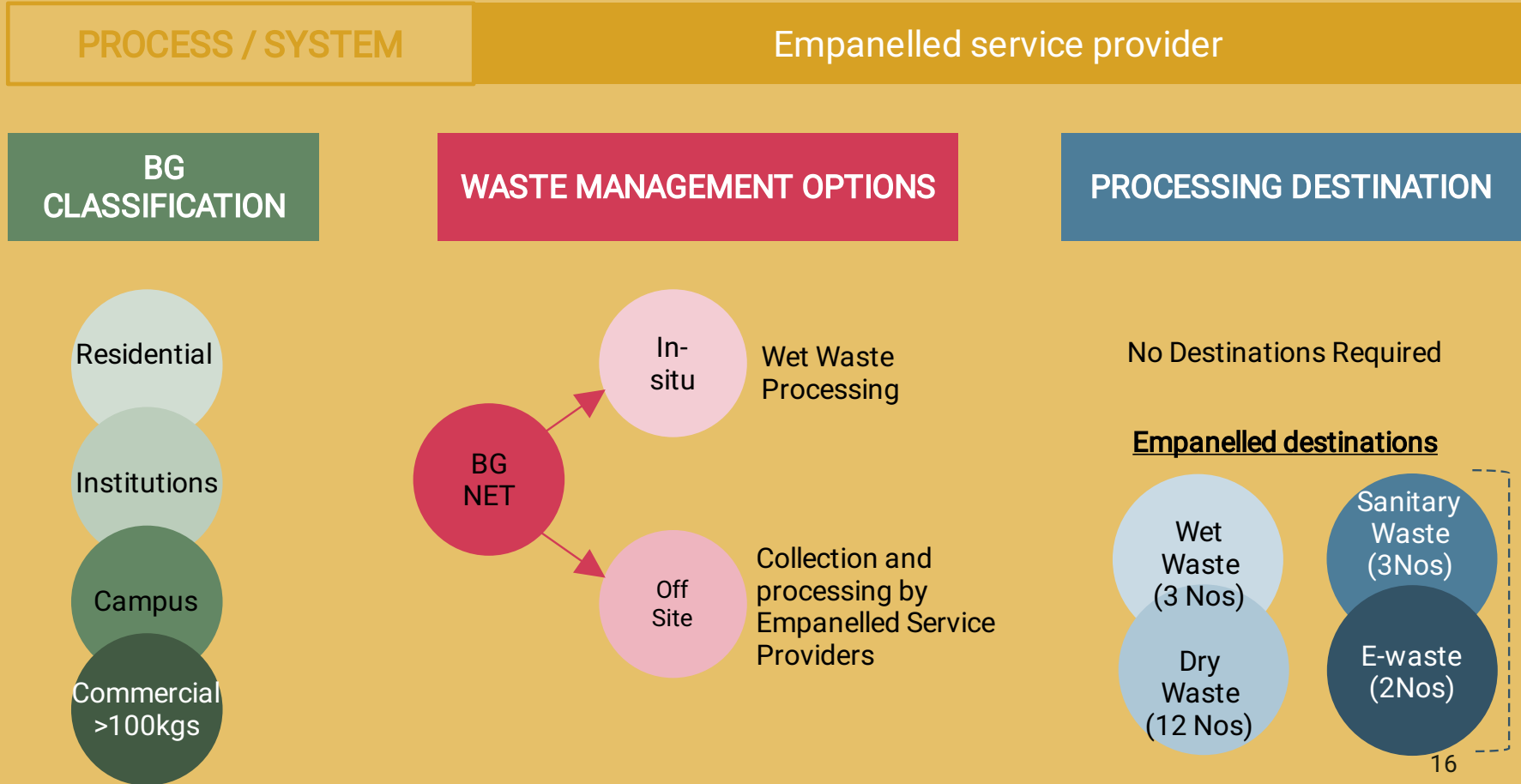


ACTION PLAN: BULK COMMERCIAL (10-100kgs/day)

- Commercial Generators 10 to 100 Kgs – To streamline the unauthorised dumping of waste, it is proposed to fix the authorised agencies who will collect waste by collecting trade refuse charges by the generators and in turn BBMP will allow the waste to be disposed at the BBMP processing plants by levying royalty charges from the agencies.

Strategy

5. Bulk Generators above 100kgs/day



ACTION PLAN:

BULK GENERATORS (100kgs/day and above)

a)Mandate in –situ for Bulk Generators who generate > 100kgs- 800 BGs

are already practising insitu processing

b) BG Net- Application has been developed both web based and mobile app

to Map all Bulk Generators through BG Net

c) Cess Waiver : A proposal to provide 50% rebate on swm cess for the bulk

generators doing insitu waste management is before BBMP Council

ACTION PLAN: OTHER STREAMS

6. Animal Waste Management: RFP finalised for management of animal waste. Tenders would be floated in July 2019

7. C&D Waste Management

- Work order has been issued to process 700 MT of C&D waste per day
- Lands needs to be identified for disposal of remaining C&D waste

8. Domestic E-Waste management

- E waste will be collected along with Dry waste by the Dry waste collection vehicles
- The DWCC will route the E waste through the designated E waste recyclers.

9. Plastic Waste Management:

- Complete ban on plastic carry bags, banners, buntings, flexs, plastic plates, cups, spoons, cling films, plastic sheets, plastic sheets used for dining table, and items made of thermocols, irrespective of thickness as Per GoK Notification dated 11-03-2016
- Chowltry, community halls, function halls are directed to switch over to steel plates and glasses.

Strategy

10. Framing of SWM Policy and SWM- Bye-Laws

- State level SWM Policy is being prepared by UDD, same shall be adopted by BBMP
- For effective implementation of SWM Rules – 2016, preparation of Bye-laws is under process

Levying Penalty:

- All AEE's/MOH's/SHIs are delegated to levy penalties to enforce SWM Rules,2016 and Plastic Waste Mangement Rules,2016.
- Spot fining machine for levying spot fines by Marshalls, HI's, AEE's and MOH is being procured.

ACTION PLAN: Penalty for the offences

SI No.	Act of Commission or omission	Penalty for the first offence	Penalty for the second and subsequent offence
01	Littering spitting urinating, open defecating or committing other acts of nuisance on Road, Bus station, Railway station, Street, playground, park and other preises of public utility.	Rs. 200/-	Rs.1000/-
02	Failure to segregate Dry Waste nd hand over the same separately to collector of waste in accordance with the Notification, Bye-laws, public notice or circular issued by the competent authority from time to time. (i) By any domestic occupier (ii) By any bulk Generator or commercial complex	Rs. 200/- Rs. 1000/-	Rs. 1000/- Rs. 5000/-
03	Failure to comply with any lawful directions issued by the commissioner to ensure cleanliness and hygiene of Road, Bus Station, Railway Station, Street, playground, Park and other premises of public utility.	Rs. 200/-	Rs.1000/-
04	Failure to segregate and hand over garden waste, inert wste, sanitary, nn-Bio degradable and Bio-medical waste or any other category waste separately to the corporatin for the purpose of handling and tansportation of the wastes in the manner specified by the corporation.	Rs. 1000/-	Rs. 5000/-
05	Irregular deposit of rubbish or any solid waste	Rs. 200/-	Rs. 1000/-
06	Allowing filth to flow in streets	Rs. 200/-	Rs. 1000/-
07	Depositing carcasses of animals or filth in improper place	Rs. 200/-	Rs. 1000/-
08	Dumping of building waste irregularly	Rs. 5000/-	Rs. 25000/-
Along with these, the penalty will be levied on burning of waste , other related offences and on plastic usage which will be incorporated in the new Bye laws.			

Timelines for Achieving SWM Vision for BBMP

1. Finalisation of C&T Tender for all wards - August 1st week
2. 100% Door to Door Collection of Wet Waste and Domestic hazardous waste – by Sept 2019
3. 90-100% Segregation of Waste – by Dec 2019
4. Finalization of Byelaw –by Oct 2019
5. Dry Waste Collection through Wastepickers –by Sept 2019
6. Construction and upgradation of Dry Waste Centes in those wards where they do not exist – by Dec 2019
7. Reach 90% of optimum processing capacity of 8 WPP – By Dec 2019
8. Revive all 11 Bio-meth plants and make it functional – Sept 2019
9. Deployment of Marshals for all 198 wards- AUG-2019
- 10.100% Animal Waste Collection – Sep 2019
11. 90-100% C & D waste collection, processing and disposal – by Mar 2020
- 12.Raising of SWM Cess and Cess waiver - In the next Financial year.
- 13.100% Implementation of Plastic Ban – By Aug 2019

THANK YOU