

# Plastic Waste Management Strategy and Action Plan: Implement, Monitor and Enhance

**Module VC**



# Session Overview

## Monitor

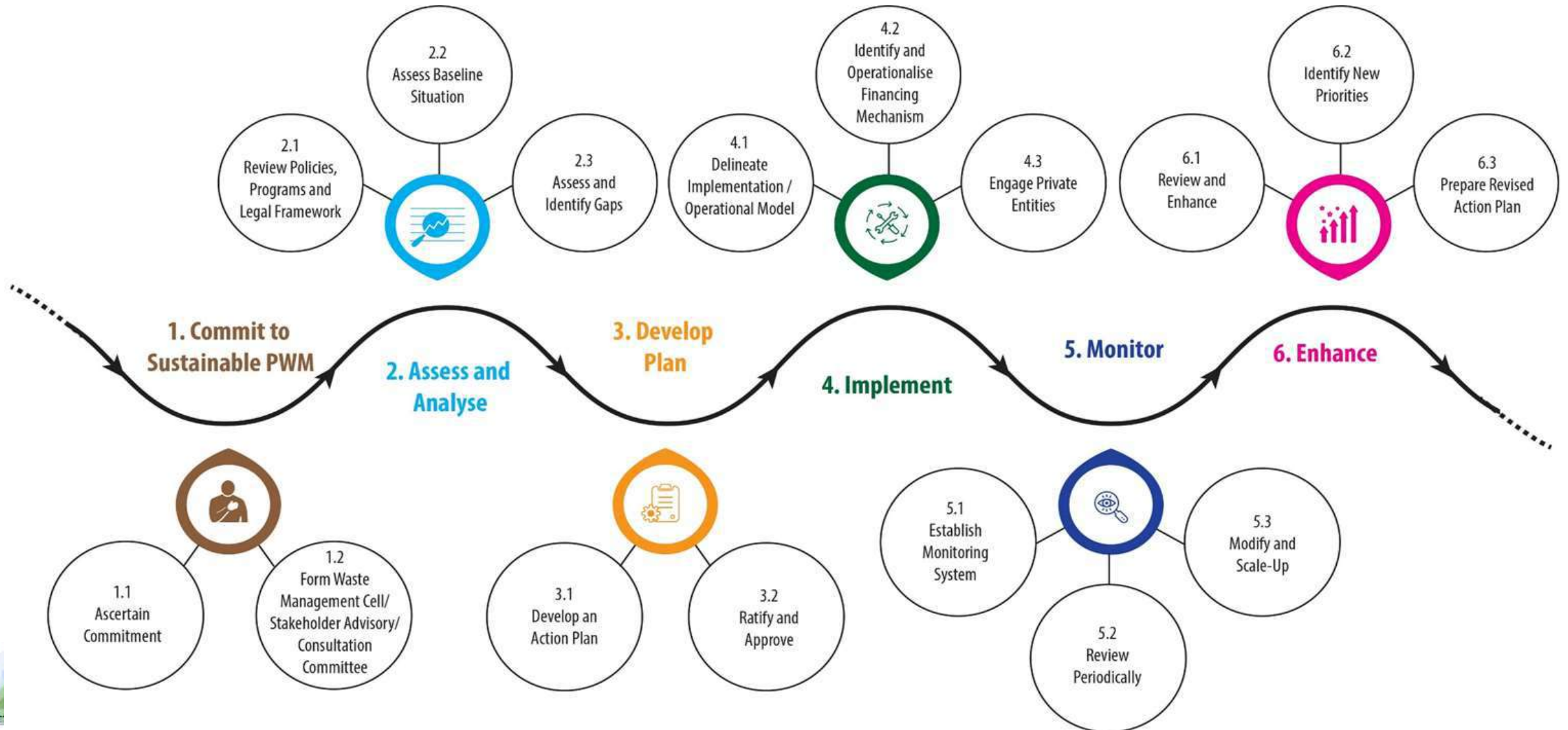
- Monitor implementation
- Periodic review
- Modification and scale up

## Enhance

- Review and enhance the action plan
- Identify new priorities



# Overall process to develop plastic waste management action plan





## 5. Monitor





## 5.1 Establish monitoring system

### Description

- Monitor each project with the support of a well-defined institutional structure
- Monitor implementation of each project with reference to pre-defined KPI

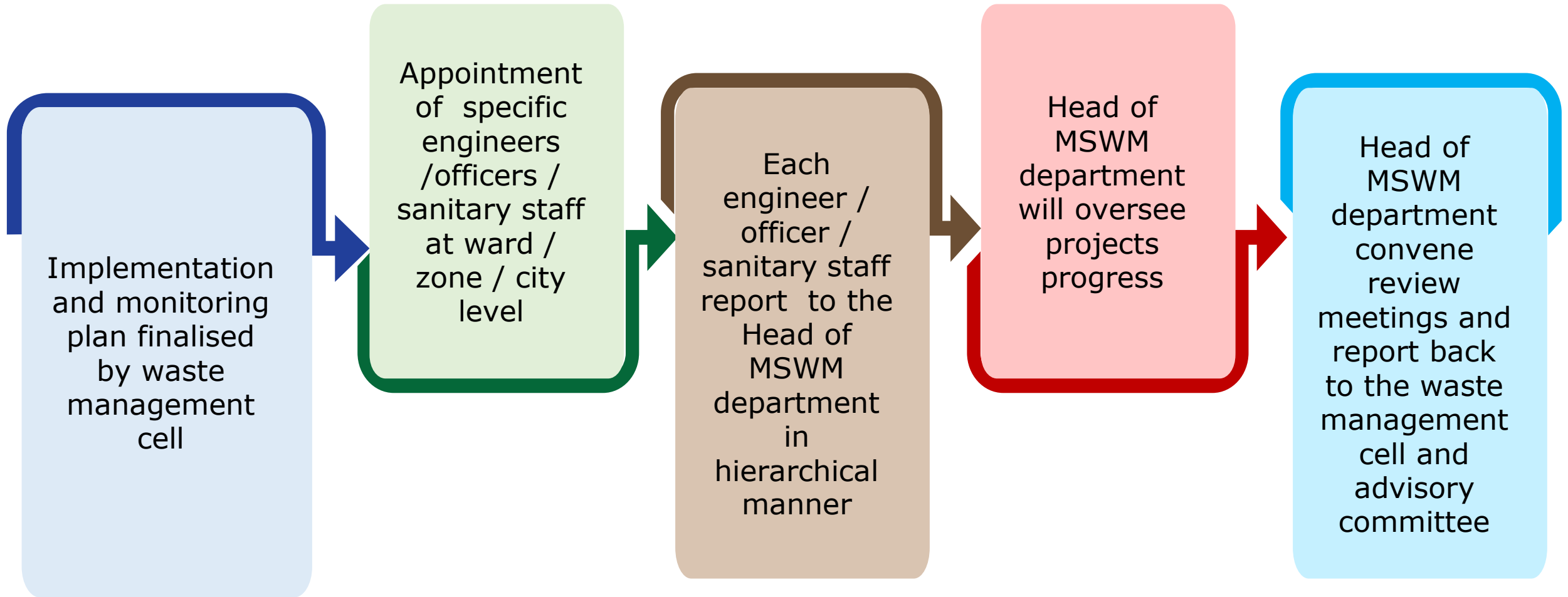
### Key Actions

- Define institutional structure for monitoring process
- Establish mechanism for implementation and impact monitoring
- Define Key Performance Indicators for all actions
- Define monitoring and reporting framework for all actions
- Steer implementation based on reported performance

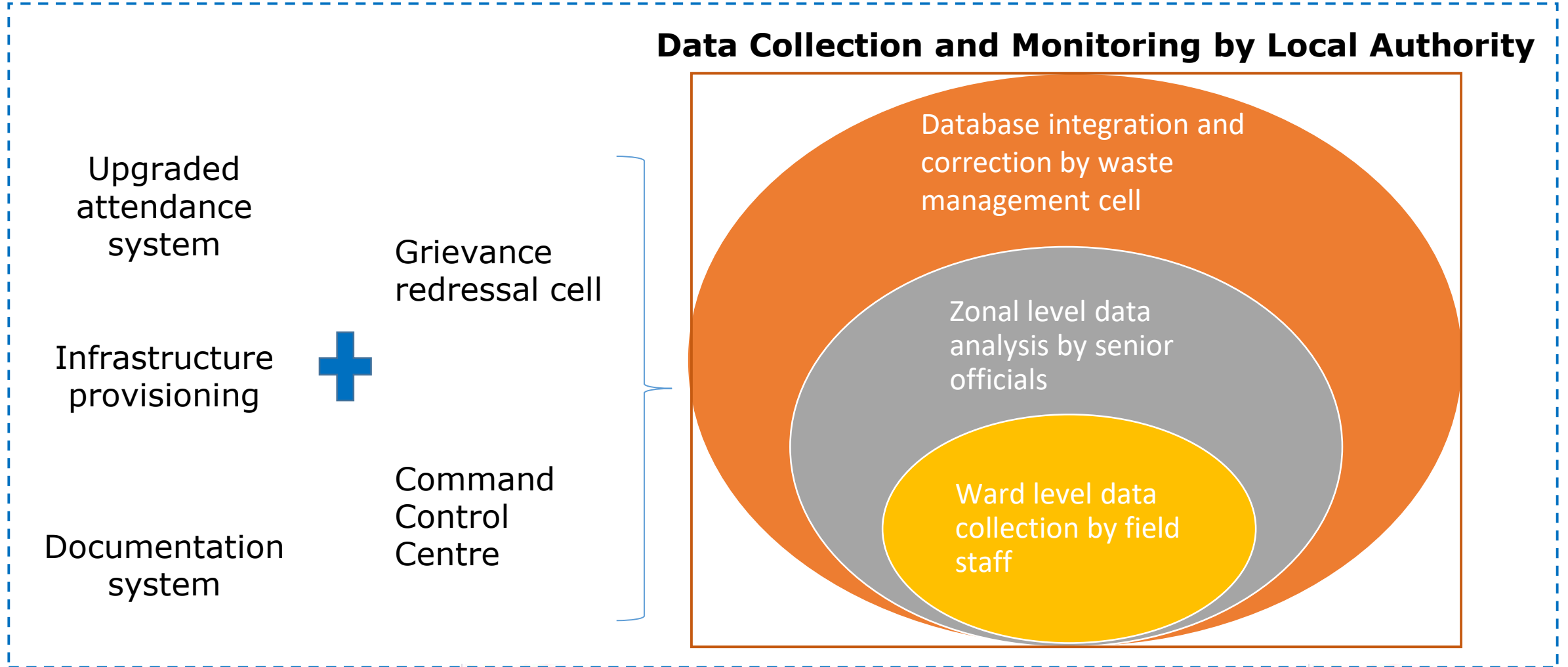




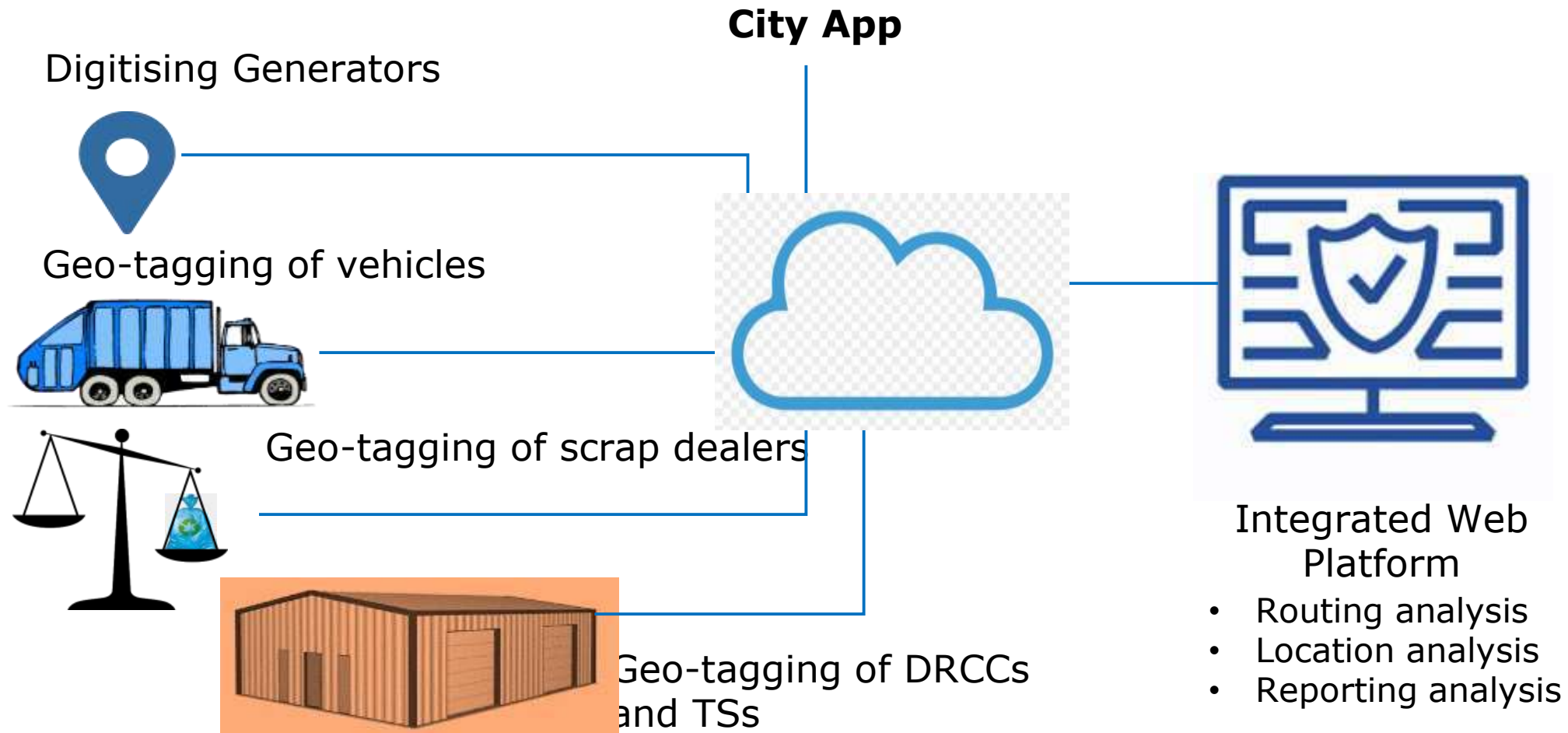
## 5.1.1 Institutional structure for monitoring process



## 5.1.2 Mechanism for impact monitoring



## 5.1.3 Command Control Centre





## 5.1.4 Key Performance Indicators (KPIs) – Point of generation

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Implement and enforce ban on SUPs	Extent of ban on SUPs	A legally binding ban on SUPs is imposed	NA	City level
		Number of shops using/selling SUPs	Quarterly	Ward level (sampling basis)
		Complaint lodged against shops using/selling SUPs and penal action imposed		
Enhance availability and accessibility to alternatives of SUPs	Extent of shift to alternative products	Number of shops adopting alternative materials	Semi-annually	Ward level (sampling basis)
		Number of institutions adopting preferential procurement of alternative products within their procurement policy	Annually	City level



## 5.1.4 Key Performance Indicators (KPIs) – Point of generation (Contd.)

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Enhance availability and accessibility to alternatives of SUPs	Extent of shift to alternative products	Number of cottage industry units engaged in manufacturing alternative products	Annually	City level
		List of alternative products available and accessible in the city uploaded in the city portal and its regular updation	Semi-annually	City level
Ensure 100% source segregation	Extent of source segregation	Number of households with 3 bin distributed	Semi-annually	Ward level
		Number of bulk generators undertaking on-site waste processing facilities	Annually	City level



## 5.1.4 Key Performance Indicators (KPIs) – Point of generation (Contd.)

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Minimise leakage of plastic waste at point of generation	Extent of uncollected plastic waste	Quantity of plastic waste generation- Quantity of plastic waste collected	Monthly	Ward level (sampling basis)
	Extent of leaked plastic waste	Quantity of uncollected plastic waste- Quantity sold to kabadiwalas	Monthly	Ward level (sampling basis)
	Extent of leaked plastic waste burnt/buried/openly dumped	Quantity of leaked plastic waste burnt/buried/openly dumped	Monthly	Ward level (sampling basis)



## 5.1.4 Key Performance Indicators (KPIs) – Point of generation (Contd.)

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Minimise leakage of plastic waste at point of generation	Percentage of leaked plastic waste disposed of in water bodies (lakes, ponds etc.)	Quantity of plastic waste found in water bodies	Monthly	Ward level (sampling basis)
	Percentage of leaked plastic waste directly entering waterways (rivers, canals)	Quantity of plastic waste found in water ways	Quarterly	City level water bodies
	Leakage of plastic waste into waterways through the storm-water system	Quantity of plastic waste found at outlet of storm water drains	Quarterly	City level outlet points (sampling basis)
	Direct beach & coastal littering (applicable to coastal city)	Quantity of plastic waste recovered	Monthly	Beach



## 5.1.4 Key Performance Indicators (KPIs) – Collection and transport

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Ensure 100% source segregation and door to door collection of waste on daily basis	Extent of segregation of waste	Quantity of waste collected in segregated fractions from doorstep	Monthly	Ward level (sampling basis)
	Doorstep collection efficiency	Total amount of plastic waste and MSW generated in the city	Monthly	Ward level (from weighbridge)





## 5.1.4 Key Performance Indicators (KPIs) – Collection and transport (Contd.)

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Ensure 100% source segregation and door to door collection of waste on daily basis	Assess extent of cost-recovery	Number of properties paying user charges in a timely manner	Monthly	Ward level
	Assess efficiency of manpower for primary collection of waste	Total number of sanitary staff vis-à-vis number of sanitary staff reporting daily to ensure efficient plastic waste collection	Daily	Ward level
	Assess efficiency of infrastructure for primary collection of waste	Total number of primary collection vehicle vis-à-vis number of primary collection vehicles reporting daily to ensure efficient plastic waste collection	Daily	Ward level

## 5.1.4 Key Performance Indicators (KPIs) – Collection and transport (Contd.)

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Streamline collection and transport of waste to registered recyclers	Sufficiency of infrastructure for collection and transport of waste	Capacity of vehicles dedicated to primary, secondary and tertiary collection	Monthly	Ward
	Efficiency of secondary collection and transport	Number of DRCCs equipped with required infrastructure	Semi-annually	City
		Number of TSs equipped with required infrastructure	Semi-annually	City



## 5.1.4 Key Performance Indicators (KPIs) – Collection and transport (Contd.)

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Streamline collection and transport of waste to registered recyclers	Efficiency of secondary collection and transport	Quantity of incoming and outgoing waste in DRCCs and TSs	Semi-annually	City
		Number of registered and unregistered scrap dealers in the city	Monthly	Ward
		Volume of waste received by scrap dealers in the city	Monthly	Ward



## 5.1.4 Key Performance Indicators (KPIs) – Recycling, recovery, disposal

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Ensure plastic is recycled in environmentally compliant manner in all recycling and processing units	Assess capacity and efficiency of recycling and processing plant	Number of plastic waste recycling and processing plant	Semi-annually	City level
		Capacity of the sites / facilities		
		Number of units following proper pre-processing mechanisms		
		Quantity and type of plastic waste received at the plant		
		Quantity of end products produced at the plant		
		Quantity of reject material		



## 5.1.4 Key Performance Indicators (KPIs) – Recycling, recovery, disposal

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Ensure plastic is recycled in environmentally compliant manner in all recycling and processing units	Assess capacity and efficiency of recycling and processing plant	Availability of plastic waste for road constructions at DRCCs/processing sites	Annual	City level
		Extent of roads made from recycled plastic		
		Availability of RDF for co-processing		
	Assess quality of end products	Quality of end product	Semi-Annual	City level





## 5.1.4 Key Performance Indicators (KPIs) – Recycling, recovery, disposal

Action Points	KPIs	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Ensure plastic is recycled in environmentally compliant manner in all recycling and processing units	Assess environmental compliance of recycling / processing units	Number of units registered with Pollution Control Board	Semi-Annually	City level
		Ground water quality testing at designated locations close to recycling/processing units	Annually	City level
	Assess requirement of landfill	Record of residual waste from processing site	Daily	Each processing Site
	Assess compliance at landfill	Sample characterisation of waste at landfill site	Annually	Landfill Site
		Ground water quality testing at landfill	Annually	Landfill Site

## 5.1.4 Key Performance Indicators (KPIs) – Institutional strengthening

Action Points	Data Use and Potential Analysis	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Institutional strengthening	Assess financial viability of the PWM and overall MSWM system	Cost of collection per tonnes per day	Quarterly (once in three months)	City level
		Cost of transport per tonnes per day		
		Human resource costs		
		Cost of operations and maintenance for services managed by the city (recurrent fuel, electricity and maintenance costs)		
		Cost recovery for service through tax, user fees, etc.		



## 5.1.4 Key Performance Indicators (KPIs) – Institutional strengthening (Contd.)

Action Points	Data Use and Potential Analysis	Data Required	Minimum Frequency of Measurement	Point of Data Collection
Institutional strengthening	Assess and identify repeated problem areas Assess efficiency of complaint redressal	Number of PWM and overall MSWM related complaints received daily	Daily	City level
		Types of complaints received		
		Time taken for issues to be resolved and appropriate actions taken		
		Number of defaults for which penalties are collected		





## 5.2 Periodic review

### Description

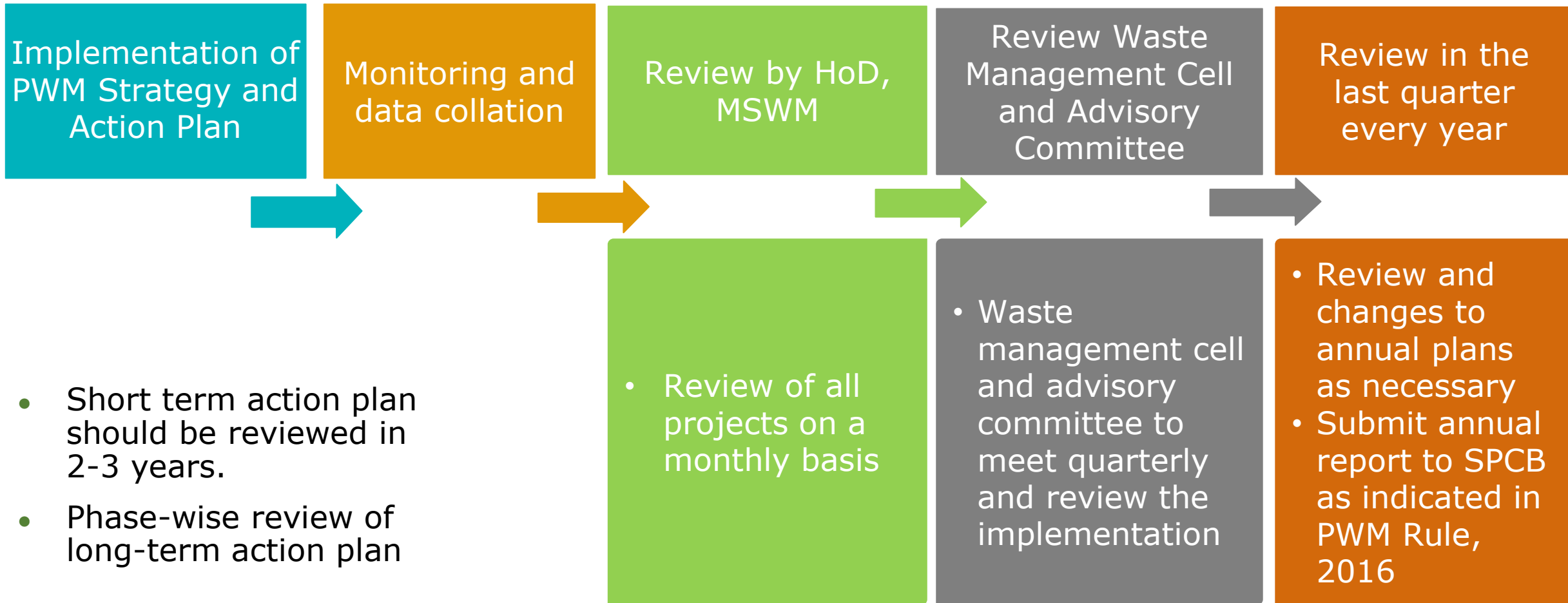
- Periodic review of action plan implementation to identify roadblocks and emerging priorities

### Key Actions

- Periodic review of the action plan by waste management cell and stakeholder advisory/consultation committee
- Short-term action plan to be reviewed on regular basis and revised accordingly.
- Long-term action plan to be reviewed after completion of each phase and revised with revision of action plan.



## 5.2 Periodic review







## 5.3 Modification and scale up

### Description

- Modification and scale up of action plans

### Key Actions

- Waste management cell will
- Update/ modify interventions of short-term annual action plans based on progress/challenges during ongoing annual action plan implementation. This refers to the areas of improvements especially the soft measures identified through periodic review that will help to make the intervention more impactful.
- Discuss and decide on further city-wide upscaling of the particular components of yearly action plan that are implemented on pilot basis at initial stage.

***For eg. Successful operation of RVM require intensive IEC campaign. This soft measure can be included during city wide scale-up of the initiative***





## 6. Enhance



## 6.1 Review and enhance the action plan



### Description

- The action plan is reviewed towards the end of the ongoing phase of implementation and tasks that are not addressed or partially addressed are identified

### Key Actions

- Review of annual and periodic review reports by waste management cell and stakeholder advisory/consultation committee



## 6.2 Identify new priorities



### Description

- Identify new priority areas for revising (based on emerging concept and new technology) or preparing the next phase of the action plan

### Key Actions

- If required, new priority areas (based on emerging concept and new technologies) to be decided for a subsequent annual plan for short term goals, say, 5-10 years
- New priority areas to be decided for phase-wise implementation under more than 20 years long term action plan



## 6.3 Prepare revised action plan



### Description

- Revision or preparation of the next version of the plastic waste management action plan

### Key Actions

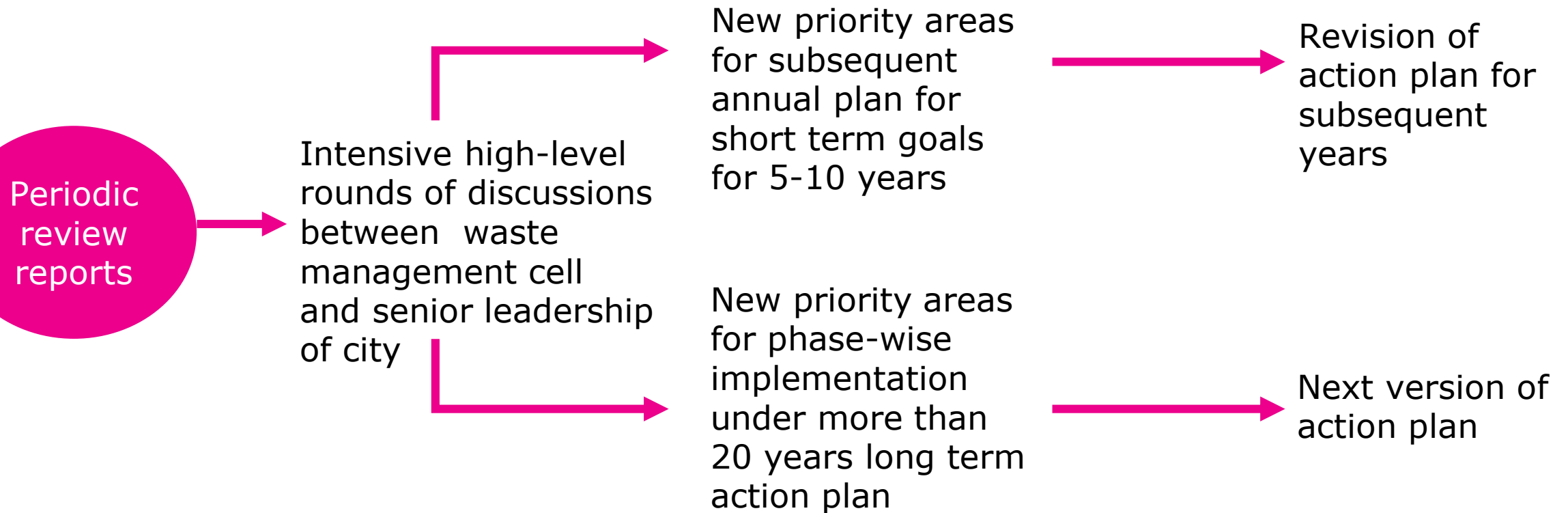
- Waste management cell, in consultation with the stakeholder advisory/ consultation committee to revise the long term action plan or prepare the next version of the plastic waste management action plan





## 6.3.1 Enhance action plan

### Identify New Priority Areas (new technology/concept etc.) and Revision/ New Action Plan



# Exercise - 1 hour

Let us organise in 3 groups - each group representing one aspect of the plastic waste management chain - collection/segregation, transport, recycling/processing.

- Each group will further organise into two parties - one representing the Local Authority and one representing the private sector.
- From one of the solutions you identified earlier, work out an implementation model by discussing among the parties.
- Identify KPIs and a monitoring framework



# END OF MODULE VC





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### Disclaimer

The Training Modules on developing 'Plastic Waste Management Strategy and Action Plan for Urban Local Bodies(ULBs)' is prepared by ICLEI-Local Governments for Sustainability, South Asia under the contract- Development of Knowledge, Training and Capacity Building Materials on Plastic Waste Management based on the activities of GHMC, supported by the IGES Centre Collaborating with UNEP on Environmental Technologies (CCET). The views expressed in this document do not necessarily represent the official decision or stated policy of the United Nations Environment Programme. The citing of trade names in this document does not constitute any endorsement.

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