

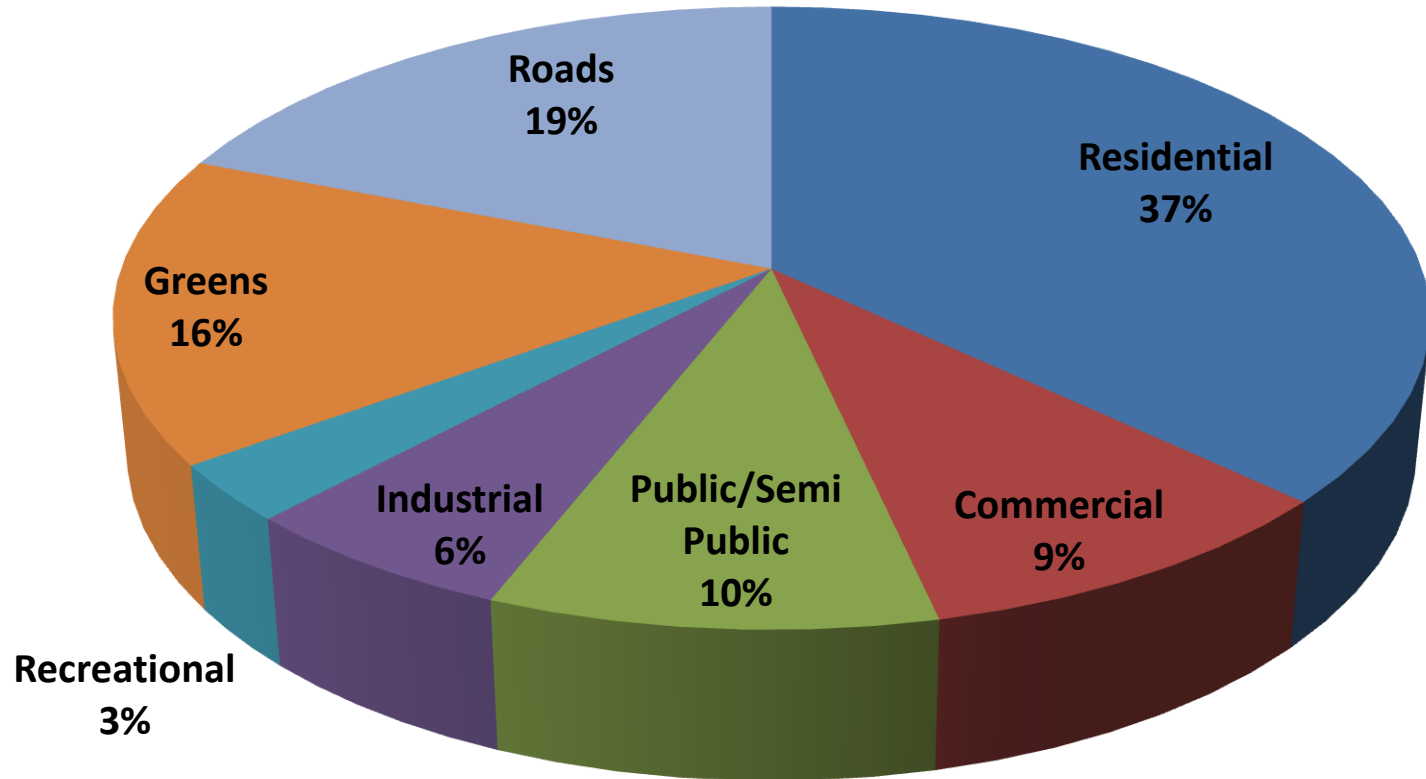
# Sustainable Waste Management Strategies to be Adopted

## *Key Performance Indicators (KPIs) identified for the project*

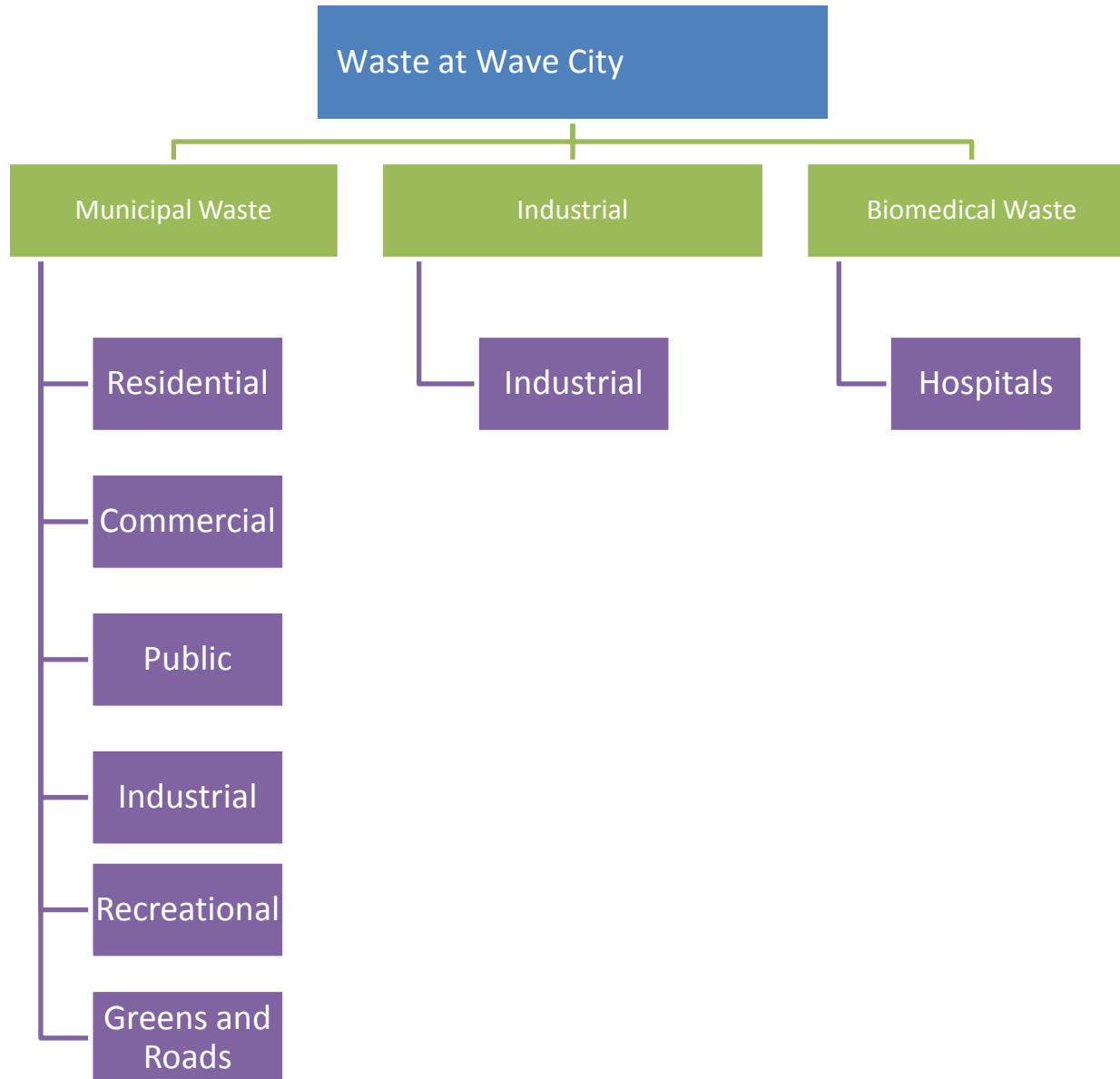
- Minimize waste generation
- Segregation of waste at source
- Clean roads/ parks/ open spaces with no sights of solid waste dumping and foul odour.
- In situ treatment of waste wherever possible
- LEED points from waste segregation and reduction in construction waste
- At least 50% recycle and reuse of Construction
- Zero incident-accident reported due to waste mismanagement



## Land Use Distribution – Wave City



# Category of Waste Generated

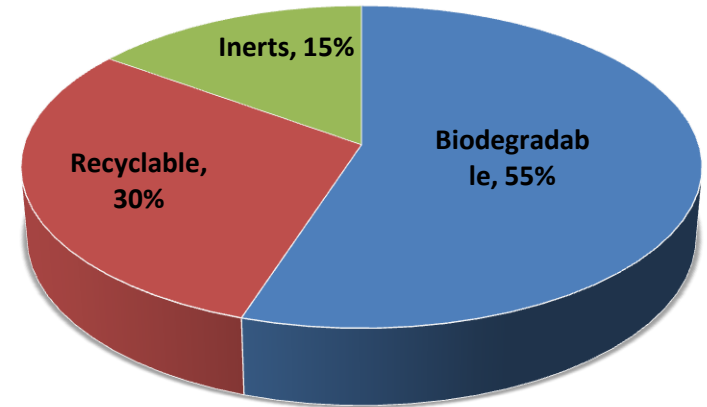


# Total Waste Generation

## Total Waste Generation from Wave City

Service Area	Waste Generated (TPD)
	HiTech
Residential	303
Commercial	59
Public	17
Industrial	196+9 (205)
Recreational	1
Greens	8.5
Roads	7
<b>TOTAL</b>	<b>601 TPD</b>

Out of the total municipal waste generated, % fractions of waste streams



Industrial Waste will be stored, collected and treated separately and not to be mixed with MSW

# Functional Elements of Municipal Solid Waste Management



# Municipal Solid Waste Management

## Source Segregation and Storage

- Residents dispose their household waste in two colored bins
  - **Blue colour** bin for recyclables
  - **Green colour** bin for biodegradable/ wet waste



## Primary Collection

- Door to door collection through motorized vehicles
- Vehicles will have separate compartment for biodegradable and recyclable waste stream



# Municipal Solid Waste Management

## Secondary Storage

- Secondary storage will be through the use of Refuse Collector Bins(Twin), where the auto tippers unload the waste
- These bins will be placed at strategic locations in the residential blocks, commercial spaces etc



## Transportation of Waste

- The refuse collector bins will be hydraulically lifted for emptying into the refuse collector truck
- Bins will be compartmentalized vehicles with an arrangement for compaction; this will reduce the volume of waste transported.
- GPS enabled vehicles for monitoring the status of bins



# Municipal Solid Waste Management

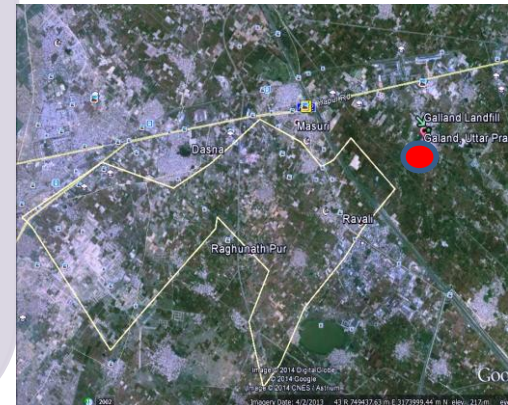
## Sorting at Waste Storage Depot

- Waste will be unloaded from refuse collector trucks
- Containers of 5-20 cu.m would be kept at transfer station to receive waste from small vehicles
- Mechanical Sorting will take place and recyclables will be separated



## Processing & Disposal of Waste

- Feasibility study is recommended to decide whether it should be set up within the proposed City limits.
- IWMF planned by GDC/GMC at Village Galland may be considered
- Inerts and Ash from WTE process will be sent to landfill site in Galand.
- Organic Waste Composter machines recommended for decentralised treatment of organic waste



# Waste Processing Technique- Controlled Composting

## Organic Waste Converter Machine 3.0 TPD

### Ideal for:

- Segregated Organic Waste ; ideal quantities (1-3 TPD) generated in commercial units, Group Housings, garden waste
- Equipment cost : 20- 30 lakhs
- Area Requirement: <500 sq.m
- Estimated Compost Generation: ~ 1.0 TPD

Such localised processing of waste will reduce the quantity of waste reaching the IWMF site, also saving transportation cost.



# Waste Processing/ Treatment Options

Technique/ technology	Type of waste	System requirement	Benefit	Recommendation
Waste to Energy/ RDF and associated Power Plant	Mixed waste	<ul style="list-style-type: none"> <li>• Good calorific value of mixed waste</li> <li>• Shredding</li> <li>• homogenization</li> <li>• High maintenance</li> <li>• Pollution control devices</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity</li> <li>•Waste to landfill reduced</li> </ul>	Techno-Financial Feasibility to be checked
Composting (Controlled, small scale )	Garden waste/ trimmings/ Kitchen waste	<ul style="list-style-type: none"> <li>• Organic Waste Convertors (OWC) units suggested</li> </ul>	<ul style="list-style-type: none"> <li>•Sale of compost</li> </ul>	Recommended for garden trimmings/ kitchen waste
Biomethanation	Kitchen waste/ biodegradable waste	<ul style="list-style-type: none"> <li>• High level sorting</li> <li>• High maintenance</li> <li>• Huge Area requirement</li> </ul>	<ul style="list-style-type: none"> <li>• Cooking fuel to villagers</li> <li>• Electricity</li> <li>• Heat Energy</li> </ul>	Feasibility to be checked

# Overall Waste Management Strategy

