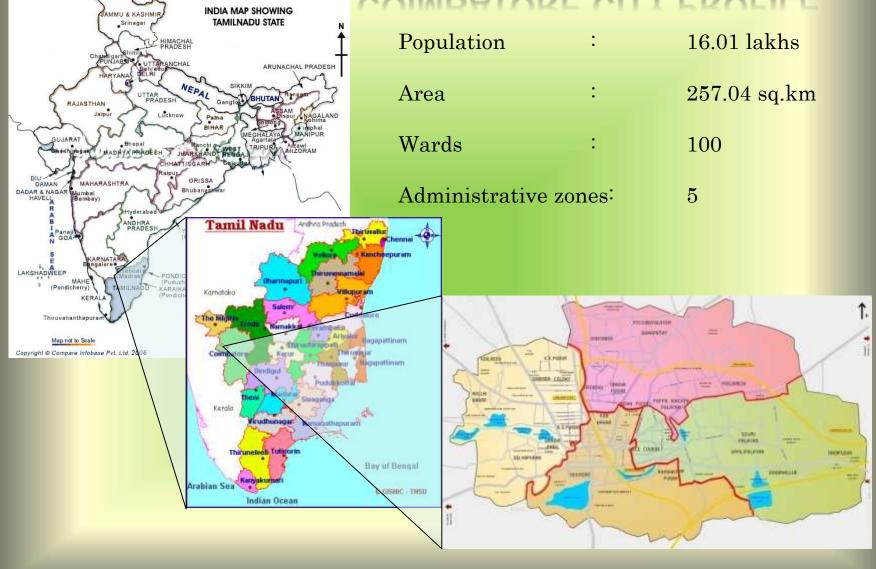
## **Coimbatore City Municipal Corporation**



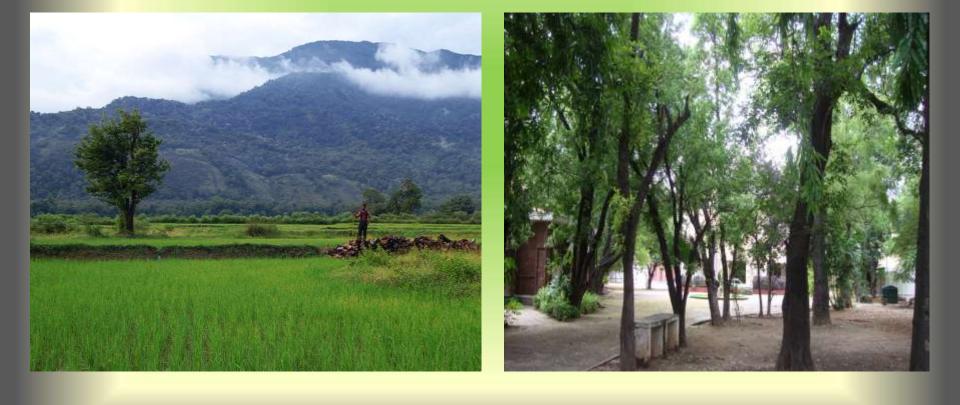
## Jawaharlal Nehru National Urban Renewal Mission

## IMPLEMENTATION OF INTEGRATED SOLID WASTE MANAGEMENT PROJECT THROUGH PPP MODE

## **COIMBATORE CITY PROFILE**



# **GREEN CITY COIMBATORE**



#### **GENERAL INFORMATION ABOUT COIMBATORE CITY**

<ul> <li>City's population as per census 2001</li> <li>City's population as on 2006</li> <li>10.09 Lakhs</li> <li>City's population after Expansion</li> <li>15.00 Lakhs</li> <li>Floating population</li> <li>Slum Population</li> <li>1,85,935</li> <li>No. of Administrative wards</li> <li>100</li> <li>No. of Zones</li> <li>Quantity of MSW generated</li> <li>R1550 gms</li> <li>Total No. of Slums existing</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Collection Contract Workers</li> <li>Total No. of Contract Workers</li> <li>O4</li> <li>No. of Slaughter Houses</li> <li>No. of Slaughter Houses</li> <li>No. of Slaughter Houses</li> <li>No. of Fish Markets</li> <li>No. of Hospitals/Nursing Homes</li> <li>Total No. of Hospitals/Nursing Homes</li> <li>City Science</li> </ul>	•	Area of the City	:	257.36 Sq.Km
<ul> <li>City's population after Expansion</li> <li>Floating population</li> <li>Slum Population</li> <li>No. of Administrative wards</li> <li>No. of Administrative wards</li> <li>No. of Zones</li> <li>Quantity of MSW generated</li> <li>Ref capita waste generation</li> <li>Total No. of Slums existing</li> <li>Total No. of Slums existing</li> <li>Coverage door-to-door collection of waste</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Contract Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>Mathematical State State</li> <li>No. of Fish Markets</li> <li>Mathematical State</li> <li>Mo. of Fish Markets</li> <li>Mo. of Fish Markets</li> <li>Mo. of Fish Markets</li> </ul>	•	City's population as per census 2001	:	9.31 Lakhs
<ul> <li>Floating population</li> <li>Slum Population</li> <li>No. of Administrative wards</li> <li>100</li> <li>No. of Zones</li> <li>Quantity of MSW generated</li> <li>R15 TPD</li> <li>Quantity of Waste Collected</li> <li>775 TPD</li> <li>Per capita waste generation</li> <li>550 gms</li> <li>Total No. of Slums existing</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Cotal No. of Contract Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	City's population as on 2006	:	10.09 Lakhs
<ul> <li>Slum Population</li> <li>1,85,935</li> <li>No. of Administrative wards</li> <li>100</li> <li>No. of Zones</li> <li>Quantity of MSW generated</li> <li>815 TPD</li> <li>Quantity of Waste Collected</li> <li>775 TPD</li> <li>Per capita waste generation</li> <li>550 gms</li> <li>Total No. of Slums existing</li> <li>173</li> <li>No. of Households</li> <li>5,06,009</li> <li>Coverage door-to-door collection of waste</li> <li>80%</li> <li>Collection Efficiency</li> <li>93%</li> <li>Availability of Land for waste disposal</li> <li>654.54 Acress</li> <li>Total No. of Contract Workers</li> <li>2635</li> <li>Total No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>20</li> <li>No. of Fish Markets</li> <li>01</li> </ul>	•	City's population after Expansion	:	15.00 Lakhs
<ul> <li>No. of Administrative wards</li> <li>No. of Zones</li> <li>Quantity of MSW generated</li> <li>Quantity of Waste Collected</li> <li>Per capita waste generation</li> <li>Total No. of Slums existing</li> <li>Total No. of Slums existing</li> <li>Coverage door-to-door collection of waste</li> <li>Solection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Floating population	:	15%
<ul> <li>No. of Zones</li> <li>Quantity of MSW generated</li> <li>Quantity of Waste Collected</li> <li>Quantity of Waste Collected</li> <li>775 TPD</li> <li>Per capita waste generation</li> <li>Total No. of Slums existing</li> <li>Total No. of Slums existing</li> <li>Solection Efficiency</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Slum Population	:	1,85,935
<ul> <li>Quantity of MSW generated</li> <li>Quantity of MSW generated</li> <li>Quantity of Waste Collected</li> <li>775 TPD</li> <li>Per capita waste generation</li> <li>550 gms</li> <li>Total No. of Slums existing</li> <li>173</li> <li>No. of Households</li> <li>5,06,009</li> <li>Coverage door-to-door collection of waste</li> <li>80%</li> <li>Collection Efficiency</li> <li>93%</li> <li>Availability of Land for waste disposal</li> <li>654.54 Acress</li> <li>Total No. of Contract Workers</li> <li>965</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>01</li> </ul>	•	No. of Administrative wards	:	100
<ul> <li>Quantity of Waste Collected</li> <li>Per capita waste generation</li> <li>Total No. of Slums existing</li> <li>Total No. of Slums existing</li> <li>Source age door-to-door collection of waste</li> <li>Coverage door-to-door collection of waste</li> <li>Source age door-to-door collection of waste</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Cotal No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	No. of Zones	:	05
<ul> <li>Per capita waste generation</li> <li>Total No. of Slums existing</li> <li>No. of Households</li> <li>Coverage door-to-door collection of waste</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Quantity of MSW generated	:	815 TPD
<ul> <li>Total No. of Slums existing</li> <li>No. of Households</li> <li>Coverage door-to-door collection of waste</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>Mo. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Quantity of Waste Collected	775 TPD	
<ul> <li>No. of Households</li> <li>Coverage door-to-door collection of waste</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Availability of Permanent Sanitary Workers</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Per capita waste generation	550 gms	
<ul> <li>Coverage door-to-door collection of waste</li> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Total No. of Slums existing	:	173
<ul> <li>Collection Efficiency</li> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	No. of Households	:	5,06,009
<ul> <li>Availability of Land for waste disposal</li> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Coverage door-to-door collection of waste	:	80%
<ul> <li>Total No. of Permanent Sanitary Workers</li> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>20</li> </ul>	•	Collection Efficiency	:	93%
<ul> <li>Total No. of Contract Workers</li> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>965</li> <li>04</li> <li>20</li> <li>01</li> </ul>	•	Availability of Land for waste disposal	:	654.54 Acres
<ul> <li>No. of Slaughter Houses</li> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>O1</li> </ul>	•	Total No. of Permanent Sanitary Workers	:	2635
<ul> <li>No. of Vegetable Markets</li> <li>No. of Fish Markets</li> <li>20</li> <li>01</li> </ul>	•	Total No. of Contract Workers	:	965
No. of Fish Markets     : 01	•	No. of Slaughter Houses	:	04
	•	No. of Vegetable Markets	:	20
No.of Hospitals/Nursing Homes : 154	•	No. of Fish Markets	:	01
	•	No.of Hospitals/Nursing Homes	:	154

# MAIN OBJECTIVES

Improving and augmenting the economic and social infrastructure of the city.

Initiating wide-ranging urban sector reforms to eliminate legal, institutional and financial constraints.

To serve the imperative needs of the present population of the city.

To ensure proper and prompt Management of Solid waste in the city to make it a Clean city.

To prevent water logging on the roads, thereby eliminating Mosquito menace and preventing breeding of other pests by Constructing Roadside Storm Water Drains.

To maintain environmental Ecology and Hygiene of the City by providing Underground Sewerage Scheme

#### Solid Waste Management Project as approved for Coimbatore City under the JnNURM

SI. No	Component	Component Approin R	
1.	For Primary Collection		415.95
2.	For Secondary Collection		2108.22
3.	For carrying out improvements to the existing Workshop facilities in the Corporation		105.00
4.	For Construction of Modern Transfer Stations, Secondary Transportation of waste, Construction of Compost Plant (Waste Processing facility), Establishing of a Sanitary Landfill Facility (Waste Disposal facility) at Vellalore dumpsite including the Scientific Closure of Old & abandoned Dumpsites		6893.11
	Sub-total		9522.28
	Towards Contingencies & unforeseen items		335.67
	Estimated Project Cost		9857.95
	Deduct: the Funds already devolved under 12 <sup>th</sup> Finance Commission Grants		207.00
-	Total Project Cost		9650.95

## Strategy adopted by the Coimbatore City for implementation of the SWM Project

PART - I	Comprises Source Segregation of waste, Primary Collection, Secondary Collection and Transportation of Segregated waste up to the transfer stations (implemented by the Municipal Corporation)	Rs.2629.17* Lakhs (50% Gol Grants + 20% GoTN Grant + 30% Own Source)
PART - II	Comprises the component works beyond the transfer stations namely Construction of Four Transfer stations, Secondary transportation of waste upto the Processing site/Disposal site, Construction of Compost Plant (Waste Processing facility), Establishment of Sanitary Landfill Facility (Waste Disposal facility) including Scientific Closure of Old & abandoned dumpsites (implemented through Public-Private-Partnership Mode)	Rs.6893.11* Lakhs (50% Gol Grants + 20% GoTN Grant + 30% Private Operators investment)

### Package wise details involved in the implementation of the Project

The project has been taken up for implementation by the Corporation in Eleven Packages as follows:

SI. No	Package Name of the Work		Estimate Amount in Rs.Lakhs
1.	I	Purchase of Containerized Push carts with 6 Bins for collection of street sweepings and Door-to-Door collection of segregated waste and seamless carts for Drain desilting in the corporation areas (For Primary Collection)	245.60
2.	Ι	Purchase of 10 Litres capacity Polyethylene bins to each of the households for storage of segregated waste at source (For Source Segregation & Door-to-Door Collection)	125.35
3.	Ξ	Purchase of Smaller tippers for congested lanes/ important areas (For Primary Collection)	84.00
4.	IV	Purchase of vehicle mounted skip lifter equipments with 5 m <sup>3</sup> capacity skip lifter container (For Collection of C&D waste)	46.50
5.	V	Supply and delivery of vehicle mounted twin Bin Dumper placer equipments with 2.5 m <sup>3</sup> capacity coloured galvanized steel sheet bins (For Secondary Collection)	1140.60
6.	VI	Implementation of an Integrated Municipal Solid Waste Management Project (IMSWMP) through PPP Mode (For Secondary Transportation, Treatment & Disposal)	
7.	VII	II Purchase of Road Sweeping Machines (For Road Sweeping)	
8.	VIII	VIII Purchase of Refuse Collectors and Fabrication & Mounting of Refuse Collection units on the already purchased chassis (For Secondary Collection)	
9.	IX	Establishment of Workshop Facilities for maintenance of vehicles	
10.	Х	X Providing Asphalting & Cement Concrete Flooring for placing the waste Collection Community Bins (For Secondary Collection)	
11.	XI	Providing IEC activities and Awareness Generation	45.00

### **Methodology Adopted for Implementation of the SWM Project**



மக்கும் குப்பை, மக்காத குப்பை என தரம் பிரித்து குடியிருப்புகளில் சேகரம் செய்து வைக்க அனைத்து குடியிருப்புகளுக்கும் இலவசமாக இரண்டு குப்பைக் கூடைகள் வழங்குதல்



தரம் பிரிக்கப்பட்ட குப்பைகளை வீடுவீடாக சென்று மாநகராட்சீப் பணியாளர்கள் பெற்றுக் கொள்ளுதல்



குடியீருப்புகளிலிருந்து பெறப்படும் தரம் பிரிக்கப்பட்ட குப்பைகளை இரண்டாம் கட்டமாக சேகரித்து வைத்தல்



இரண்டாம் கட்டமாக சேகரம் செய்து வைக்கப்பட்ட தரம் பிரிக்கப்பட்ட குப்பைகளை நவீன வகை வாகனங்களைக் கொண்டு குப்பை மாற்று நிலையங்களுக்கு கொண்டு செல்லுதல்



நவீன குப்பை மாற்று நிலையங்கள் நிறுவுதல்





குப்பை மாற்று நிலையங்களிலிருந்து கொண்டு சேல்லப்படும் மறுகழற்சிக்கான குப்பைகளை மறுகழற்சிக்கூடத்திற்குக் கொண்டு செல்லுதல்



குப்பை மாற்று நிலையங்களிலிருந்து கொண்டு செல்லப்படும் மக்கும் குப்பைகளை வெள்ளலூரில் நிறுவப்படும் நவீள உரக்கிடங்கில் உரம் தயாரித்தல்

குப்பை மாற்று நிலையங்களிலிருந்து கொண்டு செல்லப்படும் மக்காத குப்பைகளையும் புதியதாக நிறுவப்படும் உரக்கிடங்கிலிருந்து வெளியேறும் மக்காத கழிவுகளை வெள்ளலூரில் சாளிடரி லேண்ட்.பில் முறையில் சுற்றுச்சூழல் மாசுப்படா வண்ணம் விஞ்ஞான முறைப்படி நிரப்பி முடுதல

# SECONDARY TRANSPORTATION

## Waste Transfer Station at Peelamedu before JNNURM

## **Newly Constructed Waste Transfer Station at Peelamedu**

11 15

1 10010

# Waste Transfer Station at Sathy Road before JNNURM







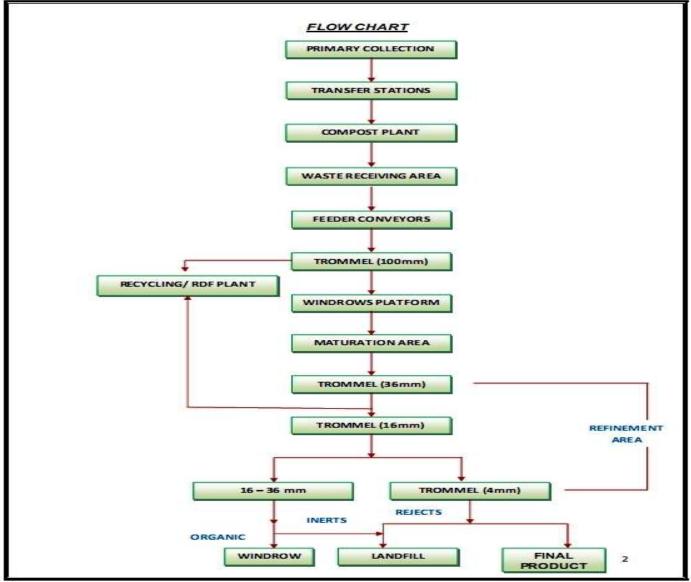
## **Newly Constructed Waste Transfer Station at Sathy Road**

## Waste Transfer Station at Ukkadam before JNNURM

## **Newly Constructed Waste Transfer Station at Ukkadam**

# WASTE PROCESSING

#### **PROCESSING FACILITY- COMPOST PLANT**



## WASTE PROCESSING PLANT

15/04/2011 03:02 PM



## WASTE PROCESSING PLANT

15/04/2011 02:52 PM

NIN



.....

# SCIENTIFIC CLOSURE

## Old & abandoned Dumpsite at Ondipudur before Commencement of Work

#### Scientific Closure of Old & abandoned Dumpsite at Ondipudur







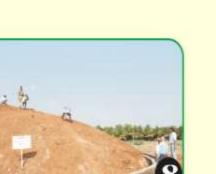












6

## Old & abandoned Dumpsite at Ondipudur After Commencement of Work

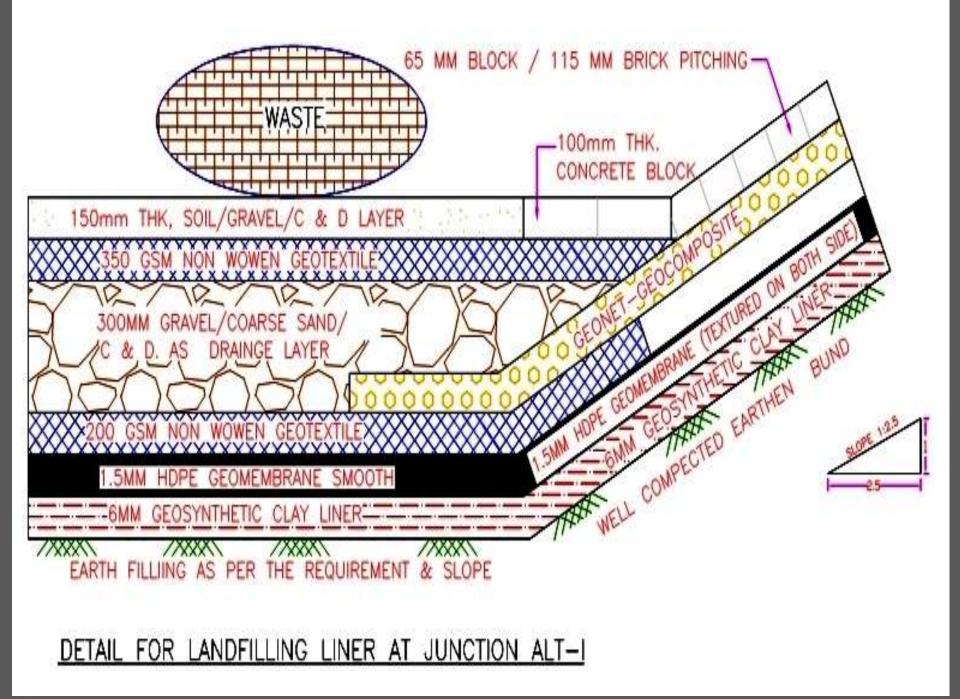
## Old & abandoned Dumpsite at Kavundampalayam before Commencement of Work

View of the Scientific Closure of Old & abandoned Municipal Solid Waste Dumpsite at Kavundampalayam

## Scientific Closure of Old Municipal Solid Waste Dump is in progress at Vellalore Site

## **DISPOSAL - SANITARY LANDFILL**

## Establishment of Sanitary Landfill Facility at Vellalore Dumpsite



# SANITARY LANDFILL

## Steps involved in Construction of Sanitary landfill

- 1) Marking of the Foot print area
- 2) Formation of Bunds (or) Providing of Embankment including compaction
- 3) Base preparation
- 4) Laying of Geo-synthetic Clay Liner 6mm (GCL)
- 5) Laying of HDPE Liner 1.5 mm(Smooth Finish HDPE for the bottom and Textured for the slopes of the Landfill)
- 6) Providing 200 mm gsm Non-woven Geo-textile liner
- 7) Providing of 300 mm thick drainage Layer above Geo-textile liner
- 8) Providing of Leachate collection network
- 9) Providing Brick Pitching to the side slopes
- 10) Providing 150 mm thick protective soil Layer



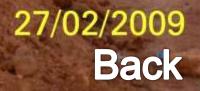
## **MARKING OF THE FOOT PRINT AREA**



#### FORMATION OF BUNDS/PROVIDING OF EMBANKMENT FOR THE SLF



#### FORMATION OF BUNDS/PROVIDING OF EMBANKMENT FOR THE SLF



### LAYING OF GEO-SYNTHETIC CLAY LINER (GCL)



1ª A

Laying of HDPE Liner (Smooth Finish HDPE for the bottom and Textured for the slopes of the Landfill)



#### Laying of 200 gsm Non-woven Geotextile liner



# Laying of 300 mm thick drainage Layer above Geotextile liner

abili



# Laying of Leachate Collection Pipes



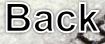
# After completion of Laying of Leachate Collection Network

9



# **Providing Brick Pitching to the side slopes Completed**

Providing Geo Composite to the side slopes below Brick Pitching



# **Providing 150 mm thick protective Soil Layer is in progress**

10/08/2009 Back

# Sanitary Landfill Facility established at Vellalore Site (For Scientific Disposal of Municipal Solid Waste)

### SOLID WASTE MANAGEMENT BY-LAWS OF THE COIMBATORE CITY MUNICIPAL CORPORATION, COIMBATORE FRAMED UNDER SECTION 432 OF TAMIL NADU ACT XXVI OF 1981

- Pursuant to the directions of the Ministry of Urban Development, Government of India and in order to ensure effective solid waste management in the Coimbatore, the Coimbatore City Municipal Corporation Council in Resolution No.84, Dated: 24-09-2007 had already resolved that necessary User Charges for Solid Waste Management Services be levied and collected.
- In accordance with the Coimbatore City Municipal Corporation Act (Tamil Nadu Act XXV/1981) sections 119, 120, 226,227, 228, 229, 230, 231, 232, 233, 233, 234, 235, 265, 430, 431, 432, 433, 434, 435, 436, 438, 439, 440 and their subsequent revisions in the sub-sections thereof and in order to ensure effective solid waste management in the Coimbatore city, the Coimbatore City Municipal Corporation Solid Waste Management By-Laws have been framed.

### LEVY & COLLECTION OF USER CHARGES FOR SWM SERVICES

The Ministry of Urban Development, Government of India while approving of the DPR for SWM, has directed the CCMC to explore the possibility for levying & collecting User Charges for SWM services. The CCCMC on its part has decided to collect necessary User Charges from the General Public in order to meet out the O&M Cost incurred towards Primary Collection, Secondary Collection and Transportation of MSW from the source to the Transfer Stations. The Corporation Council in Resolution No.84, Dated:24-09-2007 has already resolved to levy & collect the SWM User Charges based on Property tax as follows:

SI. No	Description	User Charges
1.	For Property Tax less than Rs.500/-	Rs.10/-per House per Month
2.	For Property Tax falling between Rs.501 to 1000/-	Rs.20/-per House per Month
3.	For Property Tax more than Rs.1000/-	Rs.30/- per House per Month
4.	For Shops and Establishments	Rs.2/-per Day
5.	For Restaurants/ Kalyana Mandapams/Commercial Establishments/ Industrial Establishments	
	(i) Through Small Vehicles (Upto 3.00 Ton of Waste)	Rs.500/- per Trip
	(ii) Through Heavy Vehicles (Above 3.00 Ton of Waste)	Rs.1000/- per Trip

#### O & M COST Requirement for the PPP Part

The work has been awarded to the Concessionaire deciding on the NPV (Net Present Value) and based on Tipping fee. The Concessionaire/SPV will meet out the O&M Expenditure through the Tipping Fee paid by the Corporation for 20 Years and by way of sale of Compost

SI. No	Year	Assured Waste Qty T/year	For Transportati on of MSW from the Transfer	For Processing of MSW at the Compost Plant Rs/T	For Disposal of MSW at the Sanitary Landfill Facility Rs/T	Average Tipping	Yearly Tipping Fee	
			Station to Processing/ Disposal Site Rs/T	(Not more (75% of MSW should be composted) (Not more than 25% of MSW should be landfilled)		fee in Rs/T	In Rs.	
1.	2008	146000	440.00	185.00	171.50	667.88	975,09,750.00	
2.	2009	153300	484.00	194.25	180.08	723.27	1108,77,291.00	
3.	2010	160965	543.10	203.96	189.08	794.33	1278,59,328.45	
4.	2011	169013	603.39	214.16	198.53	867.18	1465,65,115.87	
5.	2012	177464	670.36	224.87	208.46	947.35	1681,19,633.08	
6.	2013	186337	744.77	236.11	218.88	1035.60	1929,70,597.20	
7.	2014	195654	827.44	247.92	229.83	1132.82	2216,40,275.15	
8.	2015	205437	919.29	260.31	241.32	1239.93	2547,27,499.41	
9.	2016	215708	1021.33	273.33	253.38	1358.01	2929,32,542.54	
10.	2017	226494	1134.70	287.00	266.05	1488.21	3370,71,201.98	

### **OPERTION & MAINTENANCE COST IN RESPECT OF THE PPP PROJECT**

SI. No	Year	Assured Waste Qty T/year	For Transportati on of MSW from the Transfer Station to Processing/	For Processing of MSW at the Compost Plant Rs/T	For Disposal of MSW at the Sanitary Landfill Facility Rs/T	Average Tipping fee in Rs/T	Yearly Tipping Fee In Rs.	
			Disposal Site Rs/T	( For 75% of MSW)	(For 25% of MSW)			
11.	2018	237819	1260.65	301.35	279.36	1556.50	3701,65,868.00	
12.	2019	249710	1400.58	316.41	293.32	1711.22	4273,08,122.00	
13.	2020	262195	1556.04	332.23	307.99	1882.21	4935,06,051.00	
14.	2021	275305	1728.76	366.29	323.39	2084.33	5738,25,094.00	
15.	2022	289070	1920.66	348.85	339.56	2267.19	6553,75,891.00	
16.	2023	303524	2133.85	384.60	356.54	2511.44	7622,80,797.00	
17.	2024	318700	2370.71	403.83	374.36	2767.17	8818,97,876.00	
18.	2025	334635	2633.85	424.02	393.08	3050.14	10206,81,926.00	
19.	2026	351366	2926.21	445.22	412.74	3363.31	11817,52,781.00	
20.	2027	368935	3251.02	467.49	433.37	3709.98	13687,41,471.00	

# SOLID WASTE MANAGEMENT PROJECT

Pros & cons:

Pros:

- Reduced CO<sub>2</sub> emission Reduction in Greenhouse Gas Emission due to the energy generation using fossil fuels
- The project would help in improvement in the local and national environment conditions
- The project activity shall help in Emission Reduction of Methane
- Help in creating hygienic working and environment condition for the local engaged in waste collection and segregation from the dumping site
- Cleanness of city
- City Traffic Control
- Fly and odour Control
- Environmental Safety
- Effective Collection System

### Cons:

- Tipping fee cost incurred for project activity
- Tonnage has been increased from 400 to 800 MT from the initial stage of project commencement
- Compost and Refused Derived Fuel (RDF) sales

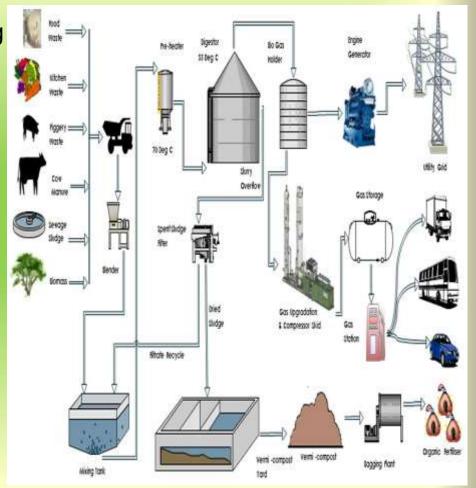
# New Initiatives Undertaken By the Corporation

# **Bio Methanation Plant**

•Bio methanation is one among the technologies specified in the MSW Rules,2000,

•The ULBs Shall collect the segregated bio degradable waste from the Hotels, Restaurants,

Kalyanamandapams, Mess, Canteens of the Hostels, Hospitals and other institutions within the municipal limit slaughter Houses, Vegetable Markets, Fish and Mutton Markets etc for utilize for the production of bio gas.



### EXPRESSION OF INTEREST INVITING ORGANISATION/AGENCIES/NGOs TO CONDUCT CLEAN CITIES CHAMPIONSHIP IN THE FRAMEWORK OF INTEGRATED SOLID WASTE MANAGEMENT AS PER MSW RULES 2000.

•The Coimbatore City Municipal Corporation invites an 'Expression of Interest' (EOI) to conduct Clean Cities Championship Campaign to improve and strengthen its current solid waste management services for the entire city as per the MSW Rules 2000 in the framework of integrated solid waste management.

•Preference would be given to those organizations/agencies which have either jointly or on their own conducted such a campaign any where in the country

•The work should be completed within the specified time of 3-4 months and a Monitoring and Institutionalizing strengthening contract could be awarded to the same agency after successful completion of the campaign program.

# Special Training to the Sanitary Workers under Capacity Building

- The Corporation for the first time has organized imparting of Two Day residential Training programme to the Sanitary workers in association with Karl Kubel Institute of Development Education at Mankarai, Coimbatore (a German Foundation) with a view to toning up their efficiency in work
- The training envisages Health & hygiene, Safety measures, Personal Cleanliness, Healthy food habits, Discipline, Time Management, need to care for their families, Solid Waste Management etc.,
- So far 80 batches of Sanitary workers numbering 2400 (each batch consisting of 30 persons) have already been trained.
- These training programmes have resulted in improving the efficiency of the Sanitary workers in their day to day work











கோயம்புத்தூர் மாநகராட்சி

### சான்றிதழ்

தேதி: .....

இடம் : கோயம்புத்தூர்

T.K. நாதன் செயல் இயக்குநர் கார்ல் க்யூபல் இன்ஸ்ட்டியூட் ஃபார் டெவலப்மென்ட் எஜீயுகேஷன் அன்சுல் மீஸ்ரா, இ.ஆ.ப., ஆணையர் கோயம்புத்தூர் மாநகராட்சி Initiatives taken up by the Corporation in respect of IEC Activities and Awareness Creation for Segregation of Waste at Source

# **IEC activities and Awareness Generation**

- The Coimbatore City Municipal Corporation has taken up the work of providing IEC activities and awareness creation among the general public in all the 72 wards under the JNNURM scheme.
- A budget of Rs.45.00 Lakhs is allocated for this purpose
- This work will be implemented for a period of two (2) years.
- The work has been awarded to M/s Centre for Environment Education, Bangalore a reputed environmental based organization for a contract value of Rs.43.53 Lakhs.
- The firm have been imparting intensive awareness campaign in all the 72 wards.

### Awareness Creation Materials in the form of Stickers introduced in the Wards



#### Let us Segregate waste at source in Green and White Bins

Bio-degradable (Wet) Waste
All Food Wastes (Cooked & Uncooked)
Fruit Waste
Vegetable Waste
Flower Waste
Fish, Chicken, Meat Waste
Egg Shell
Garden Waste

#### Non-biodegradable, Recyclable (Dry) Waste Paper Packing Materials

	Packing Materials
Materials	Metals
ene Bags	Rogs
Material	Rubber Materials
r Materials	Wooden Materials
Boxes	Bulbs & Tube lights

Always use dustbins

Do's

Dont's

✓ Keep Bio-degradable (Wet) Wastes in Green Bin

1880

- ✓ Keep Non-biodegradable, Recyclable (Dry) Wastes in White Bin
- Keep Household Hazardous Wastes (Pesticides, Batteries, Toiletries, Expired Medicines, Cosmetics, Paints, Polishes, etc.,) separately

Plasti

Polyth

Glass

Leath Carto

- Handover the Segregated wastes to the Corporation Sanitary Workers
- X Do not mix Bio-degradable and Non-biodegradable/Recyclable wastes
- X Do not throw wastes into Storm Water Drains and Underground Drainage lines
  X Do not litter

× Do not burn wastes



**பச்தைச்** மற்றும் இலிலீனுன் கோவையை தூய்மையாகவும் பசுமையாகவும் வைக்க உதவும்



аўцава периздылас задзбалы **сёвае** аруй **Даніван** до альсаны дай слідфіўдан

#### மக்கும் (ஈரமான) குப்பை

உணவு கழிவுகள் (மையத்த 8 சலைக்காத) பழக்கழிவுகள் கால்கறி கழிவுகள் மலர் கழிவுகள் இறைச்சி வகைகள் முட்டை ஒடு தோட்டக்கழிவுகள்

Dar Baand

Degini

Carefrictions

#### மக்காத, மறுசுழற்சிக்கான (உலர்ந்த) குப்பை

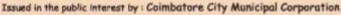
காகிதல் பிளாஸ்டிக் பொருட்கள் மாலிதின் மைகள் கண்ணாடி பொருட்கள் தோல் பொருட்கள் அப்டை பெட்டிகள் பேக்கில் டுபாகுட்கள் உலோகல்கள் கந்தல் துணிகள் ரப்பர் பொகுட்கள் மரச்சாமான்கள் பல்பு, டிலுப் கைட்

🧹 தப்பை கரைட்களையே எப்பொழுதும் உபயோசிக்கலும்

- / மக்கும் (சுரமான) குப்பைகளை பச்சை தீற கடையில் வைக்கவும்
- 🗸 மக்காத, மறுகழற்சிகான (உலர்ந்த) குப்பைகளை வெள்ளை திற கடையில் வைக்கவும்
- / குடியீருப்புகளில் உற்பத்தியாகும் அபாயகரமான குப்பைகளை (பூச்சி டுகால்லி குப்பீகள், பேட்டரிகள், சோப்பு வரைகள், காலாவதியான மருந்துகள், அழகு சாதனங்கள்,
- பெட்சன், கோம் கல்கள், வால்கள் தின்னும் பல.....) தனியாக வைக்கவும் பெபின்ட், பாலிஷ் வகைகள், இன்னும் பல.....) தனியாக வைக்கவும் ✓ கரம் பிரீத்து வைக்கப்பட்ட கழியுகளை மாதகராட்சி துப்பரவு பணியானரிடம்
- மக்கும் மற்றும் மக்காத, மறுகழுற்சிக்கான குப்பைகளை கலந்தீடல் கூடாது தெல்லக் குற்றைகளை மழைநிர் வடிகால் மற்றும் சாக்கடைகளில் எரிதல் கூடாது கூடாதலை குற்றைகளை பொது இடங்களில் விசி எரிதல் கூடாது
  - 🗴 குப்பைகளை தீலிட்டு எரித்தல் கடாது



டுபாத தலைக் கருத் டுவலியடுவேலர் : கோயம்புத்தூர் மாநகராட்சி



# Initiative of the CCMC for Managing the Household Hazardous Waste and e-waste

As a stake holder the Coimbatore City Municipal Corporation has the responsibility to play a major role in Household Hazardous Waste Management. Therefore, the **CCMC** have planned to come up with the Household Hazardous collection programme. Apart from Solid Waste Management the role of CCMC is also important for organizing the collection of e-waste especially from household and other end users and segregation of e-waste from other household waste. For this purpose the CCMC has planned to establish Eight (8) HHW collection centres in all the Zones. To begin with the CCMC will set up 2 collection centres per zone. These collection centres will be established at the Sanitary ward offices. The sanitary workers of the concerned wards will collect the HHW and e-waste from the households/other end users at the door steps every Thursday's between 8.00 AM to 6.00 PM. Thereafter the CCMC will arrange to send the collected HHW for safe disposal and the e-waste to the authorized collection centres or registered recyclers for recycling

# Initiative of the CCMC for Managing the Construction & Demolition Waste

The Coimbatore City Municipal Corporation have proposed to dump all the Construction & Demolition Waste being generated within the Corporation areas into 4 abandoned quarries in Madukarai revenue village belonging to the District Administration.

The District Collector have already granted necessary permission to the CCMC to enter upon the above said lands for the purpose of dumping of the Construction & Demolition Waste into the said abandoned quarry lands.

As per the directions of the District Collector the Tamil Nadu Pollution Control Board and the Mines Department have issued the necessary "No Objection Certificate" to the CCMC for dumping of the Construction & Demolition Waste into the said abandoned quarry lands.

Works will commence shortly.

### **Bio-metric System for Attendance of the Sanitary Workers**

- Falling in line with the modern system of Management the Corporation has introduced the Bio-metric system with a view to saving the time in signing the daily attendance during muster calls twice a day
- In order to prevent impersonation while reporting for duty and also deploying other persons to perform their legitimate duties
- To enable the Corporation to view the daily attendance of the sanitary workers online and to prepare the pay bills besides avoiding manipulations in the attendance
- It serves to have an effective and efficient control over the sanitary workers

## Health Camps to the Sanitary Workers and their Families

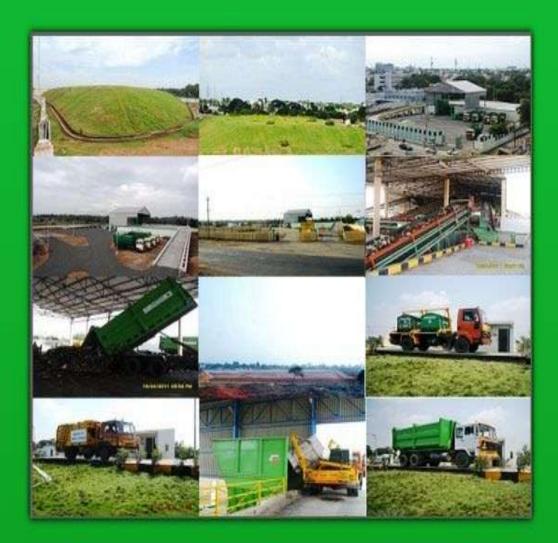
- The Corporation with the intention of providing health care to the Sanitary workers and their families has been conducting Medical camps by utilizing the services of the Corporation Medical Officers by chalking out a programme
- The aim of the programme is to make the Sanitary workers and their families health conscious thereby leading a healthy life
- The welcome feature of these camps is that a large number of Sanitary workers and their family members turn up voluntarily to these camps
- These health camps have resulted in improving the efficiency of the sanitary workers in their day to day work

# Waste Truck Monitoring System using Radio Frequency Identification (RFID)

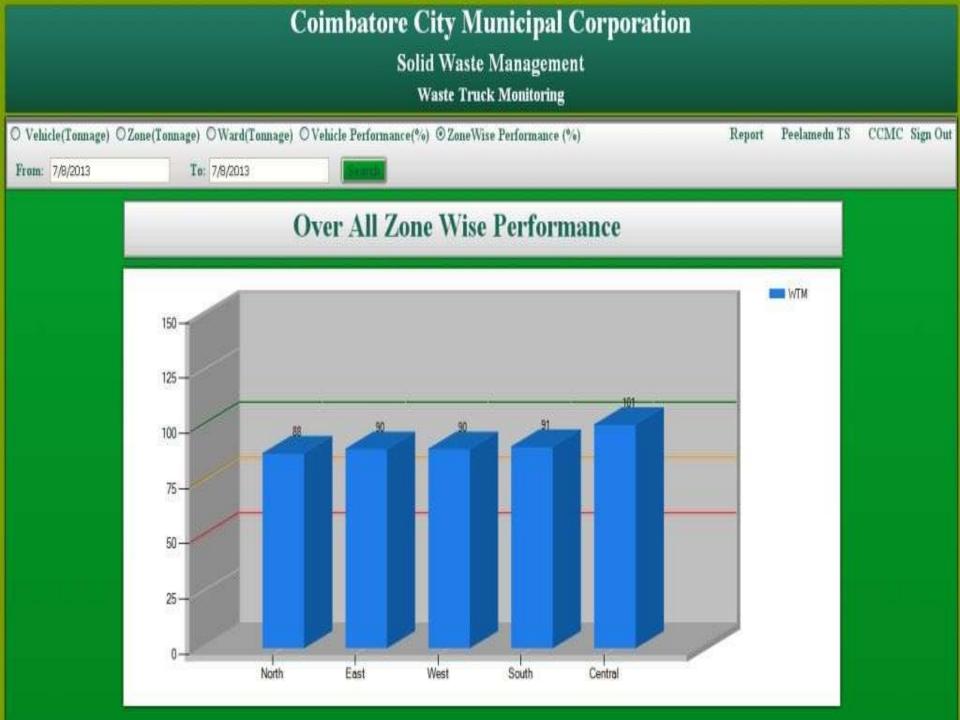
- The Corporation for the first time has introduced the online Waste Truck Monitoring System using Radio Frequency Identification (RFID)
- This RFID arrangement has been linked with the Weigh Bridge installed at the transfer stations and Processing Facility the system has connectivity with the Corporation's official website
- All the trucks deployed for Solid Waste Management activities have been fitted with Transponders (RFID tags) which are electronically programmed
- When the waste laden truck fitted with the Transponders passes through the electromagnetic zone at the Weigh Bridge, it detects the reader's activation signal. The reader in turn decodes the data encoded in the tag's integrated circuit (silicon chip) and the data is passed to the host computer coupled with the Weigh Bridge for processing
- It has been so programmed that as soon as the truck halts at the Weigh Bridge it automatically records the truck number, the wards from which the waste have been collected, name of the driver, the time of entry of the vehicle, weight of the waste, etc.,
- By this system the Corporation is in a position to monitor the exact number of trips made by the trucks and the quantity of the waste dumped at the Transfer station and process facility at any

time

# Coimbatore City Municipal Corporation Solid Waste Management Waste Truck Monitoring







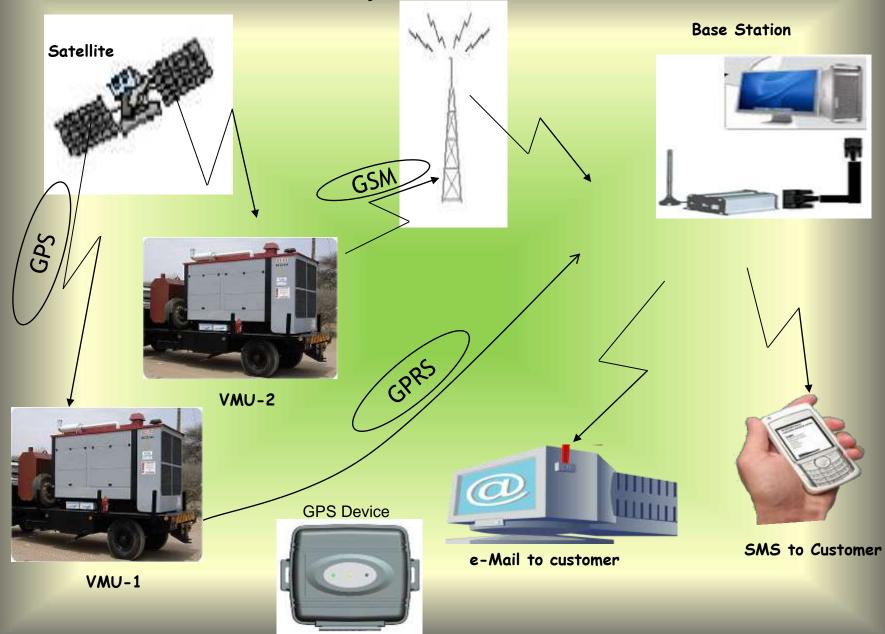
# Vehicle Tracking System - Features

- GPS/GSM /GPRS Unit with Tracking and Communicating.
- Seamless Communication using GPRS network.
- Live Tracking, Trace and Status Information on Web Application Software using Google Map.
- Vehicle Information such as Distance Traveled, Speed, Current Location, Halt Duration, Drive Time, Journey Log etc.
- Trip data such as Start time, End time, Undesired driving behavior such as High Acceleration, Harsh Braking, Over-speeding etc.
- Exhaustive and user-friendly analysis software.
- Reports can be printed or saved on MS Word or Excel formats

### Route Chart - Vehicle Monitoring

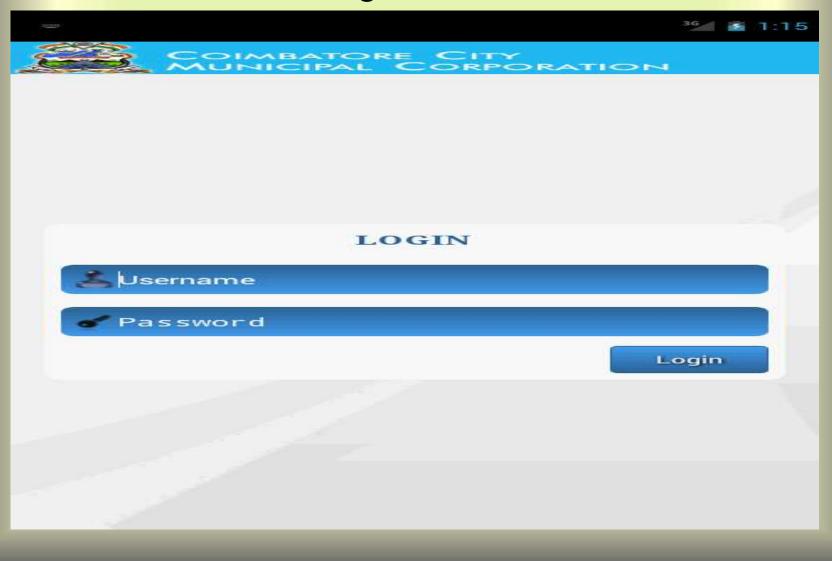
• Route for the movement of vehicles gives Geo Fence to incorporate with the GPS system for effective use of Vehicle and monitoring of the same.

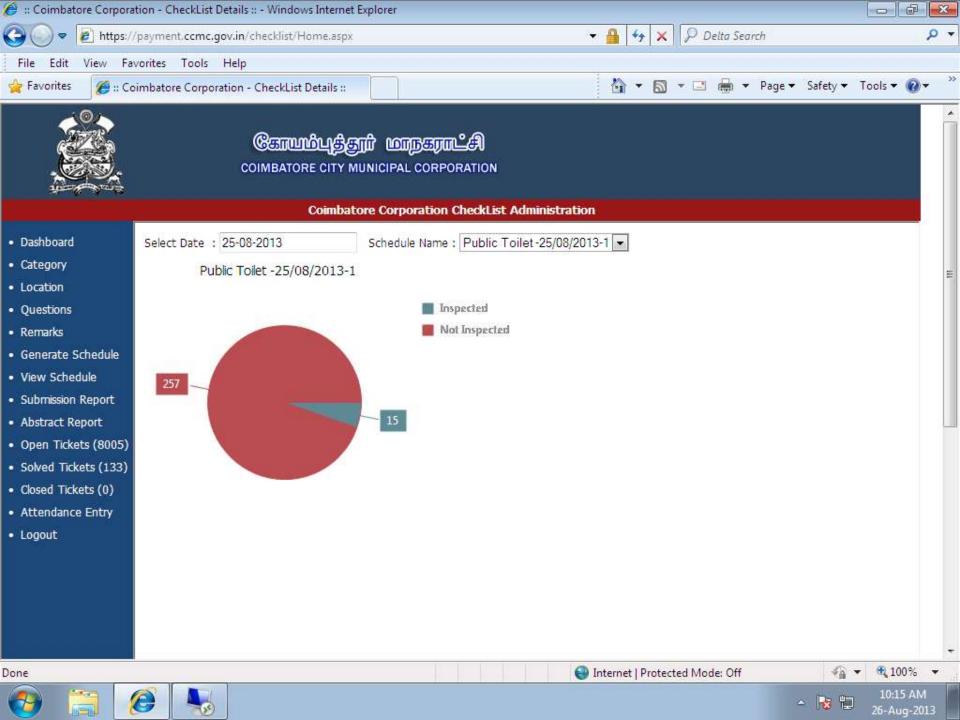
# **GPS System - Architecture**



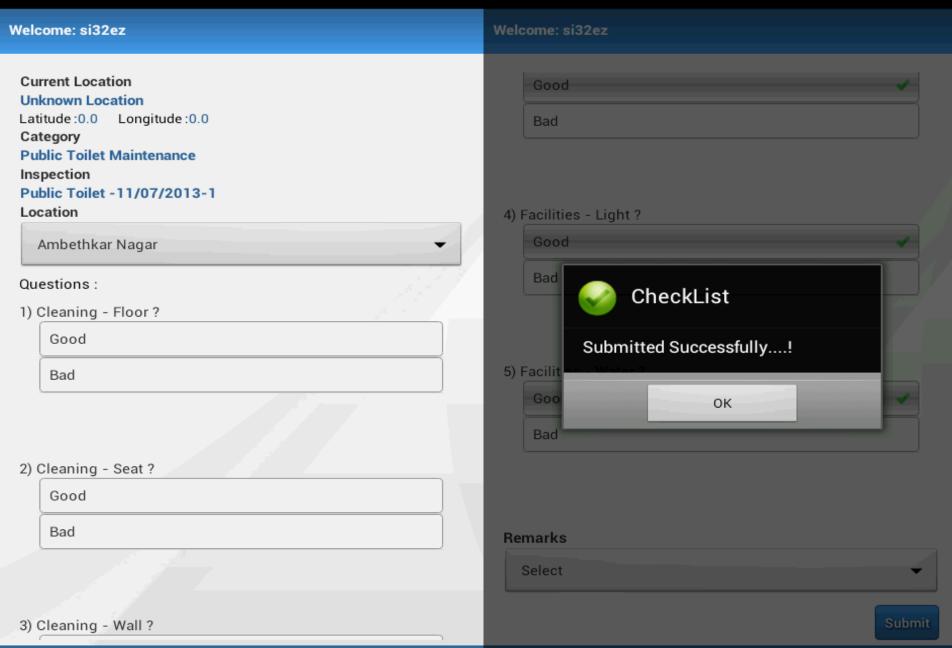
# Implementation of Mobile Application for

# Monitoring various activities.





### <sup>36</sup> 🛃 1:19





🗧 :: Combetore C	Coporation : - Windows Internet Explorer		04	🔴 : Combatore Corporation : - Windows Internet Explorer	08
60. E	https://payment.comc.gov.in/cheol.ist/CheolLisReport.app	• 🔒 😽 🗙 🖗 Det	a Search	🚱 🕒 🔹 🕅 🕹 🚱 🚱 🖉 🚱 🖉	🔹 🔒 😽 🗙 🖗 Debo Search 🛛 🖉 🔻
File Edit Vie	w Favorites Tools Help			File Edit View Favorites Tools Help	
👷 Favorites 👔	Cointiatore Corporation :	<b>}</b> • <b>0</b> • <b>0</b> •	🔋 * Page* Safety* Tools* 👔	👷 Favorites 🍯 : Coimbatore Corporation :	👌 🔹 🔯 🔹 🗃 🐳 🕈 Page 🛪 Safety 🛪 Tools 🕶 👰 🛪
	COMBATORE CITY NUNICIPAL CORPORATION			Combartore: Comparative Corporation CheckList Administration Combartine: Corporation CheckList Administration toard Sched Ticket Details gry Category * Public Toler Mantarana	
	Combatore Corporation CheckList A	dministration		don Zone" ALIZONES	
<ul> <li>Deshboard</li> <li>Category</li> </ul>	CheckList Report Zone * ALL ZONES •			stors Ward ALLYNARDS . ants Location ALLYNARDS . ente Scheckle Search Reset	
<ul> <li>Location</li> </ul>	Ward * ALL WARDS			name Report	Zase Ward Ticket Number
• Questions				set Rever © near thinnel war bus stant. VXX menon med. svitabilities- 641052	CENTRALZONE WARD-52 WD-52T5146 Cleaned at 9.45am
<ul> <li>Remarks</li> </ul>	1700 2012			n Toles (2005) 🔲 near thin vallwar bus stand. VVX menor trad. cointbature - 641012 ed Toles (123) 🗇 near thin vallwar bus stand. VVX menor trad. cointbature - 641012	CENTRALZONE WARD-52 VD-5275152 revolt site we informed to CENTRALZONE WARD-52 VD-5275144 cleaned at 9.40am
Generate Scher				et Tobes 👔 🔲 Thear thinwallovar bus stand. WX menon mail. combature - 641012	CENTRALZONE WARD-52 WD-5275145 deened at 9.30am
• View Schedule	To Date 17-09-2013			edense Erry 🔲 Jawahar Nagar, ramakrishnakalyana mandapam backisiba, cumbatora - 641044	CENTRAL ZONE WARD-53 WD-5375049 This site is going to denote
Submission Rep				Isvahar Nagar, ramakrishnakalyara mandapan backside, cuinbatore - 641044     Isvahar Nagar, ramakrishnakalyara mandapan backside, cuinbatore - 641044     Isvahar Nagar, ramakrishnakalyara mandapan backside, cuinbatore - 641044	CENTRAL ZONE WARD-53 WO-5375046 Cleaned at 8am CENTRAL ZONE WARD-53 WO-5375047 Revolvestimate prepared CENTRAL ZONE WARD-53 WO-5375044 Cleaned at 8am
Abstract Report		Inspected	Not Inspected	🛙 dharalakshmi nagar, near electric crematorium backside, combatore - 641044	CENTRALZONE WARD-53 WD-5375091 Action taken it will rectified
<ul> <li>Open Tickets (8</li> </ul>				Isvatar Nagar, ramakrishnalralyara mandapan backside, coimbatore - 641044 Isvatar Nagar, ramakrishnalralyara mandapan backside, coimbatore - 641044	CENTRAL ZONE WARD-53 WD-5375048 Water available now CENTRAL ZONE WARD-53 WD-5375045 Gleaned at 8am
<ul> <li>Solved Tickets (</li> </ul>	p. II. 7. 3. x +7 ippinesp 3	223	49	Vallannal street ranarathaparan, che 641045	CENTRAL ZONE WARD-68 WD-68T3064 EB service inenct availabl
<ul> <li>Closed Tickets (</li> <li>Attendance Ent</li> <li>Logout</li> </ul>		125	147	Thirunal Street, near Annia unavaghan, chimbatore - 641001 GANS RAVUTHAR STREET,UKKADAM, COIMBATORE-641001 GANS RAVUTHAR STREET,UKKADAM, COIMBATORE-641001 Kas Wil, Kunimbapalayan Road, Kalagath, CBE 641048	CENTRAL ZONE WARD-81 WD-8175108 watercame at 9,30AW only CENTRAL ZONE WARD-84 WD-8474604 Cleaned at 10an CENTRAL ZONE WARD-84 WD-9474603 Cleaned at 10an EAST ZONE WARD-33 WD-3375120 cleaned at 18,30an CENTRAL ZONE WARD-33 HD-3375120 cleaned at 18,30an
Let		linternet   Protected Mode	0# G + 4100%	*	* internet   Protected Mode: Off 4 * \$75% *
Done		Control Frontier Mode			The second se
🔞 📓			• 🐱 🕄 🔣 1016 H 26-Aug 2	🚯 📋 🖉 🍢 🖉	• 🔥 🗐 🐉 🕹 🐉 🕹

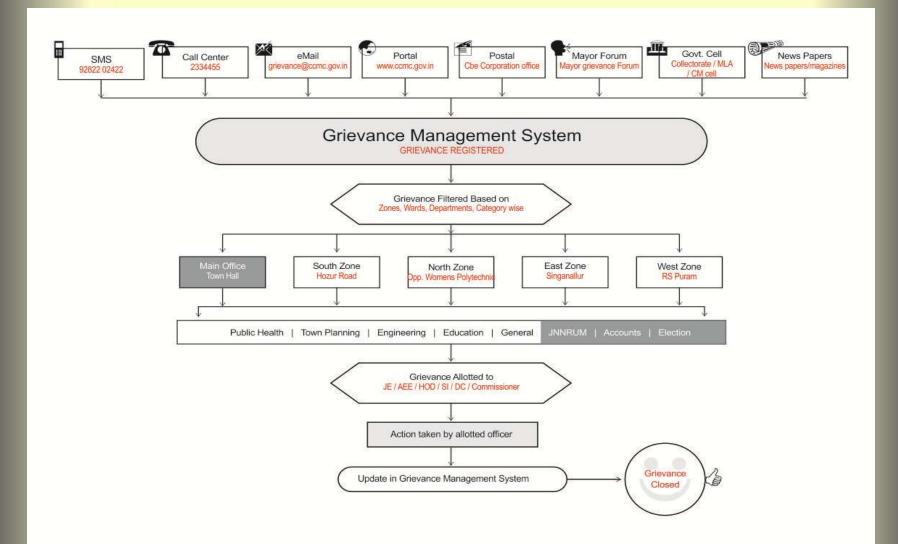
# **Grievance Management System (GMS)**

# Methodology:

- CCMC has implemented the web based "Grievance Management system" software.
- This system has been integrated with email, SMS, call center lines of the Unified Communication system.
- Grievance received through all the channels are entered into this system.
- Auto Allotment of grievance to CCMC Official based on pre-defined rules
- Ability to define the number of days within which the grievance needs to be addressed based on nature of grievance and escalation mechanism.



# **GMS Flow Chart (All Channels)**



# Appreciations SMS from the Public

S.NO	G.NO	DATE	USER NO	SUBJECT	ZONE	WARD
1	6359	03.04.2013	98404 00242	Dear sir thank you very much for introducing the sms service. I am suresh staying in elango nagar near vinayaga puram saravanampatl. I want to bring to your kind notice, in my area past 20 days the waste collection vehicle has not come, due to non collection of the waste all my neighbour's started dumping the waste near the empty place, due to this, possibility of the same may correct collectorese you to take some immediate action to solve the problem.	North	26
2	6750	03.04.2013	94430 21902	congratulation both mayor& the commissioner for introducing sms grievance redressal system this attempt will definitely take closure to public and make the official always on their toes, further it will increase the corporation image. We thank you from the bottom of our heart, may amma helps us always regards cnk (r s puram)	West	15
3	7860	09.04.2013	94439 35811	Drainage cleaned very neatly by the SI-Ganapathy with his workers. Many Thanks to the corporation officers for their quick response. From:G.Raju, First Street, Sridevi Nagar, Ganapathy. Ph:9443935811.	North	41
4	12013	18.04.2013	81483 69167	Complaint no.6726.street lights have been put today and v thank u for the quick action, balaji nagar residents association.	North	42
5	12179	20.04.2013	72000 20570	Thank you for solving the issue. ( Bharathipark Road , GCT College Drinking Water Leakage Arrested )	West	22
6	12200	20.04.2013	94430 52620	Thanks for immediate response to our request of rectification of the switch box PRESIDENT MEENA ESTATE WELFARE ASSOCIATION WARD 66	East	66



Total Grievance Received-5922Total Grievance Cleared-5620Pending Grievance-302



# THANK YOU

