Coimbatore City Municipal Corporation

Jawaharlal Nehru National Urban Renewal Mission

IMPLEMENTATION OF INTEGRATED SOLID WASTE MANAGEMENT PROJECT THROUGH PPP MODE
COIMBATORE CITY PROFILE

Population : 16.01 lakhs
Area : 257.04 sq.km
Wards : 100
Administrative zones: 5
GENERAL INFORMATION ABOUT COIMBATORE CITY

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

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Component</th>
<th>Approved Cost in Rs.Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>For Primary Collection</td>
<td>415.95</td>
</tr>
<tr>
<td>2.</td>
<td>For Secondary Collection</td>
<td>2108.22</td>
</tr>
<tr>
<td>3.</td>
<td>For carrying out improvements to the existing Workshop facilities in the Corporation</td>
<td>105.00</td>
</tr>
<tr>
<td>4.</td>
<td>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 &amp; abandoned Dumpsites</td>
<td>6893.11</td>
</tr>
<tr>
<td></td>
<td><strong>Sub-total</strong></td>
<td><strong>9522.28</strong></td>
</tr>
<tr>
<td></td>
<td>Towards Contingencies &amp; unforeseen items</td>
<td>335.67</td>
</tr>
<tr>
<td></td>
<td><strong>Estimated Project Cost</strong></td>
<td><strong>9857.95</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Deduct: the Funds already devolved under 12\textsuperscript{th} Finance Commission Grants</strong></td>
<td>207.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total Project Cost</strong></td>
<td><strong>9650.95</strong></td>
</tr>
</tbody>
</table>
## Strategy adopted by the Coimbatore City for implementation of the SWM Project

<table>
<thead>
<tr>
<th>PART - I</th>
<th>Rs.2629.17* Lakhs (50% GoI Grants + 20% GoTN Grant + 30% Own Source)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprises Source Segregation of waste, Primary Collection, Secondary Collection and Transportation of Segregated waste up to the transfer stations <em>(implemented by the Municipal Corporation)</em></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART - II</th>
<th>Rs.6893.11* Lakhs (50% GoI Grants + 20% GoTN Grant + 30% Private Operators investment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 &amp; abandoned dumpsites <em>(implemented through Public-Private-Partnership Mode)</em></td>
<td></td>
</tr>
</tbody>
</table>

* * Cost is excluding 3.5% Contingencies
The project has been taken up for implementation by the Corporation in Eleven Packages as follows:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Package</th>
<th>Name of the Work</th>
<th>Estimate Amount in Rs.Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I</td>
<td>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)</td>
<td>245.60</td>
</tr>
<tr>
<td>2.</td>
<td>II</td>
<td>Purchase of 10 Litres capacity Polyethylene bins to each of the households for storage of segregated waste at source (For Source Segregation &amp; Door-to-Door Collection)</td>
<td>125.35</td>
</tr>
<tr>
<td>3.</td>
<td>III</td>
<td>Purchase of Smaller tippers for congested lanes/ important areas (For Primary Collection)</td>
<td>84.00</td>
</tr>
<tr>
<td>4.</td>
<td>IV</td>
<td>Purchase of vehicle mounted skip lifter equipments with 5 m³ capacity skip lifter container (For Collection of C&amp;D waste)</td>
<td>46.50</td>
</tr>
<tr>
<td>5.</td>
<td>V</td>
<td>Supply and delivery of vehicle mounted twin Bin Dumper placer equipments with 2.5 m³ capacity coloured galvanized steel sheet bins (For Secondary Collection)</td>
<td>1140.60</td>
</tr>
<tr>
<td>6.</td>
<td>VI</td>
<td>Implementation of an Integrated Municipal Solid Waste Management Project (IMSWMP) through PPP Mode (For Secondary Transportation, Treatment &amp; Disposal)</td>
<td>6893.11</td>
</tr>
<tr>
<td>7.</td>
<td>VII</td>
<td>Purchase of Road Sweeping Machines (For Road Sweeping)</td>
<td>154.00</td>
</tr>
<tr>
<td>8.</td>
<td>VIII</td>
<td>Purchase of Refuse Collectors and Fabrication &amp; Mounting of Refuse Collection units on the already purchased chassis (For Secondary Collection)</td>
<td>342.00</td>
</tr>
<tr>
<td>9.</td>
<td>IX</td>
<td>Establishment of Workshop Facilities for maintenance of vehicles</td>
<td>105.00</td>
</tr>
<tr>
<td>10.</td>
<td>X</td>
<td>Providing Asphalting &amp; Cement Concrete Flooring for placing the waste Collection Community Bins (For Secondary Collection)</td>
<td>341.12</td>
</tr>
<tr>
<td>11.</td>
<td>XI</td>
<td>Providing IEC activities and Awareness Generation</td>
<td>45.00</td>
</tr>
</tbody>
</table>
Methodology Adopted for Implementation of the SWM Project
SECONDARY TRANSPORTATION
Waste Transfer Station at Peelamedu before JNNURM
Newly Constructed Waste Transfer Station at Peelamedu
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 Ukkadamb
SCIENTIFIC CLOSURE
Old & abandoned Dumpsite at Ondipudur before Commencement of Work
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
Establishment of Sanitary Landfill Facility at Vellalore Dumpsite
65 MM BLOCK / 115 MM BRICK PITCHING

100mm THK. CONCRETE BLOCK

150mm THK, SOIL/GRAVEL/C & D LAYER

350 GSM NON WOVEN GEOTEXTILE

300MM GRAVEL/COARSE SAND/C & D. AS DRAINAGE LAYER

200 GSM NON WOVEN GEOTEXTILE

1.5MM HDPE GEOMEMBRANE SMOOTH

6MM GEOSYNTHETIC CLAY LINER

EARTH FILLING AS PER THE REQUIREMENT & SLOPE

DETAIL FOR LANDFILLING LINER AT JUNCTION ALT-1
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
LAYING OF GEO-SYNTHETIC CLAY LINER (GCL)
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
Laying of Leachate Collection Pipes
After completion of Laying of Leachate Collection Network
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
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 CCMC 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:

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

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Year</th>
<th>Assured Waste Qty T/year</th>
<th>For Transportaion of MSW from the Transfer Station to Processing/Disposal Site Rs/T</th>
<th>For Processing of MSW at the Compost Plant Rs/T</th>
<th>For Disposal of MSW at the Sanitary Landfill Facility Rs/T</th>
<th>Average Tipping fee in Rs/T</th>
<th>Yearly Tipping Fee In Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2008</td>
<td>146000</td>
<td>440.00</td>
<td>185.00</td>
<td>171.50</td>
<td>667.88</td>
<td>975,09,750.00</td>
</tr>
<tr>
<td>2.</td>
<td>2009</td>
<td>153300</td>
<td>484.00</td>
<td>194.25</td>
<td>180.08</td>
<td>723.27</td>
<td>1108,77,291.00</td>
</tr>
<tr>
<td>3.</td>
<td>2010</td>
<td>160965</td>
<td>543.10</td>
<td>203.96</td>
<td>189.08</td>
<td>794.33</td>
<td>1278,59,328.45</td>
</tr>
<tr>
<td>4.</td>
<td>2011</td>
<td>169013</td>
<td>603.39</td>
<td>214.16</td>
<td>198.53</td>
<td>867.18</td>
<td>1465,65,115.87</td>
</tr>
<tr>
<td>5.</td>
<td>2012</td>
<td>177464</td>
<td>670.36</td>
<td>224.87</td>
<td>208.46</td>
<td>947.35</td>
<td>1681,19,633.08</td>
</tr>
<tr>
<td>6.</td>
<td>2013</td>
<td>186337</td>
<td>744.77</td>
<td>236.11</td>
<td>218.88</td>
<td>1035.60</td>
<td>1929,70,597.20</td>
</tr>
<tr>
<td>7.</td>
<td>2014</td>
<td>195654</td>
<td>827.44</td>
<td>247.92</td>
<td>229.83</td>
<td>1132.82</td>
<td>2216,40,275.15</td>
</tr>
<tr>
<td>8.</td>
<td>2015</td>
<td>205437</td>
<td>919.29</td>
<td>260.31</td>
<td>241.32</td>
<td>1239.93</td>
<td>2547,27,499.41</td>
</tr>
<tr>
<td>9.</td>
<td>2016</td>
<td>215708</td>
<td>1021.33</td>
<td>273.33</td>
<td>253.38</td>
<td>1358.01</td>
<td>2929,32,542.54</td>
</tr>
<tr>
<td>10.</td>
<td>2017</td>
<td>226494</td>
<td>1134.70</td>
<td>287.00</td>
<td>266.05</td>
<td>1488.21</td>
<td>3370,71,201.98</td>
</tr>
</tbody>
</table>
## Operation & Maintenance Cost in Respect of the PPP Project

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Year</th>
<th>Assured Waste Qty T/year</th>
<th>For Transportation of MSW from the Transfer Station to Processing/Disposal Site Rs/T</th>
<th>For Processing of MSW at the Compost Plant Rs/T (For 75% of MSW)</th>
<th>For Disposal of MSW at the Sanitary Landfill Facility Rs/T (For 25% of MSW)</th>
<th>Average Tipping fee in Rs/T</th>
<th>Yearly Tipping Fee In Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>2018</td>
<td>237819</td>
<td>1260.65</td>
<td>301.35</td>
<td>279.36</td>
<td>1556.50</td>
<td>370165868.00</td>
</tr>
<tr>
<td>12.</td>
<td>2019</td>
<td>249710</td>
<td>1400.58</td>
<td>316.41</td>
<td>293.32</td>
<td>1711.22</td>
<td>427308122.00</td>
</tr>
<tr>
<td>13.</td>
<td>2020</td>
<td>262195</td>
<td>1556.04</td>
<td>332.23</td>
<td>307.99</td>
<td>1882.21</td>
<td>493506051.00</td>
</tr>
<tr>
<td>14.</td>
<td>2021</td>
<td>275305</td>
<td>1728.76</td>
<td>366.29</td>
<td>323.39</td>
<td>2084.33</td>
<td>573825094.00</td>
</tr>
<tr>
<td>15.</td>
<td>2022</td>
<td>289070</td>
<td>1920.66</td>
<td>348.85</td>
<td>339.56</td>
<td>2267.19</td>
<td>655375891.00</td>
</tr>
<tr>
<td>16.</td>
<td>2023</td>
<td>303524</td>
<td>2133.85</td>
<td>384.60</td>
<td>356.54</td>
<td>2511.44</td>
<td>762280797.00</td>
</tr>
<tr>
<td>17.</td>
<td>2024</td>
<td>318700</td>
<td>2370.71</td>
<td>403.83</td>
<td>374.36</td>
<td>2767.17</td>
<td>881897876.00</td>
</tr>
<tr>
<td>18.</td>
<td>2025</td>
<td>334635</td>
<td>2633.85</td>
<td>424.02</td>
<td>393.08</td>
<td>3050.14</td>
<td>1020681926.00</td>
</tr>
<tr>
<td>19.</td>
<td>2026</td>
<td>351366</td>
<td>2926.21</td>
<td>445.22</td>
<td>412.74</td>
<td>3363.31</td>
<td>1181752781.00</td>
</tr>
<tr>
<td>20.</td>
<td>2027</td>
<td>368935</td>
<td>3251.02</td>
<td>467.49</td>
<td>433.37</td>
<td>3709.98</td>
<td>1368741471.00</td>
</tr>
</tbody>
</table>
Pros & cons:
Pros:
• Reduced CO₂ 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
• Cleanliness 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 anywhere 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.
Initiatives taken up by the Corporation in respect of IEC Activities and Awareness Creation for Segregation of Waste at Source
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.

IEC activities and Awareness Generation
Awareness Creation Materials in the form of Stickers introduced in the Wards

**Green and White**

Will help us keep Coimbatore Clean & Green

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**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
- Plastic Materials
- Polythene Bags
- Glass Material
- Leather Materials
- Carton Boxes
- Packing Materials
- Metals
- Rags
- Rubber Materials
- Wooden Materials
- Bulbs & Tube lights

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**Do's**
- Always use dustbins
- Keep Bio-degradable (Wet) Wastes in Green Bin
- Keep Non-biodegradable, Recyclable (Dry) Wastes in White Bin
- Keep Household Hazardous Wastes (Pesticides, Batteries, Toiletries, Expired Medicines, Cosmetics, Paints, Polishes, etc.) separately
- Handover the Segregated wastes to the Corporation Sanitary Workers

**Dont's**
- Do not mix Bio-degradable and Non-biodegradable/Recyclable wastes
- Do not throw wastes into Storm Water Drains and Underground Drainage lines
- Do not litter
- Do not burn wastes

*Issued in the public interest by: Coimbatore City Municipal Corporation*
Initiative of the CCMC for Managing the Household Hazardous Waste and e-waste

As a stakeholder, 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 doorsteps 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
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.
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

- **Satellite**
- **Base Station**
- **GPS Device**
- **VMU-1**
- **VMU-2**
- **GSM**
- **GPRS**
- **e-Mail to customer**
- **SMS to Customer**
Implementation of Mobile Application for Monitoring various activities.
## Check List Report

**Zone**: ALL ZONES

**Ward**: ALLWARDS

**Category**: Public Toilet Maintenance

**From Date**: 17-08-2013

**To Date**: 17-08-2013

<table>
<thead>
<tr>
<th>Schedule Name</th>
<th>Inspected</th>
<th>Not Inspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Toilet - 17/08/2013-1</td>
<td>223</td>
<td>49</td>
</tr>
<tr>
<td>Public Toilet - 17/08/2013-2</td>
<td>128</td>
<td>147</td>
</tr>
</tbody>
</table>

**Location**

- near thiruvallur bus stand, VIKRAM nagar road, Coimbatore - 641012
- near thiruvallur bus stand, VIKRAM nagar road, Coimbatore - 641012
- Jawahar nagar, remakrishnankulam mandapam backside, Coimbatore - 641044
- Jawahar nagar, remakrishnankulam mandapam backside, Coimbatore - 641044
- Shankar nagar, near electric crematorium backside, Coimbatore - 641044
- Shankar nagar, near electric crematorium backside, Coimbatore - 641044
- Vallikam street, near surapalayam, Coimbatore - 641048
- Thirumal, near Annamunai nagar, Coimbatore - 641012
- GANI RAJU STREET, UKIDAIYAR, COIMBATORE - 641001
- GANI RAJU STREET, UKIDAIYAR, COIMBATORE - 641001
- Rice Mill, Annamalayam Road, Kalapatti, CBE - 641048
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.

![Diagram showing the flow of information and improved service through continuous feedback from stakeholders.](image-url)
GMS Flow Chart (All Channels)
### Appreciations SMS from the Public

**Information Centre - Thanks SMS**

<table>
<thead>
<tr>
<th>S.NO</th>
<th>G.NO</th>
<th>DATE</th>
<th>USER NO</th>
<th>SUBJECT</th>
<th>ZONE</th>
<th>WARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6359</td>
<td>03.04.2013</td>
<td>9840400242</td>
<td>Dear sir thank you very much for introducing the sms service...</td>
<td>North</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>6750</td>
<td>03.04.2013</td>
<td>9443001902</td>
<td>congratulations both mayor and the commissioner for introducing sms...</td>
<td>West</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>7860</td>
<td>09.04.2013</td>
<td>9443995811</td>
<td>drainage cleaned very neatly by si ganapathy with his workers...</td>
<td>North</td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>12013</td>
<td>18.04.2013</td>
<td>8148369167</td>
<td>complaint no.6726 street lights have been put today...</td>
<td>North</td>
<td>42</td>
</tr>
<tr>
<td>5</td>
<td>12179</td>
<td>20.04.2013</td>
<td>7200002050</td>
<td>thank you for solving the issue...</td>
<td>West</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>12200</td>
<td>20.04.2013</td>
<td>94430052620</td>
<td>thanks for immediate response to our request of rectification of the switch box...</td>
<td>East</td>
<td>66</td>
</tr>
</tbody>
</table>

**Total Grievance Received**: 5922
**Total Grievance Cleared**: 5620
**Pending Grievance**: 302
THANK YOU