

# COIMBATORE CITY MUNICIPAL CORPORATION



## CIRCULAR ECONOMY

### “COIMBATORE CITY PROFILES AND CHALLENGES”

**M. Prathap , I.A.S., Commissioner, CCMC**

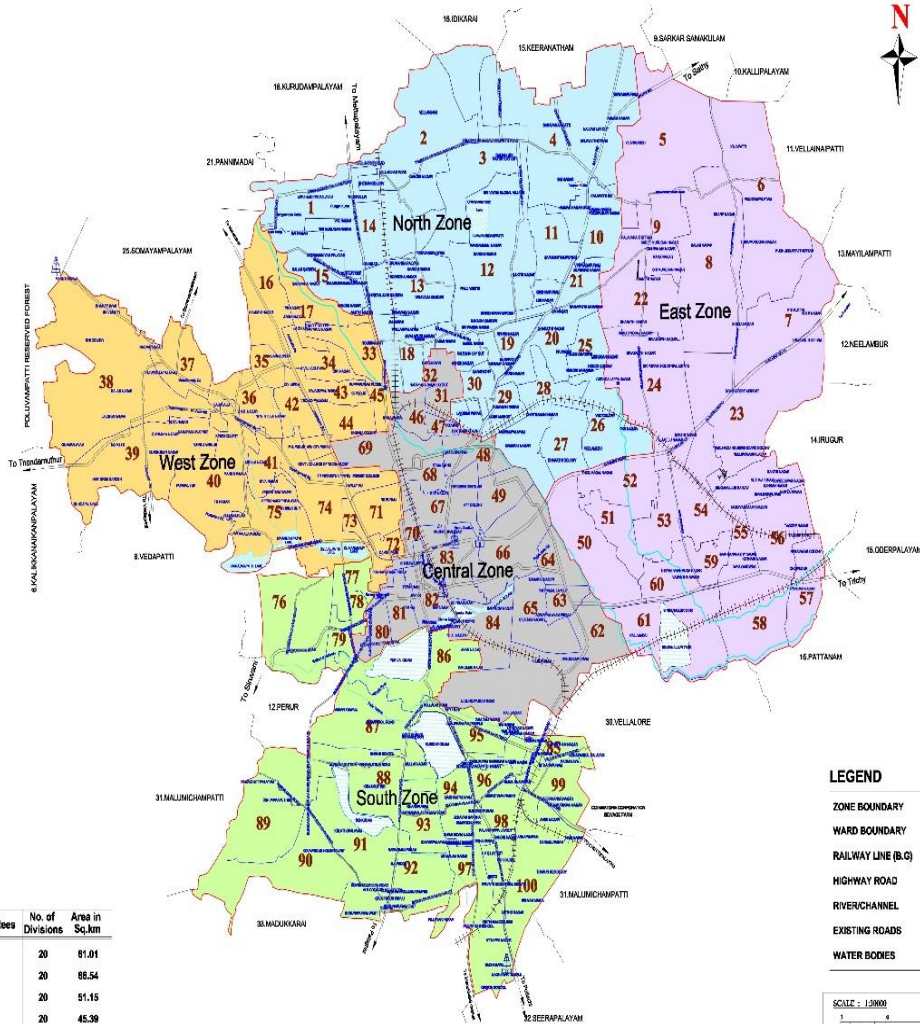
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# COIMBATORE CITY MUNICIPAL CORPORATION

## CITY PROFILE



Wards Committees	No. of Divisions	Area in Sq.km
North Zone	20	81.01
East Zone	20	66.54
South Zone	20	51.15
West Zone	20	45.39
Central Zone	20	35.85
<b>Total</b>	<b>100</b>	<b>257.04</b>

Area	257.04 Sq.Kms
No.of Zones	5
No. of Wards	100
Population (As per 2011 Census)	15,95,043
Current Population as per 2021 summary revision	22,88,042
Floating Population	2,00,000
Households	5,39,858
Waste Generation	1100 -1200 TPD

## GENERAL INFORMATION

Quantity of MSW Generated	:	1100 to 1200 TPD
Per capita generation of waste	:	550 gms/person/day
House holds	:	539858
Commercial Establishments	:	42175
Bulk Waste Generators – Residential Apartments	:	809
Hotels and Restaurants	:	879
Lodges and Guest Houses	:	106
Kalyana Mandapams, Marriage Halls, etc.,	:	94
Vegetable Markets including Uzhavar Sandhai	:	20
Slaughter Houses	:	4
Major Shopping Complexes/Malls	:	5
Land available for Solid Waste Management	:	654.54 Acres at Vellalore

# HUMAN RESOURCE DATA

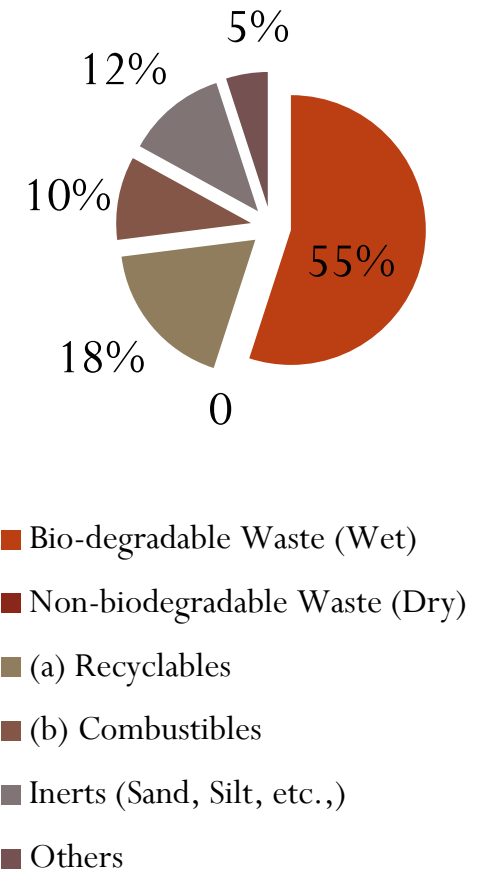
Sr. No	Post Name	Total No. of Sanctioned Posts / Requirement as per Norms	In Position
			Permanent
1	Sanitary Officers	5	5
2	Sanitary Inspectors	26	22
3	Conservancy Inspectors	72	-
4	Conservancy Supervisors	84	67

Sr. No	Post Name	Total Requirement as per Norms	Sanctioned	In Position	Vacancy	Out sourced	Balance
1	Cleanliness Workers	<b>6262</b>	3226	<b>2401</b>	825	<b>3303</b>	558

- Norms fixed in G.O.(Ms) No.224, Municipal Administration and Water Supply (Elections II) Department Dated 11.09.1997
- **1 Supervisor** for every 20 Workers, **1 Sanitary Inspector** for every 2 Sanitary Supervisors, **Team of 3 workers** for every 250 Houses (or) 3 Kms Road Distance, 4 workers for **Heavy Vehicles**, 3 workers for **Light Vehicles**, 4 workers for compost yard maintenance where waste generation is more than 20 TPD

## WASTE CHARACTERISTICS

Sr. No	Description	%	Weight in MT
1	Bio-degradable Waste (Wet)	55%	584.10
2	Non-biodegradable Waste (Dry)		
	(a) Recyclables	18%	182.40
	(b) Combustibles	10%	105
3	Inerts (Sand, Silt, etc.,)	12%	126.00
4	Others	5%	52.50



The above waste quantity is excluding the 100 TPD of C&D wastes generated in the City

# FLEET STRENGTH OF CCMC FOR SWM

S.NO	DESCRIPTION	TOTAL
1	Excavator Cum Loader/Dozer	11
2	Single Bin Dumper Placer	16
3	Twin Bin Dumper Placer	32
4	Refuse Collector	37
5	Refuse Collector Compactor	14
6	Compactor Lorry	16
7	Tipper Lorry (HMV)	5
8	Mini Tipper Lorry (LMV)	19
9	Open Body Lorry	3
10	Jetting Cum Suction	7
11	Vacuum Suction lorry	5
12	Sullage Tanker	4
13	Vehicle mounted Fogging vehicle	5

## FLEET STRENGTH OF CCMC FOR SWM

S.NO	DESCRIPTION	TOTAL
14	Skip Lifter Lorry	3
15	Tractor	16
16	Smaller tipper (organic)	310
17	Small tipper dry Waste	5
18	Mini jetting machine (TATA ACE)	9
19	Ladder vehicle (Street Light)	1
20	Road Sweeper	3
21	Tractor fitted Shredding machine (Garden Waste)	7
22	Bobcot (Mini JCB)	7
23	Battery Operated Vehicles	100
	<b>Total</b>	<b>635</b>



# SOURCES OF WASTE GENERATION

Weight in MT			
Sr. No	Description	Wet Waste	Dry Waste
1	Quantity of waste generated from the Households	<b>421.1</b>	<b>226.7</b>
2	Quantity of waste generated from Commercial Establishments	<b>168.7</b>	<b>253.1</b>
3	Quantity of waste generated from Markets and Shandies	<b>26.35</b>	<b>10.62</b>
4	Quantity of waste generated by Bulk Waste Generators	<b>49.83</b>	<b>21.36</b>
	<b>TOTAL</b>	<b>665.97</b>	<b>511.77</b>

## INFRASTRUCTURE AVAILABLE FOR PROCESSING WASTE

<b>PROCESSING OF BIO-DEGRADABLE WASTE (WET)</b>	<b>HANDLING CAPACITY in MT</b>	<b>CURRENTLY PROCESSED in MT</b>
Waste-to-Compost Plant at Vellalore	550.00	510.00
Vermi-compost Plant at Vellalore	100.00	90.00
Biogas Plants (4 Units)	6.00	6.00
Micro-Composting Centers (34 nos)	162.00	76.50
<b>TOTAL</b>	<b>818.00</b>	<b>682.50</b>

❖ Around 287.80 MT of Wastes are dumped in Open Ground at Vellalore site

# MICRO COMPOSTING CENTERS

<b>Sr. No</b>	<b>Zone</b>	<b>2.00 MT MCC's</b>	<b>5.00 MT MCC's</b>	<b>Total Units</b>	<b>Total Capacity in MT</b>
1	North	0	5	5	25.00
2	East	0	3	3	15.00
3	West	6	8	14	52.00
4	South	0	7	7	35.00
5	Central	4	3	7	35.00
	<b>TOTAL</b>	<b>10</b>	<b>26</b>	<b>36</b>	<b>162.00</b>

# METHODOLOGY

# PRIMARY COLLECTION

250 houses per pushcart



கோயம்புத்தூர் மாநகராட்சி மேற்கு மண்டலம் வார்டு எண்.37க்குட்பட்ட பெருமாள் கோவில் வீதி, பிரதான சாலையில் மாநகராட்சி தூய்மைப்பணியாளர்கள் மக்கும் குப்பை மற்றும் மக்காத குப்பைகளை தரம் பிரித்து சேகரிக்கும் பணிகளில் ஈடுபட்டு வருவதை மாநகராட்சி ஆணையாளர் திரு.மு.பிரதாப் இ.ஆ.ப., அவர்கள், நேரில் பார்வையிட்டு ஆய்வு செய்து, அப்பகுதியிலுள்ள பொதுமக்களிடம் குப்பைகளை மக்கும் குப்பை, மக்கா குப்பைகள் என வகைப்படுத்தி தரம் பிரித்து கொடுக்க விழிப்புணர்வு ஏற்படுத்திட வேண்டுமென தூய்மைப் பணியாளர்களுக்கு அறிவுரை வழங்கினார். உடன் மேற்கு மண்டல தலைவர்

# PRIMARY COLLECTION

400 houses per BOV



# PRIMARY COLLECTION

800 houses per LCV



# WASTE PROCESSING PLANT (COMPOST PLANT) AT VELLALORE ESTABLISHED UNDER JNNURM SCHEME







**SCIENTIFIC CLOSURE OF OLD  
ABANDONED MSW DUMPSITE AT  
ONDIPUDUR**



# MICRO COMPOSTING CENTRE AT PANAIMARATHUR



# **IMPLEMENTATION OF BIOMINING SCHEME**

## BIO-MINING OF LEGACY WASTES DUMPED AT VELLALORE

1	Total Quantity of Wastes	9,40,070 Cu.m
2	Area to be cleared	68.56 Acres
3	Approved Project Cost	Rs.60.11 Crore
4	Date of Work Order	15.05.2020
5	Period of Contract	24 Months
6	Targeted Date for Completion – (30.09.2023)	30.09.2023 – Extension period order issued
7	Present Stage of the project	<ul style="list-style-type: none"><li>• Center for Environmental Studies, Anna University, Chennai has been appointed as Third Party Inspection Agency</li><li>• As on date 9,40,066 Cu.m of legacy wastes (100%) has been removed from the source and processed. The disposal of RDF is in progress.</li></ul>

# BIO-MINING OF OLD LEGACY WASTES DUMPED AT VELLALORE



# BIO-MINING OF OLD LEGACY WASTES DUMPED AT VELLALORE

**BEFORE**



**AFTER**



# **IMPLEMENTATION OF ANIMAL WASTE DISPOSAL**

# POULTRY WASTE DISPOSAL



- Waste Collections – Generation weekly days 5 – 7 tonnes, Holidays – 10 to 15 tonnes the collection gap is there due lack of awareness to the shop keeper.
- Slaughterhouse waste is a huge menace and currently being disposed using deep burial (land filling).
- This way the land used cannot be reused for several years.
- This method generates GHG emissions thereby polluting the environment leading to global warming.
- Slaughterhouse waste volume increases rapidly thereby requiring more land for its deep burial which is a major challenge faced.



# ANIMAL WASTE DISPOSAL - PROCESS



- Vehicles arrive at the plant unloading area and unloads the slaughter house waste. Vehicles are cleaned and disinfected before leaving our plant.

- Load the slaughter house waste in Trays and load the same into our specially designed Steam Jacketed Cooker for processing. Each batch runs for 5 hours and finally the rendered product is taken out.



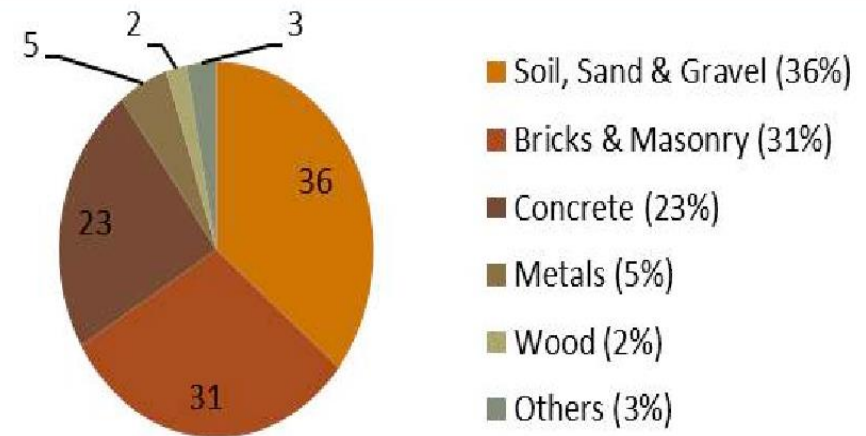
# C & D WASTE DISPOSAL

# Construction and Demolition Waste

## Importance of C & D Disposal and Generation (MT)

- Huge heaps of C & D waste on footpaths, carriageways, alleys, etc. is a common scene in Coimbatore turning the surrounding neighbourhood unaesthetic.
- Approximately 20 tons of wastes generated from 3000 sq. ft. of (G+1) building in its entire lifetime. Considering the construction takes a period of 2 months, approx. 1 kg of C & D waste is generated per sq. m. of area per day.

## Typical Composition of C&D Waste



90% of recyclable and critical resources in C&D

## Year wise data Under Construction / Demolition buildings.

Year	LPA Approval (Bulk C & D Waste Generator)		CORPORATION Approval (Large C & D Waste Generator)	
	No. of Permits	Area(sqm)	No. of Permits	Area(sqm)
2015	62	444778	1005	622508
2016	49	919921	686	1033619
2017	114	588647	2963	1113399
2018	222	1149873	3841	1834427
2019	182	1391401	4583	2202111
2020	89	458243.23	4285	899686.51
2021	57	181012.03	1833	388430.40

# District Collector Proceedings

## ROC No. 871/Mines/2020 Dated – 21.11.2020

- Two abandoned quarries are handed over to Coimbatore Corporation on temporary basis for the utilization of exclusively dumping the C & D waste.
  1. Suler – Pattanam Village – S.F. No.38
  2. Madukarai Village – S.F.No.478 & 581 B/2 – Area 1.86 Hec. & 2.71 Hec.

### **Issues :**

- Out of Corporation Limit – Long Distances
- Man Power for monitoring system
- Fees structure

## The benefits of proposed C&D waste management

- Provide credible information about GHG (Green House Gas) emissions and their sources, which can help establish a strong foundation to support mitigation policies.
- These programs also enable decision makers and city administration to understand their emissions related risks and opportunities, so they can efficiently focus on activities addressing significant GHG emissions. Mandatory reporting programs bring consistency and enhanced accuracy in reporting emissions through rigorous calculation and quality management methods.

# ISSUES & CHALLENGES

- Due to poor Source Segregation of wastes by the CCMC, only Un-segregated / Mixed wastes are supplied .
- Due to acquisition of a portion of land in the Transfer Station by the NH Department for construction of fly over, this transfer station has become non functional since 20-02-2015.
- The major issue in the sale of RDF due to poor market and hence huge quantity of the RDF is accumulated in the Plant Premises. This is attributable to fire incidents.
- All the MCCs replaced with latest machineries and equipments according to the locations. High labour intensive leading to low productivity.
- Composting process adopted in the MCC is more cumbersome and time consuming. Bad odour and Fly Menace issues was solved by providing appropriate infrastructure.
- Poor market for sale of end product (Compost) .
- Disposal and processing of materials from the channels and drainage.

**Thank You**