

Coimbatore – City Sanitation Plan

Ministry of Urban Development
Government of India
Swachh Bharat Mission
City Sanitation Plan



Dated : 24/03/2018

State : Tamil Nadu District : Coimbatore ULBName : Coimbatore (M Corp.)

Existing Situation Analysis		
Statutory Town(Y/N):Y	Total No. of Wards:100	Area of the City (Sq. Km):257.000
No. of HouseHolds 2011 Census:419874	No. of Slums:341	Total Solid Waste Generated (in MT):890.000
Total Waste Transported (in MT):850.000	Total Waste Treated (in MT):650.000	Total Waste Collected (in MT):850.000
I). Total Population:	II). Slum Population:	III). Floating Population (assume 5% of Total Population):
Population(2011):930882		
Population(2011):1560484	295051	80072
Population 2019(Projected):1799874	335915	
Population 2025 (Projected):21508494	373773	
I). As per 2011 Census :	II). Projected up to 2019:	III). Justification for the Projection
No. of Urban HHs resorting to Open Defecation:84	0	NIL
No. of Urban HHs having Pit latrines:0	0	NIL
No. of Urban HHs having Insanitary Latrines:239	0	NIL

Proposed Target under SBM										
SNO	Targets	Baseline 2011	Cumulative Projection upto 2019	Justification based on 2001-11 data & other Factors	Target 2015	Target 2016	Target 2017	Target 2018	Target 2019	Cumulative Target(2014-19)
1	CAPACITY BUILDING	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00

Tentative Financial Requirements									
SNO	Funding[As per the Funding Pattern in SBM Urban Guidelines]	2014-15	2015-16	2016-17	2017-18	2018-19	2014-2019(Total)	Cost/ Unit As per City Specific norms*	State's Incentive (in Rs. per unit)
1	CONSTRUCTION ON NEW INDIVIDUAL HOUSEHOLD LATRINES(IHL)	243300000.00	36000000.00	38250000.00	306000000.00	285000000.00	1576800000.00	30000.00	2000.00
2	CAPACITY BUILDING	0.00	233000000.00	233000000.00	233000000.00	233000000.00	932000000.00	0.00	0.00
3	CONSTRUCTION ON OF COMMUNITY TOILETS(NORM:1 SEAT/25 WOMEN AND 1 SEAT/35 MEN)	0.00	60000000.00	480000000.00	300000000.00	300000000.00	6000000000.00	30000.00	0.00
4	CONVERSION OF INSANITARY LATRINES INTO SANITARY LATRINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	CONVERSION OF PIT LATRINES INTO SANITARY LATRINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	PUBLIC AWARENESS & IEC		700000000.00	700000000.00	699000000.00	699000000.00	2798000000.00		
7	SOLID WASTE MANAGEMENT		402200000.00	409400000.00	417000000.00	425000000.00	1653600000.00		

COMMISSIONER
COIMBATORE CORPORATION

Coimbatore City Municipal Corporation

City Sanitation Plan

CITY SANITATION PLAN

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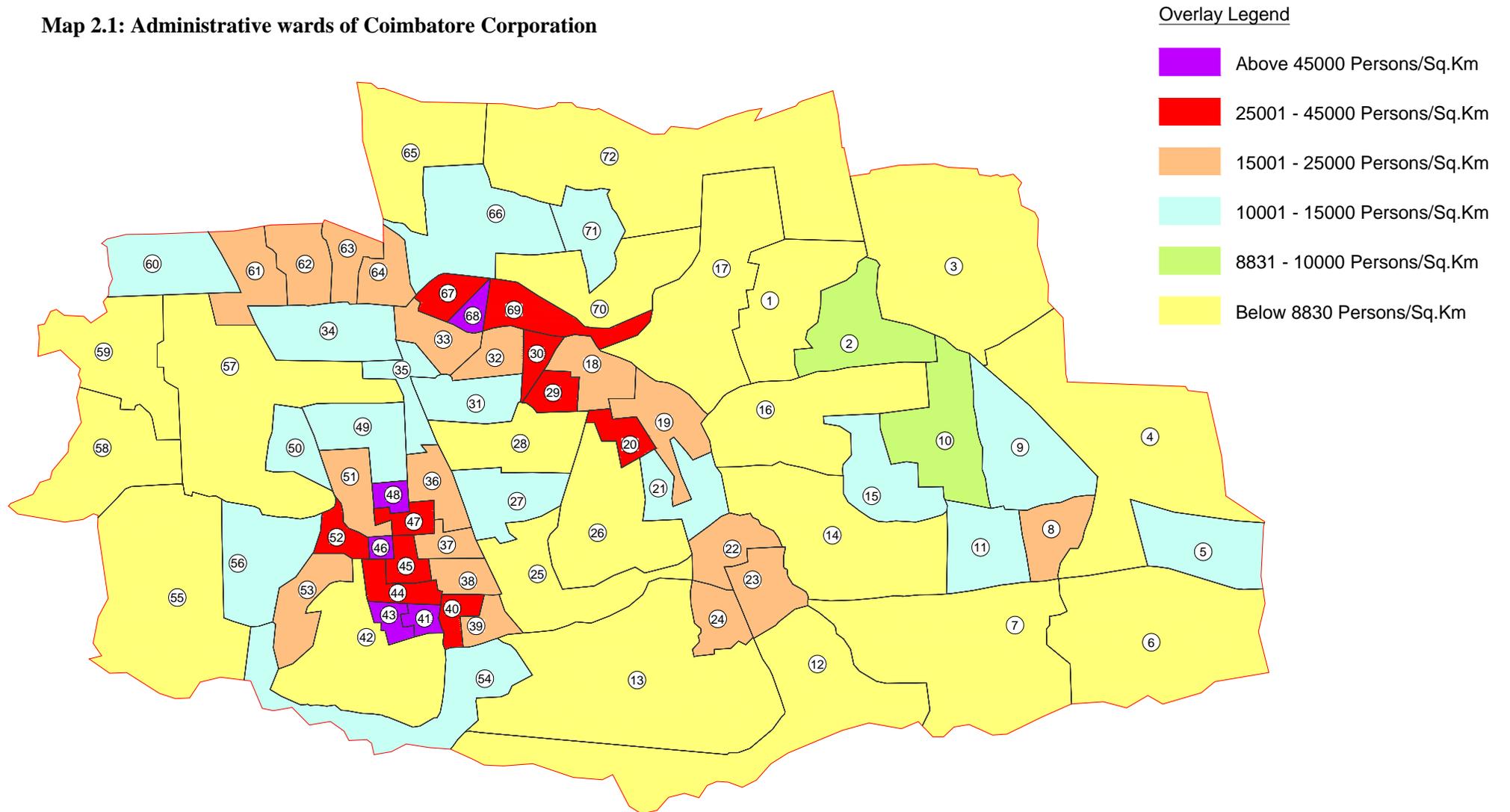
GENERAL INFORMATION

City Sanitation Task Force • Special

officer / Chairman / Councilors

- Corporation Commissioner
- City Health Officer
- Executive Engineer
- Assistant Executive Engineer / Assistant Engineer
- Sanitary Officers
- Sanitary Inspectors
- Sanitary Supervisors
- NGO / Voluntary Organization / SHGS
- Stake holders
- Sanitation Private Agency
- Sanitary Workers

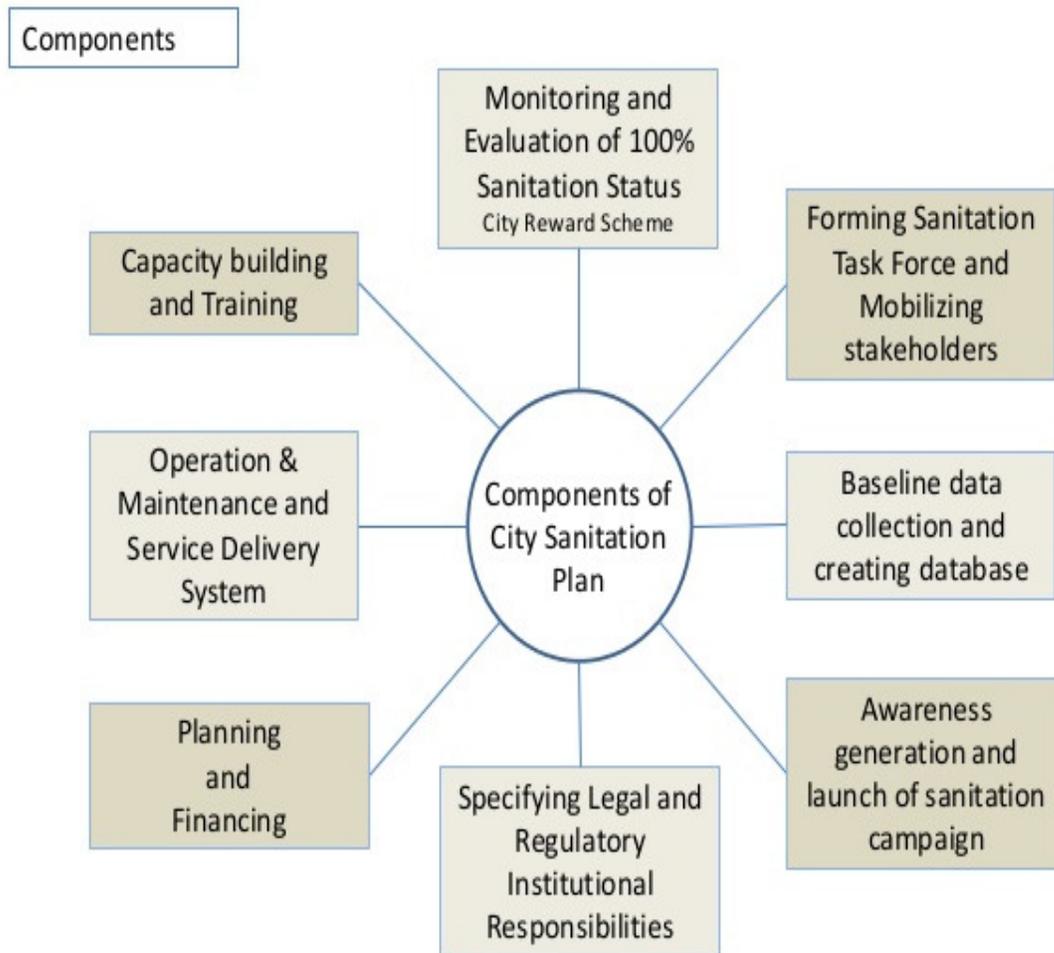
Map 2.1: Administrative wards of Coimbatore Corporation



Methodology For CSP:



- City Sanitation Mainly based on the five basic amenities illustrated in the diagram Shown below.





Approach and Methodology

COMPONENTS OF CSP

Water Supply

- Sewage
- Storm water drainage
- Solid Waste Management
- Information, Education and Communication
- Environment
- Open defecation free

National Urban sanitation Policy (NUSP)

National Urban Sanitation Policy (NUSP) has been formulated by Government of India with a vision to provide appropriate Sanitation facilities in all cities/towns. State have to prepare State Sanitation Strategies and cities/towns are required to prepare city Sanitation Plans (CSPs) as per NUSP guidelines,so as to improve health and environmental outcomes. The CSP is a vision document on sanitation with 20 to 25 years horizon with short term town level action plans for five years to achieve sanitation goals. CSP envisages achieving the following outputs

- Open Defecation free status.
- Elimination of manual Scavenging and safety of sanitory workers.
- Prepare disposal of rain water and storm water drainage.
- Recycle and reuse of treated waste water for non-potable applications.
- Solid waste fully collected and safely disposed of scientifically.
- Serving the unserved with basic minimum services.
- Measures for improved public health and environmental standards.

CITY SANITATION PLAN

- Open defecation free town
- Providing individual households toilets to all households in the city
- Maintenance of Community / Public Toilets in a hygienic manner
- Providing protected water supply to all households in the town.
- Safe disposal of sewage water in UGD scheme.
- Providing UGD connection to all households / Commercial / Public & Private institutions.
- Drainage and storm water drainage to be strengthened and well maintenance of the same.
- 100% door to door Segregated Garbage Collection.
- Bulk waste garbage generators to dispose bio waste.
- Municipal solid waste to be collected and disposed scientifically.
- Reclamation of existing dumpsite.
- Dry recyclable waste are to be collected once in a week.
- Recyclable waste are to be sold to the recyclers and the amount disbursed among sanitary workers concerned.
- Garbage free Kumbakonam to be achieved.
- Providing safety equipments to all sanitary workers.
- Setting up of MCC centers so that all bio waste are disposed at the site.
- Capacity building / Training programs for all staff.

- Medical camp / Eye camp to be organized at periodical intervals.
- Providing Medical facilities to all citizens in the town.

Need for CSP

- To achieve the goal of universal sanitation
- To develop access to safe and hygienic sanitation facility and arrangements (individual or community toilets) to all urban population so that no one defecates in the open
- To develop adequate availability and 100 percent upkeep and management of public sanitation facilities in all urban areas like commercial areas, offices, institution and service centres etc.
- To ensure scientific collection, treatment and safe disposal and establish appropriate and feasible technology of disposal system for human excreta & liquid waste from all sanitation facilities and establish appropriate system of operation & maintenance of the disposal system.

What is CSP?

The CSP is a vision document on Sanitation with 20 to 25 years horizon with short term town level action plans for 3-5 years to achieve sanitation goals as per above stated objections.

Broad areas to be covered in CSP are:

- Awareness generation
- Sanitary choices and Technical options
- Operation & Maintenance and service Delivery system
- Institutional Responsibilities
- Reaching the un-served and poor households
- Legal and Regulatory Institutional Responsibilities
- Planning and Financing
- Capacity Building & Training
- Implementation Management
- Monitoring & Evaluation and supervision
- City Reward Schemes.

WHY CSP

- Facilitate vision on a long term perspective.
- Sanitation aspect should be approached to ensure effectiveness
- Long term vision on transition to a 100% sanitized city.
- To understand the cost and user charges implications.
- Ensure proper assessment of codex and investment phasing
- Awareness and sensitization of community.

CITY PROFILE

GENERAL PROFILE		
NAME OF ULB	:	COIMBATORE CITY MUNICIPAL CORPORATION
AREA IN SQ.KM	:	257 Sq.Km
POPULATION AS PER 2011 CENSUS	:	16.01 LAKH
NUMBER OF WARDS	:	100
NUMBER OF STREETS	:	7460
NUMBER OF SANITARY DIVISION	:	100
NO.OF HOUSE HOLDS	:	494404
NO.OF SLUMS	:	182
NO.OF GOVT.HOSPITAL	:	1
NO.OF URBAN PHC	:	24

IV. PLANNING AND LAND USE MANAGEMENT

A. Planning Efforts in the Past

1. Master Plan Outline

135. Government of Tamil Nadu has notified a Local Planning Area for Coimbatore, extending over an area of 1,287 sq.km under the Town and Country Planning Act, 1971 with a population of 42.71 lakhs according to 2001 census.
136. Coimbatore municipality has been upgraded from Special grade municipality to Corporation with effect from 1-12-1978 as per G.O.Ms.No.1771, RD&LA dt.17.11.1978. The Corporation of Coimbatore covers an area of 105.60 sq. kms and includes the added areas of Singanallur Municipality, Kumarapalayam town panchayat, Sanganoor town panchayat, Telungupalayam town panchayat, Coimbatore rural, Ganapathy town panchayat, and portion of Vilankurichy town panchayat.
137. The city is divided into 4 zones namely north, south, east and west for administrative purposes. These zones are in turn divided into 72 wards, with 18 wards under the jurisdiction of each zone as presented in **Table 4.1**.

Table 4.1: City Zones

Zone	Ward Numbers
East Zone	4,5,6,7,8,9,10,11,14,15,16,19,20,21,22,23,24,26
North Zone	1,2,3,17,18,29,30,31,32,33,65,66,67,68,69,70,71,72
South Zone	12,13,25,27,28,36,37,38,39,40,41,42,43,44,45,46,47,54
West Zone	34,35,48,49,50,51,52,53,55,56,57,58,59,60,61,62,63,64

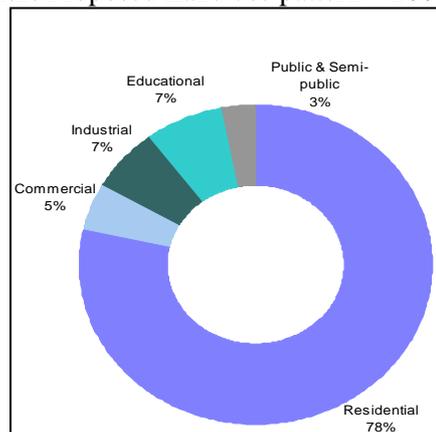
Source: Coimbatore Corporation

B. Land Use Management

1. Land Use Pattern – Current and Future

138. Review of the land use pattern of Coimbatore, for an area of 105.60 sq.km as indicated in Coimbatore Master Plan 1993, indicates that approximately 76 percent of land is put to development use, whereas approximately 23 percent of the land is still being put to agricultural use, water bodies, vacant areas and heritages sites. Almost 80 percent of the developed area is put to residential use. In the proposed land use plan for 2001, it is noted that the city is predominantly expected to develop in residential area and in industrial area. The existing

Figure. 4.1: Proposed Land use pattern – 2001



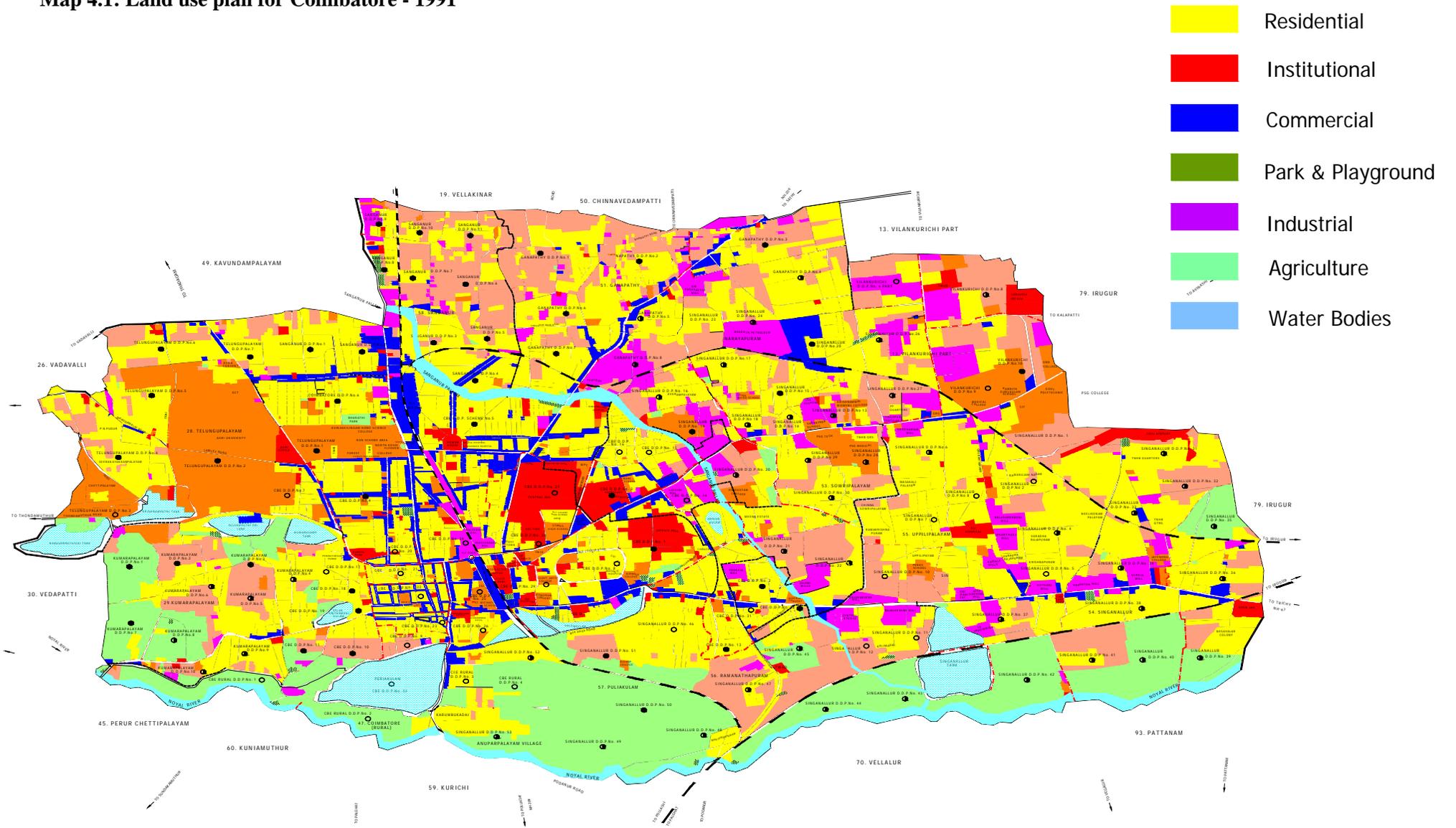
and proposed land use pattern for 1993 and 2001 respectively as indicated in Coimbatore Master Plan is presented in **Table 4.2**.

Table 4.2: Land use – Coimbatore Corporation

Land use Category	Existing in 1993		Proposed for 2001	
	Area	% to Total Extent of Town	Area	% to Total Extent of Town
	<i>Sq.Km</i>	<i>%</i>	<i>Sq.Km</i>	<i>%</i>
Residential	65.2736	61.81	70.7121	66.96
Commercial	2.3634	2.24	4.058	3.84
Industrial	4.4	4.17	5.8439	5.53
Education	6.6045	6.25	6.6045	6.25
Public & Semi- public	2.3735	2.25	2.6252	2.49
Agriculture	24.5191	23.22	15.6901	14.86
Total	105.6	100.00	105.6	100.00

Source: Master plan for Coimbatore

Map 4.1: Land use plan for Coimbatore - 1991



- Residential
- Institutional
- Commercial
- Park & Playground
- Industrial
- Agriculture
- Water Bodies

196. It can be read from the figure that, about 76 percent of the waste is Biodegradable, which primarily originates from the residential solid waste and from the markets. The industries and the commercial establishments contribute about 10 percent of the total waste. The salient features and details of the source of waste generation are presented in **Table 5.19**.

Table 5.19: Waste Generation

Waste Generated	MT	% of total waste
Domestic	349.54	58.16
Industries	18.39	3.06
Commercial and Others	39.25	6.53
Segregated waste from Market	193.88	32.26
Total	601.00	100

Source: Coimbatore Corporation

197. *Primary Collection:* Door to Door, collection of segregated solid waste is practiced for primary collections with 287 nos. of pushcarts. Road sweeping and mopping is also carried out with 12 nos. of road sweeping flipper machines to clean the roads. It can be noted from the tables below that, 489 vehicles are used for primary collection, of which almost 57 percent being push carts and 27 percent being bullock carts. The usage of bullock carts is slowly being phased out. There are about 100 containers of 2 MT capacities, which are placed at important locations in the town. 36 private tractors are being used for collection of waste from the bins. About 288 MT of waste being collected and disposed at the secondary collection points by these tractors.



198. Vegetable markets waste is being collected in the night conservancy in South and West Zones. Mopping of bus stand floors are being done in the night on all Saturdays. 2137 sanitary workers are involved in the conservancy works, which works out to be about 275 m of road length per conservancy workers, which is low according to the norms. The infrastructure and indicators of primary collection is presented in **Table 5.20 and Table: 5.21**.



Table 5.20: Primary Collection – Infrastructure

Type of Vehicle	Vehicles	Capacity	No of trips	Total
	Nos.	MT	Nos.	MT
Auto	15	0.5	3.5	26.2
Bullock Carts	139	0.5	2.0	139.0
Push carts	287	0.2	2.0	114.8
Mini Lorries	9	2.0	2.0	36.0
Lorries	3	4.0	2.0	24.0
Private Tractors	36	2.0	4.0	288.0
Total / Average	489		2.7*	628.1
Dumper placer	17	2.0	3.0	102.0
Containers	100	2.0	-	200.0
Road sweeping flipper machines	12	-	-	-

Source: Analysis

* Average figure

Table 5.21: Primary Collection - Indicators

Indicator	Unit	Nos
Collection capacity of the containers & vehicles of corporation	MT	340.1
Collection capacity of the private vehicles*	MT	288.0
Total collection capacity#	MT	628.1

Source: Analysis

* for primary collection with 4 trips daily, # with an average of 2.7 trip a day

199. *Secondary Collection:* There are 4 nos. of Transfer stations. Viz

- Peelaimedu,
- Ondipudur,
- Sathy Road,
- Ukkadam



200. The existing two prime movers with four trailers in Coimbatore City Municipal Corporation are used for secondary transportation from transfer station to the compost yard / landfill site. It can also be noted from the **Table 5.22** that 53 Lorries are hired to dispose waste from the transfer stations to the disposal yard.



201. *Private Participation in SWM Secondary Transport:* Private lorries are disposing about 50-70 percent of the total waste collected. The detail of the rents given to the hired vehicles is presented in **Table 5.22a**.

Table 5.22: Secondary Collection - Infrastructure

Type of Vehicle	Vehicles	Avg. Capacity	Trips	Vehicle Capacity
	<i>Nos.</i>	<i>MT</i>	<i>Nos.</i>	<i>MT</i>
Private Lorries	53	3	4	636
Bulk Refuse Carrier	4	4	4	64
Total				700
Prime mover vehicles	8	2	2	32.0
JCB	4	-	-	-

Source: Analysis

Table 5.22a: Rental Details of Hired Vehicles

Type of Vehicles	Rentals	Maximum Trips
	<i>Rs./Trip</i>	<i>Nos.</i>
Lorry	608.32	4
Tractor	92	4

202. *Disposal Sites:* There are 4 disposal yards out of which only one is operational at Vellalore sewage farm. The landfill site at Vellalore has been operational for the last two years, subsequent to the



closure of the city's earlier dumpsites. The corporation has obtained permission from the Tamil Nadu Pollution Control Board (TNPCB) to use this land for municipal solid waste disposal. The Vellalore compost yard has an extent of 604 acres of dry land acquired from farmers with one Weigh Bridge and 30 acres of greenery around it. The Coimbatore Corporation initially acquired this property for the sewage disposal.

203. It is noted that waste dumps are spread over an area of about 40 -50 percent of the property and different techniques of disposals are being applied in different areas and at different times. It appears that, at certain locations the wastes are dumped on the ground surface while at other locations waste is being dumped in parallel trenches or in large pits having varying depths. In certain location of the site, there seems to be area filling as well. Paved roads have been laid in the site for this purpose. In general, there appears to be no compaction of the waste. The other disposal sites Viz. at Ondipudur and Peelamedu is not in use and has a quantity of about 6300 MT and 4000 MT of waste which is yet to be disposed.
204. *Service Adequacy and Key Issues:* Based on the available data, discussions with the officials, and field survey, the following the key issues and the performance indicators are arrived. The comparative analysis for SWM is illustrated in **Table 5.23**.

Table 5.23: Solid Waste Management – Service Indicators

Indicator	Unit	Existing Situation	Benchmark
Source segregation	%	10	100
House to House Collection	%	20	100
Daily sweeping and mopping	%	70	100
Per Capita Generation	Gms/ Day	606	NA
Collection Performance (% Collected to Generated)	%	91	100
Total Vehicle Capacity / Waste Generated (with Corporation Vehicles)	%	28	NA
Total Vehicle Capacity / Waste Generated (with Total Fleet)	%	120	100

Source: Analysis

The issues and deficiency in the present system is as follows

205. *Primary Collection*

- Source Segregation and house to house collection practiced in 10% area
- Uncontrolled littering along main roads, streets and Drains
- Present container capacity is enough only for 70% removal of the accumulated solid water
- Lack of adequate community participation in primary collection
- Mismanagement of the hired vehicles
- Lack of records to track hired and owned vehicles.

206. *Secondary Collection*

- Inefficient fleet management system
- Lack of workshop facilities
- No Synchronized system between primary and bulk wastage storage facility
- Higher expenditure on maintenance of vehicles used in secondary transportation

207. *Processing and Disposal of Waste*

- No scientific treatment and disposal of garbage
- Lack of adequate infrastructure in compost yard.

5. *Roads and Traffic Management*

208. The Corporation, State Highways & Rural Works, and the National Highways maintain roads in the city. However, the highways passing through the city account for about 48 kms alone. Road improvement works and planning in residential areas is the prerogative of the Corporation.

209. *Existing Situation:* The Corporation maintains a large road network of 635.52 kms. Of the total road length 83.6 percent are Black Topped roads, 10.4 percent are Concrete roads, and the balance 6 percent include Earthen and other roads. The road length does not