

## Chapter-XIII

### INFRASTRUCTURE INVESTMENTS FOR CMA

#### A. Chennai Metropolitan Development Plan (CMDP)

Cities play a vital role in social and economic development. Efficient and productive cities are essential for national economic growth and equally, strong urban economies are essential for generating the resources needed for public and private investments in infrastructure, social facilities, improved living conditions and poverty alleviation.

13.02 Environmental degradation holds back economic development. The urban challenge put forth before us is to improve the environmental quality and make the city livable. The level of services have to be improved by better planning, management and maintenance of the services, which could be achieved by channalising the investments in the right directions.

13.03 Every citizen has his/her own perception about city where one lives. The benefits to the citizens of CMA because of the proposed Infrastructure Investment Plan named as CMDP are:

- Improvement in the quality of life
- Higher standard of living
- Improvements in service level
- Eco-friendly environment
- Reduced pollution levels
- Less congested roads and better parking facilities
- Hassle free travel by public and private transport and
- Better employment opportunities by attracting more industries/ commercial establishments.

#### Benefits to The Investors

13.04 In the recent past Chennai has attracted many industries including the Information Technology Industries. Chennai has many natural advantages including availability of a Sea Port and other infrastructure attracting the large-scale industries. The strength of Chennai City is mainly the availability of good infrastructure facilities, skilled labour and availability of land for developments.

13.05 CMDA considering the need for making investments for infrastructure developments in a planned and co-ordinated manner, has proposed infrastructure investment plan called as “CMDP” in consultation with the department agencies and local bodies concerned.

13.06 The major objectives of the Plan are:

- i. to identify the infrastructure needs in each sector and work out the projects accordingly;
- ii. to identify the quantum of finance for execution of these projects;
- iii. to identify the source of finance;
- iv. to prioritize the projects by working out the annual programme, medium term programmes and long term programmes;

13.07 In Chennai Metropolitan Area the development and maintenance of urban services are vested with the specialised agencies. CMWSSB, TWAD and concerned local bodies provide water supply electricity by TNEB, solid waste management by the concerned local bodies, roads by Highways and local bodies, storm water drains by local bodies and PWD. These agencies depend on Central Government, State Government and financial institutions for funding their projects. The cost of the projects to be executed in various sectors estimated to be of several crores and these projects cannot be implemented with the State Govt. budgetary support alone; additional resources have to be mobilized.

13.08 The infrastructure requirements for the Chennai City, 16 Municipal areas, 20 TP, Panchayats and 214 village Panchayats and 10 Panchayat unions which lie within Chennai Metropolitan Area have been collected from the concerned agencies and the Investment Plan for them has been prepared.

13.09 The Investment Program has been categorized into 3 categories viz. annual, medium and long-term projects. The projects that need immediate investment have been included in the annual program. The projects which have to be executed to fulfill the infrastructure requirements in the medium term have been included in the medium term programmes. Projects which require heavy investments with long gestation periods have been included in the long term programmes.

<b>Table No.13.01 Investment Plan</b>			Rs. in Crores
<b>Programme/Agency</b>	<b>Annual Plan (2003-2004)</b>	<b>Medium Term Plan (2004-2007)</b>	<b>Long Term Plan</b>
<b>Traffic and Transportation</b>			
Urban Rail Projects	165.00	519.24	3528.00
Road/River Bridge	3.00	7.00	-
Traffic Management	11.94	3.00	-
Resurfacing of Major Roads	43.11	-	-
Strengthening of peri urban Roads	4.54	13.62	4.56
ORR	-	250.00	250.00
Widening & Strengthening of city roads	57.80	-	-
New Road formation	21.50	-	350.00
Relaying of City Roads	99.00	297.00	-
Study for Augmenting the capacity of Major Arterial Roads	0.25	3.55	-
Widening & Strengthening	-	1595.58	-
Cement Conc. - Anna Salai	-	101.32	-
Road Over/Under Bridge	-	832.71	-
Bus Terminal	-	6.00	-
Multilevel Parking	-	48.00	-
Urban Road Projects	-	-	1126.00
Urban Transit System	-	-	855.00
Truck Terminal	-	80.00	-
<b>Sub Total</b>	<b>406.14</b>	<b>3757.02</b>	<b>6113.56</b>
<b>Housing</b>			
TNHB	5.00	570.00	-
TNSCB	27.70	330.41	325.00
<b>Sub Total</b>	<b>32.70</b>	<b>900.41</b>	<b>325.00</b>
<b>Water Supply</b>			
CMWSSB	<b>730.00</b>	<b>946.00</b>	<b>649.18</b>
<b>Sewerage</b>			
CMWSSB	295.00	607.00	897.78
CMA (Thiruvottiyur Mpty)	28.00	-	-
<b>Sub Total</b>	<b>323.00</b>	<b>607.00</b>	<b>897.78</b>

<b>Storm Water Drain</b>			
Chennai Corporation	40.00	47.00	-
PWD	44.65	3.65	-
Highways	3.68	-	-
SIDCO	0.68	-	-
CMA	13.77	-	-
DTP	8.94	10.59	-
<b>Sub Total</b>	<b>111.72</b>	<b>61.24</b>	-
<b>Solid Waste Management</b>			
Chennai Corporation	16.00	35.00	-
CMA	11.19	16.25	-
<b>Sub Total</b>	<b>27.19</b>	<b>51.25</b>	-
<b>Electricity</b>			
TNEB	<b>150.00</b>	<b>1910.81</b>	-
<b>Total</b>	<b>1780.75</b>	<b>8233.73</b>	<b>7985.52</b>
<b>Grand Total</b>			<b>18000.00</b>

13.10 The main sources of finance identified are loans from financial institutions, budgetary support/grant from government. Public-private participation is also proposed for the housing, water supply and sewerage projects.

13.11 Based on this overall plan, annual plans are formulated in consultation with the sectoral agencies / departments, Government budgetary allocations made and implemented as Annual Plans since 2003-04. CMDA monitors the progress of implementation and report to the Government. The investment made since 2003 sector-wise under CMDP is given below.

<b>Annual Programme 2003-04, 2004-05, 2005-06 &amp; 2006-07</b>					<b>(Rs. in Crores)</b>
Programme	Investment in 2003-04	Investment in 2004-05	Investment in 2005-06	Investment in 2006-07	
Traffic & Transportation	412.16	237.28	179.48	199.28	
Housing	40.77	65.17	65.27	68.91	
Water Supply	581.60	309.03	99.61	92.67	
Sewerage	83.16	122.88	66.23	49.58	
Storm Water Drain	38.97	40.39	103.10	17.71	
Solid Waste Management	-	3.695	6.06	9.94	
Electricity	164.88	179.21	211.32	188.52	
Others	-	-	3.36	0.44	
<b>Total</b>	<b>1321.54</b>	<b>957.66</b>	<b>795.58</b>	<b>670.23</b>	

## **B. Jawaharlal Nehru Urban Renewal Mission (JN-NURM)**

13.12 The Government of India in 2005 has introduced the scheme called Jawaharlal Nehru Urban Renewal Mission (JN-NURM) to encourage reforms driven, fast tract planned development of identified cities with a focus on efficiency in urban infrastructure / service delivery mechanisms, community participation and accountability of urban local bodies towards citizens.

13.13 The Mission objectives are to ensure the following in the urban sector including the basic services to urban poor:

- a. Integrated development of infrastructure services in cities covered under the Mission.
- b. Establish linkages between asset creations and asset management for long term project sustainability.
- c. Ensure adequate funds to fulfill deficiencies in the urban infrastructural services
- d. Planned development of identified cities including peri urban areas, out growths and urban corridors leading to dispersed urbanisation.
- e. Scale up delivery of civic amenities and provision of utilities with emphasis on universal access to urban poor.
- f. Special focus on urban renewal program for the old city areas to reduce congestion.
- g. Provision of basic services to urban poor including security of tenure at affordable prices, improved housing, water supply and sanitation and ensuring delivery of other already existing universal services of the Government for education, health and social security.

13.14 The Mission strategy includes preparing perspective plan called as City Development Plan (CDP), preparing projects, leveraging of funds and incorporating private sector efficiencies. The duration of the Mission is 7 years beginning from the year 2005-06. The nodal agency for the State of Tamilnadu is TUFIDCO and the concerned department at Government of Tamilnadu is Municipal Administration and Water Supply. Chennai is one of the identified cities for Government of India assistance under JN-NURM. To comply with the prerequisite of preparation of CDP, the City development plan for Chennai as called as 'Development Plan for Chennai Metropolitan Area' was prepared and Government of India's approval obtained.

13.15 Strengths-weakness-opportunities and threats in respect of Chennai are given below:

<b>Strengths</b>	<b>Opportunities</b>
Strong Commercial and Industrial Base	High telecom penetration
Skilled and educated man power	Growth oriented reforms
High standard educational and health institutions	Public Private Participation
Good urban land market and availability of developable lands.	
Uninterrupted and quality power supply	
<b>Weaknesses</b>	<b>Threats</b>
Traffic congestion	Automobile pollution
Inadequate infrastructure	Overcrowding in certain pockets
Water shortage	Decrease in manufacturing industry

### **Institutional Arrangements in Development Planning**

13.16 The rapid urban population growth and consequent pressure on the developments in major urban centres have led the Government of Tamil Nadu to set up specialised agencies to tackle the urban development issues in various sectors such as housing, water supply and sewerage etc. The principal ones are CMWSSB, TNSCB, and TNHB. The Chennai Metropolitan Development Authority was set up in 1973 with the main objective of being in charge of long term planning and co-coordinating the various urban development activities in the Metropolis.

13.17 The agencies involved in the infrastructure planning and development in CMA are presented below. The details of agencies and its responsibilities are presented in the table no.13.02 below.

<b>Sl.No.</b>	<b>Agency</b>	<b>Responsibility</b>	<b>Jurisdiction</b>
Local Government			
1	Chennai Corporation-	Provision of roads, construction of ROBs, RUBs, pedestrian subways etc., streetlights, solid waste collection and management, micro-drainage, parks and play grounds in their area of jurisdiction	Within the local body area
2	Municipalities-	Provision of roads, construction of pedestrian subways etc., streetlights, solid waste collection and management, micro-drainage, parks and play grounds in their area of jurisdiction	
3	Town Panchayats		
4	Village Panchayats		

Parastatal Agency			
5	TNHB	Neighbourhood development including provision of plots and ready built houses, Sites and Services schemes.	Tamil Nadu State but focus is more on CMA
6	MTC	Bus transport	CMA
7	Traffic Police (Greater Chennai)	Traffic management schemes	Greater Chennai
8	TNEB	Electricity generation and supply	Tamil Nadu State
9	PWD	Implementation & maintenance of macro drainage system	Tamil Nadu State
10	CMDA	Urban planning, co -ordination of project implementation	CMA
11	CMWSSB	Water supply & sewerage facilities for CMA	CMA*
12	TNSCB	Provision of housing, infrastructure and livelihood programs in slum areas	Tamil nadu State but focus is more on CMA
13	Highways Department	Major roads within Chennai City, all bus route roads and major district roads, construction of ROBs, RUBs, pedestrian subways etc.	Tamil nadu State

\* Though CMWSSB has jurisdiction over the CMA as per their Act, their area of operation are limited presently to Chennai City Corporation area and a few adjoining areas such as Mogappair, I.T.Corridor etc. However they have proposed to expand their area of operation covering the entire CMA.

13.18 Though the geographical areas of jurisdiction of these agencies overlap, their operational jurisdictions and functions are well defined. For example in the Chennai City Municipal Corporation Area, CMWSSB is solely in charge of water supply and sewerage; in respect of National Highways and roads except for the major roads handed over to State Highways for maintenance, others are maintained by the Chennai Municipal Corporation. In respect macro drains such as rivers and canals the PWD is responsible of maintenance; the micro drains are provided and maintained by the City Corporation of Chennai and other local bodies within CMA.

13.19 Capital investment plan for the various sector proposed under JN-NURM are given below.

### **Water Supply**

13.20 The proposed investments for water supply projects for CMA is of the order of Rs. 6,321.00 Crores and the break up is presented in Table 13.03.

<b>Table No. 13.03 Proposed Water Supply Investments in CMA</b>			<i>Rs.in Crores</i>
<b>Component</b>	<b>Activity</b>	<b>Institution</b>	<b>Total</b>
Planning, Reforms and Institutional Strengthening	Comprehensive Water Sector Development Master Plan	CMWSSB	4.00
	Leak Detection Studies		9.00
	Energy Audit Studies		10.00
	Water Quality Studies and Monitoring		4.50
	Design and Implementation of Communication Strategy		7.00
	Baseline Survey		2.00
	Human Resources Development		7.00
	Establishment of Regulatory Authority		1.00
	GIS Mapping of Water and Sewerage Utility Mapping		9.00
	Modernizing Financial Management and MIS		7.00
	Community Initiatives Support		3.50
	<b>Sub-total</b>	<b>64.00</b>	
Service Delivery	Source Augmentation		3,600.00
	Distribution Network Extension		800.00
	Rehabilitation and Modernisation of Existing Network		1,150.00
	Energy Conservation Measures		70.00
	Metering		210.00
	Piloting 24x7 zone by zone		350.00
	GIS Mapping & Refurbishment		70.00
		<b>Sub-total</b>	<b>6,250.00</b>
<b>Citizens Relations Management</b>	Citizen feedback mechanisms established		7.00
	<b>Sub-total</b>	<b>7.00</b>	
	<b>Grand Total</b>	<b>6,321.00</b>	

## Sewerage

13.21 The proposed investments for sewerage projects for entire CMA is of the order of Rs. 2,299.00 Crores and the break up is presented in Table 13.04.

<b>Table No. 13.04 Proposed Sewerage Investments in CMA</b>			<i>Rs in Crores</i>
<b>Component</b>	<b>Activity</b>	<b>Institution</b>	<b>Total</b>
Design & Implementation of Communication Strategy	Comprehensive Sewerage Master Plan	CMWSSB	4.00
	Energy Audit		7.00
	Sewerage Quality Studies and Monitoring		7.00
	Design & Communication Strategy		7.00
	Human Resources Development		7.00
	Community initiative Support		7.00
	<b>Sub-Total</b>	<b>39.00</b>	



Service Delivery (Sewerage)	Network coverage	CMWSSB	950.00
	Remodeling of old sewers		550.00
	Construction of STPs		550.00
	Recycling Plant & Reuse		175.00
	Energy Conservation Measures		35.00
	<b>Sub-Total</b>		<b>2,260.00</b>
	<b>Grand Total</b>		<b>2,299.00</b>

### Storm Water Drainage

13.22 The proposed investments for storm water drainage, macro drainage for CMA and renovation of lakes is estimated Rs. 1,423.85 Crores and the break up is presented in Table 13.05.

<b>Table No. 13.05 Proposed Storm Water Drainage Investments in CMA</b>	
<b>Item</b>	<b>Rs. In Crores</b>
Macro Drainage	865.00
Micro Drainage	
Chennai Municipal Corporation	252.00
Surrounding Municipalities	72.34
Town Panchayats	38.05
Village Panchayats	146.80
Renovation of Lakes	
Chennai Municipal Corporation	-
Surrounding Municipalities	9.91
Town Panchayats	3.36
Village Panchayats	1.57
Culvers	34.82
<b>Total</b>	<b>1,423.85</b>

### Solid Waste Management

13.23 The proposed investments towards solid waste management sector for CMA is of the order of Rs. 847.81 Crores. The break up is presented in Table 13.06.

<b>Table No. 13.06 Proposed Solid Waste Management Investments in CMA</b>		
<b>Sl. No.</b>	<b>Solid Waste Management</b>	<b>Rs. in Crores</b>
1	Chennai Municipal Corporation	808.70
2	Surrounding Municipalities	10.20
3	Town Panchayats	3.18
4	Village Panchayats	5.66
5	Slaughter Houses	20.07
	<b>Total</b>	<b>847.81</b>

## Traffic and Transportation

13.24 The proposed investments for traffic and transportation for CMA is of the order of Rs. 24,854.08 Crores. The break up is presented in Table 13.07.

<b>Table No.13.07 Proposed Transportation Investments in CMA</b>		
<b>Sl. No.</b>	<b>Traffic &amp; Transportation</b>	<b>Rs. in Crore</b>
1	Urban Transport Components	
2	Widening Strengthening and resurfacing of arterial, sub arterial and collector roads to at least 4 lane width	1,700.00
3	Elevated highways and Flyovers	4,655.00
4	Road/Rail crossings - ROB/RUB	150.00
5	River bridges	45.00
6	Link Roads	1,650.00
7	Concreting of Major roads	278.00
8	Junction improvements with white topping and Landscaping	75.00
9	Pedestrian sub-ways	102.00
10	Bus lay-byes & shelters	58.35
11	Utility duct and storm water drains along major roads	200.00
12	Peripheral road improvements	197.00
13	Construction of mini flyovers	48.00
14	Concreting of City-roads	95.00
15	Multi level car parking	145.00
16	Road/Rail Crossings - ROB/RUB	396.00
17	Nesapakkam Road widening	14.00
18	Road works including bridges/culverts	675.15
19	Road works	480.32
20	Metropolitan public transport (Bus)	1,300.00
21	Traffic management basic infrastructure needs	4,982.04
22	Street Lighting	8.22
23	Rapid Transit System	600.00
24	Metro rail (about 45 km)	7,000.00
<b>Total</b>		<b>24,854.08</b>

## Heritage and Recreation

13.25 The proposed investment towards Heritage and recreation projects is estimated Rs. 103.08 Crores and the break up is presented in Table 13.08.

<b>Table No.13.08 Proposed Heritage and Recreation Investments in CMA</b>		
<b>Sl. No.</b>	<b>Heritage</b>	<b>Rs. Crores</b>
1	Renovation/Development of Ripon buildings	18.00
2	Renovation/Development of V.P. Hall Building	5.00
3	Recreation Developments in City area	60.00
4	Recreation Developments in Municipalities	8.46
5	Recreation Developments in TP	3.24
6	Recreation Developments in Village Panchayats	8.37
<b>Total</b>		<b>103.08</b>

### Urban Basic Services for Poor

13.26 The proposed investments for urban poor population for entire CMA are estimated Rs. 3,887.23 crore for the next seven years and break up is illustrated in Table 13.09.

<b>Table No.13.09 Proposed Investment for Urban Poor in CMA</b>		
<b>Sl. No.</b>	<b>Basic Services for Poor</b>	<b>Rs. in Crore</b>
1	Chennai Municipal Corporation	1,319.96
2	CMA (Except Chennai City)	536.27
3	Housing for LIG/EWS groups	2031.00
	<b>Total</b>	<b>3,887.23</b>

### Parking Lots and Spaces

13.27 The proposed investment for civic amenities in CMA is estimated Rs. 43.85 Crores and the break up is presented in Table 13.10.

<b>Table No.13.10 Proposed Civic Amenities Investments in CMA</b>		
<b>Sl. No.</b>	<b>Parking lots / Spaces</b>	<b>Rs. In Crores</b>
Parking Lots / Spaces		
1	Parking Lots / Spaces for TP	15.38
2	Parking Lots / Spaces for VP	28.47
	<b>Total</b>	<b>43.85</b>

### Satellite Towns / Cities around CMA

13.28 The proposed investments for development of satellite towns/ cities around CMA as a decongestion measure during the next six years estimated is Rs.5000 crores.

13.29 The total estimated cost of the projects for proposed is Rs. 44,779.92 Crores. The summary of investments is given in the table below.

<b>Table No. 13.11: Proposed Summary of investments in CMA</b>					<i>Rs. Crores</i>
<b>Sl. No.</b>	<b>Component</b>	<b>Total Cost</b>	<b>JNNURM</b>		
			<b>GoI</b>	<b>GoTN</b>	<b>IR/IF</b>
1	Water Supply	6,321.00	2,212.35	948.15	3,160.50
2	Sewerage	2,299.00	804.65	344.85	1,149.50
3	Solid Waste Management	847.80	296.73	127.17	423.90
4	Storm Water Drainage	1,423.88	498.36	213.58	711.94
5	Transportation	17,254.08	6,038.93	2,588.11	8,627.04
6	Mass Rapid Transit System	600.00	210.00	90.00	300.00
7	Metro Rail (45 km.)	7000.00	2450.00	1050.00	3500.00
8	Parking Lots and Spaces	43.85	15.35	6.58	21.92
9	Heritage and Recreation	103.08	36.08	15.46	51.54
10	Satellite Town development	5000.00	1750.00	750.00	2500.00
	<b>Total</b>	<b>40892.69</b>	<b>14312.45</b>	<b>6133.9</b>	<b>20446.34</b>
11	Urban Basic Services for Poor	3,887.23	1943.61		1943.62
	<b>Grand Total</b>	<b>44779.92</b>	<b>16256.06</b>		<b>28523.86</b>