

Appraisal of City Development Plan Madurai

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Appraisal of City Corporate Plan: Madurai

The City Corporate Plan (CCP) of Madurai has been prepared by Wilbur Smith Associates Private Limited and is facilitated by Tamil Nadu Urban Development Fund. The CCP has been well designed and well focused on the future needs of the city. The existing situation analysis has been well presented and analysed in the first seven chapters of the CCP. The chapter on Infrastructure Development and Service Provision has been divided into two parts – the first part focuses on sector-wise analysis of rationale, need and demand whereas the second part focuses on the sector-wise project identification for service delivery. The last chapter of the CCP is on Capital Investment Plan and Financial Sustainability.

The CCP appraisal has been divided into three sections – an analysis of the existing situation, vision and strategies, and city investment plan.

1. Analysis of the Existing Situation

The sections on population trends, economic development and socio-economic profile under the chapter of City Demography are well elaborated. The chapter on Urban Governance provides the details on institutional arrangements and policy context, organization structure at municipal corporation level and the reforms initiated by the Madurai Municipal Corporation (MMC). The sections on land use management, master plan implementation and implications have also been well presented. The chapter on Infrastructure Services deals with sector-wise situation analysis and shortcomings. The chapter on Urban Basic Services for Poor has highlighted the level of services in slums and explained the policies, targets and programs related to slums. The chapter on Finances of Madurai corporation gives the sufficient idea about the financial health of the MMC and is analysed in substantial details.

1.1 City Demography

The population of MMC has registered an annual growth of 1.31 percent during 1981 to 1991 and further has declined by 0.13 percent during 1991 to 2001. Though the CCP mentions that the Madurai district was bifurcated into Madurai and Dindigul in 1991 and it was again bifurcated into Madurai and Theni districts in 2001, the reasons for negative growth in the last decade are not clearly explained. The population projections for 2011 and onwards have been made by using semi log-line of best-fit method. On calculating the annual growth for the duration of 2001 to 2011 it comes to 3.23 percent, which does not fit with the past two decade trends. These population projections seem to be on higher side and since the projected demand in the core sectors depends crucially on the population in the coming years therefore population projections should have been estimated more carefully. Figure 2.1, Figure 2.2 and Figure 2.3 related to municipal areas, regional linkages of Madurai city and population

density pattern in Madurai respectively have been referred in the CCP but could not be found on the mentioned pages.

Population trends and projections*-MMC

Year	Population lakh	AAGR (%)
1961	4.25	
1971	5.49	2.60
1981	8.21	4.10
1991	9.41	1.31
2001	9.29	-0.13
2011*	12.82	3.23

Source: Table 2.1 and Table 2.9 of the CCP of Madurai

1.2 Institutional Arrangements:

The CCP highlights the role of multiple agencies working together for the provision of basic services and infrastructure. For example the Tamil Nadu Water Supply and Drainage Board (TWAD) is responsible for creation of water and sewerage infrastructure in the state. The MMC is responsible for the provision and delivery of these services within the municipal limits. The Town and Country Planning Department (TCPD) of the state government prepare the master plans and comprehensive development plans while the mandate of implementing these plans lies with MMC. Though the CCP has presented the role of other agencies well, it has not thrown any light on the problems related to the overlapping functional jurisdiction etc. The extent to which these institutional arrangements are responsible for the deficiencies in the service sectors should have been highlighted in this section.

One of the items of the reform agenda is to minimize the ambiguities and overlapping functions between urban local bodies (ULBs) and other agencies by transferring the functions under the Twelfth Schedule of 74th Constitution Amendment to ULBs. The CCP has not made any reference to this aspect at all. However, the reform agenda at the level of State Government has been provided in detail and implementation of each of the 18 functions has been discussed in depth. “This Government (GOTN), adopting a cautious approach towards the appointment of the staff in urban local bodies, has allowed the same wherever they are really necessary.” (See page 174)

1.3 Physical Infrastructure: Water Supply, Drainage and Solid Waste Management etc.

In Madurai, the frequency of water supply is once in three days and the population covered is only 36 percent. The per capita availability of water ranges between 60 lpcd to 75 lpcd. The situation becomes worse in summer season with reduced per capita supply. These deficiencies in the water supply sector are mainly because of inadequate treatment capacity, inadequate network coverage, inadequate summer storage, need for source augmentation and need for asset management action plan etc. While

discussing the deficiencies and shortcomings in the water sector, details of leakages, theft and cost recovery should have also been presented.

The underground drainage in the city covers six-lakh population. Out of 72 wards of MMC, 13 wards have no under ground drainage system and another 16 wards are partially covered. The sewage inflow is 61mld, which is partially pumped to the treatment plant. Only 26mld of sewage is being treated because of severe capacity constraints. The key issues related to this sector are inadequate population coverage and treatment capacity constraints. The original sewerage system in the core of the city areas had been laid down during 1925 to 1948 period and is in a dilapidated condition. The CCP has referred to a detailed study, which has suggested the relaying and refurbishment of the sewerage network in the core city areas.

In case of solid waste management, 450MT of garbage is generated everyday and 91.5 percent is the collection efficiency of MMC. The key issues highlighted by the CCP are the absence of effective primary collection mechanism, inadequacy of waste dumping sites and lack of scientific waste disposal.

The network of storm water drains comes to only 28 percent of the road network of the city. Besides inadequate coverage, the other issues of concern are frequent floods due to lack of proper drainage system, silting and uncontrolled solid waste dumping causing blockage, stagnation of water and waste water runoff. Consequently, drains choke and overflow in the neighbouring areas.

1.4 Social Infrastructure: Primary Health and Education

The public health department of MMC maintains 16 maternity homes, 17 urban health posts and 19 dispensaries. Various health programmes have been taken care of by the MMC such as malaria eradication and mother and child care programmes etc. Similarly, the MMC has also been involved in maintaining 74 schools comprising of primary, middle, high and higher secondary schools with a capacity of 26,562 students. However, the CCP has not highlighted the achievements and deficiencies as well as the problem areas related to these sectors.

1.5 Urban Basic Services for Poor:

The Tamil Nadu Slum Clearance Board (TNSCB) is the authority, which is responsible for notifying and providing clearances to the slums whereas the MMC is responsible for the provision of basic services to the urban poor residing in slums within municipal limits. Madurai has 208 slums within municipal limits of the MMC with about 3 lakh people living there (i.e. 22.35 percent of total population). The key issues related to urban poor are poor water supply and sanitation facilities, high density and poor infrastructure.

1.6 Finances of the Madurai Municipal Corporation:

Traditionally, the MMC followed a cash based single entry system for maintaining its accounts. The double entry accrual-based system of accounting has been introduced in the MMC with effect from 1.4.2000. Since the MMC has implemented the new accounting system successfully, the corporation has already achieved one of the most important reform agenda in ULB list.

Two separate funds are maintained at the MMC level i.e., Revenue Fund and Water & Drainage Fund. The CCP has provided necessary and sufficient details on revenue and capital accounts of these funds for the past four years i.e. from 2000-01 to 2003-04. The Revenue fund of the MMC shows that there is a high dependency on state transfers, which includes assigned revenues and grants. Own resources contribute 53 percent whereas state transfers contribute 47 percent of the revenue for 2000-01 and 2003-04. There are some fluctuations in state transfers for 2001-02 and 2002-03. Inconsistency in state transfers is one of the major concerns of the MMC. On the expenditure side, establishment and salaries head accounts for 69 percent of the revenue expenditure whereas operation and maintenance work accounts for only 14 percent while debt servicing accounts for 17 percent for 2003-04. Similarly, details of water and drainage account have also been provided. The water and drainage fund has shown a consistent surplus on revenue account for the past four years indicating self-reliance of the MMC to meet more than one hundred percent of the cost recovery for the water and drainage sector.

However this chapter needs certain clarifications. For the year 2003-04, revenue and water accounts have shown a surplus of Rs.317.81 lakh and Rs.111.64 lakh respectively whereas the capital accounts of these two heads have shown a capital income of Rs.1602.67 lakh and Rs.438.81 lakh respectively from its own contributions. These seem to be contradictory and needs clarifications. Huge deficits have incurred during 2001-02. To explain these deficits, necessary details are required. Opening and closing balance for the individual years could have given a better insight into these deficit problems. Secondly, the details of revenue expenditure and water & drainage sector have not provided any explanation for transfers towards capital account. Thirdly the overall financial performance indicators provided on the page 85 have raised some doubts and needs clarification e.g., revenue income has grown by 4.59 percent annually and revenue expenditure has risen by 9.77 percent annually whereas per capita revenue income has grown by merely 0.94 percent annually and revenue expenditure has risen by 3 percent annually.

In addition to it, this chapter should provide the rate structure of property tax, water tax and drainage tax etc. The tariff structure of water and drainage charges and the revision in the tariffs should also be provided. Demand and collection ratios for individual taxes and charges should be provided. Self-

reliance of the MMC to meet all its expenses on water and drainage accounts also needs more details and clarifications.

2. Vision and Strategies:

Infrastructure assessment of the MMC has indicated inadequate service levels, which therefore justifies a strong basis for undertaking new projects. To meet the service norms based on state norms (Second State Finance Commission norms), CPHEEO norms or other applicable norms, the MMC has realized the need to increase the level of coverage of all services. Considering the current deficits in the municipal services and the future requirements of municipal services, strategies and action plan have been suggested in the CCP.

2.1 Stakeholder Consultations:

The future vision of the city has been developed through a participatory approach and stakeholder consultations. Public consultations have been conducted at the town level with the Municipal Councillors, officials, line agencies and identified stakeholders. “The process of formulating the CCP was iterative and would enable the MMC to review its outcomes through a series of indicators so as to make the process dynamic and in tune with the felt needs and requirements.” (See page 3)

2.2 Sector-wise Funding:

The CCP has proposed various projects totalling Rs.2,361 crores to be financed through JNNURM. However the proposed projects on behalf of the MMC are of Rs.898 crores only and Rs.1, 463 crores have been sought on behalf of state level agencies. Further, the sectors related to core services (namely water supply, sanitation, solid waste management, sewerage, storm water drainage and slum up-gradation) require Rs.548 crores only. The city of Madurai falls in the category B of the list of JNNURM cities therefore thirty percent of the funding has to be arranged by the MMC whereas twenty and fifty percent of the funding has to be sought from state government and central government respectively. (See Table 1 and Table 2 below—core services in bold). Therefore prioritisation of the projects or the prioritisation of the service sectors should have been suggested by the CCP.

Table 1: Sector-wise Funding Requirements of Madurai M. Corporation (2006 to 2013)

Madurai M.Corp. Area only	Involved Agency	Required Amount in Rs. Crore	% age from Total
Traffic and Transportation	State level agency	981.01	41.55
Housing Component for Slums	State level agency	482.06	20.42
Roads, Traffic and Transportation	ULB	305.37	12.93
Water Supply	ULB	181.12	7.67
Storm Water Drainage & Desilting of Drains	ULB	156.26	6.62
Sewerage	ULB	131.22	5.56
Slum Up-gradation	ULB	42.76	1.81
Solid Waste Management	ULB	36.32	1.54
Others	ULB	35.01	1.48
Street Lighting	ULB	9.82	0.42
Total	Both State & ULB	2360.95	100.00

Sector-wise goals and vision have been presented for 2011, 2016 and 2026. Table 2 links the present situation i.e. 2004-05 with goals and vision for 2011 and 2016 and further highlights the sector-wise general strategies. However, it has been observed that there are many information gaps in the analysis of present situation with respect to the service sectors.

3. City Investment Plan:

The CCP has presented two sections on financial planning for the next seven years i.e. for the period of 2006-07 to 2012-13. The first section has presented the sector-wise investment phasing for the above-mentioned period. The investment phasing for each sector has been presented with reference to its detailed project components. The second section has provided the financial sustainability as well as the financial operating plan together with project cash flows. Sector-wise funding requirements have already been explained in the above section and in Table 1.

The financial operating plan (FOP) for the period of 2006-07 to 2012-13 is based on a whole range of assumptions related to income and expenditure of the MMC. The FOP prepared for the MMC has evaluated two scenarios, first scenario is based on “Base Case Scenario” and second scenario is based on “Full Project Investment Scenario”. Some subsections and some pages are missing from the CCP, which makes it difficult to understand the project cash flows mechanisms. FOP results could also not be understood from these sections. Without a complete FOP, it is quite difficult to come to any conclusion. Therefore it is suggested that the CCP should present the complete financial operating plan.

Table 2: Present Situation, Goals & Vision and General Strategies- Selected Sectors

CITY	Present situation	Goals and Vision 2011	Goals and Vision 2016	Sector Specific General Strategies
Water supply	Coverage = 36% Slum coverage = NA Supply =once in 3 days Supply (24x7) = nil Quantity = 78 lpcd % NRW = NA Cost Recovery = NA	=100% =70% (-) =10% =110 lpcd =20% =75%	=100% =85% (-) =50% =110 lpcd =15% =100%	Asset management plan, leak detection plan, mapping and GIS, piloting 24x7 water supply, source augmentation and network coverage.
Sewerage	Coverage = 59% Slum coverage = NA Treat. & Disposal = 43% Recycle & reuse = NA Cost Recovery = NA	=90% =60% =90% =40% =50%	=100% =100% =100% =60% =85%	Asset management plan, rehabilitation of old network system, under ground drainage for un-served area, mapping and GIS, network coverage for slums and recycle & reuse
Storm water drainage and water bodies	Coverage= 28% (road length) Rehabilitation of existing nallahs & water bodies Usage of water bodies as water recharge structure	= 100% = 100% = 50%	= 130% = 100% = 70%	Primary drain rehabilitation, construction of tertiary drains, rejuvenation and rehabilitation of water bodies and operation & maintenance schedule
Solid waste management	Door to door = NA Source segregation = NA Mechanised handling = NA Scientific disposal = NA Waste to energy = NA Cost recovery = NA	=80% =80% =80% =40% =50%	=100% =100% =100% =70% =75%	Door to door collection, introduction of twin bin system at storage, source segregation, mechanization of transportation, fleet management system, development of scientific landfill site and IEC activities
Basic services for Poor (Slums)	Network coverage = NA UGD coverage = NA Adequately lit slums = NA Pucca houses = NA Education for all = NA	=90% =90% =100% =80% =100%	=100% =100% =100% =100% =100%	Better access roads, storm water drainage, sewer network, sanitation facilities and provision of housing

Note: NA is not available

4. Expected Improvements

1. The document submitted by the Madurai Municipal Corporation is titled as “City Corporate Plan”. Since JNNURM requires cities to submit City Development Plans therefore the MMC should submit the City Development Plan instead of the City Corporate Plan.

MMC: In Tamil Nadu State, the City Corporate Plan is prepared for many ULBs in which all the existing infrastructure details and proposed development works for the future needs are taken care in the City Corporate Plan, which is similar to City Development Plan as required under JNNURM guidelines. Initially CCP for Madurai was prepared in 2001 and now it has been updated as per the requirement under JNNURM as City Development Plan.

NIUA: This issue has been suitably addressed in the revised CDP.

2. The CCP is designed for the MMC area only while the periphery outgrowths and the periphery local bodies are completely left out. Why this particular strategy to focus only on the core of the city has been adopted, needs to be clarified. The composition of population growths should be provided. The population projections seem to be on higher side with reference to the past

two decadal population growths. Figure 2.1, 2.2 and 2.3, which are missing in the CCP, should be incorporated to provide a clearer understanding of the issues.

MMC: The City Corporate Plan is prepared for Madurai Corporation area only. For LPA area a detailed study is being done and modified CDP will include all the Development, Upgradation and Renewal Works comprehensively in the LPA area. As per JNNURM guidelines City Development Plan can be modified if required even after the submission of CDP. Initially concentration of development works would be in Madurai Corporation and in subsequent years in peripheral areas. Modified CDP including peripheral outgrowth would be finalised within four months. Population projection for Madurai City is in coherence with the population adopted as a part of detailed project report for water supply improvement works for Madurai and detailed project report for underground sewerage scheme which is under implementation. For population projections for Madurai LPA, please refer Annexure 2.1 to 2.12.

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

3. Multiple agencies have been working together for the provision of basic services and infrastructure in the MMC area. The extent to which these institutional arrangements are responsible for the deficiencies in the service sectors should be highlighted.

MMC: Multiple Agencies such as State Highways, National Highways, P.W.D., Slum Clearance Board, Tamil Nadu Housing Board are working for the provision of basic services and infrastructure in the Madurai Corporation area, with their own budget allotments from the State Government. If there are deficiencies in their service sector the respective Agencies are responsible. As far as Basic Services such as WS & Drainage concerned TWAD or CMWSS Board are executing agencies and if there is any deficiencies in these services, responsibility lies with MMC only. As envisaged in the 74th Amendment Act, the Elected Council of the local body is vested with the power of planning and approving the infrastructure facilities. The operation and maintenance is the responsibility of the local body. The deficiency in infrastructure facilities is due to the need of capital investment and not attributed to institutional arrangements. There is no overlapping on the part of the local bodies and other institutions. The elected council of the local body is also responsible and administrative authority to implement the projects required for that town. Here also, the capital investment requirement is the main problem for the deficiency and not overlapping is responsible for the deficiency in infrastructure facilities.

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

4. For the water sector, information on distribution and transmission losses has not been provided. Details of water leakages and water theft etc. and details of cost recovery in the water sector should be provided in the CCP. The vision of increasing water supply coverage from 36 percent in 2005 to one hundred percent by 2011, storm water drainage coverage from 28 percent in 2005 to one hundred percent by 2011 seems to be overly optimistic. A more realistic approach could be considered (See Table 2 as provided above on page 7). An explanation of how this would be achieved should be given.

MMC: The population coverage of water supply is 100 % in Madurai Corporation area and the coverage through the distribution network is 84 percent of the total road network. Hence, it is wrongly noted as 36 % (refer Annexure 4.1 for water supply indicators). A leak detection study conducted by WAPCOS/NEERI in 1998 is undertaken in West Zone by TWAD Board, which

reveals a 30 % losses in distribution network and transmission main and remedial measures are being taken. As already 84 % of water supply coverage is in existence, 100 % coverage will be attained in the 2-1/2 years. Out of 615 km of roads in Madurai Corporation limits, 60 km roads are less than of 3 m width, which are running mainly across the slums. The pre-dominant surface type is stone-paved, concrete in built with storm water drains. Though the existing storm water drain coverage is 28 % of the road network, every year 10 % of the roads will be provided with storm water drainage and 100 % will be attained within 7 years (Please refer Annexure 8.2C for the investment).

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

5. The link of goals and vision with the existing situation could not be developed because the CCP lacks the required information. The CCP should incorporate the missing information such as NA-not available (See Table 2 as provided above on page 7).

MMC: Please refer Annexure 5.1.

NIUA: These issues have been suitably addressed in the revised CDP.

6. The section on social infrastructure is presented in a generalized manner and has not explained the achievements and deficiencies related to the primary health and education sectors. More details on these aspects could be incorporated in the CCP.

MMC: There are nearly 226 hospitals (major and minor), of which are 26 Major Hospitals, 45 Maternity and Family Planning Centers, about 37 Nursing Homes and other small Clinics. The Corporation maintains 16 Maternity homes, 17 Urban health posts and 19 Dispensaries within the ULB Limits. Apart from these, there are Allopathy, Siddha, Ayurvedic Dispensaries maintained by the Corporation. There is one school health team that serve school going children. There are separate wings in the Health Department of the Corporation, responsible for Malaria and Mosquito Control and School Health Program. Some of the major issues relating to health care noticed in the City are inadequate bed strength, ill-equipped and inadequate operation theatre in the government hospitals, ill-equipped corporation dispensaries and health posts, and unsafe hospital waste disposal practice. The ULB is implementing several health improvement schemes, viz., Malaria Eradication Program, Mother and Child Care Program, Family Welfare Program, Pulse Polio Program, School Health Program and Vizhivoli Thittam.

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

7. Financial prognosis of the city should be presented with more details. Please see section 1.6 and provide necessary details and clarifications on the same.

MMC: In Para 1.6 of the comments under the head of finance of MMC, it is indicated certain clarification are needed regarding Revenue & Water Account. As per the Double Entry accounting system corporation contribution to capital works has been arrived by debit the Revenue Account as Revenue Expenditure and the same amount has been credited in the Capital Account and taken as Capital Income. During the year 2003 – 04 Revenue and Water Supply Account Surplus amount of Rs. 317.81 lakhs and Rs. 111.64 lakhs have been arrived after debiting of Corporation Contribution of Capital works of Rs. 1602.67 lakhs and Rs. 438.81 lakhs respectively. There was a huge deficit during the year 2001 – 02 has been arrived

due to Heavy Short fall in the Government Grants. Further, the cash flow charts are enclosed for perusal. Details are presented in Appendix 7.1 enclosed with this reply.

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

8. Prioritisation of the projects of various sectors needs to be highlighted in the CCP.

MMC:Based on the consultation workshops, sectors were prioritized in the following order: Water Supply, Road & Traffic Management and Storm Water Drainage, Solid Waste Management, Slum Upgradation, Street Lighting and Sewerage. Water Supply – Out of the gap of 159 MLD, the detailed DPR is prepared for 47 MLD of source augmentation from Vaigai River. Based on the long-term proposal of 112 MLD, the pre-feasibility report was already prepared by TWAD Board for source augmentation from Periyar Dam. For investment size, please refer Annexure 8.1a and 8.1b. The investment size for Road & Traffic Management and Storm Water Drainage is given in Annexure 8.2a 8.2b, 8.2c and 8.2d. The investment size for Solid Waste Management is given in Annexure 8.3a and 8.3b. The investment size for improvements in slum infrastructure is given in Annexure 8.4. The investment size for improvements in streetlighting is given in Annexure 8.5. Underground Drainage System – The sewerage scheme already taken up for Rs. 165 crores under NRCD and it is under implementation. This scheme will be sufficient to cater the long-term proposal also. For investment size, please refer Annexure 8.6.

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

9. The section on the project cash flows and FOP results could not be understood from the CCP. The CCP should present the complete financial operating plan.

MMC:Please refer to Annexure 9.

NIUA: Detailed analysis on this issue has been provided in the revised CDP.

NIUA: The CDP is now in accordance with the guidelines of the JNNURM Toolkit Number 2.