Tamil Nadu Urban Infrastructure Financial Services Limited

City Corporate Plan cum Business Plan for Hosur Municipality

Final Report

December 2008

ICRA Management Consulting Services Limited

Contents

List of exhibits

List of abbreviations

TWAD	Tamil Nadu Water Supply and Drainage Board
CIP	Capital Investment Plan
FOP	Financial and Operating Plan
GLR	Ground Level Reservoir
IMaCS	ICRA Management Consulting Services Limited
IT / BPO	Information Technology / Business Process Outsourcing
Hos-M	Hosur Municipality
LPCD	Litres per Capita per Day
MLD	Million Litres per Day
OHT	Over Head Tank
PC	Public Conveniences
SME	Small and Medium Enterprises
SMP	Second Master Plan
SWM	Solid Waste Management
SPV	Special Purpose Vehicle
TNHB	Tamil Nadu Housing Board
TNUIFSL	Tamil Nadu Urban Infrastructure Financial Services Limited
UGD	Under Ground Drainage

Executive Summary

The Tamil Nadu Urban Infrastructure Financial Services (TNUIFSL) mandated ICRA Management Consulting Services (IMaCS) for preparation of City Corporate Plan cum Business Plan (CCP-BP) of Hosur Municipality (Hos-M). This exercise intends to enable Hos-M to develop a holistic, structured and consultative approach to fine-tune and define its development priorities going forward.

The objectives of the exercise are three-fold: a) to assess existing demand-supply gaps in service delivery and derive a comprehensive infrastructure improvement plan (including a Capital Investment Plan) required, b) to identify revenue enhancement and financial improvement measures and c) to develop a Financial and Operating Plan to implement a sustainable infrastructure improvement plan.

City profile and growth potential

Hosur is a selection grade town which is located in Krishnagiri District. Hosur municipality covers an area of **11.71 sq.km** and had a population of **84394** in 2001 with average household size as 4.25 and density of 72 persons per hectare. Municipality has been constituted in 1965 and has been upgraded to first grade municipality in 1984. Hosur is 48 km from Krishnagiri and 32 km from Bangalore. This is a major industrial town in north Tamil Nadu with growing nature.

A brief **SWOT** analysis of the town is presented below:

Strengths	**Weakness**
• Industrial region with a number of large, medium and small industrial units • Proximity to Bangalore city • Horticulture potential in the region	• Town is congested and faces structural limitations for growth • Encroachments on arterial roads and traffic problems • Water availability and quality.
Opportunities	**Threats**
• Potential for further growth in industrial development with expansion of existing units and proposed SEZ plans • Potential for IT-ITES given proximity to Bangalore and proposed IT SEZ / IT park development plans of ELCOT • Emerging as an important commercial and trade hub with improving road connectivity and new bus stand.	• Outward migration of skilled workforce • Municipal areas not getting the benefit of growth around the city limits in terms of finances and meeting investment needs.

The key economic development themes for Hosur town are articulated below:

1. **Build on the industrial base in and around Hosur and proximity to Bangalore to generate further employment opportunities and economic development**

   Hosur is an industrial town and a number of larger and medium scale industries are based in Hosur. Though the industrial areas are outside the city's limits, the contribution of these industrial growth in terms of residential demand and commercial activity is significant. It is in this regard the proposed plans to create a new Special Economic Zone in Hosur is particularly relevant and critical for continued growth in the region. Further, press reports and anecdotal evidence indicate that a significant number of IT professionals working in Bangalore live and travel out of Bangalore. There is thus significant scope for seeding and creating an IT cluster in and around Hosur.

2. **Build on the strengths in horticulture and processing by incentivizing investments in terminal markets, cold storage and export processing facilities**

   Tan Flora Park has emerged as the largest exporter of roses in the country. The success of this unit indicates the potential for horticulture in Hosur. Provision of additional infrastructure for setting up such units including establishment of a cold supply chain and phytosanitation facilities could contribute significantly to economic development in the region.

3. **Review master plan and explore scope for extending town limits**

   While there are significant developments in areas in the vicinity of Hosur, the town itself has remained fairly congested and today faces structural limitations for growth. We understand from discussions with Hosur municipality that the New Hosur Town Development Authority in charge of development planning for the region. During consultations with public stakeholders and council, there has been a strong demand for extension of the town's limits to facilitate orderly development. The land-use pattern in Hosur town and adjoining areas needs to be reviewed and updated in conjunction with the land-use of adjoining areas. This exercise is critical to enable an integrated approach to planning for the urban agglomeration growing in and around Hosur and to facilitate an orderly growth in the region.

Municipal Services - Status assessment, gaps and actions being taken

Exhibit 1 presents a summary of service levels and status with respect to select indicators in Water Supply, Sanitation, Transportation, Street lights and Solid Waste Management.

Exhibit 1 Summary of prevailing service levels – key indicators, issues and gaps

Sl. No	Name of the Indicator	Value	Issues and Gaps
Water Supply: Hogenakkal water supply scheme expected to address water supply needs of the town.			
1	Daily Per Capita Supply (LPCD)-2007	58	• Current supply on a per capita basis is below municipal norms • Need for significant augmentation of water supply at source, storage and distribution.
2	Storage Capacity / Daily Supply (%)	172%	
3	Distribution Network / Road Length (%)- (only municipal roads)	84%	
4	Water connections / Assessed properties (%)	34%	
Sanitation: The tender for the proposed UGD system covering all wards had been called.			
6	Presence of UGD network (Yes / No)	No	• No UGD system • Storm water drainage coverage needs to be increased • Public convenience network needs augmentation in view of the present inadequate coverage.
7	UG connections / assessed properties (%)	0	
8	Household per Public convenience (nos.)	83	
9	Storm Drain Length / road network (%)	73.3%	
Roads and Street Lights:			
10	BT roads / Total (%)	883%	• Municipal roads would require comprehensive upgradation following water supply and UGD implementation.
11	Road length per Street Light (m)	21 m	
Solid Waste Management:			
11	Waste generation per capita (gms)	540	• Composing, Source segregation and Door-to-door collection needs implementation in a phased manner. • Awareness among citizens for less usage of plastics. • Scope for greater private participation covering end-to-end given the size and scope of the SWM service requirement.
12	Collection efficiency (% of waste generated)	96%	
14	Compost yard area (Acres per 10,000 population)	72%	
15	Average vehicle trips	4	
16	Source Segregation and Composting (Yes/No)	Partial	

Analysis of financial performance

Exhibit 2 provides a summary of the income and expenditure of Hosur Municipality.

Exhibit 2

Income and Expenditure summary

Rs.in Lakhs

INCOME	2002-03	2003-04	2004-05	2005-06	CAGR %
OWN INCOME	**486**	**518**	**574**	**565**	5%
Property tax	276	294	330	328	6%
Profession tax	17	21	26	25	13%
Water & Sewerage Charges	58	50	51	53	-3%

INCOME	2002-03	2003-04	2004-05	2005-06	CAGR %
Other Service Charges & Fees	37	38	37	81	30%
Other Income	99	115	131	79	-7%
ASSIGNED REVENUE	37	153	110	124	50%
DEVOLUTION FUND	141	159	133	290	27%
PRIOR PERIOD INCOME	147	18	72	0	-100%
TOTAL	**811**	**847**	**889**	**979**	**6%**
EXPENDITURE	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**CAGR %**
Salaries	152	136	171	164	3%
Operating Expenses	171	227	200	246	13%
Programme Expenses	0	1	6	0	-100%
Administrative Expenses	125	91	55	67	-19%
Finance Expenses	73	35	40	1	-75%
Depreciation	112	96	96	0	-100%
Prior Period Expenses	4	0	4	0	-100%
TOTAL	**526**	**489**	**476**	**479**	**-3%**
SURPLUS - (Excl.Depr)	**286**	**358**	**413**	**500**	**21%**
Operational Ratio (Total Exp/Total Income) (All figures in Percentage)					
Incl Depreciation	**79%**	**68%**	**64%**	**49%**	**56%**
Excl. Depreciation	**65%**	**57%**	**54%**	**49%**	**65%**
Debt servicing (Rs in lakhs)					
Loan repayments - Interest	**39.63**	**6.59**	**45.16**	**43.02**	**134.4**
Loan repayments - Principal	**19.05**	**32.38**	**21.64**	**16.99**	**90.06**
Debt servicing Vs Income	**7%**	**5%**	**8%**	**6%**	**6%**

Source: Hos-M

Exhibit 2 provides a summary of the income and expenditure of Hosur Municipality. This summary has been prepared based on information provided by Hosur Municipality covering audited accounts for FY 2003 to 2005 and unaudited accounts for FY 06. Income has grown faster (CAGR of 6%) than expenditure (CAGR of 3%).

Capital Investment Plan, priority projects and technical assistance requirements

Exhibit 3 provides a summary of the CIP for Hos-M. The CIP has been prepared based on

- Normative gaps in infrastructure services given existing status and norms for service delivery.
- Status and progress on projects identified as part of the Vision Plan (2004-09)
- Consultations with stakeholders and feedback on our presentation to the Council.
- Discussion with Hos-M officials and review with TNUIFSL and CMA

Exhibit 3 Capital Investment Plan summary

Rs.in lakhs

Segment	2008	2009	2010	2011	2012	2008-12
Water Supply	-	2,780	2,840	2,640	2,580	10,842
Sanitation	25	2,263	2,570	2,570	358	7,785
Solid Waste Management	-	71	304	53	-	428
Transportation and street lights	397	345	25	515	515	1,795
Others	70	25	100	110	110	415
Urban Services for the poor	-	284	284	284	284	1,136
TOTAL	**492**	**5,768**	**6,123**	**6,171**	**3,847**	**22,400**

List of projects

List of projects identified for implementation by Hos-M are listed in Exhibit 4 below.

Exhibit 4 Priority projects: FY 2008-12

Sl. No	Sector	Project	Cost *Rs. Lakh*	Status
1	**Water Supply**	Hogenakkal water supply project-Krishnagiri component	10522	Proposed. DPR being prepared by TWAD
		Storage capacity 10 lakh litres - 4 nos.	200	Additional Outlay Phasing
		Distribution network	120	Additional Outlay Phasing
	Total		**10842**	
2	**Sanitation**	Proposed UGD Scheme	6635	Revised DPR prepared by TWAD board
		Storm water drains	1100	Hos-M in the process of finalising cost
		Public conveniences	50	Proposed by Hos-M
	Total		**7785**	
3	**Transportation**	New Bus stand	689	Under Implementation and work is going on By TNUDF
		Roads upgradation and restoration	1034	Proposed
		Street Lights	72	
	Total		**1795**	
4	**SWM**	Land acquisition for disposal yard	180	Proposed
		Development of Compost Yard	106	Proposed
		Secondary collection	63	Additional Outlay Phasing
		Development cost - Landfill site	79	Additional Outlay Phasing
	Total		**428**	
5	**Others**	Healthcare	25	Additional Outlay Phasing
		Slaugher House	25	Under implementation
		Gasifier Crematorium	45	Under implementation
		Market	300	Additional Outlay Phasing
		Parks	20	Additional Outlay Phasing
	Total		**415**	
6	**UIDSSMT**	Additional Outlay required for service level goals	**1136**	Additional Outlay Phasing
	Total		**22400**	

Technical assistance requirements

A list of project level / sector specific technical assistance requirements needed from CMA/TNUISFL is given below:

1. Roadmap for 135 LPCD water and 24x7 supply
2. Digitization of layout records and town planning information
3. Comprehensive GIS for the town with updated information on all urban assets including roads, water supply, sanitation etc.
4. DPR for solid waste management with focus on scientific disposal and mechanised handling of waste with private sector participation
5. Identification of land for municipal waste disposal

Projects by other departments / agencies

Projects to be taken up for implementation by other Government departments include the following:

1. **GoTN –** Review of master plan and land-use and roadmap for extension of city limits. The authorities may also evaluate the need and scope of a master ring road around Hosur town / adjoining areas to facilitate future developments in an orderly manner
2. **Department of Highways –** Evaluate the scope for providing truck terminals at the entry and exit of Hosur town
3. **Commercial taxes / RTO –** Streamline, integrate and computerise check post documentation and processing to minimise pile up of trucks on the National Highway connecting the town.
4. **Tamil Nadu Pollution Control Board (TNPCB) –** Develop and implement necessary pollution control measures to prevent water, land and air pollution that may otherwise arise otherwise due to the expected growth of industrialisation of the region.

Reform Agenda

Hos-M's ability to improve on its financial performance hinges primarily on its ability to sustain and improve on the revenue growth noticeable in recent years.

State level - 10 point agenda

1. Implement recommendations of the Third State Finance Commission, particularly those relating to the revenue buoyancy including property tax reform and devolution income from GoTN.
2. Ensure stability of tenure of key officials. Except for extraordinary circumstances, there should be a minimum tenure of at least 2 years for all the key positions including Commissioner, Municipal Engineer, Manager, Town Planning Inspector, Sanitary and public health head and Accountant. Further, guidelines need to be clarified and enforced for formal charge handover to ensure continuity, when there is a transfer of officials.
3. Conduct a zero-base assessment of skill gaps and manpower needs of ULBs to ascertain the appropriate manpower plan in terms of skill sets and experience/seniority. This is particularly relevant given the recent developments, specifically in urban planning and GIS, municipal

accounting and systems, e-governance and modern practices in infrastructure service delivery including potential for Public-Private Partnerships.

4. Address critical operational areas through focused training and capacity building interventions, particularly in the areas of a) Engineering and project development, b) Accounting and Finance and c) Use of CAD/GIS applications in Town Planning and Engineering functions.
5. CMA, GoTN should continue with its ongoing technical assistance to ULBs to improve their accounting systems and computerisation. Setting up of the Debt Monitoring Cell to reconcile and disseminate information on debt status of the ULBs is also a positive step in this direction.
6. CMA, GoTN should insist and make ULBs complete accounts closing and audit within 3 months of completion of financial year. TNUDF could consider a grading system to categorise ULBs on the basis of quality of accounting and reporting practices.
7. Develop / enforce technical standards with specific applicability to municipal projects construction and execution particularly in the areas of a) integrated road asset creation and management, b) Flood management and guidelines for storm water drain construction and c) Building on ongoing initiatives in Solid Waste Management with greater focus on scientific waste processing and disposal mechanisms.
8. CMA, GoTN along with TNUIFSL should develop a framework for PPP covering specific policies and guidelines and model concessions for PPP in urban services including Water supply, Sanitation, Solid waste management, Street light maintenance and remunerative projects.
9. ULBs should be required to establish the practices of an independent systems audit to be conducted annually. This would enable ULBs to build in robust processes for disaster recovery and security of the IT architecture of the ULB.
10. Facilitate creation of a formal institutional mechanism to manage functional overlaps among nodal agencies/state level agencies and the ULB at the city level.

ULB level

Hos-M could potentially double its own income to **Rs.2086 lakhs** by FY ending 2012 through focused interventions in the following areas. Specific actions for revenue enhancement and improvement in collection efficiency are outlined in the report.

1. **Property tax**: – through revision in ARV, widening assessee base and closer scrutiny.
2. **Professional tax** – sustaining growth in assessments through widening tax base among traders and self-employed professionals
3. **User charges** – through increased penetration of water connections and new sewerage connections could potentially triple user charges income from the current levels.
4. **PPP / remunerative projects** - Hos-M also needs to explore land development as a revenue enhancement mechanism and should focus on attracting private sector participation through appropriate BOT/ SPV structures for implementing remunerative projects.
5. **Energy costs** - A savings of 15-20% reduction in energy costs appears imminently achievable and could translate to annual savings of nearly Rs.10-15 lakh on the current cost base of Rs. 160 lakh.
6. **Collection Efficiencies** in both taxes and user charges indicate scope for improvement.

7. **NGOs / Corporate participation -** Intensify focus on attracting NGOs/advertising revenue for city beautification projects to reduce reliance on grants for such projects.

FOP, borrowing capacity and investment capacity

The borrowing capacity of Hosur works out to Rs. **6568** lakhs. At an aggregate level, assuming loans to be equivalent to **50%** of investment, sustainable investment capacity works out to Rs. **13136 lakh.** which translates to about **47** % of the total investment requirement (including slum rehabilitation). If we exclude slum rehabilitation and urban services for poor projects which are largely grant funded, the borrowing capacity translates to **51**% of the total investment requirement. Hence Hos-M is well constrained to meet its capital investment requirements and would require grant funding to meet its capital investments in full.

Exhibit 5 provides a summary of the results of the FOP, prepared for a 20-year horizon.

Exhibit 5 Financial and Operating Plan – summary

Estd. Revenues – FY 2008 (Rs. Lakh)	1,085
Estd. Revenues – FY 2016 (Rs. Lakh)	2,791
Estd. Revenues - FY 2027 (Rs. Lakh)	5,479
Revenue CAGR % - FY 2008-17	10.9%
Revenue CAGR % - FY 2008-27	8.9%
Average TE (excluding depreciation)/TR (%)	25%
Average DS/TR (%)	33%
Average DSCR	1.30
Borrowing Capacity	6568
Investment Requirement	27,965
Investment Capacity (at 50% loan)	13,136
IC/IR (including Urban Service for Poor)	47%
IC/IR (without USP investment)	51%

1. Introduction

1.1 Background to the study

The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) intends to assist Hosur Municipality (also referred to as Hos-M in this document) in strengthening and improving its financial position for effective capital investment management and urban service delivery. As part of its project development and capacity building role, TNUIFSL retained ICRA Management Consulting Services Limited (IMaCS) for preparation of a City Corporate Plan cum Business Plan for Hos-M.

This exercise intends to build on internal efforts of Hos-M and the Vision Plan prepared by Hos-M in FY 2005 that identified projects and development priorities in various areas of municipal functioning and also enable Hos-M to develop a holistic, structured and consultative approach to fine-tune and define its development priorities going forward. The objectives of the exercise are three-fold: a) to assess existing demand-supply gaps in service delivery and derive a comprehensive infrastructure improvement plan (including a Capital Investment Plan) required, b) to identify revenue enhancement and financial improvement measures and c) to develop a Financial and Operating Plan for a 10-year period to implement a sustainable infrastructure improvement plan.

1.2 Objectives, Scope of Work and study modules[1]

1.2.1 Objectives of the study

The objectives of this exercise as defined by TNUIFSL were to:

a) Define the growth directions and service up-gradations in relation to the activity mix / growth
b) Look at the demand for the projects specified by the ULBs, and identify gaps in services to broadly outline infrastructure needs;
c) Identify specific capital improvement needs with regard to priority city infrastructure in both slums and other areas
d) Define revenue enhancement and revenue management improvements required to sustain the rehabilitation proposed
e) Identify reforms required in local administration and service delivery and management changes required at the local level to improve O&M of assets
f) Suggest measures to address common growth and infrastructure issues.

[1] *Compiled from the Terms of Reference document prepared by TNUIFSL*

1.2.2 Scope of work

A brief summary of the scope of work for the study is given below:

a) Assessment of demand for projects identified by ULB.
b) Assessment of the financial and operating aspects of Hosur
c) Review issues relating to revenue realisation, asset management and institutional constraints
d) Development of a Financial and Operating Plan (FOP), taking into account potential revenue enhancement and cost reduction measures
e) Prepare a draft Memorandum of Association between ULB and TNUIFSL that will outline. Base line indicators and the performance targets on the same.
f) Initiate consultations with council and local stakeholders on the priorities; redefine priorities and work with the Council to resolve on adoption of the City's FOP and CCP actions.
g) Finalize Action Plan for the City, with a resolution from the council on the priorities and commitment to implement revenue and management improvement measures.

The detailed Terms of reference provided by TNUIFSL is enclosed in Annexure I.

1.2.3 Study outputs and modules

We have clubbed overlapping and related study outputs defined in TNUIFSL's RFP into the following modules:

- **Module I** - Rapid Urban Assessment
- **Module II** - Strategic Plan, Capital Investment Needs and Asset Management Plan
- **Module III** - Project risk, environmental and social assessment
- **Module IV** - Financial and Operating Plan
- **Module V** - Policy Interventions and Technical Assistance requirements

1.3 Approach and Methodology

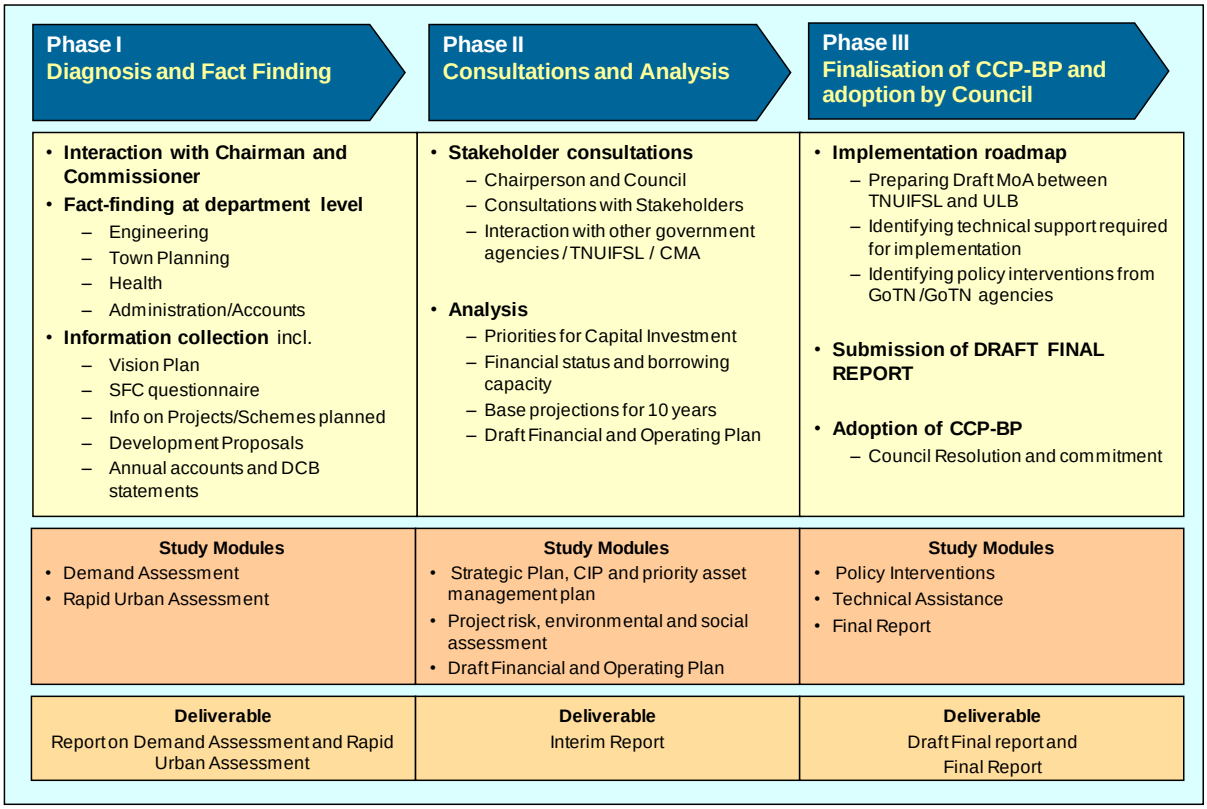
We conducted this study in three phases. Exhibit 1.1 provides a snapshot of the approach and methodology along the study modules and the deliverable(s) covered in each phase.

1.3.1 Phase I – Diagnosis and Fact-finding

The diagnostic review was directed towards achieving an understanding of demographic and economic profile of the town along with a review of the operating and financial performance of Hosur municipality. During this phase, we focused our fact gathering on the following:

- Understanding of the city context and characteristics in terms of demographics, land-use and economic development
- Assessment of current status and requirements for various urban services
- Review of operational performance and service delivery of Hos-M in infrastructure segments
- Compilation of information on ongoing and proposed schemes and projects.

Exhibit 1.1 IMaCS' approach and methodology



Our methodology for this phase covered the following:

a) Primary research

- We had interactions with the Commissioner and officials in various departments of Hosur municipality. The objectives of these interactions were to get a first-hand view of the perspectives of these officials with respect to the overall status of the town and the issues in delivery of urban services.

b) City Visits

- Our team made several reconnaissance visits to different parts of the town to understand the spatial characteristics of the town and to get hang of the 'visible' issues facing municipal management in the town.
- During these visits, IMaCS' team also had informal dipstick interactions with the local populace to capture select perceptions on the town and its municipal administration.

c) Collection of information on aspects relating to the town and municipality

- We spent substantial time during this phase in perusing various documents and information available with Hos-M and in follow-up discussions with ULB officials on the information gathered. In preparing this report, we have relied on the information provided by the ULB.

Phase I of the study culminated with the submission of Rapid Urban Assessment Report.

1.3.2 Phase II - Consultations and Analysis

In phase II, we validated the findings of our rapid urban assessment report through extensive consultations in the town. The activities during this phase included:

a) Consultations with the Council - The focus of these consultations was to understand issues in urban services and to discuss options and drive a consensus on the future vision and strategy for the town. We also deliberated on the ongoing and proposed projects in order to understand and factor the council's priorities. Refer Annexure II for minutes of the discussions

b) Public consultations – We had consultation with the District collector and key stakeholders in Hosur. Annexure III provides minutes of our meeting with the public stakeholders and with the District collector.

c) Analysis and finalisation of Capital Investment Plan – Based on the findings of the rapid urban assessment and consultations with Council and stakeholders, we arrived at the Capital Investment Requirements for the town for the next 20 years. (i.e., 2008-2027).

Phase II of the report culminated with the submission of the report on Strategic Plan, Capital Investment Plan and Asset Management Plan report for the municipality.

1.3.3 Phase III – Finalization of report

This phase involved finalizing the contours of the City Corporate Plan cum Business Plan of Hosur municipality. During this phase we crystallized

a) Reform agenda to be adopted by Hos-M including revenue enhancement options.
b) Policy interventions and technical assistance required for Hos-M to implement the CCP-BP.
c) Assessment of borrowing capacity of the municipality and preparation of a sustainable Financial and Operating Plan for the municipality.

1.4 Organization of this report

This document presents our Final Report of the study and is structured along the sections given below. Prior to finalisation, the Draft Final Report was submitted and reviewed by TNUIFSL, CMA and Hosur-M. The report with the incorporated changes was presented to the municipal council, which passed a **Council Resolution**[2], approving the report in its meeting on **31.07.2008**

- Section 1 Introduction
- Section 2 City profile and demographics
- Section 3 Economic profile and Land use
- Section 4 Rapid urban assessment – services, issues and gaps
- Section 5 Urban Governance and management
- Section 6 Analysis of financial performance
- Section 7 Vision and strategic plan, CIP and asset management plan

[2] Copy enclosed with Executive Summary of report

- Section 8 Project profiles including analysis of risks and ESA considerations
- Section 9 Reform Agenda and Technical Assistance
- Section 10 Financial and Operating Plan

2. Town profile and city demographics

2.1 City profile

2.1.1 District overview & Historical Significance

Hosur town is located at the junction of Krishnagiri-Bangalore Highway (NH-7) and NH-207. The town is situated in Hydro-geologically potential zone. The hilly terrain with a system of tanks and a sloping topography represents a high runoff potential. At the same time, the valley portions between the hills indicate the presence of a good ground water potential. The climatological conditions, physiographical situations, the agricultural practices, present natural channel network and drainage conditions indicate a good water resources potential in Hosur municipality.

However, the present developments and withdrawals of water seem to be affecting this water resource potential. The population of the town as per 2001 census was 84394 and floating population of the town is estimated at 13500. There are about 19850 residential houses in the town as per the Census data. Hosur is an industrial new town. The major industries are steel industries and engineering industries located in and around the municipal area within a radius of 5 km.

The normal rainfall for Hosur is 822.4 mm with a rainfall of 18.7 mm in the months of January and February, 182.5mm between March to May, 349.8 mm during the Southwest monsoon and 271.4 mm during the Northeast monsoon. Hosur falls under a scanty rainfall region.

The geomorphologic characteristics of Hosur are generally shallow buried pediments having moderate to good ground water occurrence. The Hosur municipality is underlain by hard crystalline rocks of Archaean age comprising of Granitic Gnesis. The Hosur cropping pattern comprises of groundnut, horse gram, chilies, vegetable and black grains maize. The municipal area of the town extends over an area of 11.71 sq. km.

2.1.2 Location and Connectivity

It is located at the junction of Krishnagiri-Bangalore Highway (NH-7) and NH-207. Hosur is 48 km from Krishnagiri and 32 km from Bangalore.

Exhibit 2.1 Hosur Route Map

2.2 Hosur municipality - administrative status

Hosur is a selection grade municipality in Krishnagiri district of Tamil Nadu. It is located at the junction of Krishnagiri-Bangalore Highway (NH-7) and NH-207. Hosur is 48 km from Krishnagiri and 32 km from Bangalore. This is a major industrial town in north Tamil Nadu with growing nature.

Hosur has seven tanks each having an ayacut area of 40 hectares and above. It also has one reservoir and six irrigation tank canals with a length of 13 km. The Kelavarapalli reservoir constructed across the Ponnaiyar River is fed by the Hosur minor basin with an area of 107863.63 hectares.

2.3 Population

2.3.1 Decadal trends

Population in Hosur town has registered a steady growth rate during last few decades. As per the last census 2001 population was 84394 with floating population of approximately 13500. According to a survey there are 15 slums with total population of approx. 7460 in around 2416 houses. Slum population constitutes about 8.8% of the present town population.

Exhibit 2.2 provides a snapshot of the population growth over the last few decades.

Exhibit 2.2 Population growth trend

Year	Population	Growth Rate (%)	
		Annual	Decadal
1961	11683		
1971	16591	3.97%	42.01%
1981	27129	5.62%	63.52%
1991	42187	5.03%	55.51%
2001	84394	8.01%	100.05%

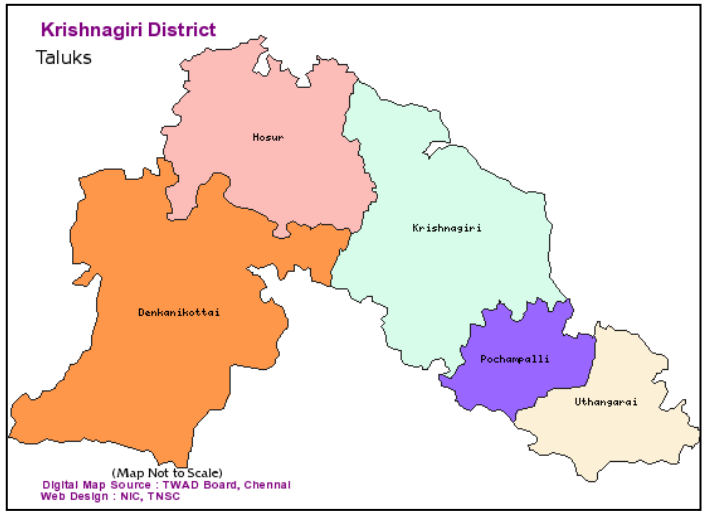
Source: Census 2001, www.tnulbs.tn.gov.in

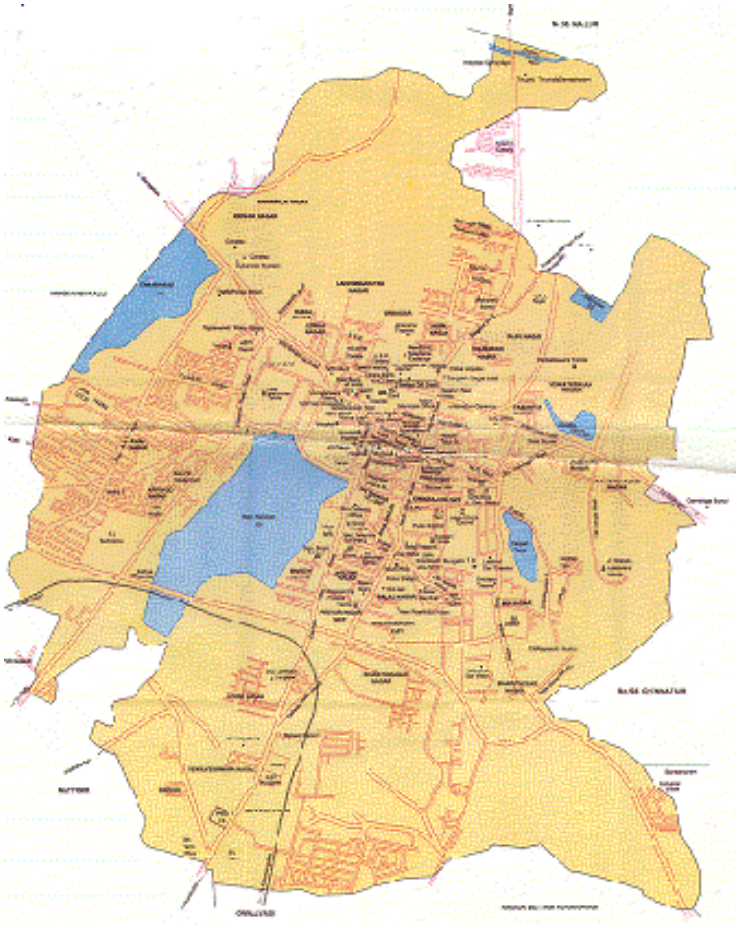
There has been a significant population growth rate in last decade, because of the vast industrial infrastructure development and growing employment opportunities, which led to the migration from neighboring settlements like Krishnagiri, Bangalore and nearby villages.

From the study of the vision plan town and our interactions with town planning officials, residential density is not uniform through out the town. Density is high in the centre and decreases in the peripheral areas. However, the overall density for Hosur is 7207 per sq. km.

The overall literacy rate of the town is 84%, which is fairly significant.

Exhibit 2.3 Location & Town Map of Hosur





2.3.2 Ward wise population

Population is largely concentrated in central parts of the town.

Exhibit 2.4 provides the ward wise population of the town as per Census 2001.

Exhibit 2.4 Ward wise Details

Ward No.	Households	Population 2001			Sex Ratio
	Nos.	Total	Male	Female	
1	1480	5987	3453	2534	734
2	1144	4455	2341	2114	903
3	1132	4941	2638	2303	873
4	772	3702	1843	1859	1009
5	155	801	425	376	885
6	328	1569	826	743	900
7	297	1355	709	646	911
8	217	1114	555	559	1007
9	244	1186	603	583	967
10	278	1218	627	591	943
11	350	1673	881	792	899
12	171	743	382	361	945
13	381	1765	911	854	937
14	328	1668	834	834	1000
15	340	1529	805	724	899
16	466	2049	1075	974	906
17	150	656	341	315	924
18	1531	6361	3304	3057	925
19	248	1066	558	508	910
20	391	1672	897	775	864
21	881	3959	2037	1922	944
22	2010	8127	4358	3769	865
23	395	1779	933	846	907
24	804	3465	1805	1660	920
25	852	3544	1814	1730	954
26	1114	3991	2194	1797	819
27	511	2256	1194	1062	889
28	434	1878	959	919	958
29	705	3172	1674	1498	895
30	1741	6713	3672	3041	828

2.3.3 Literacy Rate and sex ratio

Exhibit 2.5 provides details of the sex ratio along with details of Literates for Hosur Town, and Urban areas in Tamil Nadu. Hosur's literacy rates and sex ratio is marginally better than the state urban averages.

Exhibit 2.5 Literacy and sex ratio

Particular	Male	Female	Total
Literates (no.) – Hos-M	34,603	26,766	**61,369**
Literacy % - Hos-M	89.44%	78.83%	**84%**
Literacy Rate –Krishnagiri District Urban	**85%**	**68%**	**76%**
Literacy % - State - Urban	**88.97**	**75.99**	**82.53**

Region	Sex Ratio
Hosur Town	**890**
Krishnagiri District	932
Tamil Nadu Urban	982

Source: http://www.census.tn.nic.in http://municipality.tn.gov.in/Hosur/

As seen, literacy rates in the town are more than the overall urban literacy scenario in Krishnagiri district and Tamil Nadu. The number of literates has shown positive trend in absolute terms as per the latest census data. There has been also been a significant increase in female literacy over the last decade. This may be attributed to migration of educated male population to other cities in search of employment opportunities and increase in proportion of girls enrolling into schools.

The sex ratio for Hos-M at 890 is lower than the state average of 982 (as per Census 2001) reflecting the lower female population.

2.4 Population projections

We have projected the population for Hosur town has been made using the following methods:

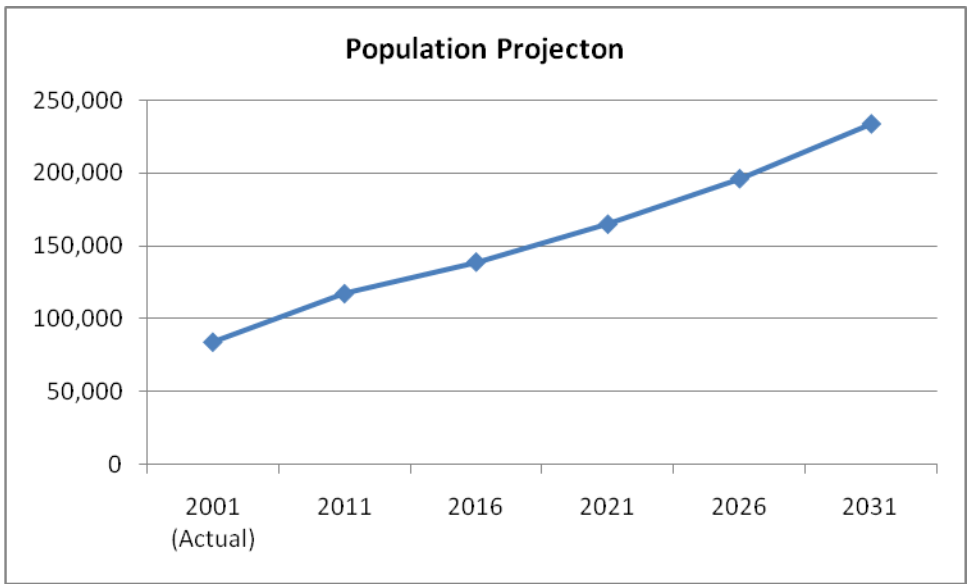
d) Arithmetical Increase Method
e) Geometric Increase Method
f) Incremental Increase Method

Exhibit 2.6 provides the summary of the population projects made for the town.

Exhibit 2.6 Population Projections

	Arithmetic	Geometrical	Incremental	Average	Density as per avg. pop PPH
2001 (Actual)	84,394	84,394	84,394	84,394	**72**
2011	102,572	136,755	113,128	117,485	**100**
2016	111,661	174,083	131,454	139,066	**119**
2021	120,750	221,602	152,419	164,923	**141**
2026	129,838	282,090	176,022	195,984	**167**
2031	138,927	359,090	202,265	233,428	**199**

Source: IMaCS analysis, Hos-M



The population of Hosur town will increase from 84394 in 2001 to 164923 in 2021 and it will reach the figure of ~233428 in 2021. It is therefore critical that land-use and master planning for the town and adjoining areas factor this population growth. Hos-M should need to take into account these population projections and trends for planning, execution and implementation of infrastructure projects in order to ensure adequate provision of urban services.

3. Economic profile and Land use

This section analyzes issues relating to Town planning, land-use and economic status of the town.

3.1 Planning efforts in Hosur

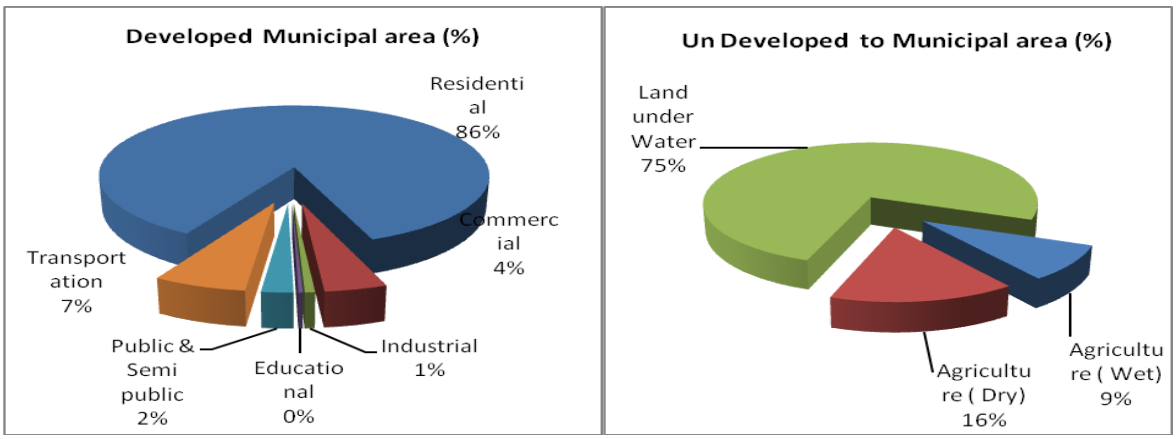
3.1.1 Land-use and development as per Master Plan

The town, encompassing an area of 11.71 square kilometers, is divided into 30 wards. The total developed area is 5.85 Sq. km (2004). Residential use occupies about 30.1% of the total developed area in the town. The land use distribution of Hosur town is given below (source: Census of India).

Exhibit 3.1 Existing Land Use (Municipal Area)Distribution in Hosur Town 1999

Land use distribution	% to Municipal area (%)
Developed Area	
Residential	77.41
Commercial	3.95
Industrial	0.64
Educational	0.28
Public & Semi public	2.01
Transportation	5.87
Total	**90.16**
Undeveloped Area	
Agriculture **(Wet)**	0.89
Agriculture **(Dry)**	1.53
Land under Water	7.42
Total	**9.84**
Grand Total	**100.00**

Source: Hosur Master Plan & Hosur new Development Authority



3.2 Economic status

The town is a multifunctional town with both retail and wholesale business units.

3.2.1 Primary Sector - Agriculture and Mining

Hosur does not have exploitable mineral resources. The town is the marketing centre for trading of agricultural produce from neighboring villages. It has two weekly and three daily markets, which act as centres for trading of agricultural produce from the contiguous region. Exhibit 3.2 shows the range of agricultural products grown in the region surrounding the town.

Exhibit 3.2 Categorised Agricultural produce

Category	Produce
Cereals	Paddy, Ragi, Maize, Cholam
Pulses	Red gram, Horse gram, Black gram
Fruits	Banana, Mango, Jack Fruit, Acid Lime
Condiments	Chillies
Oil seeds	Ground nut, Coconut

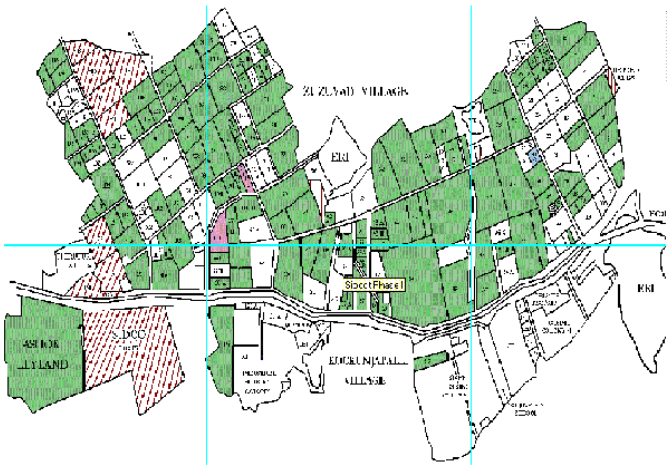
3.2.2 Secondary Sector – Manufacturing Base

There is no significant industrial activity in the town, which is also reflected in the land allocated for industrial usage. According to the town's approved Master plan, the existing land allocated for industrial usage was 1.78% of the total area of the town in 1988, which was then proposed to be reduced to 0.09% of the total area of the total town in 2001.

There is a significant industrial activity in the town. Hosur is an industrial new town.

The major industries are steel and engineering industries.

Numbers of industries are located in SIPCOT and SIDCO industrial areas. Ashok Leyland, Lakshmi Autolooms, India tobacco, Lakshmi ring travels and fruit processing centers are located in SIPCOT.



The TVS moped factory is located in Belgondapalli and Kothagondapalli village. The Premier Mills, Asian bearings, English Electricals and Bi-Metal bearing are located in Belathur village, Bagular village, Chennathur village and Peranadapalli village respectively located within Hosur New Town

Development Authority's limit. An Electrical and Electronic Industries Estate is also functioning within the municipal limit of Hosur. There are around 332 registered industries in the Hosur taluk.

Hosur's importance lies in the fact that it is the gateway to Tamil Nadu from Karnataka. Being close to Bangalore, 30 kilometers, the city offers a good opportunity for linkages with the industrial development of Bangalore

3.2.3 Tertiary Sector - Services

Hosur serves as an important commercial centre for the district. Agriculture being the main activity in the surrounding region, commercial activities linked to sale of inputs for crop production and harvesting and sale of produce are the major trading activities in the trade. Hosur serves as a central market for seeds, fertilizers and farm equipment required by farmers for agricultural production. It also serves as the market for trading harvested agricultural produce. Two daily and one weekly market support these activities. Besides agricultural trading activities, the town also serves as a commercial centre to meet provision needs of the population from the surrounding region / villages. Retail activities include provision stores, and shops for household goods, clothing, etc.

3.3 Occupational pattern

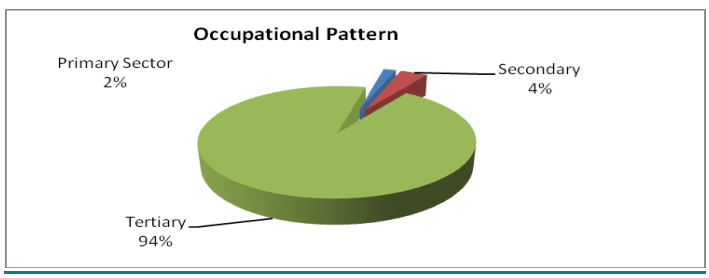
As per census data of year 2001 on occupational pattern of the town's population, the primary sector employs only 1.8% of the total workers population in the town. This implies low level of agricultural activity inside the town limits.

Household industries employ about 4% of the total worker population. This again shows the low level of industrial activity inside the town. Services and trading sector is the single largest employer, employing 94.2% of the total population in the town. This reinforces the fact that services drive the economy of the town. Exhibit 3.3 gives occupational pattern in Hosur Town

Exhibit 3.3 Occupational distribution in Hosur town (2001)

Sector	Employment	Percentage (%)
Primary Sector	379	1.8%
Secondary	840	4.0%
Tertiary	19905	94.2%
Total	**21124**	**100%**

Source: Census of India



4. Rapid urban assessment - services, issues and gaps

This section provides details of the current status of various urban services in Hosur Municipality and summarizes key issues. The section also covers an analysis of the projects identified by Hosur municipality as part of its Vision Plan and the demand assessment of these projects. Finally, the section summarizes the normative gaps in infrastructure provisioning in water supply, underground drainage, roads, streetlights and solid waste management.

4.1 Water Supply – existing status

4.1.1 Sources of supply and Transmission

Water is supplied to the town through two sources (1) Bore wells at Perandapally, Samathuvapuram, and Housing colonies (2) Kelavarapally dam treated water by TWAD board. The details relating to sources of water supply are given in *Exhibit 4.1*.


Kelevarapalli Reservoir -

A total of 5.48 Million Litters per Day (MLD) of water is supplied by the two schemes from Hosur head works. While the municipal scheme supplies 4.73 MLD to the Hosur Town, the TWAD board scheme supplies 0.75 MLD to the town.

Exhibit 4.1 provides details of the sources of water and the total daily supply.

Exhibit 4.1 Water Supply - Storage infrastructure

Sr. No.	Details of water supply schemes	Unit	Local Body (Own Scheme)	TWAD/CWSS
1	Quantity Supplied	MLD	4.73	0.75
2	Distance of the Source from Town	Km	8	3
3	Capacity of the Treatment Plant	MLD	Nil	1
4	Per capita supply- 2007	Lpcd	58	
7	Public fountains/ stand post- No.	168		
9	Hand pumps-No.	170		

4.1.2 Storage

Water is pumped through headwork and transmitted to the Over Head Tanks (OHTs) / Ground Level Service Reservoirs (GLSRs), located at various places in the town. Water is then distributed to separate water supply zones and areas through localised distribution networks. The total capacity of the reservoir works out to 69.56 ML as shown in *Exhibit 4.2*.

Exhibit 4.2 Water Supply - Storage infrastructure

Sr. No.	OHT/GLSR-No.	Capacity (Lakh litres)
1	OHT-8	66.6
2	GLSR-13	27.9
	Total capacity	94.5
Required (50 % of requirement) (Lakh Lit)		**27.4**
Gap in Storage (Lakh Lit)		**(67.1)**

Source: As provided by Hos-M. Discussions, IMaCS analysis

4.1.3 Distribution Network and House Service Connections

The distribution line length in Hos-M is about 65 km. Seen in the context of the total road length of Hos-M, which extends over 77.45 km, the distribution network coverage works out to be 84% of road network.

4.2 House Service Connections

As of May 2007, Hosur has nearly 10500 household connections, 77 commercial connections, 170 hand pumps and 168 public fountains. Gross water supply in the town ranges from 55-60 LPCD.

4.3 Proposed Hogenakkal Water Supply Project

The water supply requirement of the Dharmapuri and Krishnagiri districts to the extent will be solved by the proposed Hogenakkal project. The beneficiaries of this project will be Dharmapuri, Krishnagiri and Hosur municipality, Seventeen town Panchayats from Dharmapuri district and six thoursand and fiifty five villages. The estimated installation cost of the project is Rs. **1334** crore and the estimated maintenance cost is Rs. 51.65 crore. The project is funded by JBIC and implementing agency will be TWAD board.

The length of distribution system as per the zones is given in *Exhibit 4.3.*

Exhibit 4.3 Beneficiary list and Distribution length proposed in Hogenakkal project

Beneficiary List			
District	**Municipalities**	**Town Panchayats nos.**	**Unions**
1. Dharmapuri	a) Dharmapuri	10	8
Population coverage 2001	64444	128473	1103348
Population for Base year 2006	73000	134898	1158516
Population forecast for 2036	138000	175370	1506072
2. Krishnagiri	b) Krishangiri town c) Hosur town	7	10
Population coverage 2001	149338	89163	129246
Population for Base year 2006	163000	93622	1357084

Population forecast for 2036	336000	121708	1764209
Zone	**Distribution Length**		
Zone I	98.93		
Zone II	254.68		
Zone III	53.51		
Zone IV	75.41		
Zone V	135.04		
Zone VI	117.43		

Source: As provided by Hogenakkal project office, TWAD board

The water from the surface flow of river Cauvery at the Hogenakkal 1276 lakh litres of water would be pumped to a height of 913 metres to Head works is located at 6.22 km from source. From treatment plant it will travel a distance of 5.3 km to reach Pennagaram and Madam; from here gravity would carry the water to most of the habitations to 3 municipalities (Krishnagiri, Dharmapuri, and Hosur), 17town panchayats and 6,755 villages in 18 blocks.

. Exhibit 4.4 gives other details of the proposed scheme.

Exhibit 4.4 Other details of proposed Hogenakkal water supply project

SN	Particulars	Details
1	Proposed Per capita raw water supply	90 lpcd for 70% of pop (HIG)
		40 lpcd for 70% of pop (LIG)
2	Headwork	Intake well in river Cauvery at Hogenakkal
3	Pumping	18 hrs- 1,18,148 LPM
4	Raw water main	1000mm dia. and 6.2 Km length
5	Treatment plant at 6.21 Km from Head works	127.6 MLD

Source: As provided by Hogenakkal project office, TWAD board

4.3.1 Issues and gaps

Exhibit 4.5 summarizes the current status vis-à-vis ultimate population requirements

Exhibit 4.5 Water Supply – Gap analysis

Indicator	Unit	Norm	Existing	Gap
Per Capita Water Supply	LPCD	135	58	(77)
Storage and Distribution				
Storage - % of Current Demand	%	50%	172 %	(122%)
Distribution Network - % of Road Network	%	80%	84%	(4)%
Connections / Properties	%	70%	34%	36%
Demand - Supply Gap				
Water Demand - Current-2007	MLD		8.0	
Water Demand – 2027	MLD		~26	
Water Supply – Current	MLD		5.48	
Demand Supply Gap – Current	MLD			2.52
Demand Supply Gap – 2027	MLD			21

Source: Inputs from Hos--M and IMaCS analysis

a. Present status-Lack of adequate access will be solved to the extent by Hogenakkal Project

To the extent this can be solved by the proposal to supply water at 90 lpcd under Hogenakkal water supply project to Hosur town for the estimated population of 336000 (including Krishnagiri town) in year 2036.

b. Distribution coverage and HSCs needs to be increased

The length of distribution network is 68 % of the total road length and HSCs covers only about 48 % of the assessed properties of the town. Age of the network, pipe material and its spatial coverage are the three issues of concern relating to the distribution network in the town.

4.4 Sewerage and Sanitation

4.4.1 Underground Drainage (UGD)

Current status

There is no dedicated UGD system for carrying sewage and storm water separately in the town. The roadside drains are used for carrying both the sludge and rainwater. The main mode of individual disposal in the town is through septic tanks, low cost sanitation units and through public conveniences.

About 70% percent of the total population have resorted to private arrangements, in the form of septic tanks and low cost sanitation units. There are only seven public conveniences throughout the town detailed below in *Exhibit 4.6*.

Exhibit 4.6 Details of public conveniences

Sr. No.	Particulars	Number
1	No. of HH with Septic tank (ST)	**18000**
2	No. of HH with Low cost sanitation units (LCS)	**0**
Total		**18000**
Total households (No.)		**19850**
% of total HH covered through ST & LCs		**91%**

Source: Inputs from Hos-M and IMaCS analysis

Proposed UGD System

The existing open drains are dumped with solid waste, night soil etc. and use to this, the drains often gets choked. In order to overcome the problems faced by municipality due absence of proper UGD system, municipality has proposed to provide the sewerage system and a plan was prepared by TWAD board at an estimated cost of Rs 57 crore. *Exhibit 4.7* gives details of cost of the proposed UGD scheme for Hos-M.

Exhibit 4.7 Details of proposed UGD system

Particulars	Details
Implementing Agency	TWAD
Estimated Cost-	Rs. 66.35 crore
Status	DPR submitted.& sanctioned by Govt
No. of wards covered	All (30 wards)
Length of sewer network	105.672 Km
House Connections- nos.	15000

Particulars	Details	
Sewage Treatment Plant (STP) Details		
Estimated cost of STP	Rs. 5.54 crore (to be changed)	
Capacity- proposed	13.0 MLD	
Required Capacity	13.0 MLD	
Area- acre	**Location**	**Area**
	Pultharai Anandnagar (SF no- 430 to 434)	16 acre
Type of Plant	Waste stabilization pond (yet to be finalised)	
Effluent Discharge	Nearby odhai	
Other specification	**Raw sewage**	**Treated**
Biological Oxygen Demand (BOD)	410 mg/lit	20 mg/lit
Suspended Solids (SS)	600 mg/lit	30 mg/lit
Pumping station	**Location of pumping station**	**Area 'acre'**
1. Zone –I	SF no.-214- Paramboke	0.4
2. Zone –II	SF no.-372- TNHB	0.89
3. Zone- III	SF no.-843- Municipal land	0.22
4. Zone-IV	SF-376 (P)-Municipal Land	0.62
5. Zone-V	SF no. 507 (P)- Paramboke	0.22

Source: TWAD board project office- Dharmapuri

The committee consisting engineers from TWAD board and officials from TNUIFSL is reviewing the possibility new technology to be adopted for setting up of sewage treatment plant (STP) which will reduce the land requirement for STP unit to 1-1.5 acre. According to the municipality the decision regarding it will be taken soon.

TNUDF has recommended reducing the cost of the estimated project to Rs. 66.35 crore and the project will be undertaken in June 2008.

4.4.2 Public conveniences (PC)

Considering that public conveniences in the town cater to 30% of the population, each seat of public conveniences has to cater to 414 persons. This is quite high compared to the norm of 37 persons per seat of public conveniences. Further, if consider the large floating population of the town, this capacity seems very inadequate to serve the needs of the town.

Exhibit 4.8 Details of public conveniences

Particulars	Nos.
Public Toilets-No. of units	7
Public Toilets-No. of seats	72

Source: Inputs from Hos-M and IMaCS analysis

There is proposal for 10 toilets at an estimated cost of Rs. 50 lacs, out of which construction of one toilet block is completed and as per the municipal officials the construction of the other blocks will be completed by March 2008.

4.4.3 Storm water drains

Storm water drains carry the wastewater in addition to storm water generated during rains. With a total length of 62.5 km, the open drainage system covers partial road network of the town. Although pucca drains covers maximum road network yet there are drains still left uncovered in the town.

Exhibit 4.9 provides the details of coverage of storm water drains.

Exhibit 4.9 Storm water drain network

Type	Length (km)	% of total road network
Kutcha	14.79	17%
Pucca open	45.41	53%
Pucca closed	2.3	3%
Total Drain length	**62.5**	**73.3%**
Total road length	**57.83**	**100%**
Gap (length of drains on both side of road)	**17.37 km**	

Source: Inputs from Hos-M and IMaCS analysis

The proposal for improvement of Storm Water Drain, Road for funding under UIDSSMT and two more works are going on 3.71 kms @ cost of 52 lakh.

4.4.4 Issues and gaps

Specific issues relating to sewerage and sanitation in Hosur municipality are highlighted below:

1. **Absence of UGD system –** All the wards are to be covered with UGD system. Though Hos-M has some coverage through septic tanks, the disposal of sewage through either open drainage or septic tanks is leading to the pollution of ground water and surface water. **This can be solved to the extent by the proposed UGD system.**
2. **Uncovered Population –** While the absence of UGD itself exposes the entire town population to the hazards of unsanitary conditions, nearly 25% of the town's population remains uncovered by safe sanitary disposal systems.
3. **Need for greater coverage and better maintenance of Public conveniences –**Absence of UGD itself exposes the entire town population to the hazards of unsanitary conditions, nearly 35% of

the town's population in slums is covered through public conveniences. There are 414 persons per seat of public convenience, which is relatively significantly high.

4. **Use for sewage disposal, overflows and blockages of Storm water drains -** With the growth in population of the town, use of storm water drains for sewage disposal and without adequate linkages of storm water drains to main channels requires immediate attention. The drains also face the overflow and blockage problems due to the garbage thrown in the drains.

4.5 Solid Waste Management (SWM)

Exhibit 4.10 summarizes the status of SWM in Hosur municipality.

4.5.1 Waste Generation and collection

Hosur town generates around 50 MT of waste every day at a rate of 540 grams per capita per day. Other than residential sources, commercial and institutional establishments contribute nearly 20% to the total waste generated by the town. Managed by the health department of the local body, waste is collected by 10 vehicles and 107 pushcarts on a regular basis. On an average 46 MT of waste is being collected from all the health zones and disposed off through dumping by the agency with a collection efficiency of 92%.

4.5.2 Primary and secondary collection

The collection system available with the municipality comprises of open masonry bins where the waste is collected by the municipal staff and thereafter disposed in the disposal yard. Waste is transported in open vehicles. The vehicular fleet available with the municipality for disposal of solid waste includes pushcarts, tractor-trailers, trucks and tippers. The vehicles are generally aged and few are in good condition, therefore reducing efficiency in collection of solid wastes. A detail of vehicle fleet is given in *Exhibit 4.10*.

Exhibit 4.10 Solid Waste Management - Current status

Particulars	Units	Values
Generation		
Daily Waste Generation	MT	48
Daily Waste Collection	MT	46
Waste generation per capita-2007	Gm	540
Collection efficiency	%	96%
Dumping Yard		
Dumping Yard Area	7.20 acres	
Distance from town centre	17km	
Collection / Transfer		
Wards with door to door collection	30 wards	
Privatisation of collection	No	
Number of Workers	186	
Primary Collection		

Particulars	Units	Values
Door-to-Door collection	Nil	
Pushcarts in use	153	
Lorries	2	
Autos	4	
Secondary Collection		
Tipper	4	

4.5.3 Dumping/Compost yard infrastructure

At present, waste is disposed off through dumping in the only available disposal yard outside the town. The disposal yard is situated at a distance of about 17 kilometers from the town and is spread over an area of 7.20 acres.

4.5.4 Issues and Gaps

Specific issues and gaps in Solid waste management are highlighted below:

1. **Need for composting** – Presently the ultimate disposal of waste is by dumping and there is proposal for compost yard. There is need to accelerate the process to start use of compost yard, which will solve the problem of biodegradable waste to the large extent.
2. **Scope for private participation –** While Hosur-M has not privatized garbage collection in any ward, there appears to be potential for comprehensive end-to-end management of solid waste through a public private partnership covering collection, transfer and scientific disposal.
3. **IEC campaigns necessary for minimizing usage of plastic bags-** There is need for increasing awareness on RRR i.e. Reduce waste at source, Recycle and Reuse of waste. Hos-M should progressively move towards source level segregation of waste for more efficient disposal and conversion. It may need to intensify promotion campaigns in this regard.

4.6 Transportation, Bus stands and street lights

4.6.1 Municipal roads

As per the primary data from municipality, Hosur has a total road length of 77.45 km and out of that only 88% of the total road length is surfaced. The total length does not include the length of unauthorized layouts, which have developed in the outer areas of the town. National Highway No. 7 connects the town. Detail of roads inside the town is shown in exhibit 4.11 below.

Exhibit 4.11 Road network

Type	Length in km
Municipal Roads	
Cement Concrete	13.67
Bitumen Top roads	54.68
WBM roads	0.16
Stone Slab	0.452
Earthen roads	8.49

Type	Length in km
Total	**77.452**
% of roads surfaced (BT + CC)	**88%**

Source: Hos-M

The proposal for improvement of Roads will be undertaken after completion of the UGD system. Two more road works are ongoing, viz., 3.71 kms length @ estimated cost of 52 lakh.

4.6.2 Bus terminus

There is one B grade bus stand (as per state government standards) with CC Pavement, Toilets, Cycle Stand, Shopping Complex and Lodging facilities. This existing bus stand is situated at NH-7 road. There are more than 500 buses flying through this bus stand and it is not adequate.

The existing bus stand is being modernized with' A' grade at an estimated cost of Rs. 683 lakh, with CC Pavement, Toilets, and Cycle Stand, Parking lots (two and four wheelers) Shopping Complex and Lodging facilities

4.6.3 Street Lights

The town has a total of 3694 streetlights of which 85.3% is high power tube lights as shown in exhibit 4.12. The town has 41 streetlights per kilometer of road length with a spacing of 21 meters between lampposts, which compares favorably with the prevailing norms being adopted in the state.

Exhibit 4.12 Street Lighting

Type	All Wards	
	Nos	**%**
Tube lights	3190	86%
Sodium Vapor Lamps	487	13%
Mercury Vapor Lamps	15	0.41%
High Mast lamps	2	0.05%
Total	**3694**	**100.0**
Average distance between street lights	**21.0 m**	
Spacing between streetlights as per norm	**30.0 m**	

Source: Hos-M

4.6.4 Issues and gaps

Specific issues and gaps with respect to roads and street lighting are summarized below:

1. **Problems of traffic congestion and inadequate parking facilities** - Increase in the number of vehicles and inadequate road networks are the major causes for traffic congestion. Inadequate traffic management measures and inadequate parking facilities are major problems of the town. The ongoing and planned transportation infrastructure improvements need to be implemented on priority.

2. **Encroachments along the roads** - Presence of informal activities along the road margins illegal encroachments of pedestrian areas and footpaths are the other causes for traffic congestion in the town. There is considerable commercial activity on the main centre roads. Many shops along these roads have encroached the road / footpath which creates congestion in the centre of the town.
3. **Need for planning restoration post water supply and UGD scheme -** With the plans to create water supply and an UGD scheme in the city, the entire road network in the town would need to be restored. So it may be appropriate to take up any large scale upgradation of the road network keeping this in consideration.
4. **Provide street lights to uncovered area** – The spacing between the streetlights is 24m which is adequate considering the norm of 30m for spacing between streetlights. There are some areas which are not covered or inadequately covered which need to be given priority.

4.7 Urban Services for poor

4.7.1 Slum Details

There are 8463 people residing in total of 2666 houses in 13 slums in the town. These are improved under various central/state government slum up-gradation programs, but still there is scope for further up-gradation. As there is insufficient provision of physical amenities like water supply, storm water drains, community baths, sewers, community latrines, street lights leading to health hazards. There is also lack of community based facilities like primary education, primary health, and recreational activities.

Exhibit 4.13 Ward wise slum population

Ward nos.	Slum-Households	Slum-Population	Place
1	75	225	Sunnambu zeebi
3	425	1580	Venkatesh nagar,Millath nagar,Old vasanth nagar,Kittappa kuttai
4	497	1318	Parvathi nagar
5	162	510	Adidravidar st
13	330	1010	Anna nagar
18	283	1132	Shanthi nagar
21	181	590	Therpettai
23	87	290	Bharathiyar nagar,Rajaganapathi nagar
24	54	165	komeriikuttai
25	115	362	Dinnur,Jeeva nagar
27	136	408	Muthurayan zeebi & Palayam
28&29	321	873	Ram nagar
Total	2666	8463	

Source: Hos-M

4.8 Markets and other assets

4.8.1 Markets

Hosur has three daily markets. The markets are fairly big and are spread on both sides of the bus stand. Goods vehicle stand market: Existing goods market is located at lorry stand itself in the town.

There are two Weekly markets in the town. Near by village people used to come to purchase or sell their commodities like Vegetables, Groceries, Banana, Pumpkin, Leather, Fish, Dry fish, Live stocks such as Cow, Goat, Chilly, Mat, etc., This Market is whole sale market.

4.8.2 Crematoria and burial grounds

There is only one large municipal burial / cremation ground in the town and lacks in the basic infrastructure such as fencing, access roads, lighting facilities etc.

4.8.3 Slaughter house

There is only one slaughterhouse. The basic issues are:

(1) Lack of facilities like building and treatment facilities.

(2) Damaged Building at slaughter house

(3) No proper facilities and water supply

The proposal for slaughter house is estimated at Rs. 25 lacs, which will be ready by March 2008.

4.9 Social infrastructure

4.9.1 Schools

Hosur has 12 noon meal centers and 12 schools and there are 0.14 numbers of schools per 1000 population. All the primary schools are located throughout the town, covering all the remote areas.

4.9.2 Hospitals and medical facilities

Healthcare services are amongst the most vital services provided by the municipal bodies. There is one government hospital in the Hosur town. As per performance indicators, there is 0.14 health centre per 1000 population in the town.

4.9.3 Recreational facilities

There are total 26 parks (11.592 acre) and two playgrounds (1.75 acre) in the town. This includes 3 large municipal parks, of. The command area per park is 0.62 square kilometers. In the open spaces, avenue plantation is low and the survival rates of trees decreases during summers due to lack of water. There is a small lake maintained by municipality for recreational purposes.

4.10 Service level indicators and demand assessment summary

Exhibit 4.14 below captures the status of core urban services of Hosur Municipality in terms of key indicators and summarises key issues and gaps in these areas. The table summarizes the baseline situation in some critical performance indicators from the analysis presented above and highlights the critical gaps in the core urban services namely, Water Supply, Sanitation, Roads, Street lighting and Solid waste Management. In the next phase of the study, these gaps would be analysed in greater detail to arrive the vision for urban services in Hosur and to estimate the capital investments required to address these gaps. Based on consultations, we would then define the Capital Investment priorities for the town.

Exhibit 4.14 Core urban services - Ongoing initiatives, Baseline indicators and gaps

Sl. No	Name of the Indicator	Value	Issues and Gaps
Water Supply: TWAD board currently preparing Hogenakkal water supply scheme to supply water in all wards in Hosur town.			
1	Daily Per Capita Supply (LPCD)-2007	58	• Current supply on a per capita basis is below municipal norms • Need for significant augmentation of water supply at source, storage and distribution.
2	Storage Capacity / Daily Supply (%)	172%	
3	Distribution Network / Road Length (%)- (only municipal roads)	84%	
4	Water connections / Assessed properties (%)	34%	
Sanitation: The tender for the proposed UGD system covering all wards had been called.			
6	Presence of UGD network (Yes / No)	No	• No UGD system • Storm water drainage coverage needs to be increased • Public convenience network needs augmentation in view of the present inadequate coverage.
7	UG connections / assessed properties (%)	0	
8	Household per Public convenience (nos.)	83	
9	Storm Drain Length / road network (%)	73.3%	
Roads and Street Lights:			
10	BT roads / Total (%)	883%	• Municipal roads would require comprehensive upgradation following water supply and UGD implementation.
11	Road length per Street Light (m)	21 m	
Solid Waste Management:			
11	Waste generation per capita (gms)	540	• Composing, Source segregation and Door-to-door collection needs implementation in a phased manner. • Awareness among citizens for less usage of plastics. • Scope for greater private participation covering end-to-end given the size and scope of the SWM service requirement.
12	Collection efficiency (% of waste generated)	96%	
14	Compost yard area (Acres per 10,000 population)	72%	
15	Average vehicle trips	4	
16	Source Segregation and Composting (Yes/No)	Partial	

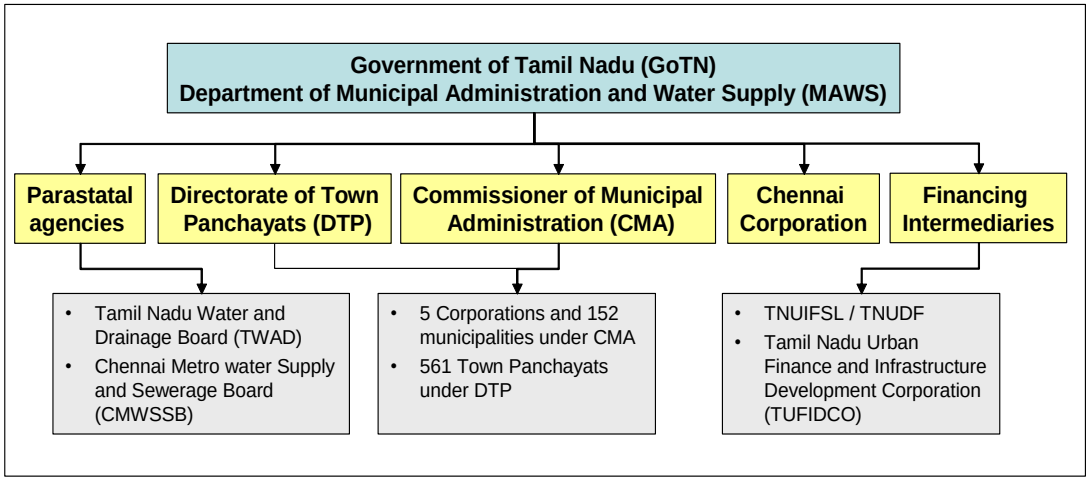
5. Urban governance and management

5.1 Policy oversight and institutional framework – State level

The governance of urban local bodies assumes importance with the adoption of 74th Constitutional Amendment Act. The Act proposes mandatory elections and greater devolution of functions to the urban local bodies including Town Corporations. The enactment of the 74th CAA provides an entirely new framework for the governance of the Urban Local Body. The Act provides for mandatory elections and a substantially larger devolution of functions to the ULBs, including several new areas hitherto not under their control. The Tamil Nadu District Municipalities Act (1920) governs the management of Municipality and Town Panchayats of Tamil Nadu. An amendment to the Municipalities Act (1920) was made in 2003 to provide impetus for environment improvement through Rain Water Harvesting.

The Urban sector in Tamil Nadu comes under the oversight of the Department of Municipal Administration and Water Supply, Government of Tamil Nadu (MAWS). The institutional structure for the urban sector is presented in *Exhibit 5.1* below:

Exhibit 5.1 Urban sector - Institutional framework - State Level



Source: Policy notes, MAWS, Government of Tamil Nadu, IMaCS analysis.

The department of Municipal Administration and Water Supply administers Urban Local Bodies and also implements development programs for the Urban Local Bodies in the State. The department is also responsible for planning and implementing water supply and under ground sewerage schemes in both rural and urban areas in the State.

5.1.1 Municipal Administration

The institutional framework for municipal administration is described below:

- **Corporations and Municipalities** - There are 10 Municipal Corporations, namely, Chennai, Madurai, Coimbatore, Tiruchirappalli, Salem, Tirunelveli,Erode, Tiruppur, vellore and Tuticorin in the State of Tamilnadu. Nine Corporations (except Chennai) and 151 Municipalities including 49 Third Grade Municipalities are under the oversight of the Commissioner of Municipal Administration.
- **Town Panchayats** - The Town Panchayats are governed by the Tamil Nadu District Municipalities Act, 1920. 1920. There are 561 Town Panchayats in the State. Towns have become drivers of economic growth and offer opportunities for social and economic development of people. The population of the Town Panchayats is 76,46,386, which accounts for 12% of the total population of the State as per Census 2001. Town Panchayats have become service centres drawing huge floating population from adjoining rural areas. The Directorate of Town Panchayats was created in1981, to look after the affairs of the Town Panchayats. The Director of Town Panchayats is the Head of the Department and looks after the affairs of 561 Town Panchayats. The District Collector is the controlling authority for the Town Panchayats at the District level. Under the Directorate, the Department has 16 Zonal offices, headed by Assistant Directors of Town Panchayats.

5.1.2 Parastatal agencies

- **Tamil Nadu Water and Drainage Board** - TWAD is a statutory body formed by the Government of Tamil Nadu, vested with the twin task of providing water supply and sewerage facilities to the entire state of Tamil Nadu except Chennai Metropolitan Area. TWAD came into existence on 14-4-1971.
- **Chennai Metropolitan Water Supply and Sewerage Board** - The Board is attending to the growing needs of and for planned development and appropriate regulation of Water Supply and Sewerage Services in the Chennai Metropolitan Area with particular reference to the protection of Public Health and for all matters connected therewith or incidental thereto. The Board was established under "The TWAD Act. 1978' (Act No.28 of 1978) and commenced functioning from 01.08.1978

5.1.3 Financial Intermediaries

- **TNUIFSL / TNUDF** - The Government of Tamil Nadu established the Tamil Nadu Urban Development Fund (TNUDF) on a ‘Public-Private Partnership’ mode, with the participation of ICICI, Housing Development Finance Corporation (HDFC) and Infrastructure Leasing & Financial Services (IL&FS). The Fund is managed by Tamil Nadu Urban Infrastructure Financial Services Limited. TNUDF provides various services including project advisory, financial advisory and consultancy services to various ULBs through its fund manager, viz. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).
- **TUFIDCO** - TUFIDCO, a State owned Organization, was incorporated to extend financial assistance to urban infrastructure schemes in Tamil Nadu. The State Government have also

appointed TUFIDCO as a State level nodal agency for the following centrally sponsored schemes including Jawaharlal Nehru Urban Renewal Mission (JNNURM) and Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)

5.2 Governance structure of Hosur municipality

Hosur municipality has two wings, namely, a political wing and an administrative wing. While the Municipal Council, headed by a Chairperson and constituting ward level council members constitutes the Political wing and is directly elected by the people, the Executive wing is headed by the Commissioner and consists of various operational departments.

5.2.1 Political wing

The municipal council with a 30 elected councillors, each representing a ward, forms the political wing of the municipality. One of the elected representatives is selected by the council as the Chairperson. Three committees viz., appointment committee, contract committee, tax appeal committee have been formed consisting of elected representatives and commissioner as members.

Appointment Committee

The committee is responsible for all appointments in the municipality. It consists of three members including the Chairman and the Commissioner.

Contract Committee

The three member contract committee is responsible for approval of all contracts costing up to Rs.5000. Works above Rs.5000 is approved by the municipal council through a sealed tender.

Tax Appeal Committee

This committee addresses appeals filed by the public against orders on revision of taxes. The committee consists of six members comprising of the commissioner, chairman and four councillors.

5.2.2 Administrative Wing

The administrative wing is responsible for the day-to-day functioning of the corporation and assists the deliberative wing in the decision-making process. The Municipal Commissioner heads the executive wing of the ULB, and various officers in charge of different departments or sections assist the Commissioner in managing the ULB. Apart from its own employees, the ULB also employs daily wage basis workers or contractual workers for services such as street lighting, and sanitation and water supply. These include electricians, watchmen, water boys, drivers, valve operators etc. Certain jobs like sanitary works and garbage clearance are done through contracts, where the usual procedure followed is selection through tenders.

The **Municipal Commissioner** heads the administrative wing of the municipality. The functions of the administrative wing include:

- All executive functions with the Administrative Head (Commissioner)

- Establishment matters such as appointment, transfers, Pay and allowances, etc., correspondence with Government and other departments,
- Public relations, redressal of public grievances, Legal matters etc.
- Sanctioning of estimates and approval of contracts, payments, etc.

5.2.3 Departments of municipality

Various departments under the ULB, share the responsibility of service delivery within the Corporation. The functions of various officials/departments, under the Administrative wing, are elucidated hereunder:

a) Commissioner. The Commissioner is at the apex of this structure and is responsible for all activities carried out by the ULB. The Commissioner is responsible for preparation and certification of all periodical records, returns and furnishes all information as may from time to time be required by the Municipal Council or the Standing committees. He is also responsible for preparation of accounts. At each general meeting, the Commissioner along with some other key officials, discuss various issues with the elected representatives.

b) General Administration Department. - This department is responsible for establishment, other essential matters relating to office, officers, staff and their welfare like preparation of staff pay bills, maintenance of registers for advances, GPF, pension, PF's etc.

c) Engineering and Water Supply Department. This department looks after all the works relating to execution and maintenance of basic amenities like Water Supply, Drainage, Sewerage, Storm water drains, Roads, Street lights, etc. The Engineering department is also responsible for ensuring the quality of works and their execution within the time frame.

d) Accounts Department : The Accounts Section is responsible for supervising all financial transactions related to the CMC, advising the Commissioner on all internal financial matters, updating financial receipts and expenditure details in accordance with the utilization of funds, reporting deviations in expenditure of funds in any of the allocated schemes, assisting preparation of the CMC budget, maintenance of accounts regarding stamp duty, SFC Grants, MP Grants, maintenance of petty cash book and general cash book and attending to audit requirements and other such accounts-related duties.

e) Revenue Department: Revenue Officer, heading the Revenue Section, is responsible for collecting taxes such as, trade tax, house tax, advertisement tax, and entertainment tax; development charges; transfer of properties; collection of duty; issuing notices for recovery of tax; and monitoring revenue collections of the ULB.

f) Public Health Department. The is responsible for ULB services such as Solid waste management, public health related works like malaria control, family planning, mother and child health care, birth and death registration etc, and other government assisted programs related to health and poverty reduction and awareness programs. Besides, this department is responsible for the enforcement of the Public Health Act. The department is also involved in promotion of health awareness programs and implements various State and Central assisted schemes like pulse polio project, SJSRY etc.

g) Town Planning Department. The major function of this department is issue of building license, preparation and implementation of development plans and eviction of encroachments, urban planning and building regulation.

5.3 Manpower position

Exhibit 5.2 provides the manpower position vis-à-vis sanctioned posts as of October 2007.

Exhibit 5.2 Manpower status (as of October 2007)

Departments		No. of posts sanctioned	Staff in position			Posts vacant
			Perma-nent	Consoli-dated Pay	NMRs	
A	**General Administration**					
1	Commissioner	1	1			
2	Deputy Commissioner					
3	Assistant Commissioner					
4	Manager	1	1			
5	PA					
6	Assistant	2	1			1
7	Junior Assistant	6	6			
8	Typist	1	1			
9	Record clerk	1	1			
10	Office Assistant	2	2			
11	Asst. Programmer	1	1			
12	Data Entry Operator	1	1			
B	**Accounts Department**					
1	Accounts Officer					
2	Accountant					
3	Assistant Accountant					
4	Assistant					
5	Cashier					
6	Junior Assistant					
7	Office Assistant					
C	**Revenue Section**					
1	Revenue Officer					
2	Asst. Revenue Officer					
3	Revenue Inspectors/Market Superintendents	1				1
4	Bill Collectors	6	6			
5	Assistant					
6	Jumior Assistant					
7	Office Assistant					
D	**Engineering Section**					
1	Municipal Engineer (E.E.)	1	1			

Departments		No. of posts sanctioned	Staff in position			Posts vacant
			Perma-nent	Consoli-dated Pay	NMRs	
2	Asst. Executive Engineer					
3	Assistant Engineer	1	1			
4	Junior Engineer					
5	Supervisors					
6	Foreman					
7	Overseer	1	1			
8	Draughtsmen	1	1			
9	Work Inspector	1				1
10	Office Assistant					
E	**Street Lighting**					
1	Wireman	5	5			
2	Helper	5	5			
3	Others (Pl .specify)					
F	**Water Supply**					
1	Assistant Engineer					
2	Water works Supdt.					
3	Junior Engineer					
4	Electrician					
5	Meter Reader					
6	Pump Operator					
7	Fitters	3	3			
8	Mechanic					
9	Turn Cock Operator	10	10			
10	Watchman	2	2			
11	Driver	6	6			
12	Cleaner					
13	NMR					
G	**Public Health**					
1	Health Officer					
2	Sanitary Officer					
3	Sanitary Inspector	4	4			
4	Supervisor	12	12			
5	Conservancy staff					
6	Drain cleaners					
7	Drivers	4	4			
8	Office Assistant					
9	Watchman					
H	**Medical**					
1	Medical Officer					
2	Staff nurse					

Departments		No. of posts sanctioned	Staff in position			Posts vacant
			Perma-nent	Consoli-dated Pay	NMRs	
3	Pharmacist					
4	Mat. Assistant					
5	Mat. Ayah					
6	Health visitor					
7	Computer cum clerk					
8	M.P.H. worker					
9	Female attendant					
10	Watchman					
I	**Sewerage**					
1	Junior Engineer					
2	Workers	233	201			32
3	Others (Pl .specify)					
J	**Town Planning**					
1	Town Planning Officer	1	1			
2	Town Planning Inspector	1	1			
3	Assistants					
4	Junior Assistants					
5	Chainman	1	1			
5	Office Assistant					
K	**Parks & Garden**					
1	Park Officers					
2	Watchman					
3	Gardener					
3	Gang mazdoor					
L	**Other Staffs**					
1	Community Organiser (NM)	2				2
2	Community Ayah(NM)					
3	Cook					
2	Assistant					

Source : Hos -M

5.4 Role of other agencies

The State Government's line departments continue to play a crucial role in urban basic service delivery. Sectors and agency involvement include:

a) Water Supply & Sewerage. The Tamil Nadu Water Supply and Drainage Board (TWAD) is responsible for creation of water and sewerage infrastructure in the state. However, ULB is responsible for the provision and delivery of services within the City.
b) Master Plan. The Department of Town and Country Planning (DTCP) prepares the Master Plan and Comprehensive Development Plan (CDP) for the city/town, and the mandate of implementing the Master Plan lies with the ULB.
c) Roads and Highways. Department of Highways, Government of Tamil Nadu maintains the National, State Highways and select arterial roads that pass through the city. Municipal roads are however created and maintained by the ULB.
d) Environmental Protection. The Tamil Nadu Pollution Control Board (TNPCB) is responsible for environmental protection and enforcement of rulings related to the same.
e) Slum Upgradation. The Tamil Nadu Slum Clearance Board (TNSCB) develops improvement schemes for notified/regularized slum settlements in the city/town.

5.5 Reforms undertaken by Hosur municipality

5.5.1 Accrual accounting

Fund based accrual accounting has been implemented in the urban local bodies in Tamil Nadu under TNUDP-II and Hosur municipality has also been following the system for the last 4-5 years.

5.5.2 E-Governance

E-Governance of Hosur Municipality is aimed to provide online citizen services and information to all hierarchies and monitoring performance of Municipality. All Municipal records are computerised and information stored in a central server and connected to an uplink which online on the internet. Property tax, Water Charges, Nontax, Profession Tax and trader license fees and Birth and Death certificate may be obtained from the computerized civic center at the municipal premises. Through the e-governance program, Hosur Municipality hopes to provide easy access to the municipality and municipal records to its citizens.

5.5.3 Citizen's Charter

As per the directions of the Government of Tamil Nadu, the Hosur Municipality has published its 'Citizen's Charter' during 1998 to bring ULBs function closer to the people. The main focus of this charter is to introduce transparency, responsibility and user friendliness in its service provision and maintenance. Its basic objectives were to:

- Provide fast and quality service to the citizens.
- Inform the public about time limits to address the problems, and
- Provide transparency in administration.

This publication of citizen's charter brings people and administration closer and to let people know how much time is required to get works done. If the work is not attended to even after stipulated time, they can approach the Commissioner/ Chairperson. Thus, people's rights are made known to them. This also reduces time on the part of public, as they need not follow the movement of their applications at the municipal office. Further, through this charter, they also create awareness about sanitation, town improvement, tax payment and the like. Based on the time frame given for understanding / compliance, various works/ activities can be evaluated either by citizens or by Hos-M, paving the way for improving performance. Specific interventions in human resource development and systems dealt with in the section 9 - Reform agenda subsequently in the report.

6. Analysis of financials

This section provides a summary analysis of the financial performance of Hosur Municipality.

6.1 Income and Expenditure summary of Hosur Municipality

Exhibit 6.1 provides a summary of the income and expenditure of Hosur Municipality. This summary has been prepared based on information provided by Hosur Municipality covering audited accounts for FY 2003 to 2005 and unaudited accounts for FY 06. Income has grown faster (CAGR of 6%) than expenditure (CAGR of 3%).

Exhibit 6.1 Consolidated Income and Expenditure trend

(Rupees in Lakhs)

INCOME	2002-03	2003-04	2004-05	2005-06	CAGR %
OWN INCOME	***486***	***518***	***574***	***565***	5%
Property tax	276	294	330	328	6%
Profession tax	17	21	26	25	13%
Water & Sewerage Charges	58	50	51	53	-3%
Other Service Charges & Fees	37	38	37	81	30%
Other Income	99	115	131	79	-7%
ASSIGNED REVENUE	***37***	***153***	***110***	***124***	50%
DEVOLUTION FUND	***141***	***159***	***133***	***290***	27%
PRIOR PERIOD INCOME	***147***	***18***	***72***	***0***	-100%
TOTAL	**811**	**847**	**889**	**979**	**6%**
EXPENDITURE	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**CAGR %**
Salaries	152	136	171	164	3%
Operating Expenses	171	227	200	246	13%
Programme Expenses	0	1	6	0	-100%
Administrative Expenses	125	91	55	67	-19%
Finance Expenses	73	35	40	1	-75%
Depreciation	112	96	96	0	-100%
Prior Period Expenses	4	0	4	0	-100%
TOTAL	**526**	**489**	**476**	**479**	**-3%**
SURPLUS - (Excl.Depr)	**286**	**358**	**413**	**500**	**21%**
Operational Ratio (Total Exp/Total Income) (All figures in Percentage)					
Incl Depreciation	79%	68%	64%	49%	**56%**
Excl. Depreciation	65%	57%	54%	49%	**65%**
Debt servicing (Rs in lakhs)					
Loan repayments - Interest	39.63	6.59	45.16	43.02	**134.4**
Loan repayments - Principal	19.05	32.38	21.64	16.99	**90.06**
Debt servicing Vs Income	**7%**	**5%**	**8%**	**6%**	**6%**

Source: Hos-M, IMaCS analysis

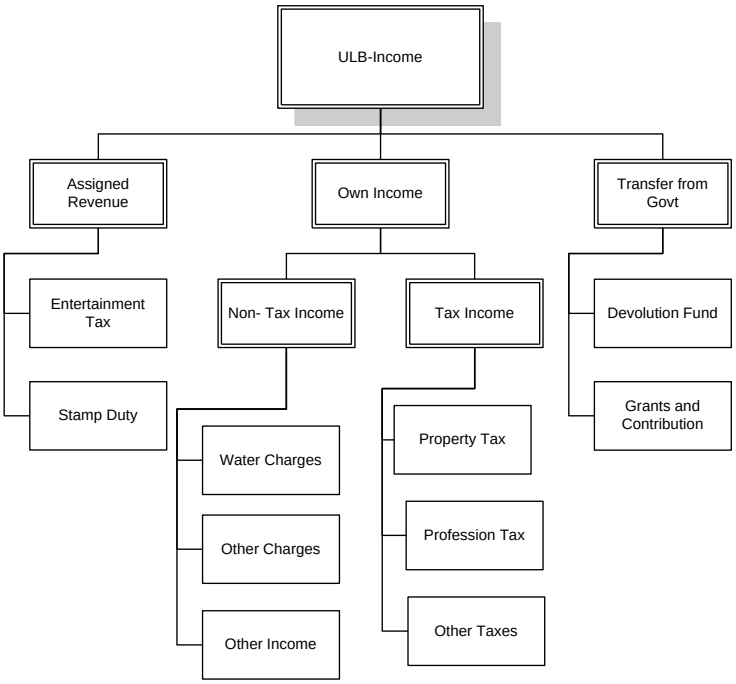
6.2 Revenue streams of ULB in Tamil Nadu

Revenue of ULBs in Tamil Nadu can be categorised along three areas:

- **Own Revenue** - comprising taxes (property tax and professional tax), user charges (water, sewerage, solid waste etc.) and other non-tax income (lease and rents, sale & hire charges etc)
- **Assigned Revenue -** Income generated revenues shared with the ULB
- **Grants and Contributions** - Grants and transfers made by GoTN

Exhibit 6.2 provides a detailed classification of the revenue streams.

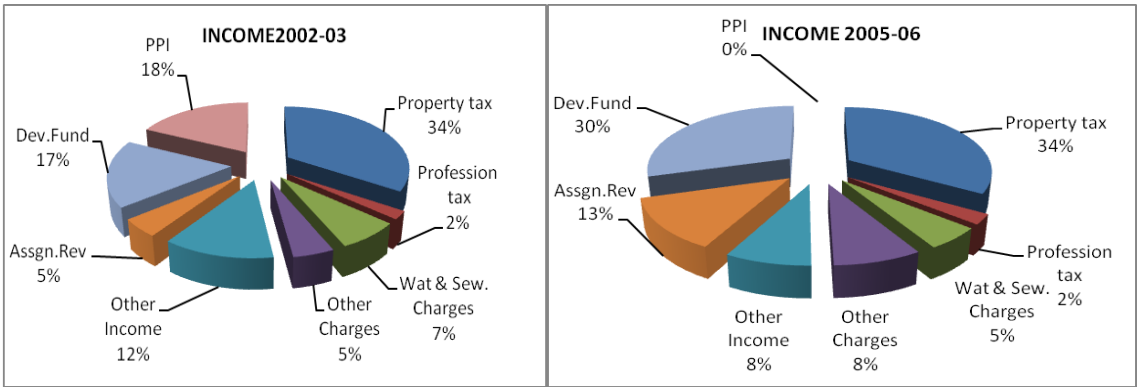
Exhibit 6.2 Revenue streams - ULBs in Tamil Nadu



6.3 Revenues

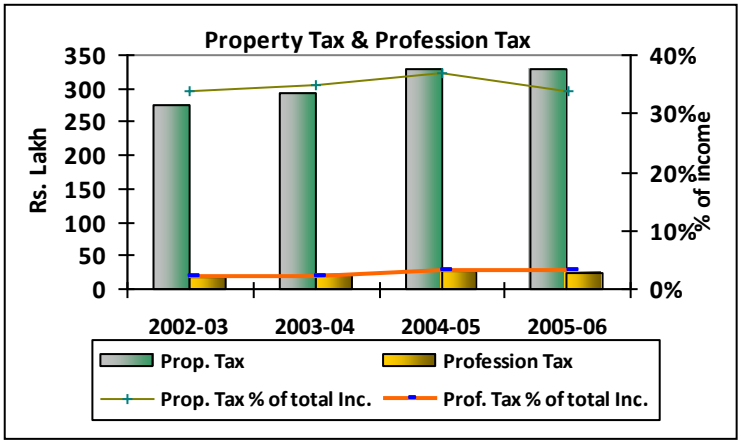
Exhibit 6.3 provides the composition of revenue of Hosur Municipality along various heads between FY 2003 and FY 2006. These are based on information provided by Hosur Municipality.

Exhibit 6.3 Analysis of Revenues



6.3.1 Tax Income

Tax income has grown at a CAGR of 5 % over the last four years aided by a 5% growth in Property tax. Professional Tax has grown at 13 % during this period. But, the share of property tax in total revenue has remained constant at 35 % of income; share of professional tax in revenue has increased marginally from 2% to 3% over four years.



6.3.2 Property Tax

Property tax alone accounted for almost a third of income of Hosur Municipality in FY 2006 and is an important contributor of revenues to Hosur Municipality. Following are the key issues / observations with respect to property tax. Exhibit 6.4 provides a summary.

Exhibit 6.4 Property tax - analysis of key revenue drivers

Year	Collection Efficiency			Properties		Growth Rate Of properties	Growth Rate of Current Demand
	Arrears	Current	Total	Numbers	Tax/property		
2002-03	18%	35%	25%	-	-	NA	NA
2003-04	18%	49%	30%	26312	963	NA	-14%
2004-05	24%	44%	32%	27819	1042	6%	14%
2005-06	12%	29%	17%	30533	1163	10%	23%
2006-07	18%	33%	22%	31884	1154	4%	4%

Source: Hos-M

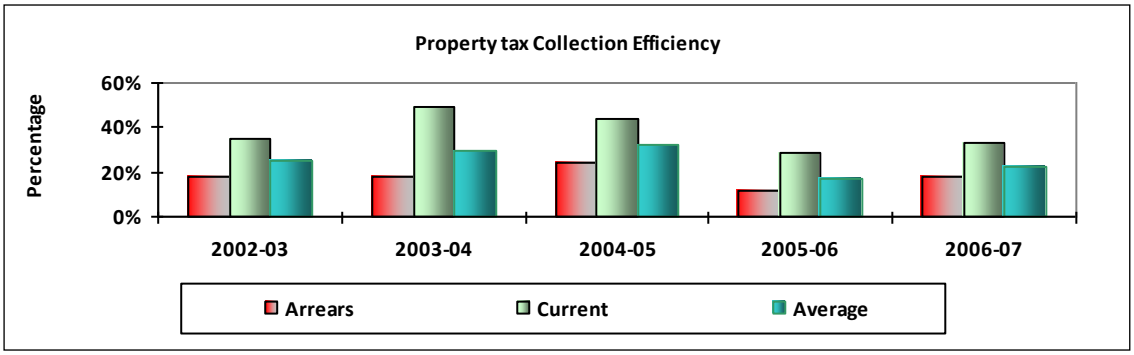


Exhibit 6.5 Property Tax - breakup of assessees (2007-08)

Category of Property	Number of Assessments	%	Annual Tax Demand (Rs. lakh)	%
Residential	32257	98%	135.40	46%
Commercial	623	2%	92.25	31%
Industrial	37	0%	68.6	23%
State Government Properties	620	2%	8.92	3%
Exempted if any	-			
Total	33537	100%	305.17	100%

Share of property tax remained constant over four years - The property tax has increased marginally in absolute terms and its share in total income has remained constant at 35%.

Demand per assessment - There has been an overall increase of 2.3% in the number of assessments and the average demand per property assessed has shown a 5.1% increase. During FY 2003 to FY 2005, the average tax per property assessed has increased from Rs. 963 per property to Rs 1154 per property.

Low collection efficiencies - Collection efficiency is a cause for concern. The collection efficiency in current demand has grown marginally from 35% to 33% from FY 03 to FY 07 The recovery of arrears has shown the declining trend of even low. In FY 2007, arrears collection efficiency dipped to 18%.

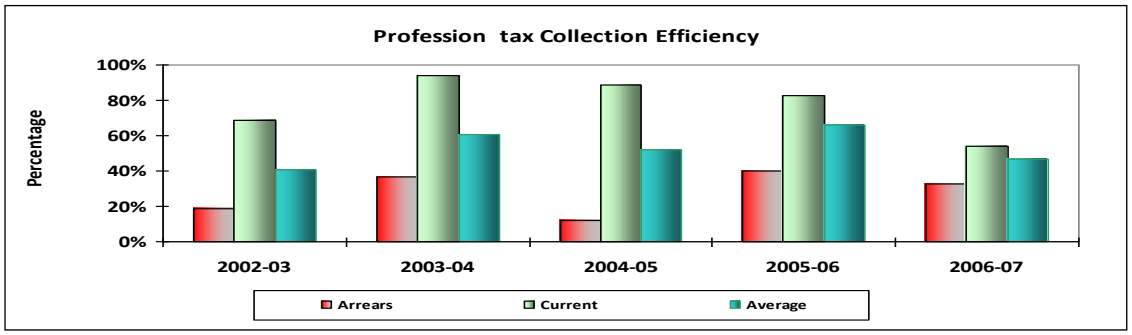
6.3.3 Professional tax

Exhibit 6.6 provides an analysis of key drivers for professional tax revenue.

Exhibit 6.6 Professional Tax - revenue drivers

Year	Collection Efficiency			Assesses		Growth rate of Assesses	Growth Rate of Current Demand
	Arrears	Current	Total	Numbers	Tax demand/assessee		
2002-03	19%	69%	41%	3205	540	NA	NA
2003-04	37%	94%	61%	3450	464	8%	-8%
2004-05	12%	89%	52%	4200	381	22%	0%
2005-06	40%	83%	66%	4307	511	3%	38%
2006-07	33%	54%	47%	4520	816	5%	68%

Source: Hos-M



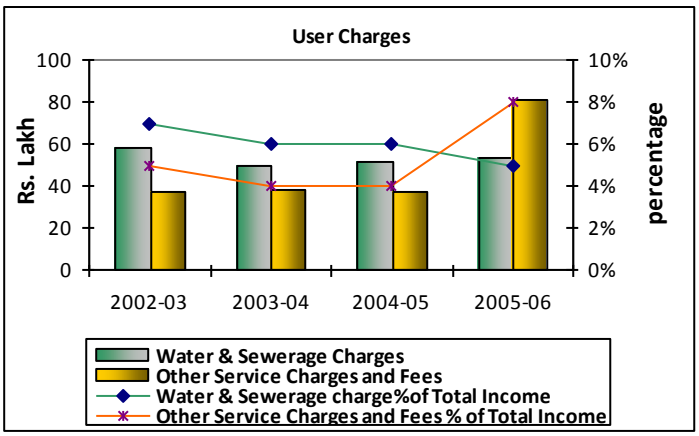
a) **Share of professional tax in total income** has increased marginally from 2% to 3% of total income
b) **Demand per assessment** has increased from Rs 540 in FY2003 to Rs 816 in FY2007.
c) **Collection efficiency** Collection efficiency is a cause for concern. The collection efficiency in current demand has decreased from 69% to 54% from FY 03 to FY 07. The recovery of arrears has shown the increasing trend of even low. In FY 2007, arrears collection efficiency slowly growth from 19% to 33% in FY 2007, While current collections are high at around 94%, there is still a scope for improvement.

Exhibit 6.7 Professional Tax – assessee break up 2007-08

Category	Number of Assessments	%	Annual Tax demand (Rs in Lakh)	%
State/Central/Quasi Govt. Employees	3701	71%	21.1	77%
Traders	1365	26%	3.6	13%
Private employers/ Companies	182	3%	2.7	10%
Total	**5248**	**100**	**27.4**	**100**

Source: Hos-M

6.3.4 User Charges / Fees



User charges have grown by 6%, aided by5 % increase in Service charges and fees. Share of other service charges and fees in total income has increased from 5% in FY2003 to 7% in FY2006. At the same time share of water charges has decreased marginally from7 % to 5 % of total income. As a result the share of total user charges/fees has increased from 12% of total income to 13% of total income over the last four years.

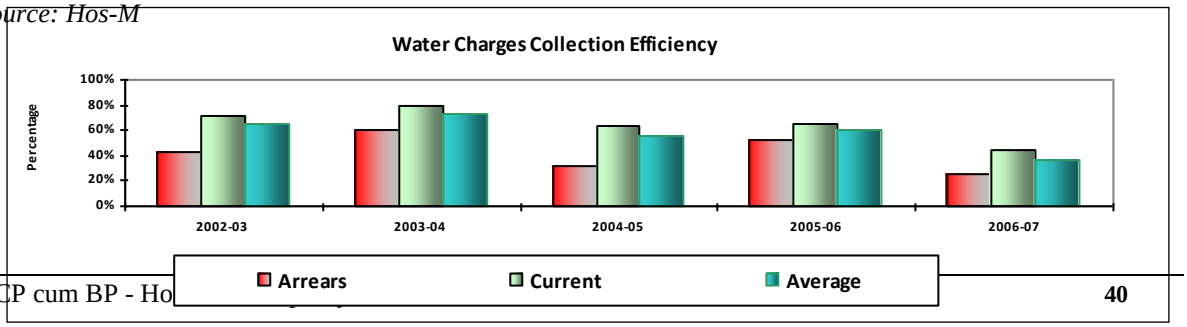
6.3.5 Water charges

Exhibit 6.8 provides an analysis of key drivers for water charges.

Exhibit 6.8 Water charges - revenue drivers

Year	Collection Efficiency			Connections		Growth rate of Connections	Growth Rate of Current Demand
	Arrears	Current	Total	Numbers	water charges per assessee		
2002-03	43%	72%	65%	8363	476	NA	NA
2003-04	61%	79%	73%	8601	471	3%	2%
2004-05	31%	63%	55%	8524	510	-1%	7%
2005-06	52%	65%	60%	9377	476	10%	3%
2006-07	25%	44%	37%	10283	472	10%	9%

Source: Hos-M



a) **No. of connections** - There has been a marginal increase in number of connections from 8363 in FY2003 to 10283 in FY2006 showing CAGR of 10%. There exists a lot of scope for the municipality to increase its revenue by converting unmetered connections to metered connections.

b) **Water tariff / connection** have decreased from Rs 476 to Rs. 472.

c) **Collection efficiency** - Current collection efficiency has declined from 77% (FY 2003) to 44% (FY 2007). Arrears collection efficiency has also been very low and has ranged between 25% and 61%. The overall collection efficiency of 58% is quite low and needs significant improvement. One way to improve this is to convert the water connections into metered connections.

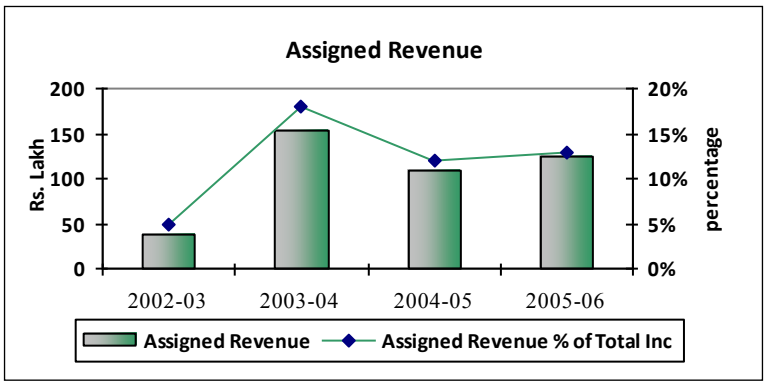
Exhibit 6.9 Water charges assessee break up 2007-08

Category of Water Supply	Number of Connections	%	Annual Demand (In lakh)	%
Residential	10575	99	50.76	97
Commercial	77	1	1.39	3
Total	**10652**	**100**	**52.15**	**100**

Source: Hos- M

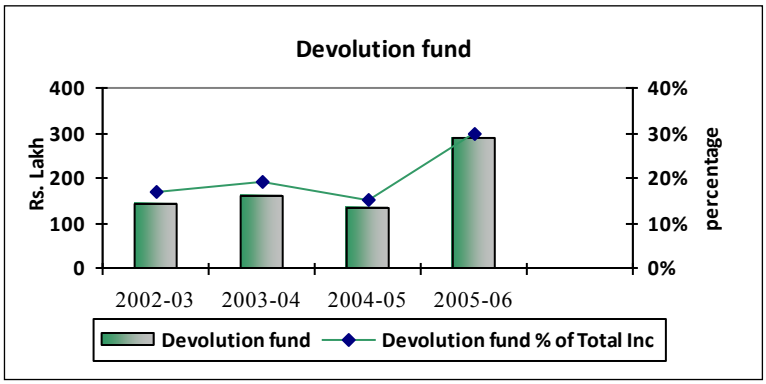
6.4 Assigned Revenue

Assigned Revenue (which includes transfers of stamp duty and entertainment tax) decreased from Rs 37 lakh in FY2003 to Rs 124 lakh in FY2006. Share of assigned revenue in total income declined from 5% of revenue in FY 2003 to 13% of revenue in FY 2006.



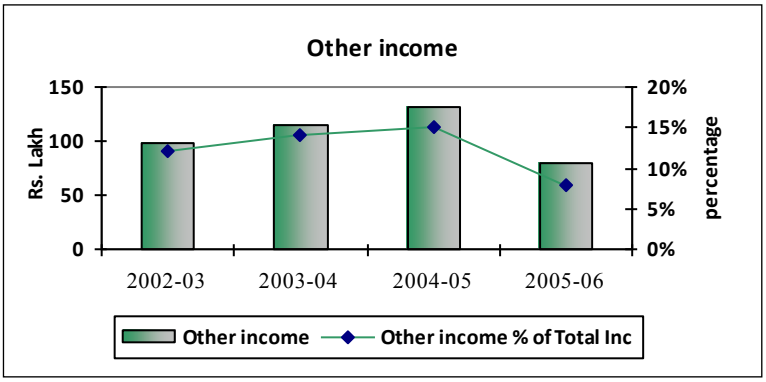
6.4.1 Devolution Fund

While Devolution fund has increased from Rs 141 lakh in FY2003 to nearly Rs 290 lakh in FY2006, its share in total revenue of the municipality has declined from 15% to 30% in respective years.



6.5 Other Income

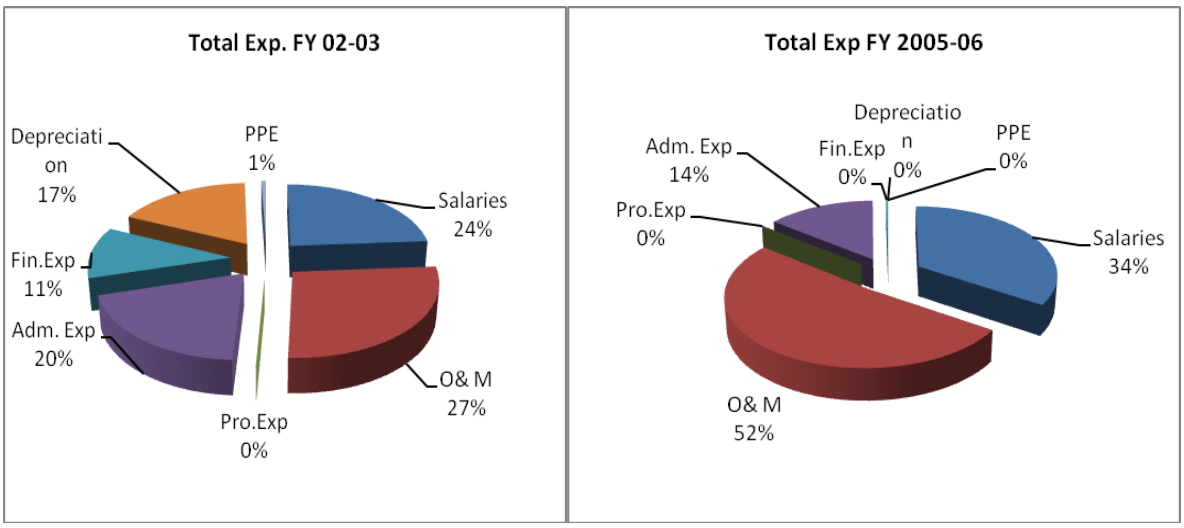
Other Income has increased from Rs 99 lakh in FY2003 to slightly above Rs 79 lakh in FY2006. Its share in total income of the municipality has increased from 12% in FY2003 to around 8% in FY2006.



6.6 Analysis of Costs

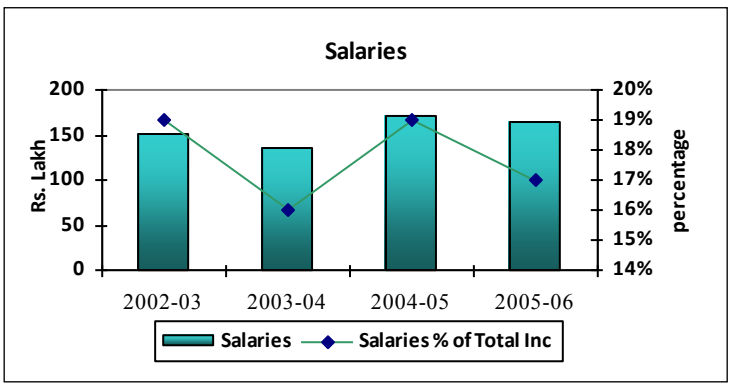
Exhibit 6.10 provides details of costs of Hosur Municipality along various heads between FY2003 and FY2006. Total expenditure has shown an upward trend, except for a dip in FY2006. This decline in total expenditure in FY2005 is due to decline in administration expenses by more than 80 %. Operating expenditure has shown an upward trend over the period except in FY06.

Exhibit 6.10 Expenditure – FY 2003 and FY 2006



6.7 Salary and wages

While salary and wages account for almost a half of total expenditure incurred by the municipality, it has increased from Rs. 152 lakh to Rs. 164 lakh over this period. It accounts for **18 % of total income.**

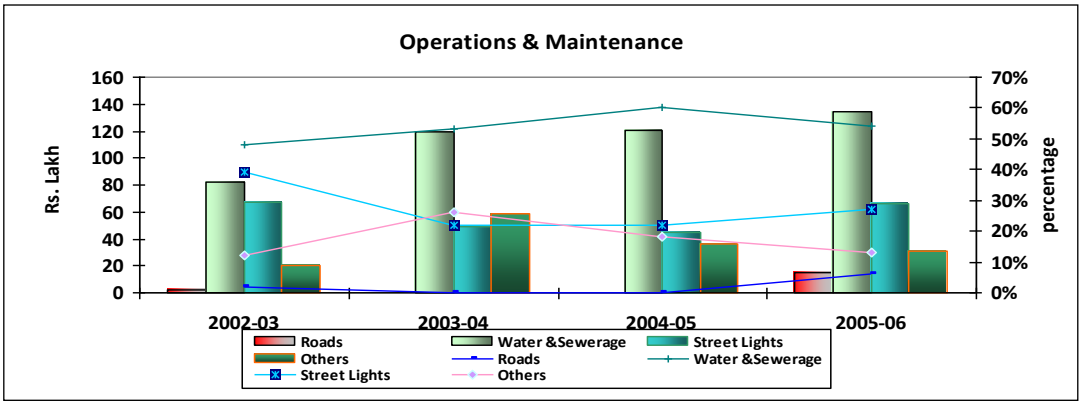


6.8 Operations and Maintenance

Repairs and maintenance form the other major component of total expenditure. In absolute terms, repairs and maintenance expenditure has shown inconsistent trend, over the last four years, growing from Rs 171 lakh in FY2003 to Rs 246 lakh in FY2006. Its share in total expenditure has increased marginally from 21% to 25% in FY2003 and FY2006, respectively. *Exhibit 6.11* provides details of sector wise composition. Though streetlights form the major proportion of operating expenses, there has been a downward trend in expenditure between FY 2003 to FY 2006. Expenditure on water and sewerage has shown inconsistent trend with overall decrease from 8 % to 1% over past four years. Overall repairs and maintenance has grown at a CAGR of 13% over the period.

Exhibit 6.11 Repair and maintenance expenditure - Sector wise break up (Rs. lakh)

Item	FY2002	%	FY2003	%	FY2004	%	FY2005	%
Roads	2.61	2%	-	0%	0.16	0%	14.77	6%
Water & Sewerage	81.62	48%	119.97	53%	120.08	60%	133.90	54%
Street Lights	66.68	39%	48.80	22%	44.41	22%	65.88	27%
Others	20.55	12%	58.15	26%	35.78	18%	31	13%
Total	**171**	**100%**	**226.92**	**100%**	**200.42**	**100%**	**246.05**	**100%**



6.8.1 Power costs

Exhibit 6.12 gives the details of power costs out of the total repair and maintenance expenditure relating to Water & Sewerage and Street lights. Power costs have declined at a CAGR of 8%.

Exhibit 6.12 Power costs – Water, Sewerage and Street Lights (Rs in Lakh)

Item	FY2002	%	FY2003	%	FY2004	%	FY2005	%
Water	**81**	**100%**	**114**	**100%**	**106**	**100%**	**124**	**100%**
Power	58	72%	77	68%	83	78%	80	65%
Non Power	22.73	28%	37.09	32%	22.88	22%	43.82	35%
Street Lights	**67**	**100%**	**49**	**100%**	**44**	**100%**	**66**	**100%**
Power	62	93%	42	86%	36	80%	43	65%
Non Power	4.55	7%	6.98	14%	8.90	20%	22.93	35%
Total	**147**		**163**		**150**		**190**	

Power costs account for nearly 85% of repair & maintenance costs of operating streetlights.

Power costs have declined from 61% of O& M expenditure in FY 2003 to nearly 41 % of O&M expenditure in FY 2006.

6.9 Loans and Finance charges

Exhibit 6.13 provides the loan statement of the ULB as of FY 06. As of March 2006,

Exhibit 6.13 Loan statement (as of FY 2006)

Lending Agency	Amount of Loan (Rs in Lakh)	Year of drawal	Interest Rate %	Repayment period (years)	Purpose / Scheme	Moratorium Years	Outstanding loan amount
TUFIDO (take over finance)	90	2003	10%	40	Special road works	3.5	90.00
TUFIDCO- WS	80.92	2003	10%	52	Water supply scheme	2	80.92
TNUDF	100.39	1996	15%	30	Road,Burial ground, sanitation,SWD		55.21
Government Loan	122.55	1998	11%		Road,Burial ground, sanitation,SWD		122.55*
TOTAL	393.86						348.68

Source:Hos-M ** expected to be written off*

6.10 Analysis DCB – Based on 2007-08

6.10.1 Property tax

Exhibit 6.14 Property tax analysis Per capita

Category of Property	No of Assts	%	Demand	%	ATPA*	Collection Effy
Residential	32257	98%	135.4	46%	420	54%
Commercial	623	2%	92.25	31%	14,807	47%
Industrial	37	0%	68.6	23%	185,405	50%
State Government Properties	620	2%	8.92	3%	1,439	26%
Charitable & Religious Institutions	-	0%	-	0%	-	-
Other if any *	-	0%	-	0%	-	-
Total	**33,537**	100%	**305.17**	100%	**910**	50%
Average for 5 years	29,137		311.97		1071	38%
Increase Over Previous Year	118	0.4%	1.49	0.5%		
Litigation	11	0.03%	8.21	3%		
Growth in 5 years - Current		7%		7%		6%

Exhibit 6.14 provides a summary of the Current Collection Efficiency of Hosur Municipality. This summary has been prepared based on information provided by Hosur Municipality covering break up for category of property tax. Following are our observations:

- The municipality has seen a CAGR of 7% in assessments and 7% in demand respectively. Demand growth at a higher rate than assessments is a positive sign. However, litigation accounts for 0.03 % of assessments and 7% of properties which needs to be addressed on priority.
- Collection efficiency at 51% is a serious cause for concern. Also, the collection efficiency has not improved over the last 5 year period. The collection efficiency is low across residential, commercial and state government categories.
- Overall Average tax per Assessment shows (ATPA) for 2007-08 was **Rs.910, marginally lower than the average Rs. 1071 for last five years.** Residential ATPA was Rs.420 and Commercial ATPA was Rs.14807. Industrial ATPA was Rs.185405 and State government ATPA was Rs.1439**.**

6.10.2 Professional tax

Exhibit 6.15 Professional tax analysis Per capita

Category of Professional	No of Assts	%	Demand	%	ATPA*	Collection Effy
State / Central / / Quasi/ Government Employees	3751	72%	24.60	83%	656	94%
Traders	1407	27%	3.75	13%	267	32%
Industrial / Private Exmployees	27	1%	1.15	4%	4,259	100%
Other if any	-		-			
Total	**5,185**	**100%**	**29.5**	**100%**	**569**	**86%**
Average for 5 years	**3,936**		**21.64**		**550**	**78%**
Increase Over Previous Year	**238**	**5.0%**	**2.33**	**9.0%**		
Litigation						
Growth in 5 years - Current		**9%**		**21%**		**14%**

Exhibit 6.15 provides a summary of the Current Collection Efficiency of Hosur Municipality. This summary has been prepared based on information provided by Hosur Municipality covering break up for category of professonal tax. Following are our observations:

- The municipality has seen a CAGR of 9% in assessments but only 21 in demand respectively. Demand is growing at a higher pace than assessments and that needs to be reviewed.
- Collection efficiency at 86% is healthy. But, the collection efficiency among traders is low.
- Average tax per Assessment is Rs. 569 slightly higher than the average Rs. 550 in the last 5 years. ATPA for State/Central government employees was Rs.**656**, Traders was **Rs.267** and industrial/ private employees was Rs.**4259**. The number of assessments is recorded at an organization level and not at the level of individual professionals paying taxes. This constrains us from making a meaningful comparison of ATPA across categories and across years. The municipality needs to make a change to reflect assessments at the level of individual paying professional tax.

6.10.3 Water Supply charges

Exhibit 6.16 Water supply charges analysis Per capita

Category of Water Supply	No of Assts	%	Demand	%	ATPA*	Collection Effy
Residential	10243	99%	49.166	97%	480	41%
Commercial	77	1%	1.386	3%	1,800	79%
Industrial	-		-			
Other if any *	-		-			
Total	**10,320**	**100%**	**50.55**	**100%**	**490**	**42%**
Average for 5 years	**9,029**		**43.40**		**481**	**64%**
Increase Over Previous Year					%	
Litigation						
Growth in 5 years - Current		**5%**		**5%**		**-7%**

Source:Hosur- M and IMaCS analysis

Exhibit 6.16 provides a summary of the Current Collection Efficiency of Dharmapuri Municipality. This summary has been prepared based on information provided by Dharmapuri Municipality. Following are our observations:

- Current Collection Efficiency for Residential, Commercial, and Industrial shows **41% ,79%** and **nil.** Overall current collection efficiency was around **42%** for 2007-08, but an average for the last five years shows the current collection efficienty is **64%.** The municipality needs to ensure that its improvement in collection efficiency in the previous year is sustained and improved upon.
- The municipality has seen a CAGR of 5% in assessments and 5% in demand respectively. Demand growth at a higher rate than assessments is a positive sign.
- However, only about connections account for only 33%.of property tax assessments which indicates low penetration. The municipality needs to improve this from current levels.
- Average tax per Assessment shows (ATPA) for Residential connections was **Rs.480**, Commercial - **Rs.1800.** Over all average tax per assessment shows **Rs.490** for the FY'2007-08 and is higher than the ATPA of **Rs.481** in the last five years.

7. Vision & Strategic plan, CIP and Asset Management plan

This section articulates a strategic plan for urban development in Hosur town and crystallizes the Capital Investment Plan (CIP) for urban infrastructure needs of the town in the short term (5 years) and long term (20 years). The strategic plan and CIP follow from an analysis and articulation of the potential themes for economic development for the town, a SWOT analysis of the current status of the town and the expectations elucidated by stakeholders of the town namely, elected municipal council representatives and public stakeholders during our consultations with them.

7.1 Potential themes for economic development

The key economic development themes for Hosur town are articulated below:

7.1.1 Build on the industrial base in and around Hosur and proximity to Bangalore to generate further employment opportunities and economic development

Hosur is an industrial town and a number of larger and medium scale industries are based in Hosur. Though the industrial areas are outside the city's limits, the contribution of these industrial growth in terms of residential demand and commercial activity is significant. It is in this regard the proposed plans to create a new Special Economic Zone in Hosur is particularly relevant and critical for continued growth in the region. Further, press reports and anecdotal evidence indicate that a significant number of IT professionals working in Bangalore live and travel out of Bangalore. There is thus significant scope for seeding and creating an IT cluster in and around Hosur.

7.1.2 Build on the strengths in horticulture and processing by incentivising investments in terminal markets, cold storage and export processing facilities

Tan flora Park has emerged as the largest exporter of roses in the country. The success of this unit indicates the potential for horticulture in Hosur. Provision of additional infrastructure for setting up such units including establishment of a cold supply chain and phytosanitation facilities could contribute significantly to economic development in the region.

7.1.3 Review master plan and explore scope for extending town limits

While there are significant developments in areas in the vicinity of Hosur, the town itself has remained fairly congested and today faces structural limitations for growth. We understand from discussions with Hosur municipality that the New Hosur Town Development Authority in charge of development planning for the region. During consultations with public stakeholders and council, there has been a strong demand for extension of the town's limits to facilitate orderly development. The land-use pattern in Hosur town and adjoining areas needs to be reviewed and updated in conjunction with the land-use of adjoining areas. This exercise is critical to enable an integrated approach to planning for the urban agglomeration growing in and around Hosur and to facilitate an orderly growth in the region.

7.2 SWOT analysis

A brief SWOT analysis of the town is presented below:

Strengths	Weakness
• Industrial region with a number of large, medium and small industrial units • Proximity to Bangalore city • Horticulture potential in the region	• Town is congested and faces structural limitations for growth • Encroachments on arterial roads and traffic problems • Water availability and quality.
Opportunities	**Threats**
• Potential for further growth in industrial development with expansion of existing units and proposed SEZ plans • Potential for IT-ITES given proximity to Bangalore and proposed IT SEZ / IT park development plans of ELCOT • Emerging as an important commercial and trade hub with improving road connectivity and new bus stand.	• Outward migration of skilled workforce • Municipal areas not getting the benefit of growth around the city limits in terms of finances and meeting investment needs.

7.3 Strategic plan – focus areas and time horizon

The focus of the City Corporate Plan exercise and the strategic plan is on provisioning of urban services in the following areas:

a. Water Supply
b. Sewerage and Sanitation
c. Roads, Transportation and street lighting
d. Solid Waste Management
e. Urban services for the Poor
f. Social infrastructure and other urban amenities

The strategic plan for urban service delivery involves identification of interventions to address the gaps in service delivery between the prevailing levels and the required levels of services in the short term (covering a period of 5 years starting 2007-08 up to 2011-12) and long term (covering a period of 15 years starting 2012-13 up to 2026-27). The geographical coverage of the plan includes the area under the jurisdiction of Hosur municipality as of March 2007.

7.4 Population projections underlying the strategic plan

Exhibit 7.1 provides the population projections that form the basis of arriving at the sector wise service delivery gaps, interventions required and capital investment estimates.

Exhibit 7.1 Population projections and related estimates

	Unit	Baseline	Projected		
		2007	2012	2017	2027
Population	Nos	93996	109682	116783	132224
Households (Estd.)	Nos	22109	25798	27468	31100
Assessed Properties	Nos	31884	37205	39613	44851
Road length	Km	77	78	84	89

The population projections have been arrived at as an average of the population projected based on Arithmetical Increase Method, Geometric Increase Method and Incremental Increase Method. A household size of 4.9 is assumed (in line with Census 2001).

7.5 Water Supply

7.5.1 Service Goals and Reform targets

Exhibit 7.2 provides the service goal/outcomes and reform targets for 2008-12.

Exhibit 7.2 Water supply - Service Goals and Reform Targets

FACTOR	Unit	Baseline	Target		
		2007	2012	2017	2027
Service Goals					
Per capita supply at doorstep	LPCD	58	135	135	135
Storage capacity / Total demand	%	74%	50%	50%	50%
Distribution network / Road length	%	84%	80%	85%	90%
Frequency of supply	hours/day	3	4	4	24X7
Reform targets					
Current collection efficiency	%	44%	75%	90%	90%
House Service Connections / Assessed Properties	%	33%	50%	60%	80%
Population per water fountain	nos.	261	200	200	200
Implementation of graded / metered tariff	Yes / No	No	Yes	Yes	Yes
User charge collection - % of O&M plus debt servicing	%	n.a	30%	50%	100%

As observed, the current supply levels fall short of the norm of 135 LPCD. On the reform agenda, however, at 44% the current collection efficiency requires significant improvement. Connection efficiency (as measured by connections / assessed properties) also is low at 32% and indicates scope for improvement.

7.5.2 Baseline status and requirements – short term & long term

Exhibit 7.3 provides details of the water supply infrastructure and the requirements and gaps in the short, medium and long term after taking into account the interventions mentioned above.

Exhibit 7.3 Water Supply - Baseline status and gaps (short term and long term)

INFRASTRUCTURE - Baseline and Gaps	Unit	Baseline	Required			Incremental addition		
		+ Ongoing	2012	2017	2027	2012	2017	2027
Gross Water Supply	MLD	4.30	10.37	11.14	12.74	6.07	0.77	1.60
Storage Capacity	ML	3.00	5.18	5.57	6.37	2.19	0.39	0.80
Distribution network length	km	38.65	36.80	41.40	51.75	-	2.75	10.35
HSCs	nos	11,936	13,978	16,094	16,783	2,042	2,116	689
Public fountains	nos	515	614	660	755	99	46	95

7.5.3 Interventions – immediate priorities

Hogenakkal water supply project

The Hogenakkal Water supply project for addressing water supply requirements of Dharmapuri and Krishnagiri district is expected to address requirements of Hosur town as well. Regarding the project, the following details are available to us based on reports provided to us by TWAD and TNUIFSL. While we understand that the project is still under finalization and these numbers are subject to change, they provide the broad details to base the range of operational indicators and capital investment requirements:

a) **Gross water supply** – The project is assumed to provide 128 MLD supply at intermediate stage and 160 MLD at ultimate stage. For Hosur, the project envisages supply of 12.38 MLD at the ultimate stage or 2036. While our computation of overall demand works out to nearly 17.85 MLD by 2027 itself as per our estimates, based on a norm of 135 LPCD, we have not provided for any additional capital investment for the same. Further, the scheme is assumed to cover 12 km of distribution network that is currently uncovered as per our normative gaps.

b) **Connections** – The project envisages servicing 23299 connections. However, our estimates of connections at even 60% of households by 2027 imply a demand of about 26000 plus connections.

c) **Allocated cost** –Assuming cost of the project at Rs. 1334 crore, the apportioned cost on a pro-rata basis works out to Rs. 10322 lakh. Discussion with TWAD authorities indicate that the project would cover necessary additions to local infrastructure (including distribution network for uncovered areas and storage augmentation).

Other ongoing projects

Hos-M is contemplating addition of 40 lakh litres of storage capacity through construction of 4 OHTs in view of the proposed Hogenakkal water supply scheme. In addition, it also expects the need to replace about 40 km of pipeline apart from the areas that would be covered by Hogenakal scheme.

Asset Management and developmental activities

1) Review and update asset register to reflect the latest status and establish process along with accountability for updating asset register on a periodic basis.
2) Provide a ward wise report on capital works undertaken online on a quarterly basis.
3) Undertake an independent study to assess loss levels in transmission, storage points and distribution and develop a roadmap for providing 24x7 water supply.
4) Conduct periodic IEC campaigns on water conservation and rainwater harvesting practices.
5) Review losses and illegal connections and widen the base of house service connections.

7.5.4 Interventions - medium-long term

The Hogennakal water supply scheme is envisaged to take care of the water supply requirements of Hos-M in the medium to long term as well. We have provided for additional investments for distribution network extension based on normative gaps. Further, we believe that Hos-M should strive towards 24x7 water supply in the medium to long term. This would require comprehensive metering of all connections and implementing volume based user charges. Investments in metering have been provided based on expected connections in 2027 during 2018-27

Asset Management and Developmental activities

Critical asset management and development activities in the medium to long term are listed below:

- Implement metering and metering-based-tariff /graded water tariff at household level
- Implement 24x7 water supply on a pilot basis in select zones / wards and replicate the same in a phased manner within a ten-year timeframe.
- Undertake a comprehensive GIS mapping of the water supply network of the town.

7.5.5 Investment summary - Water supply

The total outlay and phasing of investments for water supply is given in Exhibit 7.4 below.

Exhibit 7.4 Water Supply - Capital Investment outlay and phasing

Rs. in lakhs

CAPEX PLAN AND PHASING	2008	2,009	2,010	2,011	2,012	2008-12	2013-17	2018-27	Total
ONGOING / PROPOSED PROJECTS									
Hogenakkal scheme	-	2,680	2,680	2,580	2,580	10,522	-	-	10,522
Proposed Storage capacity addition		100	100			200			200
Distribution line replacement (40 km)			60	60		120			120
Others – normative estimates						-			-
Distribution network	-	-	-	-	-	-	461	771	**1,232**
Metering	-	-	-	-	-	-		538	**538**
TOTAL CAPEX - Water supply	**-**	**2,780**	**2,840**	**2,640**	**2,580**	**10,842**	**461**	**1,309**	**12,612**

7.6 Sanitation

7.6.1 Service Goals and Reform targets

Exhibit 7.5 provides the service goal/outcomes and reform targets for 2008-12.

Exhibit 7.5 Sanitation - Service Goals and Reform Targets

SERVICE LEVEL GOALS AND OUTCOMES	Unit	Baseline	Target		
		2007	2012	2017	2027
Service Goals					
UGD Network					
Availability	Yes/no	No	Yes	Yes	Yes
Treatment capacity per capita	LPCD	-	120	120	120
Sewer network - % of road length	%	-	80%	80%	80%
Storm Water Drains					
Drain length / Road length	%	81%	80%	100%	100%
Public Conveniences					
Population per PC seat	%	118	200	200	200
Reform targets					
Sanitation coverage - % of population	%	81%	100%	100%	100%
User charges - Current collection efficiency	%	Na	70%	75%	80%
Household connections / Assessed Properties	%	na	50%	60%	60%

7.6.2 Baseline status and gaps

Exhibit 7.6 provides the baseline status on sanitation and the requirements and gaps in the short, medium and long term after taking into account the above projects

Exhibit 7.6 Sanitation- Baseline status and gaps (short term and long term)

INFRASTRUCTURE - Baseline and Gaps	Unit	Baseline + Ongoing	Required			Gap		
			2012	2017	2027	2012	2017	2027
Treatment & pumping capacity	MLD	Project in progress	9.22	9.90	11	-	-	-
Sewer Length	km		37	41	41	-	-	-
Household connections	nos		6,827	11,005	14,685	-	-	-
Storm Water Drains	km	60	46	67	67	-	7	-
Public convenience seats	nos	150	192	206	236	42	14	30

7.6.3 Interventions - Immediate priorities

There are significant gaps in sanitation in the immediate term and the following actions are required within the next 5 years. Exhibit 7.7 presents the list of ongoing projects of Hos-M.

Exhibit 7.7 Sanitation – Ongoing/proposed projects

Rs.in lakhs

ONGOING / PLANNED INTERVENTIONS - Status and Outlay	Outlay	2008	2009	2010	2011	2012
UGD Scheme	**6,635**		2,212	2,212	2,212	
Storm water drains - 22 Kms- UIDSSMT	**52**	**-**	26	26	**-**	**-**
Construction of Public conveniences	**50**	50		**-**	**-**	**-**
TOTAL	**6,737**	**50**	**2,238**	**2,238**	**2,212**	**-**

The project priorities in the short term are listed below:

a) UGD scheme Hos-M has proposed to provide the sewerage system in entire town and a plan was prepared by TWAD board at an estimated cost of Rs 6635 lakh. While the details of the project are not available (the DPR is under finalization), the following are the normative gaps that would need to be addressed by the system (as outlined in Exhibit 2.6 above)

- ❖ Treatment capacity requirement (13.16 MLD by 2012 and 16 MLD in 2027)
- ❖ Sewer length (63 km in 2012 and 71 km in 2017)
- ❖ Connections (18600 in 2012 and 26911 in 2017).

b) Storm water drains

- ❖ Storm water drains of about 3.71 km are under construction. We have also factored a capital outlay for complete renovation of the entire storm drain network (of about 63 km) during 2008-12 on a normative basis.

c) Public conveniences

- ❖ Hos-M intends to build about 10 blocks of public convenience seats at an outlay of Rs. 50 lakh.

d) **Restoration of water bodies** – There are 2 water bodies within Hos-M which need restoration on priority, but these water bodies are under the jurisdiction of respective town panchayats. Therefore this would require the intervention of CMA and GoTN and has not been considered in the CIP for Hos-M, though it is an important felt need of the town.

Asset Management and developmental activities

a) Create baseline information database on sanitation assets and performance of the municipality. Establish processes and accountability for periodic updation and dissemination.
b) Conduct IEC campaigns and public consultations to educate citizens on the benefits of Underground drainage scheme.
c) Ensure adequate upkeep of sanitation assets including public conveniences and storm water drains through encouraging community level participation and feedback
d) Disseminate information on tariffs a transparent manner and undertake a focused program to mobilise connection deposits
e) Use a combination of incentives and penalties to encourage timely payment of user charges.

7.6.4 Interventions – Long term

The proposed investments in UGD will take care of bulk of the sanitation requirements in the medium to long term as well. However, additional investments will required to take care of growing population and increase in road length due to new formations / layouts in extension of sewer length. The proposed UGD system will cover all the wards of Hos-M in terms of sanitation facilities. We have provided for investments in these areas on a normative basis, depending on the demand gaps emerging from Exhibit 2.6 above.

Asset Management and Developmental activities

Hos-M should incorporate the sanitation asset details as part of a wider GIS implementation program. Further, tariffs can be structured on a slab rate structure with property tax assessments as the basis.

7.6.5 Project components and Capital Investment

Exhibit 7.8 provides a summary of the project components, capital outlay and phasing for sanitation.

Exhibit 7.8 Sanitation - Capital Investment outlay and phasing

Rs. in lakhs

	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
UGD Scheme	-	2,212	2,212	2,212	-	6,635	-	-	6,635
Sewer construction						-	36	36	71
Public conveniences	25	25	-	-	-	50	9	19	78
Storm water drains	-	26	358	358	358	1,100	382	101	1,582
TOTAL	**25**	**2,263**	**2,570**	**2,570**	**358**	**7,785**	**427**	**156**	**8,367**

7.7 Solid Waste Management

7.7.1 Service goals and reform targets

Exhibit 7.9 provides the service goal/outcomes and reform targets in SWM during 2008-27.

Exhibit 7.9 Solid Waste Management - Service Goals and Reform Targets

	Unit	Baseline	Target		
		2007	2012	2017	2027
Collection efficiency	%	96%	100%	100%	100%
Door-to-door collection	%	100%	100%	100%	100%
Source Segregation	%	30%	60%	100%	100%
Scientific disposal	%	0	50%	100%	100%
Conservancy fee	Yes / no	No	Yes	yes	yes

7.7.2 Baseline status and gaps – short term & long term

Exhibit 7.10 provides the baseline status in solid waste management and the requirements and gaps in the short, medium and long term.

Exhibit 7.10 Solid Waste Management - Baseline status and gaps (short term and long term)

	Unit	Baseline	Required			Incremental gap		
			2012	2017	2027	2012	2017	2027
Waste Generated	**MT**	**48**	**66**	**76**	**86**			
Primary collection								
Number of trips	Nos.	2.00	4.00	4.00	4.00			
Vehicle capacity (Tricycle equivalent)	MT	0.15	0.15	0.15	0.15			
Number of Tricycle equivalent	nos.	**160**	**110**	**127**	**143**		17	17
Replacement - Tricycle equivalents	nos.			**110**	**47**		110	47
Secondary collection / Transfer								
Number of trips	nos.	1.50	2.00	2.00	2.00			
Vehicle capacity	MT	15.00	32.90	37.95	42.97	17.90	5.05	5.02
Equipment - tonnage equivalent	MT			32.90	37.95		32.90	37.95
Disposal								
Land	acres	7.20			13.22			6.02
Compost yard	acres	2.88			5.29			2.41
Processing yard	acres	4.32			7.93			3.61

The gaps in primary collection and secondary collection have been arrived at on a normative basis in terms of tricycle equivalents for primary collection and tonnage requirement for secondary collection, based on assumptions relating to waste generation per capita and the no. of trips.

7.7.3 Interventions required – Short Term

The following projects are proposed and required in the short term.

a) Land acquisition

- Hos-M has a land availability gap of about 6 acres. We have provided for outlay of acquisition of 6 acres land at Rs. 30 lakh per acre.

b) Compost yard development

- Compost yard development and implementation of wind rows over 5.3 acres at an outlay of Rs. 106 lakh

c) Equipment – primary and secondary collection

- Capital estimate for equipment procurement has been provided for on the basis of normative gaps. The estimated outlay for 2008-12 is Rs. 62 lakh for secondary collection and transfer.

Asset Management and developmental activities

- Hos-M should prepare a detailed project report for its solid waste management requirements along the entire value chain from generation to disposal to ascertain. This should also include an evaluation of disposal options and recommend a roadmap for safe disposal of waste

including additional investments needed for composting if any and implementing other options for non-biodegradable waste such as engineered landfills

- Conduct IEC activities to back other initiatives like door-to-door collection to facilitate effective segregation of waste at source.
- Review and updated the Solid Waste Management Action Plan and prepare a detailed feasibility report for comprehensive Solid Waste Management in the town
- Implement door-to-door collection and source segregation in all wards.
- Identify transfer points / collection points for every ward and streamline primary and secondary collection trips

7.7.4 Interventions required – medium term

The following projects are proposed and required in the medium to long term. The outlay has been arrived at based on the normative gaps established in Exhibit 7.11 above.

a. Equipment - Purchase of equipments for primary and secondary collection at an outlay of Rs. 100.9 lakh and Rs. 201.3 lakh respectively.

b. Sanitary Land fill - Development of scientific landfill site and compost yard at an estimated outlay of Rs. 80 lakh.

Asset Management and Developmental activities

a. Progressively enable greater mechanisation of waste handling.
b. Implement a nominal conservancy fee for primary collection.
c. Focus on commercial exploitation opportunities for revenue enhancement by exploring scope for privatising compost yard management and other options including bio-gas and formal sale of scrap/recyclable material
d. Shift from indiscriminate dumping of non-biodegradable waste to explore potential for development of a shared landfill site for safe disposal of non-biodegradable waste.

7.7.5 Project components and Capital Investment

Exhibit 7.11 provides a summary of the project components, capital outlay and phasing for Solid Waste Management in Hosur town.

Exhibit 7.11 Solid Waste Management - Capital Investment outlay and phasing

Rs.in. lakhs

CAPEX PLAN AND PHASING	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Primary collection	-				-	63	32	95
Secondary collection	31	31			63	133	150	346
Land acquisition		180			180	-	-	180
Development cost - Compost Yard		53	53		106	-	-	106
Development cost - Landfill site					-	79.3	-	79
TOTAL CAPEX- SWM	**31**	**264**	**53**	**0**	**348**	**275**	**182**	**806**

7.8 Roads, Transportation and Streetlights

7.8.1 Service goals and reform targets

Exhibit 7.12 provides the service goal/outcomes and reform targets for the horizon period.

Exhibit 7.12 Transportation and street lighting - Service Goals and Reform Targets

SERVICE LEVEL GOALS AND OUTCOMES	Unit	Baseline	Target		
		2007	2012	2017	2027
Municipal roads as % of Total Area	%	7%	8%	9%	10%
Surfaced roads to Total roads	%	88%	100%	100%	100%
Street Lights - Distance between streetlights	M	20.97	30.00	30.00	30.00
Street Lights - Proportion of high power lamps	%	14%	30%	30%	30%
Street Lights - Proportion of lights with energy saving devices	%	n.a	30%	30%	30%

7.8.2 Baseline status and gaps

Exhibit 7.13 provides the baseline status and interventions in transportation sector.

Exhibit 7.13 Transportation- Interventions - Physical

	Unit	Total	Phasing (outcome)		
			up to 2012	2013-17	2018-27
Municipal road network	**km**	**77**	**78**	**84**	**89**
Upgrading non-surfaced roads to BT roads	km	9	9	-	-
Restoring roads after UGD completion	km	68	68	-	-
Ongoing/Planned new road formation	km	12	-	6	6
Re-laying roads once between 2018-27	km	89	-	-	89
Road facilities					
Bus shelters upgradation	nos	5	5	-	-
Bus terminus upgradation	nos	1	-	1	-
New Bus stand	Nos	1	-	-	

Out of the total road network 88.25% roads are surfaced. However, there is a need for substantial investment in the road network even in the short term given the proposed underground sewerage projects in the town.

7.8.3 Interventions required – immediate term

Investment / Project components

The key investment components in roads and transportation in Hos-M are listed below:

a) **Road upgradation, surfacing and restoration –** Hos-M has nearly 77 km of roads and nearly 88% are surfaced roads. About 39 km of roads would need to be restored after completion of the UGD phase –I and remaining to be upgraded in the next phase. Outlay for resurfacing is estimated at Rs. 820 lakh and upgradation would cost Rs. 137 lakh.

b) **Bus stand** – Hos-M is implementing a bus stand modernization project at an outlay of Rs. 683 lakh which is expected to be ready by 2009.

Asset Management and developmental activities

- Create a baseline database on road assets at a ward level covering street wise details of length of road, road assets (storm drains, culverts etc), surface and condition
- Establish process and accountability for periodically updating this database with details of works done on these roads and disseminating information on the same on Hos-M's website.
- Clarify policy on road digging and repair and communicate the same to all agencies. Take stern action on agencies digging without prior permission from the ULB.
- Create a coordination committee comprising 'right of way' users including telecom companies, Tamil Nadu Electricity Board, TV cable operators, Traffic police and ULB officials to plan development and maintenance of road assets in a synchronised manner.
- Provide ducts for cables and other utilities along all arterial and major roads to minimise road digging.
- Adopt energy saving measures including implementation of energy savers in all high power street lights.

7.8.4 Capital outlay and phasing

Exhibit 7.14 provides the details of the capital outlay for transportation and street lighting requirements

Exhibit 7.14 Transportation and Street lighting - Capital Investment outlay and phasing

TRANSPORTATION INTERVENTIONS	TOTAL	Phasing (Rs.in Lakhs)		
		upto 2012	2013-17	2018-27
Ongoing				
Road works (3.71 km in progress)	52	52		
New Bus stand	683	683		
Muncipal road network				
Non-surfaced roads to BT roads after UGD	137	137	-	-
Re-surfacing of roads	820	820	-	-
New road formation / Surfacing	126	-	126	
Re-laying of roads once between 2018-27	1,430	-	-	1,430
Road facilities	-			
Bus shelters upgradation	25	25	-	-
TOTAL	**3,273**	**1,717**	**126**	**1,430**

Rs.in Lakh

CAPEX PLAN AND PHASING	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	Total
Bus stand	345	345				689			689.0
Roads and Road facilities	52		25	478	478	1,034	126	1,430	2,590.0
Street lights				36	36	72	2.8	2.8	78.0
Total- Capex Transportation	**397**	**345**	**25**	**515**	**515**	**1,795**	**129**	**1,433**	**3,357**

7.9 Urban services for the poor

In Hosur Municipality there are 15 slums with population of 7460 residing in 2416 households. No proposal for slum improvement under IHSDP scheme has been prepared by Hosur municipality.

7.9.1 Service levels goals and outcomes

Exhibit 7.15 gives a snapshot of the service level goals and outcomes of Hos-M with respect to provision of urban services for the poor. It is envisaged to develop 50% of the slum households under the comprehensive slum improvement policy by 2012 and remaining 50 % of the slum dwellings would be brought under development by 2017.

Exhibit 7.15 Urban Services for poor – Service level goals and outcomes

SERVICE LEVEL GOALS AND OUTCOMES	% of HH coverd up to 2012	Target – no. of households		
		2012	2017	2027
Service Goals				
Network Coverage for slum households	50%	1,208	1,208	-
UGD coverage for slum households	50%	1,208	1,208	-
Adequately lit slums	50%	1,208	1,208	-
Adequate road link for the slums	50%	1,208	1,208	-
Pucca houses for all slum households	50%	1,208	1,208	-

7.9.2 Capital outlay and phasing

There are no ongoing projects on urban services for poor under IHSDP and Hos-M expects to start implementation under this scheme starting 2009. We have assumed that Hos-M would be able to address its slum development and urban services for poor requirements completely in a 10 year period. Exhibit 7.16 provides the summary of capital outlay and phasing of investments for provision of urban services for the poor.

Exhibit 7.16 Urban Services for the poor –Capital outlay and phasing

	2009	2010	2011	2012	2008-12	2013-17	Total
Urban services for poor (under IHSDP scheme)	284	284	284	284	1136	1136	2271
Total Rs. Lakh	**284**	**284**	**284**	**284**	**1136**	**1136**	**2271**

7.10 Social infrastructure and other urban amenities

Exhibit 7.17 provides the summary of interventions, capital outlay and phasing of investments for provision of other urban service amenities in Hos-M.

Exhibit 7.17 Social infrastructure and other urban amenities – Capital outlay and phasing

Rs. in lakhs

	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Healthcare		25				25	25	50	100
Slaugher House	25					25			25
Gasifier Crematorium	45					45			45
Market			100	100	100	300	-		300
Parks	-			10	10	20	20	40	80
TOTAL	**70**	**25**	**100**	**110**	**110**	**415**	**45**	**90**	**550**

a) Slaughter house and Gasifier crematorium (Ongoing projects)

- Gasifier based crematorium is being built at an outlay of Rs. 45 lakh.
- Slaughterhouse modernisation is proposed at by Hos-M at an outlay of Rs. 25 lakh.

b) Markets & Shops

- An outlay of Rs. 100 lakh each is provided for renovating MGR market and Vasanth nagar markets. However, they would take up this project only in the medium term during 2013-17

c) Improvement of Health Care Centres

- An outlay of Rs. 25 lakh has been provided for improvement of health facilities in the medium term.

d) Schools

- There are no schools under Hos-M. All the schools are under the jurisdiction of town panchayats in the region. Therefore, we have not provided for any additional outlay.
- Improvements in parks are envisaged through support from industrial units in the region and hence no capital outlay has been assumed. However, an outlay of Rs. 20 lakh every 5 years has been provided for.

7.11 Capital Investment Plan - Summary

7.11.1 List of projects

The critical priority projects to be implemented by Hos-M in the short term (2008-12) are summarized below in Exhibit 7.18.

Exhibit 7.18 Priority projects - FY 2008-12

Sl. No	Sector	Project	Cost Rs. Lakh	Status
1	**Water Supply**	Hogenakkal water supply project-Krishnagiri component	10522	Proposed. DPR being prepared by TWAD
		Storage capacity 10 lakh litres - 4 nos.	200	Additional Outlay Phasing
		Distribution network	120	Additional Outlay Phasing
	Total		**10842**	
2	**Sanitation**	Proposed UGD Scheme	6635	Revised DPR prepared by TWAD board
		Storm water drains	1100	Hos-M in the process of finalising cost
		Public conveniences	50	Proposed by Hos-M
	Total		**7785**	
3	**Transportation**	New Bus stand	689	Under Implementation and work is going on By TNUDF
		Roads upgradation and restoration	1034	Proposed
		Street Lights	72	
	Total		**1795**	
4	**SWM**	Land acquisition for disposal yard	180	Proposed
		Development of Compost Yard	106	Proposed
		Secondary collection	63	Additional Outlay Phasing
		Development cost - Landfill site	79	Additional Outlay Phasing
	Total		**428**	
5	**Others**	Healthcare	25	Additional Outlay Phasing
		Slaugher House	25	Under implementation
		Gasifier Crematorium	45	Under implementation
		Market	300	Additional Outlay Phasing
		Parks	20	Additional Outlay Phasing
	Total		**415**	
6	**UIDSSMT**	Additional Outlay required for service level goals	**1136**	Additional Outlay Phasing
	Total		**22400**	

7.11.2 CIP summary

Exhibit 7.19 provides a summary of sector wise phasing of investment needs of Hos-M.

Exhibit 7.19 Capital Investment Plan summary

Rs.in lakhs

Segment	2008	2009	2010	2011	2012	TOTAL
Water Supply	-	2,780	2,840	2,640	2,580	10,842
Sanitation	25	2,263	2,570	2,570	358	7,785
Solid Waste Management	-	71	304	53	-	428
Transportation and street lights	397	345	25	515	515	1,795
Others	70	25	100	110	110	415
Urban Services for the poor	-	284	284	284	284	1,136
TOTAL	**492**	**5,768**	**6,123**	**6,171**	**3,847**	**22,400**

The specific points from consultations and the amount allocated with respect to these suggestions are summarised in table below.

Segment	Suggestions	Reflected in CIP
Water Supply Pilot project 24x 7 Upgradation Distribution	1. Improve the water supply through out the Hosur. 2. Improve quality of water , existing water is contaminated* water	Rs. 10842 lakhs are allocated in CIP up to FY2008-12
Road and Transportation Roads (Upgradation and new) Bus terminus New Bus stand Street lights	1. Traffic conjected in all areas. Need over bridge avoid traffic conjection 2. Upgration of all roads and reduce the traffic conjection. 3. Improve street light facility at all areas 4. All roads to be widening 5. Need master ring road 6. Need over bridge from Bangalore road to MR road	Rs. 1795 lakhs are allocated in CIP up to FY2008-12
Sanitation Toilets UGD Storm water drainage	1. Need Under ground drainage system 2. Need proper way for storm water drainage. 3. More public convenience required in Hosur 4. Rama naikan eri should be acquire and develop	Rs. 7785 lakhs are allocated in CIP up to FY2008-12
SWM Primary Secondary Composite yard	1. Solid waste should be maintained properly.	Rs. 428 lakhs are allocated in CIP up to FY2008-12
Others: Parks Schools Health cares Markets Sluaghter House Gasifier Cremetorium Municipal Office	1. Renovate the markets areas are MGR nagar and Vasanth nagar 2. Need commercial complex near bus stand and market area 3. Plan to construct new municipal office 4. Need separate parking lot for lorry and heavy vehicles. 5. Improve the Basic facilities in Government Hospital 6. Markets should be renovate 7. Existing playground should be modernize and maintain properly. **Do not use as a commercial purpose** 8. Need kalyanamandapam and community hall 9. Identified the vacant lands and to be construct Kalyana mandapam, community hall and commercial complex 10. Parks should be renovated	Rs.415 lakhs allocatted in CIP upto FY' 2008-2012

7.11.3 Technical assistance requirements

A list of project / sector specific technical assistance requirements needed from CMA/TNUISFL is given below:

1. Roadmap for 135 LPCD water and 24x7 supply
2. Digitization of layout records and town planning information
3. Comprehensive GIS for the town with updated information on all urban assets including roads, water supply, sanitation etc.
4. DPR for solid waste management with focus on scientific disposal and mechanised handling of waste with private sector participation
5. Identification of land for municipal waste disposal

7.11.4 Interventions required from other agencies/departments of GoTN

Specific initiatives required from departments and agencies of GoTN (other than Hos-M) are detailed below:

1. **DTCP / Hosur New Town Development Authority –** Review of master plan and land-use and roadmap for extension of city limits. The authorities may also evaluate the need and scope of a master ring road around Hosur town / adjoining areas to facilitate future developments in an orderly manner
2. **Department of Highways –** Evaluate the scope for providing truck terminals at the entry and exit of Hosur town
3. **Commercial taxes / RTO –** Streamline, integrate and computerise check post documentation and processing to minimise pile up of trucks on the National Highway connecting the town.
4. **Tamil Nadu Pollution Control Board (TNPCB) –** Develop and implement necessary pollution control measures to prevent water, land and air pollution that may otherwise arise otherwise due to the expected growth of industrialisation of the region.

7.11.5 Reform targets

Exhibits 7.20 and 7.21 summarize reform targets and asset management plan for Hos-M respectively.

Exhibit 7.20 Service level and reform targets – A summary

FACTOR	Unit	Baseline	Target		
		2007	2012	2017	2027
WATER SUPPLY					
Service Goals					
Per capita supply at doorstep	LPCD	58	135	135	135
Storage capacity / Total demand	%	74%	50%	50%	50%
Distribution network / Road length	%	84%	80%	85%	90%
Frequency of supply	hours/day	3	4	4	24X7
Reform targets					
Current collection efficiency	%	44%	75%	90%	90%
House Service Connections / Assessed Properties	%	33%	50%	60%	80%
Population per water fountain	nos.	261	200	200	200
Implementation of graded / metered tariff	Yes / No	No	Yes	Yes	Yes
User charge collection - % of O&M plus debt servicing	%	n.a	30%	50%	100%
SANITATION					
Service Goals					
UGD Network					
Availability	Yes/no	No	Yes	Yes	Yes
Design treatment capacity per capita	lpcd	-	120	120	120
Sewer network - % of road length	%	-	80%	80%	80%
Storm Water Drains					
Drain length / Road length	%	81%	80%	100%	100%
Public Conveniences					
Slum population per PC seat	Nos.	118	200	200	200
Reform targets					

FACTOR	Unit	Baseline	Target		
		2007	2012	2017	2027
Sanitation coverage - % of population	%	81%	100%	100%	100%
User charges - Current collection efficiency	%	Na	70%	75%	80%
Household connections / Assessed Properties	%	na	50%	60%	60%
SOLID WASTE MANAGEMENT					
Collection efficiency	%	96%	100%	100%	100%
Door-to-door collection	%	50%	100%	100%	100%
Source Segregation	%	30%	60%	80%	100%
Mode of disposal	%	0	50%	100%	100%
Conservancy fee	Yes / no	No	yes	yes	yes
TRANSPORTATION AND STREET LIGHTS					
Municipal roads as % of Total Area	**%**	6.9%	8%	9%	10%
Surfaced roads to Total roads	**%**	88%	100%	100%	100%
Street Lights - Distance between streetlights	M	21	30	30	30
Street Lights - Proportion of high power lamps	**%**	14%	30%	30%	30%
Street Lights - Proportion of lights with energy savers	**%**	0%	30%	30%	30%

7.12 Asset Management Plan

This section details the asset management plan for various urban service areas and assets owned by Hosur M and follows from a review of the asset register of the municipality particularly relating to its land and buildings and open space areas (such as parks and water bodies).

In the following paragraphs we analyse the information provided to us on land and building assets available with Hosur-M and outline specific observations and suggestions on maintaining and updating these assets. The Asset Management Plan for core services areas namely Water Supply, Sanitation, Solid Waste Management and Transportation follows largely from the Capital Investment Plan outlined in the earlier paragraphs and is outlined below under sections 7.12.2 to 7.12.5 below. Specific actions relating to asset management and reform steps in these areas are also summarized in Exhibit 7.23.

7.12.1 Land and building assets of Hosur Municipality

Details of information on assets of Hosur-M have been compiled and enclosed as Annexure as shown below:

- Annexure VII - List of Roads
- Annexure VII - List of Storm Water Drains
- Annexure IX - Details of Water Bodies
- Annexure X - Land details as per Schedule I of asset register
- Annexure XI - Building details as per Schedule II of asset register

Exhibit 7.21 and 7.22 summarises the details of land and building assets in Hosur-M as shown in schedule I and II of the asset register of the municipality.

Exhibit 7.21 Summary of Land assets

Summary of Vacant Land details		
Particulars	**No of Places**	**Area in sm**
Basic aminities	2	660.84
Social Purpose	47	85499.55
Remunerative Purpose	5	21462
Office Buildings	3	19,102.00
Vacant Place & Others	49	57,511.90
Total	**106**	**184236.29**

Exhibit 7.22 Summary of Building assets

Summary of Building details			
			All in sm
Particulars	**No of buildings**	**Total area**	**Plinth area**
Basic aminities	9	1,196.00	317.20
Social Purpose	10	7,972.08	1,823.73
Remunerative Purpose	16	23,700.00	5,106.94
Office Buildings	6	6,231.00	628.88
Others	3	19,178.54	416.73
Total	**44**	**58277.62**	**8293.48**

Source: Hosur M

We observe that the asset register of Hosur-M has not been updated. Several items in the asset register reflect status as of year 2000, when the asset register was initially created. We recommend the following actions in terms of managing the land and building assets of Hosur-M

a) There are several discrepancies between the land details shown in land schedule and in the buildings schedule. We therefore strongly suggest a zero base validation and updation exercise covering the asset register be taken up on priority.

b) Hosur-M should prepare and implement an annual maintenance plan (along with an assessment of cost implications) for all land and building assets. This maintenance plan should precede budget preparation process and should feed into the budget, so that the plan is adequately funded.

c) Hosur-M should progressively move towards achieving revenue realisations in line with market trends from all its remunerative assets including shops, markets etc. This is achievable through a combination of a) periodic increases in rates charged and b) improvement and better maintenance of the assets through periodic and planned maintenance.

Specific actions relating to management of assets in water supply, sanitation, solid waste management and roads are outlined below and are summarized in Exhibit 7.23

7.12.2 Water supply

As explained in section 4, Hosur-M handles water supply in Hosur and other areas. Hosur – M handles O&M for water supply in 30 wards, Bulk water supply to the areas serviced by Hosur-M is catered to by TWAD Hosur-M intends to handle operations and maintenance of the water supply project for the entire town once the proposed water supply scheme is completed. While this would enable focused accountability, it is important that TWAD and CMA prepare a roadmap and take the necessary steps for smooth handover of the water supply network during the next 5 years, when implementation of the proposed water supply scheme is completed. This would entail capacity building within Hosur-M to ensure appropriate upkeep of the network. Specific Asset management activities relating to the water supply assets and network are listed below along with priority.

Immediate Interventions

a) Review and update asset register to reflect the latest status and establish process along with accountability for updating asset register on a periodic basis.
b) Provide a ward wise report on capital works undertaken online on a quarterly basis.
c) Undertake an independent study to assess loss levels in transmission, storage points and distribution and develop a roadmap for providing 24x7 water supply.
d) Conduct periodic IEC campaigns on water conservation and rainwater harvesting practices.
e) Review losses and illegal connections and widen the base of house service connections.

Medium- Long term

Critical asset management and development activities in the medium to long term are listed below:

a) Implement metering and metering-based-tariff /graded water tariff at household level
b) Implement 24x7 water supply on a pilot basis in select zones / wards and replicate the same in a phased manner within a ten-year timeframe.
c) Undertake a comprehensive GIS mapping of the water supply network of the town.

7.12.3 Sanitation

Underground drainage is being handled in Hosur-M in all wards. TWAD will develop the UGD systems and handle over to Hosur-M for the O&M purposes.

Immediate Interventions

a) Create baseline information database on sanitation assets and performance of the municipality. Establish processes and accountability for periodic updation and dissemination.
b) Conduct IEC campaigns and public consultations to educate citizens on the benefits of Underground drainage scheme.
c) Ensure adequate upkeep of sanitation assets including public conveniences and storm water drains through encouraging community level participation and feedback

d) Disseminate information on tariffs a transparent manner and undertake a focused program to mobilise connection deposits
e) Use a combination of incentives and penalties to encourage timely payment of user charges.

Medium-Long Term

Hosur-M should incorporate the sanitation asset details as part of a wider GIS implementation program. Further, tariffs can be structured on a slab rate structure with property tax assessments as the basis.

7.12.4 Solid Waste Management

Short term

a) Hosur-M should prepare a detailed project report for its solid waste management requirements along the entire value chain from generation to disposal to ascertain. This should also include an evaluation of disposal options and recommend a roadmap for safe disposal of waste including additional investments needed for composting if any and implementing other options for non-biodegradable waste such as engineered landfills
b) Conduct IEC activities to back other initiatives like door-to-door collection to facilitate effective segregation of waste at source.
c) Review and updated the Solid Waste Management Action Plan and prepare a detailed feasibility report for comprehensive Solid Waste Management in the town
d) Implement door-to-door collection and source segregation in all wards.
e) Identify transfer points / collection points for every ward and streamline primary and secondary collection trips

Medium & Long term

a) Progressively enable greater mechanisation of waste handling.
b) Implement a nominal conservancy fee for primary collection.
c) Focus on commercial exploitation opportunities for revenue enhancement by exploring scope for privatising compost yard management and other options including bio-gas and formal sale of scrap/recyclable material
d) Shift from indiscriminate dumping of non-biodegradable waste to explore potential for development of a shared landfill site for safe disposal of non-biodegradable waste.

7.12.5 Roads and Transportation

The related asset management and developmental activities in transportation and street lights include the following:

a) Create a baseline database on road assets at a ward level covering street wise details of length of road, road assets (storm drains, culverts etc), surface and condition
b) Establish process and accountability for periodically updating this database with details of works done on these roads and disseminating information on the same on Hosur-M's website.

c) Clarify policy on road digging and repair and communicate the same to all agencies. Take stern action on agencies digging without prior permission from the ULB.
d) Create a coordination committee comprising 'right of way' users including telecom companies, Tamil Nadu Electricity Board, TV cable operators, Traffic police and ULB officials to plan development and maintenance of road assets in a synchronised manner.
e) Provide ducts for cables and other utilities along all arterial and major roads to minimise road digging.
f) Adopt energy saving measures including implementation of energy savers in all high power street lights.

Exhibit 7.23 Asset Management Plan and timeline

Sl.No	ASSET MANAGEMENT / DEVELOPMENTAL ACTIVITIES	Responsibility	Short Term	Medium term	Long Term
			2007-12	2013-17	2018-27
	WATER SUPPLY				
1	Create Baseline information on water supply assets / performance	**Hos-M**			
2	Accountability and process for periodic updation / dissemination	**Hos-M**			
3	IEC campaigns for water conservation and rainwater harvesting	**Hos-M**			
4	**Leak detection plan / Losses assessment**	**Hos-M**			
5	Implementation of usage based / graded tariffs	**Hos-M**			
6	Incentives / penalties to encourage timely payment of water charges	**Hos-M/CMA**			
7	**GIS mapping of water supply assets/connections**	**Hos-M/CMA/TWAD**			
8	**Roadmap for 24x7 water supply**	**TWAD / Hos-M**			
9	Metering at household level and usage based tariffs	**TWAD / Hos-M**			
10	Piloting 24x7 water supply	**TWAD / Hos-M**			
11	Implementation of 24x7 water supply	**TWAD / Hos-M**			
	SANITATION				
1	Create Baseline information on sanitation assets / performance	**Hos-M**			
2	Accountability and process for periodic updation / dissemination	**Hos-M**			
3	IEC campaigns and public consultations on UGD benefits	**Hos-M**			
4	Mobilisation of public deposits	**Hos-M**			
5	Initiate and encourage Community participation for upkeep of sanitation assets	**Hos-M**			
6	Incentives / penalties to encourage timely payment of water charges	**Hos-M/CMA**		`	
7	Implementation of graded tariffs	**Hos-M**			
8	**GIS mapping of sanitation assets/connections**	**Hos-M/CMA/TWAD**			
	SOLID WASTE MANAGEMENT				
1	IEC activities	**Hos-M**			
2	**Review and updation of SWM action plan / Preparation of DPR**	**Hos-M/CMA**			
3	Door to Door Collection	**Hos-M**			
4	Source Segregation	**Hos-M**			
5	Identified transfer / collection points	**Hos-M**			
6	Sychronisation of primary/secondary collection	**Hos-M**			

Sl.No	ASSET MANAGEMENT / DEVELOPMENTAL ACTIVITIES	Responsibility	Short Term	Medium term	Long Term
			2007-12	2013-17	2018-27
7	Conservancy fee for primary collection	**Hos-M**			
8	Commercial exploitation of waste	**Hos-M**			
9	Increased mechanisation of handling waste	**Hos-M**			
10	**Development of scientific landfill site**	**Hos-M/CMA**			
TRANSPORTATION					
1	Baseline data on road assets	**Hos-M**			
2	Accountability and process for periodic updation / dissemination	**Hos-M**			
3	Policy on road digging and right of way	**Hos-M/CMA**			
4	Stakeholder coordination mechanism for synchronised road development	**Hos-M**			
5	Energy saving in street lights	**Hos-M**			

Interventions requiring technical assistance/support in DPR preparation

8. Project profiles, analysis of risks and ESA considerations

This section follows from the Capital Investment Needs identified in the previous section and provides brief profiles of select priority projects that need to be executed by Hos-M in the short term. These project profiles provide a) Need for the project b) Project cost and phasing c) current status and technical assistance requirements d) possible financial mix and risk factors and e) illustrative classification based on environmental and social framework adopted by TNUDF.

8.1 Water supply

Project Description	Comprehensive water supply scheme for piped water supply in all wards
Project Status	DPR under preparation by TWAD.
Need for the project	Water supply is only 58 LPCD while less than 34% of assessed properties have house service connections, indicating the significant gaps in water supply service levels and coverage. Therefore this project needs to be addressed on priority
Project Components	This outlay is based on initial estimates provided by TWAD to Hos-M and exact components and scope of DPR are not available. An assessment of normative gaps that need to be addressed are highlighted below. • **Supply augmentation, Transmission and primary storage** for supply of at least 14.81 MLD (by 2012) and 17.85 MLD (by 2027) • **Local storage and pumping -** Additional of storage capacity 1.04 MLD by 2027 only. • **Investments in pumping and distribution network -** Comprehensive provision of protected piped water supply in all wards covering about 69 km of roads in the short term. • **Rapid scale up in House service connections –** which would potentially need to increase nearly 8-fold in the next 5 years to more than 150,00 connections
Project Cost and basis	**Estimated at Rs. 12612 crore.** Based on discussions with Hos-M, initial estimate provided by TWAD, but is likely to get escalated.
Revenue impact	Direct incremental revenue impact as Hos-M intends to levy house connection deposits and user charges. However, it has still not been decided whether Hos-M or TWAD would be handling the maintenance of water supply
Financing mix	Would be structured as a combination of grant, loan and own funds based on a detailed appraisal of potential revenues and other possible credit enhancements including escrow of part of property tax receivables and user charges and creation of debt service reserve.
Risk factors and other remarks.	Given the large size and the complexity of the project, it is important to follow best practices in contracting out this project. Stringent quality considerations must be adopted in selecting contractors. The contract could be structured on a BOT format where the contractor is also responsible for maintaining the network, so that that the risk of non-performance is shared. Further incentives and penalties should be built into the contract to ensure timely completion of the project. To ensure scalability, TWAD should ideally make the design amenable for 24x7 supply in the future, even it does not envisage 24x7 supply in the short term.
ESA analysis and tentative rating	E2 -Expected to have only moderate environmental issues. Mostly generic impacts in nature S3 - No social issues expected. Hence socially benign no social mitigation measures required, need to submit SSR

8.2 Sanitation

Sector	Sanitation
Project Description	UGD scheme
Project Status	DPR already prepared by TWAD and under updation.
Need for the project	Only 30 wards have some Underground Drainage system in place. TWAD has also prepared a DPR. Therefore there is significant gaps in sanitation that need to be rectified on priority.
Project Components	**Comprehensive Underground Drainage scheme (Estd. Outlay – Rs. 66.35crore) covering the following components** • Provision of UGD scheme in 30 covered wards ~ Rs. 66.35 crore • Provision of estimated 15000 household connections in 5 years and additional sewer network of approximately 165 km.
Project Cost and basis	Estimated at Rs. 66.35 crore. Based on estimate for 30 wards provided by TWAD, cost escalation sought by contractor for ongoing UGD scheme and discussions with officials of Hos-M.
Revenue impact	Direct incremental revenue impact as Hos-M intends to levy house connection deposits and user charges. However, it has still not been decided whether Hos-M or TWAD would be handling the maintenance
Financing mix	Could be structured as a combination of grant, loan and own funds
Remarks	Given the large size and the complexity of the project, it is important to follow best practices in contracting out this project. Stringent quality considerations must be adopted in selecting contractors. The contract could be structured on a BOT format where the contractor is also responsible for maintaining the network, so that that the risk of non-performance is shared. Further incentives and penalties should be built into the contract to ensure timely completion of the project. Modern best practices including biogas based electricity generation should be incorporated in the project design.
ESA analysis and tentative rating	E1 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), S1 or S2 – is likely to have PAPs and hence need fairly detailed assessment.

Sector	Sanitation
Project Description	Desilting and restoration 2 other water bodies from the list of water bodies within Hos-M.
Project Status	**Proposed.** A Detailed Project Report needs to be prepared for ascertaining exact scope and costs and to explore potential for remunerative options such as boating in select water bodies
Need for the project	Hos-M has identified 2 water bodies in the town that need to be desilted and rehabilitated
Project Components	This project would involve • Removal of encroachments and extending water body limits • Preventing sullage and sewage water from entering the water body. • Deepening and de-silting of water body. • Beautification and provision of amenities including jogging track garden wherever feasible.
Project Cost	**Rs. 20 lakh** The costs for2 water bodies only considered for Hos-M's budget as these come under the management of PWD .

Revenue impact	Most of the projects are likely to be non-remunerative. However, Hos-M should explore scope for remunerative options including boating and tap commercial opportunities wherever possible, particularly in development of water bodies
Financing mix	Given the size of the project and the non-remunerative of the project proposals, implementation of the project would require significant grant support.
Remarks	There is a need for a clear O&M strategy involving local community participation at the project implementation stage itself.
ESA analysis and tentative rating	E1 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), S1 or S2 – is likely to have PAPs and hence need fairly detailed assessment.

Sector	Sanitation
Project Description	Implementation of pucca storm water drains and flood management measures.
Project Status	**Proposed.** A Detailed Project Report needs to be prepared covering a) identification of potential water catchment points (including restoration of water bodies), b) Identify arterial canal networks that need to be developed/strengthened based on a review of flooding and water flow patterns and c) specify ward level guidelines for storm water drain construction in terms of linkages and gradient of local storm water drain construction initiatives.
Need for the project	Hos-M has a number of flood-prone and low-lying areas to be identified and interlinking needs with arterial canals and water bodies
Project Components	This project would involve • Construction of new Pucca concrete storm water drains along the road along with interlinking to water bodies in uncovered areas in an estimated length. Cost estimated arrived at based on a normative length of 164 km of existing storm water drains. • Rehabilitation and desilting of existing storm water drains. Cost estimate arrived at based on an additional length of 164 km needed to meet 70% of road length.
Project Cost	**Rs. 1582 lakh**
Revenue impact	The project is likely to be non-remunerative.
Financing mix	Given the size of the project and the non-remunerative of the project proposals, implementation of the project would require significant grant support.
Remarks	There is a need for a clear O&M strategy involving local community participation at the project implementation stage itself to ensure appropriate upkeep and maintenance of the asset. Further, the construction of storm water drains should be done in conjunction with road restoration/development to ensure appropriate alignment and flow patterns.
ESA analysis and tentative rating	E1 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), S1 or S2 – is likely to have PAPs and hence need fairly detailed assessment.

8.3 Solid waste management

Sector	Solid waste management
Project Description	Land acquisition and compost yard development
Project Status	**Proposed.**
Need for the project	Hos-M has shortage of land for disposal and has decided to acquire 10 acres of land for development of an integrated compost yard.
Project Components	This project would involve • Acquisition of land at a cost of Rs. 180 lakh • Development of compost yard at Rs. 106 lakh
Project Cost	**Rs. 206 lakh**
Revenue impact	The project could enable earnings through sale of compost manufactured.
Financing mix	The project should be implemented with private sector participation on a BOT basis. This will reduce the capital investment from Hos-M and at the same time enable Hos-M to insist and enforce service levels.
Remarks	The project could be clubbed with collection and transfer responsibility in select wards.
ESA analysis and tentative rating	E1 or E2 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), particularly if dumping of non-biodegradable waste is also being done in the location. S1 or S2 – may have PAPs and hence need fairly detailed assessment.

8.4 Transportation

Sector	Roads
Project Description	Upgradation of road network post UGD implementation
Project Status	**Ongoing – to be implemented in a phased manner to cover all wards.**
Need for the project	Since UGD scheme is expected to be implemented over the next few years, there is a need to restore the entire road network post implementation
Project components	The following components • Conversion of Non-BT to BT surface (9 km @ Rs.137 lakh) • Road up gradation and restoration after UGD implementation (68 km @ Rs. 820 lakh) • Road facilities at Rs. 2513 lakh
Project Cost	**Rs. 2590 lakh**
Revenue impact	Non-remunerative project
Financing mix	Combination of loans (30%), grant (50%) and own funds
Remarks	The road network up gradation should comprehensively take into account storm water drain design and other road assets including pedestrian foot paths, signage and road medians as appropriate.
ESA analysis and tentative rating	E2 -Expected to have only moderate environmental issues. Mostly generic impacts in nature S3 - No social issues expected. Hence socially benign no social mitigation measures required, need to submit SSR
Sector	Transportation
Project Description	Development of A class bus terminus in **Existing bus stand**
Project Status	**On going**
Need for the project	Existing bus stand is being modernization with all facilities
Project components	The following components are , CC Pavement, Toilets, and Cycle Stand, Parking lots (two and four wheelers)

	Shopping Complex and Lodging facilities
Project Cost	**Rs. 689.79 lakh**
Revenue impact	Can be structured as a remunerative project
Financing mix	Implementation should be attempted on PPP mode.
Remarks	Project would require a DPR to ensure appropriate routing of buses to avoid congestion. Provision for commercial activities should be provided to facilitate revenue augmentation and steps to keep the bus stand encroachment free should be planned and enforced.
ESA analysis and tentative rating	E2 -Expected to have only moderate environmental issues. Mostly generic impacts in nature S3 - No social issues expected. Hence socially benign no social mitigation measures required, need to submit SSR

9. Reform agenda and Technical assistance

This section outlines the reform agenda for Hos-M in the areas of a) capacity building and systems b) measures for improving financial performance and c) summary of targets on select operational and financial indicators

9.1 Urban sector reform in Tamil Nadu – an overview

Tamil Nadu is considered a pioneer in the area of urban reforms. Tamil Nadu has constituted three successive State Finance Commissions for improving resources of local bodies and devolution of funds from the State to Urban Local Bodies and has conducted three successive elections to Urban Local Bodies on due dates. Apart from this, other key reform initiatives undertaken by Tamil Nadu in the urban sector are given below:

1. Reduction in stamp duty on transfer of property from 15 to 8 percent.
2. Implementation of accrual accounting system in all Urban local bodies
3. Introduction of modified area based property tax system
4. Computerization of sub-registrar's offices
5. Repeal of the Land Ceiling Act, while a reformed Rent Control Act is being considered
6. Commitment to levy user charges and improvement in collections for water and sanitation services.
7. Creation of TNUDF to provide access to capital markets in a non-guarantee mode.

Apart from setting in motion a process for financial devolution through creation of SFC, Tamil Nadu has also moved a fair bit towards delegating a number of functions to the ULBs. The 12th Schedule of the Constitution provides for 18 functions to be undertaken by ULBs.

1. Urban planning, including town planning;
2. Regulation of land-use and construction of buildings;
3. Planning for economic and social development;
4. Provision of roads and bridges;
5. Provision of water supply for domestic, industrial, and commercial purposes;
6. Provision of public health, sanitation conservancy, and solid waste management;
7. Provision of fire services;
8. Promotion of urban forestry, protection of the environment, and promotion of ecology;
9. Safeguarding of the interests of weaker sections of society, including the handicapped and mentally retarded;
10. Slum improvement and upgrading;
11. Urban poverty reduction;
12. Provision of urban amenities and facilities such as parks, gardens, and playgrounds
13. Provision of cultural, educational and aesthetic aspects
14. Provision of burials and burial grounds, and cremations, cremation grounds, and electric crematoriums;
15. Provision of cattle pounds, and prevention of cruelty to animals
16. Recording of vital statistics including registration of births and deaths

17. Provision of public amenities including street lighting, parking lots, bus stops and public conveniences
18. Regulation of slaughterhouses and tanneries.

While not mandatory, the provisions direct state governments to decide the powers and functions to be devolved to local bodies. Tamil Nadu has delegated functions 2 to 6 and 8 to 18 to ULBs[3]. Though Urban Planning as a function is vested with the Department of Town and county planning, both the political and administrative heads namely the Chairman and the commissioner are typically involved in the process of preparing master plans.

9.2 Reform agenda – interventions required at the state level

As observed above, GoTN has ushered in a number of reforms in the urban sector. However, there is a need to persist with this direction. The stage is set for the state to usher in a set of second generation reform that furthers the vision of the 74th Constitutional amendment in empowering and strengthening local governance. In this regard, we have outlined below a set of possible reform areas and interventions below:

1. **Implement recommendations of the Third State Finance Commission** – The recommendations relating to the revenue buoyancy of the ULBs including property tax reform and devolution income and transfer are particularly critical for the financial stability of the ULBs and need to implement on priority.
2. **Maintain reasonable stability of tenure of key officials –** We recommend that except for extraordinary circumstances, there should be a minimum tenure of at least 2 years for all the key positions including Commissioner, Municipal Engineer, Manager, Town Planning Inspector, Sanitary and public health head and Accountant. Further, guidelines need to be clarified and enforced for formal charge handover whenever there is a transfer of officials to ensure continuity of city level vision, projects and streamlined service delivery.
3. **Carry out an Independent assessment of skill gaps and manpower needs of Hos-M -** There is a need for an independent review of the skill requirements in various grades of municipal bodies to ascertain the appropriate manpower plan in terms of skill sets and experience/seniority. This is particularly relevant given the recent developments and the growing service delivery expectations in the urban sector specifically in urban planning, municipal accounting and systems, e-governance and modern practices in infrastructure service delivery including potential for public-private partnerships.
4. **Address critical operational areas through focused training and capacity building interventions** - Three areas stand out in terms of criticality and the need for significant training interventions. These include:

[3] *Source: Local Governments Finances and Bond Markets. ADB. 2003*

- **Engineering and project development –** A number of new grant and loan schemes (both central and state) including the UIDSSMT are available for ULBs to tap into for meeting their asset creation requirements. However, there seems to be very little understanding of the scope and potential of using these schemes for implementing local level projects. GoTN and CMA should conduct periodic training and awareness programs for senior management personnel including Commissioners, Managers and Engineering staff. This would enable them work towards developing projects that can leverage such schemes. Agencies like TNUIFSL and TUFIDCO should also take the lead in organising such awareness programs.
- **Accounting and Finance –** Though accrual accounting has been implemented in Hos-M and is under operation for more than 5 years. Computerised Financial and Administrative systems are in place or are in various stage of implementation/up gradation. There is a therefore a need for continued emphasis on training to bring the accounting and finance staff up to speed on these developments.
- **Use of CAD/GIS applications in Town Planning/Engineering –** CMA and GoTN should initiate a state-wide program to train Town planning and engineering staff on CAD and GIS applications.

5. **Build on GoTN's pioneering position in implementing accrual accounting by launching a drive improve the timeliness and quality of information dissemination -** While all ULBs in Tamil Nadu have implemented a double entry accounting system, there is scope for improvement in the quality of accounting in the areas of classification and recording, consolidation and dissemination of information. Several ULBs have redundant systems involving manual and computerised book keeping and errors often creep into MIS. Often, the DCB statements and accounting statements are not reconciled. The recent initiative of the setting up of the Debt Monitoring Cell at the CMA level is a positive step in getting the loan records at the ULB right. It still takes significantly long time for accounts to be closed and this need to be remedied. GoTN and CMA should continue its thrust in this area to ensure that the real advantages of accrual accounting is realised. In this regard, we recommend that

   - CMA, GoTN should continue its focus **on technical assistance to ULBs to improve their accounting systems and practices**. Proper training should be given to the staff on the concepts of double entry book keeping. Apart from the municipal staff, the LFA should also be given training in auditing the new computerised systems being implemented. Currently there is a dual system in operation and this seems to be creating significant reconciliation issues.
   - CMA, GoTN should **insist and implement closing of accounts and audit of the same within a fixed time period** subsequent to the completion of financial year.
   - TNUDF could consider a **grading system to categorise ULBs** on the basis of quality of accounting and reporting practices.

6. **Create technical standards with specific applicability to municipal projects construction and execution. These are particularly required in 2 areas:**
   - **Integrated road asset creation and management –** The quality of road construction particularly in urban areas is inconsistent ranging from well-laid roads in select areas to

poorly designed roads that does not last even a single monsoon season. In this regard **CMA along with the State Highways department** should

- ***Standards*** **-** Define standards for urban roads construction covering technical specifications (construction material, equipment use, process for road construction)
- ***Procurement guidelines*** - Review procurement guidelines for empanelment / selection of contractors including incentives and penalties to ensure adequate accountability
- ***Showcase project*** **-** Identify one major arterial high-density road corridor (typically maintained by the State Highways department) in all district headquarters for development in an integrated manner covering strengthening/widening, encroachment removal, de-bottlenecking through junction improvements and grade separators, streamlining parking, guidelines for right of way for road users (such as TNEB, BSNL etc) and aesthetics/signage. Implementation of such projects could potentially have a demonstration effect and could contribute to widespread replication and adoption.
  - **Flood management and interlinked storm drains –** Storm water drains are among the most expensive assets to be created by ULBs and yet least priority gets accorded to maintaining storm drains and keeping them clean. Further there is inadequate planning and sub-optimal drain construction in an isolated manner without a detailed review of interlinking needs with arterial canals and water bodies. In this regard, we recommend that
- TNUIFSL and CMA should considering initiating a technical assistance study at a city level for all the district headquarters and other flood-prone and coastal towns (such as Krishnagiri) in Tamil Nadu in a phased manner to develop a blueprint for an integrated water and flood management plan covering a) identification of potential water catchment points (including restoration of water bodies), b) Identify arterial canal networks that need to be developed/strengthened based on a review of flooding and water flow patterns and c) specify ward level guidelines for storm water drain construction in terms of linkages and gradient of local storm water drain construction initiatives.

7. **PPPs -** It is necessary to encourage a deeper involvement of private sector (beyond financing) in the areas of design, development and operation of infrastructure. PPPs have been found to be very effective in addressing efficiency and asset management (through pre-defined service levels and accountability for operations and maintenance) aspects of infrastructure development. In this regard,

   - CMA, GoTN should develop a framework for PPP including specific policies and guidelines in urban infrastructure and in land development / remunerative projects.
   - TNUIFSL should provide comprehensive assistance covering necessary capacity building (in terms of evaluating mechanisms - BOT, SPV etc) and financing for developing projects through private sector participation.
   - CMA, GoTN along with TNUIFSL should develop model concessions involving Private sector in various areas including Solid waste, STP O&M, Maintenance of head works for water supply, Street light maintenance and remunerative projects

8. **Initiate formal and independent Information Systems and Security Audits, given the implemented and ongoing e-governance initiatives of ULBs in Tamil Nadu –**
    - ULBs should be required to establish the practices of an independent system audit to be conducted annually. This would enable ULBs to establish greater accountability and build in robust processes for disaster recovery and security of the IT architecture of the ULB
9. **Facilitate creation of a formal institutional mechanism to manage functional overlaps among nodal agencies/state level agencies and the ULB –** As described earlier in section 5.4 – role of other agencies, ULBs shares responsibility for a number of service delivery areas with other agencies/departments of the state including Department of Town Planning, Department of Highway, Tamil Nadu Electricity Board, Tamil Nadu Water and Drainage Board, Road Transport Corporations etc.
    - In order to overcome the limitations of these overlaps and to enable operation of these various organs of the state in a coordinated manner, each ULB should be mandated to facilitate creation of a formal steering committee at the city level comprising of 8-10 officials from all government departments/agencies. This committee could meet regularly (once every 2-3 months) to discuss and share information on respective projects/areas and could pave the way for better communication and effective service delivery.

9.3 Suggestions for improving financial performance and collection efficiency

Overall income of Hos-M grows at a 6% CAGR, driven largely by significant growth in Assigned revenue and Devolution fund income. Own income of the municipality grew at a moderate 5 %, while expenditure actually declined during the period at a CAGR of -3% due to a steep decline in operating expenses and finance expenditure. However, this presents only part of the picture. Current collection efficiencies in property tax and water user charges are abysmally low at an average 38% and 64% respectively.

Hos-M's ability to improve on its financial performance hinges primarily on its ability to sustain and improve on the revenue growth noticeable in recent years. While there is potential for expenditure control in certain areas (as in the case of energy costs), the focus of cost management should be to shift expenditure from administration to better asset management and O&M. The following paragraphs outline select interventions for improvement of financial and operating performance.

9.3.1 Revenue enhancement

Property tax

Specific recommendations for improving property tax revenue and collections are detailed below. Recommendations in bold are actions that can be implemented immediately by the municipality without any significant investment and can enable the municipality to show immediate results

Issues	Recommended Interventions
Rate of taxation and monitoring	1. Implementation of quinquennial ARV revision as recommend by SFC and removal of distortions in rates wherever existent. **2. Apart from collection efficiency, the ratio of assessments to population and growth of assessments should also be tracked and monitored at the highest level.** 3. There should be changes instituted to the policy of Vacant Land tax to introduce steep step up in taxes for vacant land particularly in peri-urban areas to incentivise development. Vacant land are often prone to abuse in the form of encroachments, poor maintenance and dumping of garbage. Therefore an increase in Vacant land tax can be ploughed back for supporting the costs municipalities often incur in managing and preventing such abuses. 4. Property tax information of various residential units should be published online in the same manner as the guideline values that are published
Increasing assessments	5. Move to **GIS-based database** to track, update and retrieve property tax information 6. **It should be made compulsory for all new building constructions to display the building permission details obtained from the municipality for construction.** The municipality should actively encourage its citizens to report unauthorised buildings construction and should disseminate online information on action taken on such constructions to dissuade such activity. Capturing information on unauthorised construction at the initial stages through such efforts would go a long way in preventing the rampant growth of unauthorised and unassessed constructions in our towns and cities. **7.** Conduct a one-time survey to compile database of properties and initiate sample checks in all wards on an ongoing basis. **The Commissioner should undertake 'surprise checks' on a regular basis in various wards to provide a sense of enforcement both to the municipal officials and to citizens for encouraging compliance.** **8. Reconcile and link assessment information with building permissions issued and initiate a drive to bring unassessed properties under the tax net.** **9. Reconcile manual and computerised registers to identify and bring in left-out assessments into the tax net.** 10. Blanket exemptions should be reviewed. Revenue loss due to exemptions should be compensated by GoTN. 11. **A strong coordination between departments within the municipality by itself bring significant increase in assessment base and collection efficiency.** The Revenue department should reconcile its information across various databases on households and other commercial properties available within the municipality. Specific suggestions in this regard are listed below: o The Property tax database should be regularly updated based on the status of Building permissions issued by **Town Planning department** o Whenever the **Engineering department** provides water and sewage

Issues	Recommended Interventions
	connections, it should check with the Revenue department for compliance of those assesses with respect to property tax dues. The **water and sewage assesses databases** should be regularly updated and reconciled with the property tax database. o Whenever, the **Health Department** issues D&O and Trade licenses, they should check on the status of property tax assessment and professional tax assessment status for these license. o The D&O licenses and Trade licenses should only be provided for applicants with a clear property tax assessment status and compliance. 12. E-governance efforts should be undertaken towards creation of an integrated database that provides for access of information across various departments would enable effective reconciliation of information. 13. Along with the above internal coordination, Hos-M should also coordinate with other GoTN departments including TNEB and Commercial taxes department for improving assessment information. This can be done by obtaining and reconcile addresses and properties data of such departments with that of the municipality to identify and update missing data in the property tax database. Apart from improving property tax assessment, such cross-department interaction would facilitate mutual benefits and aid effective working relationships among them. **14. There is a need for greater recognition of effort and contributions to improvement in assessment increase and collection efficiency. Municipal officials should be given targets and appreciated with monetary and non-monetary recognition for contribution.** 15. **Similarly, the municipal council should be encouraged to contribute to improvement in collection efficiency. Top 20 default cases in each ward should be brought to notice of individual council members and Council members contributing to improvement in collection efficiency could be recognised through resolutions praising their efforts.**
Improving collection efficiency	**16. Draw a systematic plan for sending demand notices and ensure despatch of demand notices on time.** **17. Conducts ward wise analysis of collection efficiency to focus more on troublesome wards/ areas.** **18. Involve council members and resident welfare associations / NGOs as pressure groups to act against wilful defaulters.** 19. Simplify payment of property tax dues by providing multiple options; a) payment through banks b) additional facilitation / e-governance counters, c) mobile vans and door-to-door collection drives, d) online payment option and e) payment through credit cards etc. **20. Make it compulsory for clearing property tax dues for provision of water and sewerage connections.** **21. Initiate a One-time drive and settlement scheme for arrears.** **22. Prepare a list of top100 defaulters and disseminate the information online and through other media to put pressure on such defaulters.**

Issues	Recommended Interventions
	23. Municipalities should be made to report details of Litigation cases on a quarterly basis to CMA and the actions taken on them. Municipal officials should be given targets for settlement of litigation cases in a time-bound manner. 24. Moot creation of a special tribunal for speedy completion of litigation cases. **25. Wherever possible initiate steps for out-of-court settlement to facilitate speedy clearance of such cases.** 26. Make provisions and take steps for writing off bad debts to clear up arrears history and database **27. Encourage greater accountability among bill collection staff by introducing targets and incentivise the same by recognition of top performers.** 28. The linking of grants to improvement in collection efficiency as in the case of JNNURM and UIDSSMT should be institutionalised for receipt of state government grants too.
Incentivise on-time payment	29. Implement Payment Due Date and penalties to incentivise on-time payment 30. Encourage self-disclosure and payment.

Professional Tax

Professional tax has grown at 19% over the last five years and is becoming an important revenue stream. It is also a visible revenue stream, yet collection efficiency (especially on current demand) has been only about 82%. Hos-M should improve collection efficiency to more than 95% and should explore options for enhancing revenues by taking the following steps.

31. Hos-M should focus on widening its professional tax base by bringing more traders and independent professionals within the ambit of professional tax. Specifically, Hos-M should consider tapping into databases of potential professional tax assesses including

- **Professional associations** including Institute of Chartered Accountants of India (ICAI), the Bar Council, Medical Council etc.
- **Databases of Commercial Taxes Department, GoTN** to get details of sales tax registrations within Hos-M.
- **Yellow pages and other local commercial directories** to identify and bring in more professionals within the ambit of professional tax.

32. A Targeted approach should be followed to widen the tax base for professional tax. In particular, the municipality should focus on gathering information on the following groups that could potentially add to the professional tax assessment base.

• Banks (Commercial and Cooperative) • Government Staff • Doctors • Engineers • Surveyors • Contractors • Advocates	• Architects • Chartered Accountants (Firms) • Income Tax Practitioners • Computer Hardware Shops • Computer Education Institutes • Medical Shops • Private Companies

• Business Entities (other than companies) • Stock Broking concerns • Hospitals • Schools and other educational institutions • Cinema Theatres • Clubs	• Chit Funds • Pawn Brokers • Laboratories • Internet Browsing Centres • Stockists and Distributors

User charges

With the proposed UGD system in uncovered areas and proposed implementation of the Combined Water supply scheme, user charges would need increased monitoring and follow-up given their potential to contribute to Hos-M's revenue. Specifically Hos-M should

33. **Increase penetration of connections for water supply.** As of FY 2006, Hos-M has about 17000 connections (including connections in TWAD managed wards), which accounts for only 22% of the properties assessed. Hos-M should target to increase this to at least 60 % in the next 5 years progressively going up to 70% in the next decade.
34. **Providing water fountains only in areas with a predominantly low income population to minimise revenue loss.**
35. **Improve revenue per connection through implementation of either a graded water tariff scheme (as is being considered by CMA, GoTN) or a metering based tariff.** While the metering based system would a better system in principle (charges on the basis of usage) and in terms of incentivising water conservation, ULBs have faced resistance in implementation of metered tariffs. Hos-M could also consider implementation of meter based tariffs through involvement of Self Help Groups as meter readers.
36. **Adopt measures to improve collection efficiency.** Hos-M should consider stiff penalties for non-payment of user charges. Specifically Hos-M should consider implementation of late payment fines and in case of extreme overdue situations, disconnecting supply. Recommendations 8-14 given above under Property tax apply for improving collection efficiency in user charges as well.

Public private partnerships (PPP)

Well-structured PPPs apart from relieving ULBs of some investment burden could also be a potential revenue enhancement option, particularly in structuring remunerative projects. In particular, Hos-M could take the following measures.

37. **Evaluate PPP options for development of proposed remunerative projects including** a) development of Uzhavar Sandhai and other markets and b) Development of sports complex
38. **Actively encourage corporate / NGO partnerships for city beautification and asset management in areas covering bus stops, street lighting, medians, parks and road junctions**. Given that Hosur has a number of large industrial houses, Hos-M could encourage them to adopt specific municipal assets and maintain them as part of Corporate Social Responsibility.
39. Further Hos-M should also **regulate posters and hoardings and outdoor advertising rights** available to it to incentivise maintenance of above mentioned municipal assets by corporates that depend on outdoor advertising including banks, consumer goods and retail companies.

9.3.2 Measures for cost management

Energy efficiency

Hos-M needs to take steps to address its power costs which have shown a steep increase over the last three years. The following steps are needed in this direction:

40. Hos-M should conduct a **comprehensive energy audit** to identify areas for reducing power consumption and related costs.
41. Hos-M should implement **automatic time based dimmers** on street light network and ensure that all **pumps / motors are energy efficient.**
42. A focused study is needed to assess the level of leakages in water supply and to recommend measures to minimise the same.

10. Sustainable financial and operating plan

10.1 Financial and Operating Plan (FoP)– time horizon, basis and assumptions

10.1.1 Time-horizon

The FOP has been prepared for a 20-year period i.e., FY 2008-2027.

10.1.2 Demographic projections

Exhibit 10.1 provides the population projections that form the basis of developing the Capital Investments and other revenue and cost projections for the municipality.

Exhibit 10.1 Population projections and related estimates

	Unit	Baseline	Projected		
		2007	2012	2017	2027
Population	nos	93996	109682	116783	132224
Households	nos	22109	25798	27468	31100
Slum population	nos	7460	8,775	9,343	10,578
Slum households	nos	2416	2,838	3,021	3,421
Assessed Properties	nos	31884	37205	39613	44851
Road length	km	77	78	84	89

10.1.3 Revenues

Exhibit 10.2 provides details of the assumptions for projecting revenues for Hosur

Exhibit 10.2 Revenue related assumptions

Segment	Revenue driver	Basis / Assumptions
Property Tax	Baseline property tax / property (2006)	Rs. 1505 per year
	Growth in tax rate	30% once in 5 years 2008 onwards
	Assessments growth	Population growth. As per trend captured in Exhibit 10.1
Professional Tax	Baseline tax / assessee (2006)	Rs. 1387 per year
	Growth in tax rate -	30% every 5 years from 2008
	Growth in assessments -	Population growth
Water charges	Penetration (Connections / properties)	Baseline – 22%. Connections growth assumed to reach 60% by 2013 and 80% by 2027.
	Deposit and user charges	Connection deposit assumed at Rs. 3000 and Rs. 8000 for household and commercial connections respectively and user charges assumed at Rs. 100 per month and Rs. 200 per month for residential and commercial connections respectively. Tariffs are

Segment	Revenue driver	Basis / Assumptions
		escalated at 5% annually
Sewerage charges	Penetration (Connections / properties)	Connections growth assumed to reach 50% by 2011 and 80% by 2027.
	Deposit and user charges	Connection deposit assumed at Rs. 3000 and Rs. 8000 for household and commercial connections respectively and user charges assumed at Rs. 75 per month and Rs. 250 per month for residential and commercial connections respectively. Tariffs are escalated at 5% annually
Devolution Income	State sales tax	States' sales tax projections assumed to grow at 5%. 10% of sales tax receipts assumed to devolve to ULBs and to the municipality based on 2001 population base.
Assigned revenue and other income	Growth over baseline income (2006)	6% growth during projection period

10.1.4 Expenditure

Exhibit 10.3 provides details of the assumptions for projecting expenditures for Hosur

Exhibit 10.3 Expenditure related assumptions

Segment	Revenue driver	Basis / Assumptions
Staff Costs	Growth over base salary	10% annually
Operating Expenditure	**Existing asset base** – Growth on base O&M expenditure of 2006	Assumed to grow at 5% annually
	For new capital investments – O&M has been assumed as a % of capital costs given in Exhibit 10.4 CIP	
	Water Supply	3.00%
	Sewerage and Sanitation	3.00%
	Solid Waste Management	8.00%
	Transportation & Street lighting	20.00%
	Urban services for poor	2.00%
	Others	2.00%
Administrative expenditure	Growth over average base expenditure during 2002-06	4%
Interest expenditure	Refer section 10.1.6 below.	

10.1.5 Assets

The addition to assets is as per the Capital Investment Plan given below

Exhibit 10.4 Capital Investment Plan

Segment	Outlay	Phasing						
		2008	2009	2010	2011	2012	2013-17	2018-27
Water Supply - Project	5000	0	1667	1667	1667	0	0	0
Water Supply - Balance	7612	0	1114	1174	974	2580	461	1309
Sewerage & Sanitation - Project	5700	0	1900	1900	1900	0	0	0
Sewerage & Sanitation - Net	2667	25	363	670	669	358	427	156
SWM	806	0	71	304	53	0	196	182
Transportation and Street lighting	3358	397	345	25	515	515	129	1433
Urban services for poor	2272	0	284	284	284	284	1136	0
Others	550	70	25	100	110	110	45	90
TOTAL	**27965**	**492**	**5768**	**6123**	**6171**	**3847**	**2394**	**3170**

10.1.6 Liabilities

The Financial and Operating Plan allows for 3 types of loan – short, medium and long term. The assumptions relating to loans are given below:

Exhibit 10.5 Loan related assumptions

Segment	Type of loan
Water Supply	Medium term
Sewerage and Sanitation	Long term
SWM	Medium term
Lighting	Short term
Urban Services to poor	Long term
Others	Medium term

Type of loan	Tenure years	Moratorium years	Interest rate %
Long	20	5	9
Medium	10	3	10.5
Short	8	2	10.5

10.2 Estimation of borrowing capacity and investment capacity

We have arrived at the borrowing capacity based on the Income and expenditure projections including debt servicing of existing loans as of FY ending 2006. We have arrived at the borrowing capacity of Hosur as the minimum of

- NPV of 30% of revenue projections and
- NPV of 50% of operating Surplus projections.

As part of the FoP, we have also prepared project specific cash flow projections for the proposed water supply and underground drainage projects, apart from consolidated financial projections.

10.3 Possible financing mix for achieving full investments

Based on these criteria, the borrowing capacity of Hosur works out to Rs **6568 lakh.** At an aggregate level, assuming loans to be equivalent to **50%** of investment, sustainable investment capacity works out to Rs.**13136 lakh**, which translates to about 47 % of the total investment requirement (including slum rehabilitation). If we exclude slum rehabilitation and urban services for poor projects which are largely grant funded, the borrowing capacity translates to **51** % of the total investment requirement. Hence Hos-M is constrained in its financial capacity even after revenue enhancements and would require significant grant support and private capital to meet its capital requirements in full.

10.4 Financial and Operating Plan

Exhibit 10.6 below provides a summary of the financial projections for 10 years.

Exhibit 10.6 FOP projections

	Actual	Estd.	Projections									
FY ending	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2012**	**2014**	**2015**	**2016**	**2017**
INCOME												
Own income	536	415	519	531	544	960	1,155	1,446	1,471	1,561	1,738	1,602
Property Tax	355	227	321	324	326	329	332	489	493	497	501	505
Profession Tax	22	5	6	6	6	6	6	8	8	8	8	8
Water Charges	-	-	-	-	-	204	225	302	299	326	436	321
Sewerage Charges	-	-	-	-	-	199	359	401	413	460	509	470
Service charges/fees	81	85	89	93	98	103	108	113	119	125	131	138
Other Income	79	98	103	108	114	119	125	132	138	145	152	160
Assigned Revenue	106	112	119	126	134	142	150	159	169	179	190	201
Devolution Fund	299	327	360	395	430	469	513	561	614	672	736	805
Total Income	**941**	**855**	**998**	**1,053**	**1,109**	**1,571**	**1,819**	**2,166**	**2,254**	**2,413**	**2,663**	**2,608**
Expenditure												
Salaries	164	180	198	218	240	264	291	320	352	387	425	468
Operations	246	258	358	418	400	815	888	739	782	830	882	939
Administrative	338	1	1	1	1	2	2	2	2	2	2	2
Finance	1	36	46	192	356	529	644	675	703	707	697	675
Total Expenditure	750	476	603	830	998	1,610	1,825	1,735	1,838	1,925	2,006	2,084
Surplus	**191**	**378**	**395**	**223**	**110**	**(40)**	**(6)**	**431**	**416**	**488**	**657**	**525**

10.4.1 Summary

Exhibit 10.7 below provides a summary of the results of the Financial and Operating Plan.

Exhibit 10.7 FOP summary

Estd. Revenues – FY 2008 (Rs. Lakh)	1,085
Estd. Revenues – FY 2016 (Rs. Lakh)	2,791
Estd. Revenues - FY 2027 (Rs. Lakh)	5,479
Revenue CAGR % - FY 2008-17	10.9%
Revenue CAGR % - FY 2008-27	8.9%
Average TE (excluding depreciation)/TR (%)	25%
Average DS/TR (%)	33%
Average DSCR	1.30
Borrowing Capacity	6568
Investment Requirement	27,965
Investment Capacity (at 50% loan)	13,136
IC/IR (including Urban Service for Poor)	47%
IC/IR (without USP investment)	51%

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