Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)

Final Report

Conversion of City Corporate Plan to Business Plan for Thanjavur Municipality

May 2007

ICRA Management Consulting Services Limited

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List of Exhibits

List of abbreviations

BOT	Build –Operate –Transfer
CAGR	Cumulative Annual Growth Rate
CIP	Capital Investment Program
CCP	City Corporate Plan
FOP	Financial and Operating Plan
GLR	Ground Level Reservoir
IMaCS	ICRA Management Consulting Services
LPCD	Litres per capita per day
MSW	Municipal Solid Waste
NRCP	National River Conservation Program
OHT	Over Head Tanks
PPP	Public Private Partnerships
STP	Sewerage Treatment Plant
SWM	Solid Waste Management
ThM	Thanjavur Municipality
TNUDF	Tamil Nadu Urban Development Fund
TNUDP	Tamil Nadu Urban Development Program
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 conversion of City Corporate Plan (CCP) of Thanjavur Municipality (ThM) into a Business Plan. The CCP for Thanjavur was prepared in 2002, under the Tamil Nadu Urban Development Project - II (TNUDP-II) to develop vision, strategies and tasks to be carried out by ThM. Subsequently, ThM has prepared a Vision Plan, identifying various projects that it plans to undertake during 2004-09. The objective of this study is to enable effective implementation of projects envisaged in its CCP and Vision Plan through preparation of this report on conversion of the City Corporate Plan to a Business Plan.

City profile and growth potential

Constitution	Special Grade
Area	36.31 sq.km
Population (2001)	215,725
Decadal growth	6.80%
Wards	51

Thanjavur is a selection grade municipality as well as district headquarters, located in the centre of Cauvery Delta region, an agricultural land surrounding the town. This town is located at a distance of 351 km from Chennai and 56 km from the regional growth foci of Tiruchirapalli. The population growth has slowed down during the last couple of decades. This has primarily been due to Thanjavur's geographical constraints in terms of limited land area and industrial potential. Thanjavur is a temple town in the vicinity of large-scale agricultural activity, which supports trading and commercial activities. There are limited avenues for primary activities within the town. Thanjavur along with Kumbakonam, has strengths in Handicraft, particularly handloom silk weaving, bell metal craft, musical instruments and pith works. There appears to be potential for Thanjavur to leverage its heritage infrastructure and spur economic development through tourism initiatives. But this would require focused interventions in terms for restoring heritage sites and in providing necessary infrastructural facilities relating to connectivity, hospitality and sanitation. The CCP observes the violation of bye-laws in the small lanes in the town and the need for new by laws governing new developments in heritage areas of the town. Specifically, the CCP outlines the following strategies for better management of heritage areas

- Regulating land-use in vulnerable heritage areas
- Regulating height of buildings in and around heritage areas
- Major decisions relating to land use development should be cleared by an Heritage Committee comprising officials from key nodal agencies in the town

In order to safeguard and protect the heritage assets of the town, the CCP recommends constituting Heritage Act encompassing special building bye-laws and land use planning aspects. The CCP also recommends a review of the Master Plan of the town and to establish Land Information System to control and monitor developments in the town.

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 - Status of Municipal services

Sl. no	Parameter / Indicator	Value	Issues and Gaps
A. Water Supply			
1	Total Water Supply (MLD)	24	• Thanjavur has surplus water at a service level of 90 LPCD till 2021. • Only 56% of assessed properties have connections indicating scope for improvement • Poor collection efficiencies are a cause for concern • Uneven distribution and bottlenecks in storage in certain areas are other important issues that need to be resolved.
2	Water Connections - nos.	~ 21600	
3	Public Fountains - nos.	~ 1100	
4	Daily Per Capita Supply (LPCD)	105	
5	Storage Capacity / Daily Supply (%)	55%	
6	Pipe length / Road Length (%)	90%	
7	Water connections / properties (%)	56 %	
Actions being taken: • Rs. 9.04 crore proposal for pipe carrying bridges from Vennar headworks sent for Administrative sanction. • OHTs as recommended in the CCP for augmenting storage has been implemented • Distribution network needs to be provided in a few uncovered areas as identified in the CCP and in a few new layouts.			
B. Sanitation			
8	UGD network (Yes/No/WIP)	WIP	• A comprehensive UGD scheme is under implementation at an outlay of Rs. 70 crore under NRCP. • An estimated 31% of households do not have access to service levels Storm water drains in 58% of the total road length. • Major proportion of existing drains are kutcha and unlined and require upgradation to pucca surfaced drains
9	Existing UGD connections	None	
10	Planned UGD scheme connections	30,000	
11	Length of UGD network (km)	~ 250	
12	Length of Storm drains (km)	155	
13	Number of Public conveniences	49	
14	UGD - % of road length envisaged	100%	
15	Storm Drains - % of road length	58%	
Actions being taken: • UGD scheme expected to be completed during the current financial year. • Need for expediting completion of the same.			
C. Roads and Street Lights			
16	Total Length of Roads	268	• ThM maintains a road network of 250 km • Roads need upgradation in view of the ongoing UGD scheme ThM's street light infrastructure is adequate. • Energy conservation measures including timers and appropriate wattage lamps under implementation
17	Total number of Street Lights	~ 9320	
18	BT + CC roads / Road length (%)	90%	
19	Road length per Street Light (m)	27	
Actions being taken: • ThM is currently undertaking upgradation and improvement projects of 43.56 km under the Special Roads scheme at an outlay of Rs. 280 lakh. • Proposal submitted under UIDSSMT for comprehensive upgradation following UGD implementation			
D. Solid Waste Management			
20	Total Waste Generation (MT)	104	• Need for additional 19 acres land for compost yard

21	Collection - % of waste generated	85	• Visible garbage pile-ups in various pockets of the town indicating the need for better collection efficiencies. • Equipment - ThM has been augmenting its collection infrastructure including vehicles and push carts, as recommended in the CCP, using NRCP non-core funds and XI finance commission grants
22	Compost yard area -available	20	
23	Compost yard - required (Acres)	39	
24	No. of Vehicles for SWM	12	
25	Compressed Carrying capacity	22%	
26	Compost Yard - Gap - Acres	19	

Actions being taken:

- ThM's vision plan has identified deficiencies in terms of compost yards and transportation infrastructure.
- ThM has initiated steps to involve private sector participation / Self-Help Groups in garbage collection and management and is in the process of implementing a project at an outlay of Rs. 299 lakh to improve its solid waste management handling infrastructure and compost yard.

Other Ongoing / recent Initiatives:

- Upgradation of slaughter house being considered
- Provision of Shelters and amenities in 15 slums envisaged under IHSDP at an outlay of Rs. 17.23 crore

Analysis of financial performance

Exhibit 2 provides a summary of the financials of THM. ThM financial position has improved from a cash surplus of of Rs. 157 lakh in FY 2001 to an overall surplus of Rs. 518 lakh in FY 2004. This has been primarily achieved through:

- A **16% CAGR in revenue** together with expenditure control has led to a steep growth (CAGR-49%) in operating surplus during FY 2001-2005.
  - ❖ Tax income has grown at a CAGR of 6 % over the last five years. There has been no revision in Average Rental Value (ARV) since 1998.
  - ❖ User charges have grown by a healthy 14 %. The share of user charges/fees has increased from 14% of revenue to 20% of revenue between FY 2001-04.
  - ❖ Grants / Contributions from state have been the biggest revenue driver and have doubled in the last five years. They contributed more than 28% of revenue in FY 2004.
- **Expenditure has remained flat** over the last few years, shown a declining trend till FY 2004. Salaries have marginally increased, while Operating expenditure has grown at 21%. Overall, revenue expenditure appears to have been in control.
- **Poor collection efficiencies** of own income is a major cause for concern
- **ThM has an outstanding loan of Rs. 2018 lakh in FY 2005.** Finance charges have declined from 11% of income to 6% of income over the last five year. However, overall debt servicing is likely to increase, as repayment of loans taken during 2002 to 2005 become due.
  - ❖

Exhibit 2 - Financial analysis

	2001	2002	2003	2004	CAGR
Income					
Property Tax	344	389	399	405	6%
Professional Tax	64	67	67	78	7%
Assigned revenue	187	195	484	362	25%
Devolution Fund	243	239	361	422	20%
Service Charges and Fees	167	238	376	372	31%
Grants and contributions	-	30	37	107	
Sale and Hire charges	0	0	1	-	-100%
Other income	201	196	113	113	-18%
Total	**1,206**	**1,354**	**1,837**	**1,858**	**16%**
Expenses					
Personnel cost	613	646	645	619	0%
Terminal and retirement benefits	99	115	148	174	21%
Operating Expenses	226	223	232	371	18%
Admin expenses	41	51	55	144	52%
Finance Expenses	70	230	160	33	-22%
Depreciation	702	565	478	329	-22%
Prior period	-	1	-	1	
Total	**1,751**	**1,830**	**1,717**	**1,669**	**-2%**
Cash Surplus	***157***	***89***	***598***	***518***	**49%**
Overall Surplus	***(545)***	***(476)***	***120***	***189***	

Capital Investment Plan

The CIP has been prepared based on

- Review of projects recommended in the City Corporate Plan prepared earlier
- 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 ThM officials and review with TNUIFSL and CMA

Exhibit 3 provides a summary of the CIP for ThM.

Exhibit 3 Capital Investment Plan along with phasing - Short Term (2006-10 and 2011-15)

Segment	Outlay	Phasing	
		2006-10	2011-15
Water Supply	3,594	1,014	2,580
Sewerage and Sanitation	5,250	4,200	1,050
Solid Waste Management	650	380	270
Roads	9,505	1,975	7,530
Street Lights	255	128	128
Storm Drains	2,400	1,200	1,200
Social Infrastructure	850	425	425
Tourism	3,925	425	3,500
Slum Development	7,524	3,000	4,524
TOTAL	**33,953**	**12,747**	**21,207**

Priority Projects

Priority projects identified by Thanjavur municipality are listed below:

1. Water Supply upgradation covering replacement of pumping mains and implementation of pipe carrying bridges from Vennar and other headworks.
2. Upgradation of roads following ongoing Underground drainage scheme
3. Development of Compost yard and procurement of equipment for Solid Waste management in line with their action plan.
4. ROBs at Shanti pillai gate and Medical college road
5. Completion of ring road /bypass
6. Renovation of moat around the big temple.

The last three projects namely 4,5 and 6, being complex and high value projects would require significant support both in the form of technical assistance and in the form of viability grant funding in order to implement them. While the road and transportation projects (4 and 5) should be implemented by the State Highways department, GoTN along with the Thanjavur municipality would require support from other agencies including the Archaeological Survey of India in order to do the moat renovation. To start with, GoTN should form an apex committee comprising the ASI, Thanjavur municipality, Tourism department and other concerned local stakeholders to study this project further and prepare an implementation plan.

Reform Agenda

The report provides the details of reform agenda. ThM'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.

ULB level

ThM could potentially increase its own income to Rs. 1460 lakh through focused interventions in the following areas:

1. **Property tax**: – through revision in ARV, widening assessee base and closer scrutiny.
2. **Professional tax** – sustaining a growth in assessments of 8 % in the assessments through widening tax base among traders and self-employed professionals
3. **User charges** – ThM should target to achieve 30,000 water connections and 15,000 sewerage connections by FY 2010. This would enable a significant jump in user charge revenue.
4. **PPP / remunerative projects** - ThM 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. Considering that ThM has identified development of bus stand infrastructure and other remunerative projects at an outlay of nearly Rs. 100 crore, it could potentially realise 2.5% of this outlay or nearly Rs. 250 lakh as annual revenue. This potential has not been taken into account while arriving at the borrowing / investment capacity of ThM.
5. **Energy costs** - A savings of 10-15% reduction in energy costs appears imminently achievable and could translate to annual savings of nearly Rs. 100 lakh on the energy cost base for the year FY 2005. A comprehensive energy audit is required.
6. **Collection Efficiencies** – ThM's collection efficiency is very low across all its revenue heads namely, property tax, professional tax and user charges and needs significant improvement from current levels. ThM should consider a) a focused one-time drive to clear up its dues and b) strengthening of its collection process and organisation to ensure that the overall levels of efficiency in order to improve and sustain its collection efficiencies.
7. **NGOs / Corporate participation** - Intensify focus on attracting NGOs/advertising revenue for city beautification projects.

Actions from GoTN and GoTN agencies

1. Initiate action to complete ongoing updation of land use and master plan for Thanjavur Corporation on priority to guide future growth of the town in an orderly manner.
2. Revise ARV for property taxes, pending since 1998 at the earliest.
3. Develop model concessions / formats for 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
4. Incentivise energy conservation and implementation of SWM guidelines through specific grants
5. GoTN should continue its thrust on e-governance, accounting systems and capacity building/training. Specific actions on this have been identified in the report.
6. GoTN should support ThM in implementing the large projects involving significantly high capital outlay as outlined in the list of priority projects.

FOP, borrowing capacity and investment capacity

At an aggregate level, assuming loans to be equivalent to 40 % of investment, sustainable investment capacity works out to Rs. 69.34 crore, which is only 22 % of the total investment requirement. However, if we exclude the projects to be undertaken by state level agencies (such as moat restoration and bypass/ ROB projects), the investment capacity goes up to more than 50 % of investment requirements.

Exhibit 4 Summary of key results

Summary of FOP results	
Revenues – FY 2006 (Rs. Lakh)	1986
Revenues – FY 2015 (Rs. Lakh)	3482
Revenue CAGR % - FY 2006-15	**6.44**
Avg. Op. Surplus (Rs. Lakh)	1
Avg. Cash Operating Surplus	797
Avg. TE (excluding depreciation)/TR (%)	71%
Average Debt Servicing/TR (%)	18%
Borrowing Capacity as a minimum of NPV of	
NPV of 50% of Cash Surplus (without new loans)	2,773
NPV of 30% of Revenue	5,325
Borrowing Capacity	**2,773**
Investment Capacity (assuming 40% loan)	6,934
Investment Requirement	31,453
IC/ IR	**22%**

While loans and own funds should be used to finance remunerative projects, ThM should leverage and utilize Grants from schemes like UIDSSMT and IHSDP to undertake non remunerative projects relating to slum development, tank restoration etc. Further, ThM could also consider involvement of private sector in implementing remunerative projects including slaughter houses etc. Further large projects such as ring roads, ROBs and moat restoration should be undertaken through viability gap funding and financing by state level nodal agencies.

1. Introduction

1.1 Background to the study

Thanjavur is a selection grade municipality as well as district headquarters, located in the centre of Cauvery Delta region, an agricultural land surrounding the town. Under the Tamil Nadu Urban Development Project - II (TNUDP-II), a City Corporate Plan (CCP) was prepared for Thanjavur Municipality (ThM) in 2002. The objective of the CCP was to outline a vision for development of the city and to identify strategies and tasks to be carried out by ThM. Subsequently, ThM has also developed a 5-year Vision Plan (2004-09), identifying various projects that it plans to undertake during this period. In order to enable effective implementation of projects envisaged in its CCP and Vision Plan, The Tamil Nadu Urban Infrastructure Financial Services (TNUIFSL) mandated ICRA Management Consulting Services (IMaCS) for conversion of City Corporate Plan (CCP) into a Business Plan (BP).

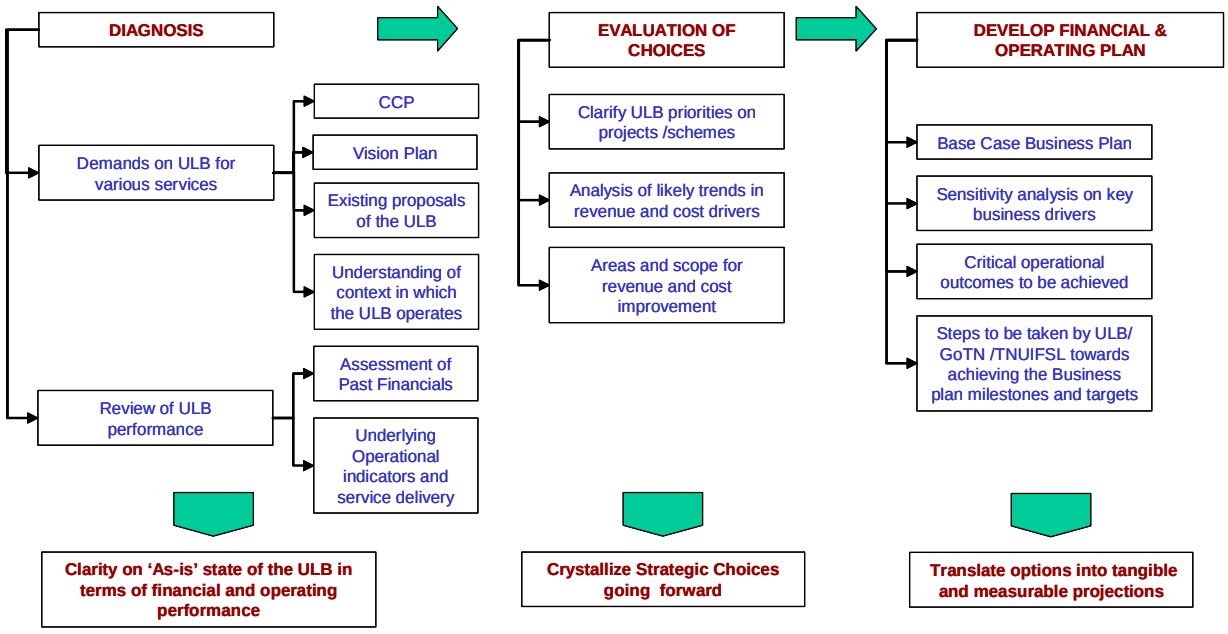
1.2 Scope of work

The scope of work for the study covered a) assessment of the financial and operating aspects, b) Review issues relating to revenue realisation and cost management and identification of improvement (revenue enhancement and cost reduction) measures and c) Development of a Financial and Operating Plan (FOP), taking into account potential revenue enhancement and cost reduction measures.

1.3 IMaCS approach to the study

Exhibit 1.1 gives a snapshot of IMaCS' approach to the study.

Exhibit 1.1 IMaCS approach to the study



1.3.1 Step I – Diagnostic review

The diagnostic review involved an assessment of the current status of ThM, its activities and financial performance, review of the City Corporate Plan (CCP) and discussions with TNUIFSL and ThM. We had the opportunity to interact with the Commissioner along with their team and had extensive interactions with the chairperson and select ward members during our field visits.

We collected relevant information on the performance (operational and financial) from ThM. Our review was focused on the following areas:

- Financial position
- Operational performance
- Demands on urban services in the town/municipality

The diagnostic review was directed towards achieving a clear understanding of the operating and financial performance of ThM.

1.3.2 Step II – Evaluation of options for financial improvement and projects

Based on the diagnostic review, we crystallised the options for ThM covering a) analysis of areas for revenue enhancement and cost management and b) Felt needs in terms of projects and estimate of capital outlay.

1.3.3 Step III –Projection of financial statements and estimation of investment and borrowing capacity

We have projected financial statements for ThM under two scenarios namely, a) base case and b) with potential improvements. Under both scenarios, the optimum borrowing capacity and sustainable investment capacity have been computed.

1.3.4 Step IV - Consultations and Finalisation

Subsequent to preparation of draft final report, we had public consultations in Thanjavur to elicit and factor views of stakeholders in Thanjavur. The stakeholder meeting was well attended with participation from architects, city NGOs and other consumer welfare associations. Further to this we made a presentation to the Municipal council of Thanjavur on the findings of the study.

1.4 Structure of the report

This document covers our final report for the study and is organised as follows:

- **Section 1** Introduction
- **Section 2** Thanjavur - a brief profile
- **Section 3** Review of operating performance
- **Section 4** Analysis of financial performance
- **Section 5** Potential areas for improvement
- **Section 6** Business plan projections and investment capacity of ThM

2. Thanjavur - a brief profile

2.1 Location and connectivity

Thanjavur is a special grade municipal town as well as district headquarters. Thanjavur is located in the Cauvery delta region, at a distance of 351 km from Chennai and 50 km from Tiruchirapalli. It is situated in 10' 47" latitude, 19" 08' longitude and 57 m above mean sea level. The town serves as a transit point and is well connected to the adjoining towns by road and rail. Vadavar and Vennar rivers traverse along Thanjavur town in the north.

2.2 Social and demographic characteristics

Thanjavur with a total land area of 36.31 sq. km had a population of 215,725 in 2001.

The population of Thanjavur was 215,725 in 2001, implying a growth of 6.78 % over the population of 202,013 in 1991. Exhibit 2.2 below shows that the population growth has slowed down during the last couple of decades, after strong growth in the 70s and 80s. Map 3 shows the population density in various wards of the town.

Exhibit 2.1 Population trend

Year	Population		Decadal Growth rate %
	Population	Variation	
1951	100,680	-	
1961	111,099	10,419	10.35
1971	140,547	29,448	26.51
1981	184,015	43,468	30.93
1991	202,013	17,998	9.78
2001	215,725	13,712	6.78

Source: Census of India

Thanjavur[1] recorded an overall literacy rate of 80.3 % with female literacy of 76.1 %, while the sex ratio was 977 females per 1000 males. Thus Thanjavur compares favourably in terms of literacy and sex ratio compared to state averages on these indicators.

2.3 Economic Development

2.3.1 Composition of workforce

Only 26% of the population was engaged in economic activity (in 1991) indicating the limited opportunities and the need to exploit new opportunities to promote the economy. The occupational pattern for the city (available only as of 1991) indicates that more than 70% of the workforce is engaged in the tertiary sector. About 7% of the workforce was engaged in primary activities, while about 22% of the workforce is employed in secondary activities.

[1] Source: http://gisd.tn.nic.in/census-paper2/TABLES/table-1c.htm

2.3.2 Economic activities

Primary and secondary sector

Thanjavur is a temple town in the vicinity of large-scale agricultural activity, which supports trading and commercial activities. Being located in the Cauvery delta region, agriculture is a key economic activity in the region, though only around 7% of the workforce in the town is directly employed in the primary sector.

Thanjavur along with Kumbakonam, has strengths in Handicraft, particularly handloom silk weaving, bell metal craft, musical instruments and pith works

- **Handloom industry** occupies an important place in the economy of Thanjavur District as it provides livelihood for more than 60,000 people in this district. It is reported that the number of looms in Thanjavur stood at 13233 of which 10662 looms comes under co-operative sector. This district stands foremost in the varieties of the handloom fabrics woven in silk cotton and lace in the designs of the pattern and the artistic workmanship exhibited. Silk weaving is mainly carried on in Thanjavur and Kumbakonam. There are 25 cooperative handloom societies functioning in this district. Silk sarees produced by Thirubuvanam cooperative silk society with gold lace cost from RS. 2000 to Rs. 15,000 and these sarees are very popular all over the country.
- This district is also famous for **bell metal craft** like Thanjavur metal plates, bronze images bowls, napkins and powder boxes etc made of bronze and copper images with inlaying and engraving work of motifs drawn from Hindu Mythology done in Silver etc known as "Thanjavur Swamy works" chief centres of Metal work are in Kumbakonam and in Nachiyarkoil.
- Thanjavur is also well known for its **pith works** consisting of beautiful models of hindu idols, temples, mosques, garlands, bouquets, parrots and peacocks. The flower garlands and bouquets are much demand during Christmas days. Pith is available on the river beds in Thanjavur and Kumbakonam.
- **Manufacture of musical instruments** from jack wood like Veena, Tambura, Violin, Mrithangam, tabela and Kanjira is another important occupation in Thanjavur.

However, due to lack of focused attention and lack of scale, these traditional industries are on the decline. Strengthening the existing craft clusters in and around Thanjavur through focused interventions by the Government of Tamil Nadu and other nodal agencies such as The Tamil Nadu Handicraft Development Corporation could spur growth of handicraft based economic activity and employment in the town.

Commercial and tertiary activities

Commercial activities in Thanjavur is primarily related to tourism and allied activities. Three major markets and a few neighbouring markets support the commercial requirements of the town. The important markets in the town and the key activities are detailed below:

- **Sarafoji Market -** The old market is located near the Palace complex and consists of 10 blocks with more than 300 shops. This market serves the neighbourhood in the eastern parts of the town and has sufficient land for future expansion.
- **Kamaraj Market -** This market is adjacent to the fort area with more than 100 shops serving the population in and around the fort area.
- **Subramanya Swami Koil market -** This market place more than 100 years old is maintained by the temple authority and accommodates nearly 100 shops.

Besides these markets, Amarar Swaminathan market at Karanthai and AVK Swami market at Pookara street are other important markets. In addition, ThM also maintains three shopping complexes namely Raja Rajan commercial complex, Gandhiji commercial complex and Municipal colony commercial complex. ThM also maintains shops in the old and new bus stands.

2.4 Heritage development and tourism potential

There appears to be potential for Thanjavur to leverage its heritage infrastructure and spur economic development through tourism initiatives. But this would require focused interventions in terms for restoring heritage sites and in providing necessary infrastructural facilities relating to connectivity, hospitality and sanitation.

Apart from the internationally renowned Brahadeeswarar Temple (which has been declared as a World Heritage Monument and is managed by the Archaeological Society of India, there are more than 80 temples in Thanjavur. Map 4 shows the important heritage landmarks in the town. Major temples in the town include:

- Konnaneswarar temple
- Vijaya ramar temple
- Navaneetha Krishnan temple
- Kalingaya Vengatesa Perumal temple
- Vashiteswara temple
- Iruthayeswara temple
- Meenashi Sundareswarar temple
- Prasa Venkatesaswamy temple

2.4.1 Heritage areas

There are five categories of heritage areas in Thanjavur. The landmarks and key issues (as observed in the CCP) in these zones are detailed below:

- **Heritage Zone 1 -** This zone includes the Small Fort area (which houses the famous Brahadeeswarar temple) Sivaganga park (one of the largest parks in Tamil Nadu) and Schwartz Church. Key issues faced in this zone include a) Lack of adequate parking facilities, b) poor

condition and structural damage of the rampart on the rear of the fort, c) encroachments and slums on the northern and western environs of the fort and the temple and d) presence of high rise buildings obstructing view of the temple complex on the southern side.

- **Heritage Zone 2 -** This zone comprises the Palace complex and houses the Saraswathi Mahal Library and the Thanjavur Art Gallery. The palace complex is situated in an area of about 110 acres located in the eastern part of the big fort area. The area now has a number of Government offices, schools, university and play ground and several structures have been constructed without due consideration to the architectural value of the complex. Entry and exit to the palace complex is also troublesome and arrangements for lighting, public conveniences and drinking water also need substantial improvement. The surrounding environs to the palace complex has more than 50 temples, several of which need revival and renovation. The existing rampart around the palace complex is encroached.
- **Heritage Zone 3 -** This zone comprises Porch Sacred Cathedral, Church of Lady Dolor and traditional villas of Kalikulam area.
- **Heritage Zone 4 -** This zone comprises the railway station building, a church located at St.Peters School, few colonial structures and exhibit the influence of maratha and colonial architecture. This zone also includes the Sivarayar Thottam, which is predominantly a weavers settlement and the traditional urban built forms exhibit several unique features including linear streets and houses with columnar façade.
- **Heritage Zone 5 -** This zone comprises the Karanthai Tamil Sangam, traditional settlements and moderate size temples.

2.5 Land use management

2.5.1 Issues in land-use

The town extends for an area of 36.31 sq.km. Exhibit 2.2 provides a snapshot of the land use pattern in Thanjavur.

Exhibit 2.2 Land-use in Thanjavur

Sl. No	Type	Area (in Hectare)		% of total	
		Existing	Proposed 2011	Existing	Proposed 2011
1	Residential	2013.34	2700	55.4	74.00
2	Commercial	111.32	125	3.06	3.50
3	Industrial	82.68	85	2.28	2.50
4	Educational	108.11	110	2.98	3.00
5	Public and semi-public	320.2	330	8.81	9.00
6	Agriculture	996.85	283	27.47	8.00
	Total	**3633.00**		**100**	

Being a temple town, residential areas account for nearly 60.85% of the total land area. The new developments are taking place along the north-west. Along with residential development, the slum areas in the town has also grown. Commercial and industrial use has remained more or less similar

and account for less than 6% of the land area. Agricultural use has declined significantly during 1981-1991 from 24% to 10 % of land use.

2.6 Strategy for development

The CCP prepared earlier recognises the heritage importance of Thanjavur and stresses the need to conserve this aspect. The CCP observes the violation of bye-laws in the small lanes in the town and the need for new by laws governing new developments in heritage areas of the town.

Specifically, the CCP outlines the following strategies for better management of heritage areas

a) Regulating land-use in vulnerable heritage areas
b) Regulating height of buildings in and around heritage areas
c) Major decisions relating to land use development should be cleared by an Heritage Committee comprising officials from key nodal agencies in the town
d) Need to review and prepare a fresh master plan for guiding future growth of the town in an orderly manner.

In order to safeguard and protect the heritage assets of the town, the CCP recommends constituting Heritage Act encompassing special building bye-laws and land use planning aspects. The CCP also recommends a review of the Master Plan of the town and to establish Land Information System to control and monitor developments in the town.

3. Review of operating performance

This section presents a review of the status of infrastructure development undertaken by ThM

3.1 Water Supply

3.1.1 Sources and distribution network

Map 5 shows details of the water supply infrastructure in Thanjavur. Thanjavur is provided with a protected water supply with head works at both Vennar and Coleroon rivers. Apart from these two sources, 31 bore-wells augment these sources of water supply. The details relating to sources of water supply are given in Exhibit 3.1.

Exhibit 3.1 Water supply

	Source I		Source 2	
Source	Vennar river		Coleroon river	
Distance from the Municipality	5 km.		22 km	
Year of installation of water works	1895		1979	
Transmission type	Pumping		Pumping	
Location of Head works	Vennar		Coleroon	
Total No.of filter basing system	1		1	
Average water table (M)	5.00		5.00	
Quantity of Water pumped (MLD)	5.20		18.80	
Hours of Pumping	22		22	
No.of deep borewells	32 Nos. (various location of the town)			
Total quantity of water supplied (MLD)	25.20 (including borewells)			
Pumping machinery details				
Pumps (No's)	I (Main)+ I (Additional)	I (Main)+ I (Additional)	I (Main)+ I (Additional)	I (Main)
Power (HP)	125	25	200	60
Head (m)	54.0	-	15.0	26.5
Discharge (LPM)	6000		21000	7425
Remarks	• A position of filter basin was being renovated. • The age old pumping main often get choked, which need to be replaced with a parallel (new) pumping main		• Operating with moderate yield	

Water is pumped and transmitted to the 17 Over Head Tanks (OHTs) / Ground Level Reservoirs (GLRs), located at various places in the city. Water is then distributed within various areas through localised distribution networks without treatment from the respective OHTs. The OHTs / GLRs are complemented by a distribution network of 256 km, which covers almost 98% of the 260 km road network.

3.1.2 Level of access

Exhibit 3.2 provides details of service levels and level of access in water supply in Thanjavur.

Exhibit 3.2 Service levels - Water supply

Indicators	Existing	Proposed
Per capita supply during Normal days (LPCD)	110	110
Per Capita supply during Summer (LPCD)	70-80	110
% of Storage capacity	50.30%	63%
% of distribution Network to total Road Length	89.45%	100%
% of Population served through Public fountains	36.63%	-
% of Assessments covered with direct connections	52.56%	70%
Slum Population per stand post	120	-
Current Collection Performance	26.26%	90%
% of Population Served	86.66%	100%
No. of House Service Connections	**Metered**	**Unmetered**
Residential	15,400	5326
Non Domestic/Commercial	871	-
Industrial	-	-

3.1.3 Key issues

Thanjavur has a fairly good coverage and access to protected water supply given its proximity to sources of water and presence of a water supply scheme over a long period. While the water supply level in summer months needs improvement, overall level of water supply is in line with municipal norms.

Some of the key issues with respect to water supply are highlighted below:

- **Demand – Supply –** ThM would require close to 25 MLD by 2021 to meet the needs of the projected population of 2.78 lakh. Thanjavur has surplus water at a service level of 90 LPCD even till 2021.
- **Scope for adding water connections –** Water connections account for only about 55 % of the number of properties assessed and indicate the scope for adding more connections. However, the high number of public fountains could constrain the ability of ThM to add more connections.
- **Poor collection efficiency -** Current collection efficiency was only 48% in FY 2005. Overall collection efficiency is even lower due to poor arrears collection (24% efficiency) and is a major cause for concern, especially considering the significant debt servicing obligation that ThM has.
- **Other issues -** Uneven distribution and low pressure supply complaints prevail in select wards in the town. Also certain extended areas of the town need to be provided with distribution main. While municipal officials estimate leakages in the region of 5-6%, there is a need for a comprehensive audit to assess the extent of leakages and scope for improvement

3.1.4 Interventions required and status of projects identified in CCP

The projects identified for implementation as part of CCP and their status is given below:

a) **Provision of leasing of tanker lorries.** This has been done away with in view of proposed improvements in the distribution network.
b) **Setting up Customer complaint cell.** Has been implemented
c) **Renovation of Vennar source filter bed.** Yet to be implemented
d) **Construction of OHTs.** Under implementation. Rs 90 lakh being spent in FY 2005-06
e) **Laying of additional pumping main from Thirumanur to Vennar and pipe carrying bridges.** Yet to be implemented
f) **Laying of additional pumping main from Vennar to Karanthai.** Yet to be implemented
g) **Laying of distribution mains in uncovered areas.** Yet to be implemented

These projects identified in the CCP involved an outlay of Rs. 7.25 crore, of which projects worth more than Rs. 5.5 crore are yet to be implemented. ThM is already implementing the project for augmenting storage by construction of OHTs. A proposal for pipe carrying bridges for Rs. 9.04 crore has been submitted for administrative sanction.

3.2 Sanitation

3.2.1 Under Ground Drainage (UGD)

Thanjavur is currently implementing an Underground sewerage system with assistance under the National River Conservation Program (NRCP)

Thanjavur is in the process of implementing comprehensive Underground drainage scheme with assistance from NRCD at an outlay of Rs. 70 crore. Nearly 80 % of the pipeline work for the project has been completed. When completed the project is expected to be ready to serve 30,000 house service connections. The project would have 5 pumping stations with the sewerage treatment plant located near Samuthiram tank. About 44 acres of land has been earmarked for setting up the sewerage treatment plant. The project is expected to be completed within two years. Exhibit 3.3 provides details of the existing sanitation facilities in Thanjavur. Nearly 56 % of the population has access to septic tanks, while another 13 % have access to low cost sanitation and public toilets. Nearly 30 % of the population do not have access to organised sanitation facilities.

Exhibit 3.3 Sanitation facilities – coverage of population

	% of households
Septic tanks	56%
Low cost sanitation	8%
Public conveniences	5%
Total	69%
% of households without access	31%

Source: CCP

There are more than 80 public conveniences (PCs) in Thanjavur town, of which nearly 49 are in operation.

3.2.2 Storm water drains

Storm water drains are provided in approximately 58% of the total road length within ThM limits. Major proportions of existing drains are kutcha and unlined and require upgradation to pucca surfaced drains. Exhibit 3.4 provides the details.

Exhibit 3.4 Storm water drain network

Details	Length in km	% coverage
Open pucca / surfaced	53	20 %
Kutcha / unlined	101.73	38 %
Total Drains (km)	155	58 %
Roads without drains	113	42 %
Total Road Length (km)	**268**	**100 %**

Source: CCP

3.2.3 Issues

The CCP stressed the importance of implementing the UGD project expeditiously and when completed, this is expected to address the problems relating to sanitation and pollution.

ThM should however focus on upgrading and renovating its public convenience infrastructure. Being a tourist town with a high floating population, Thanjavur should ensure creation and upkeep of adequate number of public conveniences.

About 40% of the road network does not have storm drains. Even in the roads that have drains, a large part of this drain network is covered by kutcha drains and hence there is a need for substantial upgradation of the drain network.

3.2.4 Project identified and status

The projects identified for implementation as part of CCP and their status is given below:

a) **UGD network.** Under implementation and expected to be completed during FY 2007.
b) **Upgradation of storm water drain network.** Partial implementation.
c) **Restoration of lakes and ponds.** Restortion of 4 lakes being taken up under NRCP non-core projects.

3.3 Solid Waste Management

Thanjavur generates nearly 104 MT of solid waste per day, while collection is estimated about 85 MT per day (implying nearly 80% collection). Exhibit 3.5 gives the current status of solid waste generation and management system of ThM.

Exhibit 3.5 Solid Waste Management - current status

Generation / day	104 MT
Collection / day	85 MT
Door - to - door collection	27 wards
Privatisation of door-to-door collection	7 wards
Compost Yard	
Total required	39 acres
Available	20.acres
Additional required	19 acres

3.3.1 Equipment

The list of equipment available with ThM for Solid Waste Management at the time of preparation of CCP is given below:

- Tractor - 1
- Mini Lorry - 6
- Bullock cart - 22
- Loaders - 1
- Sullage lorry - 1
- Tipper - 2

The CCP observed that the carrying capacity of the vehicles for secondary collection was only 22% of the total waste generated. It estimated that a cumulative 160 trips in a day was required.

Subsequently, ThM has procured a dumper place and dumper place bins and push carts in line with its Solid Waste management action plan.

3.3.2 Disposal yard

Household, market and commercial waste accounted for nearly 64% of the total waste generated in the town. The wastes are disposed off at the Sekkadai road and no composting used to be done. The land available is not sufficient for ultimate population requirements as shown in Exhibit 3.5. ThM is developing composting facilities at the disposal yard under NRCP non-core scheme.

3.3.3 Issues and status of project identified in the CCP.

a) **Need for integrated approach to SWM** - There appears to be substantial deficiencies in Solid Waste management and this aspect of the municipal management requires immediate attention across the entire chain of activities starting with segregation and collection, transfer and need for additional land for composting and disposal.

b) Land for composting - ThM requires additional land for disposal and composting and is in the process of acquiring land for the same.

c) **Deficiencies in collection -** There are visible garbage pile-ups in various pockets of the town indicating the need for better collection efficiencies. There may also be a need to intensify awareness campaigns to educate citizens on the need for handling and segregating their waste.

d) **Equipment -** ThM has been augmenting its collection infrastructure including vehicles and push carts, as recommended in the CCP. It proposes to buy to dumper placers to utilise XII finance commission grants during FY 2007.

ThM's vision plan has identified deficiencies in terms of compost yards and transportation infrastructure. ThM has initiated steps to involve private sector participation / Self-Help Groups in garbage collection and management and is in the process of implementing a project at an outlay of Rs. 299 lakh to improve its solid waste management handling infrastructure and compost yard.

3.4 Roads

Map 6 shows the details of transportation infrastructure in Thanjavur. Exhibit 3.6 provides details of the road network under the jurisdiction of ThM.

Exhibit 3.6 Road network

Type	Municipal Roads		Highways		Total	
	km	%	km	%	km	%
BT. Roads	186	74	18	100	204	76
Cement Concrete pavement	20	8	-	-	28	8
W.B.M roads	13	5	-	-	18	5
Earthen Roads	31	12	-	-	43	11
Total	**250**	**100.00**	**18**	**100**	**268**	**100**

ThM maintains a road network of nearly 250 km of which surfaced roads (both B.T. and CC) constitute 82 %. In addition, nearly 18 km of highway roads traverses the ThM area. ThM is currently undertaking upgradation and improvement projects of 43.56 km under the Special Roads scheme at an outlay of Rs. 280 lakh.

3.4.1 Issues and status of project identified in the CCP.

The CCP points out that the proposed ring road in only partly completed and the rest of the road should be implemented. The proposed ring road connects Trichy, Nagapattinam and Kumbakonam rods which will facilitate easing of congestion in the town. With the implementation of UGD, municipal road network in the town needs substantial upgradation. Further nearly 25% of the road network needs to be converted from WBM to BT roads. Hence ThM requires substantial investment in road network.

Consultations with stakeholders in the city also reveal the need for better operational traffic management in terms of creating better traffic flow. Some of the suggestions include traffic improvements at 3 junctions - Railway junction, Maris corner and Srinivasan Pillai road junction. The

report also proposes a one-way traffic plan for the city along with these changes. These suggestions need to be reviewed and implemented.

3.5 Street lights

The CCP highlights that Thanjavur has fairly good coverage of the city roads with street lights. Exhibit 1 provides details of provision of street lights by ThM. Nearly 80 % of the lights are tube lights and 20 % are sodium vapour lamps. Average spacing between the lights (~ 27 m) is in line with the municipal norm of 30m. Tube lights are provided in interior streets, while sodium vapour lamps are provided at the major roads and junctions. Exhibit 3.7 provides the details.

Exhibit 3.7 Existing Street Lighting Facilities

Type	Nos.
Tube lights	8235
Sodium Vapour Lamps	1077
Mercury Lamps	-
High Mast Lamps	7
Total	**9319**

3.6 Bus stands

Thanjavur has a new bus stand at the periphery (50 bus bays) and an old bus stand at the town centre (24 bus bays). These bus stands are classified as A category with an average inflow of 475 buses per day. The CCP mentions that the facilities provided at new bus stand are inadequate and highlights the need to improve facilities there. ThM is currently implementing concrete pavement at the new bus stand at an outlay of Rs. 100 lakh.

3.7 Capital Investment Plan

We have compiled the felt needs of the city under various service areas, based on

- Review of projects recommended in the City Corporate Plan prepared earlier under TNUDP - II
- Status and progress on projects identified as part of the Vision Plan (2004-09) prepared by ThM
- Consultations with stakeholders and
- Discussion with ThM officials

Exhibit 3.8 provides project components of the Capital Investment Plan over the next ten years for various services and the estimated outlay for implementing these projects. Nearly Rs.340 crore of investment is required over the next ten years to address these felt needs.

Exhibit 3.8 THM - Felt needs (2006-15)

Area	Outlay provided by ThM (Rs. Lakh)		Projects / Remarks
	2006-10	2011-15	
Roads, Bridges and Culverts	**1,975**	**7,530**	**Ongoing projects / proposals** • Ongoing Special Roads project - Rs. 280 lakh • UIDSSMT project proposal ~ Rs. 800 lakh **Recommended projects in CCP (Rs. 1240 lakh)** • New roads - 20 km ~ Rs. 1100 lakh • Feasibility for ROBs ~ Rs. 5 lakh • Provision of pedestrian subway ~ Rs. 60 lakh • Organised parking area ~ Rs. 25 lakh • Truck terminal ~ Rs. 50 lakh
Storm water drains	**1,200**	**1,200**	**Ongoing projects / proposals (Rs. 170 lakh)** • IDSMT/UDSMT project proposals ~ Rs. 170 lakh **CCP (Rs. 260 lakh)** • Convert Kutcha drains to pucca drains ~ Rs. 260 lakh
Water supply	**1,014**	**2,580**	**Completed / Ongoing projects / proposals** • Construction of OHTs ~ Rs. 90 lakh • Distribution network additions • Upgradation of pumping mains
Solid Waste	**380**	**270**	• Ongoing project (NRCP) at an outlay of Rs. 299 lakh
Street lights	**128**	**128**	• Energy savers, additional lights ~ Rs. 32 lakh • High mast lamps ~ Rs. 75 lakh (suggested in CCP)
Social / Rem. Enterprises	**425**	**425**	• Proposed Slaughter house projects, Crematorium and other projects identified in Vision Plan
Sanitation	**4,200**	**1,050**	• Ongoing Underground sewerage scheme under NRCP
Slum Development	**3,000**	**4,524**	• Proposal for improvement of 15 slums at Rs. 17.23 crore submitted.

Area	Outlay provided by ThM (Rs. Lakh)		Projects / Remarks
	2006-10	2011-15	
Others	**425**	**3,500**	• Proposal submitted for heritage tourism development schemes at an outlay of Rs. 4.25 crore. • Renovating and desilting moat/canal around big temple
TOTAL	**12,747**	**21,207**	

3.7.1 Priority Projects

Priority projects identified by Thanjavur municipality are listed below:

7. Water Supply upgradation covering replacement of pumping mains and implementation of pipe carrying bridges from Vennar and other headworks.
8. Upgradation of roads following ongoing Underground drainage scheme
9. Development of Compost yard and procurement of equipment for Solid Waste management in line with their action plan.
10. ROBs at Shanti pillai gate and Medical college road.
11. Completion of ring road /bypass
12. Renovation of moat around the big temple.

The last three projects namely 4,5 and 6, being complex and high value projects would require significant support both in the form of technical assistance and in the form of viability grant funding in order to implement them. While the road and transportation projects (4 and 5) should be implemented by the State Highways department, GoTN along with the Thanjavur municipality would require support from other agencies including the Archaeological Survey of India in order to do the moat renovation. To start with, GoTN should form an apex committee comprising the ASI, Thanjavur municipality, Tourism department and other concerned local stakeholders to study this project further and prepare an implementation plan.

3.7.2 Phasing of Capital Investment Plan

The prioritisation and phasing of the CIP during 2008-15 is given below:

Exhibit 3.9 TCC - Phasing of CIP (2006-15)

Segment	Outlay	Phasing	
		2006-10	2011-15
Water Supply	3,594	1,014	2,580
Sewerage and Sanitation	5,250	4,200	1,050
Solid Waste Management	650	380	270
Roads	9,505	1,975	7,530
Street Lights	255	128	128
Storm Drains	2,400	1,200	1,200
Social Infrastructure	850	425	425
Tourism	3,925	425	3,500
Slum Development	7,524	3,000	4,524
TOTAL	**33,953**	**12,747**	**21,207**

4. Analysis of financial performance

This section provides a summary analysis of the financial performance of ThM.

4.1 Income and Expenditure summary of ThM

Exhibit 4.1 provides a summary of the income and expenditure of ThM. This summary has been prepared based on information provided by ThM[2].

Exhibit 4.1 Income and Expenditure of ThM - Last five years

	2001	2002	2003	2004	CAGR
Income					
Property Tax	344	389	399	405	6%
Professional Tax	64	67	67	78	7%
Assigned revenue	187	195	484	362	25%
Devolution Fund	243	239	361	422	20%
Service Charges and Fees	167	238	376	372	31%
Grants and contributions	-	30	37	107	
Sale and Hire charges	0	0	1	-	-100%
Other income	201	196	113	113	-18%
Total	**1,206**	**1,354**	**1,837**	**1,858**	**16%**
Expenses					
Personnel cost	613	646	645	619	0%
Terminal and retirement benefits	99	115	148	174	21%
Operating Expenses	226	223	232	371	18%
Admin expenses	41	51	55	144	52%
Finance Expenses	70	230	160	33	-22%
Depreciation	702	565	478	329	-22%
Prior period	-	1	-	1	
Total	**1,751**	**1,830**	**1,717**	**1,669**	**-2%**
Cash Surplus	***157***	***89***	***598***	***518***	**49%**
Overall Surplus	***(545)***	***(476)***	***120***	***189***	

4.2 Revenue streams of ULB in Tamil Nadu

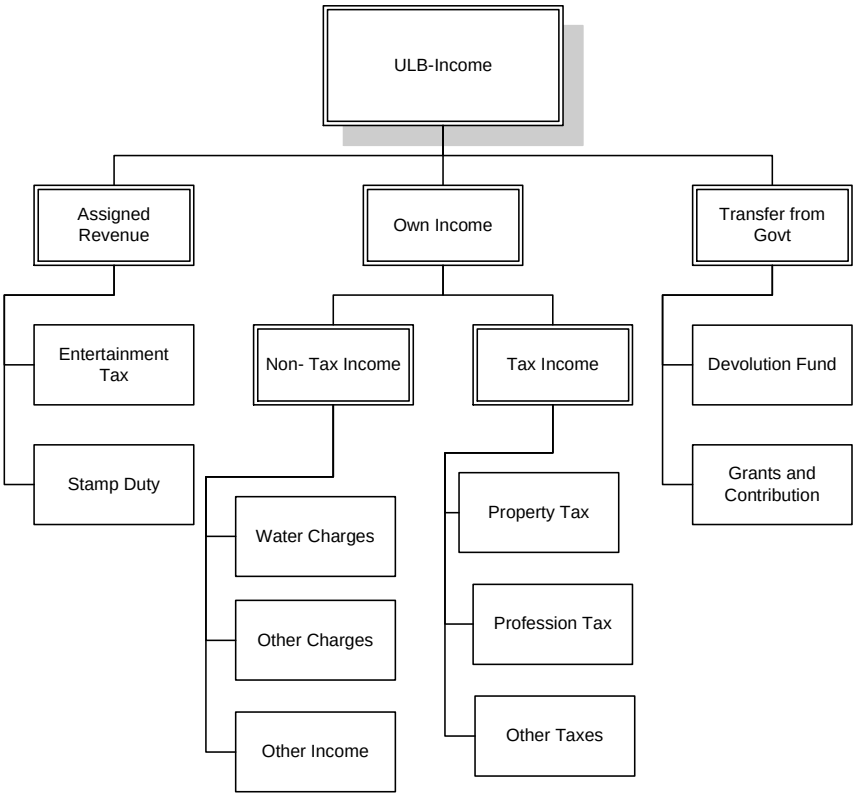
Revenue of ULBs in Tamil Nadu can be categorised along three areas:

- **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 4.2 provides a detailed classification of the revenue streams.

[2] *We have received the audited accounts from ThM for FY 2001 to FY 2004 and information on FY 2005 (as in the case of DCB statements, we have considered the same in our analysis as well)*

Exhibit 4.2 Revenue streams - ULBs in Tamil Nadu

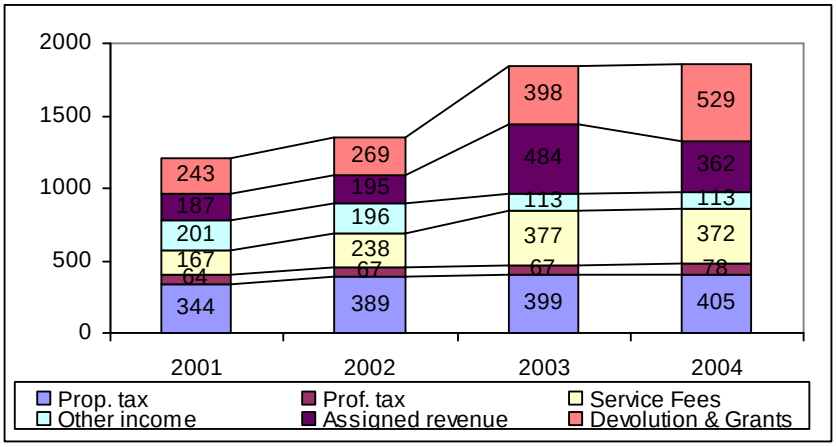


4.3 Revenues

Exhibit 4.3 provides details of revenue of ThM along various heads between FY 2001 and FY 2005.

Exhibit 4.3 Analysis of Revenues of ThM

Figures in Rs. Lakh



4.3.1 Tax Income

Tax income has grown at a CAGR of 6 % over the last five years. Share of taxes have declined from 34% to 26 % of income.

Property Tax

Property tax alone accounted for a 22% of income of ThM in FY 2005 and is an important contributor of revenues to ThM. Following are the key issues / observations with respect to property tax. Exhibit 4.4 provides a summary.

Exhibit 4.4 Property tax - analysis of key revenue drivers

Year	Collection Efficiency			Properties		
	Arrears	Current	Total	Numbers	Tax/property	Growth %
2000-01	25%	65%	47%	33608	1226	na
2001-02	21%	65%	43%	34758	1209	3%
2002-03	14%	65%	38%	35957	1192	3%
2003-04	22%	63%	39%	37167	1177	3%
2004-05	16%	64%	37%	38737	1118	4%

a) **Decline in share of property tax -** Even though the property tax has increased in absolute terms, its share in total income has declined from 29% to 22 % over the last five years.

b) **Stagnant demand per assessment -** Though there has been a 3-4 % increase in the number of assessments between 2001-05, the average demand per property assessed has shown a marginal decrease from around Rs. 1226 in FY 2001 to Rs. 1118 in FY 2005. **The quinquennial revision of Annual Rental Value (ARV) due in 2003 has not been undertaken as of date.**

c) **Low collection efficiencies -** Collection efficiency is a cause for concern. While collection efficiency in current demand has been around 65%, efficiency in arrears collection has been very low. Overall efficiency at 37% in FY 2005 is very low and needs significant improvement.

d) **Aging of arrears -** Nearly 47 % of the arrears are outstanding for more than five years. ThM may need to review the arrears, as some of these may not be collectable and would require provisioning.

e) **Break-up of assesses -** Residential segment contributes 72 % of the total assessments, but only 48% of the total property tax demand. ThM must take steps to increase property tax from this category. Exhibit 4.5 below gives the detailed break-up of assesses for property tax.

Exhibit 4.5 Property Tax - breakup of assessees

Category of Property	Number of Assessments	%	Tax Demand 2005 - Rs. lakh	%
Residential	28331	72%	258.01	48%
Commercial	9610	24%	174.92	33%
Industrial	6	0%	4.37	1%
State Government Properties	505	1%	68.61	13%
Public Sector Undertakings	285	1%	29.40	5%
Total	38,737	100.00%	535.31	

Professional tax

Exhibit 4.6 provides an analysis of key drivers for professional tax revenue.

Exhibit 4.6 Professional Tax - revenue drivers

Year	Collection Efficiency		
	Arrears	Current	Total
2000-01	14%	69%	42%
2001-02	31%	80%	57%
2002-03	23%	88%	60%
2003-04	22%	95%	64%
2004-05	9%	77%	51%

a) **Share of professional tax in total income** has reduced from 5% to 4%

b) **Demand per assessment was Rs. 2491 per assessee in FY 2005.**

c) **Collection efficiency has been very low** While current collections improved from 69% in FY 2001 to 95% in FY 2004, it has declined to 77% in FY 2005. An ageing analysis reveals that 26% of arrears are more than 5 years old, while 19% arrears got added in FY 2005. Clearly there is a need to improve professional tax collections significantly from current levels.

d) **Composition of professional tax assessments** - Exhibit 4.7 below shows the composition of assessments. Traders constitute 85% of assessments but just 13% of the total demand. There appears to be potential for increase professional tax from this segment.

Exhibit 4.7 Professional Tax – assessee break up

Category	Number of Assessments	%	Annual Tax demand	%
State/Central/Quasi Govt. Employees	470	15%	69.16	87%
Traders	2721	85%	10.32	13%
Self-employed professionals				
Private employers/ Companies				
Private employees				
Total	**3191**		**79.48**	**100%**

4.3.2 User Charges / Fees

User charges have also grown by a healthy 31%, aided by 14% increase in collection of water charges and other fee income including lease and rents. As a result, the share of user charges/fees has increased from 14% of revenue to 20% of revenue over the last five years.

Water charges

Exhibit 4.8 provides an analysis of key drivers for water charges.

Exhibit 4.8 Water charges - revenue drivers

Year	Collection Efficiency			Connections		
	Arrears	Current	Total	Numbers	Charges/ connection	Growth rate
2000-01	26%	45%	33%	18640	420	na
2001-02	29%	49%	38%	19420	557	4%
2002-03	21%	42%	31%	20110	600	4%
2003-04	30%	53%	39%	20960	609	4%
2004-05	24%	48%	34%	21480	611	2%

a) **No. of connections -** There has been an increase in the number of connections from 18,640 in FY 2001 to more than 21,480 connections in FY 2005. Water connections account for about 55 % of properties assessed, indicating scope for increasing the number of connections. The low penetration is also due to the availability of water fountains in several areas (covering nearly 35% of population) which lead to loss of revenue for ThM.

b) **Water tariff / connection** has increased from about Rs. 420 per year per connection to Rs.611 per connection in FY 2005 as a result of increase in water tariffs.

c) While 80% of the water connections are metered**, water billing is being done on a flat (monthly) basis**. Refer exhibit 4.9 for details of type of connections and water charges. ThM is considering collections on the basis of meter readings.

d) **Collection efficiency -** Current collection efficiencies have ranged from a low of 63% (FY 2004) to a high of 75% (FY 2005) and have not shown a linear trend. Arrears collection efficiency has been very low and has ranged between 21% and 33%. The overall collection efficiency of 55% is quite low and needs significant improvement.

Exhibit 4.9 Water charges - category wise connections and tariff

Connections	Metered	Un-metered	Total	%	Billing system
Domestic	15,400	5326	20,726	98%	Flat rate
Commercial	871		871	2%	Meter reading
Total	16,271	5326	21,597	100%	

Connection Type	Flat rate	Per KL
Domestic	Minimum Rs. 50 /-PM	Rs.8/-
Commercial	Minimum Rs. 100/-PM	Rs25/-

4.3.3 Assigned Revenue

Assigned Revenue (which includes transfers of stamp duty and entertainment tax) have grown ovr the last five years at a CAGR of 25%. However, assigned revenue has declined from Rs. 484 lakh in FY 2003 to Rs. 362 lakh in FY 2004.

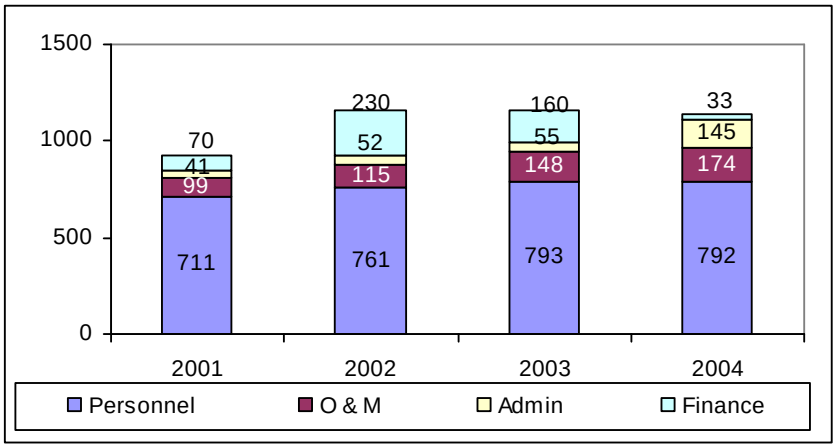
4.3.4 Grants/Contributions

Grants / Contributions from state have one of the biggest revenue drivers and have doubled during FY 2001-04. They contributed to nearly 28% of revenues of ThM in FY 2004.

4.4 Analysis of Costs

Exhibit 4.10 provides details of costs of ThM along various heads between FY 2001 and FY 2005. Total expenditure has shown a declining trend till FY 2003, before increasing over the next two years. In FY 2003, expenditure in almost all the categories have declined, except repair and maintenance. Admin expenditure spiked from Rs. 151 lakh to Rs. 584 lakh in 2005.

Exhibit 4.10 Costs - FY 2001 and FY 2004



4.4.1 Salary and wages

While salary and wages account for the highest expenditure (more than 43%% of total expenditure), it has shown a declining trend during FY 2001 to FY 2004. This has been due to the lack of addition in staff over the last few years and a number of posts remaining vacant. As of March 2005, the number of employees was 830.

4.4.2 Operations and Maintenance

O & M forms the other major component of total expenditure. In absolute terms, this expenditure has been around 8-9% of total income during this period.

Power costs

Exhibit 4.11 gives the details of power costs out of the total repair and maintenance expenditure relating to Water & Sewerage and Street lights. Power costs have grown at a CAGR of 13%, driven primarily by a steep increase in power costs for street lights.

Exhibit 4.11 Power costs - Water & Sewerage and Street Lights

Power costs	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Water & Sewerage (WS)	**93.61**	**70.18**	**74.35**	**80.03**	**200**
% of total W&S	97%	96%	94%	86%	78%
Street lights	**36.91**	**31.35**	**27.87**	**64.35**	**66.75**
% of total Street light	100%	100%	100%	100%	100%
Total	**130.52**	**101.53**	**102.22**	**144.38**	**266.75**

Source: SFC questionnaire

Power costs account for nearly 78 % of repair & maintenance costs of water and sewerage and the entire cost operating street lights.

Power costs have gone up from 20 % of O& M expenditure in FY 2001 to nearly 49 % of O&M expenditure in FY 2005.

4.5 Trends in Capital Expenditure

Exhibit 4.12 gives details of capital expenditure by ThM over the last five years and estimated capital outlay to address the felt needs of ThM over the next ten years.

Exhibit 4.12 Capital Expenditure - Last five years

Rs. In Lakh

	Actuals					Felt Needs	
	2000-01	2001-02	2002-03	2003-04	2004-05	2006-10	2010-15
Roads	0.78	0.82	1.60	0.43		1700	2100
Bridges and Culverts						30	40
Storm water drains	0.06	0.08	0.07	0.04	0.25	225	250
Water supply	7.16	71.96	17.46	40.30	28.65	200	100
Solid Waste Management		15.40	80.00	60.00	72.00	380	270
Street lights					18.00	55	65
Remunerative enterprises		55.00		35.00	110.00	85	155
Education	5.40	9.61	10.81	18.00	6.00	100	110
Sewerage and sanitation						4200	30
Others						40	100
Total	**13.40**	**98.54**	**109.94**	**153.77**	**234.9**	**7015**	**3220**

4.6 Loans and Finance charges

Exhibit 4.13 gives the details of outstanding loans of ThM at the end of last five years.

Exhibit 4.13 Loan Statement

Sl.No	Lending Agency	Amount of Loan	Year of drawal	Interest Rate %	Repayment period (years)	Total loan repaid as on 30.9.2005			Outstanding loan amount (3-9+13+14)
						Principal	Interest	Total	
1	2	3	4	5	6	9	10	11	16
1	Consolidate Govt Loan	109499.00	1998	13.50%	20	6658	18405	25063	102841.00
2	TUFIDCO	8560.00	2002	10.50%	15	2435	3082	5517	6125.00
3	TUFIDCO/IDSMT	20597.00	2003	10.50%	10	3178	2711	5889	17419.00
4	TUFIDCO Road Work	14196.00	2004	10.50%	13	0	2939	2939	14196.00
5	MUDF/TUFIDCO	12434.00	2004	9.25%	10	1212	1690	2902	11222.00
6	TUFIDCO /NRCP	50000.00	2005	9.50%	15	-			50000.00
	Total	**215286.00**				**13483**	**28827**	**42310**	**201803**

To summarise,

a) There has been a **growth in operating surplus** (CAGR-48 %) during FY 2001-2005. However this has been achieved primarily by growth in Grants/ Devolution income (CAGR-25%) and assigned revenue (CAGR-20%).

b) **Poor collection efficiencies** of own income is a major cause for concern

c) **ThM has an outstanding loan of Rs. 2018 lakh in FY 2005.** Finance charges have declined from 11% of income to 6% of income over the last five year. However, overall debt servicing is likely to increase, as repayment of loans taken during 2002 to 2005 become due.

5. Potential areas for improvement

5.1 Public private partnerships (PPP)

ThM should consider handling the operations and maintenance of the Sewerage Treatment Plant of the ongoing UGD scheme and implementation of the proposed slaughter house project through private sector participation. ThM should explore more areas to augment its own resources through use of PPPs. 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,

1. CMA, GoTN should develop a **framework for PPP** including specific policies and guidelines.
2. ThM should explore use of private sector participation in its **proposed remunerative projects** in areas such as slaughter house, market development etc., through public private partnerships.
3. ThM should actively encourage **corporate / NGO partnerships** for heritage preservation and city beautification projects
4. ThM should consider addition of more **pay-and-park zones** in the town
5. TNUIFSL should provide assistance covering **necessary capacity building (in terms of evaluating mechanisms - BOT, SPV etc) and financing for developing projects** through private sector participation.

5.2 Potential for revenue enhancement

5.2.1 Property Tax

Exhibit 5.1 highlights the key issues and recommended interventions with respect to property tax. While a substantial improvement in property tax is contingent upon implementation of ARV revision (due in 2003), there are other interventions that would enable effective property tax realisation.

Exhibit 5.1 Key issues and suggested measures

Issues	Recommended Interventions	Agency
Revision of Annual rental Value (ARV) has fallen due in 2003. The revision is yet to be implemented.	6. **GOTN should implement the SFC recommendation of revision of property tax every three years, linked to inflation. This is will ensure gradual and stable increase, rather than the existing quinquennial revision.**	GoTN
In 1998 when the ARV scheme for assessing property tax was introduced, the old assesses were allowed to pay taxes based on capital value with	7. **All assesses should be taxed on the same basis through a uniform and transparent approach to property tax assessment. Existing anomalies need to**	GoTN / ThM

Issues	Recommended Interventions	Agency
marginal increase, leading to distortions and non-uniform rates.	**be removed at the earliest.**	
Survey of properties happens only when the ARV revision takes place. Apart from addition in properties without getting assessed, addition to area in existing properties or conversion of property from residential to commercial category also goes unnoticed leading to revenue loss	**8. Initiate a one-time survey to prepare a comprehensive database of properties available with it with updated information on the area / type and property tax details** **9. Institutionalise a mechanism for conducting surprise checks on a sample basis in all wards on an ongoing basis and mandatory re-assessment of properties every five years.** **10. Streamline procedures for assessment/ approvals of new properties / expansion of existing properties to encourage self-disclosure of property development / modification** **11. Computerise and web-enable property tax assessment and billing processes** **12. Develop a GIS based system for effective data capture and monitoring**	Ku
On an absolute basis, property tax arrears have shown an increasing trend.	**13. Launch a focused drive on existing arrears** **14. Conduct one time settlement scheme for old arrears and incentivise payments through marginal rebates for arrears pending for more than 5 years.** **15. Work with GOTN to moot creation of a special tribunal for speedy disposal of properties under litigation** **16. Make provisions for the debtors and take steps for writing off bad debts**	GoTN/ThM
While Property tax is payable on a semi-annual basis, no interest /penal charges are levied on late payment.	**17. Implement Payment Due Date along with a 90 day grace period during which payments would involve a nominal interest payment.** **18. Payments beyond the grace period should include a steep penal charge to encourage payments on time.**	GoTN/ThM
Tax Dispute cases where the assessee approaches legal recourse without paying any tax.	**19. In case of disputed property tax, the assessee should first pay the tax under protest as in the case of excise or customs and then take the necessary legal recourse. The Act should be modified in such a way that no legal recourse should be available to the assessee without paying the tax under protest.**	GoTN / ThM
Blanket Exemptions to institutions reduce the property tax potential	**20. Exemptions from tax should be provided only to needy institutions. For example**	GoTN / ThM

Issues	Recommended Interventions	Agency
	blanket exemption to educational institutions (including large self-funded private residential schools) should be reviewed. **21. All exemptions lead to a revenue loss to the ULBs and should be compensated by GoTN.**	

5.2.2 Professional Tax

Professional tax income has grown at a CAGR of 4% over the last five years. Specifically,

22. **ThM should focus on widening its professional tax base** by bringing more traders and independent professionals within the ambit of professional tax**.** Specifically, ThM 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.
- **Commercial Taxes Department, GoTN** to get details of sales tax registrations (existing and new) within ThM.

5.2.3 User charges

ThM has been fairly successful in progressively increasing user charges, as reflected in the increase in the average water charges per collection and could augment its revenues through focused interventions including the following.

23. **Increase penetration of connections for water supply.** Currently ThM has about 21,000 connections, which accounts for only 55 % of the properties assessed. ThM should target achieving at least 30,000 connections over the next five years.

24. **Provide water fountains only in areas with a predominantly low-income population to minimise revenue loss.**

25. **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.

26. Consider implementing **user charges for door-to-door collection** of Solid Waste.

27. **Adopt measures to improve collection efficiency.** Overall collection efficiencies in water charges are very low and needs to be improved. ThM should consider stiff penalties for non-payment of user charges. Specifically ThM should consider implementation of late payment fines and in case of extreme overdue situations, disconnecting supply.

5.2.4 Measures to improve collection efficiency

28. ThM's collection efficiency is very low across all its revenue heads namely, property tax, professional tax and user charges and needs significant improvement from current levels. ThM should consider a) a focused one-time drive to clear up its dues and b) strengthening of its collection process and organisation to ensure that the overall levels of efficiency in order to improve and sustain its collection efficiencies.

5.3 Measures for cost management

5.3.1 Energy efficiency

ThM needs to take steps to address its power costs, which comprise nearly 60% of its operations and maintenance costs. The following steps are needed in this direction:

29. ThM should conduct a **comprehensive energy audit** to identify areas for reducing power consumption and related costs. As envisaged in its Vision Plan, ThM should implement **automatic time based dimmers** on street light network and ensure that all **pumps / motors are energy efficient.**

30. GoTN should also consider a **specific grant / capital subsidy scheme to incentivise energy conservation initiatives** for not just ThM, but for all ULBs.

31. **CMA, GoTN and TNUDF should develop and implement minimum standards related to energy conservation including installation of energy efficient motors, right sized pumps etc.**

5.4 Other measures / interventions

5.4.1 Accounting /Audit

While all ULBs in GoTN have implemented a double entry accounting system, most of the ULBs including ThM require significant improvement in their accounting practices. Several ULBs have redundant systems involving manual and computerised book keeping and errors often creep into MIS. Often, the MIS in the form of DCB statements and information provided in accounting statements are not reconciled.

32. CMA, GoTN should consider an **outlay for technical assistance** to ULBs to **improve their accounting systems and practices** and to provide adequate training to staff on the concepts of double entry book keeping.

33. Property tax system has been computerised but the software for accounting developed seems to have some errors. TNUDF should take steps to eliminate these teething problems in the accounting software.

34. GoTN should issue an order for phasing out manual books like the property tax DCB registers as the same data is being maintained both manually and also in computer database.

35. The LFA should also be given training in auditing through computer so that the manual books can be avoided in future.

36. 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. The government should continue to provide for the payment of common accountants and computer assistant to work in the ULB which it was providing till date. GoTN should also evaluate the option of employing a local CA firm to give guidance and training to ULB staff on a regular basis. CMA,

37. TNUDF should consider a grading system to categorise ULBs on the basis of accounting and reporting practices

6. Business plan projections and investment capacity of ThM

6.1 Financial and Operating Plan – time horizon and scenarios

The FOP has been prepared for a ten-year period i.e., FY 2006-2015 for 2 different scenarios as given below:

- **Scenario I -** Base projections
- **Scenario II –** Projections with 'potential improvements'

The basis and assumptions underlying income and expenditure projections for the FOP are detailed in section 6.2

6.2 Basis and assumptions

6.2.1 Revenues

Since the annual accounts were given only for years 2000-01, 2001-02, 2002-03 and 2003-04, we have assumed the figures for 2004-05 will be same as the figures given for 2003-04.

Property tax

Property tax projections has been arrived at as a product of average tax per assessment and the number of properties assessed. Assumptions on these revenue drivers are given below:

- ***Scenario I –Base case***
  - ❖ Assessments growth – 4% per annum (assumed), with a cap on the number of assessments at 40,000 properties. The base number of assessments has been taken as 28377 properties.
  - ❖ Average tax per property - Rs. 1526 per property assessed, in line with the average tax per property collected in FY 2005.
  - ❖ Arrears collection efficiency - 25 % for FY 2006 (maximum during FY 2001-05) in FY 2001 and assumed to increase by 2 % every year (27% in FY 2007 and so on)
  - ❖ Current collection efficiency - 65 % for FY 2006 (maximum during FY 2001-05) in FY 2003 and assumed to increase by 2 % every year (67% in FY 2007 and so on)

- ***Scenario II – with improvements***
  - ❖ Assessments growth – 8% per annum, with a cap on the number of assessments at 40,000 properties.
  - ❖ Average tax per property - Rs. 1526 per property assessed in FY 2006 with a one-time upward revision of 25% in FY 2007
  - ❖ Collection efficiency are kept at the same levels as Scenario I

Profession tax

Profession tax has been arrived at as a product of average tax per assessee and the number of assessments. Assumptions on these revenue drivers are given below:

- ***Scenario I –Base case***
  - ❖ Assessments growth – 4 % per annum (assumed), with a cap on the number of assessments at 4000. The base number of assessments has been taken as 3191 assessments.
  - ❖ Average tax per assessment - Rs. 2491 per assessment, in line with the average in FY 2005. No revision has been assumed for the base case.
  - ❖ Arrears collection efficiency – 31% for FY 2006 (maximum during FY 2001-05) in FY 2002 and assumed to increase by 2 % every year (33% in FY 2007 and so on)
  - ❖ Current collection efficiency –95 % for FY 2006 (maximum during FY 2001-05) in FY 2004 and assumed to increase by 1% every year (96% in FY 2007 and so on till 99% in FY2010).
- ***Scenario II – with improvements***
  - ❖ Assessments growth – 5 % per annum (in line with the CAGR over the last five years), with a cap on the number of assessments at 4000.
  - ❖ Average tax per assessment - Rs. 2491 per assessment, in line with the average in FY 2005.
  - ❖ Collection efficiency are kept at the same levels as Scenario I

Water Charges

Water charges have been arrived at as a product of average water charges per connection and the number of connections.

- ***Scenario I –Base case***
  - ❖ Assessments growth – 3.61 % per annum (in line with the CAGR over the last five years), with a cap on the number of assessments at 25,000. The base number of assessments has been taken as 21480 assessments.
  - ❖ Average tax per assessment - Rs. 611 per assessment, in line with the average in FY 2005. No revision has been assumed for the base case.
  - ❖ Arrears collection efficiency – 30% for FY 2006 (maximum during FY 2001-05) in FY 2004 and assumed to increase by 2 % every year (32% in FY 2007 and so on)
  - ❖ Current collection efficiency –53 % for FY 2006 (maximum during FY 2001-05) in FY 2004 and assumed to increase by 2% every year (55% in FY 2007 and so on).
- ***Scenario II – with improvements***
  - ❖ Assessments growth – 5 % per annum (in line with the CAGR over the last five years), with a cap on the number of assessments at 25,000.

- Average tax per assessment - Rs. 611 per assessment, in line with the average in FY 2005, with a tariff increase of 5% every three years.
- Collection efficiency are kept at the same levels as Scenario I

Other income

The assumptions made in case of other income is summarised in the table below:

Exhibit 6.1 Assumptions for other income

Item	Base Amount (in Lakhs)	Growth (CAGR %)	Assumptions
Service Charges & Fees	220.41	29.2%	CAGR of 5%
Other income	112.64	-ve growth	Assumed at FY 2005 levels.
Assigned Revenue	362.05	18.0%	CAGR of 5%
Devolution Fund	421.54	14.8%	CAGR of 10%
Grants & Contributions	107.12	53.3%	CAGR of 5%

6.2.2 Expenditure

The major assumption adopted for projection in revenue expenditure based on the past performance is as follows:

Exhibit 6.2 Expenditure

Item	Base Amount (in Lakhs)	Growth (CAGR %)	Assumptions
Salaries	792.14	2.7%	CAGR of 3% with cost of FY 2005 as the base
Operating Expenses	370.60	13.1%	The expenditure has been assumed as 3% of the gross block of fixed assets (in line with the average over the last five years). An inflation of 5% has also been considered.
Administrative Expenses	144.17	36.7%	The growth rate has been assumed at a nominal rate of 5% and has been applied on the base amount, which is for the year 2004-2005.
Depreciation	-	-	Expenditure assumed as 2.5% of the gross block of fixed assets
Finance Expenses	-	-	Refer 6.2.3 below.

6.2.3 Assets and liabilities

Since the balance sheets were given only for 2000-01, 2001-02, 2002-03 and 2003-04, we have assumed the figures for 2004-05 are same as the figures for 2003-04. The other major assumptions adopted for projection of assets and liabilities is given below:

Fixed Assets

The closing balance as given in the last balance sheet by the ULB has been taken as the base figure for projection. Based on the Capex requirement of the ULB, the amount of Capex has been distributed over the 10 years of projection. Every year the amount of Capex spent is added to the respective total of fixed assets. The Capex requirements of the ULB are summarised in the table given below:

Exhibit 6.3 Capex requirements (Rs. in Lakh)

Sector	2006-2010	2011-15	2006-15
Roads	1700.00	2100.00	3800.00
Bridges and culverts	30.00	40.00	70.00
Storm water drains	225.00	250.00	475.00
Water supply	200.00	100.00	300.00
Solid Waste Management	380.00	270.00	650.00
Street lights	55.00	65.00	120.00
Remunerative Enterprises	85.00	155.00	240.00
Education	100.00	110.00	210.00
Sewerage & Sanitation (incl UGD scheme)	4200.00	30.00	4230.00
Others	40.00	100.00	140.00
Total	**7015.00**	**3220.00**	**10235.00**

Other assets

Exhibit 6.4 Assumptions - Assets

Asset Head	Assumptions
Stock Account	The closing balance as given in the last balance sheet by the ULB has been taken as the base figure for projection. It has been assumed that the stock will be 95% of the last year balance
Debtors	This head represents the debtors for the three heads property tax, profession tax and water charges. As they form the major portion of revenue their debtors also have been grouped separately. The calculation of debtors has been done based on the current demand under each category of income and the collection efficiency for each of the category
Other Receivables	The closing balance as given in the last balance sheet by the ULB has been taken as the base figure for projection. It has been assumed that other receivables will be 95% of the last year balance.
Bank Account	This account is the balance based on the cash flows for particular year

Loans

All loans taken by the ULB are long-term. The ULB has a loan outstanding of Rs.1217.33 lakhs and the scheduling of these loans and interest has been taken into account in the FOP.

Exhibit 6.5: Loan Statement as on 30.09.2005 (Rs in lakhs)

S.No	Lending Agency	Amount of Loan	Year of drawal	Interest Rate %	Repayment period (years)	Total loan repaid			Outstanding loan amount
						Principal	Interest	Total	
1	Consolidate Govt. Loan	1094.99	1998	13.50%	20	66.58	184.05	250.63	1028.41
2	TUFIDCO	85.60	2002	10.50%	15	24.35	30.82	55.17	61.25
3	TUFIDCO/IDSMT	205.97	2003	10.50%	10	31.78	27.11	58.89	174.19
4	TUFIDCO Road Work	141.96	2004	10.50%	13	0.00	29.39	29.39	141.96
5	MUDF/TUFIDCO	124.34	2004	9.25%	10	12.12	16.90	29.02	112.22
6	TUFIDCO /NRCP	500.00	2005	9.50%	15	0.00	0.00	0.00	500.00
	Total	**2152.86**				**134.83**	**288.27**	**423.10**	**2018.03**

New Loans

The requirement of new loans is related to capital expenditure (Capex) the ULB wants to execute. The loans has been taken as 60% of the total Capex while the grants is assumed at 30% and the own contribution by the ULB is pegged at 10% of the total Capex. The terms of the new loans is assumed as follows

Exhibit 6.6 New loans

Particulars	Assumptions
Rate of Interest on new loan	8% p.a.
Repayment Period of new loan	15 years (inclusive of moratorium)
Principal moratorium period	2 years

Other liabilities

Exhibit 6.7 Other Liabilities

Liabilities	Assumptions
Grants	Closing balance as given in FY 2005 has been taken as the base figure. Grants assumed at 30% of the Capital expenditure, which would be added to grants balance every year.
Current Liabilities	Closing balance as given in FY 2005 has been taken as the base figure. Current Liabilities assumed at 90% of the previous year's balance.
Accumulated depreciation	Closing balance as given in FY 2005 has been taken as the base figure. Every years depreciation has been added to the balance of the accumulated depreciation

Liabilities	Assumptions
Accumulated Surplus	Closing balance as given in the FY 2005 has been taken as the base figure. Every year the cash surplus is added to this account while the contribution for the project from its own funds are deducted from the accumulated surplus.

6.3 Estimation of borrowing 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 2005. We have arrived at the borrowing capacity of TCC as the minimum of

- NPV of 30% of revenue projections and
- NPV of Operating Surplus projections.

The overall financing mix has been assumed to include 50% loans, 40% Grants and 10% own funds in order to arrive at the overall investment capacity. Thus, we have computed the investment capacity as Borrowing capacity (arrived at as explained above) divided by 0.5.

6.4 Results of Financial projections

6.4.1 Income and expenditure projections

Exhibit 6.8 captures the Income and Expenditure projections for FY 2006-15 with potential improvements and sustainable borrowings

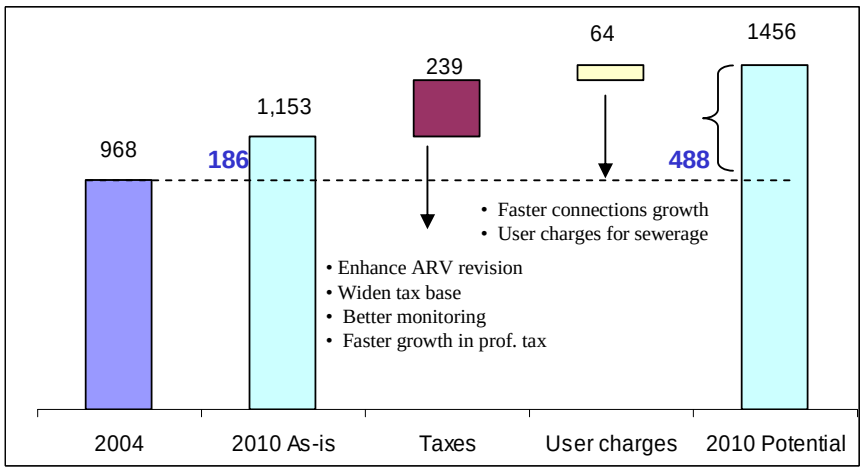
Exhibit 6.8 Income and Expenditure projections

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Income										
Property Tax	468	505	667	667	667	667	667	834	834	834
Profession Tax	86	93	100	108	117	125	125	125	125	125
Water Charges	138	145	152	160	165	165	165	165	165	165
Sewerage Charges	-	-	72	78	84	90	102	114	120	120
Service Charges & Fees	227	234	241	248	256	263	271	279	288	296
Sale & Hire Charges	0	0	0	0	0	0	0	0	0	0
Other Income	116	120	123	127	131	135	139	143	147	151
Assigned Revenue	373	384	396	407	420	432	445	459	472	487
Devolution Fund	464	510	561	617	679	747	821	904	994	1,093
Grants & Contributions	115	123	131	140	150	161	172	184	197	211
Total Income	**1,986**	**2,113**	**2,443**	**2,553**	**2,668**	**2,785**	**2,907**	**3,206**	**3,342**	**3,482**
Expenditure										
Salaries	832	873	917	963	1,011	1,062	1,115	1,170	1,229	1,290
Operating Expenses	389	409	429	450	473	497	521	548	575	604
Repairs & Maintenance	-	-	-	-	-	-	-	-	-	-
Programme Expenses	-	-	-	-	-	-	-	-	-	-
Administrative Expenses	151	159	167	175	184	193	203	213	224	235
Finance charges	226	230	233	234	232	233	230	225	219	191
Depreciation	475	475	554	641	727	814	916	1,018	1,120	1,222
Total Expenditure	**2,073**	**2,145**	**2,300**	**2,463**	**2,628**	**2,798**	**2,985**	**3,174**	**3,367**	**3,542**
Operating Surplus	**(87)**	**(33)**	**143**	**90**	**41**	**(13)**	**(77)**	**32**	**(25)**	**(60)**
Cash Operating Surplus	**387**	**442**	**697**	**731**	**768**	**801**	**839**	**1,050**	**1,095**	**1,162**

6.5 Impact of potential improvements

Exhibit 6.9 provides a snapshot of the areas and order of improvement in revenue that THM could potentially achieve.

Exhibit 6.9 Potential for Revenue Improvement



ThM'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. Specific interventions with respect to revenue realisation and cost management are detailed in section 5 of the report.

On an 'as-is' basis, ThM's own revenues (comprising taxes and user charges) could grow from Rs. **968 lakh** in FY 2004 to **Rs. 1,153 lakh.** However, we believe that ThM could potentially increase its own income to **Rs. 1456 lakh (absolute growth of 50%) through focused interventions in the following areas**

- **Property tax** – through an enhanced revision in ARV, widening assessee base and closer scrutiny
- **Professional tax** – sustaining a growth in assessments of 8 % in the assessments as against 4 % assumed in the 'as-is' scenario through widening tax base among traders and self-employed professionals
- **User charges** - ThM could potentially generate nearly Rs. lakh by adding another 4000 water connections (increase of tariff by 5% every two years) by FY 2010 and by adding 10,000 sewerage connections by FY 2010.

ThM should aspire to increase its own revenues (other than state devolution and assigned revenues) to Rs. 1500 lakh – Rs. 1600 lakh within the next five years

While there is potential for expenditure control in certain areas (as in the case of energy costs and leakage in water supply), **the focus of cost management should be to shift expenditure from administration to better asset management and service levels.** While preparing the Financial and Operating Plan, we have not factored in any cost reduction and have assured that any savings

generated from cost reduction would go into augmenting service levels and better asset management. A comprehensive energy audit is required, given that ThM spent **Rs. 266 lakh** on electricity charges in FY 2005. A savings of 10-15% reduction in energy costs appears imminently achievable and **could translate to annual savings of nearly Rs. 25 - Rs. 30 lakh on energy cost base for FY 2005.**

6.6 Key results

Exhibit 6.10 Summary of key results

Summary of FOP results	
Revenues – FY 2006 (Rs. Lakh)	1986
Revenues – FY 2015 (Rs. Lakh)	3482
Revenue CAGR % - FY 2006-15	**6.44**
Avg. Op. Surplus (Rs. Lakh)	1
Avg. Cash Operating Surplus	797
Avg. TE (excluding depreciation)/TR (%)	71%
Average Debt Servicing/TR (%)	18%
Borrowing Capacity as a minimum of NPV of	
NPV of 50% of Cash Surplus (without new loans)	2,773
NPV of 30% of Revenue	5,325
Borrowing Capacity	**2,773**
Investment Capacity (assuming 40% loan)	6,934
Investment Requirement	31,453
IC/ IR	**22%**

At an aggregate level, assuming loans to be equivalent to 40 % of investment, sustainable investment capacity works out to Rs. 69.34 crore, which is only 22 % of the total investment requirement. However, if we exclude the projects to be undertaken by state level agencies (such as moat restoration and bypass/ ROB projects), the investment capacity goes up to more than 50 % of investment requirements.

While loans and own funds should be used to finance remunerative projects, ThM should leverage and utilize Grants from schemes like UIDSSMT and IHSDP to undertake non remunerative projects relating to slum development, tank restoration etc. Further, ThM could also consider involvement of private sector in implementing remunerative projects including slaughter houses etc. Further large projects such as ring roads, ROBs and moat restoration should be undertaken through viability gap funding and financing by state level nodal agencies.

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