

CITY CORPORATE CUM BUSINESS PLAN THURAIYUR

FINAL REPORT



FEBRUARY 2009

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Disclaimer:

The contents of this report are based primarily on discussions with Thuraiyur Municipality and information, secondary data /Reports available with the Municipality including our discussions with the Operations Working Group (OWG) representing stake holders of the city.

Based on the available data and information provided to us, M/s Darashaw & Company Pvt. Ltd has prepared the Final report.

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ANNEXURE I POPULATION PROJECTION

ANNEXURE II NORMS VS CURRENT STATUS

ANNEXURE III SALARIES

ANNEXURE IV OWG ATTENDANCE

ANNEXURE V DRAFT MEMORANDUM OF UNDERSTANDING

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ANNEXURE VI COUNCIL RESOLUTION

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Acronyms....

AMP	:	Asset Management Plan
ASI	:	Archeological Survey of India
BPL	:	Below Poverty Line
BOT	:	Build-Operate-Transfer
BOOT	:	Build-Own-Operate-Transfer
BOLT	:	Build-Own-Lease-Transfer
BT	:	Bitumen Tar
CAGR	:	Compounded Annual Growth Rate
CC	:	Cement Concrete
CIP	:	Capital investment Plan
CCBP	:	City Corporate Cum Business Plan
CMA	:	Commissioner ate of Municipal Administration
CMWSSB	:	Chennai Metro Water Supply & Sewerage Board
CPHEEO	:	Central Public Health & Environmental Engineering Organisation
DPR	:	Detailed Project Report
ESR	:	Elevated Storage Reservoir
ESA	:	Environmental and Social Assessment
FAS	:	Financial Accounting System
FOB	:	Foot Over Bridge
FOP	:	Financial Operating Plan
FY	:	Financial Year
GIS	:	Geographical Information System
Govt.	:	Government
G.O	:	Government Order
GSR	:	Ground Level Reservoir
HH	:	House hold
HP	:	Horse Power
HSC	:	House Hold Connections
HSS	:	Higher Secondary School
HUDCO	:	Housing and Urban Development Corporation
IHSDP	:	Integrated Housing & Slum Development Program
IDSMT	:	Integrated Development of small & Medium Towns
IUDP	:	Integrated Urban Development Project
Kg	:	Kilo Gram
Km	:	Kilometer
JNNURM	:	Jawaharlal Nehru National Urban Renewal Mission
Sq.Km	:	Square Kilometer
Lpcd	:	Litre per capita per day
LL	:	Lakh Litre
LIC	:	Life Insurance corporation of India
OHT	:	Over Head Tanks
m	:	Meter
m2	:	Square Meter

m ³	:	Cubic Meter
MIS	:	Management Information System
Mld	:	Million litres per day
MOA	:	Memorandum of Association
mm	:	Millimeter
MUDF	:	Municipal Urban Development Funds
MUDP	:	Madras Urban Development Project
NA	:	Not Available/Not Applicable
NGO	:	Non Government Organization
NH	:	National Highway
NHAI	:	National Highway Authority of India
O&M	:	Operations and Maintenance
OWG	:	Operations Working group
PF	:	Public Fountains
PPP	:	Public Private Participation
PSP	:	Private Sector Participation
PWD	:	Public Works Department
ROB	:	Road Over Bridge
Sq ft	:	Square Feet
Sq Km	:	Square Kilometer
SC/ST	:	Scheduled Castes/Schedule Tribes
SHG	:	Self Help Group
SH	:	State Highway
SWD	:	Storm Water Drains
SWM	:	Solid Waste Management
TOR	:	Terms of Reference
TNUDP	:	Tamil Nadu Urban Development Project
TNUIFSL	:	Tamil Nadu Urban Infrastructure Financial Services Limited
TUFIDCO	:	Tamil Nadu Urban Finance & Infrastructure Development Corporation Limited
TWAD	:	Tamil Nadu Water Supply & Drainage Board
UDPMI	:	Urban Development Planning Formulation and Implementation
UIDSSMT	:	Urban Infrastructure Development Scheme for Small & Medium Towns
UGD	:	Under Ground Sewerage
ULB	:	Urban Local Bodies
UT	:	Union Territory
WBM	:	Water Bound Macadam
WFPR	:	Work Force Participation Rate
WS	:	Water Supply

1 PROJECT BACKGROUND

Government of Tamilnadu and The World Bank as a partner has been involved in Urban Reform program in Tamilnadu through Tamilnadu Urban Development Project – TNUUDP-I, TNUUDP-II, TNUUDP-III (in progress). Government of Tamilnadu is now implementing TNUUDP-III with focus on furthering the urban reforms initiated under TNUUDP-II.

As a financial intermediary, TNUIFSL under TNUUDP-III intends to assist Sathyamangalam, Bhavani, Gobichettipalayam, Rasipuram, Komarapalayam, Idappadi, Attur, Dharapuram, Kulithalai, Manapparai, Thuraiyur municipality in strengthening and improving its financial position for effective capital investment management and urban service delivery. These towns are having a good potential for immediate implementation of such financial reforms for which it is essential to formulate a City Corporate Cum Business Plan. Moreover, these municipalities have on their own defined their vision and identified certain projects to be implemented, for which pre-feasibility studies are to be carried out and a sustainable investment plan has to be prepared.

In this regard, the task of preparation of City Corporate cum Business Plan for the aforesaid ULBs was awarded to Darashaw and Company Private Limited. This final report pertains to the City Corporate cum Business Plan for Thuraiyur Municipality.

1.1 City Corporate Cum Business Plan

City Corporate cum Business Plan (CCBP) is an innovative approach and strategy that represents both a vision for the city and for the ULB organization as well as mission statements on how to materialize the vision. City Corporate cum Business Plan is considered as an important tool for governing the City, through a participatory and consultative process. CCBP tends to bring a systematic approach in the planning process through Citizen's Participation. This helps the ULBs to identify the issues with clear vision and convert them into an action programme for Long, Medium and Short- term periods.

The process of CCBP has been initiated through identifying the basic issues/priorities and possible ways of achieving them through a consultative process. As a forward linking process, the stakeholders have made an attempt to assess the deficiency in the existing system and identified an ideal vision for future development. The stakeholders' priorities

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have been established through a detailed consultation process. Based on this, an appropriate strategy has been drafted, adhering to the preferred standards as suggested by the stakeholders. Detailed corporate plan based on the financial status of the ULB has been prepared for implementation.

One of the major focuses of CCBP is its importance attached in the preparation of 15-year Capital Investment Plan for the ULB. This has been carried out based on the priorities identified by the stakeholders in the context of long-term development and identification of priority investments, which has been phased based on the ULB's infrastructure requirements and investment priority of the OWG members.

The final report has been approved and passed by the Elected Representatives of the Municipal Council (Council Resolution enclosed).

1.2 Approach and Methodology

Evolving and conceptualizing a precise methodological framework is crucial as it guides the task of preparing the City Corporate cum Business Plan (CC & BP) in a phased and planned manner. The study methodology outlines the various stages and tasks carried out in the preparation of City Corporate cum Business Plan for Municipal Towns in Tamil Nadu.

The whole exercise is divided into four stages, which are further subdivided into tasks and several sub-tasks or activities within them. Figure below shows the adopted study methodology and is followed by a brief description on each of the stages.

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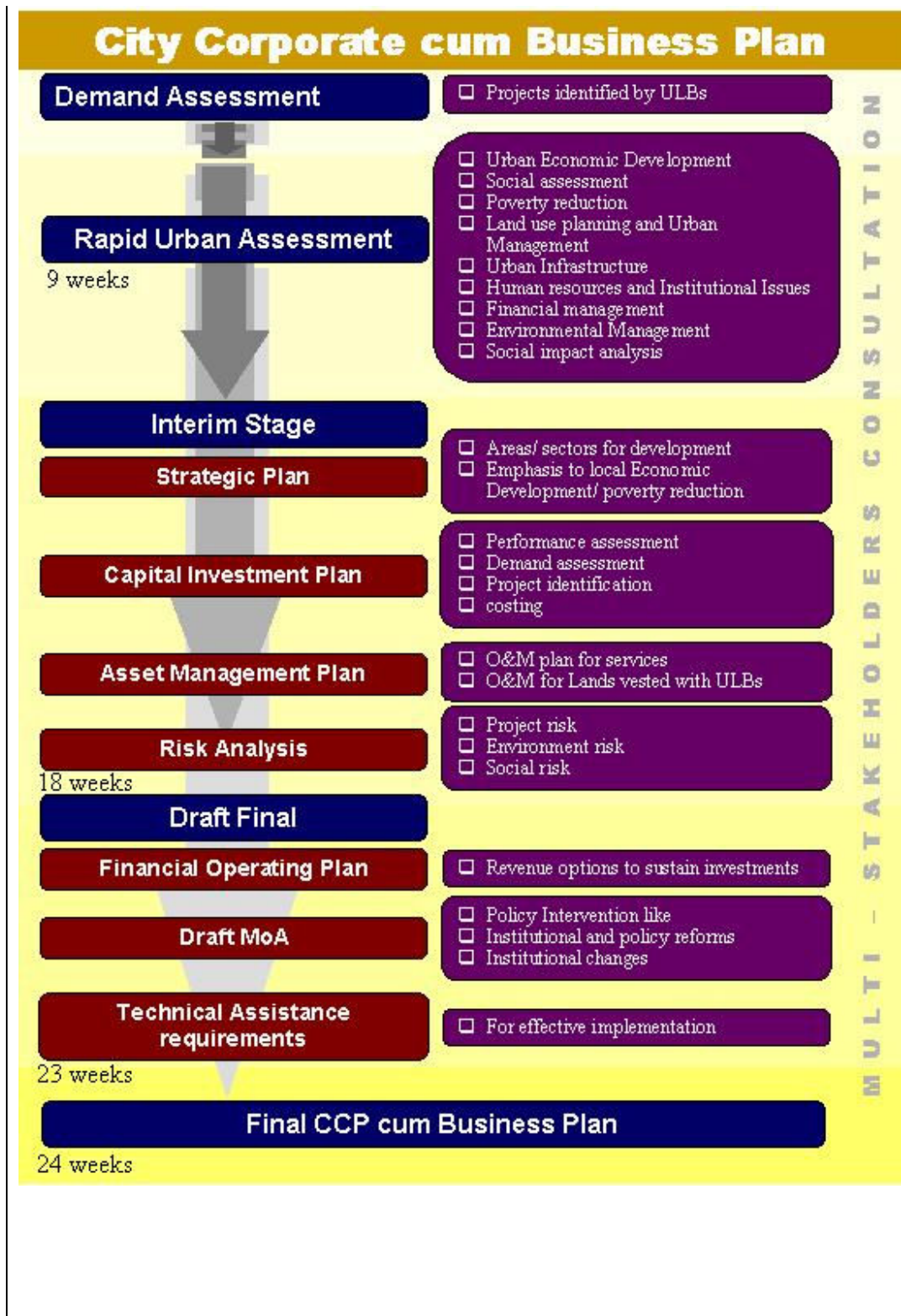
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Figure 1-1: Approach and Methodology for City Corporate cum Business Plan



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1.2.1 **Inception Stage**

In the inception stage, both the Demand Assessment and the Rapid Urban Assessment for the municipal area was carried out.

1.2.1.1 **Demand Assessment**

RFP document specifies that the municipalities (allotted to Darashaw and Company Private Limited) have on their own defined their vision and identified certain projects to be implemented, for which pre-feasibility studies are to be carried out and a sustainable investment plan has to be prepared.

Hence, this stage in essence assessed the demand for various projects proposed by the municipality and Investment Plan for such projects was reviewed.

1.2.1.2 **Rapid Urban Assessment**

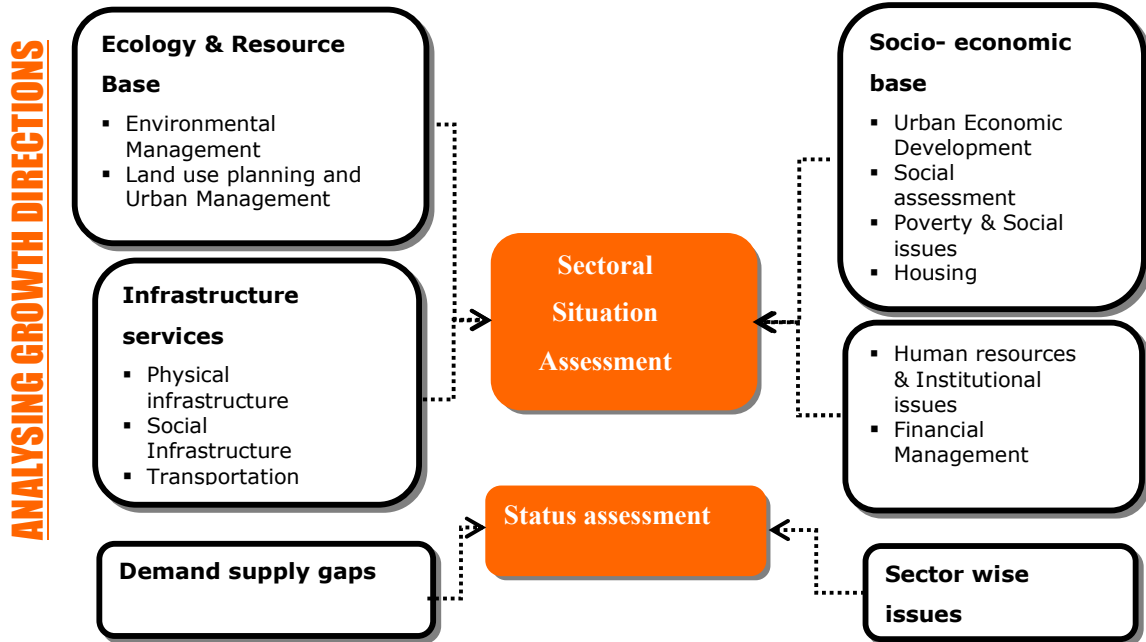
Here, all the information collected by Secondary sources was analyzed to find out current development status at an urban area level. The Analysis included all the sectors mentioned below:

- Urban Economic Development
- Social assessment
- Poverty reduction
- Land use planning and Urban Management
- Urban Infrastructure
- Human resources and Institutional Issues
- Financial management
- Environmental Management
- Social impact analysis

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Figure 1-2 Rapid Urban Assessment



Demand Assessment and Rapid Urban assessment was approved and accepted by the Review Committee on 07th January 2008 .

Figure 1-3 Presentation of the Inception report before the Review Committee



The Suggestions given by the Review Committee during the meeting has been given as under.

1.2.1.3 Suggestions of the Review Committee on the Inception Report

Our initial assessment and findings during the Inception stage was presented before the Review Committee meeting held on 07.01.2008. The Review Committee's inputs and comments on the Inception Report are given as under:

1. The consultants were requested to do stakeholder consultations to get demands from public for identifying infrastructure gaps.
2. The consultants were requested to do a SWOT analysis for every Municipality and accordingly fix up their vision statements and potentials for improvements.
3. Apart from the basic infrastructure the consultants were requested to assess the demand for the social infrastructure such as municipal schools, burial ground, slaughter house etc.
4. The consultants had identified projects implemented by municipality. It was also requested that the consultants should identify infrastructure requirements for total up liftment of the towns and accordingly classify under projects implemented by other departments.
5. All the municipalities were requested to provide five years audited accounts and recent year's un-audited accounts to the consultants. Accordingly the consultant was request to work out the financials.3
6. Integrated approach on plans may be considered by the consultants for all the possible services

The consultants have considered all the important suggestions suggested by the Review Committee and included them in the Interim Report.

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1.2.2 Interim Stage

1.2.2.1 Strategic Plan

On the basis of the sectoral issues identified during rapid urban status assessment, the sectoral strategies were proposed and converted into Action plans and projects in liaison with the city vision developed by the municipality. Such projects have been phased on the basis of demand and OWG member's priorities.

During Strategic plan preparation; emphasis were given to Areas/ sectors for local Economic Development and poverty reduction.

1.2.2.2 Capital Investment plan

The Consultant have worked out the cost of projects and financial requirements for meeting the demand for infrastructure and services. Urban agglomeration have been considered while working out the project costing for identified projects.

1.2.2.3 Asset Management plan

Consultant has carried out the O&M costs for the services proposed and at the same time analyzed the impact on finances for existing and proposed Infrastructure projects. A detailed Asset Management Plan have also been prepared for the municipality

1.2.2.4 Risk Analysis

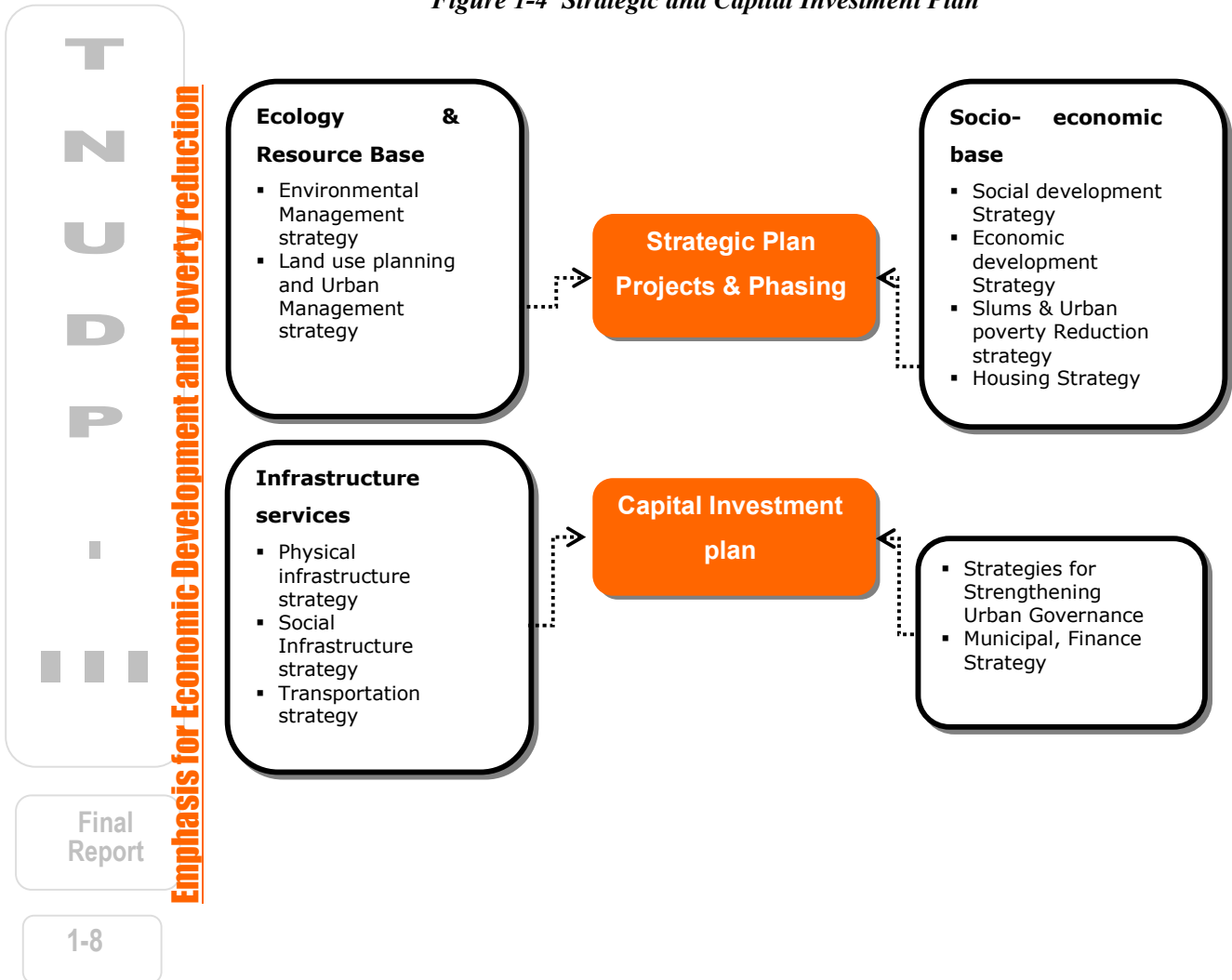
Consultant has carryout the risk analysis for the projects proposed by ULBs as well as for the projects identified in this assignment.



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Figure 1-4 Strategic and Capital Investment Plan



All the aforesaid four tasks were covered in the Interim Stage report which was approved and accepted by the Review Committee in its two day meeting held on 18th and 19th March 2008.

Figure 1-5 Presentation of the Interim report before the Review Committee



1.2.2.5 Suggestions of the Review Committee on the Interim Report

The Review Committee during the aforesaid Interim meeting made some specific suggestions pertaining to Thuraiyur Municipality to be addressed in the Draft Final Stage and the same is listed out below:

1. The consultants were requested to prioritize the projects based on the demand for the project & demand from the stake holders and also have to consider the state policy and the financial capacity of the local body
2. The consultants had mentioned in the report that the OWG will be formed, which will work towards identifying the issues, developing the strategies and finalize the capital investment plans. But it was found that stakeholder consultation was treated as OWG. Hence the consultants were requested to form the OWG and continuously interact with them towards effective completion of the assignment
3. It was mentioned that the most of the projects identified were proposed under UIDSSMT. The consultants were requested to consider allocation to the state and to the local body for all the schemes and were requested to work out the project financials accordingly

4. In solid waste management sector the consultant has given provisions only for collection system and compost yard. However they were requested to make a provision for scientific sanitary landfill facility for all towns
5. The consultant has proposed some of the remunerative projects in second and third phase. However if there is a demand for such remunerative projects, this may be implemented in the first phase as this may act as an additional source of income for the local bodies
6. Wherever tourism potential is huge, the consultants can identify some of the tourism project which may also be implemented by tourism / other departments
7. The consultant has to consider O&M for Underground sewerage system only after completion of the scheme

The consultants have taken into consideration all the important suggestions suggested by the Review Committee and have included them in the Draft Final Report.

1.2.3 Draft Final stage

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1.2.3.1 Financial Operating Plan (FOP)

The Financial Operating Plan (FOP) assesses the financial strength of the municipality to implement the identified investments. The Financial Operating Plan (FOP) forecasts the municipal finances on the basis of certain assumptions on income and expenditure. The primary objective of the FOP is to ascertain the investment sustenance capacity of the municipality under different scenarios of revenue enhancement and expenditure control.

The projected FOP under four broad scenarios have been worked out to highlight the importance of the reforms suggested to implement all identified projects required for the development of Thuraiyur Town.

The four broad scenarios under which FOP has been worked out for Thuraiyur municipality are as under:

1. Base case scenario (“Business as usual scenario”) - In this scenario “No New Projects” are to be implemented over the 15 year period and No reforms to be undertaken.
2. Full Project Scenario without undertaking the Suggested Reforms
3. Full Project Scenario with Full Reforms implementation
4. Sustainable Investment Scenario

1.2.3.2 Draft Memorandum of Association

Consultant has prepared a draft Memorandum of Association between ULB and TNUIFSL. The draft MoA has also outlined the Identified projects with implementation schedule, Reform Agenda which needs to be carried out and suitable action plan for the same.

1.2.3.3 Suggestions of the Review Committee on the Draft Final Report

The Review Committee during the aforesaid meeting, made some specific suggestions pertaining to Thuraiyur Municipality to be addressed in the Addendum for the Draft Final Report and the same is listed out below:

1. The consultant informed that none of the municipalities had the capacity to implement all the identified projects even with the reforms proposed. In this regard, consultants were requested to analyze the sustainable investment capacity of the local body and suggest the projects that can be taken within the investment capacity and also to suggest alternative ways to implement the balance identified projects.
2. The consultants were requested to analyze the impact of the reforms suggested on the financials of the local body and also to conduct the sensitivity for the same
3. The consultant has suggested various reforms to be reached after certain period by the local bodies. However the consultants were asked to give the milestones for implementing the reforms, for intermittent period also.



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4. The consultants were requested to propose the Under Ground Sewerage Scheme based on the priorities already laid down by the Commissionerate of Municipal Administration, for which TNUIFSL will facilitate in obtaining the same.
5. The consultants were requested to incorporate the provision for scientific sanitary landfill facility for all the local bodies
6. The consultants were requested to work out year on year DSCR, average DSCR, minimum and maximum DSCR.
7. The consultants were requested to include the existing loan while calculating DSCR
8. The cost of the Underground Sewerage Scheme for Rasipuram, Gobichettipalayam, Sathyamangalam and Komarapalayam has increased, hence the consultants were requested to update the same and work-out the financials accordingly
9. In Bhavani Municipality, the Commissioner pointed out that there is a slight difference in the assets given in the report and hence the consultants were requested to update the list of assets from the local body.
10. In addition to the projects proposed in Bhavani, the Commissioner requested the consultants to incorporate the construction of compound wall in the head works and improvements to certain parks in the municipality.
11. In addition to the projects proposed in Rasipuram, the Municipal Engineer requested the consultants to incorporate the construction of shops at the first floor and a shopping complex at Anna Nagar, which will fetch additional revenue to the local body.
12. While converting Kulithalai from Panchayat to Municipality most of the assets were not transferred. Although these assets are within the municipal limits, these are owned by the Panchayat. As the development of the Kulithalai town vests partly with the Panchayat, the consultants were requested to consult the officials and the elected representatives of the Panchayat before finalizing the plan.

1.2.3.4 Addendum to the Draft Final Report

Based on the comments received on the Draft Final Report, an addendum to the Draft Final Report was prepared and the same was approved by the Review Committee. The Review Committee made some suggestions to be incorporated in the Final Report and the same is listed below:

The following are the salient points discussed.

1. The consultants were requested to incorporate the additional projects in consultation with the local body.
2. The consultants were requested to discuss the reforms suggested with the Council.
3. The consultants were requested to prepare a comparative statement for the full project scenario vis-à-vis sustainable scenario.
4. The consultants were requested to address the requirement of Wind Mills for Dharapuram Municipality.
5. In some of the towns the consultants has decreased the ULB contribution in the scenarios after implementing reforms, which may be addressed.
6. The Consultants were requested to provide justification for projects altered for the sustainable investment scenario.
7. The Consultants were requested to high light the requirement of Common Effluent Treatment Plant for Komarapalayam Municipality in consultation with the Local Body.

The Draft Final Report was approved by the Review Meeting held on 16th and 17th September 2008.

1.2.4 Final Report

The final stage is the preparation of final report covering all the above stages incorporating the suggestions and modifications given by the Review Committee and also the OWG members.

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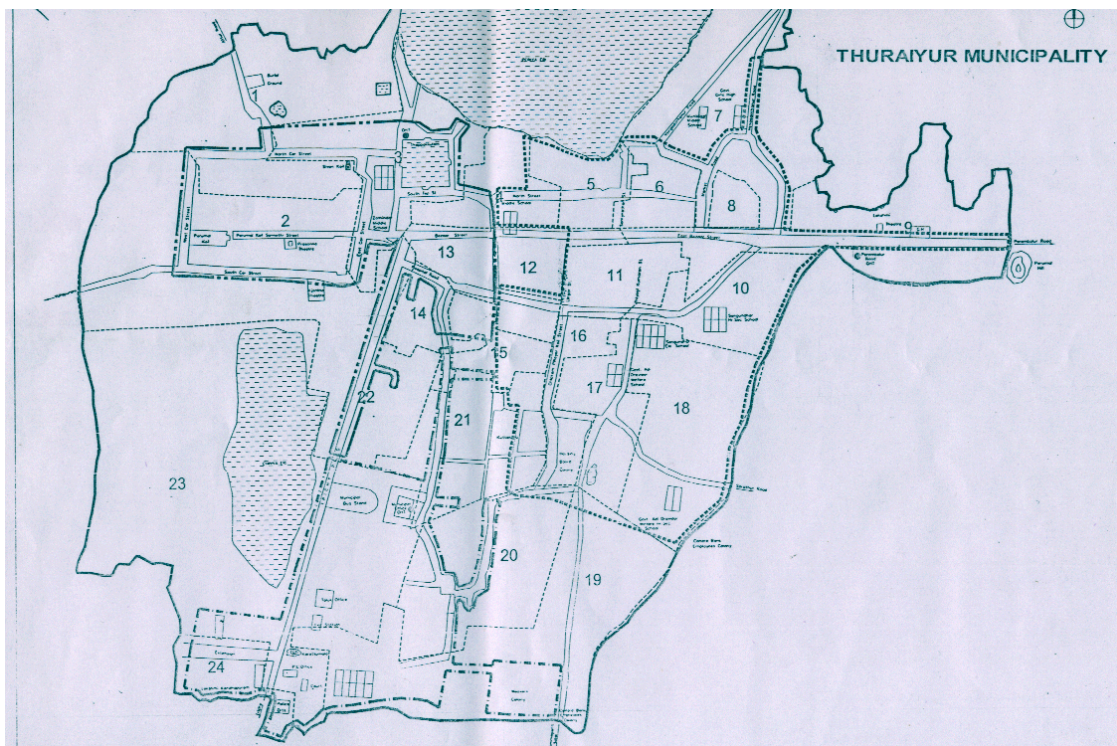
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2 TOWN PROFILE

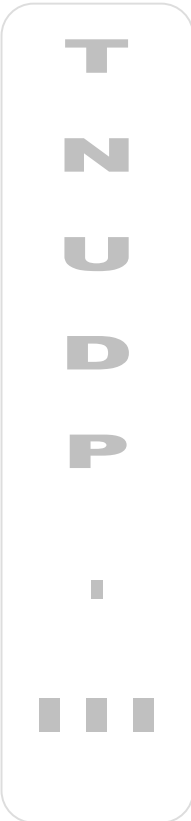
Thuraiyur is a Second Grade Municipality in Trichirappalli district. It is located at 50 Kms North-West of Trichirappalli and 120 Kilometers South-East of Salem. Perambalur, Attur, Namakkal, Musiri are located within 50 Kms radius. The municipal area is 14.55 Sq.Km with a population of 31005 persons as per 2001 Census with the composition of 15530 males and 15475 females.

Thuraiyur Municipality has been upgraded as III Grade Municipality from Town Panchayat on 17.01.1970 and it was upgraded to II Grade Municipality from 22.05.1998 onwards.

Figure 2-1 Map of Thuraiyur Municipality.



Source: <http://municipality.tn.gov.in/thuraiyur>



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2.1 Regional setting and network linkages

Thuraiyur town is located at 11° 09' North Latitude and 78° 36' East Longitude. The town is bounded north by Murungur, Maruvathur villages, south by Ammapatti, east by Muthampalayam and Kirambur villages and west by Venkatesapuram village.

The town is well connected by major district roads with the surrounding area. Thuraiyur does not have Airport and Railway station. Nearest airport and railway station is located at Trichirappalli at a distance of 50 Kms. Thuraiyur town is linked with Perambalur, Trichy, Namakkal, Attur and Musiri by bus.

Figure 2-2 Regional Setting and Network linkages



2.2 Demography

Thuraiyur is one of the largest urban centers in the district and has a population of nearly 31,005 persons as per 2001 Census with a growth rate of 12.17 percent during the period of 1991-2001. The growth pattern of the town is illustrated in Table 2-A. The

Table 2-A Population growth of Thuraiyur

Year	Population	Increment	% of Variation	CAGR
1941	15713			
1951	14488	-1225	-7.80	-0.81
1961	15939	1451	10.02	0.96
1971	21134	5195	32.59	2.86
1981	23592	2458	11.63	1.11
1991	27640	4048	17.16	1.60
2001	31005	3365	12.17	1.16
Average Growth rate				1.14

Source : Census publications

gross population density of Thuraiyur in 2001 was 2131 persons per Sq.Km. Ward wise population of Thuraiyur is shown in Table 2-B.

Table 2-B Ward wise population details 2001

Ward No	Total Population	Male	Female	Ward No	Total Population	Male	Female
1	1101	544	557	13	870	430	440
2	1458	734	724	14	1098	533	565
3	946	491	455	15	1167	589	578
4	1143	594	549	16	1013	499	514
5	1248	631	617	17	1098	525	573
6	1183	599	584	18	2343	1098	1245
7	1807	892	915	19	1279	604	675
8	1051	491	560	20	1481	747	734
9	1811	925	886	21	2022	1040	982
10	1274	642	632	22	635	329	306
11	1435	704	731	23	1312	763	549
12	902	459	443	24	1328	667	661
				Total	31005	15530	15475

Source: Thuraiyur Municipality

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2.3 Social Characteristics

2.3.1 Social Composition

As per census 2001, SC population is 16.69 percent of the total population whereas ST population is less which

Table 2-C Social Composition

<i>Social Composition</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>% share to total</i>
SC Population	2499	2676	5175	16.69
ST Population	233	214	447	1.44
Others	12798	12585	25383	81.87
Total Population	15530	15475	31005	100.00

Source: Census 2001

comes around 1.44 percent of the total population as shown in Table 2-C.

2.3.2 Gender ratio

Gender ratio of Thuraiyur in 1971 was 930 females per 1000 males and it has increased to 996 females per 1000 males in 2001. Gender ratio in the case of population below 6 years of age and among SC population in 2001 is higher than the general population figures of Thuraiyur. Gender ratio in Thuraiyur town and the comparison with the State urban and District urban figures are shown in Table 2-D.

Table 2-D Gender ratio

<i>Gender ratio</i>	<i>Population</i>	<i>Population below 06</i>	<i>SC</i>	<i>ST</i>
Male	15530	1625	2499	233
Female	15475	1663	2676	214
Gender ratio in Thuraiyur	996	1023	1071	918
In Trichy Urban district	999	970	1009	993
In Tamilnadu	982	955	1001	997

Source : Census publications

2.3.3 Literacy levels

As per census 2001, 81.42 percent of total population (excluding 0-6 years of age) are literates of which male accounted for 88.44 percent and female accounted for

Table 2-E Literacy levels

Literacy levels	Total	Male	Female
Thuraiyur town	81.42	88.44	74.36
Thiruchirappalli Urban district	86.76	92.41	81.13
Tamilnadu urban	82.53	88.97	75.99

Source : Census publications

74.36 percent. Literacy levels have increased from 68.31 percent in 1991 to 81.42 percent in 2001. Literacy levels in Thuraiyur and its comparison with state urban and district urban figures are shown in Table 2-E.

2.4 Physical characteristics

2.4.1 Geology and Soil Type

Clay soil is found on the north & east and black and red soil is available in remaining parts of the town.

2.4.2 Climate and Rainfall

The town gets its rainfall mostly from the North-East Monsoon during the month of October to December. Average annual rainfall is around 790 mm.

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3 PHYSICAL PLANNING AND GROWTH MANAGEMENT

Under Town and Country Planning Act 1971, the responsibility of preparing and executing the Master plan for a Local Planning Area vests with the Local Planning Authority. The master plan prepared by Thuraiyur Municipal council was approved by Government under Town and Country Planning Act 1971 in G.O.Ms. No. 175 H & U D Dept. Dated 19.4.99 and published in Tamilnadu Government Gazette part VI, section (1), page No. 40 dated 24.01.2001.

3.1 Land Usage in Thuraiyur

Out of 1179.94 hectares of total Municipal area, nearly 81 percent of the area remains undeveloped. Among the developed area, 54 percent is developed under residential usage, 26 percent under public and semi public, 9 percent under Educational, 4.19% under Industrial and 14.69 percent under commercial usage. Existing land use of Thuraiyur (1997) is given in Table 3-A.

Table 3-A Existing land use in Thuraiyur

<i>Land Use</i>	<i>Area in Ha</i>	<i>% to Developed area</i>	<i>% to the Total area</i>
Residential	121.4	54.29	10.29
Commercial	14.69	6.57	1.24
Industrial	9.38	4.19	0.79
Public and semi public	57.92	25.90	4.91
Educational	20.23	9.05	1.71
Developed area	223.62	100.00	18.95
Agriculture wet	237.4		20.12
Agriculture dry	719		60.93
Land under water	NA		NA
Undeveloped area	956.3		81.05
Total	1179.94		100.00

Source : data compiled from Thuraiyur approved Master Plan for the year 2011

3.2 Proposed Land Use for 2011

In the proposed land use, residential use has been increased to 556.49 hectares. But land under Educational, public and semipublic use has been reduced considerably as shown in Table 3-B.

Table 3-B Proposed Land Use for the year 2011

<i>Land Use</i>	<i>Area required for 2011 in Ha</i>	<i>% to developed area</i>	<i>% to total area</i>	<i>Existing area in Ha (1997)</i>	<i>Additional area required in 2011 in Ha</i>
Residential	556.49	73.44	47.16	121.4	435.09
Commercial	41.59	5.49	3.52	14.69	26.9
Industrial	81.26	10.72	6.89	9.38	71.88
Public & Semi Public	15.56	2.05	1.32	57.92	-42.36
Educational	19.18	2.53	1.63	20.23	-1.05
Transportation	43.68	5.76	3.70	NA	NA
Urbanisable area	757.76	100.00	64.22	223.62	534.14
Land Under water	165.88		14.06	NA	NA
Agriculture land	256.3		21.72	956.3	0
Non Urbanisable area	422.18		35.78	956.3	0
Total area	1179.94		100.00	1179.94	0

Source : data compiled from Thuraiyur approved Master Plan for the year 2011

3.3 Development potentials & Constraints

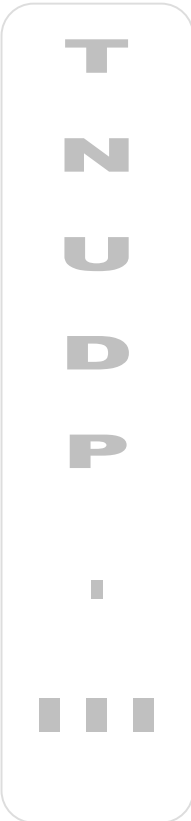
3.3.1 Development potentials

Due to its proximity to Trichy, Thuraiyur town can be developed as a satellite town for Trichy. Improvement in the commercial and industrial sectors can create more job opportunities and it can result in immigration from near by areas. Since the town enjoys the strategic position of transportation network, it induces more growth.

3.3.2 Development constraints

According to the proposed land use in 2011, the additional land requirements are mainly satisfied by converting agricultural lands into residential, commercial and industrial areas. Also the area under educational and public & semi public uses have been reduced. These proposals can become constraints later because the growing town will require adequate social amenities.

There is no major Highway / Rail network passing through this town which could again be a constraint for the development of this town.



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4 ECONOMIC DEVELOPMENT

4.1 Economic Base

Two decades back agriculture was the main occupation in Thuraiyur. Paddy and Cholam are the predominant crops. But now, the indigenous economy of this town is based on agricultural products and jewellery. Thuraiyur economy had witnessed a boom earlier through handloom manufacturing. With the advancement of power looms, it has lost its significance. But still, Handloom and Jewellery making are the main occupations among the people of Thuraiyur.

4.1.1 Occupational pattern

Tertiary sector contributes around 76 percent of the total work force. Primary sector contributes 10.76 percent of total work force and secondary sector is only 4.65 percent. Marginal workers in Thuraiyur come around 8.66 percent of the total work force. The occupational pattern of Thuraiyur Municipality is given in Table 4-A.

Table 4-A Occupational pattern in Thuraiyur 2001

<i>Workers in</i>	<i>2001</i>	<i>% to total workers</i>	<i>% to total population</i>
Primary sector	1179	10.76	3.80
Secondary sector	510	4.65	1.64
Tertiary sector	8322	75.93	26.84
Marginal workers	949	8.66	3.06
Total	10960	100.00	35.35
Non workers	20045	182.8923	64.65
Total population	31005		100.00

Source : Census 2001

4.2 Industries in Thuraiyur

A few medium scale rice mills and saw mills located along the Perambalur road are the only industrial units in existence. For stimulating industrial activities, land along the Attur Road and Perambalur road are set apart for industries in the Master plan for the year 2011.

4.3 Tourism potential

Thuraiyur is also famous for the temple Prasanna Venkatasalapathi, situated in the Thuraiyur-Perambalur road. Prasanna Venkatasalapathi temple lies at the top of Perumalmai that lies 960 feet above ground level in Pachamalai hills, 3 km from Thuraiyur in Tiruchirappalli district. This temple is said to be constructed by the grand son of Karikala Chozhan. Musical pillars are available here. Hundreds of devotees take part in the Girivalam procession around the Perumalmai hillock on all full-moon days. Thuraiyur is also famous for its Nandhikeshuvarar aalayam, (a shiva temple) and a Vishnu temple which were built many centuries before.

5 PHYSICAL INFRASTRUCTURE

Infrastructure facilities play an important role in fostering economic growth and enhancing public welfare. By and large, the infrastructure may be divided into two categories:

- (a) Physical infrastructure including Water supply, Drainage, Sewerage, Solid Waste Management, Electricity, Telecommunications and so forth; and
- (b) Socio-economic infrastructure including Education, Health, other Community facilities, Cold storages, Warehouses, Markets, Banks and Financial Institutions.

This chapter deals with Physical Infrastructure which includes Water Supply, Sewerage and Sanitation, Storm water drainage, Solid Waste Management Roads and Street Lighting.

5.1 Water Supply

5.1.1 Water supply scheme

Thuraiyur depends on “Cauvery Koottu Kudineer” scheme for meeting its water supply requirements. The source of water is located at a distance of 35 km from the town at Musiri – Ayyampalayam in Cavuery River and has been in operation since 2001. Water is supplied daily for 1 hour for all the 24 wards in the Municipality. Thuraiyur supplies 2.8 MLD treated water to the entire section of the society.

5.1.2 Water supply system

Thuraiyur has total 26 Km distribution network supplies water to 3 over head tanks and one GLR of total 1.9 MLD capacities. Two OHTs with 4.5 lakhs litres capacities are located at Theppakulam and Perambalur Salai , and the other OHT with 8 lakhs

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litres capacity is located at Office campus. Also there is one Ground level reservoir of 2 lakhs litres capacity.

Thuraiyur has total 9797 number of assessments out of which 2018 assessments have Household Service Connections. There are 1892 Nos of Domestic connections and 126 Nos of Non domestic connections. In addition, Municipality has provided 175 stand posts (Public Fountains) and 96 public power hand pumps all over the municipal area.

5.1.3 Water availability

Municipality supplies daily one hour water supply covering the entire section of the society. Overall, 85 LPCD water is being supplied taking into consideration the population in 2008 would be 33050.

5.1.4 Service adequacy

Table 5-A: Performance Indicators

S.No	Indicators	Unit	Current Status	Normative Standard
1	Daily per capita supply	Litres	85	135
2	Roads covered with distribution network	Percent	60	> 100
3	Storage capacity with respect to supply	Percent	6.79	33
4	Available Treatment capacity with respect to supply	Percent	100	100
5	Assessments covered by service connections	Percent	20.60	85
6	Slum population per stand post	Persons	68	150

Source : Data computed based on the data collected from Thuraiyur Municipality

5.2 Sewerage and Sanitation

Sewage is mostly the waste water of the community draining into the sewer system with some ground water infiltration. Generally 80 percent of the water supplied gets drained into the sewerage system.

5.2.1 Sewerage System in Thuraiyur

There is no Underground sewerage system in Thuraiyur. Sullage and kitchen waste is disposed through the open drains. Most of the drains are open with shallow depth and the sections are inadequate causing stagnation. For implementing sewerage system, Detailed Project Report for Underground sewerage system is under preparation by TWAD.

5.2.2 Sanitation facilities in Thuraiyur

In Thuraiyur, nearly 6553 assessments out of 9797 total assessments (67 percent coverage) are having individual private sanitation facilities with septic tank as a major mode of sewage disposal. In addition, Thuraiyur has 21 public convenience units with 154 seats out of which 22 seats are reserved for Gents and 132 for ladies.

5.3 Storm water drainage

The town is provided with 24.48 Km of open drains. Storm water drains in Thuraiyur are located at:

- Palakattu Mariamman Street-1 no
- Perumal Koil Street-2no
- Kuttakarai Street –1no
- Vinayagar Street –7—1no
- Attur Road --1 no and
- Kuttakarai to Chinna eri --1no

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Road length covered with storm water drainage is coming around 57 percent against the standard norm of 130 percent coverage.

5.4 Solid Waste Management

The collection transportation and disposal of Municipal Solid Waste is an obligatory function of Thuraiyur Municipality. The Public Health Department of the Municipality is responsible for the Solid Waste Management of the town. There are four sanitary supervisors under the Public Health department.

5.4.1 Generation and collection

Thuraiyur Town generates around 15 tonnes of Garbage per day at the rate of 454 grams per capita per day. Thuraiyur municipality collects waste from all 24 wards. Door to Door collection system has been adopted in 12 wards and in the other 12 wards waste is being collected from the streets. Thuraiyur has 50 collection dust bins of 100 litre capacity each. Waste segregation is yet to be adopted.

5.4.2 Disposal and Treatment

The waste collected is transported in open Lorries to the disposal site, located at Sorathur Road which is at a distance of 3 Km from Thuraiyur town. This site has an area of 3.76 acres. There is no waste treatment facilities provided at this site. A new site has been purchased at Venkadesapuram near Thuraiyur which has an area of 4.16 acres and located at a distance of 6 km from the Thuraiyur. Setting up Windrows Treatment Plant at this site is nearing the completion stage.

Table 5-B Vehicle availability and trips performed for waste disposal

<i>Vehicles</i>	<i>Nos</i>	<i>Trips</i>	<i>Vehicle capacity in ton</i>	<i>Capacity after 0.4 adjustment factor</i>	<i>Total waste collected inTon</i>
Tipper	1	4	3	1.2	4.8
Power tiller	1	4	1	0.4	1.6
Lorry	3	4	4	1.6	6.4
Total	5	12	8	3.2	12.8

Source : Health department, Thuraiyur municipality

5.4.3 Service adequacy

Table 5-C Performance Indicators

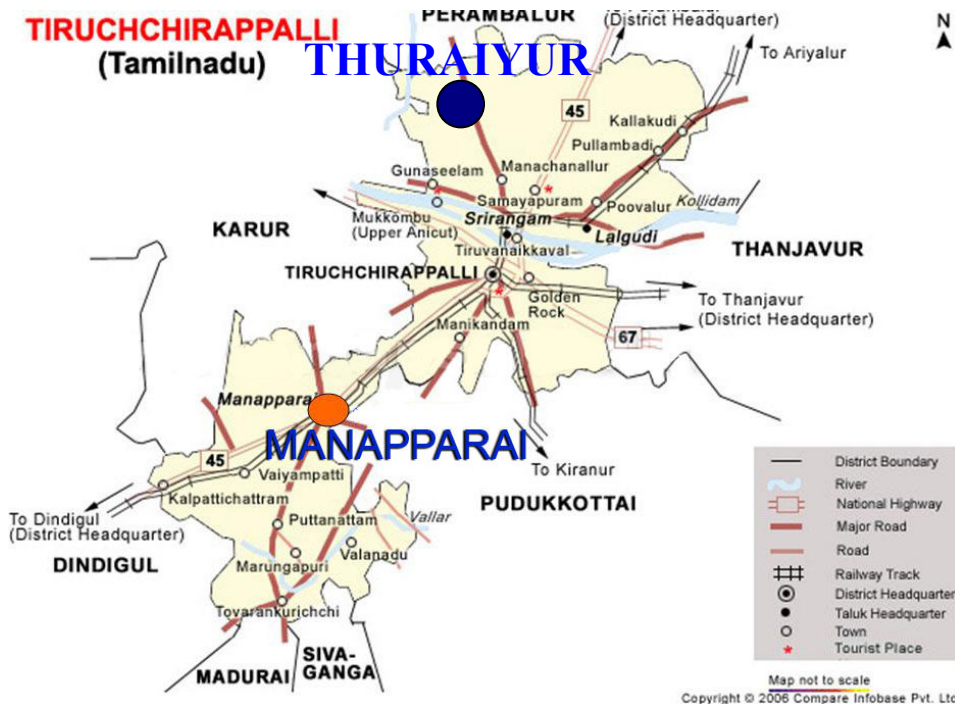
Indicators	Unit	Current Status	Normative Standard
Waste generation per Capita per day	Grams	454	350-450
Collection efficiency	Percent	80	100
Conservancy staff per Km	Persons	1.8	2
% capacity of Fleet vehicles to waste generated	Percent	42.7	

Source : computed based on the data collected from Thuraiyur Municipality

5.5 Traffic and Transportation

The town is well connected by major district roads with the surrounding area. Thuraiyur does not have Airport and Railway station. Nearest airport and railway station is located at Trichirappalli at a distance of 50 Kms. Thuraiyur town is linked with Perambalur, Trichy, Namakkal, Attur (Salem District) and Musiri directly by Bus transport system.

Figure 5-1 Regional level Transportation network



Source : www.mapsofindia.com

5.5.1 City level road network

Thuraiyur Municipality's role regarding road comprises, construction of major roads and maintenance of all roads in its jurisdiction, except roads belonging to Highways Department and PWD. The Municipality is

Table 5-D City level road network in Thuraiyur

Road Type	Length in Kms	% Share
Cement concrete	5.844	13.55
Bitumen	26.385	61.15
WBM/ Metal Roads	0.293	0.68
Stone Slab	0.905	2.10
Earthen	9.718	22.52
Total	43.145	100.00

Source : Engineering section, Thuraiyur Municipality

maintaining roads to a length of 43.145 Km. Road length and its type is shown in Table 5-D. Other than this, 7 Km State Highway roads, maintained by Highway Department are also passing through this town.

5.5.2 Transport system

The main mode of mass transportation in and out of the town is buses operated by a number of private companies and State Transport Corporation. Regular bus services are available from Thuraiyur to Perambalur, Trichy, Namakkal, Attur and Musiri.

5.5.3 Bus Stand infrastructure

'Anna Bus stand' in Thuraiyur municipal area is located in the center of city. Bus stand has 30 bus bays for parking. Municipal Shops within the Bus Stand helps the passengers their needful. Drinking Water Facility, Paid Toilets and Free Toilets are available. TV provision is there to announce the arrival and departure of buses.

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5.5.4 Service adequacy

Table 5-E Performance Indicators related to road

<i>Performance indicators</i>	<i>Unit</i>	<i>Current status</i>
Road density	Km/ Sq.Km	3.0
Per capita road length	Meters/Person	1.31
Percentage of Surface roads	Percent	74.70

Source : Thuraiyur Municipality

5.6 Street Lighting

The town in total has 1239 fixtures out of which 1115 lights are tube lights, 96 lights are Sodium Vapor lights and 28 lights are Mercury vapor lights. Three numbers of high mast lights are also proposed in Thuraiyur municipality.

5.6.1 Service adequacy

Table 5-F Performance Indicators regarding Street Lighting in Thuraiyur

<i>Indicators</i>	<i>Unit</i>	<i>Current status</i>	<i>Norms/Standards</i>
Spacing between lamps	Meters	39	30
Proportion of tube lights W.R.T to total	Percent	90	60
Proportion of high power fixtures W.R.T to total	Percent	10.0	40

Source : data computed based on the data collected from Thuraiyur Municipality

5.7 Problems and Issues

<i>Sector</i>	<i>Issues</i>
Water Supply	<ul style="list-style-type: none"> • Service coverage is very low (20.6) • Power cut constraints in supplying water regularly • 22 Km distribution network was laid in 1980 needs replacement • Existing well in Periya Eri is unused for non domestic purpose (it has to be desilted, cleaned for usage)
Sewerage	<ul style="list-style-type: none"> • No comprehensive sewerage system as on today • Absence of adequate Public conveniences mainly for gents

<i>Sector</i>	<i>Issues</i>
	<ul style="list-style-type: none"> Public Conveniences proposed in UIDSSMT is yet to be implemented
Storm water drainage	<ul style="list-style-type: none"> Nearly 45% of the roads have no SWDs Proposals sent under UIDSSMT are yet to be implemented due to fund constraints and due to UGD proposal. Existing drains are open drains causing health hazards
Traffic and Transportation	<ul style="list-style-type: none"> More than 20% of the roads are Kutcha Traffic conflicts at intersections Infrastructure inadequacy in existing Bus stand
Solid Waste management	<ul style="list-style-type: none"> Waste segregation at source is not yet adopted Only 50 % of the wards are covered by D – D collection
Street Lighting	<ul style="list-style-type: none"> Spacing between lights is more than 30 Meters Absence of Energy saving Mechanism

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6 SOCIO-ECONOMIC INFRASTRUCTURE

The Socio-economic infrastructure determines the development status of any human settlement and this chapter covers Health, Education, Recreation and other amenities.

6.1 Health

Thuraiyur has 20 hospitals and clinics serving the population of the town. The location of the same are given in Table 6-A

Table 6-A Hospitals in Thuraiyur

<i>Sl no</i>	<i>Hospital</i>	<i>Location</i>
1	Dhivyapriya Poly Clinic	Santhi Veerappan Koil Street
2	Mahalakshmi Clinic	Big Bazaar Street
3	Kumaran Clinic	Trichy Road
4	Sankaran Clinic	Keela Kadai Veethi
5	Municipal Maternity Center	Hospital Road
6	Annai Hospital	Trichy Road
7	Government Hospital	Perambalur Road.
8	Maruthu Hospital	Opp. Municipal Office
9	B. R. Hospital	Co-operative Nagar
10	Nirmal Nursing Home	Co-operative Nagar
11	Srinivasan Poly Clinic	Athur Road
12	N. R Hospital	Hospital Road
13	National Clinic	South Car Street
14	Amrudha Clinic	Thuraiyur
15	Aravind Clinic	Co-operative Nagar
16	Hemamalini Nurshing Home	Opp. Municipal Office
17	Balaji Hospital	Trichy Road
18	Sri Krishnaveni Clinic	118 Trichy Main Road
19	Sri Sakthi Nursing Home	Co-operative Nagar
20	Govt. Hospital	Perambalur Road

Source : Thuraiyur Municipality

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6.2 Education

Thuraiyur has 10 schools, out of which 4 are higher secondary schools, one is a high school, 2 are matriculation schools, one is an elementary school and one is a middle school. The details of schools in Thuraiyur and their student strength are given in Table 6-B.

Table 6-B Educational institutions in Thuraiyur

<i>Sl No</i>	<i>School Name</i>	<i>Boys</i>	<i>Girls</i>
1	Jameendar Higher Secondary School	1199	496
2	Sengunthar Higher Secondary School	1628	1197
3	Sowdambiga Matriculation School	661	572
4	Vimala Matriculation School	160	171
5	S.P.G. Middle School	297	256
6	Municipal High School	153	211
7	Jameendar Middle School	171	153
8	Govt. Girls Higher Secondary School	-	1124
9	ADW Higher Secondary School	632	411
10	ADW Elementary School	54	89

Source : Thuraiyur Municipality

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6.3 Recreation

There is only one park in Thuraiyur town. It is the Municipal Park at Co-op. Nagar, Trichy Road, near Bus Stand. Thuraiyur also has three theatres namely Ajantha Theatre, Bharathi Theatre and Lakshmi Theatre.

6.4 Other Amenities

Thuraiyur has six banks out of which three are nationalized banks. The details of the banks in Thuraiyur are given in Table 6-C.

Table 6-C Banks in Thuraiyur

<i>SI No</i>	<i>Name of the Bank</i>	<i>Ward No</i>
Nationalized Banks		
1	State Bank of India , Trichy Road.	22
2	Canara Bank , Trichy Road.	2
3	Indian Overseas Bank , Mathurapuri.	
Other Banks		
4	Lakshmi Vilas Bank, Thiruchi Road.	22
5	TCC co-op. Bank, Teppakulam.	23
6	Thuraiyur Urban Co-op. Bank	20

Source : Thuraiyur Municipality

6.5 Problems and Issues

<i>Sector</i>	<i>Issues</i>
Social infrastructure	<ul style="list-style-type: none"> • Only one park in Thuraiyur • Primary Health centre has Infrastructure inadequacy (Improvements proposed are yet to be implemented) • Community hall developed has no Kitchen and Toilet • Space constraints in Municipal building • Desiltation of Periya Eri and Chinna Eri has not been done hence reducing the water storage capacity.

7 SLUMS AND URBAN POVERTY

As per Census of India, the slum areas are broadly defined as:-

- (i) All specified areas in a town or city notified as 'Slum' by State/Local Government and UT Administration under any Act including a 'Slum Act'.
- (ii) All areas recognized as 'Slum' by State/Local Government and UT Administration, Housing and Slum Boards, which may have not been formally notified as slum under any act;
- (iii) A compact area of at least 300 persons or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.

7.1 Slums in Thuraiyur

In Thuraiyur, there are 9 slums in existence. Nearly 36 percent of the total population is living in slums. Details of the slums in Thuraiyur are given in Table 7-A.

Table 7-A Slum details, Thuraiyur

S No	Name of Slum	Type	Ward	Population	No of stand posts	No of bore wells	No of Public toilets	No of HSC
1	Mettu Street	Notified	1	1800	4	3	-	12
2	Palakattu Mariyamman Street	Notified	20	1200	4	6	Nil	14
3	Vinayakam Street	Notified	18	1950	10	5	Nil	15
4	Pudhu Street	Notified	17	1200	4	1	Nil	6
5	Throwpadhiamman Koil Street	Notified	8	2500	7	4	1	21
6	Govindapuram Colony	Notified	1	250	-	2	Nil	-
7	Muthu Nagar	Notified	9	1200	-	5	Nil	-
8	Periyar Nagar	Notified	9	750	1	1	Nil	-
9	Maruthi Nagar	Notified	19	1000	1	2	Nil	1
	Total			11850	31	29	1	69

Source : Thuraiyur Municipality

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7.1.1 Service provision in slum areas

The slums at Throwpadhiamman Koil Street, Palakattu Mariyamman Street, Vinayakam Street, Pudhu Street and Maruthi nagar are given Household service connections (around 69). Slum areas are also provided with stand posts to meet their water demands. In slum areas, 31 Nos of stand posts and 1 No of public toilets are provided. According to the municipality officials, proposal has been prepared under IHSDP programme for constructing Dwelling Houses in 9 Slums, laying Bitumen and Cement Concrete Roads, constructing Storm Water Drains, providing Water Supply and Street Lighting.

7.2 Urban poor in Thuraiyur

BPL population revised in 2006 was 9978 which is about 33 percent of the total population. An attempt has been made to compare Ward wise population 2001 with ward wise BPL population revised in 2007. Wards 8, 17 and 18, have BPL population more than 60 percent of the total ward population as shown in *Table 7-B*.

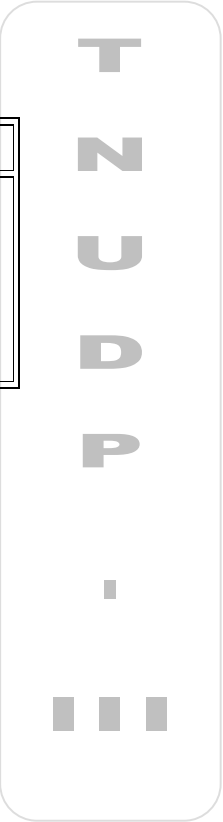
Table 7-B Ward wise BPL population and its percentage share in Thuraiyur

Ward No	Pop	BPL Pop	% share	Ward No	Pop	BPL Pop	% share
1	1101	632	57.40	13	870	140	16.09
2	1458	388	26.61	14	1098	264	24.04
3	946	169	17.86	15	1167	128	10.97
4	1143	384	33.60	16	1013	214	21.13
5	1248	314	25.16	17	1098	685	62.39
6	1183	326	27.56	18	2343	1424	60.78
7	1807	983	54.40	19	1279	545	42.61
8	1051	772	73.45	20	1481	426	28.76
9	1811	512	28.27	21	2022	334	16.52
10	1274	520	40.82	22	635	25	3.94
11	1435	376	26.20	23	1312	120	9.15
12	902	235	26.05	24	1328	62	4.67
				Total	31005	9978	32.18

Source : Thuraiyur Municipality

7.3 Problems and Issues

<i>Sector</i>	<i>Issues</i>
Slums and Urban Poverty	<ul style="list-style-type: none">• 9 slum pockets accommodating 36 % of the total population• 33 % of the total population are living below poverty line• IHSDP proposal is yet to be implemented due to delay in approval and fund constraints



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8 FINANCIAL STATUS

8.1 Overview

The Urban Local Bodies (ULB's) in Tamil Nadu have adopted Accrual Based Accounting System in the last few years. Currently the ULB's of Tamil Nadu maintain three separate fund namely a) Revenue and Capital Fund b) Water Supply and Drainage Fund and c) Elementary Education Fund. For each of these funds a Trial Balance, Income & Expenditure Account and Balance Sheet are maintained.

The Sources of income for a municipality can be broadly categorized as own sources (Includes both Tax and Non Tax Revenues), and External Sources (Assigned Revenues, Devolution Funds, Grants and Contribution). Besides municipalities also can avail of loans/Grants/Contribution from Government(Central and State) and loans from various funding agencies such as TUFIDCO, TNUIFSL, HUDCO, LIC and Banks etc, for undertaking specific projects based on their credit worthiness.

The municipality's Revenue expenditure can be broadly categorized into Personnel cost and Terminal and Retirement benefits, Operating Expenses, Repairs & Maintenance Expenses, Programme Expenses Administrative Expenses, Finance Expense, Provision for Depreciation. Besides the above, significant amount would be required for undertaking up capital works.

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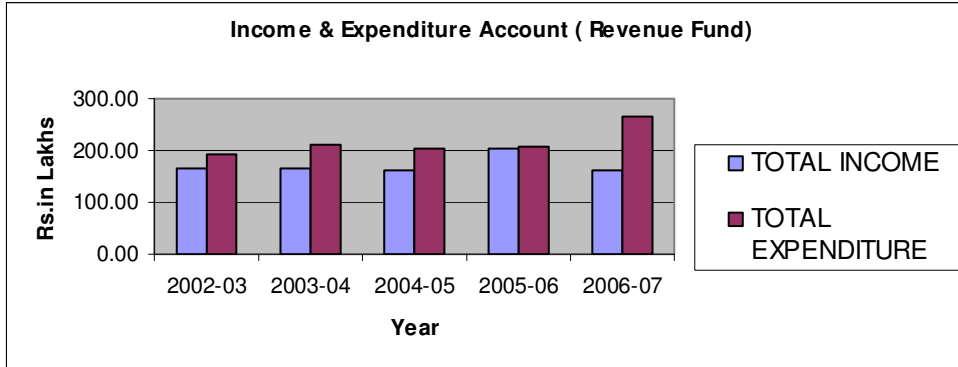


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8.2 Financials (Revenue Fund)

Figure 8-1 Income & Expenditure Account (Revenue Fund)



Source : Annual Accounts/Budget Estimates of Thuraiyur Municipality

Table 8-A Income & Expenditure Account (Revenue and Capital Fund)

Rs.in lakhs

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07 (Revised Budget Estimates)
INCOME					
Property Tax	24.31	25.18	25.80	26.66	26.99
Profession Tax	7.90	8.87	10.97	12.12	12.61
Other taxes	0.11	0.10	0.00	0.00	0.03
Assigned Revenue	41.91	32.92	19.46	19.65	15.95
Devolution fund	36.34	57.44	47.99	93.43	45.34
Service Charges and Fees	23.30	26.35	28.70	14.47	12.28
Fees for Bus stand/bus bay	19.30	20.84	23.36	11.07	7.22
Building License Fees	3.12	2.25	1.68	1.60	2.50
Other Fees	0.88	3.27	3.66	1.80	2.56
Grants and Contribution	0.00	0.00	6.83	4.05	11.34
Sale & Hire Charges	0.00	0.00	0.00	0.22	0.25
Other Income	30.78	16.21	21.92	32.29	35.20
Market fees Daily	1.46	1.53	1.70	3.31	3.81
Rent on shopping	5.87	3.93	4.44	18.89	4.87

<i>Road cut restoration charges</i>	8.70	0.00	0.58	0.00	0.82
<i>Project overhead appropriation</i>	5.18	4.06	7.29	3.79	0.00
<i>Other income (remaining)</i>	9.56	6.68	7.91	6.31	25.70
TOTAL INCOME	164.65	167.07	161.69	202.90	159.99
EXPENDITURE					
Personnel Cost I (Salaries)	76.43	77.12	80.82	85.85	108.86
Personnel Cost II (Others)	1.42	1.57	1.04	2.26	2.18
Terminal and retirement benefits	22.02	20.21	14.04	28.00	86.38
Operating Expenses	3.36	18.32	12.50	14.12	20.24
<i>Power charges for street lights</i>	0.14	15.09	8.66	8.04	9.43
<i>Maintenance Expense for Street Lights</i>	1.69	1.48	1.66	3.07	4.20
<i>Sanitary and conservancy expenses</i>	0.87	0.60	1.47	2.07	0.50
<i>Expenses on sanitary materials</i>	0.53	0.91	0.66	0.89	1.98
<i>Other expenses</i>	0.13	0.24	0.06	0.04	4.13
Repairs & Maintenance	5.33	4.86	6.19	2.80	20.96
<i>Light vehicle maintenance</i>	0.22	0.00	0.09	0.04	0.91
<i>Heavy Vehicle Maintenance</i>	3.83	4.1384	4.99	0.00	6.02
<i>Others</i>	1.28	0.7192	1.113	2.76	14.03
Programme Expenses	15.11	14.88	14.40	1.77	14.24
Administrative Expenses	5.35	5.84	8.75	8.58	11.27
Finance Expenses	4.34	22.88	11.23	4.76	1.37
Depreciation	57.18	47.69	56.05	48.74	0.00
Contribution to scheme works	0.00	0.00	0.00	9.23	
TOTAL EXPENDITURE	190.54	213.37	205.03	206.10	265.50

Source: Annual Accounts/Budget Estimates of Thuraiyur Municipality

Note: There is a difference in the deficit figure for the FY 2005-06

Table 8-B Balance Sheet (Revenue and Capital Fund)*Rs.in lakhs*

<i>Particulars</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>
LIABILITIES				
Loan	76.25	70.98	66.61	64.16
<i>Loan from TUFIDCO</i>	<i>32.39</i>	<i>27.12</i>	<i>22.75</i>	<i>20.30</i>
<i>Loan from TNUDF</i>	<i>43.86</i>	<i>43.86</i>	<i>43.86</i>	<i>43.86</i>
Grants & Contribution	87.96	136.10	216.50	250.39
<i>Grants from Government</i>	<i>5.04</i>	<i>8.56</i>	<i>0.00</i>	<i>35.97</i>
<i>Contribution from Government</i>	<i>64.91</i>	<i>88.50</i>	<i>28.63</i>	<i>148.89</i>
<i>Contribution from Muni fund</i>	<i>14.76</i>	<i>28.10</i>	<i>131.57</i>	<i>49.74</i>
<i>Diversion from other Muni fund</i>	<i>3.25</i>	<i>10.93</i>	<i>15.79</i>	<i>15.79</i>
<i>Contribution from Town Panchayat fund</i>	<i>0.00</i>	<i>0.00</i>	<i>40.51</i>	<i>0.00</i>
Accumulated Depreciation Account	204.75	252.44	308.50	357.23
Accumulated Surplus/Deficit	150.68	104.39	63.05	50.26
Current Liabilities/Others	133.46	142.16	133.21	128.09
TOTAL LIABILITIES	653.10	706.07	787.87	850.13
ASSETS				
Fixed Assets	548.10	589.10	652.36	690.59
Current Assets/Others	105.00	116.97	135.51	159.54
TOTAL ASSETS	653.10	706.07	787.87	850.13

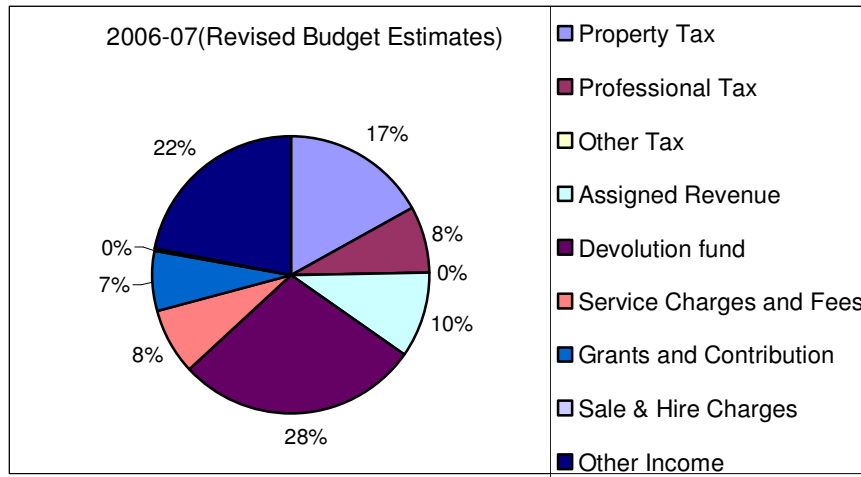
Source : Annual Accounts/Budget Estimates of Thuraiyur Municipality

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8.3 Analysis of Income

Figure 8-2: Income break up of Thuraiyur Municipality for FY 2006-07



Source : Revised Budget Estimates of Thuraiyur Municipality for the FY 2006-07

Income of the Municipality has jumped from Rs.164.65 Lakhs FY 2002-03 to Rs.202.90 Lakhs in FY 2005-06. Overall the CAGR from FY 2002-03 to FY 2005-06 is 7%

8.3.1 Own Sources

8.3.1.1 Municipal Taxes

Municipal taxes consisting of Property and Other Taxes (Mainly Professional Tax) contribute about 20% of the total income of Thuraiyur Municipality.

Property Tax:

The most important category in the own sources of income is the property tax. This tax is imposed on land and buildings depending upon their nature of use. Though the property tax has contributed about 68%-75% of the total Municipal taxes over the last 5 years its growth has remained stagnant ranging between Rs.24 Lakhs to Rs.27 Lakhs.

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Table 8-C Property Tax Particulars

Categories	Rate per Sq ft(Rs)
A	0.60
B	0.30
Slab	(in %)
General funds	2.00
Water supply & Drainage	4.00
Scavenging	1.00
Lighting	3.00
Education Tax	2.50
No. of Assessment (2006-07)	9772
No. of Assessment (2002-03)	8690
% Increase in Number Assessments for the Past 5 years	3%
CAGR in revenue over the Last 5 years	3.00%
Total Property Tax (Rs.in Lakhs in 2006-07)	26.99
Number of Staff in Revenue Department	6
Revenue per staff (Rs.in Lakhs)	4.50
Average Tax Demand per property(Rs.)	627
Average annual Property Tax Collection per Property	616
% of arrears pending more than 6 years	61.00%

Source : Thuraiyur Municipality

The Municipality needs to pay critical attention to identify and bring in more assesses for enhancing property tax collection which has grown at 3% over the last 5 years. In the accounts proper provisioning should be made for writing off the arrears pending for more than 6 years. Reforms at the state level such as revision of property tax rates, fast track methods to overcome litigation delays, introduction of GIS to identify and map un assessed properties would go a long way to solve the problem of stagnant collection of property tax

Other Taxes:

Other Tax revenues are in the form of taxes levied on carriage & carts, animals, advertisement, professional tax and others. Professional tax is the other important contributor of the own sources of revenue. The other taxes has contributed about 25-32%of the total Municipal taxes over the last 5 years.

Table 8-D Professional Tax Particulars

Particulars	
Total Professional Tax Collection(Rs.in Lakhs 2006-07)	12.61
No. of Assessment 2006-07	780.00
No. of Assessment 2002-03	780.00
% increase in No. of Assessments for the past 5 years	NIL
Slab for Professional Tax	
Upto Rs.21000	Nil
Rs.21000 to Rs.30000	Rs.75
Rs.30001 to Rs.45000	Rs.188
Rs.45001 to Rs.60000	Rs.375
Rs.60001 to Rs.75000	Rs.563
Above Rs.75001	Rs.750

Source: Thuraiyur Municipality

There has been a healthy growth in the collection of professional taxes by 12% over the last 5 years though the number of assessment constant at 780

8.3.1.2 Non Tax Revenues

The second important component of the municipal revenue is the Non-Tax Revenues like the Service Charges and Fees, Sale & Hire Charges and Other Income which has contributed for more than 25% of the Municipality's revenue in the last 5 years

Service Charges and Fees

Service Charges and Fees accounts has fallen from Rs.23.30 Lakhs in FY 2002-03 to Rs.12.28 Lakhs in FY 2006-07 (Revised budget estimate) mainly due to the fall in the fees from bus stand which shown a negative growth trend of 22% over the last 5 years. The other significant sources of income under this head are Fees for Slaughter House, Building License Fees. More than 75% of the service charges come from Bus Stand Fees.

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Other Income

The Municipality earns significant revenue through earnings from other sources namely Development Charges, Survey Fees, Daily Market Fees, rental Income from Community Hall, Shopping Complex, lease of land etc. This has grown only at a CAGR of 3% over the last 5 years, despite a major jump from the rental income of shopping complexes from Rs.4.44 Lakhs in the FY2004-05 to Rs.18.89 Lakhs in the FY 2005-06

8.3.2 External Sources**8.3.2.1 Assigned Revenue**

Assigned Revenue includes revenues transfers to the ULB by the GOTN under specific acts. This source of revenue income comprises duty on transfer of properties, entertainment tax and other assigned revenue. The share of assigned revenue has declined from Rs.41.91 Lakhs in FY 2002-03 to Rs.15.95 Lakhs in FY 2006-07(Revised Budget Estimates)

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Report**8.3.2.2 Devolution Fund**

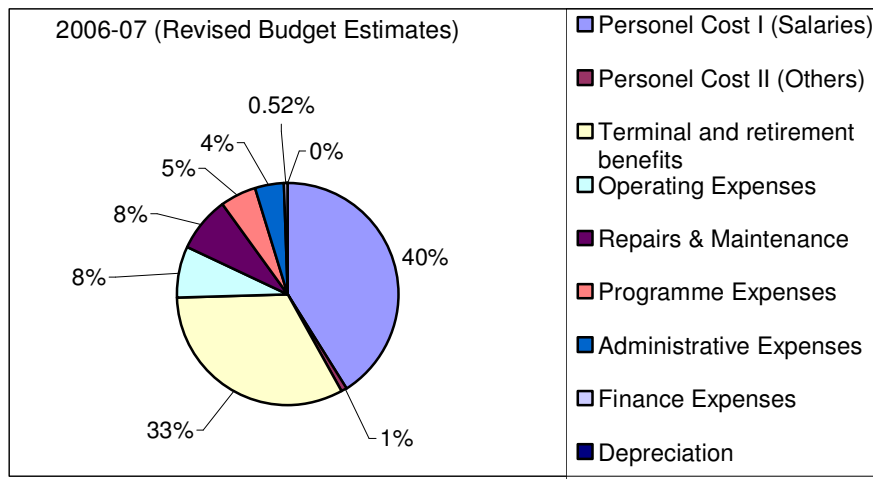
Based on the Second State Finance Commission recommendations, GOTN transfers 8% of its state revenue to the local government. The contribution through devolution funds has been growing at a CAGR of 6% over the last 5 years.

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8.4 Analysis of Expenditure

The Revenue Expenditure of the ULB has been analyzed based on expenditure heads which can be broadly classified under the major heads outlined below:

- Personnel costs
- Operating Expenses
- Repairs & Maintenance Expenses
- Programme Expense
- Administrative Expenses
- Finance Expenses
- Depreciation

Figure 8-3 Expenditure break up of Thuraiyur Municipality for FY 2006-07

Source : Revised Budget Estimates of Thuraiyur Municipality for the FY 2006-07

8.4.1 Personnel Costs

This expense mainly includes the staff salaries, Terminal and retirement benefits and allowances paid to the employees of the ULB. The Personnel Cost accounts for about 46%-56% of the total Expenditure of the ULB in the last 5 years. The salary component has grown by about 9% for the last 5 years. For every Rupee 1 of the income of the municipality close to 60 paise goes to meet the personnel cost of the employees leaving the rest for meeting the other expenses of the municipality

8.4.2 Operating Expenses / Repairs & Maintenance

Expenses relating to operations and Repairs and Maintenance are very critical indicators of the service management and maintenance capabilities and performance of the ULB. In this regard Thuraiyur Municipality utilizes about 5.28%-13.87% of its income towards operations and maintenance expenses for its infrastructure facilities excluding water supply during FY2002-03 to FY2005-06.

8.4.2.1 Operating Expenses:-

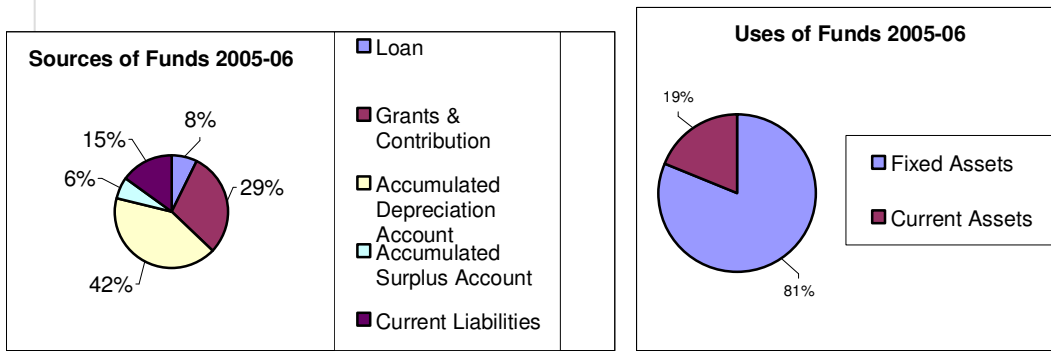
The Operating expense mainly consists of such expenses which are met towards the infrastructure facilities provided by the ULB like Power charges for Street Lights, Maintenance Expenses for Street Lights etc. The CAGR for Operating expenses is at 61% between the FY 2002-03 to FY 2005-06. Power cost towards street light a main component of Operating expenses has shown a fall from Rs.15.09 Lakhs in FY 2003-04 to Rs.8.04 Lakhs in FY 2005-06.

8.4.2.2 Repairs & Maintenance:-

Repairs & Maintenance expense mainly consists of such expenses such as Heavy Vehicle Maintenance, Light Vehicle Maintenance, Sanitary/ Conservancy Expenses etc. On an average, the municipality spends around 3-4% of its income for maintenance and repair works of its key infrastructure facilities.

8.5 Source & Use of Funds

Figure 8-4 : Source and Use of Funds of Thuraiyur Municipality as on FY 2005-06



Source : Thuraiyur Municipality

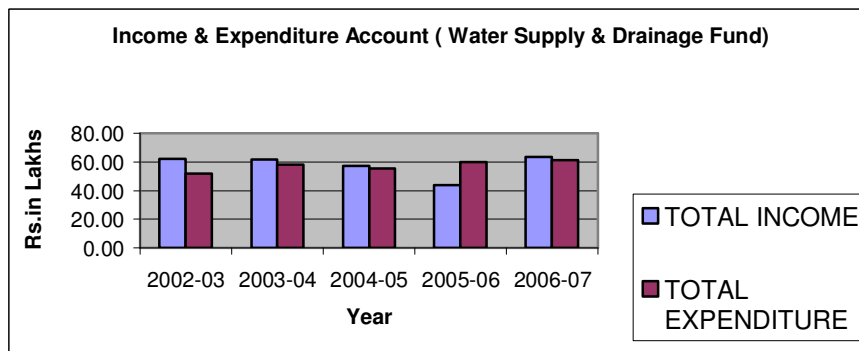
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- Fixed Assets have increased from Rs.548.10 Lakhs in FY 2002-03 to Rs.690.59 Lakhs in FY 2005-06 as per the financial details provided by the municipality growing at a CAGR of 8% over the last 4 years
- The Municipality has invested more than 50% of Total Fixed Assets for Storm Water Drains, Road Works etc.

8.6 Financials (Water Supply & Drainage Fund)

Figure 8-5 : Income & Expenditure Account (Water Supply & Drainage Fund)



Source : Annual Accounts/Budget Estimates of Thuraiyur Municipality

Table 8-E : Income & Expenditure Account (Water Supply & Drainage Fund)

Rs.in lakhs

<i>Particulars</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>	<i>Revised Budget estimates 2006-07</i>
INCOME					
Water Supply and Drainage tax	16.20	16.78	17.20	17.77	17.94
Initial Deposit for New Water supply connections	4.01	0.16	0.20	0.00	0.46
Water Supply Connection Charges	0.89	0.77	0.74	0.85	0.21
Metered/Tap rate water charges	22.31	22.25	22.25	22.26	22.26
Septic tank cleaning charges	0.06	0.13	0.10	0.09	0.10
Project overhead appropriation expenses	0.16	0.39	0.08	0.00	0.00
Devolution fund (SFC)	15.56	18.45	14.16	0.00	17.00
Other Income	2.97	2.67	2.23	2.69	5.65
TOTAL INCOME	62.17	61.60	56.97	43.66	63.62
EXPENDITURE					
Pay & allowances	4.34	4.35	4.49	4.46	4.89
Interest on loans/Ways and Means/OD	16.99	16.56	16.00	15.84	12.32
Water supply expenses to TWAD Board	20.93	22.90	23.93	28.54	27.61
Maintenance expenses for water supply	1.06	0.18	0.99	1.45	1.31
Power charges for pumping station	6.41	4.67	5.33	6.24	6.06
Water Cess to Pollution control board	0.00	2.69	0.13	0.00	0.00
Depreciation	1.53	1.36	1.24	1.08	0.00
Other expenses	0.36	5.40	3.32	2.01	8.80
TOTAL EXPENDITURE	51.62	58.10	55.44	59.62	60.99
NET DEFICIT/SURPLUS	10.55	3.50	1.52	-15.96	2.63

Source : Thuraiyur Municipality

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Table 8-F : Balance Sheet (Water Supply & Drainage Fund)*Rs.in Lakhs*

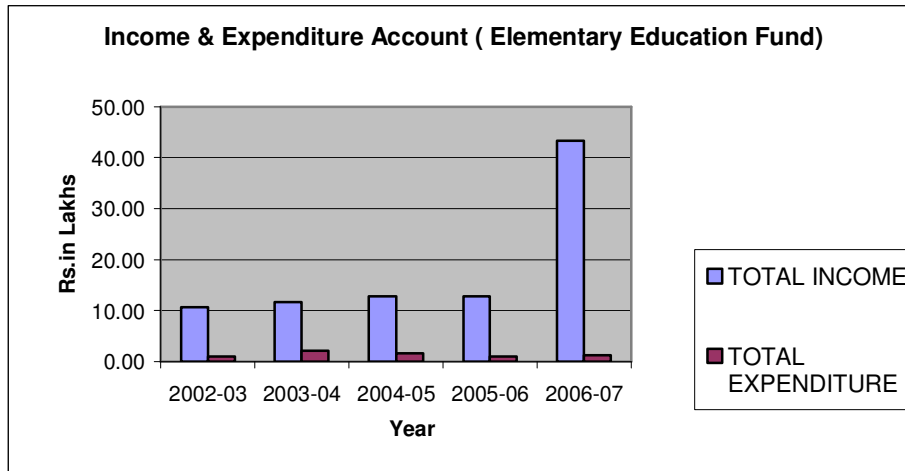
<i>Particulars</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>
LIABILITIES			
Loans	119.07	115.17	110.96
Diversion from other fund	1.25	1.25	1.25
Contribution from Municipal fund	3.57	4.32	4.32
Contribution from Government	5.06	5.06	5.06
Accumulated Depreciation Account	7.52	8.76	9.84
Current Liabilities	55.09	61.24	65.96
TOTAL LIABILITIES	191.56	195.81	197.40
ASSETS			
Fixed Assets	33.40	34.23	34.96
Current Assets	90.26	95.65	80.56
Accumulated deficit	67.90	65.92	81.88
TOTAL ASSETS	191.56	195.81	197.40

*Source : Thuraiyur Municipality***Our Observations**

- The total income of the municipality under this fund has grown marginally by 1 % over the last 5 years while the expenses have grown by 4%. in the last 5 years.
- Water taxes has grown at a rate of 3 % over the last 5 years
- Income fro Metered /tap rate water charges have stagnant at around Rs.22 Lakhs over the last 5 years
- The total expenditure of the municipality has increased from Rs.51.62 Lakhs in FY 2002-03 to Rs.60.99Lakhs in FY 2006-07(Revised Budget Estimates)
- The Municipality has shown continuous surplus for the last 5 years except for the FY 2005-06

8.7 Financials (Elementary Education Fund)

Figure 8-6 : Income & Expenditure Account (Elementary Education Fund)



Source : Annual Accounts/Budget Estimates of Thuraiyur Municipality

Table 8-G :Income & Expenditure Account (Elementary Education Fund)

Rs.in lakhs

Particulars	2003-04	2004-05	2005-06	Revised budget estimates 2006-07
INCOME				
Education Tax	10.49	10.75	11.11	11.21
Bank interest	0.86	1.23	1.73	32.11
Others	0.29	0.83	0.00	0.00
TOTAL INCOME	11.64	12.81	12.84	43.32
EXPENDITURE				
Provision for doubtful collection	0.66	0.09	0.09	0.00
Written off	0.12	0.75	0.04	0.00
Depreciation	0.84	0.75	0.84	0.00
Others	0.51	0.00	0.05	1.23
TOTAL EXPENSES	2.14	1.59	1.02	1.23
NET DEFICIT/SURPLUS	9.50	11.22	11.82	42.09

Source : Thuraiyur Municipality

Table 8-H : Balance Sheet (Elementary Education Fund)*Rs.in lakhs*

<i>Particulars</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>
LIABILITIES				
Accumulated Depreciation	2.18	3.02	3.77	4.61
Accumulated Surplus	84.94	90.83	102.54	114.37
Capital reserve	0.00	0.00	0.00	0.00
Current liabilities	0.45	1.71	0.87	0.95
TOTAL LIABILITIES	87.57	95.57	107.18	119.93
ASSETS				
Fixed Assets	16.99	18.01	18.07	20.48
Current Assets	70.58	77.56	89.11	99.45
TOTAL ASSETS	87.57	95.57	107.18	119.93

*Source : Thuraiyur Municipality***Our Observations**

- The Municipality has shown a continuous surplus over the last 5 years.

8.8 Financials Consolidated

Table 8-I : Consolidated Financials of the three funds

Rs.in
Lakhs

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07	Budget 2007-08
INCOME						
Property Taxes	24.31	25.18	25.80	26.66	27.18	28.34
Water Taxes	16.20	16.78	17.20	17.77	18.12	18.83
Education Tax	10.12	10.49	10.75	11.11	11.33	12.33
Other Tax	8.01	8.97	10.97	12.12	11.54	13.29
Assigned Revenue	41.91	32.92	19.46	19.65	23.10	17.76
Devolution fund	51.89	75.90	62.15	93.43	89.20	68.57
Service Charges and Fees	50.58	49.65	52.00	37.67	29.00	39.36
<i>Fees for Bus stand</i>	19.30	20.84	23.36	11.07	0.03	7.58
<i>Building License Fees</i>	3.12	2.25	1.68	1.60	2.26	3.75
<i>Initial Deposit for New Water supply connections</i>	4.01	0.16	0.20	0.00	0.66	0.51
<i>Water Supply Connection Charges</i>	0.89	0.77	0.74	0.85	0.84	0.30
<i>Metered/Tap rate water charges</i>	22.31	22.25	22.25	22.26	22.24	23.37
<i>Septic tank cleaning charges</i>	0.06	0.13	0.10	0.09	0.10	0.12
<i>Charges for water supply through lorries</i>	0.00	0.00	0.00	0.00	0.00	0.00
<i>Other Fees</i>	0.88	3.27	3.66	1.80	2.87	3.73
Grants and Contribution	0.00	0.00	6.83	4.05	0.00	11.90
Sale & Hire Charges	0.00	0.00	0.00	0.22	7.05	0.36
Other Income	44.48	20.42	26.29	36.72	11.32	99.81
<i>Daily Market Fees</i>	1.46	1.53	1.70	3.31	0.00	4.00
<i>Rent on Shopping Complex</i>	5.87	3.93	4.44	18.89	4.20	5.11
<i>Road cut restoration charges</i>	8.70	0.00	0.58	0.00	0.00	1.23
<i>Project Overhead Appropriation Expenses</i>	5.34	4.46	7.37	3.79	0.00	0.00
<i>Bank interest E fund</i>	0.49	0.86	1.23	1.73	2.22	54.00
<i>Others</i>	22.63	9.64	10.97	8.99	4.90	35.47
TOTAL INCOME	247.51	240.31	231.47	259.40	227.84	310.55

EXPENDITURE						
Personnel Cost I (Salaries)	80.77	81.47	85.31	90.32	116.68	124.88
Personnel Cost II (Others)	1.42	1.57	1.04	2.26	0.00	2.80
Terminal and retirement benefits	22.02	20.21	14.04	28.00	15.92	94.00
Operating Expenses	3.36	18.32	12.50	14.12	20.09	24.06
<i>Maintenance Expense for Street Lights</i>	<i>1.69</i>	<i>1.48</i>	<i>1.66</i>	<i>3.07</i>	<i>0.55</i>	<i>5.30</i>
<i>Power Charges for Street Lights</i>	<i>0.14</i>	<i>15.09</i>	<i>8.66</i>	<i>8.04</i>	<i>9.42</i>	<i>10.37</i>
<i>Sanitary and conservancy expenses</i>	<i>0.87</i>	<i>0.60</i>	<i>1.47</i>	<i>2.07</i>	<i>1.21</i>	<i>0.65</i>
<i>Expenses on sanitary materials</i>	<i>0.53</i>	<i>0.91</i>	<i>0.66</i>	<i>0.89</i>	<i>1.92</i>	<i>2.50</i>
<i>Others</i>	<i>0.13</i>	<i>0.24</i>	<i>0.06</i>	<i>0.04</i>	<i>6.99</i>	<i>5.24</i>
Repairs & Maintenance	33.74	35.28	36.57	44.29	51.54	66.55
<i>Heavy Vehicles</i>	<i>3.83</i>	<i>4.14</i>	<i>4.99</i>	<i>5.26</i>	<i>15.30</i>	<i>6.62</i>
<i>Light Vehicles maintenance</i>	<i>0.22</i>	<i>0.00</i>	<i>0.09</i>	<i>0.04</i>	<i>0.93</i>	<i>1.01</i>
<i>Power Charges for Head Water Works</i>	<i>6.41</i>	<i>4.67</i>	<i>5.33</i>	<i>6.24</i>	<i>6.09</i>	<i>6.67</i>
<i>Maintenance expense for Water Supply Works</i>	<i>1.06</i>	<i>0.18</i>	<i>0.99</i>	<i>1.45</i>	<i>1.57</i>	<i>1.44</i>
<i>Water supply expenses to TWAD Board</i>	<i>20.93</i>	<i>22.90</i>	<i>23.93</i>	<i>28.54</i>	<i>27.41</i>	<i>33.16</i>
<i>Others- Water fund</i>	<i>0.00</i>	<i>2.69</i>	<i>0.13</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
<i>Others -Revenue Fund</i>	<i>1.28</i>	<i>0.72</i>	<i>1.11</i>	<i>2.76</i>	<i>0.24</i>	<i>17.65</i>
Programme Expenses	15.11	14.88	14.40	1.77	3.24	13.34
Administrative Expenses	5.35	5.84	8.75	8.57	9.57	13.69
Finance Expenses	21.32	40.23	28.07	20.73	15.34	13.90
<i>Contribution to scheme works</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>9.23</i>	<i>0.00</i>	<i>0.00</i>
<i>Other expenses</i>	<i>0.55</i>	<i>5.91</i>	<i>3.32</i>	<i>2.06</i>	<i>1.10</i>	<i>10.35</i>
Total expenditure of E fund	0.00	0.00	0.00	0.00	0.00	54.12
Depreciation	59.47	49.90	58.05	50.65	44.95	0.00
TOTAL EXPENDITURE	243.12	273.61	262.06	272.00	278.43	417.69
NET DEFICIT/SURPLUS	4.40	-33.30	-30.59	-12.59	-50.59	-107.14

Source: Thuraiyur Municipality

The consolidated financials of Thuraiyur municipality shows that the municipality has been facing net deficit in the last 5 years.

8.9 Demand, Collection and Balance

Table 8-J: DCB for the Past 5 years

S.No	Particulars	2002-03	2003-04	2004-05	2005-06	2006-07
		Actuals (Rs.)				
I PROPERTY TAX- DEMAND, COLLECTION AND BALANCE						
	Total Assessments	8690	9200	9425	9658	9772
A.	Demand					
	Arrears	1784676	1857367	1862700	953096	808888
	Current	5464205	5664606	5805112	5998996	6057767
	Total	7248881	7521973	7667812	6952092	6866655
B.	Collection					
	Arrears	315331	277297	675518	295532	241400
	Current	5076183	5314893	5635384	5848144	5922436
	Total	5391514	5592190	6310902	6143676	6163836
C.	Balance					
	Arrears	1469345	1512987	783368	637344	567488
	Current	388022	349713	169728	150852	135331
	Total	1857367	1862700	953096	788196	702819
II PROFESSION TAX- DEMAND, COLLECTION AND BALANCE						
	Total Assessments	780	780	780	780	780
A.	Demand					
	Arrears	1366820	1336098	1390128	1406835	1390985
	Current	789995	887415	1097079	1211708	1156418
	Total	2156815	2223513	2487207	2618543	2547403
B.	Collection					
	Arrears	60152	14718	66731	90851	54081
	Current	760565	818667	1013641	1158743	1093665
	Total	820717	833385	1080372	1249594	1147746
C.	Balance					
	Arrears	1306668	1321380	1323397	1315984	1336904
	Current	29430	68748	83438	52965	62753
	Total	1336098	1390128	1406835	1368949	1399657
III WATER CHARGES- DEMAND, COLLECTION AND BALANCE						
	Total Assessments	2000	2000	2000	2000	2011
A.	Demand					
	Arrears	94468	83322	120210	108025	75818
	Current	2231155	2225160	2225160	2226120	2226120

B.	Collection					
	Arrears	70313	31707	70965	43772	21480
	Current	2171988	2156565	2166380	2206015	2190240
	Total	2242301	2188272	2237345	2249787	2211720
C.	Balance					
	Arrears	24155	51615	49245	64253	54338
	Current	59167	68595	58780	20105	35880
	Total	83322	120210	108025	84358	90218
IV NON TAX- DEMAND, COLLECTION AND BALANCE						
A.	Demand					
	Arrears	216706	288279	89793	161371	137749
	Current	2709428	3128928	3035154	3365104	3177830
	Total	2926134	3417207	3124947	3526475	3315579
B.	Collection					
	Arrears	197427	275900	76557	157771	123336
	Current	2440428	3051514	2878240	3230390	2930399
	Total	2637855	3327414	2954797	3388161	3053735
C.	Balance					
	Arrears	19279	12379	4457	3600	14413
	Current	269000	77414	156914	134714	247431

Source : Thuraiyur Municipality

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8.10 Outstanding Loan and Non-Debt Liability

The Outstanding Loan balance and Non-Debt Liability of key components of Thuraiyur Municipality is represented in the table below:

Table 8-K : Outstanding Loan and Non-Debt Liability

1.OUTSTANDING PRINCIPAL ON LOANS (2007-08) Rs. In lakhs		
1	Loan from Government	106.28
2	Loan from TUFIDCO – Special Road Project	34.06
3	Loan from TUFIDCO - Others	5.24
4	Loan from TNUDF	42.89
<i>Source: Thuraiyur Municipality, TUFIDCO, TNUIFSL</i>		
2 NON-DEBT LIABILITY (2005-06) Rs. In lakhs		
1	Library cess	9.37
2	Provident Fund	0.71
3	Terminal Benefits	0.38
4	Group Insurance Schemes	8.09
5	Dues- TWAD Board	1.08

Source: Thuraiyur Municipality

Note: Terminal Benefits includes Special PF cum Gratuity Scheme Recoveries + FBF/Group

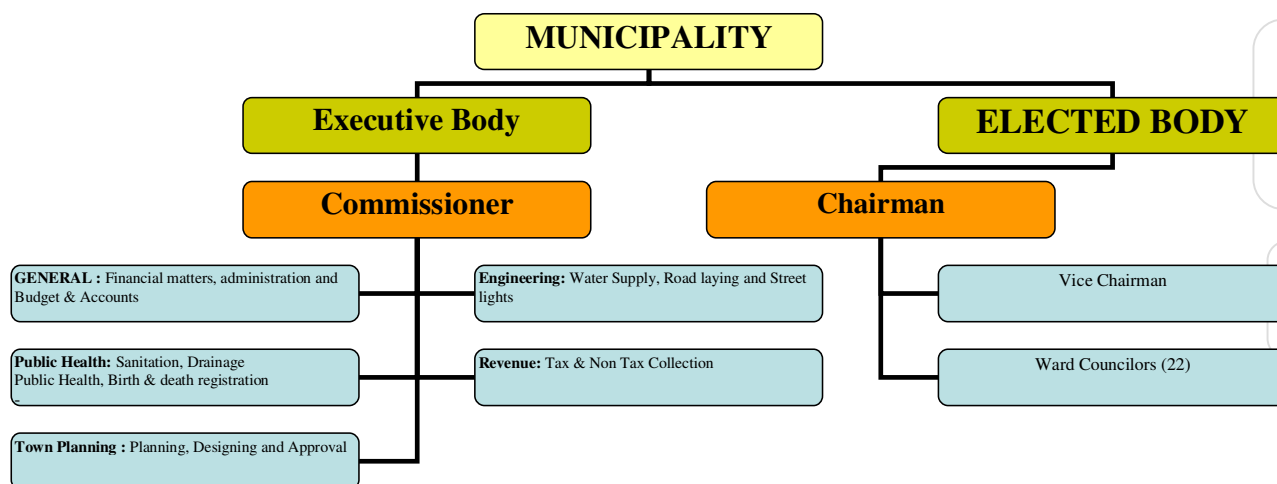
Insurance Scheme Recoveries

9 INSTITUTIONAL STATUS

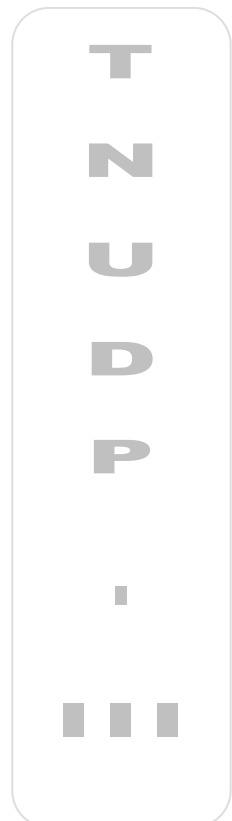
9.1 Institutional Structure

The organizational chart of Thuraiyur Municipality and details of the staff strength for the various activities against the sanctioned list are given in Figure 9-1 and Table 9-A respectively.

Figure 9-1 Organization chart of Thuraiyur Municipality



Source: Thuraiyur Municipality



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Table 9-A : The Staff strength of the Thuraiyur Municipality

<i>Executive Staff</i>	<i>Sanctioned</i>	<i>Appointed</i>	<i>Post Vacant</i>
Administrative/General			
Manager	1	1	0
Accountant	1	1	0
Asst.Programmer	1	1	0
Assistant	1	1	0
Jr.Asst.	7	4	3
Typist	1	0	1
Record Clerk	2	2	0
Office Asst.	2	2	0
Office Night Watchman	1	1	0
Engineering			
Municipal Engineer	1	1	0
Junior Engineer	1	0	1
OHT watchman	1	1	0
Pipe line fitter	1	1	0
Electrician grade II	2	0	2
Fountain Cleaner	1	1	0
Jeep Driver	1	1	0
Electrician Helper	2	2	0
Wiremen	2	0	2
Town Planning			
Town Planning Inspector	1	1	0
Revenue			
<i>Revenue Inspector</i>	1	1	0
<i>Revenue Assistant</i>	5	5	0
Public Health			
Sanitary Inspector	1	1	0
Field Assistant	1	1	0
Driver	5	5	0
Sanitary supervisor	4	4	0
Oil mazdoor + Sanitary Workers	89	73	16
Maternity Assistant	1	0	1

Maternity Ayah	1	1	0
Medical Officer	1	1	0
Pharmacist	1	1	0
Male nursing orderly	1	0	1
Female Nursing orderly	1	0	1
Sweeper	1	1	0
Watchman	1	0	1

Source : Thuraiyur Municipality

- *As seen from the above table vacancies exist for the sanitary workers which need to be filled up for maintaining the public health.*
- *Staff Salary pay slip for one representative month for all the sections have been enclosed in the Annexure*

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10 DEMAND ASSESSMENT

Physical Infrastructure gaps have been identified based on Demand Supply Gap analysis for the current and for future population for the intervals 2008-09, 2012-13, 2017-18 and for 2022-23 whereas Social Infrastructure demand assessment is done based on the opinion and suggestions given by OWG members as well as on the basis of Rapid Urban Assessment. Demand Assessment is done separately for both Physical and Socio-economic Infrastructure and the same is presented in Table 10-A and Table 10-B respectively.

Table 10-A Demand Supply Gap Analysis for Physical Infrastructure

Population	2008-09	2012-13	2017-18	2022-23
Thuraiyur	33050	34586	36579	38657
Water Supply MLD	2008-09	2012-13	2017-18	2022-23
Thuraiyur water demand @ 135 lpcd	4.5	4.7	4.9	5.2
Existing Supply	2.8	2.8	2.8	2.8
Gap	1.7	1.9	2.1	2.4
Water Treatment Plant capacity in MLD	2008-09	2012-13	2017-18	2022-23
Demand for treatment plant capacity	4.5	4.7	4.9	5.2
Existing treated water supply	2.8	2.8	2.8	2.8
Gap	1.7	1.9	2.1	2.4
Water Distribution Network in Kms	2008-09	2012-13	2017-18	2022-23
Existing distribution length in Kms	41.0	41.0	41.0	41.0
Road length in Kms (existing and proposed)	43.1	45.7	49.7	53.7
Gap	2.1	4.7	8.7	12.7
Water Service connections	2008-09	2012-13	2017-18	2022-23
No of Assessments	9898	10358	10955	11577
No of service connections	4421	5697	7668	9840
connections existing & proposed in %	44.7	55.0	70	85
Note :2400 new connections are to be given during this 2008-2009 financial year				
Gap	79.6	50.0	35.0	15.0
Storage capacity	2008-09	2012-13	2017-18	2022-23
Existing Storage Capacity in MLD	1.9	1.9	1.9	1.9
Storage capacity demand in MLD	1.5	1.5	1.6	1.7
Gap in MLD	-0.4	-0.4	-0.3	-0.2

Sewage generation	2008-09	2012-13	2017-18	2022-23
Thuraiyur sewage generation	3.6	3.7	4.0	4.2
STP capacity in MLD	2008-09	2012-13	2017-18	2022-23
Capacity of Proposed STP	4.0	4.0	4.0	4.0
Gap	-0.4	-0.3	-0.1	0.2
Sewer connections	2008-09	2012-13	2017-18	2022-23
Proposed connections under UGSS	0.0	0.0	7668.3	8103.9
Demand for sewer connections	6929	7250	7668	8104
Gap	6929	7250	0	0
Sewer Network	2008-09	2012-13	2017-18	2022-23
Sewer Network in Kms (Proposed)	37.6	37.6	37.6	37.6
Sewer Network Demand	36.7	38.8	42.3	45.7
Gap	-0.9	1.2	4.7	8.1
Assuming 85% of the roads would be having sewer network				
Road network	2008-09	2012-13	2017-18	2022-23
Existing road network in Kms	43.1	43.1	43.1	43.1
Per Capita road length assumed		1.32	1.36	1.39
Road length demand @ 1to 1.5 meter per person		45.7	49.7	53.7
Gap		2.5	6.6	10.6
Storm water drainage	2008-09	2012-13	2017-18	2022-23
Thuraiyur existing SWD	24.5	24.5	24.5	24.5
Storm water drain demand	56.1	59.3	64.7	69.9
Gap		34.87	40.19	45.37
Solid waste generation	2008-09	2012-13	2017-18	2022-23
Per capita waste in grams per day	454	472	496	522
Thuraiyur waste generation	15.0	16.3	18.2	20.2
Growth rate assumed	1.00%			
Street Lighting	2008-09	2012-13	2017-18	2022-23
Thuraiyur existing lights	1239	1239	1239	1239
Road length in Kms	43.1	45.7	49.7	53.7
Street light demand @ one light per 30 m		1522	1658	1791
Gap		283	419	552

Table 10-B : Demand Assessment for Socio-Economic Infrastructure

Particulars	Project requirements	Projects proposed by the Municipality
New School creation	Not required	• Nil
Existing school infrastructure up gradation	Not required	• Nil
Creating new health infrastructure	Not required	• Nil
Primary health centre improvements	Required	• Proposed in Vision plan
Parks and Playfields development	Required	• Proposal has already been sent to CMA
Vegetable Market Improvement	Not required	• Nil
Community Hall up gradation / Creation	Up gradation required	• Nil
Slaughter house up gradation	Required	• Slaughter house is currently under renovation under Part II scheme
Municipal building renovation	Required	• Municipal building renovation at a cost of Rs. 30 lakhs
Burial ground / Gasifier	Required	<ul style="list-style-type: none"> • Venkadathannur burial ground is being improved under Part-II Scheme. • Land is a constraint for Gasifier
Upgrading Commercial complexes	Required	• Nil
Creating new complexes	Not required	• Nil

11 CONSULTATION WITH OWG

11.1 Operational Working Group

The success of the City Corporate cum Business Plan depends on the extent of participation by the various agencies involved in urban governance and service delivery. As it is very rightly said “Business Plan is an exercise ‘For’ the people, ‘Of’ the people and ‘By’ the people.” perception and views of the representatives from the municipality and various Para-Statal agencies are of paramount importance.

To bring all the agencies involved in urban governance and service delivery under one platform for the consultation process, Operational Working Group (OWG) was formed. The first formal Operational Working Group (OWG) meeting was held in Thuraiyur Municipality Office on 27.02.2008. The OWG members had a wide representation from

1. Administrative members of the Municipality
2. Elected members of the Municipality
3. Representatives from Slums /SC /ST
4. Senior Citizens
5. Self Help Groups
6. Women Groups
7. NGO members
8. Officials from Para-Statal agencies

During the first formal OWG meeting, the Consultants made a presentation on the Rapid Urban Assessment as well as the demand assessment including the current status of the Thuraiyur town in terms of Infrastructure, Financial and Institutional aspects.

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Projects already identified by the Municipality and additional projects proposed by the Consultants based on the Demand Supply Gap analysis taking into consideration current and future needs and requirements were also presented and discussed during the meeting. During the presentation and subsequent interaction with OWG members, many ideas and suggestions were made and the same has been encapsulated below and the same has been considered and incorporated in this Draft Final Report.

Table 11-A Suggestions and projects identified during OWG meeting

Physical Infrastructure	Sector Components	Key Suggestions / Projects identified
Water Supply	Water Sources	<ul style="list-style-type: none"> Cleaning, desilting existing well in Periya Eri along with constructing new conveyor bridge.
	ESR / GSR	<ul style="list-style-type: none"> Not required.
	Distribution Network	<ul style="list-style-type: none"> Replacing 22 Km 90 mm dia old pipes with 4 inch PVC pipes.
	HSCs / Stand posts	<ul style="list-style-type: none"> Nearly 2400 water connections are proposed to be given in 2008-2009
Sewerage and Sanitation	Underground Drainage	<ul style="list-style-type: none"> Implementing UGD for Thuraiyur before 2017-18.
	Public Toilets	<ul style="list-style-type: none"> Public Toilet provision 5 Nos.
Storm Water Drainage	Renovating existing drains	<ul style="list-style-type: none"> Converting open drain into closed drain for 10 Km (Slab provision).
	New Drain Provision	<ul style="list-style-type: none"> Creating closed drains as proposed in UIDSSMT scheme and as per Demand Supply Gap analysis.
Roads	Kutcha road upgradation	<ul style="list-style-type: none"> Conversion of Kutcha road network into Pucca road network.
	Pucca road improvement	<ul style="list-style-type: none"> Relaying 18.116 BT roads after UGD implementation once in 3 years.

• Laying roads proposed in UIDSSMT

		scheme
	Bye pass / Highway projects	<ul style="list-style-type: none"> • Bye pass project to divert Trichy and Perambalur Traffic
Traffic and Transportation	Traffic Management / Junction Improvement	<ul style="list-style-type: none"> • Provision of Round About in Pallakarai junction • Junction Improvement in Perambalur road T junction, High school street
	Bus stand / railway station Imp	<ul style="list-style-type: none"> • Bus stand Improvement proposed in Vision Plan (Providing CC Platform in Bus Stand(Now it is BT Roads)) has to be implemented
Solid Waste Management	Door to Door collection and Segregation	<ul style="list-style-type: none"> • Procuring Separate bins for Waste Segregation at source for each household (with private sponsorship) – OWG members agreed to adopt it.
	Man power Requirements	<ul style="list-style-type: none"> • Protective gear for Conservancy worker
	Vehicle requirements	<ul style="list-style-type: none"> • Procuring Multi-purpose tractor
	Public Awareness	<ul style="list-style-type: none"> • Public Awareness is required for Waste segregation at source
Street Lighting	Energy Saving Initiatives	<ul style="list-style-type: none"> • Electronic chokes can be installed instead of ordinary chokes which can save energy costs 20-30%. • Timers and automatic switches can be installed. • Capacitors can be installed in OHT motors(approx 30 motors)

<i>Social Infrastructure</i>	<i>Sector Components</i>	<i>Key Suggestions / Projects proposed</i>
Hospitals / Primary Health centers	New Hospital Requirements	<ul style="list-style-type: none"> • Not required
	Improvements in existing health centers	<ul style="list-style-type: none"> • Infrastructure improvement in Primary Health centre proposed in Vision Plan has to be implemented
Parks and Playgrounds	Proposed parks and Playgrounds	<ul style="list-style-type: none"> • Proposal for developing approved layouts has been prepared and sent to CMA for approval.
	Approved layout for parks and playgrounds	<ul style="list-style-type: none"> • Proposal has been prepared and sent to CMA for approval
Daily and Weekly Market	Infrastructure Improvement	<ul style="list-style-type: none"> • Not suggested
Community hall	Creating Community hall	<ul style="list-style-type: none"> • Not required
	Upgrading existing halls	<ul style="list-style-type: none"> • Developing additional spaces like Kitchen and Toilet in the existing Community hall
Slaughter House	Slaughter house improvement scheme	<ul style="list-style-type: none"> • Slaughter house is currently under renovation @ 12 lakhs under Part II scheme.
Maternity Center	New center Requirements	<ul style="list-style-type: none"> • Not required
	Improvements in existing Maternity centers	<ul style="list-style-type: none"> • Maternity center is in good condition and don't need any renovation.
Municipal building	Creating new blocks / Improving existing blocks	<ul style="list-style-type: none"> • Office Building is proposed to be renovated at a cost of Rs.30 lacs .

Burial grounds / Gassifier	Burial ground Improvement	<ul style="list-style-type: none"> • Currently Improvement work at Venkadathannur for Rs.5.05 lakhs under Part-II Scheme
	Gassifier provision	<ul style="list-style-type: none"> • Land is a Constraint
Commercial complexes / Shops	Creating new complexes	<ul style="list-style-type: none"> • Not suggested
	Upgrading existing shops	<ul style="list-style-type: none"> • Additional I floor office space construction in the complex opposite to Municipal Office • Renovating existing Shops and constructing I floor office complex in Bus stand

<i>Sector</i>	<i>Sector Components</i>	<i>Key Suggestions / Projects proposed</i>
Slums and Urban Poverty / Environmental Issues	Toilet provision in slum areas	<ul style="list-style-type: none"> • Public Toilet provision in Maruthi, Muthu and Mettu Street
	Other Infrastructure provisions	<ul style="list-style-type: none"> • Implementing IHSDP proposal
	Developing & maintaining Water bodies	<ul style="list-style-type: none"> • Desilting Periya Eri and Chinna Eri

11.2 Sector Priority based on OWG opinion survey

Projects identified both by the Municipality and by the consultants cannot be taken at one step for implementation due to constraints like finance, institutional capabilities etc. Thus, phasing of the projects based on stake holder's priority could be a viable option for implementing projects. During OWG meeting, Stakeholders have been

asked to prioritize the sectors pertaining to Physical infrastructure, Social Infrastructure and Environment and is presented in a scale of 0-100¹ scores.

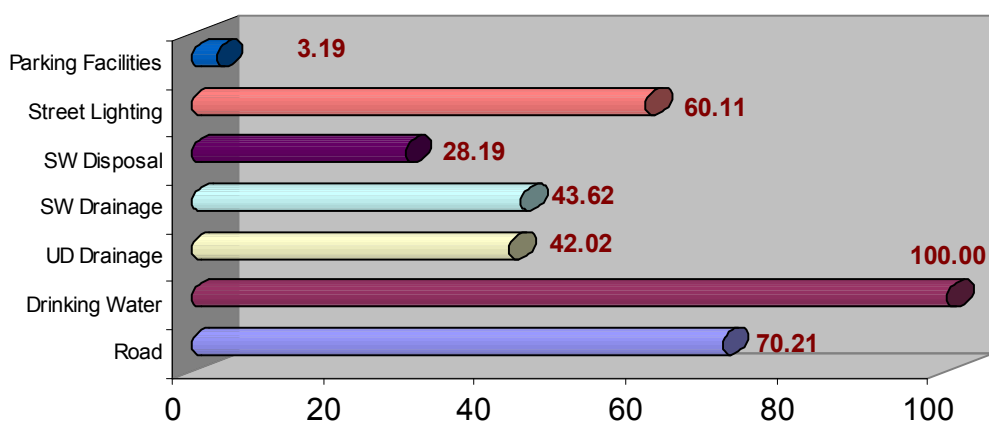
11.2.1 Physical infrastructure priority

Based on the opinion survey conducted during OWG meeting, Stakeholders have given priority to the sectors related to Physical infrastructure on the following order:

1. Drinking Water Supply
2. Road Network
3. Street lighting
4. Storm Water Drainage
5. Under Ground Drainage
6. Solid Waste Disposal
7. Parking facilities

However, road works can be ideally taken up after implementing UGD system proposed.

Figure 11-1 :Sector prioritization by the Stakeholders (Physical Infrastructure)



Source : Survey findings

¹ Sector is highly prioritized by the Stakeholders if it gets 100 score and least prioritized if it gets 0 score.

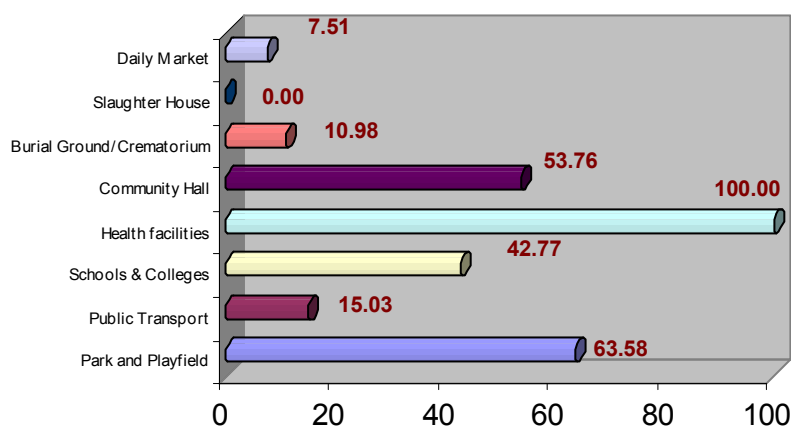
11.2.2 Social infrastructure priority

Based on opinion survey conducted during OWG meeting, Stakeholders have given priority to the sectors related to Social infrastructure on the following order:

1. Health facilities
2. Parks, Playfields
3. Community Hall
4. Schools and Colleges
5. Public Transport
6. Burial ground / Gasifier crematorium
7. Daily Market
8. Slaughter House

Since the town lacks basic infrastructure facilities like adequate treated water, sewerage and sanitation, citizens of Thuraiyur are susceptible to various health hazards. Hence, they have insisted Health facilities as one of their high priority sector.

Figure 11-2 Sector prioritization by the Stakeholders (Social Infrastructure)



Source : Survey findings

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11.2.3 Environmental Issues

Based on opinion survey conducted during OWG meeting, Stakeholders have given priority to the Environmental Issues on the following order:

1. Water Pollution
2. Land Pollution
3. Air pollution
4. River/Lake
5. Open space inadequacy in the form of parks / Playgrounds
6. Noise Pollution
7. Flood
8. Drought

Figure 11-3 Sector prioritization by the Stakeholders (Environmental Issues)

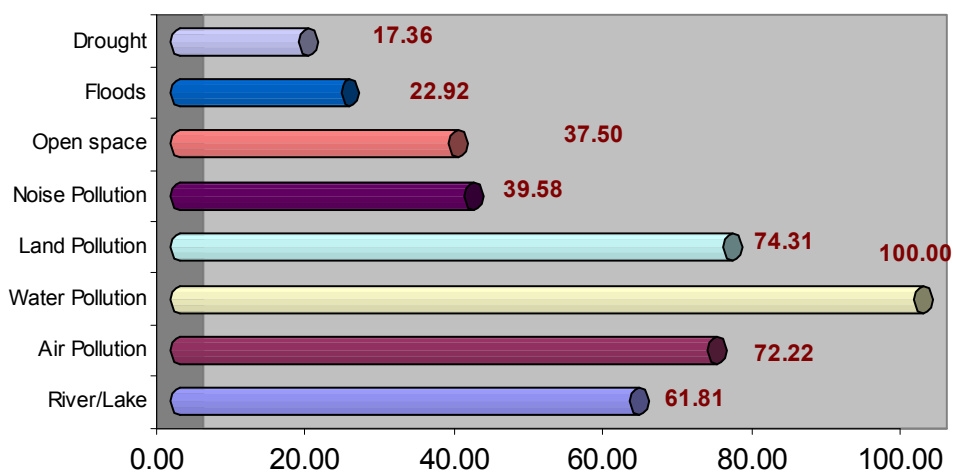


Figure 11-4 Consultation with OWG members in Thuraiyur



12 SWOT

Based on Stake holder's perception and view points expressed in the OWG meetings and on the basis of assessment done by the consultants, an attempt has been made to evaluate Strength, Weakness, Opportunities and threats of the city which is shown below:

Strength

- ✓ Thuraiyur Town is well known for handloom, Jewellery and agro based industries.
- ✓ Located in close proximity to Trichy
- ✓ Adequate land is available for Urbanisation (additional area of 534 Ha proposed for Development in Master Plan 2011)

Opportunities

- ✓ Proposed Infrastructure Projects such as UGD, Road works proposed under UIDSSMT, Bus stand Improvement proposed under vision plan, IHSDP will enhance the development prospects of the town
- ✓ Proposed additional 2400 water connections in 2008-2009 could enhance the Revenue generation of the town.
- ✓ Could emerge as a Town for Jewellery making and for agro based industries.

Weakness

- ✓ Absence of National highways and railway line / Station
- ✓ Dependent on distant Cauvery source (35 Kms) and TWAD Board for water supply
- ✓ Household Service Connection coverage is just 20% of the total assessments
- ✓ WFPR is low in comparison with other towns in Cluster IV.
- ✓ 25% of the roads are kutcha.
- ✓ Slum population is around 36%.
- ✓ High dependence on external funds.

Threats

- ✓ Water bodies like Periya Eri and Chinna Eri are not properly managed for water recharging.
- ✓ Inadequate income deters Municipality from taking Capital Intensive projects

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13 CONSOLIDATED ISSUES

The issues identified during Rapid Urban Assessment as well as the issues indicated by the OWG members were consolidated sector wise and are presented below:

Table 13-A: Consolidated Issues

Sector	Issues
Water Supply	<ul style="list-style-type: none"> • Service coverage is very low (20.6) • Power cut constraints in supplying water regularly • 22 Km distribution network was laid in 1980 needs replacement • Existing well in Periya Eri is unused for non domestic purpose (it has to be desilted, cleaned for usage)
Sewerage	<ul style="list-style-type: none"> • No comprehensive sewerage system as on today • Absence of adequate Public conveniences mainly for gents • Public Conveniences proposed in UIDSSMT is yet to be implemented
Storm water drainage	<ul style="list-style-type: none"> • Nearly 45% of the roads have no SWDs • Proposals sent under UIDSSMT are yet to be implemented due to fund constraints and due to UGD proposal. • Existing drains are open drains causing health hazards
Traffic and Transportation	<ul style="list-style-type: none"> • More than 20% of the roads are Kutchra • Traffic conflicts at intersections • Infrastructure inadequacy in existing Bus stand
Solid Waste management	<ul style="list-style-type: none"> • Waste segregation at source is not adopted • Only 50 % of the wards are covered by D – D collection
Street Lighting	<ul style="list-style-type: none"> • Spacing between lights is more than 30 Meters • Absence of Energy saving Mechanism
Slums and Urban Poverty	<ul style="list-style-type: none"> • 9 slum pockets accommodating 36 % of the total population • 33 % of the total population are living below poverty line • IHSDP proposal is yet to be implemented due to delay in approval and fund constraints

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<p>Social infrastructure</p>	<ul style="list-style-type: none"> • Only one park in Thuraiyur • Primary Health centre has Infrastructure inadequacy (improvements proposed are yet to be implemented) • Community hall developed has no Kitchen and Toilet • Space constraints in Municipal building • Desiltation of Periya Eri and Chinna Eri haven't been done hence reduces the capacity.
<p>Urban Finance</p>	<ul style="list-style-type: none"> • High dependence on External funds • Fluctuating and Declining income in absolute terms • Increasing deficit for the last 5 years
<p>Capacity Assessment</p>	<ul style="list-style-type: none"> • No privatisation for any of its services.

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14 SECTORAL STRATEGY AND ACTION PLAN

In order to address the issues identified during rapid urban assessment stage and during OWG meetings, the sectoral strategies and action plans have been proposed which are converted into projects and are phased out based on the priority suggested by the OWG members, which is explained in the subsequent chapters.

14.1 Sectoral Strategy

Action plans for improving the existing situation of various sectoral components as well as for creating new infrastructure facilities have been formulated in consultation with the Operational Working Group members and are listed below:

Table 14-A Action Plan for future development of the town

sector	Strategic Plan / Action plan
Water Supply	<ul style="list-style-type: none"> • Obtaining additional water quantity of 2.4 MLD from TWAD (Cauvery Combined Water Supply Scheme)
	<ul style="list-style-type: none"> • Improving the service coverage by 85% by 2022 (currently it is 20%)
	<ul style="list-style-type: none"> • Laying Distribution network for additional 12 Km road length by 2022 (4 Km by 2012-13, 4 Km by 2017-18, 4 Km by 2022-23).
	<ul style="list-style-type: none"> • Replacing worn out distribution network (22 Km pipe of 90 mm dia laid in 1980 can be replaced by PVC pipe of 4 inch dia) – 7 Km by 2012-13, 7 Km by 2017-18 and 8 Km by 2022-23.
	<ul style="list-style-type: none"> • Cleaning, desilting existing well in Periya Eri along with constructing new conveyor bridge
	<ul style="list-style-type: none"> • Preparing Asset management plan for water supply related assets
Sewerage and	<ul style="list-style-type: none"> • Implementing Underground Sewerage System before 2017-18

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<i>sector</i>	<i>Strategic Plan / Action plan</i>
Sanitation	<ul style="list-style-type: none"> • Implementing proposed toilet in Govindapuram and in Periyar Nagar near Government Hospital. (proposed in UGD DPR)
	<ul style="list-style-type: none"> • Laying additional 8.1Km sewer network by 2022-23.
	<ul style="list-style-type: none"> • Utilisation of treated water for agri and allied activities in and around the town
	<ul style="list-style-type: none"> • Public Toilet provision (7Nos) in Thuraiyur Municipal area other than those proposed in DPR for UGD.
Storm water drainage	<ul style="list-style-type: none"> • Creating closed drains for 45.4 Km length by 2022 -23.
	<ul style="list-style-type: none"> • Converting open drain into closed drain for existing 10 Km length.
	<ul style="list-style-type: none"> • Preventing solid waste disposal into drains by public awareness
Solid Waste Management	<ul style="list-style-type: none"> • Providing Separate bins for Waste Segregation at source to all households with Private participation
	<ul style="list-style-type: none"> • Adopting D – D collection and waste segregation in all wards(currently 50% wards are not covered)
	<ul style="list-style-type: none"> • Public Awareness programmes for waste segregation
	<ul style="list-style-type: none"> • Protective gear for all Conservancy workers
	<ul style="list-style-type: none"> • Procuring Multi-purpose tractor for secondary collection of debris and waste
Traffic and Transportation	<ul style="list-style-type: none"> • Creating new roads of 10.6Km by 2022-23 in phases. • Resurfacing damaged roads after implementing UGD – 26.385 Km BT)
	<ul style="list-style-type: none"> • Adopting Traffic Management Schemes
	<ul style="list-style-type: none"> • Conversion of Kutcha road network into Pucca road network (11 Km)
	<ul style="list-style-type: none"> • Relaying existing roads and newly created roads once in every three years.
	<ul style="list-style-type: none"> • Bye pass project diverting Trichy and Perambalur through Traffic (already proposed by Highways)
	<ul style="list-style-type: none"> • Bus Stand Infrastructure Improvement by laying CC pavement,

<i>sector</i>	<i>Strategic Plan / Action plan</i>
	Renovating existing shops and constructing new floor above existing shops.
Street Lighting	<ul style="list-style-type: none"> • Adopting energy saving street lighting systems like CFL and FTL lamps
	<ul style="list-style-type: none"> • Involving private agencies for operation & maintenance of street lighting to reduce energy consumption and saving on establishment expenses.
	<ul style="list-style-type: none"> • Provision of lighting system as per standards and norms (additional 283 lamps by 2012-13, 136 by 2017-18 and 132 by 2022-23).
Slums and Urban Poverty	<ul style="list-style-type: none"> • Implementing IHSDP proposed
	<ul style="list-style-type: none"> • Provision of all infrastructure facilities and adopting rehabilitation measures in all slums
	<ul style="list-style-type: none"> • Project formulation and implementation in slums with local stakeholder's participation
	<ul style="list-style-type: none"> • Preventing further development of slums
	<ul style="list-style-type: none"> • Self help group formulation targetting BPL population
Social Amenities	<ul style="list-style-type: none"> • Developing proposed 20 parks in a phased manner (proposal sent to CMA already) • Upgrading office building. • Creating new office floor above the existing shop opposite to the municipal building. • Renovating Community hall by developing Kitchen room and Toilet. • Renovating existing shops and constructing I floor complex in Bus stand. • Infrastructure improvement in Primary Health Centre.
Improving Environmental status	<ul style="list-style-type: none"> • Desilting Periya and Chinna Eri for a depth of 2 feet.
Urban Finance	<ul style="list-style-type: none"> • Revision in Property Taxes every five years. • Periodic revision in monthly charges and deposit charges for water supply and sewerage



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<i>sector</i>	<i>Strategic Plan / Action plan</i>
	<ul style="list-style-type: none"> • Gradual and phased introduction of User charges for Solid Waste Management backed by revision in charges every five years. • Achieving close to cent percent collection efficiency in Tax and Non Tax revenue. • Achieving 85% service coverage in water supply by 2017-18. • Achieving 70% service coverage in Sewerage.
Institutional Reforms	<ul style="list-style-type: none"> • Privatisation and outsourcing of critical services like O & M of street lights, Solid Waste Management, Water and Sewerage systems. • Qualitative computerization and E-Governance of all the modules.

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15 CAPITAL INVESTMENT PLAN

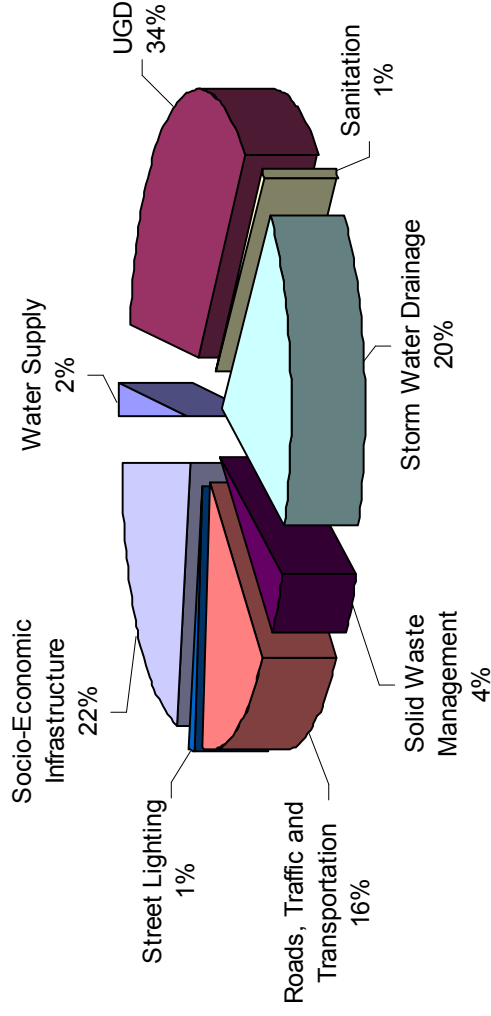
The Capital Investment Plan (CIP) identifies the investment requirement of the town without taking into consideration the financial feasibility of the projects, which would be covered in Financial Operating Plan (FOP). The investment requirement is Rs **4286.89** lakhs.

Table 15-A : Consolidated Sector wise Capital Investment requirements

Rs. in Lakhs

Project Sector	Total Investment	2008-09 to 2012-13	2013-14 to 2017-18	2018-19 to 2022-23
Water Supply	84.58	40.73	20.73	23.12
UGD	1470.25	1418.00	0.00	52.25
Sanitation	41.50	34.00	7.50	0.00
Storm Water Drainage	859.46	102.05	488.21	269.21
Solid Waste Management	179.92	89.04	49.16	41.72
Roads, Traffic and Transportation	665.52	59.00	379.40	227.12
Street Lighting	39.77	25.03	7.48	7.26
Socio-Economic Infrastructure	945.90	885.90	40.00	20.00
Hospitals / Primary Health centers	4.00	4.00	0.00	0.00
Parks and Playgrounds	100.00	40.00	40.00	20.00
Community hall	5.00	5.00	0.00	0.00
Municipal building	30.00	30.00	0.00	0.00
Commercial complexes / Shops	24.40	24.40	0.00	0.00
Slum Improvement	782.50	782.50	0.00	0.00
Development of Water bodies	0.00	0.00	0.00	0.00
TOTAL CAPEX	4286.89	2653.75	992.48	640.67

Figure 15-1 Sector wise percentage share



15.1 CIP for Physical Infrastructure sectors

During OWG meetings and on the basis of demand supply gap analysis, various works have been identified under different sectors like Water Supply, Sewerage, Solid Waste Management, Storm Water Drains, Roads and Street Lighting which are classified as Physical Infrastructure sectors. The Budget Estimates for the identified projects have been carried out based on TWAD Board Standard Schedule of Rates 2007-08, market rates and with some assumptions on the technical aspects and wherever the estimates are available with the Municipality the same has been considered for those works.

15.1.1 Water Supply

During OWG meetings and based on demand supply gap analysis, various works have been identified under Water Supply Sector. The works identified and phase wise investment for the various works are listed in Table 15-B.

The total estimated cost for Water Supply Works - Rs. 84.58 lakhs.

Implementing Agency – Irrigation Department / Thuraiyur Municipality

Project Manager – Executive Engineers from Irrigation Department / Municipal Engineer

Table 15-B Project List and Budget Estimates for Water Supply Works

Rs. in Lakhs

Project List	Remarks	Phasing				Implementing Agency
		Estimated cost	2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Laying Distribution network for 4 Km by 2012, 4 Km by 2017, 4 Km by 2022	Based on demand supply	12	4	4	4	Municipality
Replacing 22 Km 90 mm dia old pipes with 4 inch PVC pipes (7 Km by 2012, 7 Km by 2017 and 8 Km by 2022	Proposal identified during OWG	52.58	16.73	16.73	19.12	Municipality
Cleaning, desilting existing well in Periya Eri along with constructing new conveyer bridge	Proposal identified during OWG	20	20	0.00	0.00	Municipality / Irrigation department
Sub Total for Water Supply Works:		84.58	40.73	20.73	23.12	

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15.1.2 Sewerage and Sanitation

Under Sewerage and Sanitation, proposals are already prepared by TWAD board for Under Ground Drainage system. Apart from UGD, construction of new blocks and renovation of existing public toilet blocks is identified based on demand supply gap analysis. Detailed list of works, costing and phase wise implementation is given in Table 15-C.

The total estimated cost for the Sewerage & Sanitation Works - Rs. 1511.745 lakhs.

Implementing Agency – TWAD / Thuraiyur Municipality

Project Manager – Executive Engineers from TWAD / Municipal Engineer

Table 15-C Project List and Budget Estimates for Sewerage and Sanitation Works

Rs. in Lakhs

Project List	Remarks	Estimated cost	Phasing			Implementing Agency
			2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Implementing UGD scheme	Proposal prepared by TWAD	1394.00	1394.00	0.00	0.00	Municipality / TWAD
Implementing Toilets proposed in Govindapuram and Periyar Nagar in DPR for UGD	Proposal prepared by TWAD	24.00	24.00	0.00	0.00	Municipality / TWAD
Laying 8.1 Km by 2022 (RCC / Stone ware)	Proposal identified based on demand supply gap	52.25	0.00	0.00	52.25	Municipality
Public Toilet provision near Periya Eri,	UIDSSMT Scheme	5.00	5.00	0.00	0.00	Municipality
Public Toilet by demolishing existing and constructing new block in Ward No. 19,	Proposal identified during OWG	7.50	0.00	7.50	0.00	Municipality

Project List	Remarks	Phasing				Implementing Agency
		Estimated cost	2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Public Toilet in Palakkadu Mariamman koil street in W. No 20	UIDSSMT Scheme	5.00	5.00	0.00	0.00	Municipality
Public Toilet in Maruthi, Muthu and Mettu street	Proposal identified during OWG	15.00	15.00	0.00	0.00	Municipality
Public toilet in Venkatesapuram (6 seats)	UIDSSMT Scheme	3.00	3.00	0.00	0.00	Municipality
Public Toilet (Gents) at Ward No.4 North Street and at Ward no.09 (Periya nagar for ladies)	UIDSSMT Scheme	6.00	6.00	0.00	0.00	Municipality
Sub Total for Sewerage and Sanitation Works		1511.745	1452	7.5	52.245	

15.1.3 Storm Water Drainage

Under Storm Water Drainage Scheme works like construction of new closed drains after implementing UGD as part of UIDSSMT Scheme and construction of closed drains identified during OWG Meetings are considered. The works identified and phase wise investment for the various works are listed in Table 15-D.

The total estimated cost for the Storm Water Drainage Works – Rs. 859.46 lakhs

Implementing Agency – Thuraiyur Municipality

Project Manager – Municipal Engineer

Table 15-D Project List and Budget Estimates for Storm Water Drainage Works

Rs. in Lakhs

Project List	Remarks	Phasing			Implementing Agency	
		Estimated cost	2008-09-2012-13	2013-14 to 2017-18		2018-19 to 2022-23
Creating closed drains for 31.49 Km after implementing UGD (after deducting UIDSSMT SWD length from demand supply gap	Proposal identified during OWG	538.41	0.00	269.21	269.21	Municipality
Creating closed drains for 13.880 Km after implementing UGD	Proposed under UIDSSMT Scheme	219.00	0.00	219.00	0.00	Municipality
Converting open drain into closed drain for 10 Km (Slab provision)	Proposal identified during OWG	102.05	102.05	0.00	0.00	Municipality
Sub Total for Storm Water Drainage Works		859.46	102.05	488.21	269.21	

15.1.4 Solid Waste Management

Under Solid waste Management, it is proposed to procure, multi- purpose vehicle as suggested by OWG members. In addition, Protective gear for conservancy workers is proposed in such a way that worker would get protective gear once in two years (50% workers is planned to be covered each year). Further, Household segregation bins (2 Nos) are proposed for each assessment in Thuraiyur Municipality with due consideration given to projected assessments also. Household segregation bins are proposed to be replaced once in 5 years. Details of costing and phasing of investment is given in Table 15-E.

The total estimated costs for the Solid Waste Management Works - Rs. 179.92 lakhs
 Implementing Agency – Thuraiyur Municipality / PPP
 Project Manager – Municipal Engineer

Table 15-E Project List and Budget Estimates for Solid Waste Management Works

Rs. in Lakhs

Project List	Remarks	Phasing				Implementing Agency
		Estimated cost	2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Procuring Multi-purpose tractor	Proposal identified during OWG	9.00	0.00	9.00	0.00	Municipality
Protective gear for Conservancy worker (Workers will get safety gear once in two years)	Proposal identified during OWG	38.33	12.78	12.78	12.78	Municipality
Procuring Separate bins for Waste Segregation at source for each household (with private sponsorship)	Proposal identified during OWG;	82.23	25.90	27.39	28.94	Municipality / Private Sponsorship
Contribution to Regional Municipal Solid Waste Landfill	Proposed during review committee meeting	50.37	50.37	0.00	0.00	Municipality / RDMA/PPP
Sub Total for Solid Waste Management Works:		179.92	89.04	49.16	41.72	

15.1.5 Roads, Traffic and Transportation

Under this sector it is proposed to construct new roads, converting kutchra road to BT roads laying of CC roads after implementing UGD Scheme For budget cost estimates unit rates per km length are considered. The works identified and phase wise investment for the various works are listed in Table 15-F.

The total estimated cost for the Roads, Traffic and Transportation Works - Rs. 665.52 lakhs (Municipal project cost)
Implementing Agency –Thuraiyur Municipality / Highways
Project Manager –Municipal Engineer / Executive Engineer from highways

Table 15-F Project List and Budget Estimates for Roads, Traffic and Transportation Works

Rs. in Lakhs

Project List	Remarks	Estimated cost in lakhs	Phasing			Implementing Agency
			2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Creating new roads of 10.6Km by 2022 (2.5 Km by 2012, 4.1 Km by 2017 and 4 Km by 2022	Based on Demand Supply Gap	159.00	37.50	61.50	60.00	Municipality
18.269 BT road works proposed under UIDSSMT (after Implementing UGD)	UIDSSMT Scheme	121.40	0.00	121.40	0.00	Municipality
5.207 CC road works proposed under UIDSSMT (after Implementing UGD)	UIDSSMT Scheme	77.00	0.00	77.00	0.00	Municipality

Project List	Remarks	Phasing				Implementing Agency
		Estimated cost in lakhs	2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Relaying 8.269 BT road once in Three years after its implementation (UIDSSMT)	Based on demand supply	31.42	0.00	0.00	31.42	Municipality
Relaying 18.116 BT road after UGD implementation	Proposal identified during OWG	68.82	0.00	0.00	68.82	Municipality
Conversion of Kutcha road network into Pucca road network (11 Km)	Proposal identified during OWG	110.00	0.00	110.00	0.00	Municipality
Relaying new roads after each third year of its implementation 2.5 Km	Based on demand supply gap analysis	19.00	0.00	9.50	9.50	Municipality
Relaying new roads after each third year of its implementation 4.1 Km	Based on demand supply gap analysis	15.58	0.00	0.00	15.58	Municipality
Relaying new roads after each third year of its implementation 11 Km	Based on demand supply gap analysis	41.80	0.00	0.00	41.80	Municipality
Provision of Round About in Pallakarai junction	Proposal identified during OWG					Highways
Junction Improvement in Perambalur road T junction, High school street	Proposal identified during OWG	5.00	5.00	0.00	0.00	Municipality
Bye pass project to divert Trichy and Perambalur Traffic	Proposal identified during OWG					Highways
Providing CC Platform in Bus Stand(Now it is BT Roads)	Proposed in Vision Plan	16.50	16.50	0.00	0.00	Municipality
Sub Total for Roads, Traffic and Transportation Works:		665.52	59.00	379.40	227.12	

15.1.6 Street Lighting

Under this sector it is proposed to manage the street lighting and energy saving mechanism through private partnership. The phase wise implementation details and costing is given in Table 15-G.

The total estimated cost for Street Lighting – Rs. 39.77 lakhs
Implementing Agency –Thuraiyur Municipality / PPP
Project Manager – Municipal Engineer

Table 15-G Project List and Budget Estimates for Street Lighting Works

Project List	Remarks	Phasing				Implementing Agency
		Estimated cost	2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Providing 283 CFL lamps by 2012, 136 by 2017 and 132 by 2022 (Energy saving Lamps)	Based on Demand Supply Gap Analysis	30.31	15.57	7.48	7.26	Municipality / Private agency
Installation of voltage controller& timers	Based on Rapid Urban Assessment	5.00	5.00	0.00	0.00	Municipality / Private agency
Installation of electronic chokes in place of conventional copper chokes and 36 w tube lights	Based on Rapid Urban Assessment	4.46	4.46	0.00	0.00	Municipality / Private agency
Sub Total for Street Lighting Works		39.77	25.03	7.48	7.26	

Rs. in Lakhs

15.1.7 Socio-economic Infrastructure

Socio-Economic Infrastructure works are identified based on Demand Supply Gap analysis, during OWG meetings and from master plan proposals. These works include improving the existing municipal school building, Parks and Playgrounds, construction of community hall, slum improvement works, Gasifier, renovation of slaughter house, burial ground, Tourism projects and upgrading the daily and weekly markets. Project list and Budget estimates for Socio-Economic Infrastructure works are listed out in Table 15-H.

The total estimated cost for Socio-Economic Works – Rs. 945.90 lakhs
Implementing Agency –Thuraiyur Municipality / PPP
Project Manager – Municipal Engineer

Table 15-H Project List and Budget Estimates for Socio-Economic Infrastructure works

Project List	Remarks	Estimated cost	Phasing			Implementing Agency
			2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Infrastructure improvement in Primary Health centre	Proposed in Vision Plan	4.00	4.00	0.00	0.00	Municipality
Developing parks in 20 layouts	proposal sent to CMA	100.00	40.00	40.00	20.00	Municipality
Developing additional spaces like Kitchen and Toilet in community hall	Proposal identified during OWG	5.00	5.00	0.00	0.00	Municipality
Renovating Municipal building with additional block construction	Proposal identified during OWG	30.00	30.00	0.00	0.00	Municipality

(Rs. in lakhs)

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Project List	Remarks	Phasing				Implementing Agency
		Estimated cost	2008-09-2012-13	2013-14 to 2017-18	2018-19 to 2022-23	
Additional 1st floor office space construction in the complex opposite to Municipal Office	Proposal identified during OWG	4.40	4.40	0.00	0.00	Municipality
Renovating existing Shops and constructing I floor office complex in Bus stand	Proposal identified during OWG	20.00	20.00	0.00	0.00	Municipality
IHSDP project	Proposal sent to CMA	782.50	782.50	0.00	0.00	Municipality
Desilting Periya Eri and Chinna Eri	Proposal identified during OWG					Irrigation department
Sub Total for Socio Economic Works:	Infrastructure	945.90	885.90	40.00	20.00	

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15.2 Consolidated Capital Investment Plan

15.2.1 First Phase Investment Plan (2008-09 to 2012 - 13)

First Phase investment plan for Thuraiyur is given in Table 15-I. The total Estimated Cost for all the sectors is Rs 2653.75 lakhs. The total estimated cost after considering escalation for I phase is Rs. 3164.85 lakhs which is shown below.

Table 15-I First Phase Capital Investment Plan for Thuraiyur Municipality

Project Sector	Rs. in Lakhs					Investment(I Phase)
	2008-09	2009-10	2010-11	2011-12	2012-13	
Water Supply	0.00	20.00	0.00	16.73	4.00	40.73
UGD	0.00	472.67	472.67	472.67	0.00	1418.00
Sanitation	0.00	19.00	15.00	0.00	0.00	34.00
Storm Water Drainage	20.41	20.41	20.41	20.41	20.41	102.05
Solid Waste Management	27.30	53.21	2.84	2.85	2.85	89.04
Roads, Traffic and Transportation	0.00	5.00	16.50	18.75	18.75	59.00
Street Lighting	7.57	8.11	3.11	3.11	3.11	25.03
Socio-Economic Infrastructure	0.00	19.00	40.00	34.40	792.50	885.90
Hospitals / Primary Health centers	0.00	4.00	0.00	0.00	0.00	4.00
Parks and Playgrounds	0.00	10.00	10.00	10.00	10.00	40.00
Community hall	0.00	5.00	0.00	0.00	0.00	5.00
Municipal building	0.00	0.00	30.00	0.00	0.00	30.00
Commercial complexes / Shops	0.00	0.00	0.00	24.40	0.00	24.40
Slum Improvement	0.00	0.00	0.00	0.00	782.50	782.50
Development of Water bodies	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CAPEX	55.28	617.40	570.53	568.91	841.62	2653.75

Table 15-J First Phase Capital Investment Plan for Thuraiyur Municipality (after considering escalation cost)

Rs. in Lakhs

Project Sector	2008-09	2009-10	2010-11	2011-12	2012-13	Investment(I Phase)
Water Supply	0.00	22.05	0.00	20.34	5.11	47.49
UGD	0.00	521.12	547.17	574.53	0.00	1642.82
Sanitation	0.00	20.95	17.36	0.00	0.00	38.31
Storm Water Drainage	21.43	22.50	23.63	24.81	26.05	118.42
Solid Waste Management	28.67	58.66	3.29	3.46	3.63	97.71
Roads, Traffic and Transportation	0.00	5.51	19.10	22.79	23.93	71.33
Street Lighting	7.95	8.94	3.60	3.78	3.97	28.26
Socio-Economic Infrastructure	0.00	20.95	46.31	41.81	1011.45	1120.52
Hospitals / Primary Health centers	0.00	4.41	0.00	0.00	0.00	4.41
Parks and Playgrounds	0.00	11.03	11.58	12.16	12.76	47.52
Community hall	0.00	5.51	0.00	0.00	0.00	5.51
Municipal building	0.00	0.00	34.73	0.00	0.00	34.73
Commercial complexes / Shops	0.00	0.00	0.00	29.66	0.00	29.66
Slum Improvement	0.00	0.00	0.00	0.00	998.69	998.69
Development of Water bodies	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CAPEX	58.05	680.68	660.46	691.52	1074.14	3164.85

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15.2.2 Second Phase Investment Plan (2013-14 to 2017 – 18)

Second Phase investment plan for Thuraiyur is given in Table 15-K. The total Estimated Cost for all the Sectors is Rs. **992.48** lakhs. The total estimated cost after considering escalation for I phase is Rs. **1531.41** lakhs which is shown in Table 15-L.

Table 15-K Second Phase Capital Investment Plan for Thuraiyur Municipality

Project Sector	Rs. in Lakhs						Investment (II Phase)
	2013-14	2014-15	2015-16	2016-17	2017-18		
Water Supply	0.00	0.00	0.00	16.73	4.00	20.73	
UGD	0.00	0.00	0.00	0.00	0.00	0.00	
Sanitation	7.50	0.00	0.00	0.00	0.00	7.50	
Storm Water Drainage	67.30	67.30	67.30	67.30	219.00	488.21	
Solid Waste Management	36.59	3.13	3.14	3.15	3.15	49.16	
Roads, Traffic and Transportation	0.00	0.00	4.75	176.25	198.40	379.40	
Street Lighting	1.50	1.50	1.50	1.50	1.50	7.48	
Socio-Economic Infrastructure	0.00	10.00	10.00	10.00	10.00	40.00	
Hospitals / Primary Health centers	0.00	0.00	0.00	0.00	0.00	0.00	
Parks and Playgrounds	0.00	10.00	10.00	10.00	10.00	40.00	
Community hall	0.00	0.00	0.00	0.00	0.00	0.00	
Municipal building	0.00	0.00	0.00	0.00	0.00	0.00	
Commercial complexes / Shops	0.00	0.00	0.00	0.00	0.00	0.00	
Slum Improvement	0.00	0.00	0.00	0.00	0.00	0.00	
Development of Water bodies	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL CAPEX	112.89	81.93	86.68	274.92	436.05	992.48	

Table 15-L Second Phase Capital Investment Plan for Thuraiyur Municipality (after considering escalation cost)

Rs. in Lakhs

Project Sector	2013-14	2014-15	2015-16	2016-17	2017-18	Investment (II Phase)
Water Supply	0.00	0.00	0.00	25.95	6.52	32.47
UGD	0.00	0.00	0.00	0.00	0.00	0.00
Sanitation	10.05	0.00	0.00	0.00	0.00	10.05
Storm Water Drainage	90.19	94.70	99.43	104.41	356.73	745.46
Solid Waste Management	49.04	4.41	4.64	4.88	5.14	68.10
Roads, Traffic and Transportation	0.00	0.00	7.02	273.42	323.17	603.61
Street Lighting	2.00	2.11	2.21	2.32	2.44	11.08
Socio-Economic Infrastructure	0.00	14.07	14.77	15.51	16.29	60.65
Hospitals / Primary Health centers	0.00	0.00	0.00	0.00	0.00	0.00
Parks and Playgrounds	0.00	14.07	14.77	15.51	16.29	60.65
Community hall	0.00	0.00	0.00	0.00	0.00	0.00
Municipal building	0.00	0.00	0.00	0.00	0.00	0.00
Commercial complexes / Shops	0.00	0.00	0.00	0.00	0.00	0.00
Slum Improvement	0.00	0.00	0.00	0.00	0.00	0.00
Development of Water bodies	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CAPEX	151.28	115.28	128.07	426.50	710.28	1531.41

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15.2.3 Third Phase Investment Plan (2018-19 to 2022 - 23)

Third Phase investment plan for Thuraiyur is given in Table 15-M. The total Estimated Cost for all the Sectors is Rs. **640.67** lakhs. The total estimated cost after considering escalation for III phase is Rs. **1201.08** lakhs which is shown in Table 15-N.

Table 15-M Third Phase Capital Investment Plan for Thuraiyur Municipality

Rs. in Lakhs

Project Sector	2018-19	2019-20	2020-21	2021-22	2022-23	Investment (III Phase)
Water Supply	0.00	0.00	0.00	19.12	4.00	23.12
UGD	0.00	0.00	52.25	0.00	0.00	52.25
Sanitation	0.00	0.00	0.00	0.00	0.00	0.00
Storm Water Drainage	67.30	67.30	67.30	67.30	0.00	269.21
Solid Waste Management	27.90	3.44	3.45	3.46	3.47	41.72
Roads, Traffic and Transportation	0.00	39.16	96.54	91.42	0.00	227.12
Street Lighting	1.45	1.45	1.45	1.45	1.45	7.26
Socio-Economic Infrastructure	0.00	5.00	5.00	5.00	5.00	20.00
Hospitals / Primary Health centers	0.00	0.00	0.00	0.00	0.00	0.00
Parks and Playgrounds	0.00	5.00	5.00	5.00	5.00	20.00
Community hall	0.00	0.00	0.00	0.00	0.00	0.00
Municipal building	0.00	0.00	0.00	0.00	0.00	0.00
Commercial complexes / Shops	0.00	0.00	0.00	0.00	0.00	0.00
Slum Improvement	0.00	0.00	0.00	0.00	0.00	0.00
Development of Water bodies	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CAPEX	96.65	116.35	225.98	187.76	13.92	640.67

Table 15-N Third Phase Capital Investment Plan for Thuraiyur Municipality (after considering escalation cost)

Rs. in Lakhs

Project Sector	2018-19	2019-20	2020-21	2021-22	2022-23	Investment (III Phase)
Water Supply	0.00	0.00	0.00	37.86	8.32	46.17
UGD	0.00	0.00	98.52	0.00	0.00	98.52
Sanitation	0.00	0.00	0.00	0.00	0.00	0.00
Storm Water Drainage	115.11	120.86	126.91	133.25	0.00	496.13
Solid Waste Management	47.71	6.18	6.50	6.86	7.21	74.46
Roads, Traffic and Transportation	0.00	70.32	182.04	181.01	0.00	433.37
Street Lighting	2.48	2.61	2.74	2.87	3.02	13.72
Socio-Economic Infrastructure	0.00	8.98	9.43	9.90	10.39	38.70
Hospitals / Primary Health centers	0.00	0.00	0.00	0.00	0.00	0.00
Parks and Playgrounds	0.00	8.98	9.43	9.90	10.39	38.70
Community hall	0.00	0.00	0.00	0.00	0.00	0.00
Municipal building	0.00	0.00	0.00	0.00	0.00	0.00
Commercial complexes / Shops	0.00	0.00	0.00	0.00	0.00	0.00
Slum Improvement	0.00	0.00	0.00	0.00	0.00	0.00
Development of Water bodies	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL CAPEX	165.31	208.95	426.13	371.75	28.94	1201.08

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16 RISK ANALYSIS

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CHAPTER 16 : RISK ANALYSIS OF IDENTIFIED NEW PROJECTS FOR THURAIYUR

**CHAPTER 16 : RISK ANALYSIS OF IDENTIFIED NEW PROJECTS
THURAIYUR MUNICIPALITY**

Project list	Land Acquisition / Availability	Manpower availability (Skilled)	Environmental clearance	Financial availability with the local body	R & R risk	ULBs ability to fund any cost overrun	Political stability	Natural barriers	Time delay	ULBs ability to meet O & M cost	Multiplicity of organisation	Public Litigation
Water Supply												
Laying Distribution network for 4 Km by 2012, 4 Km by 2017, 4 Km by 2022	NA	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Replacing 22 Km 90 mm dia old pipes with 4 inch PVC pipes (7 Km by 2012, 7 Km by 2017 and 8 Km by 2022)	NA	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Cleaning, desilting existing well in periya Eri along with constructing new conveyor bridge	NA	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Sewerage and Sanitation												
Implementing UGD scheme	LA required	Dependent on TWAD	Required	Severe Constraint	NA	very much minimal	Currently stable	NA	fund availability, approval and	Constraint	Yes	Possible
Implementing Toilets proposed in Govindapuram and Periyar Nagar in DPR for UGD	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and completion of	Constraint	Yes	No
Laying 8.1 Km by 2022 (RCC / Stone ware)	NA	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Public Toilet provision near Periya Eri,	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No

CHAPTER 16 : RISK ANALYSIS OF IDENTIFIED NEW PROJECTS FOR THURAIYUR

Project list	Land Acquisition / Availability	Manpower availability (Skilled)	Environmental clearance	Financial availability with the local body	R & R risk	ULBs ability to fund any cost overrun	Political stability	Natural barriers	Time delay	ULBs ability to meet O & M cost	Multiplicity of organisation	Public Litigation
Public Toilet by demolishing existing and constructing new block in Ward No. 19,	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Public Toilet in Palakkadu Mariamman koil street in W. No 20	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Public Toilet in Maruthi, Muthu and Mettu street	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Public toilet in Venkatesapuram (6 seats)	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Public Toilet (Gents) at Ward No.4 North Street and at Ward no.09 (Periya nagar for ladies)	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Storm Water Drainage												
Creating closed drains for 31.52 Km after implementing UGD (each year - 3.152 Km after 2012)	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and completion of UGD	Constraint	Yes	No
Creating closed drains for 13.880 Km after implementing UGD	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Converting open drain into closed drain for 10 Km (Slab provision)	NA	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Roads												
Creating new roads of 10.6Km by 2022 (2.5 Km by 2012, 4.1 Km by 2017 and 4 Km by 2022	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
8.269 BT road works proposed under UIDSSMT (after Implementing UGD)	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and completion of UGD	Constraint	Yes	No

CHAPTER 16 : RISK ANALYSIS OF IDENTIFIED NEW PROJECTS FOR THURAIYUR

Project list	Land Acquisition / Availability	Manpower availability (Skilled)	Environmental clearance	Financial availability with the local body	R & R risk	ULBs ability to fund any cost overrun	Political stability	Natural barriers	Time delay	ULBs ability to meet O & M cost	Multiplicity of organisation	Public Litigation
5.207 CC road works proposed under UIDSSMT (after Implementing UGD)	Available	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and completion of UGD	Constraint	Yes	No
Relaying 8.269 BT road once in Three years after its implementation (UIDSSMT)	NA	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and completion of UGD	Constraint	Yes	No
Relaying 18.116 BT road after UGD implementation	NA	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and completion of UGD	Constraint	Yes	No
Conversion of Kutcha road network into Pucca road network (11 Km)	NA	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Relaying new roads after each third year of its implementation 2.5 Km	NA	Available	Not required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and approval	Yes	No	No
Relaying new roads after each third year of its implementation 4.1 Km	NA	Available	Not required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and approval	Yes	No	No
Relaying new roads after each third year of its implementation 11 Km	NA	Available	Not required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability and approval	Yes	No	No
Traffic and Transportation												
Provision of Round About in Pallakarai junction	NA	NA	Not Required	NA	NA	NA	Currently Stable	NA	NA	NA	No	No
Junction Improvement in Perambalur road T junction, High school street	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No
Bye pass project to divert Trichy and Perambalur Traffic	NA	NA	Not Required	NA	NA	NA	Currently Stable	NA	NA	NA	No	No
Providing CC Platform in Bus Stand(Now it is BT Roads)	NA	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	Depends on fund availability	Constraint	Yes	No

CHAPTER 16 : RISK ANALYSIS OF IDENTIFIED NEW PROJECTS FOR THURAIYUR

Project list	Land Acquisition / Availability	Manpower availability (Skilled)	Environmental clearance	Financial availability with the local body	R & R risk	ULBs ability to fund any cost overrun	Political stability	Natural barriers	Time delay	ULBs ability to meet O & M cost	Multiplicity of organisation	Public Litigation
Solid Waste Management												
Procuring Multi-purpose tractor	NA	NA	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	NA	No	No
Protective gear for Conservancy worker	NA	NA	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	NA	No	No
Procuring Separate bins for Waste Segregation at source for each household (with private sponsorship)	NA	NA	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	NA	No	No
Contribution to Regional Municipal Solid Waste Landfill	LA required	Available	Not Required	Constraint	NA	Minimal	Currently stable	NA	fund availability	Constraint	Yes	Possible
Street Lighting and Energy saving Mechanism												
Providing 283 CFL lamps by 2012, 136 by 2017 and 132 by 2022 (Energy saving Lamps)	NA	Available	Not required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Sector - Socio-Economic Infrastructure												
Infrastructure improvement in Primary Health centre	NA	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Developing parks	Available	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Developing additional spaces like Kitchen and Toilet	LA required	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Renovating Municipal building with additional block construction	Available	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Additional 1st floor office space construction in the complex opposite to Municipal Office	Available	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
Renovating existing Shops and constructing 1 floor office complex in Bus stand	Available	Available	Not Required	Constraint	NA	Minimal	Currently Stable	NA	Depends on fund availability	Yes	No	No
IHSDP project	Possible	Available	Not required	Constraint	Possible	Minimal	Currently Stable	NA	Depends on Govt approval and sanction	Yes	No	Possible
Desilting Periya Eri and Chinna Eri	Available	Available	Not Required	NA	NA	NA	Currently Stable	NA	NA	NA	No	No

NA - Not applicable

17 ASSET MANAGEMENT PLAN

Asset Management Plan involves maintenance management for preventive and predictive maintenance, equipment recording and tracking, replacement parts inventory, and maintenance labor scheduling. The goal of asset management is to optimize asset use and manage all maintenance efforts involved in making assets as reliable, accurate, and efficient as possible. Asset management Plan is the plan developed for one or more physical assets within the municipality that combines multi disciplinary management techniques including technical and financial over the life cycle of the asset to a specified level of service in a most cost effective manner. The key aspects of asset management plan therefore involve asset inventory, information of assets owned by the municipality and appropriate strategy to manage the assets and increase the productivity of the same. The asset management plan is therefore critical for maintaining, upgrading and operating physical assets in a cost effective manner

Thuraiyur municipality has several assets that require regular maintenance for sustenance of reasonable service delivery levels. Given the high impact of the O&M expenses on the finances of the municipality, it is prudent to undertake a proper review of the assets under its control. This would aid in identifying the revenue generating assets as well as the ones that are causing a drain on municipal revenues. A comprehensive asset management plan aids in achieving the same.

17.1 List of Assets

The assets of Thuraiyur municipality can be classified as assets relating to basic physical infrastructure such as water supply, roads, storm water drains, street lights, light and heavy vehicles etc and those relating to social infrastructure which include shops, markets, parks, bus stand commercial complexes, slaughter house, maternity centres, burial grounds etc. Among basic physical infrastructure only water supply services can be considered revenue generating as the municipality is able to collect taxes, connection charges, initial deposit charges and metering/tap rate charges and

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hence expenses are met mainly through dedicated water supply fund set up for the purpose. With regard to social infrastructure, only markets, commercial complexes and shops, bus stand, toilets (pay and use) etc are revenue generating and hence can be considered remunerative and others such as burial grounds, community hall, slaughter house, parks, public toilets, maternity centre etc; are not revenue generating or revenue generation is extremely nominal and may not be self sustaining. Some of the social infrastructure is required to be provided by the municipality as the functions remain obligatory functions of the municipality and also help to fund the non remunerative activities of the municipality. These are also required to maintain the cleanliness and sanitation of the city.

The various physical and social infrastructure of the municipality are listed below:

Table 17-A: Details of various social & physical infrastructure assets

<i>Particulars</i>	<i>Unit</i>	<i>Details</i>
REMUNERATIVE ASSETS – SOCIAL INFRASTRUCTURE		
Bus Stand	1	
Commercial Complexes	123 Shops	Each Shop @ 10X10 area. Bus stand shops-50 Slaughter house shops-17 Daily Market shops-45 Municipal office shops-11 Total-123 shops Some shops in the market place and mutton shops have not been leased due to absence of demand.
Rest Houses/Travelers Bungalow	1	
Markets-Within Local Body Limits-Daily	1	Area-10000 Sq feet Hospital Road
Markets-Within Local Body	1	Area-2000 Sq feet

Limits-Weekly		Periyar Road
Pay and Use Latrines	1	Inside the Bus Stop
Slaughterhouse	2	1- Sorathur Salai (4000 sq feet) +1 periyar street (3000 sq feet). Modernisation of slaughter house is on
Community Hall	1	Area-500 Sq meet Perambalur Street
SOCIAL INFRASTRUCTURE -NON REMUNERATIVE INFRASTRUCTURE		
School Buildings	1	Area-1.5 acres High School
Office Buildings	1	Area-3 acres Municipality Office. Including bus stand area
Maternity Centres		Inside the dispensary
Hospitals & Dispensary	1	Area-5000 Sq feet Hospital road. Inside the dispensary there is maternity centre
Noon Meal Centres	9	
Libraries/ Reading Rooms	1	Area-500 Sq feet Hospital Road
Park/Playground	1	Area-2000 Sq feet Co-operative Nagar
Burial Ground	3	Attur Road -2 acres, Venkatanathanthur salai -1 acre, Malaiappan Salai - 2 acres
Burning ghat	1	Inside the burial ground
PHYSICAL INFRASTRUCTURE ASSETS		
Water Supply		
Overhead Tank	3	Office Water Tank -8 Lakhs, Theppakulam (LLR)- 4.50 Lakhs, Perambalur Road(HLR)- 4.50 Lakhs

Length of Distribution lines	26 Km	
Storm water drains	24.5 Km	
Roads	43.145 Km	Cement concrete - 5.844 Km Bitumen Road - 26.385 Km WBM/ Metalled - 0.293 Km Stone Slab - 0.905 Km Earthen - 9.718 Km
Street Lights	1239	
Solid Waste Management		
Compost Yard	3.76 acres 4.16 acres	Sorathur road site - old Venkadesapuram site - new
Vehicles	5	Tipper 1 Power tiller 1 Lorry 3

Source: Thuraiyur Municipality

17.2 Operations and Maintenance

The revenue generation and the operations and maintenance activities currently being followed and suggestions for comprehensive Asset Management including ways and means to meet the expenses involved & make it a self sustaining for various assets are listed below:-

17.2.1 O&M of social infrastructure assets**Table 17-B: O&M and Revenue generation**

<i>Asset</i>	<i>Average Annual income</i>	<i>Current O&M practice</i>	<i>Recommendations</i>
Daily Market/Weekly market	Rs3.66 Lakhs	Ad hoc basis.	<p>-Periodic inspection and maintenance is required.</p> <p>- About 2-3 % of the income earned from this asset can be invested annually on maintaining and upgrading the facilities.</p> <p>-Private party to whom the Area/facilities are leased can meet the expenses related to the maintenance of the asset partially.</p> <p>-Municipality to clear unauthorized encroachments to use additional space for revenue generation</p> <p>-Additional Income generating activities such as pay & use toilets and parking lots if found viable can be explored</p>
Shops/Commercial Complex(123 shops)	Rs28.19 Lakhs	Ad hoc basis	same as above
Slaughter House	Rs. 0.03 Lakhs	Slaughter house is being improved under Part II scheme at a cost of Rs.12 lakhs	Periodic annual maintenance is required

Community Hall	NIL	No proper facilities are there at present to make it remunerative	<ul style="list-style-type: none"> - Need to include additional facilities such as compound wall, toilet and kitchen to make it remunerative. (OWG Discussions) - About 3-5% of the income earned from the hall can be used to maintain and improve the asset.
Parks & Playgrounds	Nil	Currently there is a proposal for developing 20 parks at an estimated cost of Rs.5 lakhs per park	Can be maintained jointly with private sector (companies/clubs/residential associations etc) or maintained exclusively by the private sector on sponsorship basis
Bus Stand	Rs. 17 lacs	Ad Hoc basis	<ul style="list-style-type: none"> -Periodic annual maintenance is required -Additional Income generating activities such as pay & use toilets, advertisements/hoarding and paid parking lots if found viable can be undertaken
Public Toilets/ Pay & Use	Nil	Ad hoc basis As per the financials of the ULB there is no income from the pay & use which is located inside the bus stand	Can explore the possibility of converting public toilets to pay and use in some commercial areas and some of maintenance can be handed over to SHGs with only major maintenance/new work to be taken up by the ULB
Burial Ground	NIL	Ad hoc basis	Periodic annual maintenance can sustain the quality of the asset

		Currently Improvement work at venkadathannur for Rs.5.05 Lakhs under Part-II Scheme	Gasifier funded through government schemes can reduce the burden of maintaining existing burial grounds. However land is a constraint
School Building	NIL	Ad hoc basis	O & M can be met through funds from elementary education fund
Maternity Centre	NIL	Ad hoc basis	

Source: Analysis based on Information provided by Thuraiyur Municipality

17.2.2 O&M Physical Infrastructure

Operation and Maintenance of the assets related to Physical and socio-economic infrastructure is divided under two heads;

- To maintain the existing assets for the next five years and
- To maintain the assets proposed to be created under various capital works proposed.

Since the O & M of the existing assets related to Socio- Economic Infrastructure has already been assessed in the above sections of this chapter, the O & M of the existing physical Infrastructure assets and the proposed O & M for the capital works identified is broadly discussed in this section. Key growth rates assumed for forecasting O & M of the existing assets and of the capital works proposed are tabulated below:

Table 17-C Key assumptions for forecasting O & M for the existing and proposed assets

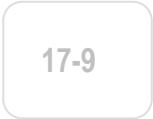
Description	Current level	Assumption
FOR EXISTING ASSETS		
Water Supply		
<i>Water supply expenses to TWAD board</i>	7%	<i>assuming 3% increased rate</i>
<i>Maintainance expenses for water supply</i>	10%	<i>assuming 6% increased rate</i>
Solid Waste Management		
<i>Repairs and Maintenance for heavy vehicles</i>	41%	<i>Assuming 5 % increased rate in heavy vehicle exp</i>
Street lighting		
<i>Maintenance Expense for Street Lights</i>	-24%	<i>Assuming 10% growth rate</i>
<i>Power Charges for Street Lights</i>	188%	<i>Assuming 5% growth rate</i>
FOR CAPITAL WORKS		
Water Supply	NA	6% of the project cost
Sewerage & Sanitation	NA	4% of the project cost
Roads and Traffic Management	NA	3% of the project cost
Storm Water Drainage	NA	2% of the project cost
Solid Waste Management	NA	10% of the project cost
Street Lighting	NA	5% of the project cost
Slum upgradation	NA	1% of the project cost
Others	NA	2% of the project cost

17.2.2.1 O & M for Existing Physical Infrastructure Assets

Based on the aforesaid assumptions, the operation and maintenance expenses for existing physical infrastructure assets have been worked out based on the past trends and based on the availability of the data / information available with the Municipality.

Table 17-D O & M for existing physical Infrastructure assets

Rs in Lakhs



17.2.2.2 O & M for proposed capital works

Based on the aforesaid standards / assumptions, the operation and maintenance expenses for proposed capital works for the first phase have been worked out and are listed below:

Table 17-E O & M for proposed capital works

Rs. in lakhs

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Table 17 D O & M for existing physical Infrastructure assets																
Thuraiyur		Rs.in lakhs														
Sectors - Physical Infrastructure	CAGR (past expenses 2003-03 to 2006-2007)	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Water Supply																
<i>Water supply expenses to TWAD board</i>	7%	34.2	35.2	36.2	37.3	38.4	39.6	40.8	42.0	43.3	44.6	45.9	47.3	48.7	50.2	51.7
<i>Maintainance expenses for water supply</i>	10%	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.6	2.7	2.9	3.1	3.3	3.5
Solid Waste Management																
<i>Repairs and Maintenance for heavy vehicles</i>	41%	7.0	7.3	7.7	8.0	8.4	8.9	9.3	9.8	10.3	10.8	11.3	11.9	12.5	13.1	13.8
Street lighting																
<i>Maintenance Expense for Street Lights</i>	-24%	5.8	6.4	7.1	7.8	8.5	9.4	10.3	11.4	12.5	13.7	15.1	16.6	18.3	20.1	22.1
<i>Power Charges for Street Lights</i>	188%	10.9	11.4	12.0	12.6	13.2	13.9	14.6	15.3	16.1	16.9	17.7	18.6	19.6	20.5	21.6

Table 17 E O & M for proposed capital works

Thuraiyur																
Investment Requirements																
Rs.in Lakhs																
Project Sector	Total Invest	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Water Supply	126.13	0.00	22.05	0.00	20.34	5.11	0.00	0.00	0.00	25.95	6.52	0.00	0.00	0.00	37.86	8.32
UGD	1741.33	0.00	521.12	547.17	574.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.52	0.00	0.00
Sanitation	48.36	0.00	20.95	17.36	0.00	0.00	10.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storm Water Drainage	1360.01	21.43	22.50	23.63	24.81	26.05	90.19	94.70	99.43	104.41	356.73	115.11	120.86	126.91	133.25	0.00
Solid Waste Management without bins and gear	55.53	0.00	55.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roads, Traffic and Transportation	1108.32	0.00	5.51	19.10	22.79	23.93	0.00	0.00	7.02	273.42	323.17	0.00	70.32	182.04	181.01	0.00
Street Lighting	53.06	7.95	8.94	3.60	3.78	3.97	2.00	2.11	2.21	2.32	2.44	2.48	2.61	2.74	2.87	3.02
Socio-Economic Infrastructure	1219.87	0.00	20.95	46.31	41.81	1011.45	0.00	14.07	14.77	15.51	16.29	0.00	8.98	9.43	9.90	10.39
TOTAL CAPEX	5712.61	29.38	677.55	657.17	688.06	1070.51	102.25	110.88	123.44	421.62	705.14	117.59	202.77	419.63	364.89	21.73
O & M Cost for New Infrastructure Works																
Sector - Physical Infrastructure	Total O&M	O & M Expenses														
		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Water Supply	62.62	0.00	0.00	1.32	1.40	2.71	3.18	3.37	3.57	3.78	5.57	6.29	6.67	7.07	7.49	10.21
UGD	898.52	0.00	0.00	0.00	0.00	65.71	68.34	71.07	73.92	76.87	79.95	83.15	86.47	93.87	97.63	101.53
Sanitation	28.62	0.00	0.00	0.84	1.57	1.63	1.69	2.16	2.25	2.34	2.43	2.53	2.63	2.74	2.85	2.96
Storm Water Drainage	155.15	0.00	0.43	0.89	1.38	1.90	2.46	4.31	6.29	8.41	10.66	18.01	20.67	23.51	26.51	29.71
Solid Waste Management without bins and gear	136.18	0.00	0.00	5.55	6.11	6.72	7.39	8.13	8.94	9.84	10.82	11.90	13.09	14.40	15.84	17.43
Roads, Traffic and Transportation	156.88	0.00	0.00	0.17	0.74	1.45	2.21	2.28	2.35	2.63	10.91	20.93	21.56	24.31	30.51	36.85
Street Lighting	29.61	0.00	0.40	0.86	1.09	1.33	1.60	1.78	1.97	2.18	2.41	2.65	2.90	3.18	3.48	3.79
Socio-Economic Infrastructure	1897.83	0.00	0.00	2.09	6.93	11.81	114.14	125.55	139.51	154.94	171.99	190.81	209.89	231.78	255.90	282.48
Total O & M expenditure	3365.43	0.00	0.83	11.73	19.22	93.26	201.01	218.65	238.80	260.99	294.73	336.28	363.90	400.86	440.21	484.97

17.3 Asset Management Plan- Recommendations

The following are some of the suggestions with regard to formulation and implementation of a comprehensive Asset Management Plan:-

17.3.1 Asset Register

A comprehensive Asset register needs to be maintained containing details of the list of assets, year and cost of acquisition, particulars such as the location, size of the area/building, ownership records and all supporting documents required for the same. These details are required for assessing the condition of the asset. The reform programme under TNUDP has initiated the process of computerizing and digitalizing the asset inventory for all municipalities in Tamil Nadu. Computerization of asset register is required with focus on proper designing, testing, installing a database management system for municipal assets. Data thus compiled would need to be classified on the basis of sector specific infrastructure facilities, land and properties etc

17.3.2 Asset Value and Life Cycle Management

The Municipality needs to determine the value of various assets in regular intervals. As all assets have a limited life expectancy, concerted efforts need to be undertaken by the municipality on regular basis before investing further in a new asset or upgradation of the existing assets. In case of an asset (service) that is handed over to a private contractor for O&M, periodic review and inspection needs to be made to prevent misuse and damage to the assets.

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17.3.3 Sustainability

Sustainable management of assets is an important element of asset management plan. Sustainable development has been defined as “meeting the needs of present generation without compromising the ability of future generations to meet their own needs”. A long term financial plan to provide necessary resources to operate, rehabilitate and ultimately replace the asset at the optimal time to achieve lowest life cycle cost is required. Preventive and operational maintenance at regular intervals can prevent higher cost associated with the full replacement of the asset. Such a plan would ensure that the current users pay a fair share for the service they receive so the future users do not have the burden to pay a higher cost for the same level of the service. Sustainable management calls for a contribution from the users to meet partially or fully the O&M cost associated with the utilization of assets. Hence user charges and fees is critical for a sustainable and a successful asset management programme

17.3.4 Integration of Technical and Financial Plans

An integrated plan combining technical aspects (to minimize life cycle cost & reduce the risk level) and financial aspects (Financial plan) are required to quantify the level of service and the cost associated with the same. The technical and financial plans need to be flexible enough to suit the changing requirements of the public.

17.3.5 Condition Assessment Survey (CAS)

The municipality could look to undertake CAS for various assets owned by the ULB, which could bring to light the deficiencies in a system or a component, the extent of defects, estimated cost of repairs and the prioritizing the work to be undertaken. This systematic review could enhance the life of the asset and minimize huge capital outlay on account of delay in taking remedial actions.

17.3.6 Risk Assessment

Asset management needs to take into account various risk factors such as financials, environmental, regulatory, legal, public health and safety. The risk assessment has been elaborated in the Chapter 16 of this report.

17.3.7 Monitoring and Evaluation

To optimize an asset management plan, performance of the assets and rehabilitation strategies should be monitored regularly, and adjustments made at the appropriate stage in the asset life cycle to achieve an acceptable balance between cost and the performance (Level of service). It is also imperative to monitor and take damage control measures when the municipality takes up any development works to prevent damage to the other assets of the municipality. Prioritizing the works to be undertaken can prevent unnecessary maintenance and capital cost.

17.3.8 Budgeting

A regular budgeting exercise regarding the possible O&M cost for various assets needs to be undertaken by the municipality. There should be a clear link to the financials plans and the budgeting exercise undertaken by the municipality. An Asset Management Plan should incorporate expenses relating to maintenance, renewal and augmentation of the asset of the municipality.

17.3.9 Training in Database management

All the above requires proper training to the concerned staff. Training would involve various issues such as methods of simplified updation of data, methods of monitoring and follow up and training in issues relating to infrastructure facilities management, land use, litigation, encroachment etc.

18 REFORMS AND RESOURCE MOBILIZATION

18.1 Overview

Urban reforms are the main focus of good governance and service delivery to the inhabitants of the urban area. Several initiatives and reforms have been taken up at the national level and state level. These reforms need to be replicated and implemented by the ULBs completely in a time bound manner. The State Government and the Urban Local Bodies have executed a Memorandum of Agreement with the Government of India, committing to implement the reform program..

Under the Urban Local Bodies level, reforms committed viz., E-Governance, shift to Accrual based double entry accounting, property tax (85% coverage), property tax collection efficiency (90%). 100% cost recovery for water supply and solid waste services have been committed to be achieved in the year 2012. Internal earmarking of funds for services to Urban Poor has been done and provision of Basic services to urban poor has been committed to be achieved in the year 2012. Encouragement of Public Private Partnership to be carried on through outsourcing in solid waste management, street light maintenance, pumping station maintenance, STP maintenance and hiring of vehicles. Many of the suggested reforms have been implemented to some extent though at the ULB level further refinement and qualitative implementation needs to be carried out. Besides these mandatory reforms the ULBs have initiated Institutional Strengthening, Capacity building for administrative and elected representatives under various reform programs of TNUDP and State Government.

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18.2 Reform measures of Thuraiyur Municipality

The reform measures to be undertaken by the municipality can be broadly classified into 3 broad heads:

- ✓ Financial and Accounting Reforms
- ✓ Institutional reforms
- ✓ Reforms in physical infrastructure

18.2.1 Financial & Accounting reforms

18.2.1.1 Financial Reforms

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As a part of financial reforms, reforms in tax and non tax collection needs to be taken up for improving the financial position of the municipality. The reform process of tax collection should be comprehensive and should focus on structural and systematic changes so that the increase in efficiency is sustained. This is vital for achieving self-sufficiency and improving its financial health to make it possible for the ULB to undertake various projects for the welfare of the people.

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The revenue department of Thuraiyur Municipality is responsible for collection of various taxes and charges from its citizens including raising the demand for key revenue items like property tax, profession tax, water charges etc., follow up on outstanding payment and prepare the Demand Collection Balance (DCB) statement. There is 1 revenue inspector and 5 revenue assistants for revenue collection and all the posts are filled up.

One of the most important yard stick for measuring the robustness of tax collection is collection efficiency. The Collection Efficiency of important revenue sources of Thuraiyur Municipality for the last 3 years is given as under:

Table 18-A: Collection Efficiency of key revenue sources

<i>Particulars</i>	<i>2004-05</i>	<i>2005-06</i>	<i>2006-07</i>
I. PROPERTY TAX			
Arrears	36%	31%	30%
Current	97%	97%	98%
Total	82%	88%	90%
II. PROFESSIONAL TAX			
Arrears	5%	6%	4%
Current	92%	96%	95%
Total	43%	48%	45%
III. WATER CHARGES			
Arrears	59%	41%	28%
Current	97%	99%	98%
Total	95%	96%	96%

Source: DCB of Thuraiyur Municipality

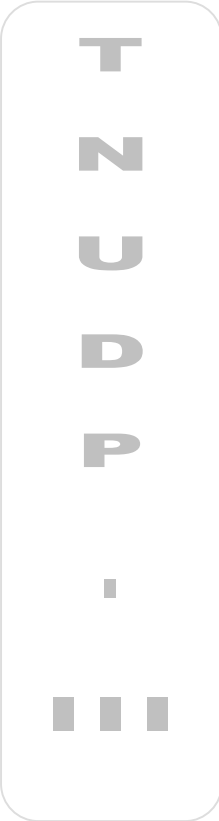
Table 18-B: Efficiency parameters of key taxes and water charges

<i>Particulars</i>	<i>Current Collection efficiency (2006-07)</i>	<i>Arrears Collection efficiency (2006-07)</i>	<i>CAGR in no of assessments (%) Last 5 years</i>	<i>CAGR in the terms of value (%) Last 5 years</i>
Property taxes	98%	30%	2.98%	2.83%
Profession Taxes	95%	4%	Nil	9.94%
Water Charges	98%	28%	Nil	Nil

Source: Thuraiyur Municipality

18.2.1.1.1 Property taxes:

Property taxes are one of the important sources of revenue for Thuraiyur Municipality accounting for more than 70% of the tax income of the municipality. The current and



arrear collection efficiency of property taxes stands at 98% and 30% respectively as on 31.03.2007. Though the current collection efficiency appears satisfactory at over 80%, the CAGR of no of assessments (3%) and in value terms (3%) reveals in stagnancy in identifying under assessed and un assessed properties. This needs to be addressed on priority basis. Hence there is an urgent to need to identify more assessments and also further revise property taxes to generate sufficient revenue to fund its development programs.

Robust growth in Taxes is required to meet the fund the projects. Proper implementation of reforms is a pre-requisite for healthy revenue generation. In the light of the revision in property taxes announced by the State government and based on our discussions with the municipality, a 25% growth in property taxes has been envisaged every 5 year period starting from 2008-09. Healthy growth in number of assessments, updated tax demand, periodic revisions and high collection efficiency is important for strong growth in property tax collection

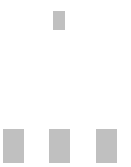
Some of the possible means of enhancing the property tax collection are given below:

Table 18-C: Reforms in property Taxes

Suggested Property taxes Reforms
<ul style="list-style-type: none"> ➤Mandatory Implementation of Revision of Property Tax once in every five years is required. ➤Digitization of the property maps through GIS to identify un -assessed and under assessed properties is required. GIS based mapping system is advisable for each property identified on GIS (Whether it is residential, commercial or industrial).The above database can be crossed checked with the data from various governmental authorities/sources such as Income Tax, Profession Tax, and Electricity Bills etc. Such database also would help the ULB to verify the utility of the property against the purpose for which permission was taken. A cost benefit study should be conducted to evaluate the possibility of the introduction of remote sensing/GIS. ➤Computerization of records of encroached properties, action taken, list of encroachers through MIS would enable linking the same with GIS.

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Suggested Property taxes Reforms

- Making the payment of property tax more convenient for the assessee through the use of various alternative modes can be explored:
 - Through banks
 - Through online payment
 - Through ECS/ EFT
- Using special schemes and incentives to encourage people to make the payment of property tax before the lapse of the due date can be considered. Rebates can be offered for advance payment of property taxes
- Collection of arrears through innovative means such as community participation and fast track litigation methods need to be attempted. Law enforcement powers should be given to the municipality to compel payment of taxes and other charges levied by them.
- Improve enforcement against defaulters by modifying byelaws with adequate recourse to ULB within the current framework for enforcing disconnections on defaulters.
- PSP involvement in computerization, billing, collections and survey of properties can be explored.
- Rewarding collection efforts of the employees to encourage more aggressive collection.
- List of consistent major defaulters can be published in the notice board of the municipality office. This can be resorted in the case of extreme default.
- Suitable legislation at state level to ensure that in the case of disputed property tax the assessee should first pay the tax under protest and then can take the necessary legal recourse as done in customs/excise duties can be considered.
- Late payment of property tax after the grace period can be penalized with nominal charges as being done in the case of insurance payments etc

18.2.1.2 Accounting reforms

The administrative section is responsible for maintenance of all income and expenditure statements, payment, preparation and implementation of budget. The system of accounting has undergone a transformation from cash based accounting system to accrual accounting system in line with the State government’s reforms initiative.

Table 18-D: Accounting Reforms***Suggested Accounting Reforms***

- ✓ As on date Thuraiyur municipality has audited accounts only upto FY 2005-06. Therefore there is an urgent need for the ULB to update its accounts to the latest year to provide a complete, updated details on the financial health of the ULB. Hence accounts need to be finalized within the year itself instead of couple of years later as seen currently. This would enable the ULB to identify the revenue gaps, financial commitments and costs of various services and take remedial measures to regain its financial health.
- ✓ Zero based budgeting would need to be carried out for continual monitoring of budgets and cash flow management.
- ✓ As a part of a larger accounting reform process at the State level, it is suggested that the ULB can include disclosures in its Annual Accounts and other published documents details on cost recovery of essential services through direct “user charges”, indirect “taxes” and Environmental status report. This information can be made available to the public through various channels (Such as hosted the details on the website, distribution of pamphlets, Involving SHGs/NGOs/Woman Groups for spreading awareness, Public announcements etc) in simple effective language to facilitate substantial/full recovery of O&M costs of the various essential services such as Water Supply, Solid Waste Management, etc. The awareness creation at various levels will increase the “willingness to pay” actions of the citizens of the area.
- ✓ The audited annual accounts can contain ULB Discussion and Analysis Report (UDAR) providing a holistic view on the financial health, quality of service level rendered, initiatives taken/proposed by the ULB to improve the city, areas of concern, targets and action plan to achieve the same etc. This report along with the Urban Performance indicators can provide a qualitative edge to the accounting and financial reporting system that can go a long way towards achieving high levels transparency, accountability and easy and smoother facilitation of the reform process required. Thus the support from the stakeholders of the city would become easier if the awareness is created with these qualitative reports being prepared and shared with the key stakeholders of the city.

18.2.2 Institutional Reforms

The Institutional reforms suggested for Thuraiyur municipality can be broadly divided into the following heads:

- Training and Capacity Building for administrative staff and elected officials
- Private Sector Participation
- User charges
- MIS and E Governance

18.2.2.1 Training and Capacity Building for administrative staff and elected officials

Both the elected and administrative member has undergone periodic training under the TNUDP and other programs of the state government. For the administrative staff training has been given at various levels in the areas of Technical issues, Accounts, Human Resources, Computer etc.

The various training undergone by the staff of Thuraiyur Municipality has been elaborated as under:

Training

Training to the staff are provided in the areas of Human Resource development & Training, Sectoral Training, Accounts and Computerisation and E-governance depending upon the need under TNUDP III Programmes and other programmes organized by CMA

Some of the details of latest training undergone by the staff are as below:

HRD training imparted to Manager, Accountant, and Sanitary Officer & Revenue Inspector under TNUDP III Programme in Yercaud

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Computer training was imparted to all the staff above the rank of Junior Assistant was held in perambalur during October 2007

5 days training was imparted to Municipal Engineer, Manager & E1 in clerk of the Engineering department in the Municipality in September 2007 by CMWSSB on Skill Development of staff in engineering department covering technical, human and financial areas.

- **Public Grievance Redressal Mechanism**

- ✓ Grievances from the public are received from various sources such as the CM Cell, Collectorate, Elected Councilors and direct complaints in the complaint register.
- ✓ Chairman and Commissioner are actively involved in addressing the grievances from the public.
- ✓ The redressal response time has been fixed for various grievances

It is recommended that the periodicity of the training can be enhanced coupled with more qualitative in-depth focus on the type of training offered. This would result in increased awareness among the administrative staff on various issues there by enhancing their productivity and creating awareness about their responsibility towards the public. For both elected and administrative members educational and awareness tours can be organised to understand the best practices in various services of other ULBs.

18.2.2.2 Private Sector Participation

Government of Tamil Nadu (GoTN) has laid down a policy clearance order for the ULBs in the State, indicating the areas of privatisation in the sectors of Solid Waste Management, Water Supply, Sewerage, Drain Cleaning, Public Toilets, Road Maintenance, Street Lighting, Parking lots, parks and play grounds, and vehicle maintenance. The GoTN states that this list is indicative and local bodies are free to investigate other areas of privatisation. The local body would be saving the indirect cost towards pension, gratuity, etc if privatization efforts are initiated and effective monitoring and evaluation on the delivery of services of private contractor is adopted.

Table 18-E: Areas of Privatization/outourcing

Areas of privatization/Outsourcing	Details
SECTOR CURRENTLY PRIVATISED	NONE (There is a proposal to Privatize Street Light Maintenance)
Other areas of privatization	The ULB can also seek private sponsorship for purchase of household bins for waste segregation once awareness is created among the public on the waste segregation

18.2.2.3 User Charges

There is a need to introduce in phases “User Charges” for various infrastructure amenities provided by the municipality. Cross subsidization of tariff, Innovative product structuring and community participation are some of the measures which could be explored to provide services for the urban poor.

Currently only for water supply the ULB is able to generate direct revenue in the form of water charges, initial deposit and connection charges and indirectly through water tax which is a component of property tax. For other services the ULB depends on its taxes and external funds to fund its activities. As these are inadequate the municipality is facing continuous deficits even in meeting its obligatory commitments and are unable to initiate any major improvement scheme for development of the city. In the light of the above limitations, the ULB needs to explore the option of introducing user charges in other areas too. For the proposed UGD collection of user charges for meeting O & M expenses becomes imperative.

Some of the suggested areas are user charges from commercial entities and institutions for solid waste management to be extended to residential areas in phases after proper awareness is created at all levels. However as per our discussions with the OWG, immediate introduction of user charges may not be possible.

To enhance its revenue the municipality would need to increase the deposit charges for new connections and can explore the option of increasing the water charges. This backed by higher collection efficiency and enhanced service coverage of water connections can minimize revenue leakages from water sources. It is recommended that the service coverage to be improved from the current 44.67% to 85% over a

stipulated time period. This could also minimize unauthorized/illegal connection. However in the absence of records in these aspects, the revenue loss from water supply cannot be quantified accurately.

18.2.2.4 E-Governance & Computerization

There is a data entry operator for attending to information and MIS requirements. This activity has come under the limelight after a significant computerization activity was undertaken under TNUDP programs. The municipality also has an E-mail address and any complains or suggestions can be received on this.

Table 18-F: E-Governance status

<i>Name of the module</i>	<i>Online Status</i>
Property Tax	Yes
Water Charges	Yes
Professional Tax	Yes
Non Tax	Yes
D&O & PFA	No
Financial Accounting System	Yes
Birth and Death	Yes
Building Plan	Yes
Solid Waste Management	Yes
Inventory	No
Movable Assets	No
Immovable Assets	No
Vehicles	Yes
Personnel Management System	Partially 69 out of 124 bio data entered
Hospital	No
Grievances	Yes
Family Enumeration	No

Source: Thuraiyur Municipality

18.2.3 Reforms in Physical Infrastructure

Table 18-G: Reforms in Physical Infrastructure

Sectors	Suggested Reforms
Water Supply	<ul style="list-style-type: none"> ➤ Service coverage of water connections to be increased from current 44.67 % to 85% by 2022-23. ➤ Water supply charges and connection charges need to be revised on periodic basis ie once in 5 years to fund its future investments in water supply. ➤ Monthly service charges for the consumers can be increased minimum of 25% every 5 years. ➤ For funding its investments in water supply, the municipality can consider alternative payment structures for water. It could offer one-time payment options, where the connection fee is bundled with usage fees for a number of years. The packages could be made attractive by offering suitable levels of discounts. This could result in reduction in collection risk and reduced cost of billing and collections. The same could be used for other services, where the collection requires the effort of the municipal staff. ➤ To improve the collection levels, the municipality could look at providing an incentive and penalty structure for payment of water taxes and charges. ➤ For reducing operating and maintenance costs, water leakage audit, installation of leak detection equipment and replacement of pipes needs to be done on regular basis. ➤ Currently there is no record maintained for Unaccounted for Water (UFW). UFW is the difference between the volume of water delivered into the distribution system and the water sold/billed or accounted for by legitimate consumption. There is need for maintaining such a record for reducing the possibilities of revenue leak through unauthorized/illegal connections. ➤ Pumps, motors and distribution network which undergo severe wear and tear impact power costs of the municipality besides reducing operational efficiency. Hence periodic maintenance of the system with regular investments in up gradation and replacement of pipelines, motors and pumps needs to be followed to avoid huge one time expenditure to the maximum extent possible. ➤ Privatization in routine maintenance relating to water supply such as hand pumps can be considered ➤ Periodic technical training to its engineering cell is required.

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Sewerage services

- Privatization of maintenance of sewerage system can be considered to reduce the establishment charges of municipality and O&M Charges.
- Sewer Connection charges to the users can be increased once in five years for better revenue generation.
- Monthly service charges for the consumers can be increased minimum of 25% every 5 years.
- To improve the collection levels of monthly charges, the municipality could look at providing an incentive and penalty structure for payment of charges and privatize the collection system.
- Pumps, motors in sewage pumping stations undergo severe wear and tear and impacts power costs of the municipality besides reducing operational efficiency. Hence periodic maintenance of the system with regular investments in up gradation and replacement of pipelines, motors and pumps needs to be followed to avoid huge one time expenditure to the maximum extent possible.
- Annual Maintenance Contract for Sewage Pumping Stations and Sewage Treatment Plants can be adopted.
- Periodic technical training to its engineering cell is required in O&M of Sewage Treatment Plant, Pumping Stations and Sewer Networking System.

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Solid Waste Management

- Door to door collection of garbage at household level and segregation of waste at source need to be implemented after creating suitable awareness level
- Gradual and phased introduction of user charges initially for commercial areas later to be extended to residential zones can be considered in later years after proper awareness is created among various stake holders.
- Private sponsorship of bins for waste segregation at house hold level can be looked into
- Vehicles used in SWM and conservancy activities such as tipper lorries, tractors; dumper blazer etc can be maintained through outsourcing arrangement with reputed contractors. The Annual Maintenance Contract should be all comprehensive covering various critical clauses in order to protect the municipality from possible claims from the Ways to improve the revenue from charges that are being collected from different commercial establishments like hotels including kiosks, eating houses, restaurants, star hotels and retail markets should be studied.
- The municipality can identify the ways to generate revenue from Solid Waste by selling compost at market.

	<ul style="list-style-type: none"> ➤ The municipality can auction to the private parties for disposal of recyclables. ➤ Potential for getting carbon credit benefit through the Clean Development Mechanism (CDM) need to be studied in making a comprehensive solid waste management scheme. ➤ Privatization of services for the following activities can be undertaken to reduce the establishment charges and O&M charges of Municipality: <ul style="list-style-type: none"> ○ Door to door collection of domestic waste ○ Door to door collection of commercial waste, construction waste and Market waste. ○ Setting up and operation and maintenance of waste treatment plants. ○ Supplying vehicles on rent ○ Transportation of waste on contract basis. ➤ Delegation of powers and fixing accountability should be done for better management of the system. . ➤ Human Resources Development <ul style="list-style-type: none"> ▪ Special training to unqualified staff ▪ Refresher courses for all levels of staff about advances in the field of SWM ▪ Exposure to elected members ▪ Design of SWM course to Public Health staff
Street lights	<ul style="list-style-type: none"> ➤ Meeting the norms of one pole per 30 meters by 2012-13 ➤ Energy Audit needs to be conducted periodically. ➤ Private parties can be involved for financing, operation and maintenance of energy efficient street light projects to reduce the cost incurred for the same.
Roads	<ul style="list-style-type: none"> ➤ Relaying Bitumen roads once in three years with patch works to be undertaken based on the need in between years ➤ Future roads to be laid with dedicated service lanes. ➤ Relaying roads with recyclable materials like fly ash, can be explored

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18.3 Additional Resource Mobilization

As discussed in detail in earlier chapter that the revenue of the municipality is inadequate to meet its service obligations and hence faces resource constraint in initiating major development works which require sustainable investments. Hence both the traditional and non-traditional alternatives for resource mobilization need to be evaluated in light of the huge investments required for many projects identified.

Resource Mobilization efforts need to be directed towards generating additional revenue from existing avenues such as property taxes, profession tax, water charges, service charges and fees and remunerative assets of the municipality. Besides this the municipality would need to take measures to control expenditure in water supply, solid waste management, street lighting etc. Additional resource mobilization options such as enhancing revenues of remunerative assets, non-tax revenue options such as advertisement and parking fees for the municipality are discussed in detail in subsequent paragraphs.

18.3.1 Additional revenue from Social Remunerative assets

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Table 18-H: Revenue from Social Assets.

Rs.in Lakhs

Particulars	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008 (estimates)	2008-2009 (Estimates)
Daily market	1.46	1.53	1.70	3.31	3.81	3.87	4.01
Entry fee	6.11	6.20	8.05	8.12	7.22	7.41	7.42
shops (123 Nos)	15.69	15.00	16.10	16.50	17.17	17.17	NA
Sub Total	23.25	22.74	25.85	27.93	28.19	28.44	
<i>Bus stand shops</i>	50						
<i>Slaughter house shops</i>	17						
<i>Daily Market shops</i>	45						
<i>Municipal office shops</i>	11						
Total (no of shops)	123						

Source: Thuraiyur Municipality

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As seen from the above table, the municipality earns about Rs.28-29 lacs from remunerative assets including daily market, bus stand entry fee for bus stand, shops, etc. More than 60% of the revenue is from the 123 shops owned by the municipality. Some shops in the market place and some mutton shops have not been leased due to absence of demand. There is no income from Slaughter houses due to absence of demand so Municipality is planning to adopt departmental collection system to generate revenue. The municipality's income from remunerative social assets has stagnated limiting the possibility of funding critical services like street lights and solid waste management.

As per our discussions with the municipality, renovation and construction of additional floors are required for the following shops:

- Bus stand shops – 50 shops including 2 restaurant shops (10 X 10 feet) – first floor construction is required
- 11 shops before Municipality office – first floor construction is required. (f 10 X 10 feet)

Renovation and construction of additional floor in bus stand shops and municipality office can yield additional revenue for the municipality and can be funded through loan, municipality contribution and some advance from tenants of the proposed construction. However in the absence of proper feasibility and cost benefit study, the benefits of revenue enhancements through renovation and improvement of these shops cannot be quantified.

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18.3.2 Advertisement & Parking Fees

Currently no Advertisement Fees or parking fees is being collected by the municipality. Possibilities of revenue from this source are limited in the absence of major industrial activity in this town.

19 FINANCIAL OPERATING PLAN

19.1 Background- need for an FOP

The Financial Operating Plan (FOP) assesses the financial strength of the municipality to implement the identified investments. The Financial Operating Plan (FOP) forecasts the municipal finances on the basis of certain assumptions on income and expenditure. The primary objective of the FOP is to ascertain the investment sustenance capacity of the municipality under different scenarios of revenue enhancement and expenditure control.

In the FOP three scenarios are envisaged

Scenarios	Details
Base Case Scenario	No New Projects without Reforms
Full Project Scenario	Implementation of all Projects required for the next 15 years with Reform implementation
Sustainable Project Scenario	Implementation of key Projects required for the next 15 years with Reform implementation

The key reforms are highlighted in Table below. The total reforms suggested have been elaborated in Reforms Implementation Schedule Figure 19-1

Key reforms

Particulars	Current practice	Reform suggested
Revision in Property tax rates	Revision once in 10 years	25% increase in every 5 years
Service level Coverage (Water Supply- Number of assessments)	53%	3% to 4% increase every year achieving 85% coverage by 2017-18
Revision in Initial Deposit for New Water Connections	Adhoc revision	Rs.2000 increase every 5 years for each new connection
Revision in Water Charges	Adhoc revision	25% increase every 5 years
Revision in Initial Deposit for New UGD Connections	No UGD currently	Rs.2000 increase every 5 years for each new connection
Revision in Monthly user charges for UGD	No UGD currently	25% increase every 5 years
User Charges for Solid Waste Management	Not Charged	Rs.40 per month from Non-Domestic assesses from the year 2011-12 and Rs.20 per month from Domestic assesses from the year 2013-14. A 25% increase every 5 years in the user charges has been proposed.

19.2 Financial Sustainability

The financial sustainability Analysis is carried out with the basic assumption that the municipality will carry out reforms and projects envisaged under various scenarios. The Financial Operating plan prepared for Thuraiyur Municipality evaluates the municipality's financial position based on the three scenarios described below:

19.2.1 Base Case Scenario

In the base case scenario, the finances of ULB are forecast for next 15 years without taking into consideration any new projects envisaged in Capital Investment Plan. Additional resources mobilized through various initiatives such as resource mobilization through enhanced revision of property tax rates and no of assessments (based on projected population increase), increased revenue realization through faster growth in service charges and fees including revision of user charges and connection charges for water supply, other income (mainly Lease rental income) etc are loaded to the FOP in the base case scenario. Routine revenue expenses including Operations and Maintenance of existing assets have also been considered and loaded to the FOP. Revenue surplus thus generated indicates ULBs capacity to service the usual capital expenditure in the normal course of running its operations.

19.2.2 Full project Scenario

Full Project scenario for Thuraiyur has been worked out based on estimated demand supply analysis of various physical and social infrastructure requirements of the city and feedback of OWG members on the city's needs for the next 15 years. The financial mix for funding these projects has been based on prudent financial norms and existing practices currently being followed today. The projects identified are vital for meeting the basic requirements of the town as per the infrastructure standards. Furthermore all the projects identified fall under the obligatory functions under the

12th Schedule. In the event of the town not undertaking the project, the key problems would be poor infrastructure resulting in poor service delivery and loss of potential revenue from new revenue streams like UGD. To overcome these issues the framework for FOP is developed taking into account existing strengths of the town and also reducing the inefficiencies in the system.

Phasing of the identified projects is done based on the possible year of construction, demand supply gap analysis and investment priority of the OWG members. Implications of the investments worked out in terms of external borrowing required, the resulting debt servicing commitments, external support in form of grants and additional operation and maintenance expenditure anticipated due to the new projects identified have been worked out for the next 15 years. Debt servicing capabilities, gaps in required investments from ULB for the said projects vs the actual availability with the municipality for the ULB's contribution for the said projects has been worked out to estimate the extent of ULB's capability to meet its contribution for financing the new projects identified under Capital Investment Plan.

The implications on the investment and borrowing capability of the ULB for all the identified projects is worked out under two scenarios

- A) Without suggested reforms
- B) With suggested reforms

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19.2.3 Sustainable Project Scenario

The sustainable investment scenario is worked out when the full project investment scenario indicates inability of the municipality to sustain the full identified investment. In this case, the identified investment is sized down to immediate felt need for the municipality to sustain on its own with external support and borrowings.

19.3 Assumptions for FOP

This FOP is based on a whole range of assumptions related to income and expenditure. These are critical to understand the financial projections worked out, sustenance of the projected increase in revenue and expenditure under various scenarios and surplus thus generated. Assumptions regarding interest rates, repayment terms and conditions, financing pattern have also been explained in subsequent paragraphs. Assumptions regarding additional Operation and Maintenance Expenses for the new projects identified have also been provided. The assumptions would help in understanding the extent of investment sustenance for future projects envisaged.

19.3.1 Revenue Income

In case of taxes and non tax revenue such as property taxes, water charges and sewerage charges where the base and basis of revenue is fairly well known and predictable the likely revenue is forecast based on certain assumptions regarding growth in number of assessment, revision in average revenue per property (for property taxes), revision in charges/Tariffs (water charges and sewerage). Table 19-A, Table 19-B, Table 19-C lists out the assumptions with regard to forecasting income from property tax, water charges and sewerage charges respectively. Assumptions regarding other sources of revenue income have been given in Table 19-D. Tables indicate the assumptions in revenue income in base case scenario and investment scenario.

19.3.1.1 Property Taxes

Table 19-A : Key assumptions for forecasting income from Property Taxes

<i>Description</i>	<i>Current Level</i>	<i>Base Case Scenario</i>	<i>Investment Scenario</i>
Annual Growth in Number of Assessment	2.98% (CAGR from 2002-03 till 2006-07)	Projected based on the estimated increase in population of the city	Projected based on the estimated increase in population of the city
Periodic Increase in Average Revenue per property (%)		25% increase in every 5 years	25% increase in every 5 years

Source: Analysis

19.3.1.2 Water Charges

Table 19-B: Key assumptions for forecasting income from Water Charges

<i>Description</i>	<i>Current Level</i>	<i>Base Case Scenario</i>	<i>Investment Scenario</i>
% OF WATER CONNECTIONS TO PROPERTY TAX ASSESSMENT			
2007-08	44.67%		
2012-13		55%	55%
2017-18		70%	70%
2022-23		85%	85%
INITIAL DEPOSIT FOR NEW WATER SUPPLY CONNECTIONS (Rs. per connection)			
Domestic (Rs.)			
<i>From 2008-09 till 2012-13</i>	<i>Rs.4000</i>		
<i>From 2013-14 till 2017-18</i>		<i>Rs.6000</i>	<i>Rs.6000</i>
<i>From 2018-19 till 2022-23</i>		<i>Rs.8000</i>	<i>Rs.8000</i>
Non-Domestic (Rs.)			
<i>From 2008-09 till 2012-13</i>	<i>Rs.7000</i>		

From 2013-14 till 2017-18		Rs.9000	Rs.9000
From 2018-19 till 2022-23		Rs.11000	Rs.11000
WATER CHARGES (per month)			
Domestic (Rs.)			
From 2008-09 till 2012-13	Rs.80		
From 2013-14 till 2017-18		Rs.100 (25% Increase)	Rs.100 (25% Increase)
From 2018-19 till 2022-23		Rs.125 (25% Increase)	Rs.125 (25% Increase)
Non-Domestic (Rs.)			
From 2008-09 till 2012-13	Rs.305		
From 2013-14 till 2017-18		Rs.381 (25% Increase)	Rs.381 (25% Increase)
From 2018-19 till 2022-23		Rs.477 (25% Increase)	Rs.477 (25% Increase)

Source: Analysis

19.3.1.3 Sewerage Charges

Table 19-C : Key assumptions for forecasting income from Sewerage Charges for the proposed UGD project

Description	Current Level	Base Case Scenario	Investment Scenario
Number of UGD Connections			70% of Total Number of Property tax assessment
Ratio of Domestic and Non-Domestic to the total UGD Connections (This is based on the current % of Domestic and Non-Domestic of the total Property tax assessments)			90:10
MONTHLY USER CHARGES			
(Note: Monthly User charges would be collected after the UGD Project is completed)			
Domestic (Rs./Month.)			
From 2011-12 till 2015-16	Rs.90		
From 2016-17 till 2020-21			Rs.113 (25% increase)
From 2021-22 till 2022-23			Rs.141(25%

			increase)
Non-Domestic (Rs./Month.)			
<i>From 2011-12 till 2015-16</i>	Rs.350		
<i>From 2016-17 till 2020-21</i>			Rs.438 (25% increase)
<i>From 2021-22 till 2022-23</i>			Rs.547 (25% increase)
DEPOSIT FEE /CONNECTION			
Domestic (Rs.)			
<i>From 2008-09 till 2012-13</i>	Rs.5000		
<i>From 2013-14 till 2017-18</i>			Rs.7000
<i>From 2018-19 till 2022-23</i>			Rs.9000
Non-Domestic (Rs.)			
<i>From 2008-09 till 2012-13</i>	Rs.8500		
<i>From 2013-14 till 2017-18</i>			Rs.10500
<i>From 2018-19 till 2022-23</i>			Rs.12500

Source: Analysis

19.3.1.4 Other sources of Revenue income

Table 19-D : Assumption for Income

Particulars	CAGR-(%)	Projected growth Rates (%)	Notes
Profession Tax	9.55% (2003-04 till 2006-07)	7%	-
External Sources (Assigned Revenue+ Devolution Funds+ Grants & Contribution)	Negative CAGR of 13.84% for Assigned Revenue & 14.50% for Devolution	5%	Moderate growth of 5% is assumed

	Funds (2002-03 till 2006-07)		
Service Charges & fees (Excluding Water Charges)	Inconsistent Trend	5%	Includes Building license Fees (8% growth rate assumed on account of Bus Stand Improvement) and Other Fees
Other Income	Inconsistent Trend	5%	Other Income consisting of Daily Market Fees, Rent on Shopping Complex & shops etc; In the 2007-08 Budget ,provision has been made in the Education Fund for Rs.50.70 towards Interest of Fixed Deposit which is very high hence for 2008-09 projection, 2005-06 is taken as the base year
User Charges for Solid Waste Management			Rs.40 per month from Non-Domestic assesses from 2011-12 and Rs.20 per month from Domestic assesses from 2013-14. A 25% increase every 5 years in the user charges has been envisaged.

Source: Analysis based on past financials provided by Thuraiyur Municipality

19.3.2 Revenue Expenditure

19.3.2.1 Current Revenue Expenditure

Table 19-E: Assumption for Revenue Expenditure

<i>Particulars</i>	<i>CAGR-(%)</i>	<i>Projected Growth Rates (%)</i>
Personnel Cost & Retirement Benefits (Salaries)	Salaries- 9.63% (2002-03 till 2006-07) Retirement Benefits- Inconsistent trend	7%
Operating Expenses	Inconsistent Trend	5%
Repairs & Maintenance	11.18% (From 2002-03 till 2006-07)	6%. This Includes the Maintenance expense for water supply works which has been projected based on the supply from TWAD to the ULB @ 90 LPCD per person
Administrative Expenses	15.66% (2002-03 till 2006-07)	5%

Source: Analysis based on past financials provided by Thuraiyur Municipality

19.3.2.2 Future Debt obligations

Table 19-F: Key assumptions for forecasting future debt obligations

<i>Sector</i>	<i>Tenure</i>	<i>Moratorium</i>	<i>Rate of Interest (%)</i>
Water Supply, UGD	20	5	9.00

Roads, Storm Water Drains	10	2	8.50
Others	5	NIL	9.00

Source : Analysis

19.3.2.3 Additional O&M Expenditure due to sub-projects

This has already been covered in Chapter 17: Asset Management Plan Table 17-E O & M for proposed capital works

19.3.3 Funding Mechanism

Table 19-G : Financing Pattern for Proposed projects

Particulars	Loan	Grant	ULB Share/Public Contribution	Notes
Water Supply	50	30	20	
UGD	50	30	20	* Public Contribution
Sanitation		50	50	
Storm Water Drainage	60	30	10	
Solid Waste Management		50	50	
Roads, Traffic and Transportation	60	30	10	
Street Lighting			100	Small Works
Socio-Economic Infrastructure				
Hospitals / Primary Health centers			100	
Parks and Playgrounds		50	50	
Community hall		50	50	
Municipal building		50	50	
Commercial complexes / Shops	90		10	19-11
Slum Improvement		80	20**	** Equal Contribution from the ULB and the beneficiaries

Source: Analysis

19.4 Outcome of Financial Operating Plan

19.4.1 Base Case Scenario (“Business as Usual Scenario”)

In the Base Case Scenario, the finances of ULB are forecast for the next 15 years without taking into consideration any new projects envisaged in Capital Investment Plan (CIP). The past trends in growth rates in revenue income and expenditure are assumed to continue over the next 15 years. No new revenue sources such as user charges for UGD, SWM are envisaged under this scenario. Revenue surplus thus generated indicates ULB’s capacity to service the usual capital expenditure in the normal course of running its operations. Table 19-H indicates the revenue surplus position of the ULB over the 15 year period.

The following are the outcome under this scenario:-

- The projected cumulative revenue surplus (Closing Balance) of the ULB shows a healthy surplus position over the 15 year period with a revenue surplus amounting to only Rs.351 Lakhs in the year 2022-23.

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Table 19 H :Financial Operating Plan - No Projects,No REFORMS- Base Case Scenario

Particulars	Projections														
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Opening Balance (X)	-43	69	71	69	66	59	65	79	90	105	117	167	215	262	307
Revenue Income															
Property Tax	74	75	76	77	78	79	80	80	81	82	104	105	106	108	109
ProfessionTax	14	15	16	17	19	20	21	23	24	26	28	30	32	34	37
External Sources	103	108	114	119	125	132	138	145	152	160	168	176	185	194	204
Service Charges and Fees	173	74	76	78	80	97	99	102	104	107	130	133	137	141	145
Sale & Hire Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Income	25	28	31	34	37	41	45	50	54	60	66	72	80	88	96
Revenue Income (A)	390	301	313	326	340	368	384	400	418	436	496	518	541	565	592
Revenue Expenditure															
Personel Cost I (Salaries)	131	138	145	152	159	167	176	185	194	203	214	224	235	247	260
Personel Cost II (Others)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Terminal and retirement benefits	20	21	22	23	25	26	27	29	30	31	33	35	36	38	40
Operating Expenses	25	27	28	29	31	32	34	36	37	39	41	43	45	48	50
Repairs & Maintenance	71	75	79	84	89	94	100	106	112	119	126	134	142	150	159
Programme Expenses	3	4	4	4	4	4	5	5	5	5	6	6	6	6	7
Administrative Expenses	14	15	16	17	17	18	19	20	21	22	23	25	26	27	28
Debt repayment for existing loans	11	18	18	18	18	17	6	6	0	0	0	0	0	0	0
Revenue Expenditure(B)	279	300	314	330	346	363	370	389	403	424	446	470	494	520	548
Revenue Surplus/Deficit (A-B)= C	111	2	-1	-4	-7	5	14	11	15	12	50	48	47	45	44
Closing Balance (C+X)=D	69	71	69	66	59	65	79	90	105	117	167	215	262	307	351

19.4.2 Full Project Scenario WITH Reforms

Under **FULL REFORM** Scenario, the FOP for full project has been worked out as under:

- Funding pattern as per Prudent Financial norms

19.4.2.1 Full Project Scenario WITH Reforms and Funding pattern for the new projects based on prudent financial norms

The cash flows from the new projects under this scenario is shown in Table 19 I. The financial impact for the ULB in implementing full projects through additional resources generated on account of reforms suggested and as per the prudent financial norms is given in Table 19 J.

The following are the outcome under this scenario:-

- ✓ Even after undertaking the reforms suggested, the ULB faces constraint in meeting the O&M expenses of new Projects Year on Year (YoY) and cumulatively the Net surplus is very minimal for the next 15 years. The same has been shown in Table 19-K
- ✓ Hence with ULB's financial position, no borrowings would be possible for funding the projects identified.
- ✓ The ULB would not be able to contribute its share in the total project funding.

As seen from Table 19 K the ULB faces serious constraints in meeting the O&M expenses of new projects even with implementing all the reforms suggested. **Hence the only solution** is to undertake the most critical projects as it is extremely important for the ULB to atleast meet the O&M expenses of new projects the same has been elaborated under heading 19.4.3

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Table No 19 I: Full Project Cash Flow, With FULL PROJECTS WITH REFORMS - As per Prudent Financial Norms

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Particulars															
Opening Balance (A)		-1.09	-27.89	-89.31	-194.69	-278.06	-475.28	-703.77	-970.94	-1287.65	-1616.09	-2009.09	-2433.20	-2909.42	-3447.04
A Sources of Funds															
1 Debt Drawn Down	12.86	288.39	299.22	352.68	29.99	54.11	56.82	63.87	239.67	0.00	69.06	114.71	234.63	207.49	0.00
2 ULB Own Contribution	24.43	60.26	41.35	23.38	122.14	40.57	20.81	22.56	55.49	87.65	37.85	29.30	41.60	50.25	20.14
3 External Support	20.76	225.71	210.45	200.55	822.14	56.60	37.65	41.64	131.33	554.63	58.39	64.93	130.20	114.01	8.80
4 Public Contribution	0.00	106.32	109.43	114.91	99.87	0.00	0.00	0.00	0.00	67.99	0.00	0.00	19.70	0.00	0.00
5 Monthly User Charges from UGD	0.00	0.00	0.00	0.00	100.93	102.07	103.22	104.38	105.56	133.43	134.92	136.42	137.93	139.46	176.26
6 Initial Deposit from Additional UGD Connections	0.00	0.00	4.27	4.34	4.38	4.38	6.07	6.12	6.23	6.28	6.28	8.05	8.12	8.25	8.31
Total Inflow (B)	58.05	680.68	664.73	695.86	1179.45	257.73	224.57	238.57	538.28	849.99	306.50	353.42	572.17	519.46	213.51
B Disposition of Funds															
Project Capex	58.05	680.68	660.46	691.52	1074.14	151.28	115.28	128.07	426.50	710.28	165.31	208.95	426.13	371.75	28.94
O&M For New Project	0.00	0.83	11.73	19.22	93.26	201.01	218.65	238.80	260.99	294.73	336.28	363.90	400.86	440.21	484.97
Debt Servicing (Principal + Interest)	1.09	25.97	53.96	90.50	95.42	102.66	119.13	138.87	167.51	173.42	197.91	204.69	221.39	245.12	262.23
Others															
Total Outflow (C)	59.14	707.48	726.15	801.24	1262.83	454.95	453.06	505.74	855.00	1178.43	699.49	777.54	1048.39	1057.07	776.14
Net Cash Flow (B-C)= D	-1.09	-26.80	-61.42	-105.38	-83.37	-197.22	-228.49	-267.17	-316.72	-328.44	-392.99	-424.12	-476.22	-537.62	-562.63
Closing Balance (A+D)=E	-1.09	-27.89	-89.31	-194.69	-278.06	-475.28	-703.77	-970.94	-1287.65	-1616.09	-2009.09	-2433.20	-2909.42	-3447.04	-4009.66

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Table No 19 J : Financial Operating Plan (Consolidated)- With FULL PROJECT WITH REFORMS - Prudent Financial Norms

Particulars	Projections											Rs in Lakhs			
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Opening Balance (X)	-43	69	85	105	132	260	462	681	905	1141	1409	1753	2107	2469	2841
Revenue Income															
Property Tax	74	75	76	77	78	98	99	101	102	103	130	131	133	134	136
ProfessionTax	14	15	16	17	19	20	21	23	24	26	28	30	32	34	37
External Sources	103	108	114	119	125	132	138	145	152	160	168	176	185	194	204
Service Charges and Fees	173	89	94	99	105	139	147	155	164	172	220	231	243	254	266
Sale & Hire Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Income	25	28	31	34	37	41	45	50	54	60	66	72	80	88	96
User Charges from SWM	0	0	0	5	5	28	28	28	30	30	37	37	37	40	40
User Charges from UGD	0	0	0	0	101	102	103	104	106	133	135	136	138	139	176
Initial Deposit for New UGD Connections	0	0	4	4	4	4	6	6	6	6	6	8	8	8	8
Revenue Income (A)	390	316	335	356	475	564	589	612	639	692	790	823	856	893	965
Revenue Expenditure															
Personel Cost I (Salaries)	131	138	145	152	159	167	176	185	194	203	214	224	235	247	260
Personel Cost II (Others)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Terminal and retirement benefits	20	21	22	23	25	26	27	29	30	31	33	35	36	38	40
Operating Expenses	25	27	28	29	31	32	34	36	37	39	41	43	45	48	50
Repairs & Maintenance	71	75	79	84	89	94	100	106	112	119	126	134	142	150	159
Programme Expenses	3	4	4	4	4	4	5	5	5	5	6	6	6	6	7
Administrative Expenses	14	15	16	17	17	18	19	20	21	22	23	25	26	27	28
Debt repayment for existing loans	11	18	18	18	18	17	6	6	0	0	0	0	0	0	0
Revenue Expenditure(B)	279	300	314	330	346	363	370	389	403	424	446	470	494	520	548
Revenue Surplus/Deficit (A-B)= C	111	16	21	27	128	202	219	224	236	268	344	354	362	373	417
Closing Balance (C+X)=D	69	85	105	132	260	462	681	905	1141	1409	1753	2107	2469	2841	3258
Total Net Project Cash Flow (E)	-26	-88	-135	-222	-506	-622	-834	-1104	-1455	-1843	-2188	-2607	-3097	-3645	-4214
Overall Closing Balance (D+E)=F	43	-4	-30	-90	-245	-160	-153	-199	-314	-435	-435	-500	-629	-804	-956

Table No 19 K : Calculation of Net Surplus after meeting the O&M on account of New Projects- Full project WITH Reforms

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Rs.in Lakhs

Particulars	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Revenue Surplus before meeting the debt obligations	122.50	33.79	38.59	44.42	146.20	218.82	225.00	229.74	236.01	267.78	344.08	353.75	362.04	372.59	417.00
O&M on New projects	0.00	0.83	11.73	19.22	93.26	201.01	218.65	238.80	260.99	294.73	336.28	363.90	400.86	440.21	484.97
Revenue Surplus after meeting New O&M	122.50	32.96	26.87	25.20	52.94	17.81	6.35	-9.06	-24.98	-26.95	7.81	-10.15	-38.82	-67.61	-67.97

Cumulative

Cumulative revenue Surplus before meeting the debt obligations	79.83	113.62	152.21	196.63	342.83	561.65	786.65	1016.38	1252.39	1520.17	1864.26	2218.01	2580.05	2952.64	3369.64
Cumulative O&M on New Projects	0.00	0.83	12.55	31.77	125.03	326.04	544.69	783.49	1044.48	1339.21	1675.49	2039.39	2440.25	2880.46	3365.43
Cumulative revenue Surplus after meeting the New O&M	79.83	112.79	139.66	164.86	217.80	235.61	241.96	232.89	207.91	180.96	188.77	178.62	139.80	72.18	4.21

19.4.3 Sustainable Investment Scenario WITH Reforms

The sustainable investment scenario is worked out when the full project investment scenario indicates inability of the municipality to meet the O&M expenses of the projects identified. In this case, the identified investment is sized down to immediate felt need for the municipality to sustain on its own with external borrowings and support.

Implications of this investment in terms of external support required, borrowing capacity of the ULB and the resultant debt service commitment, and impact on O&M of new projects are worked out. The outcome of this scenario will give an indication of the actual level of investment sustainable by the municipality with external support.

The Capital Investment for various projects in sustainable scenario is shown in Table 19 L

Table 19 L Capital Investment Plan- Sustainable Scenario

Project Sector	Total Investment (Rs.in Lakhs)
Water Supply	126.13
UGD	1741.33
Sanitation	48.36
Storm Water Drainage	0.00
Solid Waste Management	240.27
Roads, Traffic and Transportation	24.61
Street Lighting	53.06
Socio-Economic Infrastructure	1219.87
TOTAL CAPEX	3453.63

T

N

C

D

P

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The List of projects not considered (Roads and SWD) under sustainable scenario are given in Table 19 M

Table 19 M: List of projects not considered for Sustainable Scenario

Project Name	**Project Cost before escalation (Rs.in Lakhs)
Creating closed drains for 31.49 Km after implementing UGD	538.41
Creating closed drains for 13.880 Km	219.00
Converting open drain into closed drain for 10 Km	102.05
Creating new roads of 10.6Km by 2022	159.00
8.269 BT road works proposed under UIDSSMT	121.40
5.207 CC road works proposed under UIDSSMT	77.00
Relaying 8.269 BT road once in Three years after its implementation (UIDSSMT)	31.42
Relaying 18.116 BT road after UGD implementation	68.82
Conversion of Kutcha road network into Pucca road network (11 Km)	110.00
Relaying new roads after each third year of its implementation 2.5 Km	19.00
Relaying new roads after each third year of its implementation 4.1 Km	15.58
Relaying new roads after each third year of its implementation 11 Km	41.80
Total Project Cost	1503.48

** Project Cost when implemented with escalation would come to **Rs.24.43 Crores**

19.4.4 Sustainable Investment Scenario WITH Reforms and Funding pattern based on prudent financial norms

The cash flows from the new projects is shown in Table 19 N and the financial impact in implementing sustainable projects through additional resources generated on account of reforms suggested and as per the prudent financial norms is given in Table 19 O

The following are the outcome under this scenario:-

- ✓ The ULB is able to meet cumulatively the O&M of new Projects for the next 15 years. The same has been shown in Table 19 P
- ✓ The ULB would not be able to borrow new loans as it would not be possible for the ULB to meet its debt repayment obligation .The same has been shown in Table 19 Q
- ✓ The ULB would not be able to contribute its share in the total project funding.
- ✓ The only solution for project implementation is a) Full Reform implementation by the ULB and b) Strong External support for funding of the new projects identified under the sustainable scenario The same has been discussed in heading 19.4.5

19.4.5 Sustainable investment Scenario WITH Reforms and with additional external support

The cash flows from new projects is shown in Table 19 R and the financial impact in implementing the Full projects WITH reforms but with additional external support is given in Table 19 S

The following are the outcome under this scenario:-

- ✓ The ULB is able to meet the O&M of new Projects for the next 15 years
- ✓ The ULB would not be able to borrow new loans as it would not be possible for the ULB to meet its new debt repayment obligation. The same has been shown in Table 19 T

- ✓ The resources available with the ULB would be only sufficient for meeting the current debt obligations (Old Loans) and contribute a minimal share towards the required ULB contribution.
- ✓ Total external support required would be Rs.28.65 crs in order to implement projects envisaged under sustainable scenario.

The table below shows the funding and borrowing capacity of the ULB under “Sustainable Scenario WITH Reforms”

Table 19 U: Funding based on prudent financial norms Vs Funding possibility based on borrowing capacity – Sustainable Investment Scenario WITH Reforms

Particulars	Sustainable Scenario- Funding based on prudent financial norms (Rs.in Lakhs)	Sustainable scenario – Funding based on borrowing capacity (Rs.in Lakhs)
Loan Amount	965.22	0.00
External Support	1624.45	2865.37
ULB Contribution	433.43	157.73
Public Contribution	430.53	430.53
Project cost	3453.63	3453.63

As seen from the above table, the ULB contribute only Rs.157.73 Lakhs against the requirement of Rs.433.43 Lakhs on account of reform implementation. The borrowing capacity of the ULB to fund the projects identified under this sustainable scenario is NIL .Total external support required would be Rs.2865.37 Lakhs in order to implement all the identified projects envisaged under this Sustainable scenario.

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Table 19 N -Full Project Cash Flow of Identified New projects in Sustainable Scenario- Prudent Financial norms

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Particulars															
Opening Balance (A)		0.00	-24.13	-80.03	-175.73	-244.35	-418.29	-614.00	-835.94	-1080.55	-1320.46	-1583.09	-1866.22	-2181.58	-2527.60
A Sources of Funds															
1 Debt Drawn Down	0.00	274.89	285.05	324.12	0.00	0.00	0.00	0.00	12.98	0.00	0.00	0.00	49.26	18.93	0.00
2 ULB Own Contribution	22.28	58.01	38.99	18.62	117.15	31.55	11.34	11.92	17.71	19.66	26.34	10.19	10.70	18.82	20.14
3 External Support	14.33	218.96	203.36	186.27	807.15	29.54	9.24	9.71	17.98	10.71	23.86	7.58	57.22	19.73	8.80
4 Public Contribution	0.00	106.32	109.43	114.91	99.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 Monthly User Charges from UGD	0.00	0.00	0.00	0.00	100.93	102.07	103.22	104.38	105.56	133.43	134.92	136.42	137.93	139.46	176.26
6 Initial Deposit from Additional UGD Connections	0.00	0.00	4.27	4.34	4.38	4.38	6.07	6.12	6.23	6.28	6.28	8.05	8.12	8.25	8.31
Total Inflow (B)	36.62	658.18	641.10	648.26	1129.48	167.54	129.87	132.12	160.45	170.09	191.39	162.23	263.22	205.19	213.51
B Disposition of Funds															
Project Capex	36.62	658.18	636.83	643.92	1024.17	61.09	20.58	21.62	48.67	30.38	50.20	17.76	117.18	57.49	28.94
O&M For New Project	0.00	0.40	10.84	17.84	90.67	197.12	212.87	231.00	250.82	274.05	298.25	322.61	354.01	384.19	419.44
Debt Servicing (Principal + Interest)	0.00	23.73	49.33	82.20	83.26	83.26	92.13	101.44	105.58	105.58	105.58	104.99	107.39	109.54	109.54
Others															
Total Outflow (C)	36.62	682.31	697.00	743.97	1198.10	341.48	325.58	354.06	405.06	410.00	454.02	445.36	578.59	551.21	557.92
Net Cash Flow (B-C)= D	0.00	-24.13	-55.90	-95.70	-68.62	-173.93	-195.71	-221.94	-244.61	-239.92	-262.63	-283.13	-315.36	-346.02	-344.40
Closing Balance (A+D)=E	0.00	-24.13	-80.03	-175.73	-244.35	-418.29	-614.00	-835.94	-1080.55	-1320.46	-1583.09	-1866.22	-2181.58	-2527.60	-2872.00

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Table No.19 O : Financial Operating Plan - Sustainable Scenario - Prudent Financial Norms

Particulars	Projections														
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
	Rs in Lakhs														
Opening Balance (X)	-43	69	85	105	132	260	462	681	905	1141	1409	1753	2107	2469	2841
Revenue Income															
Property Tax	74	75	76	77	78	98	99	101	102	103	130	131	133	134	136
ProfessionTax	14	15	16	17	19	20	21	23	24	26	28	30	32	34	37
External Sources	103	108	114	119	125	132	138	145	152	160	168	176	185	194	204
Service Charges and Fees	173	89	94	99	105	139	147	155	164	172	220	231	243	254	266
Sale & Hire Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Income	25	28	31	34	37	41	45	50	54	60	66	72	80	88	96
User Charges from SWM	0	0	0	5	5	28	28	28	30	30	37	37	37	40	40
User Charges from UGD	0	0	0	0	101	102	103	104	106	133	135	136	138	139	176
Initial Deposit for New UGD Connections	0	0	4	4	4	4	6	6	6	6	6	8	8	8	8
Revenue Income (A)	390	316	335	356	475	564	589	612	639	692	790	823	856	893	965
Revenue Expenditure															
Personel Cost I (Salaries)	131	138	145	152	159	167	176	185	194	203	214	224	235	247	260
Personel Cost II (Others)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Terminal and retirement benefits	20	21	22	23	25	26	27	29	30	31	33	35	36	38	40
Operating Expenses	25	27	28	29	31	32	34	36	37	39	41	43	45	48	50
Repairs & Maintenance	71	75	79	84	89	94	100	106	112	119	126	134	142	150	159
Programme Expenses	3	4	4	4	4	4	5	5	5	5	6	6	6	6	7
Administrative Expenses	14	15	16	17	17	18	19	20	21	22	23	25	26	27	28
Debt repayment for existing loans	11	18	18	18	18	17	6	6	0	0	0	0	0	0	0
Revenue Expenditure(B)	279	300	314	330	346	363	370	389	403	424	446	470	494	520	548
Revenue Surplus/Deficit (A-B)= C	111	16	21	27	128	202	219	224	236	268	344	354	362	373	417
Closing Balance (C+X)=D	69	85	105	132	260	462	681	905	1141	1409	1753	2107	2469	2841	3258
Total Net Project Cash Flow (E)	-22	-82	-123	-199	-467	-556	-735	-958	-1210	-1480	-1751	-2021	-2338	-2694	-3077
Overall Closing Balance (D+E)=F	46	3	-18	-67	-206	-94	-54	-53	-69	-71	2	86	130	147	181

Table No 19 P : Calculation of Net Surplus after meeting the O&M on account of New Projects- Sustainable Scenario WITH Reforms

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Rs.in Lakhs

Particulars	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Revenue Surplus before meeting the debt obligations	122.50	33.79	38.59	44.42	146.20	218.82	225.00	229.74	236.01	267.78	344.08	353.75	362.04	372.59	417.00
O&M on New projects	0.00	0.40	10.84	17.84	90.67	197.12	212.87	231.00	250.82	274.05	298.25	322.61	354.01	384.19	419.44
Revenue Surplus after meeting New O&M	122.50	33.39	27.75	26.58	55.52	21.69	12.13	-1.26	-14.81	-6.27	45.84	31.14	8.03	-11.59	-2.44

Cumulative

Cumulative revenue Surplus before meeting the debt obligations	79.83	113.62	152.21	196.63	342.83	561.65	786.65	1016.38	1252.39	1520.17	1864.26	2218.01	2580.05	2952.64	3369.64
Cumulative O&M on New Projects	0.00	0.40	11.24	29.08	119.75	316.88	529.75	760.75	1011.57	1285.61	1583.86	1906.47	2260.48	2644.67	3064.11
Cumulative revenue Surplus after meeting the New O&M	79.83	113.22	140.97	167.55	223.07	244.77	256.90	255.63	240.83	234.56	280.40	311.54	319.56	307.97	305.53

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Table 19 R - Full Project Cash Flow of Identified New projects in Sustainable Scenario- Additional External Support

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Particulars															
Opening Balance (A)		0.00	-0.40	-6.97	-20.47	-5.83	-96.50	-200.09	-320.59	-459.62	-593.96	-751.01	-929.16	-1137.13	-1373.61
A Sources of Funds															
1 Debt Drawn Down	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 ULB Own Contribution	7.95	23.17	31.56	37.51	9.08	7.03	2.11	2.21	7.51	0.00	2.48	2.61	2.74	10.45	11.33
3 External Support	28.67	528.69	495.84	491.50	915.22	54.06	18.48	19.41	41.16	30.38	47.71	15.16	114.44	47.04	17.61
4 Public Contribution	0.00	106.32	109.43	114.91	99.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 Monthly User Charges from UGD	0.00	0.00	0.00	0.00	100.93	102.07	103.22	104.38	105.56	133.43	134.92	136.42	137.93	139.46	176.26
6 Initial Deposit from Additional UGD Connections	0.00	0.00	4.27	4.34	4.38	4.38	6.07	6.12	6.23	6.28	6.28	8.05	8.12	8.25	8.31
Total Inflow (B)	36.62	658.18	641.10	648.26	1129.48	167.54	129.87	132.12	160.45	170.09	191.39	162.23	263.22	205.19	213.51
B Disposition of Funds															
Project Capex	36.62	658.18	636.83	643.92	1024.17	61.09	20.58	21.62	48.67	30.38	50.20	17.76	117.18	57.49	28.94
O&M For New Project	0.00	0.40	10.84	17.84	90.67	197.12	212.87	231.00	250.82	274.05	298.25	322.61	354.01	384.19	419.44
Debt Servicing (Principal + Interest)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Outflow (C)	36.62	658.58	647.67	661.76	1114.84	258.22	233.46	252.62	299.49	304.43	348.45	340.37	471.20	441.67	448.38
Net Cash Flow (B-C)= D	0.00	-0.40	-6.57	-13.50	14.64	-90.67	-103.58	-120.50	-139.03	-134.34	-157.05	-178.14	-207.97	-236.48	-234.87
Closing Balance (A+D)=E	0.00	-0.40	-6.97	-20.47	-5.83	-96.50	-200.09	-320.59	-459.62	-593.96	-751.01	-929.16	-1137.13	-1373.61	-1608.48

Thuraiyur

Table No.19 S : Financial Operating Plan - Sustainable Scenario- Additional External Support

Particulars	Projections														
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Opening Balance (X)	-43	69	85	105	132	260	462	681	905	1141	1409	1753	2107	2469	2841
Revenue Income															
Property Tax	74	75	76	77	78	98	99	101	102	103	130	131	133	134	136
ProfessionTax	14	15	16	17	19	20	21	23	24	26	28	30	32	34	37
External Sources	103	108	114	119	125	132	138	145	152	160	168	176	185	194	204
Service Charges and Fees	173	89	94	99	105	139	147	155	164	172	220	231	243	254	266
Sale & Hire Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Income	25	28	31	34	37	41	45	50	54	60	66	72	80	88	96
User Charges from SWM	0	0	0	5	5	28	28	28	30	30	37	37	37	40	40
User Charges from UGD	0	0	0	0	101	102	103	104	106	133	135	136	138	139	176
Initial Deposit for New UGD Connections	0	0	4	4	4	4	6	6	6	6	6	8	8	8	8
Revenue Income (A)	390	316	335	356	475	564	589	612	639	692	790	823	856	893	965
Revenue Expenditure															
Personel Cost I (Salaries)	131	138	145	152	159	167	176	185	194	203	214	224	235	247	260
Personel Cost II (Others)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Terminal and retirement benefits	20	21	22	23	25	26	27	29	30	31	33	35	36	38	40
Operating Expenses	25	27	28	29	31	32	34	36	37	39	41	43	45	48	50
Repairs & Maintenance	71	75	79	84	89	94	100	106	112	119	126	134	142	150	159
Programme Expenses	3	4	4	4	4	4	5	5	5	5	6	6	6	6	7
Administrative Expenses	14	15	16	17	17	18	19	20	21	22	23	25	26	27	28
Debt repayment for existing loans	11	18	18	18	18	17	6	6	0	0	0	0	0	0	0
Revenue Expenditure(B)	279	300	314	330	346	363	370	389	403	424	446	470	494	520	548
Revenue Surplus/Deficit (A-B)= C	111	16	21	27	128	202	219	224	236	268	344	354	362	373	417
Closing Balance (C+X)=D	69	85	105	132	260	462	681	905	1141	1409	1753	2107	2469	2841	3258
Total Net Project Cash Flow (E)	-8	-24	-43	-62	-120	-210	-311	-433	-579	-734	-895	-1076	-1286	-1532	-1804
Overall Closing Balance (D+E)=F	61	61	63	70	140	252	370	472	562	675	858	1030	1183	1309	1454

19.5 Conclusion and Recommendations

Table 19 V: - Comparative statement for the full project scenario vis-à-vis sustainable scenario:-

Project Sector	Full Project Scenario - **Project Cost before escalation (Rs.in Lakhs)	Sustainable Scenario - **Project Cost before escalation (Rs.in Lakhs)
Water Supply	84.58	84.58
UGD	1470.25	1470.25
Sanitation	41.50	41.50
Storm Water Drainage	859.46	0.00
Solid Waste Management	179.92	179.92
Roads, Traffic and Transportation	665.52	21.50
Street Lighting	39.77	39.77
Socio-Economic Infrastructure	945.90	945.90
TOTAL CAPEX	4286.89	2783.41

** Project Cost when implemented with escalation would come to

- Full Project Scenario –Rs. 5897.34 Lakhs**
- Sustainable Scenario- Rs. 3453.63Lakhs.**

1. The ULB faces constraint in meeting the O & M expenses for identified projects under CIP even if all the reforms suggested are implemented. The only alternative is to size down the projects identified.
2. Even under Sustainable scenario, the ULB would face two major hurdles a) In-Sufficient borrowing capacity b) In-Sufficient funds to meet its share in project funding
3. Hence External Support required to undertake the projects under Sustainable scenario is Rs.2865.37 Lakhs. Full reform implementation by the ULB backed by strong external support is a must for bringing in projects required for improving the town over the next 15 years
4. It is suggested that all reforms outlined in the Reform Implementation Schedule needs to be implemented fully in order to fund the projects The time frame envisaged under Reforms Implementation Schedule in Figure 19-1 needs to be firmly adhered to.
5. The ULB would need to bring in Rs.157.73 Lakhs over the 15 year period to meet its share of contribution towards projects to be implemented under sustainable scenario. This is possible only if ULB implements all the reforms suggested and highlighted in this report within the scheduled time frame.

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Figure 19-1: Reforms Implementation Schedule for Thuraiyur

Figure 19-1: Reforms Implementation Schedule

THURAIYUR

Reforms	Current status	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	
Property Tax																	
90% Collection Efficiency	98% (current collection efficiency -2006-07)																
Mandatory Implementation of Revision of Property Tax once in every five years is required	Once in 10 years																
Digitization of the property maps through GIS	Not initiated																
Computerization of Property tax records	Initiated																
Introducing alternate methods of tax payment (ECS/EFT/Online Payment)	Currently in Municipal office only																
Other Reforms in property taxes as mentioned in Chapter 18 of this report	Limited extent																
Water Supply																	
Service coverage of water connections to be increased from current 20.40% to 85%	20.40%	44.70%	47.00%	50.00%	52.43%	55.00%	58.00%	61.00%	64.00%	67.00%	70.00%	73.00%	76.00%	79.00%	82.00%		
Revision of Water supply charges and initial deposit for new water connection	Ad hoc basis																
One time payment options for monthly water charges	Not done																
Incentive and penalty structure for payment of water taxes and charges.	Not done																
Water Leakage Audit for Un-accounted for Water (UFW)	Not done																

Figure 19-1: Reforms Implementation Schedule for Thuraiyur

Reforms	Current status	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Energy Audit	Not done															
Periodic maintenance of Water supply systems	Ad hoc maintenance															
Periodic Training to Water Supply Staff	Regularly															
Privatization in routine maintenance relating to water supply	Not done															
Sewerage and Sanitation																
Privatization of maintenance of sewerage system can be considered to reduce the establishment charges of municipality and O&M Charges	NA															
Revision in Sewer Monthly user charges	NA															
Revision in initial deposit for new sewer connections	NA															
Periodic maintenance of Sewer supply systems	NA															
Annual Maintenance Contract for Sewage Pumping Stations and Sewage Treatment Plants can be adopted.	NA															
Incentive and penalty structure for payment of Sewer taxes and charges.	NA															
Periodic technical training to its engineering cell is required in O&M of Sewage Treatment Plant, Pumping Stations and Sewer Networking System.	NA															

Figure 19-1: Reforms Implementation Schedule for Thuraiyur

Reforms	Current status	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Solid Waste Management																
Door to door collection of garbage at household level and segregation of waste at source	Door to door collection in 12 out of 24 wards with no segregation of waste at source															
Private Sponsorship of bins for waste segregation at source	Not done															
Introduction of user charges for Non-Domestic assesses	Not done															
Introduction of user charges for Domestic assesses	Not done															
Annual Maintenance Contract for Vehicles used in SWM	Not done															
Potential for getting carbon credit benefit through the Clean Development Mechanism (CDM) need to be studied in making a comprehensive solid waste management scheme	Not undertaken															
Periodic Training to Public Health Staff	Regularly															
Roads, Traffic & Transportation																
Relaying Bitumen roads once in three years with patch works to be undertaken based on the need in between years (Through use of recyclable materials)	Adhoc basis															
Street Lighting																
Meeting the norms of one pole per 30 meters by 2012	39 meters															
Energy Audit Studies	Not initiated															

Figure 19-1: Reforms Implementation Schedule for Thuraiyur

Reforms	Current status	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	
Private parties can be involved for financing, operation and maintenance of energy efficient street light projects to reduce the cost incurred for the same.	Proposal for O & M maintenance of street lights																
Municipal Assets																	
Creation and updating the Comprehensive asset register with regard to land and building	Not Comprehensive																
Valuation of assets and liabilities of the Municipality	Not done																
Periodic maintenance of Social Infrastructure	Ad hoc																
Accounting Reforms																	
Comprehensive Budgeting incorporating O&M costs of various assets	Not Done																
Periodic Training to Accounting Staff	Regular training																
Finalisation of accounts and completion of audit of accounts with in that specific year	Not done																
Zero based budgeting would need to be carried out for continual monitoring of budgets and cash flow management	Not done																

Figure 19-2: Project Implementation Schedule for Thuraiyur

Particulars	Current Status	Assistance	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Public Toilet in Maruthi, Muthu and Mettu street	Proposal identified during OWG	ULB															
Public toilet in Venkatesapuram (6 seats)	UIDSSMT Scheme	ULB															
Public Toilet (Gents) at Ward No.4 North Street and at Ward no.09 (Periya nagar for ladies)	UIDSSMT Scheme	ULB															
Storm Water Drainage																	
Creating closed drains for 31.49 Km after implementing UGD (after deducting UIDSSMT SWD length from demand supply gap)	Proposal identified during OWG	ULB															
Creating closed drains for 13.880 Km after implementing UGD	Proposed under UIDSSMT Scheme	ULB															
Converting open drain into closed drain for 10 Km (Slab provision)	Proposal identified during OWG	ULB															
Roads, Traffic & Transportation																	
Creating new roads of 10.6Km by 2022 (2.5 Km by 2012, 4.1 Km by 2017 and 4 Km by 2022	Based on demand supply	ULB															
8.269 BT road works proposed under UIDSSMT (after Implementing UGD)	UIDSSMT Scheme	ULB															
5.207 CC road works proposed under UIDSSMT (after Implementing UGD)	UIDSSMT Scheme	ULB															
Relaying 8.269 BT road once in Three years after its implementation (UIDSSMT)	Based on demand supply	ULB															
Relaying 18.116 BT road after UGD implementation	Proposal identified during OWG	ULB															

