

# **CITY CORPORATE CUM BUSINESS PLAN**

## **FINAL REPORT (Revised)**

### **THOOTHUKUDI MUNICIPALITY**

**July 2008**

**Sponsored by  
Tamil Nadu Urban Infrastructure Financial Services Limited  
Government of Tamil Nadu**

**Consultants  
Speck Systems Limited  
Hyderabad**

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### **Abbreviation and Acronyms**

BOT	: Build, Operate and Transfer
BPL	: Below Poverty Line
BSUP	: Basic Services for Urban Poor
CAA	: Constitution Amendment Act
CAGR	: Compounded Annual Growth Rate
CC	: Cement Concrete
CCP	: City Corporate Plan
CBED	: Community Based Energy Development
CDP	: City Development Plan
CFC	: Central Finance Commission
CIP	: Capital Investment Plan
CMA	: Commissionerate of Municipal Administration
CPHEEO	: Central Public Health Environmental Engineering Organization
CWSS	: Comprehensive Water Supply Scheme
DBOOT	: Design Build Operate Own Transfer
DFR	: Draft Final Report
DPR	: Detailed Project Report
ECR	: East Coast Road
EOI	: Expression Of Interest
ESCo	: Energy Saving Company
ETRP	: Emergency Tsunami Reconstruction Project
FY	: Financial Year
FOP	: Financial Operating Plan
GIS	: Geographic Information System
GLR	: Ground Level Reservoir
G.S.T Road	: Grand South Trunk Road
Gm	: Grams
GoTN	: Government of Tamil Nadu
Ha	: Hectares
HP	: Horse Power
HSC	: House Service Connection
IEC	: Information Education and Communication
IHSDP	: Integrated Housing & Slum Development Programme
IPT	: Intermediate Public Transport
ISP	: Integrated Sanitation program
JNNURM	: Jawaharlal Nehru National Urban Renewal Mission
Kg	: Kilogram
Km	: Kilometre
LAP	: Local Assistance Programme

LCS	: Low Cost Sanitation
LI	: Lakh Litres
LPA	: Local Planning Area
Lpcd	: Liters Per Capital per day
M	: Metres
MA&WSD	: Municipal Administration and Water Supply Department
ML	: Million Litres
MLD	: Million Litres per day
NGO	: Non Governmental Organisation
NH	: National Highway
Nos	: Numbers
OHT	: Over Head Tank
O&M	: Operation and Maintenance
PHC	: Primary Health Center
PMC	: Project Management Consultants
PPP	: Public Private Partnership
PPPP	: Public Private People Partnership
RCC	: Reinforced Cement Concrete
SFC	: State Finance Commission
SH	: State Highway
SHG	: Self Help Group
Sq.km	: Square Kilometers
SST	: Summer Storage Tank
STP	: Sewage Treatment Plant
SWM	: Solid Waste Management
TEAP	: Tsunami Emergency Assistance Project
TNEB	: Tamil Nadu Electricity Board
TNRDC	: Tamil Nadu Road Development Corporation
TNSCB	: Tamil Nadu Slum Clearance Board
TNUDP	: Tamil Nadu Urban Development Project
TNUIFSL	: Tamil Nadu Urban Infrastructure Financial Service Limited
TPD	: Tonnes Per Day
TUFIDCO	: Tamil Nadu Urban Finance and Infrastructure Development Corporation
TWAD	: Tamil Nadu Water Supply and Drainage Board
UA	: Urban Area
UGD	: Under Ground Drainage
UIDSSMT	: Urban Infrastructure Development Scheme for Small & Medium Towns
ULB	: Urban Local Body
VAMBAY	: Valmiki Ambedkar Awas Yojana
WBM	: Water Bound Macadem
WTP	: Water Treatment Plant



## **EXECUTIVE SUMMARY**

### **1. Town Profile**

Thoothukudi is a port town in Tamil Nadu, situated on the shores of the Gulf of Mannar about 540 km south of Chennai and along 125 km north of Kanyakumari. Geographically, the town is located at 8° 32' in the north latitude and 78° 36' east longitude. The town population was 2,16,054 as per the 2001 Census. The town is a special grade municipality which extends over an area of 13.47 sq.km. The town has 51 electoral wards.

Thoothukudi is served by three main traffic arteries, which radiate to Madurai, Tiruchendur and Tirunelveli connecting various towns in the region. The town is also linked by a broad gauge railway line which connects Thoothukudi with the other urban centers of the state.

The function and the growth of the town are closely linked to the port. The port hinterland of Thoothukudi extends to the districts of Madurai, Kanyakumari, Tirunelveli, Ramanathapuram, southern parts of Tiruchirappalli and parts of Kerala. Salt pans in and around the Municipal area is also a major factor contributing to the industrial activity in the town. Thirty three percent of the population constitutes the work force of the town, of which more than 93 percent of the workers are involved in the tertiary sector activities.

The loose sandy soil with thorny shrubs on the north and the presence of saltpans on the southeast are the major constraints to the physical growth of the town.

### **2. City Corporate Cum Business Plan**

The traditional Master Plan with a long – term perspective has proved largely ineffective due to plan and methodology and system deficiencies. CCCBP aims at preparing a sound base by filling the gaps especially in essential services totally through a community participatory mechanism to effectively meet the peoples' judicious requirements over a five year period. The vision for the town is framed as **"a global city with an international port, an environmentally safe industrial town, a centre for pearl culture"**. The CCCBP focuses on the implementable urban infrastructure and other projects to meet the present and future demands.

The projects have been proposed considering the obligatory and discretionary service requirements, facilities and amenities commensurate with the projected population over the plan period in consultation with the town Council, Municipal officials and other prominent stakeholders. Implementation of the proposed projects will ensure enhancing the sustainability of projects, quality of living environment and the economic status of the town.

### **3. Basic Socio economic infrastructure facilities**

Provision and maintenance of basic services namely water supply, drainage, sewerage, solid waste management, street lighting, public conveniences and markets, slaughter house, burial grounds etc, constitute the obligatory functions of the local body.

#### **3.1 Water Supply**

The water supply system for Thoothukudi town with Tamirabarani River as the source was implemented in the year 1932. The headwork is located in Vallanadu. The quantity of water supplied per day is 18.5 MLD.

The intermediate (2022) and ultimate (2037) demand for water supply is estimated to be 23.85 MLD and 27 MLD respectively. Taking into account the present supply, there will be a shortage of 2.85

MLD and 6 MLD in the above said periods respectively. To meet the future demand, the following proposals are envisaged.

1. Providing three number of infiltration wells in Tamirabarani River
2. Providing priming arrangements at Rajaji Park and renewal of damaged pumping main
3. Construction of 10 LI Sump (BP Tank) at the ridge point
4. Providing kinetic air valves in the pumping and gravity main.
5. Electrification works at head works in Vallanadu

The total estimated cost for the above proposal is Rs.269.00 lakhs.

### 3.2 Drainage and Sanitation

The existing UGD covers only 20% of the town area and it is not functioning efficiently. Thoothukudi Municipality intends to rehabilitate the existing drainage system and provide a new UGD system for the un-sewered areas within the Municipal limits. The components identified are

1. Rehabilitation of the existing system
2. Extending the UGD for the un-sewered areas within Municipal limits

The sewage collected is pumped to the STP located at Tharuvaikulam through a pumping main for a length of 7.36 km. The total cost of the proposed sewerage project for phase I and II is Rs.6962.27 lakhs and Rs.1940.00 lakhs respectively. As regards the storm water drainage, upgradation of the existing drains and construction of additional new drains are proposed at a cost of Rs.480.00 lakhs.

In respect of sanitation, the Municipality proposes to repair and modernize the existing public toilets to serve the floating population and the local people who do not have sanitation facilities. The cost for the improvement proposed is Rs.10.00 lakhs.

### 3.3 Solid Waste Management

It is estimated that 108.5 MT of garbage is generated everyday, of which 50% is said to be cleared by the Municipality everyday. Waste collection and transportation from 26 wards is managed directly by the Municipality and in the other 25 wards it is privatised. The compost yard is situated in Tharuvaikulam at a distance of 12 km from the town. The total extent of the compost yard is 534 acres. The garbage collected is transported and dumped in the compost yard.

Insufficient sanitary staff, low service level, outmoded vehicles and inadequate infrastructure facilities at the compost yard are the major issues related to Solid waste Management. The proposals identified for the improvement of solid waste management are:

1. Procurement of Modern transportation vehicles
2. Purchase of Dumper placer bins
3. Construction of Transfer stations
4. Provision of infrastructure facilities in compost yard for scientific waste disposal

The total estimated cost for the above proposal is Rs. 828.60 lakhs.

### 3.4 Urban transportation

The town is well connected by the National Highway-7A with Tirunelveli, and other roads with Kanyakumari and Rameswaram. Apart from the National Highway, the important roads running through the town are Ettayapuram Road (Madurai road), Ramanathapuram Road (beach road), Tiruchendur Road and West Great Cotton Road.

The major issues related to the roads are poor surface quality, absence of level crossings, inadequate pedestrian pathways etc. It is proposed to re-lay the entire stretch of roads in the town. These roadwork proposals will be taken up in phases after the completion of proposed Under Ground Sewerage System. The total cost of the proposed roads improvement works is Rs.325.00 lakhs.

Absence of **truck terminus** is also a major factor contributing to congestion in the central area of the town. A truck terminal is proposed on the Ettayapuram - Tiruchendur bye-pass road near the entrance of the town. The total area of the land required for establishment of truck terminus is about 38 acres and the estimated amount required to implement the project is Rs.400.00 lakhs.

Other major proposals includes improvement to the old and the new **bus stands**, provision of parking areas and basic amenities to commuters at an estimate of Rs.30.00 lakhs. Regarding the bus shelters, the Municipality has proposed reconstruction of existing damaged bus shelters at a proposed cost of Rs.9.90 lakhs.

### 3.5 Street lighting

The Municipality maintains 7100 streetlights in the town. Of this, 6166 (86%) are fluorescent lights, 782 (11%) sodium vapour lamps and 140 (2%) are mercury vapour lamps. On an average, there is one streetlight for every 29 m almost satisfying the norm of interval 30m.

However, it is proposed to convert the existing fluorescent lights to sodium vapour lamps along the main roads, installing energy saver lamps in the newly developed areas and providing automatic dimmer switches at an estimated cost of Rs.42.65 lakhs.

### 3.6 Education and health

There are 10 municipal schools in the town. The deficiencies in the schools broadly relate to lack of furniture and play materials, lack of computers, non-partition of classrooms, safe drinking water etc.,. The Municipality proposes Rs.197.80 lakhs as capital investment for these improvements.

The health services in the town include 3 hospitals and 2 maternity centers. There are also a number of private medical practitioners in the town. The proposal includes repairing and renovation of the existing hospital buildings, operation theatre at an estimated cost of Rs.42.00 lakhs, which would be provided under the Part-II scheme.

### 3.7 Other community facilities

The Municipality has 10 notified parks and 4 un-notified parks under its control. Inadequate maintenance of these recreational spaces is felt by the public. The proposal to improve the parks is estimated at Rs.45.00 lakhs.

### 3.8 Other Proposals

The other facilities required by the stakeholders have also been proposed as part of the CCCBP. These investments include among others;

- § Improvement to slums, burial grounds, markets and slaughter houses;
- § Rejuvenation of Buckle channel, beautification of beach road and greening of town

#### 4. Municipal Finance

The revenue income of the ULB was Rs.1377.59 lakhs during 2001-02, which had increased to Rs.1715.41 lakhs during 2003-04 and subsequently reduced to Rs.1368.32 lakhs in 2005-06. The revenue expenditure has increased from Rs.820.45 lakhs to Rs.925.90 during 2001-02 to 2004-05 and further decreased to Rs.843.32 in 2005-06.

#### 5. Summary of Capital Investments

The capital investment proposals under different sectors aggregate to **Rs.17062.75 lakhs** in the next five years starting 2008-09.

**Summary of the Multi Year Investment and Implementation Programme**

Projects	Rs. in lakhs	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Water Supply	269.00		269.00					
UGSS Phase I	6962.27	500.00	2472.66	2472.66	1516.96			
UGSS Phase II	1940.00					970.00	970.00	
SWD	480.00					144.00	336.00	
SWM	828.60		71.60	57.00	220.57	240.00	239.43	
Roads	325.00					130.00	195.00	
Truck Terminus	400.00			200.00	200.00			
Bus Stand	30.00		30.00					
Bus Shelter	10.00		10.00					
Street Lights	42.65		21.33	21.32				
Parks and Playfields	45.00				25.00	20.00		
Amarar Parks	7.00		7.00					
Public Convenience	10.00		10.00					
Education	197.80		50.00	100.00	47.80			
Medicare	40.00		40.00					
Slum Improvement	1635.30		435.30	400.00	400.00	400.00		
Market	15.00		15.00					
Buckle Channel	3360.00			883.30	1215.46	494.64	331.78	434.82
E-Governance	5.00		5.00					
Slaughter House	45.00		20.00	25.00				
Beautification of the town	300.13			150.13	150.00			
Municipal Office Building	40.00			20.00	20.00			
GIS Database	75.00						75.00	
<b>TOTAL</b>	<b>17062.75</b>	<b>500.00</b>	<b>3456.89</b>	<b>4329.41</b>	<b>3795.79</b>	<b>2398.64</b>	<b>2147.21</b>	<b>434.82</b>

Source: Analysis and discussion with ULB officials

#### 6. Financial Operating Plan

The FOP indicates that there is an increase in surplus funds in future years. The Borrowing capacity of Thoothukudi Municipality is assessed as **Rs.4807.00 lakhs**. Therefore, the Municipality would be able to take up the entire projects proposed under the CCCBP, as the loan component is Rs.5072.00 lakhs.

**The projected FOP for scenario 2 - Thoothukudi Municipality**

Rs.in lakhs

Account Head	2008-09	2009-10	2010-11	2011-12	2012 -13	2013 -14	2019 -20	2024-25	2028 -29
Opening Balance	4325.16	5243.29	6914.57	7552.74	8034.96	10174.84	27362.65	50365.74	74783.78
Total Receipts	1924.55	2682.59	2927.23	3138.42	3759.15	4072.78	6405.21	9192.32	12226.80
Total Expenditure	1006.42	1049.47	1305.36	1485.22	1808.26	1911.15	2788.43	3760.73	5109.88
<b>Surplus / Deficit</b>	918.13	1633.12	1621.88	1653.20	1950.89	2161.63	3616.78	5431.59	7116.92
Annuities / Debt Servicing	33.81	35.50	180.54	268.28	281.99	295.10	461.78	477.75	493.66
TE/TR	0.52	0.39	0.45	0.47	0.48	0.47	0.44	0.41	0.42
DS/TR	0.02	0.01	0.06	0.09	0.08	0.07	0.07	0.05	0.04
Closing Balance	5243.29	6914.57	7552.74	8034.96	10174.84	12414.48	31001.69	55823.50	81926.88

Source: Analysis and computation

**CONTEXT, CONCEPT AND CONTENTS OF CCCBP****1.1 CONTEXT OF THE STUDY**

The Government of India has received a loan equivalent to US \$300 millions from the World Bank towards the cost of Third Tamil Nadu Urban Development Project (TNUDP III) which comprises, in turn a number of components including preparation of City Corporate cum Business Plans for eligible urban centres in Tamil Nadu. The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) of Tamil Nadu Urban Development Fund (TNUDF) is a financial intermediary which, inter alia intends to assist select urban centres in strengthening and improving their resource positions for effective Capital Investment Management and delivery of urban services. TNUIFSL has identified urban local bodies which have good potential for implementation of such financial reforms immediately, and for such towns, TNUIFSL considered it essential to formulate City Corporate cum Business Plans (CCCBP). Incidentally, such urban local bodies had recently prepared the Vision Plans which encompass projects that were felt necessary, and it is broadly required now to assess the need and feasibility of these projects and while updating them, prepare Capital Investment Plan on a sustainable mode.

**1.2 OBJECTIVES**

The objectives of the study include:

- Defining the directions of growth and upgradation of services relevant to economic activities and development.
- Examination of the need for the projects identified by the Urban Local Bodies, and assessment of the demand in terms of gaps either as deficiency or as excess.
- Studying the status of essential urban infrastructural services and outlining broadly the needs.
- Defining specific rehabilitation and capital improvement needs of infrastructural facilities and services in all parts of the urban areas including slums.
- Analysis of improvement techniques and methods to enhance the local bodies' resource positions and improve the management system that would sustain the proposed rehabilitation programmes.
- Identification of reforms required in administration and service delivery system of the urban local body.
- Studying improvements / changes required in the ULB setup to improve the O&M of assets.
- Identifying measures to address overall growth measures including service needs in a sustainable mode.

**1.3 SCOPE OF WORK**

The scope of works covers the following:

- 1) Assessment of the demand for the projects listed out by the Municipalities.
- 2) Financial assessment of the Municipalities- an assessment of local finances in terms of sources and uses of funds, base and basis of levy, revision history and impacts,

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State assignments and transfers- base and basis of transfer and its predictability; uses of funds outstanding liabilities (loans, power dues, pension etc) and, a review of revenue and service management arrangements; levels of service, coverage and quality of municipal services in both poor and non-poor localities; staffing and management arrangements in delivery of services .

3) Outline issues in revenue realization, quality of existing assets in relation to service levels and coverage, and institutional constraints. Development of quick indicators of performance, based on:

- a) Current coverage and additional population in the medium term (10 years) and unit cost and indicate city level investment requirement for upgradation of city wide infrastructure.
- b) Improvement of service coverage and asset quality;
- c) Preparation of a comprehensive Asset Management Plan and use of fiscal notes and policy analysis to assist in making informed investment choices to achieve sector / city goals
- d) Defining priority assets and indicative costs of rehabilitation
- e) Conducting fiscal impact analysis of investments: life- cycle, O&M costs, revenues from project, and costs/ impacts on finances
- f) Exploring funding options for rehabilitation of facilities

4) Preparation of a Finance Operating Plan (FOP). The FOP is a medium term framework of the Municipalities. The commentary for the FOP will largely cover:

**A. Costs**

- Energy cost on UGD, Water Supply etc.
- Salary for all the departments including staff and payments to private operators.
- The benchmark cost, the cost of the identified investments for the next 5 years with identified sources of finance.

**B. Areas of reduction in expenditure**

- Energy audit resulting in savings in energy.
- Leak detection either in connections or in the tariff, maintaining the same supply and achieving a reduction in energy cost.
- Privatizing the Municipal Solid Waste collection and identifying a BOT operator for efficient and cost effective operation.
- Laying of cement concrete road / fly ash and savings on maintenance cost resulting in increasing operating surplus.
- Water recycling / reuse
- Rejuvenation of tanks and Ooraries, and reduction of cost in water supply schemes
- Privatization and option for revenue rising.

**C. Options for increasing the revenues through non-traditional methods**

- Land development for raising revenue.
- Improving tax collection performance



- Up-dating property assessment
- Computing tax payment through scientific formula
- Adopting technology interventions in areas of waste water treatment, solid waste management, water cycling, rain water harvesting, road surfacing, tapping un-conventional energy sources, street lighting etc.
- Computerization of administration and management of ULB activities
- Up-dating database and working on GIS format including property mapping and records, utility networking, assets management
- Exploring possibilities of issue of bonds for projects
- Privatizing certain projects on BOT, BOOT etc. basis

#### **D. Action to ensure Implementation of projects**

- Preparation of a draft Memorandum of Association between ULB and TNUIFSL.
- Consultations with council and local stakeholders on the priorities; and work with the Council to resolve on adoption of the City's FOP and CCP actions.
- Action Plan for the City, with a resolution from the council on the priorities and commitment to implement revenue and management improvement measures.

### **1.4 TASKS INVOLVED**

- 1) To assist and encourage full participation and consensus within the city to arrive at an adequate, appropriate and agreed development plan priorities.
- 2) To inform, consult and assist the Municipalities in assessment and in consultations, and to support establishment and activities of a representative and effective Operational Working Group (OWG) to manage, drive and guide the process.
- 3) To help the OWG define and manage an appropriate process for the CCP.
- 4) To assist the Municipalities in reviewing the works and plans of other Government, Quasi- Government and Voluntary Organizations operating within the study area.
- 5) To review all studies, plans and previous experience in the town, government, quasi- or non-government, academic or private sector. This will include economic development, urban and financial management, environmental protection, municipal service delivery, slum improvement, social development and any other relevant initiatives or studies.
- 6) To analyze findings and draw out useful lessons in order to frame the City Action Plan. The process shall primarily focus upon the areas of:
  - a) Urban Economic Development



- b) Social Assessment/ Poverty Reduction
- c) Land Use Planning and Urban Management
- d) Urban Infrastructure
- e) Human Resource and Institutional Issues
- f) Financial Management, and
- g) Environmental Management and adverse social impacts (loss of habitat and sources of income)

### **1.5 DATA INPUTS FROM THE CLIENT**

The Municipalities will lead the study and liaison and, coordinate with relevant Central, State and Quasi- Governmental agencies. The Municipalities shall make available for consultation purposes their senior officials, identify and furnish the relevant data and documentation for the consultant's information and review.

The Consultants shall report to the Municipal Commissioner of the ULB. While the Municipalities will have the overall responsibility of design, a committee comprising officials from TNUFSL and CMA will oversee preparation process.

List of projects identified by the Municipality at different points of time during the last five years shall be given to the consultants.

### **1.6 DELIVERABLES**

#### **i) Demand assessment of identified projects**

The Municipalities have identified certain projects, the demand for which would be assessed by the consultant

#### **ii) Rapid Urban Assessment (RUA)**

Review of town's economic development, physical planning and growth management issues, physical infrastructure status, social infrastructure status, and municipal fiscal status.

The O&M requirements, capacity assessments to operate and maintain systems needs infrastructure and financial improvement needs of the town and identify Capital Investment needs for consultation with local stakeholders.

#### **iii) Strategy Plan**

Identifying areas of development and physical requirements focused on local economic development and poverty reduction.

#### **iv) Capital Investment Needs**

Performance assessment, demand assessment, and project identification and costing; the CPI broadly comprise water supply system, sewerage and sanitation, solid waste management, storm water drainage, roads, slum infrastructure, and traffic and transport planning.

#### **v) Priority Asset Management Plan**

O&M plan for services and for lands vested with the Municipalities shall be prepared for the first five (5) years.

**vi) Project Risk, Environmental and Social Assessment (ESA)**

Project structuring options and associated risks, environmental and social impacts are to be included.

**vii) Finance Operating Plan**

Outlining the revenue enhancement measures required to sustain proposed investments after accounting for O&M and debt servicing. Suggests suitable actions for project sizing and/or project implementation, and action plans to sustain investments based on capital investment needs. Indicates the credit worthiness of the ULB in terms of its borrowing capacity, repayment of debts and growth oriented development.

**viii) Draft MoA****ix) Policy Interventions**

Institutional and policy reforms– institutional changes and policy reforms required for effective governance and financial management.

**x) Technical Assistance**

Outline of the technical assistance requirements for effective implementation of the CIP.

**xi) Final Report****1.7 COMPOSITION OF REVIEW COMMITTEE**

The review committee includes,

1. Chairman of concerned Municipalities
2. CEO, TNUIFSL / representatives from TNUIFSL
3. CMA / representative from CMA
4. Commissioners of concerned Municipalities

## TOWN PROFILE, PHYSICAL PLANNING AND GROWTH MANAGEMENT

### 2.1 TOWN PROFILE

#### 2.1.1 Regional Setting

Thoothukudi is a port town situated in the Gulf of Mannar about 540 km South of Chennai and 125 km North of Kanyakumari. The port hinterland of Thoothukudi extends to the districts of Madurai, Kanyakumari, Tirunelveli, Ramnathapuram, southern parts of Tiruchirappalli and also parts of Kerala. The town lies on  $8^{\circ} 32'$  in the North latitude and  $78^{\circ} 36'$  East longitude. It is served by three main roads, which radiate to Madurai, Tiruchendur and Tirunelveli. The town is well connected by the Highways with Tirunelveli, Kanyakumari and Rameswaram. The nearest airport is at Vagaikulam, which is about 30 km from the town and the next nearest airport is Madurai about 140 km away from Thoothukudi. Fig 2.1 shows the Regional setting of the town and fig. 2.2 depicts the town map.

#### 2.1.2 Physical features

The town has a flat terrain and is divided into two parts by the Buckle channel. The Bay of Bengal forms the eastern boundary of the town. The region surrounding Thoothukudi is liberally dotted with rain fed tanks. The soil and sub soil in the region are mostly clay sandy in nature. Being a coastal area, the ground water table varies from 2m to 4m below ground level during winter season and is likely to go down by 1m during summer season.

#### 2.1.3 Climate and Rainfall

The maximum temperature during summer is  $39^{\circ}\text{C}$  and the minimum during winter it is  $32^{\circ}\text{C}$ . The seasonal climate conditions are moderate and the weather is uniformly salubrious. The town gets maximum rain fall during the south west monsoon period.

#### 2.1.4 Administrative Status

Thoothukudi is a special grade Municipal Town with 51 wards and ranks sixth in Tamil Nadu by size of population (2,16,054 as per 2001 Census) with an extent of 13.47 sq.km. The organizational set up of this Municipality comprises of a political wing and an executive wing. The political wing is an elected body of councilors from different wards in the town and is headed by the Municipal chairman and consisting of 51 elected public representatives-councilors.

#### 2.1.5 Places of Interest

Thoothukudi is known as "Pearl City" on account of Pearl fishing in the past. Emergence of Thoothukudi as a maritime port attracted travelers, adventures and eventually the Colonisers. It was in Thoothukudi that the illustrious patriot, V.O.Chidambaram established the first Swadesi Steam Navigation Company. The Sivan Temple, situated in the heart of the city and 'Our Lady of Snows' church at Beach road situated at the seashore of Mannar are the famous religious spots in Thoothukudi. The important festivals of Adi-Ammavasai, Sasti and Chithrai Therottam are celebrated with gaiety at the Sivan temple. The church 'Our Lady of Snows' is very popular throughout this district. Every year at the month of August, this church festival attracts pilgrim groups. Roche Park,

Nehru Park, Harbour Beach are the primary attraction for the children and the people of the town. The Thoothukudi Harbour, situated 20 km away from the town is also a place of interest.

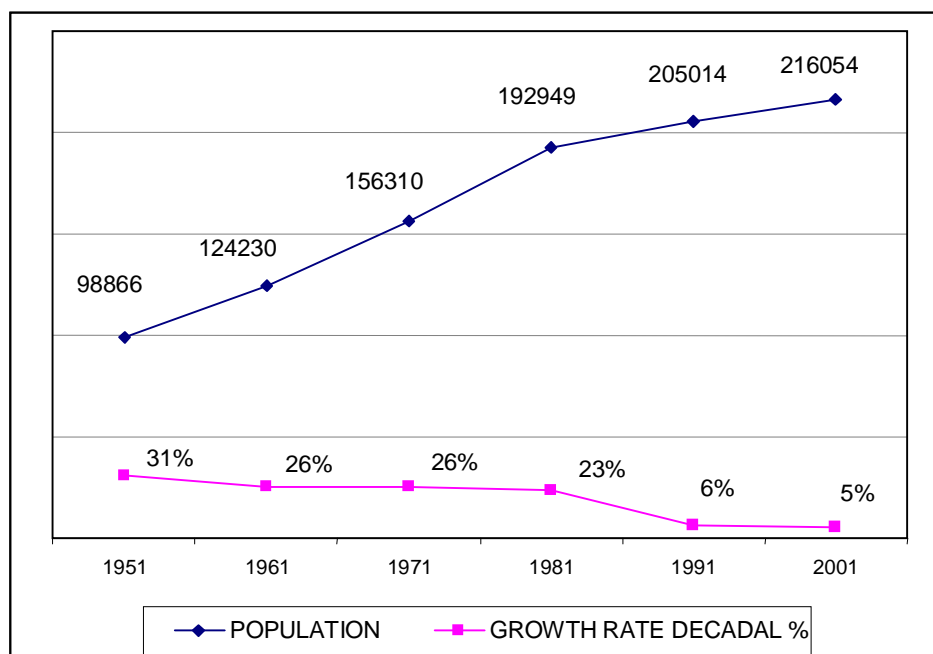
## 2.2 DEMOGRAPHIC PROFILE

Thoothukudi town extends over an area of 13.47sq.km. The town had registered a population of 2,16,054 in 2001 with a growth rate of 6%. The rate of growth of population has shown a steady increase during 1941 - 1981 and has drastically reduced during 1991– 2001 as shown in Table 2.1. This downward trend is due to migration of the town population to the other urban centres of the state.

**Table 2.1 Demographic Profile**

Year	Population	Decadal variation	Decadal growth rate %
1941	75614	-	-
1951	98866	23252	30.75
1961	124230	25364	25.65
1971	156310	32080	25.82
1981	192949	36639	23.44
1991	205014	12065	6.25
2001	216054	11044	5.34

Source: Census of India – 2001



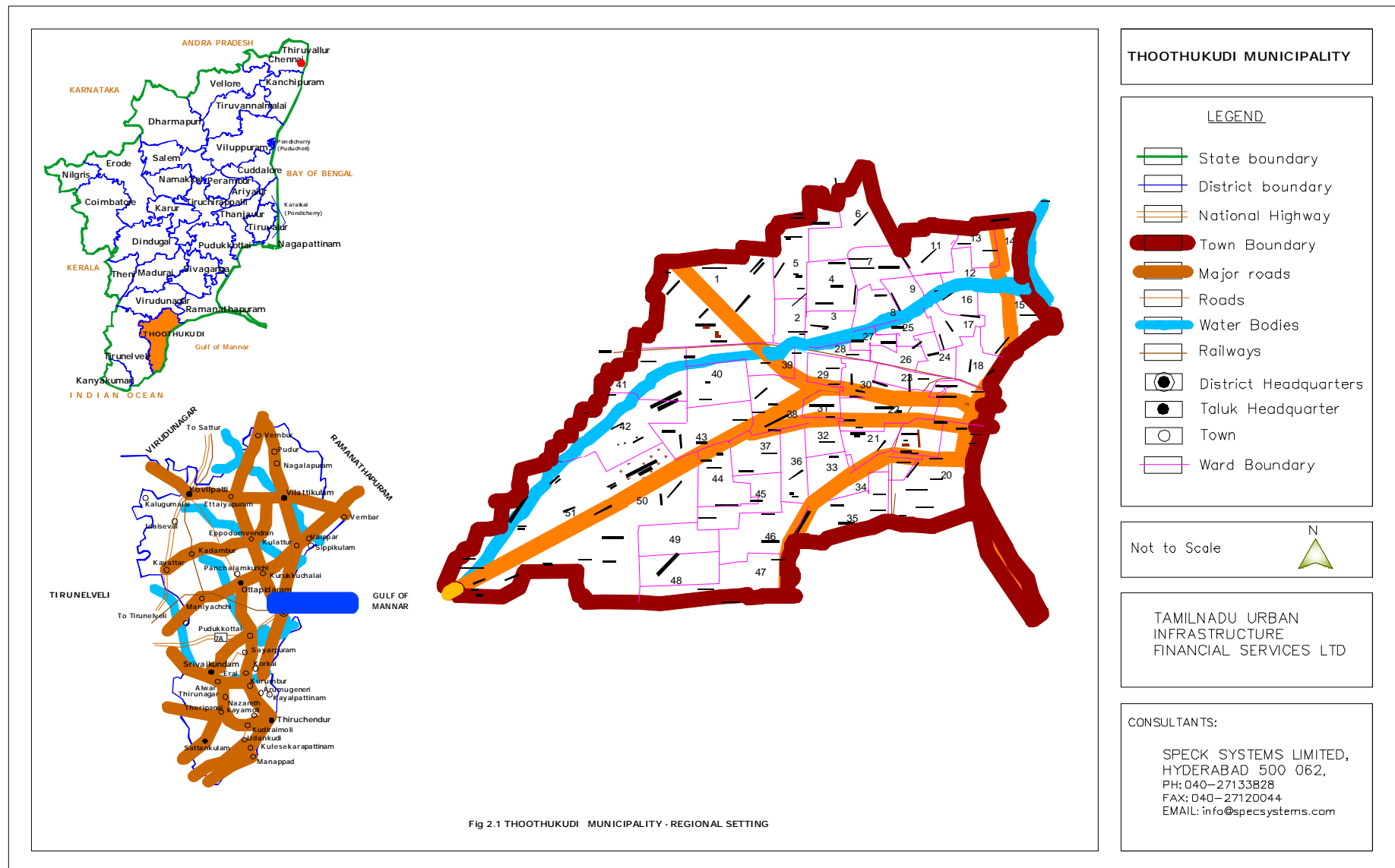
**Fig: 2.3 Population Growth**

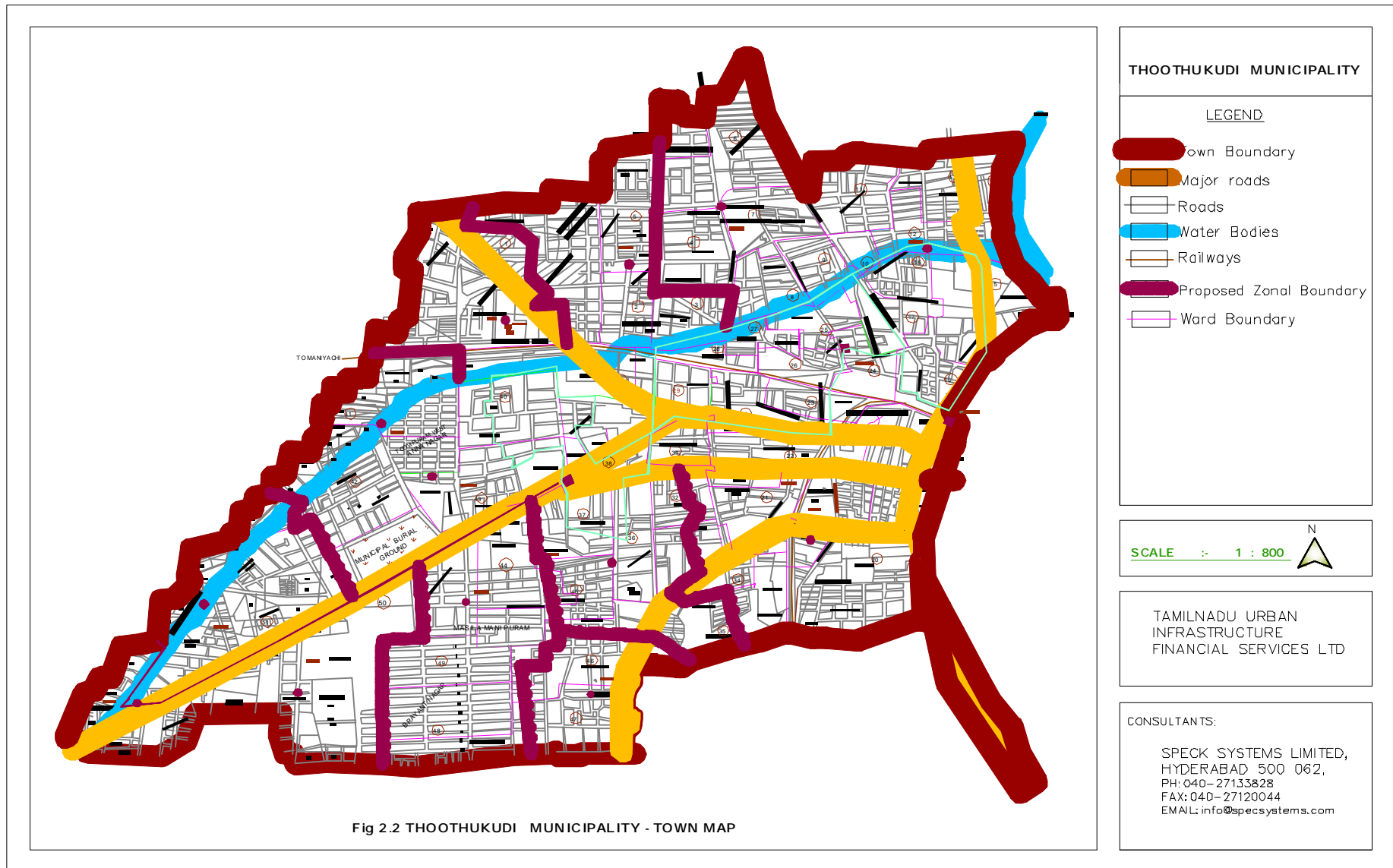
The population of the town as per 2001 census is 2,16,054 with 1,07,758 Males and 1,08,296 Females. The town's population is distributed among the 51 electoral wards of the Municipality and, as per 2001, the population counts in the wards ranges between 997 and 7945.(vide table 2.2.)

The population density of the town is 16,039 persons per sq.km and 80.23% of population are literates. The total households in the town are 50,182. The children population (age 0 – 6) is 24336, which is about 11% population of the town.

**Table 2.2: Ward-wise Population Distribution - 2001**

Ward No.	Population	Male	Female	Household
1	7394	3733	3661	1695
2	3961	1982	1979	926
3	4087	2005	2082	985
4	3697	1698	1999	846
5	6832	3450	3382	1606
6	5337	2653	2684	1299
7	5298	2628	2670	1286
8	4133	2044	2089	1017
9	1242	626	616	296
10	3260	1681	1579	776
11	6222	3129	3093	1408
12	997	498	499	210
13	5032	2509	2523	1102
14	3925	1971	1954	822
15	2988	1470	1518	644
16	3834	1814	2020	861
17	4454	2252	2202	1084
18	3762	1841	1921	881
19	2440	1201	1239	569
20	5135	2557	2578	1159
21	3660	1793	1867	850
22	3548	1732	1816	772
23	2614	1308	1306	617
24	2847	1385	1462	680
25	4257	2109	2148	997
26	3073	1557	1516	763
27	5646	2829	2817	1337
28	1489	749	740	348
29	3373	1670	1703	828
30	2874	1468	1406	614
31	3110	1541	1569	725
32	4446	2238	2208	1008
33	3827	1905	1922	859
34	3678	1823	1855	836
35	5252	2607	2645	1208
36	3791	1902	1889	887
37	2921	1396	1525	658
38	3264	1570	1694	755
39	4115	2044	2071	954
40	7307	3620	3687	1707
41	3278	1649	1629	768
42	7945	4035	3910	1841
43	4056	2009	2047	916
44	4243	2072	2171	982
45	2199	1169	1030	484
46	5466	2726	2740	1314
47	7312	3728	3584	1730
48	2717	1391	1326	649
49	5397	2692	2705	1281
50	6463	3336	3127	1462
51	7856	3963	3893	1880
<b>Total</b>	<b>216054</b>	<b>107758</b>	<b>108296</b>	<b>50182</b>





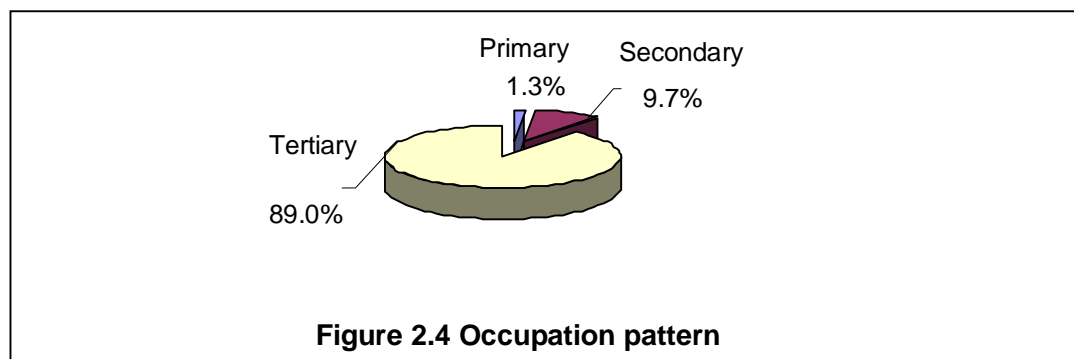
## 2.3 OCCUPATIONAL STRUCTURE

The total number of main workers in the town as per 2001 census was 72608 constituting 33.60% of the total population. The Marginal Workers accounted for 1.14% and the total dependent population of the town was 1,43,446 (66.39%).

**Table 2.3 Occupational Structure of Thoothukudi - 2001**

Category of Workers	Total	Male	Female	% to Population	% to Main work force
Total Workers	72608	60171	12437	33.60	--
Main Workers	70126	58696	11430	32.45	100.00
Cultivators	212	129	83		0.73
Agricultural labourers	196	131	65		0.57
Workers in household industries	1721	616	1105		9.66
Other Workers	67997	57820	10177		89.04
Marginal Workers	2482	1475	1007	1.14	--
Non Workers	143446	47587	95859	66.39	--

Source: Census of India 2001



The service sector is by far the largest employment engaging about 89% of the main work force, following by the industrial sector employing only 9.7% of the main workers.

## 2.4 GROWTH TREND – AN OVERVIEW

### 2.4.1 Physical Growth

Thoothukudi, known as “Pearl City” is endowed with pearl oyster resources and is a principal pearl culture center in Gulf of Mannar. The district, particularly in and around Thoothukudi is the major salt producer ranking second in the country and contributes 30% of the total salt production in the country. Emergence of Thoothukudi as a maritime port attracted travellers, adventures and eventually the Colonisers. The port hinterland of Thoothukudi extends to the districts of Madurai, Kanyakumari, Tirunelveli, Ramanathapuram, Southern parts of Tiruchirappalli and parts of Kerala.

Thoothukudi being a port town, paved way for extensive activities and expanded its area. The initial developments are around the Sivan Temple, and further development took place in stages as below.



**Stage 1:** Thoothukudi was the seat of Portuguese during 16th century, and the Dutch occupied in 17th century. During 18th century the British overpowered and occupied the town. Being a port town, the town received attention from the rulers for improving their trade, and so it was brought to Municipal status in 1866.

**Stage 2:** This stage of development can be marked with the extension of Southern railway to Thoothukudi. The location of railway station gave way for the town to expand towards north after 1877. During this period educational institutions were established.

**Stage 3:** The southern part of the town expanded towards west in this period (1907) because of the public establishments. Between the years 1907 to 1930, the residential and industrial growth sprung up along the Palayamkottai and Ettayapuram roads. The improvements in transport and communication, and development in Industries and commerce, resulted in the explosion of population and the town further expanded.

The loose sandy soil with thorny shrubs on the north and the presence of saltpans on the southeast part of the town has restricted developments in these areas. Thus, the major developments of the town were along Palayamkottai road.

## 2.5 REVIEW OF PHYSICAL PLANNING

### 2.5.1 Local Planning Authority and Planning

Thoothukudi and its surrounding areas are developing as a major industrial belt in South India. Hence, 29 villages situated around the municipal area were notified as additional areas to Thoothukudi Local Planning Area. In G.O Ms.No.853, H&UD dept dated 1.6.88 and the same was confirmed in G.O Ms.No.1620 H&UD department dated 16-10-1988. The total area of these 29 villages is 341.23 sq.km. The Thoothukudi Municipal area is 13.47 sq.km, of which 11.20 sq.km are developed area, i.e. 85% of the town area. Thoothukudi has been declared as Corporation w.e.f. 1.8.2008. The land use breakup is given in the table below:

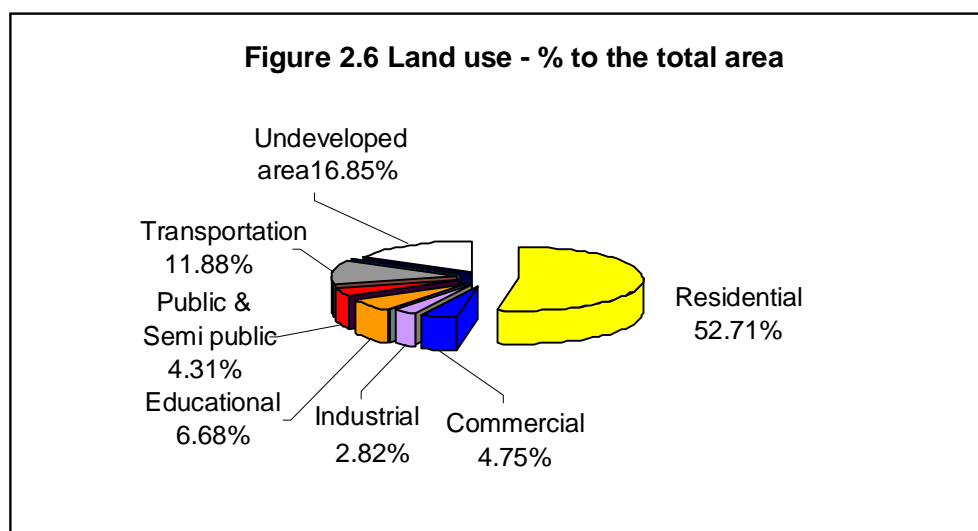
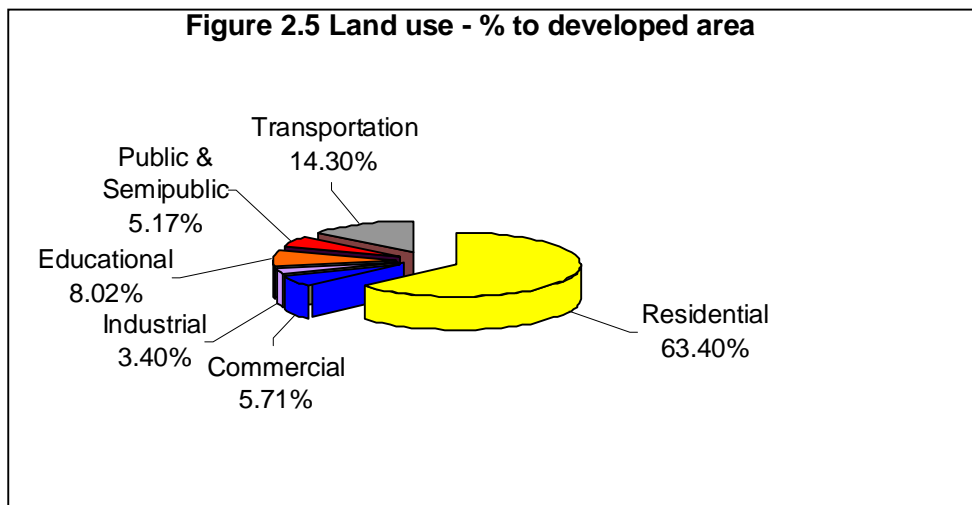
**Table 2.4 Existing Land Use - 1989**

Sl. No	Land Use	Extent in Hectares	% to developed area	% to the total area
1	Residential	710	63.40	52.71
2	Commercial	64	5.71	4.75
3	Industrial	38	3.40	2.82
4	Educational	90	8.02	6.68
5	Public & Semi Public	58	5.17	4.31
6	Transportation	160	14.30	11.88
	<b>Total Developed Area</b>	<b>1120</b>		
7	Agricultural/ Land under water/ salt pan area	227		
	<b>Total undeveloped area</b>	<b>227</b>		16.85
	<b>Total Town area</b>	<b>1347</b>	<b>100%</b>	<b>100%</b>

Source: Thoothukudi Master Plan, 1989.

Of the developed part of the town, 63% of the area is occupied by the residential use followed by traffic and transportation use 14.30%, public and semi-public uses covering 5%, and educational

institutions over 8% of the developed area. Industrial use accounts for hardly 3% and commercial use cover about 8%. Fig 2.5 & 2.6 shows distribution of land use with respect to developed area and total area.



## 2.5.2 Review of Sectoral Planning

### i. Traffic and Transportation

#### a) Road Pattern

The major road network within the town is Palyamkottai road (NH), Ettayapuram road (Madurai road), Ramanathapuram road, Tiruchendur road and West Great Cotton road. The West Great Cotton road leads to the new Harbour. A bye pass road has been formed outside the town connecting Harbour, Thermal plant and SPIC and Madurai road. Hence, a new bye pass road is not suggested in the Master plan.

#### b) Traffic flow and Problems

The total road length of Thoothukudi town is 174.43 km. The length of State Highways is 13.72 km. The Railway station is located at the eastern end of the town. There are three level crossings where traffic flow is disturbed during peak hours leading to traffic congestion. Parking facilities for lorries,

vans, and other vehicles are inadequate in the town. Absence of truck terminal is another factor contributing to the congestion in the central area of the town.

The town has two bus stands. The old Bus stand is located at Palayamkottai road and the new bus stand at Ettayapuram Road. About 700 buses are being operated daily from these two bus stands.

As Thoothukudi is a port town, the container lorry traffic and trucks are significant. Every day approximately 1000 trucks (including container lorries) enter Thoothukudi. There are no parking facilities for these trucks. Therefore, establishment of a truck terminal is essential for solving this problem.

### **c) Decongesting the town**

Traffic congestion is a major problem faced by the town. Two proposals are suggested for decongesting the traffic at peak hours. One is, providing grade separator and the other one is shifting of main Railway station to Meelavittan Railway station. Both these proposals will mitigate the traffic problems experienced by the town population.

### **ii. Water supply**

The main source of water supply is from the river Tamirabarani at Vallanadu, located at a distance of about 42 km by road along Thoothukudi – Tirunelveli Highway NH-7A. The head works for Thoothukudi is located at Vallanadu. The water supply scheme to Thoothukudi was taken up as early as the year 1932. The present rate of supply is at 80 lpcd. The Municipal area is divided into eight zones with one OHT for each zone. The quantity of water required will be 20.7 MLD for the present population. But at present, the quantity of water received at Rajaji Park is 19 MLD. By providing infiltration well and replacement of the pump set at head works, the quantity of water pumped will meet the present demand.

### **iii. Drainage System**

Thoothukudi Municipality has an existing UGD network that covers only about 20% of the town. The existing UGD was commissioned in the year 1985 and is not functioning efficiently leading to frequent clogging and overflow of sewage from the system resulting in unhygienic conditions in the town. The open drains in the town discharge the sewage into the Buckle channel and ultimately into the sea. The Thoothukudi Municipality intends to rehabilitate the existing system and provide a new UGD system for the un-sewered areas within Municipal limits.

### **iv. Recreational Facilities**

Beach and parks are the only recreational facility available for the town population. The beach is a potential area for recreation. The entire stretch of the beach road between the new port and the old port has been proposed for beach front development by Port Trust Authority.

## **2.6 GROWTH MANAGEMENT ISSUES AND SOLUTION INITIATIVES**

Apart from the projects in the form of improvements in the existing infrastructural facilities and services, there are certain priority initiatives to be provided for, in order to cope with the minimum needs of the growing population and consequent addition to the economical and physical development of the town.

### 2.6.1 Growth Potentials of the Town

Major industries such as SPIC, Sterlite, NTPC, Heavy Water plant and other small and medium scale industries are located in the Village Panchayat areas surrounding Thoothukudi Municipal area. Salt pans in and around the Municipal area is also a major factor contributing to the industrial activity in the town. The proposed Sethu-Samudram project will further result in the growth of the town commercially as well as industrially which will lead to demand for more space. Thus, the town has got good potential to grow into an international port town.

The Government has agreed to upgrade the Municipality to Corporation status by adding the surrounding villages. The proposal has been approved by the Thoothukudi Municipal Council. Many housing colonies have already developed outside the Municipal limits due to proximity to the work place.

The details of the Municipality and the surrounding Village Panchayats proposed for expansion are as tabulated below:

**Table 2.5 Proposed Village Panchayats for Expansion**

Sl. No	Name	Area in sq.km	Population as per 2001 census	Annual income
1	Thoothukudi Municipality	13.47	216058	15,87,04,000
2	Ayyanadaippu	9.00	2838	21,14,000
3	Sankaraperi	13.00	11551	77,56,000
4	Mapillaiyurani	9.00	27361	75,38,500
5	Thoothukudi rural	10.41	11523	30,30,200
6	Mutthaiyapuram	32.00	31813	1,15,99,220
7	Mullakadu	8.00	22071	7,07,526
8	Athimarapatti	5.78	18,767	39,19,690
9	Korampallam	6.00	3790	66,51,000
10	Meelavittan	21.00	30758	1,97,20,000
11	Pudiyamputtur	8.70	6249	3,17,851
12	Samynatham	13.46	1905	3,30,412
13	Therkku Veerapandiyapuram	12.88	1606	19,245
14	Sillanatham	11.56	1669	17,736
15	Pudur Pandiyapuram	9.76	743	1,49,820
16	Mela Arasaradi	13.42	3419	2,07,173
17	Keela Arasaradi	8.87	1740	45,845
18	Pulippanjankulam	-	-	-
	<b>TOTAL</b>	<b>206.31</b>	<b>3,93,861</b>	<b>222828218</b>

Source: Thoothukudi Municipal Records

### 2.6.2 Solution initiatives

1. Updation of Master Plan, including proposed Corporation area.
2. Strengthening infrastructure facilities to meet the demands of a future global city, focusing on housing needs, mass transit systems and recreational needs.
3. Enhancement and exploitation of the natural and heritage resources of the town.
4. Reforms in Municipal governance and Expanding the Resource Base for Stable Revenues.

**VISION AND STRATEGIC PLANNING****3.1 VISION STATEMENT**

The Vision Statement of the stake holders for the town will be an urban perspective framework for a period of next 20-25 years. The Vision Statement will indicate improving infrastructure facilities and help in creating durable public assets and quality oriented services. The focus of the vision statement will also be on enhancing public private partnership in infrastructure development and promote planned integrated development of the project towns within the regional frame work.

The preparation of Vision Statement shall involve the following three stages:

**a. Town assessment and policy interventions.**

An analysis to find out the existing status of Infrastructure facilities, cross-referring the norms and standards, demand and gaps based on present and future service requirements is done. A SWOT analysis was done based on the on the resources of the town and consultation with the stake holders.

**b. Stakeholder Consultation**

The City Corporate Plan is a tool which adapts a corporate approach to plan and implement projects in a participatory mechanism involving users, elected councilors, line agencies, private organizations, NGOs and CBOs. In this process, residents of various sections of the communities in the town were enquired into at random during reconnaissance survey and visits to all the sites of the projects identified by the Municipality and also otherwise suggested by the elders. The broad purpose of stakeholders participation is to involve the stakeholders in the development plan for the city.

**c. Finalization of Vision Statement.**

The Vision Statement has been firmed up based on the feed backs received from the stake holders and expert survey of the municipal services for the perspective year of 2029.

**3.2 SWOT ANALYSIS**

A SWOT (Strength, weakness, opportunities and threats) analysis illustrates the Stakeholders perception and the consultants' analysis of the town. A brief SWOT analysis for Thoothukudi town is given below:

**Table 3.1 SWOT analysis**

<b>STRENGTH</b>	<b>WEAKNESS</b>
District Headquarter town	Absence of local water supply sources
Port Town	Inadequacy of Storm water drains
Pearl City – Thriving pearl fishing industry	Absence of 100% underground sewerage
Good connectivity – By road, rail, sea and air.	Inadequacy of parking spaces and haphazard traffic in central area
Major salt producer ranking second in the country	Unsuitable soil condition for infrastructure provisions.

Strong educational base	Inadequacy and poor quality of roads
Location of Major industries such as SPIC, Chemical Industries, Heavy Water Plant and Thermal Plant	32% under slum population
OPPORTUNITIES	THREATS
Potential to emerge as a Export hub of Tamil Nadu	Opposition for Sethu Samudram project
One among major ports of India	Infrastructure deficiencies
Expansion of Thoothukudi port	Unsafe pedestrian movement in the core area
Sethu Samudram Project – to boost the economic and industrial development of the region	Inadequate Infrastructure provision in the slums
Third-largest container terminal in India after JN Port (Mumbai) and Chennai	Absence of vacant lands for further development of Municipal area
Opportunities for industrial SEZ.	Water logging in and around the town after heavy rain
Well educated population with inherent entrepreneurship skills	High levels of political interference in developmental activities
Enterprising Municipal authorities and elected representatives.	

Source: Analysis and feed backs from stakeholder workshop.

### 3.3. VISION FOR THOOTHUKUDI TOWN

Thoothukudi is one of the major port cities in India, situated approximately 540 km south of Chennai and 135 km Southeast of Madurai in the State of Tamil Nadu. The proposed Sethu-Samudram project would further elevate the status of this town in the world map. Further, the proposal to upgrade the Municipality to Corporation status is expected to take place by 2010.

The vision for the town is framed as ***'a global city with an international port, an environmentally safe industrial town, a centre for pearl culture'***.

### 3.4 STRATEGIES FOR ECONOMIC DEVELOPMENT

The economy of Thoothukudi is based on Industries, Port and Salt pans. Thoothukudi port had attracted many large industries such as SPIC Ltd, Alkali chemicals, National Thermal Power Corporation, Sterlite Industries, Heavy water plants and seafood.

To make use of the potentials in the town, the following actions need to be taken.

#### 1. Capitalize on the Natural resources of the region

##### a. Salts

Thoothukudi is a major producer of high concentrated salt from subsoil water, which is in great demand for the manufacture of chemicals. Hence, manufacture and export of salt is one of the major economic activities in Thoothukudi. Thoothukudi produces about 12 lakh tonnes of salt per year, about 90 per cent of Tamil Nadu's production, and more than half the quantity is used by chemical industries. Support on infrastructure and concessions from Government levies will help the growth of salt production in the region.





**b. Pearl culture**

The developments in pearl culture research have led to the establishment of a commercial pearl culture project in the country. The Tamil Nadu Fisheries Development Corporation Ltd and Southern Petro Chemical Industries Corporation Ltd. started a joint venture project in 1983 with a collection base at Thoothukudi, farm at Kurusadai and surgery at Mandapam.

**c. Sea food production**

The Fisheries College and Research Institute, Thoothukudi, acts as the regional resource centre for information dissemination of fish culture and sustainable technologies. Periodic training programmes on:



- Coastal aquaculture technologies
- Judicious utilisation of aquatic resources for the empowerment of women.
- Fish processing technology
- Preparation of value-added products such as smoked tuna, fisheries economics and credit plan preparation.

Export of Tuna fish, and other processed sea food is successful in Thoothukudi. Conversion of fish into value-added fishery products would fetch the coastal people including women, a good remuneration.

**2. Exploiting the potential from the emerging container hub**

The Thoothukudi port has the potential to become an international container transshipment hub given its unique geographical location, says a feasibility study by PricewaterhouseCoopers Pvt Ltd (PwC). Using a spreadsheet-based allocation model, which captures the integrated trade logistics of the East-West trade route, PwC estimated the potential traffic for a container hub port for Tuticorin. The model takes into account key variables impacting the economics of the international container industry, including latest development in various ports, to arrive at traffic forecasts. Based on the analysis, the traffic projected for Thoothukudi is 1.37 million TEUs by 2010, 2.31 million by 2015 and 3.72 million by 2020. Further, based on separate reports submitted for the Sethusamudram Ship Canal project, it is estimated that a further 16-17 per cent upside to the above traffic number would result in the implementation of the canal project.



Speck Systems Limited, Hyderabad ..... TNUIFSL

### 3. Creating base for industrial activity for future development

There are many small-scale industries in this district, which are mostly engaged in manufacturing of chemical products, and food products. The items produced by large-scale industries are salt, cotton yarn/textiles, chemical and chemical products. As Thoothukudi is the gateway of large and small scale industries, Industrial exhibitions can be organized by Thoothukudi District Tiny & small scale Industries Association (THUDITSSIA) and Small Industries Service Institute (SISI).



### 4. Establishment of Special Economic Zone

A concept paper prepared by the Thoothukudi Port Trust on developing a port-based Special Economic Zone (SEZ) has identified proximity to a port, climate and location as advantages for locating industries in agro and food processing, logistics, heavy engineering and mineral ore handling in the proposed zone.

The concept paper is under scrutiny by the Central Govt.

### 5. Benefiting from the upcoming Sethu-Samudram project

The Sethu-Samudram Project proposes linking the Palk Bay and the Gulf of Mannar between India and Sri Lanka by creating a shipping canal through the shallow sea called Sethu-Samudram. This would provide a continuous navigable sea route around the Indian Peninsula. The strategic advantages to India derive from obtaining a navigable sea route close to the coast, with a reduction in travel distance of more than 350 nautical miles (650 km) (for larger ships). The project is expected to provide a boost to the economic and industrial development of coastal Tamil Nadu. The project will be of particular significance to Thoothukudi harbour, which has the potential to transform itself into a nodal port.



### 6. Improvement to market area

The markets in the town are the nodal- centre for commercial activities. The market sites need to be redeveloped as a modern complex to enhance the marketing potential of the town.

### 7. Exploiting the tourism potential of the region

Thoothukudi - port, Industries, Salt fields, Tiruchendur temple, Panchalankurichchi - Memorials of the freedom fighters at Ettaiyapuram, Ottapidaram – manimandapam for the national poet Subramania Bharathi and VOC, Kalakadu wild life



Port Trust Beach



#### a. Eco tourism

For the conservation of biological resources there is a bird sanctuary at a Gulf of Mannar 623 ha and Vallanadu 1641 ha. Prominent species protected here are corals, sea cow and migratory birds. There are twenty islands along the stretch of Gulf of Mannar, which is declared as a National marine park. All these 20 islands were transferred to the wildlife wing of the State Government in 1991- 1992. The area was declared a biosphere reserve in 1989. The islands in the Gulf of Mannar region had been broadly classified as Thoothukudi, Vembar, Keelakarai and Mandapam groups.



#### b. Heritage Tourism

The Heritage sites located around the town can be improved by providing adequate infrastructure facilities so that the inflow of tourists can be increased.

- Civilised habitation - **Athichanallur** situated on the banks of river Tamarabarani - The place is now directly under the supervision of Tamil Nadu Archaeological Department.
- **Kazhugamalai** - situated about 90 km from Tuticorin, too can be considered historians' paradise. The Jain cave temple and Jain architecture are a treat to watch. Besides, temple named Kazhugasalamoorthy kovil, which belongs to 18th century is also situated adjacent to the Jain cave temple.
- **Lady of Snow church** - 4 centuries old situated at Thoothukudi town
- Ancient Roman **Catholic Church - Manapad**-60km from Thoothukudi -Cross at the top of the church is said to have been from Jerusalem.
- **Tiruchendur**- The sculptures and temple tower at the Lord Subramaniaswamy temple are worth seeing.



### 3.5 PERFORMANCE AND DEMAND ASSESSMENT

To assess the indicators of performance in each sector of infrastructure, the existing levels of key Municipal services is benchmarked against their norms and standards to arrive at performance assessment index .The norms and standards are based on SFC recommendation, Planning Commission recommendation, UDPFI guidelines, CPHEEO manual, best practices etc.

The demand assessment for projects is arrived from the Stake holder consultative meetings, discussions with officials, field visits and service analysis. The improvement needs proposed are

based on the demand and performance assessments with reference to short term and long term proposals for each sector.

The Performance assessment index for the existing status against the norms and standards for water supply, sewerage, drainage, solid waste, street lighting and social facilities are illustrated in the table below:

**Table: 3.2 Performance Indicators for key Municipal Services**

SI No	Service Indicators	Unit	Normative Standard	Current Status
<b>Performance of Key Water Supply Service Indicators</b>				
1	Daily per capita supply	LPCD	120	80
2	Roads covered with distribution network	Percent	>100	89
3	Storage Capacity with respect to supply	Percent	33	66
4	House Service connections	Percent	85	45
5	Proportion of non – domestic service connections	Percent	>5.00	4.6
<b>Performance of Key Storm water Drainage Service Indicators</b>				
11	Road length covered with storm water drainage	Percent	130	40
<b>Performance of Key Solid Waste Management Service Indicators</b>				
12	Estimated waste generation per capita per day	Grams	400	476
13	Waste collected as per the estimate of ULB (w.r.t. waste generation)	Percent	100	50
<b>Performance of Key Road Service indicators</b>				
14	Road density	Km/sq.km	10-15	13
15	Per capita road length	Meters	1.75	1.2
16	Proportion of surfaced roads	Percent	100	80
<b>Performance of Key Street Lighting Service indicators</b>				
17	Spacing between lamp posts	Meters	30	29
18	Proportion of fluorescent lamps (tube lights) w.r.t. total fixtures	Percent	≥80	86
19	Proportion of high power fixtures w.r.t. total fixtures	Percent	≤20	13
<b>Performance of Key indicators for Slums</b>				
20	Proportion of slum population to total city population (2005-2006)	Percent	<10	32

Source: Thoothukudi Municipal records and analysis.

From the above table, the gap in each infrastructure service is identified after comparison with the benchmarks and standards. The chapters that follow propose projects needed to ensure efficient delivery of the services.

### 3.6 STRATEGIES FOR POVERTY REDUCTION AND SLUM UPGRADATION

#### Towards Building Successful Slum-Upgrading Strategies

##### Youth groups can be very effective.

Youth SHGs can be encouraged and made active participants in developmental activities. Unlike Women SHGs, which are formed originally for social empowerment, Youth SHGs can aim at both economic empowerment and social empowerment as the primary focus. The focus can be on skill training for increasing their employability and promotion of economic activities.

**Group formation:**

The SHGs can be formed with unemployed youth in the age group of 18 to 35 years. Each group may comprise 10 to 20 members drawn from the below poverty line population.

**Youth SHGs can be beneficial in the following ways**

- To engage the communities in development activities through a dialogue with the active participation of the youth (men and women) with a sense of commitment and integrity
- To equip the youth by building their skills, capacity and capability in managing development, so that, they can help build the capacity of the citizens to manage the affairs of the community on their own.

- **Infrastructure provision**

Infrastructure provision brings indirect social and economic development, particularly for women. Improved infrastructure reduces women's work burden and gives them more time, increased space allows for more home-based economic activity, and lighting and better road coverage increase mobility and security at night. Infrastructure provision is perceived to have a significant impact on health, reducing incidence of illnesses which are related to an unhygienic living environment.

**Community halls** are valuable for project work as well as for private and public social activities, however, halls are prone to capture and maintenance can be a problem. They can also be used as location for health camps, balwadis (pre-schools), vocational training and neighborhood committee meetings. They can be used by the community for a variety of occasion such as religious ceremonies, marriages, political meetings etc. Conflicts over use and maintenance are common, and control over the hall give some individuals power in the community.

- **Balwadis (pre-schools) and Schools**

Both these institutions benefit poor and working families, especially working mothers. If timings of balwadis are appropriate, then they have a positive effect on the lives of working women, freeing them of childcare and giving more time to women to do paid as well as non-paid work.

## ORGANISATIONAL STRUCTURE

The organizational structure of the Thoothukudi Municipality generally consists of administrative and executive wings.

### 4.1 ELECTED BODY

The Municipal Council, the political wing of the Thoothukudi Municipality consists of 51 elected councilors. Each Councilor represents one electoral ward. The Councilors in turn elect the Chairperson as head of the Municipal Council.

#### Administrative wing

The administrative wing gives overall guidance to the Municipal functions through set of committees. Three committees have been formed namely, Appointment Committee, Contract Committee and Taxation and Appeal committee consisting of the Chairman, the Municipal Commissioner and elected Councilors as members.

Appointment Committee is a statutory committee, and the Chairman of the Municipality is also the Chairman of the committee. The Committee is responsible for making appointments for posts which fall under the purview of the Appointing Committee. Contract Committee is another statutory committee and quotation of works up to the value of Rs. 50,000/- is finalized by the Contract Committee. The Taxation Appeal Committee is responsible for hearing of appeals of the tax items.

### 4.2 EXECUTIVE BODY

#### Executive Wing

The executive wing is responsible for Municipal operations and maintenance. The Commissioner is the administrative head of the executive wing and is supported mainly by 5 department heads in the Municipal operation and maintenance. The organization structure of the Municipality comprises of 5 functional departments namely,

1. General Administration
2. Engineering and Water Supply Department
3. Accounts Department
4. Public Health Department, and
5. Town Planning Department

#### 4.2.1 General Administration

Thoothukudi Municipality is the Special Grade Municipality. Manager is the head of Administration next to Commissioner, and he is responsible for general supervision and administration of Office. All Establishment matters are dealt by the General Administration section.

#### Manager

Manager is Head of General Section. His duty includes general supervision of the ministerial staff, maintenance of discipline in the office premises, and to sign fair copies as 'for Commissioner' and to

sign receipts for all remittances made in the Municipal Treasury to acknowledge registered posts, money orders etc on behalf of the Commissioner. The Manager is the custodian of the cash collected by daily-checking of Chitta, Cash and Petty cash, payment advance etc., and for the administration report by way of Annual Inspection of the office, checking of Personal Registers of all staff and subsidiary registers in respect of all the sections. All papers are routed through the Manager to the commissioner except the Engineering section and the Health section.

All matters relating to the Establishment including Public Health, Maintenance of Increment & Punishment registers etc., maintenance of service Registers-register of Probationers; maintenance of temporary of permanent Post sanction register, Pension & DCRG for all Establishment Audit Register, issue of Office order, common office order book, maintenance of stock file, maintenance of personal Register & Audit objection register etc are looked up by the Manager.

#### **4.2.2 Engineering Department**

The Municipal Engineer is the over-all in-charge of Engineering Section. Municipal Engineer is controlling the Overseer, Work Inspector, and Road Mazdoor, Water works Superintendent, Wiremen, Helper and Fitter working in the section. The Municipal Engineer looks after the maintenance of roads, street lights, road laying, and construction of building, drainage, maintenance of parks, head works and municipal vehicles. The other subordinate officers are assisting the Engineer to look after the above works.

#### **4.2.3 Accounts Department**

The Account Section is included in General Section. The Accountant is the Head of the Wing controlling financial matters. It involves preparation of Budget and looks after the Accrual based Accounting System.

#### **4.2.4 Public Health Department**

Sanitary Officer is the overall in-charge of the Health Section. He looks after conservancy, sweeping streets, maintenance of drainage, controlling of epidemic diseases, ensuring of license to D&O trades, Birth and Death Registration. Sanitary Inspector, Sanitary Supervisor and Sanitary Workers are assisting the Sanitary Officer. The Sanitary Officer is held responsible for the segregation of garbage. Pulse Polio Immunisation camps are conducted every year under the section.

#### **4.2.5 Town Planning Department**

Town Planning Officer/Inspector is over all in-charge of the section. He looks after the work of preparation of Master Plan, Detailed Development Plan and maintains the land use registers as per the approved zoning uses. He is also responsible for licensing of plan approval, booking of unauthorized construction, approval of lay outs plans with in the town limits, controlling and removing the encroachment in the town. Town Planning Inspector helps in planning the future development of the town and allied works.

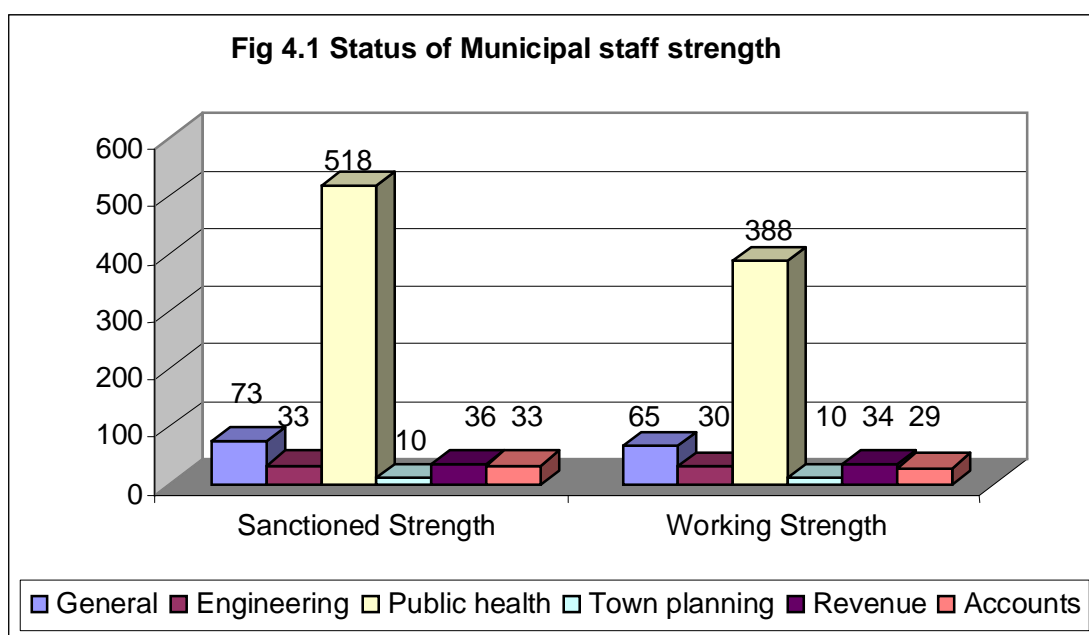
### 4.3 STAFF STRENGTH POSITION AND VACANCY POSITION

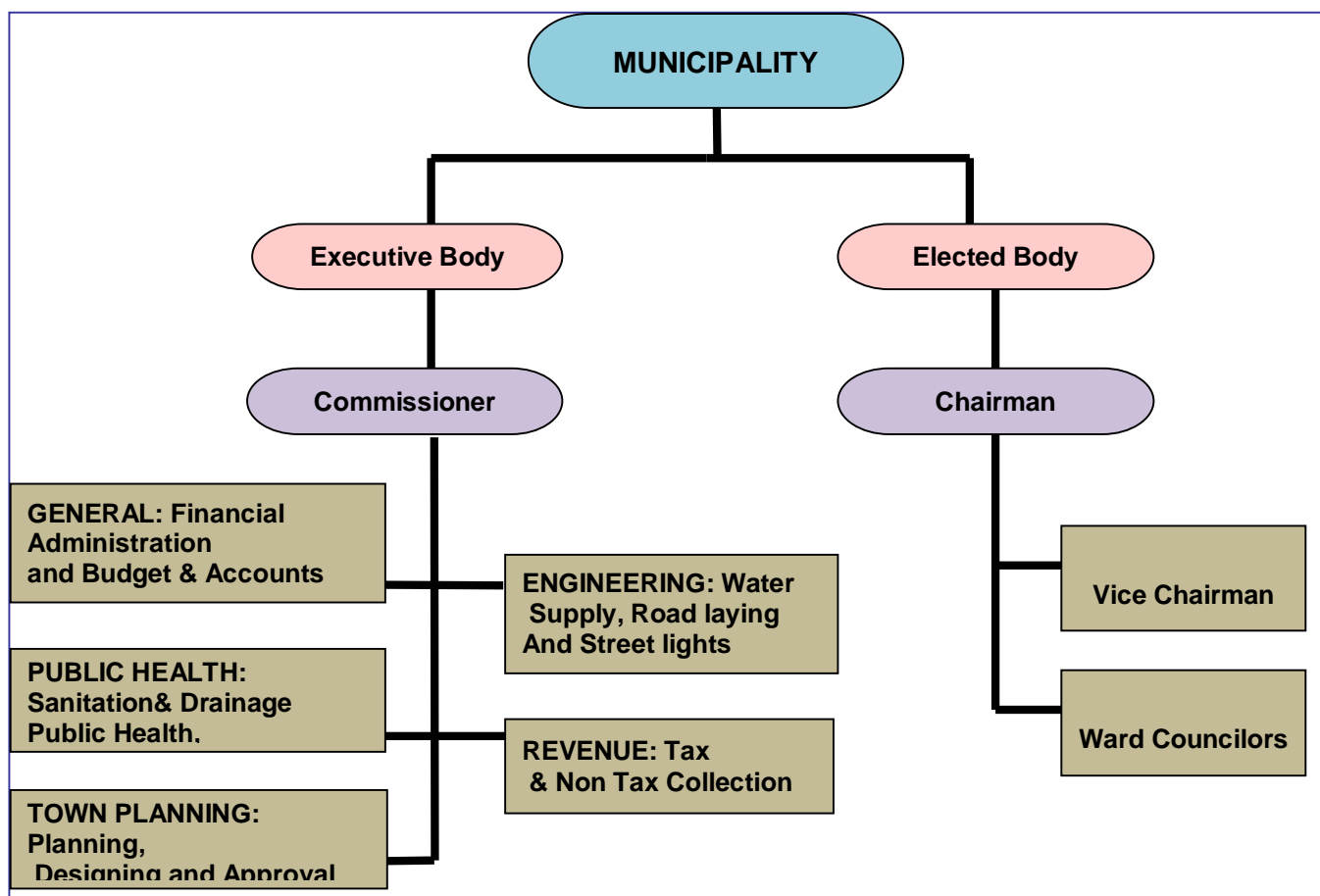
As of now, there are 147 vacancies in the 703 sanctioned strength of the Municipal office. The maximum vacancies are under public health department followed by general section.

**Table 4.1 Staff strength position**

Sl. No		Sanctioned post	Present Post	Vacant Post
1	General Administration	73	65	8
2	Town Planning	10	10	0
3	Revenue	36	34	2
4	Engineering	19	16	3
5	Water Supply	14	14	0
6	Public Health	518	388	130
7	Accounts	33	29	4
	<b>TOTAL</b>	<b>703</b>	<b>556</b>	<b>147</b>

Source: Thoothukudi Municipal records





**Fig 4.2 Organizational structure of Thoothukudi Municipality**

#### 4.4 ISSUES IN HUMAN RESOURCE

Of the total vacancies of 147 posts, 130 posts are vacant in Public Health section of the municipality. Privatisation options have been suggested in the reforms agenda. Considering the present quantum of work in the municipality, 2 Assistant Engineering/Junior Engineer (One for water supply and Sewerage, one for Roads and Bridges), one sanitary supervisor, one Town Planning officer need to be filled up expeditiously..

In view of appointing Project Management Consultant for the proposed water supply and UGSS, Privatization of Solid waste management, street light maintenance through ESCO/ Private agency, the various sections of the municipality need to be strengthening with the following Personnel.

**Table 4.2 Additional Staff Required**

SI No	Name of the Post	Section	No. of Personnel
1	Accounting for Infrastructure	General	3
2	Assistant Engineer/ Junior Engineer	Engineering	3
3	Overseer	Engineering	2
4	Sanitary Inspector	Public Health	-
5	Building Inspector	Town Planning	1
	<b>Total</b>		<b>9</b>

Source: Analysis and discussions with Municipal officials



Besides appointing additional staff, in the existing staff in the Administrative, Engineering, Public Health, Town Planning sections of the municipality need to be given training in their respective field periodically to enhance the capacity building to take up new assignments.

#### **4.5 ORGANIZATION MANAGEMENT**

As may be seen from various sections of the report particularly relating to service delivery, there are gaps which result in a shortage in the delivery system. This could be over come by certain specific options:

- In the service sections of the Municipality, there are vacancies which could be filled up. This alone may not ensure a totally satisfactory system delivery of the services as it requires an efficient personnel management especially assigning the right work to the right person in a time frame.
- The organization and delivery mechanism in some of the important personnel intensive service sectors have to be modernized. To mention the important few relate to solid waste management, where large number of workers and staff are involved, could be privatized. Scientific solid waste management need to be assigned to NGOs, voluntary organizations or even the respective resident associations in the various colonies. This is a remunerative venture as is proved in many places. This process not only will significantly reduce burden of the Municipality in engaging workers and staff but also will improve its resource position. Privatizing the repair and maintenance of water supply, collection of taxes and fees and maintenance of public assets particularly sanitary and public health units is a well known option. This also could be taken up as joint venture between urban local body and private sector.

**PHYSICAL AND SOCIAL INFRASTRUCTURE****5.1 PHYSICAL INFRASTRUCTURE****5.1.1 WATER SUPPLY****i. Existing status****a) Source of water supply**

The main source of water supply is River Tamirabarani. The head works is at Vallanadu, located at a distance of about 42 km by road along Thoothukudi – Tirunelveli NH - 7A.

The general details of water supply are as follows

Name of the scheme	Thoothukudi Water supply Scheme
Population Benefited	2,16,054 (2001)
Quantity of supply at present	18.5 MLD
Per Capita Supply	80 lpcd
Duration of Supply	Once in three days
Total storage capacity	123 LL
Length of Water Distribution Main	155.25 km
Unserved Area	26.23 km

Source: Thoothukudi Municipal Records

**b) Existing Water supply Scheme details**

The water supply to Thoothukudi Municipality is through the pumping and gravity transmission pipelines. Due to the population growth and increased demand, an improvement scheme was sanctioned in the year in 1999. The details of the scheme is given below

Head works

Infiltration well 3.5 m diameter - 5 Numbers

Infiltration Gallery

2 Rows of 375mm stone ware pipe - 136 m

2 Rows of 450mm RCC perforated pipe - 100 m

Collector well cum pump house - 1 no

Pump sets

Suction well I : 35HP/6170 lpmx16m

Suction well II : 40 HP/8111 lpm x 16m

Collector well : 35HP/5100 lpmx21m

Main pump set : 3Nos 170 Hp x 58m  
(2nos of 170HP working around the clock)

Common sump : 3LL

Power supply

Transformer : 500KVA

Collector well : LT supply and 63

KVA generator

Ridge point Reservoir

Capacity : 16.84 Lakh liters

The water supply scheme for Thoothukudi was taken up in the year 1932. The water supply scheme contemplates 5 number of infiltration wells of 3.5 m diameter with infiltration gallery for a length of 180 m with 2 rows of 450 mm RCC perforated pipes. The water is pumped from suction cum pump house No.1, provided with 2 number of turbine sets capable of pumping 6170 lpm against the total head of 16m. The suction cum pump well No.2 is provided with 2 number of Turbine sets capable of pumping 8111 lpm against the total head of 16 m.

As per the new scheme one collector well cum pump house of 6 m diameter with 7 rows of radials each of 35 m length is constructed near the old wells in Tamirabarani River. The radials are 300mm ms slotted pipes for a total length of 245m. The two pumps in the collector well are turbine type capable of pumping 5190 lpm X 21m head. The pumped water is discharged into 3 lakh litres capacity common sump constructed near the new pump house.

The common sump of 3 lakh litres capacity receives water from suction wells I & II and new collector well. After implementation of the new scheme the combined water available for supplying Thoothukudi Municipality is 26.87 MLD (Original design). A pump house of size 15m x 8m is constructed adjoining the sump and it houses three number of pump sets of 170 HP each capable of discharging 9736 X 89 mH. Two pump sets are working at a time and third one is a stand by.

As per design the total quantity of water delivered from head works is 25 MLD. At present the quantity of water realized at Rajaji Park is only 19 MLD, because, the efficiency of the pump set is reduced.

The alignment of conveying main from head works to the final collecting sump at Rajaji Park passes through a ridge point in between Vallanadu and Theivaseyalpuram. The G.L. at ridge point is 60.98m. This is the highest point in the alignment; from here, water flows by gravity to the sump situated at Rajaji Park. The levels summarized below.



Infiltration well at Vallanadu

- a. Head works : 23.55 m
- b. Ridge level : 60.98 m
- c. Rajaji Park : 3.25 m

Previously the 400 mm CI main (1932) was let into the ridge point reservoir of 16.84 lakh litres capacity, but now the pumping main (700 mm CI) is directly connected to the gravity main.

#### **PUMPING MAIN**

700 mm	14KSC	PSC pipe	-	2500 m
700 mm	12KSC	PSC Pipe	-	730 m
700 mm	CI	LA CLASS	-	3350 m

#### **GRAVITY MAIN I** (Duplication)

LS	0 to 7381	:	500 mm 4 KSC	PSC Pipe
LS	7381 to 28620m	:	600 mm RCC P2 Class	(Existing 1980)

#### **GRAVITY MAIN II**

LS	0 to 11700 m	:	600 mm PSC	4 KSC
LS	11700 to 13500m	:	600 mm PSC	6 KSC
LS	13500 to 22500 m	:	600 mm PSC	8 KSC
LS	22500 to 28620m	:	600 mm PSC	10 KSC

Earlier the two gravity mains consisted of

- (a) 400 mm CI for 28620 m
- (b) 400 mm CI for 7381 m and 600mm RCC p2 Pipe for 21239m

#### c) Existing Transmission main

**Table 5.1 Details of Existing Transmission Main**

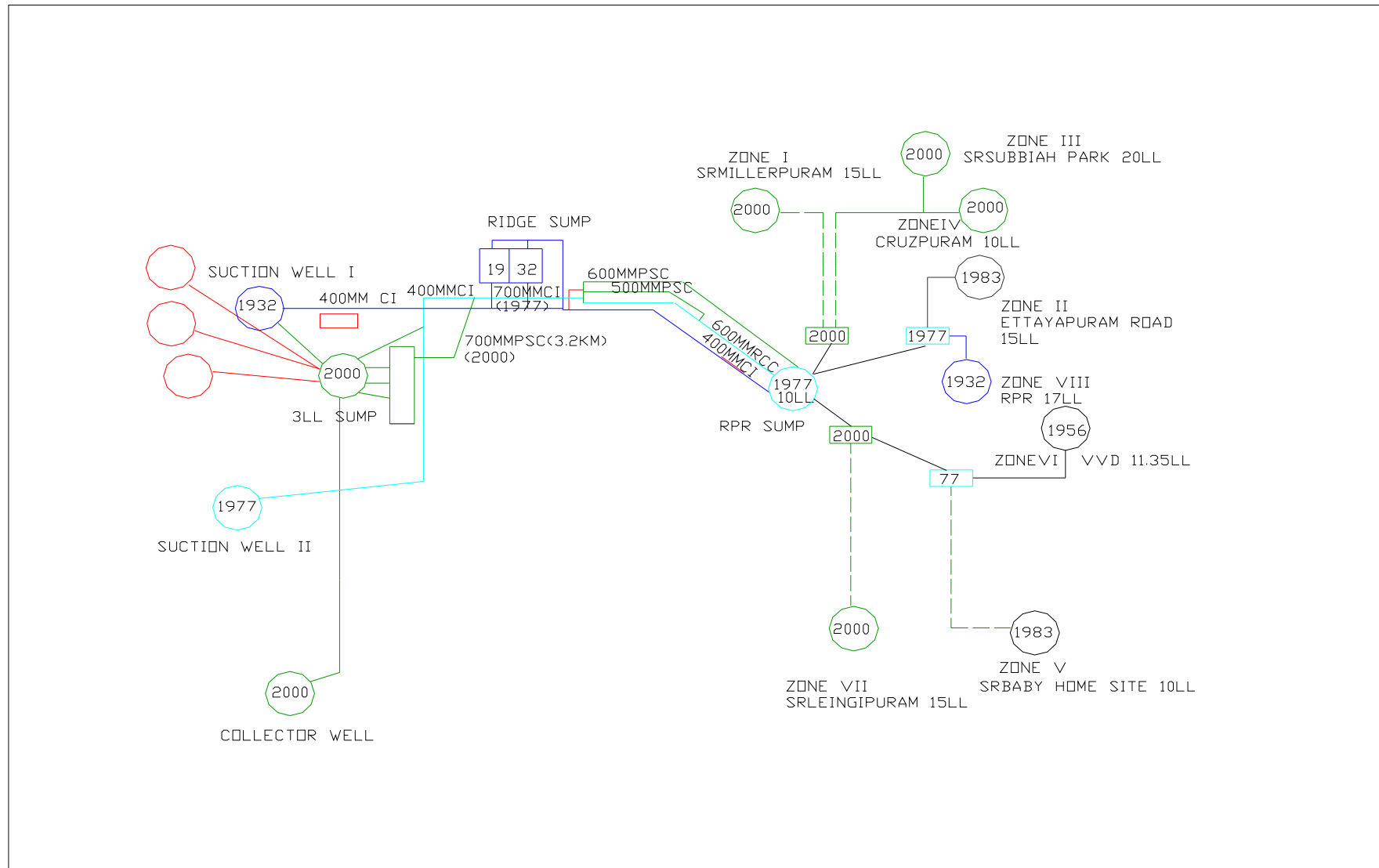
Pumping main		In m	In km	
I line(1932)	OM	6580	6.58	400mm/CI
II line(1980)	OM	3230	3.23	400mm/CI
	3230m	6.58	3.38	700mm/CI
III line(2001)	OM	3230	3.32	700mm/PSC
Gravity main				
I line	OM	28.62	28.62	400mm/CI
II line	OM	7381	7.38	400mm/CI
	7.38	28.62	21.24	600mm/RCC
III line	OM	22500	22.25	600mm/PSC
	22500	28620	6.12	500mm/PSC
Duplicate main				
	OM	7381	7.38	500mm/PSC

Source: Thoothukudi Municipal Records

#### d) Distribution system

The Municipal area is divided into eight water supply zones with one OHT at each zone. The over all capacity of the existing OHTs is 123 lakh litres. The water is pumped from Rajaji Park pumping station to each OHT through feeder mains. The total length of water distribution main is 155.25 km. Further, to ensure equal distribution to the entire Thoothukudi town area, the distribution pipes should be laid in uncovered area and damaged pipes should be replaced. Figure 5.1 shows the flow diagram of the existing water supply system in Thoothukudi municipality.

Figure 5.1 Flow diagram of existing water supply system



**e) Service Reservoirs****Number of HSCs**

Domestic	- 30058
Commercial	- 1370
Industrial	- 5
Total Number of Public Fountains	- 658



Overhead Tank at Cruzpuram

The list of OHTs with their capacity and the condition of the OHTs is given in Table below

**Table 5.2 Existing Service Reservoirs**

ZONE	NAME	CAPACITY in LL	YEAR OF CONS.	CONDITION
I	Milarpuram	15.00	2000	Good
II	Ettayapuram Road	15.00	1983	Good
III	Subbiah Park	20.00	2000	Good
IV	Cruzpuram	10.00	2000	Good
V	Baby home site	20.00	1983	Good
VI	VVD Park	11.35	1956	Good
VII	Levingipuram	15.00	2000	Good
VIII	Rajaji Park	17.02	1932	Good
<b>TOTAL</b>		<b>123.37</b>		

Source: Thoothukudi Municipal Records

**f) Distribution Zones**

The Municipal area is divided into eight water supply zones. At present the distribution is made in the six zones on alternative days and in the rest two zones once in three days. The wards covered under each zone are listed in the table below.

**Table 5.3 Areas Covered by OHTs**

ZONE	OHT -capacity in LL	Wards Covered
I	Millerpuram-15	41,42,48,49,50,51
II	Ettayapuram Road -15	1,2,5,28,39,40
III	Subbiah Park -20	3,4,6,7,9,10,11,12,13
IV	Cruzpuram-10	13,14,16,25,17
V	Baby home site- 20	19,20,34,35,21,22,15,17,18,23,24,25
VI	VVD Park -11	8,26,27,28
VII	Levingipuram -15	33,35,46,47
VIII	Rajaji Park-17	29,30,31,32,36,37,38,40,43,44,45,48,49

Source: Thoothukudi Municipal Records

**g) Water Tariff**

The existing tariff and deposits for water supply with effect from 1.10.2007 is given in table below.

**Table 5.4 Existing tariff and deposits for water supply** Amt in Rs

Category	Existing connection tariff in Rs.	For additional 1000 liters	Existing Deposit
Domestic	50.00	3.50	3000.00
Non Domestic	100.00	10.00	6000.00
Industrial	150.00	15.00	6000.00

Source: Analysis and discussions with ULB officials

**ii. Issues**

1. Out of the 51 wards in Thoothukudi Municipal area, more than eighteen wards about the seashore. The well water in Thoothukudi area is not suitable for domestic needs due to the salinity. Hence, the people of Thoothukudi depends fully on the Municipal water supply for their entire demand including domestic needs and it results in the per capita supply exceeding above 90 lpcd.
2. Inadequate daily supply –80 lpcd
3. Periodicity of supply – once in 3 days
4. Old and damaged pumping main

**iii. Improvement Needs****a) Providing three number of infiltration wells**

Taking into account the population as 2, 30,000 (2007) and considering the standard norms, the quantity of water required will be 20.70 MLD. But at present the quantity of water received at Rajaji Park is 19 MLD due to transmission losses. Hence, the shortfall quantity is about 1.7 MLD. To meet the demand, five number of infiltration wells are required at the head works in Vallanadu. Two infiltration wells were already constructed by using Municipal fund and the balance work – construction of three number of infiltration wells at the head works are in progress. The estimated cost for these three infiltration wells is Rs.44.00 lakhs. The quantity of water obtained from the 5 infiltration wells will be collected in the common sump of 3 lakh litre capacity, from where the water is pumped by 170 HP pump set and delivered through 700mm PSC main to the various parts of the town.

**b) Renewal of the Damaged Pumping Main**

In suction well I at the head works by considering the life of existing pump set, energy savings and available EB supply, the existing pump set is to be replaced by a new pump set. The yield available at the suction well could be pumped by a pump set and delivered through the existing 400mm CI main. The pump room and pump set works is undertaken at a cost of Rs.16.50 lakhs received from MLA fund (2006 – 2007).

**iv. Demand for water supply**

Thoothukudi has a confined area of 13.47 sq km with a population of 2,16,054 as per the census 2001. But the town is expanding commercially, industrially besides the imports and exports activities at the harbour. The commercial and industrial growth in the town causes the floating population to increase from time to time. The demand for water supply for the town is calculated based on the projected population at the rate of 120 lpcd as given in the table below.



**Table 5.5 Water Supply Demand - 2039**

SL No.	Year	Population adopted	Total Qty of water required in MLD (120 lpcd)	Qty of water Available	Shortage in MLD
1.	2001	2,16,054	25.92	18.50	7.42
2.	2009	2,31,938	27.83	18.50	9.33
3.	2024	2,64,934	31.79	18.50	13.29
4.	2039	3,02,624	36.31	18.50	17.81

Source: Analysis and calculation

It may be seen that in the year 2024 and 2039, a shortage of 13.29 MLD and 17.81 MLD is noticed. For Thoothukudi Municipality the only dependable source is Tamirabarani and to meet out the shortage, adequate number of infiltration wells need to be provided. The pumping main has been designed to tackle 26.87 MLD and hence may be retained to meet the requirement in the year 2039. The storage capacity of the existing 8 OHTs (12.34 ml) works out to 34% of the total demand in the ultimate stage, which has to be in between 33% and 50%, and hence no additional storage is required at ultimate stage.

#### **v) Water Supply Projects Identified in Thoothukudi Municipality**

##### **Project 1: Laying Of 400 mm 10 KSC PSC Pipes at Puthukottai**

The existing 400 mm CI main has been shifted and laid with new 400 mm PSC main from ridge point reservoir to Thoothukudi bye pass road. The area in between Puthukottai Village and Thattaparai Junction is not covered by the National Highway Project. The existing 400 mm CI main in the above said area was laid in the year 1932 and the pipes were in worn-out condition. The type of soil in this location is black cotton soil. Hence the pipe line shall be replaced by 400mm 10 KSC PSC pipe, so that the entire 400 mm gravity main from the ridge point to Rajaji Park will be put into use. Hence, laying of 400mm PSC pipe for a length of 2000 m at Puthukottai area is proposed, and the estimated cost for this work is Rs. 50.00 lakhs.

##### **Project 2: Supply Delivery and Erection - Budgetary Offer for 315 KVA Transformer Electrification Work at Vallanadu Head Works.**

The TNEB has extended 11KV power supply up to Vallanadu headwork and installed two numbers of 500KVA, 11/0.43KV (one as working and one as stand by) transformer exclusively to supply Vallanadu pump house load with LT supply at 415V, and satisfy the present load of 375KW (505HP)

For improving the water supply in the town, it is estimated to create new source at head works to extract nearly 6000 lpm. It is suggested to construct five number of infiltration well (each well have 7.5HP submersible Pump set). Out of five infiltration well, already two wells was completed and under operation, rest three number of infiltration well work is almost in completion stage.

Moreover in suction well I necessary yield test and operation condition test for 175HP pump unit was conducted and found in satisfactory condition. Hence it is better to utilize the available yield and 175 HP pump unit (1996) and also existing 400mm CI pumping and gravity main. So, power

supply is needed to operate five of 7.5HP submersible units and one number of 175 HP for further improvement of water supply.

The present HT supply is not enough to operate 5x7.5HP+1x175HP units. So additional HT supply is required. Hence it is suggested to install two 315KVA, 11KV/433 transformer (One as working and one as stand by) and connected panel board etc., The total estimated cost is Rs. 45.00 Lakhs

### **Project 3: Construction of 10 LI Sump (BP Tank) at Ridge Point**

The first conveying main of 400 mm CI pipeline was passing through B.P Tank at the ridge point. The subsequent gravity main 600 mm RCC main, 600 mm PSC main are directly connected to the pumping main to avoid any damage to the structure of the B.P. Tank (16.84 lakh litres capacity) at the ridge point. One more sump at ridge point with a capacity of 10 lakh litres is proposed to be constructed and the new sump will connect the new pumping main laid by the TWAD Board in the year 1999-2000. The cost of the sump is estimated to be Rs. 47.00 lakhs.

### **Project 4: Providing Kinetic Air Valves in the Pumping and Gravity Main.**

The Conveying main from head works to the final collecting sump at Rajaji Park consists of 6580m pumping main and 28620m length of gravity main. The water from head works is pumped to the ridge point at LS 6580 and then falls in to the sump at Rajaji Park. The levels at various points are as follows.

Head works	-	23.55 m
Ridge level	-	60.98 m
Rajai Park sump	-	3.52 m

Presently there is minimum number of air valve provisions available at 700mm pumping main as well as 600, 500 mm PSC gravity main. Hence it is necessary to provide sufficient number of kinetic air valves to avoid often leakages in the mains.

The estimated cost for this work is Rs.5.00 Lakhs.

### **Project 5: Providing Priming Arrangements at Rajaji Park.**

In Rajaji Park Booster Station, eight number of centrifugal pump sets are functioning to pump the water to all the OHTs. But, there is no priming arrangement for the pump sets. Hence it is proposed to provide vacuum pump set for priming purpose. The estimated cost is Rs.6.50 lakhs.

### **Project 6: Laying of Distribution Main in the Uncovered Area and Replacement of Damaged CI / AC Mains**

At present the distribution is made through alternative day in six zones and once in three days to the remaining two zones. Further, to ensure equitable distribution to the entire town area, the distribution pipes are to be laid in uncovered area and damaged pipes should be replaced in the place of existing CI and AC pipes. The Municipality intends to improve the internal distribution network to ensure availability of protected water supply to all the users.

Further, the existing distribution mains of 100 mm CI and 100 mm AC are laid 40 years ago. Now these pipes have been corroded and damaged. Hence the damaged distribution network are identified and proposed for replacement. Hence 16 km length pipe is proposed for replacement and uncovered areas.

In ward 51, Ganesanagar, equitable distribution is not effected. Hence, a separate feeder main work is proposed. In Theresapuram and Alagesapuram areas the distribution main passes through Buckle channel, which causes contamination in that area. Hence it is also proposed to realign the above pipe lines in Theresapuram and Alagesapuram. The total estimated cost is Rs.84.00 Lakhs.

**Table 5.6 Water supply Projects identified in Thoothukudi**

SLNO	Name of Work	AMOUNT (Rs. In Lakhs)
1	Laying of 400mm 10 KSC PSC Pipes at Puthukottai (2000 m)	50.00
2	Supply Delivery and Erection - Conversion of 500 KVA Transformer into 800KVA Transformer and connected pannel board at Head works vellanadu	45.00
3	Construction of 10LL Sump (BP Tank) at Ridge Point	47.00
4	Providing Kinetic Air Valves in the pumping main and Gravity mains.	5.00
5	Providing priming arrangements at Rajaji Park.	6.50
6	Laying of feeder main for readjustment of zones, laying of Distribution mains in the uncovered areas and replacement of CI & AC mains in the existing distribution System	84.00
7	Construction of staff quarters at Vellanadu Head works and Ridge point Reservoir compound	31.50
	<b>Total</b>	<b>269.00</b>
	<b>Annual O &amp; M Cost</b>	<b>8.07</b>

Source: Survey and discussions with municipal officials and TWAD Board officials

The total cost of the proposed water supply works is estimated to be **Rs. 269.00 Lakhs.**

## 5.1.2 SEWERAGE SYSTEM

### i. Existing Status

Thoothukudi Municipality has an existing UGD network that covers only about 20% of the town area. The existing UGD was commissioned in the year 1985 and is not functioning efficiently leading to frequent clogging and overflow of sewage from the system resulting in unhygienic conditions in the town. The reason attributed for inefficient functioning of the system is lack of proper maintenance and inadequate staff.

Thoothukudi Municipality intends to rehabilitate the existing drainage system and provide a new UGD system for the un-sewered areas within the Municipal limits. Wilbur Smith Associates Pvt. Ltd was appointed as the design consultants to formulate a report to effectively utilise the existing UGD and propose a new UGD for un-sewered areas. According to the report it is observed that



1. The existing Under Ground collection system is executed fully in zone - 4 and partially in zone - 1.
2. Stoneware pipes and CI pipes are used in the existing sewerage collection system.
3. 3 numbers of sub pumping station and one main pumping station is provided for the existing sewage system.

Details and conditions of the existing sewage pumping stations are furnished in the following sections

**a) Chatram pump station**

Chatram Pumping Station located near the Thoothukudi Railway station, pumps sewage to the main pumping station at Cruzpuram through a 500 mm dia PSC main laid for a length of 900m.

**b) Beach Road Pump Station**

Beach Road Pump Station located at north of Thoothukudi Port Trust, pumps sewage to the MPS through a 225 mm dia and 200 mm dia CI main for a length of 1500 m. Since the existing invert levels of the wells in this pump station are shallow, unsewered areas are not recommended for inclusion to this pump station, except a small stretch on the eastern side of this zone adjacent to the pump station is connected to it.



View of Buckle channel at various Locations within the municipality

**c) Palayamkottai Road Pump Station**

This pumping station is situated in the central portion of Thoothukudi on Palayamkottai main road. Sewage from this pumping station is also being conveyed to the MPS through a combination of pumping and gravity flow. A 250 mm diameter CI pumping main originates at the pumping station and terminates at a location adjacent to the Buckle channel, from where sewage flows by gravity through a 375 mm RCC main to the Cruzpuram MPS.

**d) Main Pumping Station at Cruzpuram**

Sewage collected from the two zones 1 and 4 through the network of sub-pump stations at this MPS is pumped to the sewage treatment plant through a pumping main for a length of 7.36 km. The Pumping machinery is not functioning and it is proposed to use the existing pump room with rehabilitation measures. However, at present untreated sewage is discharged into the Buckle channel.

**e) Existing Sewage Treatment Plant**

A Sewage Treatment Plant for Thoothukudi Municipality has been installed with four oxidation ponds at Tharuvaikulam on the Mandapam road in 1985. At present all ponds and the entire site of 500 acres is fully covered with thorny bushes to the extent that there is no proper access from the road to the STP site. Reconstruction of the ponds is proposed by the consultants.



**ii. Issues**

- Only 20% area is covered by existing UGD
- Damages in existing mains, branches and man holes
- Blocks in the mains and manholes.
- Over flowing of the sewage on to the roads

**iii. Improvement Needs****a) Estimation of Sewage Flow**

Based on the data available from the census, the population is projected for the intermediate and ultimate stage; a nominal sewage generation of 90 litres per capita day (lpcd) is assumed for the proposed scheme. Table below shows the estimated sewage flow in the future.

**Table 5.7 Estimated Sewage Flow - 2038**

Description	Population	Sewage in MLD
Present stage population-2007	2,30,000	20.70
Intermediate stage population-2022	2,65,000	23.85
Ultimate stage population-2038	3,00,000	27.00

Source: WSAPL Report

**b) UGD Proposed by Consultant (WSAPL)**

The proposed Underground Sewage System has been designed as a partial flow system and also based on the terrain of the Municipality, which is considerably flat. Sewer pipeline material has been selected based on factors such as corrosion resistance, structural strength to carry backfill, impact and live loads and ease of installation. The following design criteria have been adopted in design of the proposed underground sewerage system.

- A period of 30 years has been considered in design of the proposed underground sewerage scheme and 15 years has been considered in the design of pumping machinery.
- Sewage generation – 90 lpcd (including infiltration)
- Peak factor adopted in the design of the sewer network is 2.25 for the collection system.
- Designs of the sewage pump station and pumping main have been performed using a standard peak factor of 2.00.
- The sewage treatment plant has been designed for the ultimate stage population.
- Minimum diameter proposed in the system is 200mm and pipe material proposed for gravity sewers is stoneware and RCC.
- Ductile Iron (DI) pipes with cement mortar lining and suitable coating are proposed for the pumping mains.
- Maximum depth of excavation for sewer laying adopted in the design is 5m. However, in certain reaches where the sewer reaches the screen well of the pump station, the actual depth of installation ranges from 6 to 7m for a short length due to non availability of space for installation of pumping station / lift station at the desired location.
- All sewers proposed are designed to flow at a maximum of 80% at ultimate peak flow conditions.
- The Self Cleaning Velocity is maintained to prevent silt deposition.

The proposal consists of following components.

- Rehabilitation of existing system
- Extending UGD for the un-sewer areas within Municipal limits.

#### c) Rehabilitation of existing system

The entire existing sewerage collection system shall be desilted and cleaned. The Chatram and the Beach road sub-pump stations including the existing pumping mains shall be retained. Few rehabilitation measures such as plastering, painting and color washing, sludge removal in wells and pump house, cleaning the pipe network in pump station and the pumping main and related activities are proposed to increase life span. The Palayamkottai Road and Cruzpuram Pump Stations shall be reconstructed as the invert levels of existing mains and wells do not match with the proposed network levels. The existing pump room shall be retained as a control room with few rehabilitation measures like plastering, painting, and color washing etc. The pumping main from Cruzpuram pump station to STP is not sufficient for conveying the ultimate stage peak flow. It is proposed to change the pipe sections in those stretches.

#### d) Proposed UGD for the unsewered areas

The Buckle channel divides the town into two parts. Thoothukudi has been divided into 15 sewerage zones (including the three existing UGD zones). The wards covered under each zone are given below in the table.

**Table 5.8 Wards covered under sewerage zones**

S.no	Zones	Ward	Area Covered
1	Zone 1	16,17,23,25,26,27,28,29,30	Chatram pumping station
2	Zone 2	15,16,17,18	Beach Road pumping station
3	Zone 3	37,38,39,40,43	Pudu gramam Palayamkottai Road
4	Zone 4	41,42,50,and 51	Ls 4 (a) And Ls 4
5	Zone 5	50	Ls 5 Jayalani Colony, N.G.O Colony, Patinathapuram
6	Zone 6 (Ls6 &6a)	40,41,42,43	Milarpuram, Barhma Colony, Rajagopal Nagar, TNEB Colony-
7	Zone 7 (LS 7)	44,45,48,49,50	Chidambaram Nagar,Perayant nagar, Masilamanipuram, Subaya Mudalayar puram
8	Zone 8 (LS8)		Muniyaswamy puram, levanchipuram
9	Zone 9	19,20,21,22,30,32,33,34,35	Lions Town, Roja Colony, Mini Kuraya puram, Mother Teresa Colony, Panimaya Colony, Fathima Nagar, Pul Thotam, Santhi Nagar, Kiz Sanmugapuram
10	Zone 10	Ward 1	Nayagan Patai, Kuringi Nagar, State Bank Colony
11	Zone 11	Ward 1,2,3,5 Zone	Selva nayagar puram, Kandaswamy puram, Ambedkar Nagar, Nandhagopala Puram
12	Zone 12	Ward 3,4,6,7,8,9	Ambedkar Nagar, Krishnarajapuram, Ennasiyar puram, Muthukrishna puram
13	Zone 13	9,10,12,13,14	Therespuram , Madhavan Colony, Pupalnayarpuram, Vodai sanguni Colony
14	Zone14	15,18,19,22,24	
15	Zone 15	22,30,31,32,36,37,38	Sungar puram, Pudugramam, Melle Sanmugapuram

Source: Thoothukudi Municipality

The Trunk Sewer (TM-1) starts from Govt. Polytechnic and runs along the Palayamkottai road collecting the sewage from zone 4, 5, 6, 7, 8 and joins the SPS – 3 near AVM hospital. Sewage from SPS –3 shall be pumped to a nearby bell-mouth chamber on the trunk main, which passes through WGC road, Ranganathapuram main road, Nandagopalapuram main road, American Hospital road and Therespuram main road. This Trunk Main collects sewage from zones 9,10,11,12 and 15 to reach MPS at Cruzpuram. The flat terrain of the town necessitates a lift station within a sewer length of 1 km approximately to restrict the depth of excavation to within 5m.

**e) Pump/Lift stations**

In small lift stations the pump is sized to meet the peak flow. It is recommended to retain the existing pumping main and pump station.

**f) Sewage Treatment Plant**

Treated effluent shall be used for sewage farming. Ultimate stage sewage generation at 90 lpcd works out to 27.00 MLD for the proposed sewage system in Thoothukudi Municipality.

The proposed STP (5.22 acre) with ASP method of treatment has been designed in **DBOT model**.

**g) Operation and Maintenance (O & M) Plan**

The annual O & M cost of the proposed underground sewerage scheme has been estimated as **Rs 300.00 lakhs**. An additional amount of Rs.121.00 lakhs is proposed as the capital investment towards purchase of equipment for maintenance works such as Jet Rodding Machine, Sewer Flushing Tankers etc.

The Commissioner of Municipal Administration has sent revised proposal and as such the scheme is now proposed to be implemented in two phases. The phase I will be implemented at an installation cost of Rs.4640.00 lakhs with Rs. 91.00 lakhs for annual maintenance. Tenders have been floated for Phase I and the work order has been issued with about 40% excess over department rates. As such the tendered value for phase I works is **Rs.6962.27 lakhs**.

Under phase I, the town is divided into 15 zones and the collection system will be provided in 12 zones which are uncovered under the already existing system.

**e) Project Cost**

The Capital cost of the proposed underground sewerage scheme is shown below in table 5.9

**Table 5.9 Proposed projects for Under Ground Sewerage**

S.No	Description	Amount (Rs. in lakhs)
<b>A</b>	Collection System comprising of sewer lines, manholes, and additional house service connections.	2474.04
<b>B</b>	Pumping System	
1	Lift Stations	95.66
2	Sub pumping stations and Main sewage pumping stations	363.54
<b>C</b>	<b>Pumping Mains</b>	146.20
<b>D</b>	<b>Sewage Treatment Plant</b>	
1	Sewage Treatment plant at Tharuvaikulam	340.97
2	Provision for disposal arrangements for the treated effluent	150.00
3	Provision for conveyance of soil for bund formation and	30.00



	construction of ponds, if necessary	
4	Provision for laboratory at STP & equipments	10.00
	Physical contingency at 2.5%	90.26
	Price Contingency at 2.5%	90.26
	Supervision charges at 5%	189.54
<b>E</b>	<b>Miscellaneous</b>	
1	Road Restoration charges to be paid to highways department	58.00
2	Road restoration charges of Municipal roads to be undertaken by the local body as advised by the TNUIFSL	500.00
3	Payment for diversion of underground lines (WS mains, electricity and Telephone cables)	60.00
4	Deposit to be paid to TNEB and separate feeder main	35.00
5	Service charges at 1% for E	6.53
	<b>Grand Total</b>	<b>Rs.4640.00 lakhs</b>

Source: Analysis and discussions with municipal officials

The proposed tariff and deposits for Sewerage connections is given in table below

**Table 5.10 Deposit and tariff rates for sewerage connections**

Type	Deposit (Rupees)	Monthly Tariff (Rupees)
House Service Connection	3000.00	60.00
Commercial	7500.00	150.00
Industrial	10000.00	200.00

Source: Analysis and discussions with municipal officials

The works relating to laying of roads and provision of storm water drains could be taken up only after the completion of the UGD.

The Phase II works are proposed at a cost of Rs.1493.00 lakhs yet to be taken up. After discussion with municipal authorities it is presumed that there may be a tender excess of around 30% over and above department rates and hence about Rs.1940.00 lakhs may be required for completing phase II.

### 5.1.3 STORM WATER DRAINS

#### i. Existing Status

The existing open type storm water drains covers only 39% of the road network in the town. At present the storm water drains carry the sullage and sewage water, which is ultimately discharged into the Buckle Channel in the downstream side and disposed to the Bay of Bengal.

**Table 5.11 Existing Storm water drains**

Total length of roads & streets in the town	174.43 km
Total length of storm water drain required in the town	348.86 km
Length of existing storm water drain	69.47 km
Total length of storm water drain required to be provided	279.39 km

#### ii. Issues

- Absence of drains along the main roads and cross roads
- Missing links from lanes to main drains
- Lack of proper disposal arrangements

### iii. Improvement Needs

The existing storm water drains are characterised by low carrying capacity due to encroachments and silting. It reduces the regular flow and adds constraint to the existing drainage system. Absence of UGD and inadequate functioning of the existing open drainage network further add to the problem. This situation not only degrades the environment by emanation of foul smell due to stagnation of sewage at number of points, but also pollutes the land and ground water through seepage. It is therefore of prime importance that the proposed UGD for the town should be completed to enable segregation of liquid waste from the storm water network.

As the town has flat terrain, an integrated Storm water drainage plan is necessary for this town, to avoid flood during rainy season. An amount of **Rs.3.00 lakhs** is proposed for the study.

The open drains get invariably choked due to silting, grit discharge from kitchen, dumping of plastic and paper materials, etc. Hence, it is safe and must that the drains are covered with slabs leaving a meshed gap every 25 to 30 meters distance. The inlets from the houses are to be provided with mesh to avoid paper, plastic and sizable particles entering into the drains. It is therefore suggested that all the roads and streets are to be provided with proper closed type drainage network.

Therefore the components of improvements proposed are as:

- Construction of new closed type drains
- Construction of missing links in the storm drains in the lanes and streets.

### iv. Proposals

The proposed drain work will be implemented after the UGD works is completed.

**Table 5.12 Proposals –Storm water drains**

Year	Cost Rs. in lakhs
Construction of closed type storm water drains for a length of 279.39 km	<b>480.00</b>

Source: Analysis and discussions

The total cost required for the proposed drain works is **Rs. 480.00 lakhs**. The annual O & M cost needed towards this will be Rs.14.40 lakhs.

## 5.1.4 SOLID WASTE MANAGEMENT

### i. Existing Status

In 2006, for a population of 2,27,762, the total solid waste generation is 108.50 MT per day. The per capita waste generation works out to 476 grams per day (this quantity includes waste contributed by floating population 22,776). This is higher when compared to the standard of 433 gm per capita per day for a city. Collection and transportation efficiency is around 50%. The current status of SWM in the town is an age-old method of lifting and shifting the waste from one place to another. As of now, there is no proper and exclusive facility to deal with SWM generated in the town.

Waste collection and transportation from 26 wards is managed directly by the Municipality and for the other 25 wards it is privatised. Total number of sanitary workers is 713 (412 employed by ULB and 301 by the contractor).

**a) Brief Physical Features****Table 5.13 Solid waste Management Indicators**

Area	13.47 sq.km
Population 2001 census	216054
Population 2006 projected	227762
Floating population	22780
Projected population 2011	240000
Floating population 2011(projected)	23650
Number of Municipal wards	51
Number of sanitation divisions	10
Number of privatisation divisions	04
Number of privatized wards	25
Number of Streets / Roads	648
Length of Streets / Roads	174.43 Km
Length of Highways maintained roads	13.72 Km
No. of slums	24
Slum population	68,889
No. of Households all categories	70587
Residential Buildings	61571
Industrial establishments	138
Commercial buildings	8831
Institutional	47

**b) Sources of Waste Generation**

According to recent estimates, the following waste generation pattern was observed:

**Table 5.14 Pattern of Solid Waste Generation**

S. No.	Source of Waste generation	Total Qty tonnes per day	% of Waste to total
1.	Residential – households	70.40	64.00
2.	Commercial establishments	17.60	16.00
3.	Institutional areas	8.80	8.00
4.	Hospitals & Nursing homes	4.40	4.00
5.	Public gardens & Wedding halls	4.40	4.00
6.	Other public places	4.40	4.00
<b>Total</b>		<b>110.00</b>	<b>100.00</b>

Source: Thoothukudi Municipal records

The overall growth rate of population plus per capita increase in waste generation has been arrived at 2.40 % per year by the ULB. The Municipality has compost yard at Tharuvaikulam which is 12 km away from Thoothukudi with an area of 534 acres. The garbage collected from the 51 wards are dumped in 12 strategically located dumper placer bins, from there the garbage

is shifted and dumped at the compost yard. The existing compost yard is not provided with adequate infrastructure facilities such as road, segregation platform and security room.

**Table 5.15 Available Resources for SWM**

Item	No/Qty
Vehicles HCV 8M <sup>3</sup>	3
Vehicles LCV 6M <sup>3</sup>	5
Tractor Trolleys 3M <sup>3</sup>	5
Dumper placer bins of 2.5M <sup>3</sup>	20
Dumper placer vehicle	1
Tricycle rickshaw	85
Push carts/wheel barrows	93
Transfer station (sub depot)	2
Open waste storage sites	100
No. of household covered	70587
Road length covered	174.43 km
Door to door collection	8 wards(Effective)
Vehicle trips upto dumping ground	2/day
Suitability of vehicles	
Time consumed in loading & unloading	2.5 Hrs ±30min
Overall capacity	53 MT/day
Efficiency of collection & transportation system	48%
Collection to disposal site distance	8 km (Average)
Location of site	12 km (Longest)
Land area availability for treatment and disposal / SLF etc.	12 Hectare
Future land availability	13 Hectare
Current level of expenditure on SWM	108.5 TPD as 100% productivity

Source: DPR prepared under UIDSSMT scheme, 2006.

## ii. Issues

- SWM System functions are at a low service level. (50% performance efficiency)
- Deficiency in the system may cause backlog of MSW and would attract rodents, mosquitoes, flies and vector breeding causing epidemic diseases.
- Also comparing the cost per tonne for the service, the productivity level is low.

**Table 5.16 Identified Issues in Solid Waste Management**

ACTIVITY DESCRIPTION	SHORT COMINGS IDENTIFIED
<b>Primary Collection :</b>  <b>1.Man Power Deployment</b>  * Permanent : 367 * Substitute : 45 * Privatisation Contractors : 301 ----- Total : 713	Requirement based on Population of HH, sweeping area and drain cleaning. The requirement is estimated as 848 Nos. - The shortfall of (848 - 713=135 Nos.) manpower affects the collection and storage badly. - The Primary collection and storage need to be with one agency. - Working in 2 shifts affects the productivity level in morning. Absenteeism is high at 20% and to augment existing substitute strength to be increased accordingly. - No uniform is given to identify these workers.

	<ul style="list-style-type: none"> <li>- No effective monitoring of their works is seen.</li> <li>- No sincere efforts made to cover all households under door-to-door collection system and implement source segregation concept.</li> <li>- Existing beat system is not based on density of HH or population or waste generation.</li> </ul>	
<b>Utility of Tricycle, Rickshaws &amp; Push carts:</b> * Tricycles in use : 85 * Push Carts : 93	- For 70587 HH at 1 Tricycle / 250 HH the requirements with spares.	$\frac{70587}{250} = 282$ Or say 300 Nos.
	The short fall in infrastructure affect this activity. <ul style="list-style-type: none"> <li>• Manual handling</li> <li>• No containers provided in tricycles &amp; pushcarts in use.</li> <li>• Beat System is not scientifically designed.</li> <li>• Lack of maintenance of these utilities.</li> </ul>	
<b>Storage facility</b> <ul style="list-style-type: none"> <li>• Open collection and storage</li> <li>• Drain side storing</li> <li>• Sub depots system</li> <li>• Dumper placer container</li> </ul>	<ul style="list-style-type: none"> <li>• In many places open storing is done</li> <li>• Drains choked with MSW.</li> <li>• Sub depot system appears to be effective and wards attached are seen clean.</li> <li>• Compliance of storage system as per MSW (M&amp;H) rule 2000 is not in full level.</li> </ul>	
<b>Transportation – Secondary Collection</b> <ul style="list-style-type: none"> <li>• Lorries – 8m<sup>3</sup> – 3nos</li> <li>• LCV Lorries – 6m<sup>3</sup>–3nos</li> <li>• Tractor Tipper – 4m<sup>3</sup>–5nos</li> </ul> Dumper placer lifting LCV equipment vehicle –1no	<ul style="list-style-type: none"> <li>• Most of fleet do not have tipping system.</li> <li>• Manual loading ineffective and consumes longer duration and assigned trips are not made.</li> <li>• Vehicles are old and maintenance is not up to standards.</li> <li>• Most of vehicles including privatisation contractors carry waste with improper covering.</li> <li>• Compliance of Transportation as per MSW (M&amp;H) Rules 2000 is lacking.</li> </ul>	
<b>Disposal</b> <ul style="list-style-type: none"> <li>• Crude Dump</li> <li>• No. Weigh bridge</li> <li>• No monitoring</li> <li>• Mixed MSW getting dumped</li> </ul>	<ul style="list-style-type: none"> <li>•Waste processing facility not existing.</li> <li>•Mixed MSW including biodegradable getting disposed which pollutes the disposal area.</li> <li>•No monitoring system of vehicle productivity at disposal site.</li> <li>•No equipments available for MSW leveling &amp; compaction.</li> <li>•MSW (M&amp;H) Rules 2000 had not been complied till date.</li> </ul>	

Source: DPR prepared under UIDSSMT scheme, 2006.

### iii. Improvement Needs

The primary collection in 25 wards out of the 51 wards have been privatized and has been a successful exercise. There are 5 secondary collection centres, which are inadequate for the town. Dumping of garbage along road margins, into the open drains or the canal is noticed in most areas of the town. The Municipality and the private operator collect the garbage at regular intervals and dump them at Tharuvaikulam compost yard about 12 km from the town area. The ULB has proposed an Integrated Solid Waste Management plan under the UIDSSMT Scheme and is awaiting approval from the Council. The MSW generation for current year is estimated as 108.5 TPD (Tonnes Per Day) in 2006, 122 TPD in 2011 and 196 TPD in 2031.

The components for improvements are

- Procurement of Modern transportation vehicles
- Purchase of Dumper placer bins
- Construction of Transfer stations

- Compost yard with all infrastructure facilities

Based on the above improvement proposals the long term proposal is given in table below.

**Table 5.17 Summary of Cost Estimates for Integrated SWM Project (long term)**

Sl. No.	Item / category		Rs. Lakhs
1	A	Primary collection: containers, dumpers, tricycle rickshaw, wheel barrows etc	110.10
2	B	Transportation: tipper trucks, dumper placer trucks, pay loader, dead animal carrier vehicle	334.90
3	C	Basic infrastructure: processing site development machine	191.45
4	D	Pre processing segregation facility	99.00
5	E	Civil work, building, godown, machine, sheds etc for compost plant	299.36
6	F	Compost processing – mechanical plant – integrated system	160.00
7	G	Basic engineering – technologies accessories etc	82.00
8	H	Material handling equipments – automobiles	87.20
9	I	Civil & Infrastructure for RDF	115.65
10	J	Plant Machinery & Equipment for RDF	180.00
11	K	Development of sanitary landfill and remediation of old waste	380.00
12	L	Site facilities for staff, education & awareness	33.80
<b>Sub Total</b>			<b>2073.46</b>
13	M	(i) Contingencies @ 5.00% of the project cost	103.67
<b>Total</b>			<b>2177.13</b>
<b>Say Rs. 22.00 crores</b>			<b>Say 2200.00</b>

Source: DPR prepared under UIDSSMT scheme, 2006.

The total project cost works out to Rs.2200.00 lakhs. This is a long term proposal for a period of 30 years. The cost estimated for the short-term proposal of 5 years (phase I), by the ULB is Rs.828.60 lakhs. The balance components proposed for the long term for the next 25 years will be taken up in subsequent phases at a cost of (22.00-8.29) Rs.1371.00 lakhs.

The break up cost for the proposals under phase I is shown below in table below.

**Table 5.18 Cost Estimate for the Short-term SWM Proposal**

Sl.No	Work Details	Nos	Estimated Amt in lakhs	Implementing Agency
1	Dumper placer bins with 3 cu.m capacity	50	30.00	Municipality
2	Tricycle with 6 bins	300	48.00	Municipality
3	Wheel barrows with 4 bins	200	6.60	Municipality
4	Dumper bins with 7.5 cu.m capacity for the collection of construction debris	25	17.00	Municipality
5	6 cu.m capacity tipper vehicle with covering facility for the transportation of door to door collected waste to the Vermi composting yard	3	27.00	Municipality
6	Vehicles for transporting 3 cu.m capacity dumper placer bins	7	77.00	Private
7	Vehicles for transporting 7.5 cu.m capacity dumper placer bins	2	26.00	Private
8	Weight lifting and earth excavating machineries	1	22.00	Municipality
9	Compost Yard improvement works	..	195.00	Municipality
10	Sanitary landfill project	..	380.00	Municipality
<b>Total estimated Amount</b>			<b>828.60</b>	

Source: Analysis and discussion with municipal officials



The total cost required for implementing the short term proposal is **Rs.828.60 lakhs**. The annual operation and maintenance cost is Rs.57.96 lakhs. The capital Investment required for the municipality is Rs.725.60 lakhs and for the private sector investment is Rs.103.00 lakhs.

### 5.1.5 ROADS

#### i. Existing Status

The town is well connected by the National Highway-7A with Tirunelveli and Kanyakumari. The total length of Highways is 13.72 km. The important roads running through the town are Palyamkottai road, Ettayapuram road (Madurai road), Ramanathapuram road (beach road), Tiruchendur road and West Great Cotton road.

**Table 5.19 Category of roads**

No. of Roads & Streets	862	
Category	Length in km	% to total length
CC Roads	11.799 km	6.70
BT Roads	107.94 km	61.8
WBM Roads	18.67 km	10.8
Earthen Road	36.021 km	20.70
Total Length of Roads	174.43 km	100.00

Source: Thoothukudi Municipality

#### ii. Issues

- Inadequacy of pedestrian pathways along the major road network
- Inadequate width of culverts and bridges
- Roads with heavy potholes and dusty road surfaces.
- Absence of truck terminal
- Traffic congestions at level crossings on closing of the gates

#### iii. Improvement needs

The circulation network forms basic network of the town to move, to interact, and interlink the residentials, the work places, and other activity centers. A good road network is a necessity not only for growth and development of habitats, but also to sustain it in a progressive mode.

The roads and streets in many places in the town are in damaged condition. There are encroachments that have come along the road margins. Pedestrian pathways are absent in many stretches creating unsafe condition for the pedestrians. There are inadequate parking facilities for lorries, vans, and other vehicles.



Thus Upgradation of main access roads (40 to 50 km) to global standards with Service ducts, pavements, medians, signages, Parking facilities, Bus bays and Drains is proposed as long term plan. The cost required for this would be Rs.3000.00 lakhs.



Out of the three rail-road level crossings in the town, the crossing at Ettayapuram road creates heavy traffic congestion. During peak hours of traffic it is felt that a grade separated level crossing at this point (gate III) would relieve the congestion and reduce the delay considerably. The traffic and transportation study conducted in the town by **Pallavan Transport Consultancy services** in 1994 recommended improvements in traffic and transportation which includes suggestions for grade separator and truck terminal in the town. The grade separator work at the Third gate is in progress.

To improve the present situation, the proposals contemplated are given below.

**Table 5.20 Proposal for roads**

S.No	Name of the Roads	No. of works	Length in Km	Amount in Lakhs
1	Paved Roads for Bus route	7	16.50	50.00
2	Upgradation of Earthen roads to B.T. road	212	36.36	230.00
3	Upgradation of WBM roads to B.T. Roads	31	4.12	20.00
4	Approach Road (Theresapuram area)	-	1	25.00
	<b>Total</b>	<b>250</b>	<b>57.98</b>	<b>325.00</b>

Source: Thoothukudi Municipality

A stretch of 20 km of road network has been upgraded to BT from the amount allotted under the UIDSSMT scheme proposed in 3 Phases. The road work proposals will be taken up in phases after the completion of proposed Under Ground Sewage System. The total cost of the proposed roads improvement works is **Rs.325.00 lakhs**. The annual O & M cost required is Rs.9.75 lakhs.

#### 5.1.6 TRUCK TERMINUS

Absence of **truck terminus** is a major factor contributing to the congestion in the central area of the town. As recommended by the Pallavan Transportation Consultancy Services, a truck terminal with all infrastructure facilities is essential for this port town. The truck terminal is proposed on the Ettayapuram - Tiruchendur Bye -pass road (site suggested by the ULB) near the entrance of the town. The land required for the proposed truck terminal is calculated based on the assumption of accommodating 600 trucks a day. The total area of the land required for truck terminus would be approximately 38 acres and the amount required to implement the project is **Rs.400.00 lakhs**. The annual O & M Cost required is Rs.8.00 lakhs.

#### 5.1.7 BUS STAND

##### i) Existing Status

##### a) New Bus Stand

Thoothukudi Municipality has an 'A' class bus stand, in an area of 2.7 hectares (6.88 acres) located at Ettayapuram Road. It has 51 bus bays. From this bus stand nearly 600 buses are being operated daily. All the basic amenities are provided in the bus stand. There are 80 shops in the bus stand and the income derived from the bus stand is Rs.22.29 lakhs per annum.

##### b) Old Bus Stand

The Old Bus stand with an extent of 1.51 acres is located at Palayamkottai road and has been classified as 'C' class



bus stand. From this bus stand nearly 250 buses are being operated daily. There are 48 Shops in this bus stand. Income derived from the bus stand is Rs.13.99 lakhs per annum.

**Table 5.21 Bus Stand - Existing status**

	<b>New Bus Stand</b>	<b>Old Bus stand</b>
Type	A Class	C Class
No. of bays	51	8
Free Urinals	Available	Available
Pay & Use Toilets	Inadequate	Inadequate
Bus Timings Board	Available	Not Available

Source: Thoothukudi Municipality

**ii. Issues**

- Damaged run ways in the New Bus Stand
- Damaged flooring in the passengers waiting area in the New Bus Stand
- Inadequate Public convenience

**iii. Improvement needs**

- Provision of pucca run way
- Renovation of runway and maintenance of old and new bus stands
- Providing Seating arrangements

The new bus stand is on Ettayapuram Road, from where nearly 600 buses are being operated daily. The old bus stand is on Palayamkottai Road. From this bus stand nearly 250 buses are being operated daily. Both the bus stands lack basic facilities such as sanitation, drinking water, rest areas, parking area and lockers. The bus-riding surface of the new bus stand is damaged and measures should be taken for proper maintenance. Thus the following proposals need to be carried out to facilitate the public.

**iv. Proposals**

**Table 5.22 Proposals - New Bus Stand & Old Bus Stand**

<b>Description</b>	<b>Rs in Lakhs</b>
<b>New Bus Stand</b>	
Maintenance of Building	3.00
Flooring	7.00
Improvements of Toilets	2.00
Cycle stand	3.00
Drains	2.00
Approach road for mini bus	3.00
<b>Total</b>	<b>20.00</b>
<b>Old Bus Stand</b>	
Maintenance of Building	3.00
Polishing and repair of Flooring	3.00
Provision of cycle stand – improvements, and improvement of compound wall	4.00
<b>Total</b>	<b>10.00</b>
<b>Annual O &amp; M Cost</b>	<b>0.60</b>

Source: Analysis and discussions with municipal officials

Cost required for Improvement of Old Bus stand - Rs. 10.00 lakhs

Cost required for Improvement of New Bus stand - Rs. 20.00 lakhs

The total cost of **Rs.30.00 lakhs** is required for the proposed improvements in old and new bus stand.

### 5.1.8 BUS SHELTER

#### i. Existing Status

There are 18 bus shelters with in the Municipality. The bus shelters do not have any facility, and in some bus stops the shelters are in damaged condition.

#### ii. Issues

- Damaged Roof
- No seating arrangements
- Inadequate maintenance

#### iii. Improvement needs

It is proposed to reconstruct the damaged bus shelters with seating facilities. The bus route numbers can be marked in the shelters to help the passengers to go to various places without confusion. The components for improvements are:

- i. Reconstruction of the damaged bus shelters with seating arrangements
- ii. Route number boards exhibiting bus route number
- iii. Yellow paint marking
- iv. Hoarding space for advertisement

The estimated cost required for the proposed bus shelters is **Rs.10.00 lakhs** (18 nos x 0.55 lakhs per shelter)

The space for advertisement and hoardings in the bus shelters can be provided in the bus shelters which will generate revenue to the Municipality. The proposals needed to be implemented by the involvement of private sectors and NGOs. The annual operation and maintenance cost needed is be Rs.10000.

### 5.1.9 STREET LIGHTS

#### i. Existing Status

The municipality maintains 7100 street lights. Tube light covers 86% of the total lights.

- |                                   |   |           |
|-----------------------------------|---|-----------|
| 1. Number of 40W tube lights      | - | 6166      |
| 2. 250 W sodium vapour lamp       | - | 782       |
| 3. 250 W Mercury vapour lamp      | - | 140       |
| 4. 70W Sodium vapour lamp         | - | 11        |
| 5. High Mast Light                | - | 1         |
| • Total length of roads & streets | - | 174.43 km |
| • Distance between poles          | - | 29.00 m   |
| • Automatic Timer Switch          | - | 14        |

#### ii. Issues

- Absence of street lights in the Newly Developed Areas
- High electricity consumption charges
- Less illumination in the bus route roads
- Inadequate Timer Switches

### iii. Improvement needs

To improve the situation, the Municipality has initiated efforts to install around 340 streetlights, 55 median lights, and 2 high mast lights at various locations in the town. The components for improvements are:

- Provision of additional street lights in newly developed roads & streets
- Provision of additional CFL Lamp in offices, schools, Hospitals & other buildings for energy saving.
- Installation of automatic timer switches

The cost of the proposed street light work is as given below:

**Table 5.23 Proposals – Street Lights**

S.No	Project Description	Numbers	(Rs.in lakhs)
1	Conversions of existing Tube lights to Sodium Vapour lamps (70 W)	40	2.00
2	Providing Energy Saver lights for newly developed areas	200	3.00
3	Provision of CFL Lamps in offices, hospitals and other buildings	100	1.00
4	Automatic timer switches	195	13.65
5	Central Median Lights at VVD Road	55	11.00
6	High Mast light	2	12.00
	<b>Total</b>		<b>42.65</b>
	<b>Annual O &amp; M Cost</b>		<b>1.28</b>

Source: Analysis and discussions with municipal officials

Therefore the total cost required for the proposals is **Rs.42.65 lakhs.**

### 5.1.10 PARKS AND PLAY FIELDS

#### i. Existing Status

There are 10 notified parks and 4 un-notified parks in the Municipal area.

The notified parks are:

1. Roche Park
2. Rajaji Park
3. Sankara Nagar Park
4. S.V.N. Park
5. Masillamani park
6. Kakkan Park
7. Selvanayagapuram Park
8. Rajagopal nagar park
9. Ash memorial Park
10. Nehru park

- Number of play fields - 7

All the above mentioned parks and play fields are maintained by the Municipality.

The un-notified parks are:

1. Palayamkottai road West Park - 2
2. Ezhil Nagar Park - 1
3. Ezhil Nagar Open Space - 1

#### ii. Issues

- The parks are poorly maintained & uncared for a long time
- The parks are used for other than the designated uses
- Absence of proper fencing
- Lack of Recreational facility, play materials



Port Trust Children's Park

### iii. Improvement Needs

As stated above the town has ten notified park sites in the town, maintained by the Municipality and by the private owners. The Roche Park has been renovated and is maintained by the Municipality. The parks are generally in a state of disuse and the proposals by the Municipality if taken up and maintained by collecting a nominal fee, would serve as the much needed lung spaces to the town. The components for the improvements proposed are

- Restoration of Park with modern facilities such as planting trees, landscaping.
- Provision of play materials
- Development of roadside gardens.
- Walkways around the Parks, compound wall.

Development of 9 parks with modern facilities such as planting trees along the periphery, small wading pools for kids, play equipments, gym, seating benches, lighting etc is to be taken up.

Name of park	No. of works	Rs. in lakhs
1) Rajaji Park	1	5.00
2) Sankara Nagar Park	1	5.00
3) S.V.N. Park	1	5.00
4) Roche Park (Additional)	1	5.00
5) Masillamani Park	1	5.00
6) Kakkan Park	1	5.00
7) Selvanayagapuram Park	1	5.00
8) Rajagopal Nagar Park	1	5.00
9) Ash memorial Park	1	5.00
<b>Total</b>		<b>45.00</b>
<b>Annual O &amp; M Cost</b>	<b>-</b>	<b>1.35</b>

The total cost required for restoration, developments, maintenance of parks is **Rs.45.00 lakhs**. The parks sites can be revamped with the support of private sectors also. They may be involved in maintaining the parks and provisions could be made for advertising spaces for these private agencies.

#### 5.1.11 AMARAR PARKS

##### i. Existing Status:

The existing Burial Ground is a large campus situated near Palayamkottai road. The ground is divided into segments and each segment is allotted for different communities like Catholic Christians, CSI Christians, and Hindus etc.



View of Burial Ground

**ii. Issues**

- Unpleasant and eerie atmosphere in the burial grounds
- Lack of public conveniences
- Damaged burning Sheds
- Front side compound wall is damaged
- No Crematorium

**iii. Improvement Needs**

The existing burial ground is unkempt and does not have any basic facility. In this regard best practices in the towns like Palani and Namakkal in Tamil Nadu, where 'Amarar Parks' are developed can be quoted. These places look pleasant and acceptable to people to think of their departed ones. The components proposed for the burial ground improvements are:

1. Reconstruction of compound wall
2. Providing water supply
3. Providing gasifier crematorium
4. Tree planting
5. Provision of prayer hall
6. Replacement of burning hut

**iv. Proposals**

Of the proposed improvements, construction of compound wall, approach road, landscaping works, provision of gasifier crematorium at a cost of Rs.60.00 lakhs is in progress.

**Table 5.24 Proposal – Burial Grounds**

S.No	Description of works	Nos	Amount in lakhs
1	Improvement of existing damaged Burning sheds	12 Nos	6.00
2	Water supply arrangements		1.00
	<b>TOTAL</b>		<b>7.00</b>
	<b>Annual O &amp; M Cost</b>		<b>0.14</b>

Source: Analysis and discussions

The total cost required for the proposed improvement works in burial grounds is **Rs.7.00 lakhs**. The proposal has been suggested under Part-II Scheme by the ULB. The Private Establishments in Thoothukudi town or the NGOs could be involved in the construction and maintenance of the Burial grounds.

**5.1.12 PUBLIC CONVENIENCE****i. Existing Status**

Public Toilets (Free)	-	15
Pay & Use Toilets	-	8
ISP	-	3
VAMBAY	-	9
<b>Total</b>	-	<b>35</b>

**ii. Issues**

- Improper maintenance
- Toilets are in damaged condition



**iii. Improvement Needs**

Public toilets are normally used by the residents not having toilet facilities in their shelters and such section of the society is mostly from the below poverty line living in slums. In addition to this, in public places like bus stand, markets, office areas and such other places, public toilets are required not only to cater to the local public, but also floating population. Some of the public conveniences are locked or badly maintained. The components for improvements are

- Repairs and Renovation of existing Toilets
- Maintenance by Self Help Groups (SHGs)

**iv. Proposals**

It is proposed to repair and renovate the existing toilets (5 nos) at a cost of **Rs.10.00 lakhs**. The annual O & M cost needed will be Rs.0.30 lakhs.

As observed in a number of cases, the maintenance of the toilets if entrusted to the SHGs or NGOs, will serve the purpose effectively and efficiently. And also it will save the expenditure to the local body.

**5.2 SOCIAL INFRASTRUCTURE FACILITIES****5.2.1 EDUCATION****i. Existing Status**

The town has 117 schools within its limits. Of the 117 schools 10 schools are maintained by the municipality. Of these, most of them lack in terms of basic facilities.

**Table 5.25 Existing status - Education**

School	Number of Schools
Primary	54
Upper Primary	25
Secondary	14
Higher Secondary	24
<b>Total</b>	<b>117</b>

Source: Thoothukudi Municipal records

**ii. Issues**

1. Inadequate provision of safe drinking water supply
2. Inadequate toilets
3. Damaged buildings
4. Inadequate furniture

**iii. Improvement Needs**

1. Improvement of water supply
2. Construction of new buildings in 7 municipal schools
3. Provision of Infrastructure facilities
4. Provision of furnitures
5. Lighting Arrangements
6. Repairs and renovation of Toilets

**iv. Proposals**

Funding for this project will be borne by the Municipality through Elementary Education Fund. The proposals are as follows



**Table 5.26 Proposals – Education**

<b>S.No</b>	<b>Project Description</b>	<b>No. of works</b>	<b>Estimated Amount Rs.in lakhs</b>
1	Constructions of new schoolbuildings	7	178.50
2	Computer with printer	1	4.00
3	Furnitures	1	2.00
4	Toilet with water supply facility	1	5.00
5	Name boards	1	0.80
6	Colour washing & painting	1	7.50
		<b>Total</b>	<b>197.80</b>
	Annual O & M Cost		<b>2.97</b>

Source: Analysis and discussions with municipal officials

Thoothukudi serves as an educational center for the surrounding hinterland. The private institutions are well equipped with infrastructure facilities. The Municipal schools lack basic facilities in terms of number of toilets and urinals, furniture, flooring, reading room and library, and Computer facilities.

## **5.2.2 MEDICARE**

### **i. Existing Status**

The town has 3 municipal hospitals and 2 maternity centers. The staff details and the facilities available in the health centers are given below.

No. of Medical Officers	-	4
No. of Health Visitor	-	4
No. of MPHW	-	20
No. of Office Assistant	-	4
No. of Maternity Assistant	-	5
No. of Ward Attendant	-	3
No. of Beds	-	25
No. of Computer Clerk	-	3
No. of Pharmacist	-	1
No. of Deliveries (per month)	-	120

### **ii. Issues**

- Damaged structure
- Absence of Operation Theatre
- Damaged Furniture

### **iii. Improvement needs**

- Repairs and renovation of the existing buildings
- Operation Theatre with Advanced medical equipments

### **iv. Proposals**

The hospitals mainly owned by the Govt. cater to the needs of the surrounding areas. But the hospital buildings are poorly maintained due to inadequate infrastructure. The facilities available at the existing 2 maternity centers also need to be improved. There is an urgent need for the provision of an incinerator at the GH or a common incinerator for all the hospitals.

**Table 5.27 Proposals – Medicare**

S.No	Project Description	No. of works	Estimated Amt Rs.in lakhs
1	Repairs and renovation of the existing buildings	1	13.00
2	Operation Theatre with equipments at Cruzpuram hospital	1	17.00
3	Auto clave, refrigerators	1	0.60
4	Renewal of existing wiring	1	1.00
5	Repairs to the Toilets and Urinals	1	1.50
6	Generator & AC Machine for Operation Theatre	1	1.70
7	Mini Generators	1	1.20
8	Furnitures	1	4.00
		<b>Total</b>	<b>40.00</b>
	Annual O & M Cost		<b>0.60</b>

Source: Analysis and discussions with municipal officials

An amount of Rs.10.00 lakhs has been sanctioned from the MP fund for the construction of Operation Theatre with equipments at Cruzpuram. For the year 2007-2008, an amount of Rs.10.00 lakhs as grants (CMA) was received from Part II scheme. For the year 2008-09, an amount of Rs.20.00 lakhs is to be received by the municipality.

### 5.2.3 SLUM IMPROVEMENT

#### i. Existing Status

Number of Slums - 24

Out of the total population 68,889 people live in 24 slums, which is about 32% of the total population. Of the 24 slums, 16 are notified and the rest 8 are un-notified. The details of notified and un-notified slums are as follows.

**Table 5.28 Location and Status of Slums**

Sl.No	Name of the Slum	Slum pop.	No. of HH	Status
1	Sunderavelpuram	3505	701	Notified
2	Krishnarajapuram	5864	1173	Notified
3	Kandasampuram	980	196	Notified
4	MuthuKrishnapuram	6615	1323	Notified
5	Theresapuram North (Mettupathi)	627	125	Notified
6	Madavan nair colony (Therespuram)	3039	608	Notified
7	Muthukrishnapuram south (Ponnagaram)	1725	345	Notified
8	Ramanvillai	1348	270	Notified
9	Cruz Fernandezpuram East	1774	355	Notified
10	Mangalapuram (Tooveypuram)	1093	219	Notified
11	KVK nagar	4413	883	Notified
12	Therespuram	13496	2699	Notified
13	Brayant Nagar	8430	1686	Notified
14	Lohia Nagar (Muniasampuram west)	5026	1005	Notified
15	Salt factory road (near Kamaraj salai)	62	12	Notified
16	Minisahayapuram	615	123	Notified
17	TMC colony	1132	226	Un-notified
18	Shankar colony	441	88	Un-notified
19	Cylon colony	483	97	Un-notified
20	Levingipuram	3303	661	Un-notified
21	George road, Burial Ground	1052	210	Un-notified

22	Meenavar colony (Gandhinagar)	2183	437	Un-notified
23	Annai Theresa colony	479	96	Un-notified
24	Anna colony	1204	241	Un-notified
	<b>TOTAL</b>	<b>68889</b>	<b>13779</b>	

Source: Thoothukudi Municipal Records

### Facilities available in the slums

Community Toilets : 12 numbers

Community Centers : one (near by the slum)

Education : 8 Municipal elementary schools and 1 Middle school near the slums

Health : GH, 2 Municipal maternity centers

SWM : Community bins provided in each slums and collected waste is conveyed with the existing vehicle to the compost yard.

Parks and Play fields : Two Municipal parks near the slums

Social Security : Self Help Groups are formed and savings habits were introduced. Training programmes conducted under SJSRY scheme for Self Employment

### ii. Issues

- Poor Infrastructure facilities (Street Lights, Water Supply and Play fields, Reading room)

### iii. Improvement Needs

Providing better Infrastructure facilities and housing improvements are necessary for the slum population. The proposed improvement works are covered under IHSDP scheme. Facilities namely street improvement, drainage facility, water supply arrangements, Road developments and Solid waste management are felt necessary in some of the slums. These proposals have been given only for 8 out of the 24 slums covering about 50% of the total slum population. It is estimated that such improvements to the slums will cost around **Rs.935.30 lakhs**. The annual O&M cost is estimated to be Rs.49.06 lakhs.

The total cost estimate and the list of works are shown in the table below. The proposal for improvement of the 8 identified slums in the first phase is given in annexure-4

**Table 5.29 Slum Improvement Proposals – IHSDP**

Name of the Slum	No.of houses				Water supply		Road		House Service Connection Water Supply		House Service Connection UGD and Length of Pipe Line		Street Light		UGSS/SWD		Others				Informal sector market		Common Workshed		Total
	Upgradation		New construction		Km	Amt	Km	Amt	No	Amt	No & Km	Amt	No	Amt	Km	Amt	SWm Dumper Placer Bin & Tricycle		Communi-ty Hall		No	Amt	No	Amt	
																	No	Amt	No	Amt					
	No	Amt	No	Amt													No	Amt	No	Amt					
Sundaravel puram			81	105.3			1.3	15.6	147	2.2	700	14	5	0.35			3	1.8							147.1
											2.74Km	6.85					5	1							
Krishnaraja puram			12	15.6			0.78	13.25	134	2.01	715	14.3	6	0.42	0.76	8	9	5.4							71.15
											4.55km	11.37					4	0.8							
Kandasamy puram			15	19.5			0.75	9	118	1.77	196	3.92	10	0.7			7	4.2							46.94
											2.74km	6.85					5	1							
Cruzpuram East	37	24.05	44	57.2			1.3	14.9	123	1.85	417	8.34	16	1.12	0.23	2.5	6	3.6	1	12	1	1	1	0.5	128.26
																	6	1.2							
KVK Nagar	13	8.45	16	20.8	1.85	7.5	0.86	9.5	102	1.53	298	5.96	25	1.75	0.6	6.4	5	3							69.59
											1.4km	3.5					6	1.2							
Theresapur am	50	32.5	100	130			1.9	21.9	128	1.92	608	12.16	9	0.63	0.55	5.85	5	3	1	12	1	1	1	0.5	227.41
											1.9km	4.75					6	1.2							
Polepettai			59	76.7			1	14.1	58	0.87	506	10.12	9	0.63			6	3.6							110.52
											1.4km	3.5					5	1							
Mangalapur am			73	94.9			1	14.1	88	1.32	488	9.76	10	0.7	0.95	7.05	5	3							134.33
											1km	2.5					5	1							
Total	100	65	400	520	1.85	7.5	8.89	112.3	898	13.47	3928 nos 15.73 km	78.56 39.32	90	6.3	3.09	29.8	88	36	2	24	2	2	2	1	935.3

Source: Thoothukudi Municipality

**Table 5.30 Cost Estimate for Slum Improvement Proposal-Sector Wise**

<b>Description</b>	<b>No. of proposals</b>	<b>Cost Rs. in lakhs</b>
Housing component	400 nos	585.00
Water supply arrangements	8 slums	7.50
House Service connection Water supply	898 nos	13.47
House Service connection UGSS & length of pipe line	3928 nos	78.56
	15.73 km	39.32
Roads	8.89 km	112.35
Street Lights	90 numbers	6.30
UGSS/SWD	3.09 km	29.80
SWM	88 numbers	36.00
Community hall	2 numbers	24.00
Informal sector market	<b>1 number</b>	<b>2.00</b>
Common work shed	<b>1 number</b>	<b>1.00</b>
	<b>Total</b>	<b>935.30</b>

Source: IHSDP report, Thoothukudi Municipality

The infrastructure facilities for the balance 16 slums will to be taken up under phase II. The amount required for the rest 16 slums on the basis of slum population will be Rs.700.00 lakhs. Therefore, the total cost required for slum improvement is **Rs.1635.30**. The funds for the slum improvement proposals will be received under IHSDP Scheme.

## 5.2.4 MARKET

### i. Existing Status

The town has 5 markets besides the Uzhavar Shandai. They are Municipal V.O.C market, S.S. Pillai market, Boobalarayerpuram Fish Market, Thoothukudi vegetable private market and Gopalasamy market.

### ii. Issues

- Unhygienic conditions
- Mud Flooring – becoming swampy during rainy seasons
- Shops with thatched roof and wood partitioning
- Inadequate water supply facilities

### iii. Improvement needs

The SS Pillai market lies in the central area of the town is causing traffic congestion due to unloading vehicles and on street parking. There are no organized loading/unloading areas, segregated shop areas and parking areas for vehicles, causing congestion in the central area. During rainy season the market area becomes slushy and uncomfortable for the business.



View of S.S Pillai market



View of VOC market

#### iv. Proposals

Improvement in VOC market at a cost of Rs.30.00 lakhs (Rs.13.00 lakhs as grants and Rs.17.00 lakhs as Municipal contribution) is in progress.

The projects identified for improving S.S.Pillai market in the town is given in the table below

**Table 5.31 Proposals - Markets**

S.No	Project Description	Estimated Amt (Rs.in lakhs)
	<b>S.S. Pillai Street Market:</b>	
1	Approach roads	8.00
2	Toilets	2.00
3	Building maintenance	5.00
	<b>Total</b>	<b>15.00</b>
	<b>Annual O &amp; M Cost</b>	<b>0.45</b>

Source: Analysis and discussions with municipal officials

### 5.3 OTHER PROJECTS

#### 5.3.1 BUCKLE CHANNEL

##### i. Existing status

The Buckle channel is a man made channel constructed to drain off rainwater from the town to the sea to prevent flooding of the town. Buckle channel starts from Korampallam village and ends at Thresapuram area (Gulf of Mannar). The total length of the channel is 9.35 km. The channel length running with in the town limit is 5.889 km.

The town is divided into two parts by the Buckle channel and town itself has a flat terrain. The Buckle Channel, which flows through the heart of the town, is fast dying since the water flow has been blocked due to indiscriminate dumping of wastes and disposal of sewage from houses and commercial establishments into it. Total number of encroachments on the sides of buckle channel identified is 422 (with in town limit).



##### ii. Issues

- Stagnation of wastewater
- Dumping of solid wastes
- Disposal of sewage from houses and commercial establishments
- Overgrowth of weeds hindering flow of water
- Encroachments

##### iii. Improvement needs

A consultancy study of the Channel sponsored by the TNUFISL for improving and renovating the channel is in progress. The project when completed would rejuvenate the channel and also solve the

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related problems. It is proposed to improve the channel in two phases. Desilting and construction of retaining wall at a cost of Rs.1800.00 lakhs will be taken under phase I, and Construction of approach road, parking, landscaping, linking etc will be taken under phase II at a cost of Rs.1560.00 lakhs. The total cost of the proposed project is **Rs.3360.00 lakhs**. The annual O & M cost for the project will be Rs.100.80 lakhs.

### 5.3.2 E-GOVERNANCE

#### i. Existing Status

E-governance at Thoothukudi Municipality is aimed to provide on-line citizen services and monitor the performances. It is in practice that citizen's approach to Local Bodies to pay their revenues, get certificates etc., Adopting E-governance, the above activities are simplified and made possible at their counters and information & Facilitation counter at the Municipality.

Touch screen has been established at office premises. Making use of this, public is able to know their tax dues and birth and death registrations at their own. Four Remote Collection centers are located in several hot points, so as to help the citizens pay their tax dues near by their locality.

#### Modules Online

1. Birth & Death
2. Property Tax
3. Water Charges
4. Non-tax
5. Profession tax
6. Building license
7. Vehicle modules
8. Solid waste Management
9. Financial Accounts
10. Pay Roll
11. Movable immovable
12. Grievances
13. Stores and inventory
14. Personal management system

#### ii. Issues

Capacity of the server is inadequate.

#### iii. Improvement Needs

The components for improvements are

- Capacity of the server to be increased
- Introduction of file tracking modules

The total cost required for the proposed improvement works is **Rs.5.00 lakhs**. The annual O & M cost of the project will be Rs.5000.



### 5.3.3 SLAUGHTER HOUSE

#### i. Existing Status

The town has one slaughter house, located near the new bus stand. The existing slaughter house lacks proper maintenance.

#### ii. Issues

The issues regarding slaughter house are as follows

- Improper disposal of waste
- Inadequate water supply arrangement
- Inadequate maintenance

#### ii. Improvement Needs

Construction of new slaughter house with modern facilities is proposed at a cost of Rs.20.00 lakhs. In addition to this, another new slaughter house at Sivandhapuram main road at a cost of Rs.25.00 lakhs, will be taken under part II scheme.

Therefore the total cost required for the construction of new slaughter houses is **Rs.45.00 lakhs**. The annual O & M cost is Rs.0.90 lakhs.

### 5.3.4 GREENING OF THE TOWN

#### i. Existing Status

Trees are available only along few stretches of the road. The private sector (Sterlite) has given 50 saplings per ward and offered for planting and maintenance of the saplings.

#### iii. Improvement Needs

In addition, the involvement of Educational institutions, private sectors and NGOs could be sought in planting and maintenance of trees.

### 5.3.5. BEAUTIFICATION OF THE TOWN

#### i. Improvement Needs

Beautification of beach with parks and boating facilities can be done with the support of port trust authorities. The entire stretch of the beach road between the new port and the old port needs to be beautified with jogging tracks, avenue trees, street furniture and proposal for boating in the back water areas. Most of the pilgrims are going to Tiruchendur through this coastal route, and the beautification of beach will be an added attraction to the town.

The Port Trust has proposed improvement works like road works, drains, street lights etc in Gulf of Mannar at a cost of **Rs.300.13 lakhs**. The entire amount of this proposal is to be received as grants. An amount Rs.27.00 lakhs (grants) has been received as 1<sup>st</sup> phase from Port Trust. The breakup details of the proposals is as follows

**Table 5.32 Upgradation of Roads at Gulf of Mannar in Municipal Area**

Description	Length in kilo Metre	Estimate Cost (Rs. In lakhs)
B.T. Roads	8.866	115.75
Concrete Pavement	4.681	64.95
Drains	13.200	112.50
Street Lights	100 nos	6.93
<b>Total</b>		<b>Rs.300.13 lakhs</b>
<b>Annual O &amp; M Cost</b>		<b>3.00</b>

Source: Municipal records

**5.3.6 MUNICIPAL OFFICE BUILDING**

The municipality has proposed for improvement of the existing municipal office building and construction of new buildings at a cost of **Rs.40.00 lakhs**. The entire amount required for the implementation of the proposals can be received as grants. This project will need an annual operation and maintenance cost of Rs.0.40 lakhs.

As the Thoothukudi Municipality upgraded to Corporation status, it is recommended that a suitable site for Corporation office building be identified and earmarked.

**5.3.7 UPGRADATION OF MUNICIPALITY INTO CORPORATION**

Thoothukudi Municipality has got enormous growth potential due to the large-scale industries, salt pans and the Harbour located in the LPA area. After the completion of Sethu Samudram Project, Thoothukudi will evolve as a major service center for industries and business which will lead to immigration and increase in floating population.

The up gradation of the Thoothukudi Municipality into a Corporation would further increase the demand for physical and social infrastructure of the town. The following studies are recommended for guided development of the town:

- Preparation of a Master Plan for the Proposed Corporation area (206 sq.km) integrating principles of smart growth.
- Preparation of an Integrated Traffic and transportation Management Plan- including Expansion of Vagaikulam Airport, proposals for MRTS, Moffussil bus terminus, grade separators at critical level crossings etc.
- Integrated Solid waste Management for the proposed corporation area.
- Water Resources Management Plan-encompassing natural water resources, water supply, recycling and reuse of sewage, storm water drains and linkages and rain water harvest.
- Tourism development plan- to explore and exploit the potentials in marine and beach tourism.
- Support facilities for the proposed Nanguneri and Gangai Kondan SEZs and Sethu projects in terms of future requirements particularly of infrastructure and Power.
- Identification of land for the Corporation Office.

**Corporation status soon: Stalin**  
**Thursday April 17 2008 09:54 IST**  
**Express News Service**

**THOOTHUKUDI: THOOTHUKUDI will soon become the 10th municipal corporation in the state. The town, which is a municipality now, will be upgraded as a corporation, Local Administration Minister MK Stalin announced on Wednesday in the Assembly.**

**Replying to the discussion on the demands for grants for his department, Stalin said Thoothukudi was a fast-growing town and the infrastructure in and around this town needed to be improved considering the growth of industries, port and the Sethu Samudram canal project.**

### 5.3.8 UPDATION OF DATABASE ON GIS PLATFORM

To date, there is no entirely dependable and realistic database for the town, in the form of topography, updated base map, assessment of properties in their location, size, use and intensity, assets-lands and structures in their location, status, extent, and quality; topography, land parcels by town survey numbers and sub divisions and so on. All these could be updated with cent percent precision using high-resolution satellite imageries supplemented by cent percent primary survey or aerial photographs. All these with spatial and non-spatial data can be had on a GIS format which, on a click at any feature or site on the town map will provide the entire details including the description of the feature / address of the owner including tax paid etc. This is a one time comprehensive exercise to include the updated town map with town survey, land parcels, structures, service network, assets with the relevant details and description on a GIS format.

This project may cost about **Rs.75.00 lakhs** including the cost of high resolution satellite imageries. This entire amount may be obtained as grants from the Government and it will take maximum one year for completion. An amount of Rs.0.75 lakhs will be needed towards the annual operation and maintenance cost of the project.

An overview of the financial status of Thoothukudi Municipality portrays its commitment in rightly performing obligatory and discretionary functions to the citizens of the Town. The maintenance of accounts of the Municipality has been switched over from cash based to the Accrual Based Accounting System and it can help to assess the credit worthiness of the Municipality in financial view. The loan amount outstanding to the Financial Institutions is high and the overdue loan repayment must be given importance to regulate prompt repayment of loan annuity.

## 6.1 REVENUE ACCOUNT

### 6.1.1 Receipts

The financial status of the Municipality is in a positive note, even though the grants and contribution decreased from Rs.42.82 lakhs in 2001-02 to Rs.19.37 lakhs during 2005-06. It may be seen from the table 6.1 that the property tax and other tax constituted 55% of the total revenue and the assigned revenue, devolution fund and other grants constituted 30% of the total income during 2005-06.

**Table 6.1. Revenue Income in 2001- 06**

REVENUE INCOME	Rs.in lakhs					% break up				
	2001-02	2002-03	2003-04	2004-05	2005-06	2001-02	2002-03	2003-04	2004-05	2005-06
A) Property tax	472.39	462.83	487.04	404.56	424.55	34.29	28.10	28.39	30.21	31.03
B) Other taxes	271.64	279.26	313.02	161.15	332.70	19.72	16.95	18.25	12.04	24.31
C) Assigned revenue	118.74	229.07	246.02	133.68	95.39	8.62	13.91	14.34	9.98	6.97
D) Devolution fund	339.26	361.69	480.77	370.90	308.31	24.62	21.96	28.03	27.70	22.53
E) Service charges & fees	37.90	48.98	55.61	49.27	48.83	2.75	2.97	3.24	3.68	3.57
F) Grant & contribution	42.82	20.98	22.36	7.01	19.37	3.11	1.27	1.30	0.52	1.42
G) Sales & hire charges	0.00	0.94	0.72	0.41	1.33	0.00	0.06	0.04	0.03	0.10
H) Other income	95.03	243.53	109.86	212.01	137.85	6.90	14.78	6.40	15.83	10.07
<b>TOTAL</b>	<b>1377.79</b>	<b>1647.28</b>	<b>1715.41</b>	<b>1338.99</b>	<b>1368.32</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Source: Thoothukudi Municipal Records

### 6.1.2. Expenditure

The revenue expenditure increased year by year, which may be due to the factors like increase in establishment expenditure, operating expenses, repairs and maintenance etc. The personnel cost and administrative expenditure constituted 63% of the total expenditure during 2005-06 and operating expenses, repairs and maintenance about 31% of the total expenditure. The operating expenses had increased by 4 times from 7% to 26% of the total expenditure during 2001-02 to 2005-06. Table 6.2 shows the details of revenue expenditure of the Municipality.

**Table 6.2. Revenue Expenditure in 2001-06**

REVENUE EXPENDITURE	Rs.in lakhs					% break up				
	2001-02	2002-03	2003-04	2004-05	2005-06	2001-02	2002-03	2003-04	2004-05	2005-06
a) Personnel cost - salaries	481.82	475.86	439.25	477.69	503.24	58.73	52.21	43.80	51.59	59.67
b) Terminal & retirement b.f	142.36	203.37	147.91	98.17	30.66	17.35	22.31	14.75	10.60	3.64
c) Operating expenses	61.30	110.33	150.61	204.06	226.69	7.47	12.10	15.02	22.04	26.88
d) Repairs & maintenance	39.75	31.56	25.96	37.33	45.67	4.84	3.46	2.59	4.03	5.42
e) Programme expenses	5.01	0.73	4.35	2.13	1.03	0.61	0.08	0.43	0.23	0.12
f) Administrative expenses	18.76	20.38	168.07	45.65	27.39	2.29	2.24	16.76	4.93	3.25
g) Finance expenses	71.45	69.23	66.65	60.87	8.64	8.71	7.60	6.65	6.57	1.02
<b>TOTAL</b>	<b>820.45</b>	<b>911.46</b>	<b>1002.78</b>	<b>925.90</b>	<b>843.32</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Source: Thoothukudi Municipal Records

## 6.2 CAPITAL ACCOUNT

### 6.2.1 Capital Grants

There is substantial receipt as Grants from the Government during 2004-05 accounting to Rs.209.00 lakhs which decreased to Rs.109.00 lakhs during 2005-06. The capital grant receipts contribute to develop the asset base to this municipality.

### 6.2.2 Capital Expenditure

Under capital expenditure, the major portion (76%) was incurred for roads, followed by expenditure in water supply (13%) during 2005-06. The repayment of loan was meager when compared to the huge outstanding loan liability. The capital income and expenditure of the Municipality is given in Table 6.3.

**Table 6.3 Capital Income and Expenditure - 2003-04 to 2005-06****Rs. In lakhs**

Sl. No	Details of Head	2003-04	2004-05	2005-06
<b>A</b>	<b>Capital Income</b>			
1	Grants from Government	132.00	145.00	79.00
2	Other Grants from Financial Institutions		64.00	30.00
	<b>TOTAL</b>	<b>132.00</b>	<b>209.00</b>	<b>109.00</b>
<b>B</b>	<b>Capital Expenditure</b>			
3	Road	266.00	257.00	253.00
4	Water Supply	48.00	51.00	44.00
5	Street Lights			
6	Conservancy/Public Health			
7	Strom Water Drain			
8	Repayment of Loan-Principal	40.00	54.00	36.00
9	Others			
<b>C</b>	<b>TOTAL</b>	<b>354.00</b>	<b>362.00</b>	<b>333.00</b>

Source: Thoothukudi Municipal Records

The loan statement of the Municipality from 2001-02 to 2005-06 is given in Table 6.4

**Table 6.4 Loan Statement of Thoothukudi Municipality**

Source	2001-02	2002-03	2003-04	2004-05	2005-06
Loan from Govt.	100.65	86.13	94.09	94.09	94.09
Loan from TUFIDCO	0.00	0.00	0.00	0.00	11.74
Loan from TNUDP	148.81	142.32	118.58	171.31	118.58
<b>Total</b>	<b>249.46</b>	<b>228.45</b>	<b>212.67</b>	<b>265.40</b>	<b>224.41</b>

Source: Thoothukudi Municipal Records

**6.3 FINANCIAL OPERATING PLAN**

As discussed above, the Revenue and Capital Account of the Municipality is balanced in the Receipts and Expenditure. The operating ratio of total expenditure to total receipt TE/TR is >1. The debt-servicing ratio for revenue receipt DS/TR is around 0.02% as may be seen from Table 6.5.

**Table 6.5 FOP – Actuals (FY 2001-02 to 2005-06)**

S.No.	Account Head	2001 - 02	2002 - 03	2003 - 04	2004 - 05	2005-06
1	Total Receipts	1377.79	1647.28	1715.41	1338.99	1368.32
2	Total Expenditure	820.45	911.46	1002.78	925.90	843.32
3	Surplus / Deficit	557.34	735.83	712.63	413.09	525.00
4	Annuities / Debt Servicing	32.87	32.61	30.56	18.98	28.48
5	TE/TR	0.60	0.55	0.58	0.69	0.62
6	DS/TR	0.02	0.02	0.02	0.01	0.02

Source: Analysis and computation

**6.4 COLLECTION EFFICIENCY****6.4.1 Property Tax**

The Property Tax collection performance of the Municipality is poor as may be observed from table 6.6. The percentage of collection in the year 2003-04, 2004-05 and 2005-06 is 37%, 50% and 30% respectively. The unassessed buildings should be brought in to the demand and 100% must be achieved in this regard.

The arrear demand as on 31.03.2006 is Rs.814.47 lakhs. The collection team may be geared up to achieve 100% collection. The improvement of Property Tax collection can improve the financial position of the Municipality. Hence, effective steps must be taken to achieve the target. Table 6.6 gives the percentage of property tax collected during 1999-2006. The current demand has increased from Rs. 535.14 lakhs to Rs.580.58 lakhs during 2004-05 to 2005-06, correspondingly the current collection also reduced from Rs.288.83 lakhs to Rs.259.41 lakhs during the above period.

**Table 6.6 DCB of Property Tax 1999-2006****Rs.in lakhs**

Year	Demand			Collection			Balance			Percentage		
	Arrear	Current	Total	Arrear	Current	Total	Arrear	Current	Total	Arrear	Current	Total
1999-00	553.5	480.16	1033.66	181.13	267.11	448.24	372.37	213.05	585.42	33	56	43
2000-01	585.42	496.84	1082.26	150.27	311.29	461.56	435.15	185.55	620.7	26	63	43
2001-02	620.7	513.36	1134.06	155.85	316.54	472.39	464.85	196.82	661.67	25	62	42
2002-03	661.67	549.48	1211.15	143.7	319.13	462.83	517.97	230.35	748.32	22	58	38
2003-04	748.32	563.94	1312.26	151.79	335.25	487.04	596.53	228.69	825.22	20	59	37
2004-05	265.97	535.14	801.11	115.33	288.83	404.16	150.64	246.31	396.95	43	54	50
2005-06	814.87	580.58	1395.48	165.13	259.41	424.55	649.75	321.16	970.90	20	45	30

Source: Municipal Records

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### 6.4.2 Profession Tax

The percentage of total collection under Profession Tax was 42% and 38% for 2004-05 and 2005-06 respectively. The increase in collection of profession tax can raise the financial status of the Municipality. The Municipality has to assess all the professionals, shops, other establishments etc., under profession tax. The collection performance of arrears in profession tax was very poor. The D&O demand must be verified with profession tax to see whether any omission in profession tax assessment. Table 6.7 gives the percentage of profession tax collected during 1999-2006.

**Table 6.7 DCB of Profession Tax 1999-2006**

Rs.in lakhs

Year	Demand			Collection			Balance			Percentage		
	Arrear	Current	Total	Arrear	Current	Total	Arrear	Current	Total	Arrear	Current	Total
1999-00	14.24	50	64.24	1.7	28.24	29.94	12.54	21.76	34.3	12	56	47
2000-01	41.21	32.74	73.95	1.96	21.85	23.81	39.25	10.89	50.14	5	67	32
2001-02	67.41	60.65	128.06	9	48	57	58.41	12.65	71.06	13	79	45
2002-03	85	52.77	137.77	6.84	41	47.84	78.16	11.77	89.93	8	78	35
2003-04	98.53	58.96	157.49	7.40	46.0	53.40	91.13	12.96	104.09	8	78	34
2004-05	74.96	68.84	143.8	12.09	48.08	60.17	62.87	20.76	83.63	16	70	42
2005-06	109.83	60.31	170.14	14.16	50.43	65.40	94.86	9.88	104.74	13	84	38

Source: Municipal Records

### 6.4.3 Non Tax

Under Non-Tax, the total collection was Rs.70.99 lakhs only in 2005-06. Further there are huge arrears of the lease amount Rs.185.44 lakhs was kept as arrears. The current collection was around 57% only during 2005-06. It is possible that 100% collection can be attained in the Non-Tax collection. The details are given in Table 6.8.

The Financial study shows uncontrolled financial activity of the Municipality. Effective steps must be taken to improve collection efficiency internally and finding scope for improvement in resource mobilization.

**Table 6.8 DCB of Non Tax 1999-2006**

Rs.in lakhs

YEAR	DEMAND			COLLECTION			BALANCE			PERCENTAGE		
	Arrear	Current	Total	Arrear	Current	Total	Arrear	Current	Total	Arrear	Current	Total
1999-00	70.41	68.27	138.68	12.67	40.96	53.63	57.74	27.31	85.05	18	60	39
2000-01	85.05	80.9	165.95	9.68	51.69	61.37	75.37	29.21	104.58	11	64	37
2001-02	104.58	81.85	186.43	27.13	47.81	74.94	77.45	34.04	111.49	26	58	40
2002-03	111.49	95.11	206.6	14.43	67.18	81.61	97.06	27.93	124.99	13	71	40
2003-04	124.99	88.24	213.23	22.68	69.71	92.39	102.31	18.53	120.84	18	79	43
2004-05	92.53	88.11	180.64	33.49	66.89	100.38	59.04	21.22	80.26	36	76	56
2005-06	209.79	81.57	291.36	24.38	46.60	70.99	185.44	34.96	220.37	12	57	24

Source: Municipal Records



## REFORM AGENDA AND ACTION PLAN

### 7.1. CURRENT SCENARIO IN TAMIL NADU

Subsequent to the 74<sup>th</sup> CAA in 1992, a series of steps to improve the financial status and thereby the performance levels of the Urban local bodies were initiated in various states of India, including Tamil Nadu. The Government of Tamil Nadu has been a fore runner in initiating and implementing various Municipal reforms.

The following are the key reforms implemented by the GoTN:

1. **Devolution of funds:** 3.5% of State's total tax revenue passed on to urban local bodies.
2. **State Finance Commissions:** Three consecutive state finance commissions were setup for recommendations to Government.
3. **Setting up of TNUDF:** A successful private-public partnership initiative to tap the capital market.
4. **Double entry accrual based accounting system:** implemented in all the urban local bodies.
5. **Computerization and E-governance** of select Municipal functions in all urban local bodies.
6. **Urban indicators:** Performance assessment of ULBs initiated by CMA
7. **Revision of Property tax** – with effect from April 1.2008, subject to a maximum of 1.25 times the existing tax structure.
8. **Debt monitoring cell:** with the objective of collecting financial information on individual ULBs, assisting them in making realistic financial projections and facilitating the Urban Local Bodies to access the Capital Markets by information dissemination from CMA office.
9. **GIS for 5 urban local bodies:** Consultancy for survey, digitization and attribution and software development for the web based GIS project for 5 ULBs from CMA office.
10. **ESCO Studies:** TNUFSL initiative for the Implementation of energy efficiency in Water pumping and Street lighting systems under performance contract.

### 7.2 AGENDA

The CCCBP aims to initiate Urban reforms at the State level and the Urban local body level for each of the project Municipality .The agenda for the municipal reforms for Thoothukudi are categorized as:

1. State level reforms and
2. Municipal level reforms

### 7.2.1 State level reforms

- Establishment of **Tax Mapping** using GIS to assess un-assessed and under-assessed properties for all urban local bodies.
- Mandatory revision of property tax based on Area based system.
- **Frame work law for PPP** as in Gujarat, Punjab and Andhra Pradesh – Enabling and regulatory framework .Capacity building in public institutions and private sectors for handling PPP projects. Identification of bankable infrastructure projects.
- **Community participation law-** enacting the “community participation law” that will make it mandatory for the government and its agencies to get the view of citizens, mainly residents’ welfare associations and other citizens’ groups, before starting any project.
- Framing guidelines for communication service providers such as Aircel, Airtel, Hutch and empowering the Municipal authorities to collect deposits for setting up cell towers.

### 7.2.2 Municipal level reforms

The proposed Municipal reforms are broadly categorized under the heads of:

- 7.2.3 Reforms in Resource Mobilisation
- 7.2.4 Reforms in privatisation initiatives
- 7.2.5 Reforms in Audit and Accounting
- 7.2.6 Reforms in Municipal service delivery

### 7.2.3 Reforms in Resource Mobilisation

#### i. Property tax reforms

- Empowering municipalities to collect double the property tax from commercial, office and fee collecting educational establishments.
- Interfacing with the TNEB on the details of category and number of new service connections provided.(domestic or non-domestic)
- Levying Vacant Land Tax as per the recommendations of Third State Finance Commission. Empowering the municipality to convert non-claimed lands to socially benefiting uses.

#### iii. Profession Tax Reforms

- Revising the profession tax to Rs.150 per capita per annum based on the Central Finance Commission recommendations.

**iv. Water supply and sewerage charges**

- § Approval of the Municipal council for the proposed tariff and deposit structure to enhance the public contribution and meet the entire O&M.
- § Implementation of the proposed metering of water supply connections
- § Implementation of graded tariff structure (UGSS) for domestic and non-domestic connections.
- § Privatisation of Operation and Maintenance of the entire Water Supply and Distribution System.
- § Privatisation of operation and maintenance of the UGSS.

**v. Solid Waste management - Operation & Maintenance Plan.**

An integrated solid waste management plan for the town involving the following process is needed:

1. The municipality must focus on revenue enhancement by privatizing of waste management of the following components:
  - a. Primary collection
  - b. Transfer of waste to collection points/transfer stations
  - c. Transfer of waste to compost yard
  - d. Segregation of waste and option of
    - i. Selling scraps/recyclable waste.
    - ii. Treatment of biodegradable waste
    - iii. Transfer to identified regional land fill sites
  - e. Compost yard management
2. The management of biodegradable waste as a revenue generating activity will involve,
  - a. Vermi-composting
  - b. Installation of bio-gas plant
3. Implementing collection of conservancy fee for primary collection of waste and levy on commercial and industrial establishments.
4. Involvement of voluntary agencies, SHGs and private operators such as CES Onyx, Neel Metal Fanalca in the various components of Solid Waste Management on BOT, BOOT basis.

**vi. Parking management Plan**

Inventory for all roadside parking areas. Initiating time based *pay and park* facilities for vehicles. The proposed parking fee structure is

◇ Bicycles	- no tax
◇ Two wheelers	- Rs.2.00
◇ Private cars	- Rs.5.00
◇ Heavy Vehicles	- Rs.10.00

**vii Advertisement Management Plan**

- Identifying strategic locations such as bus shelters, road medians, for hoardings and poster places in Municipal area and levying advertisement tax at the rate of Rs.25 per sq.ft per annum.
- To prepare an inventory of advertisement spaces within their limits with size and type.

- Auctioning the entire rights to a single bidder on annual basis, who in turn can collect revenue from individual advertisers.

#### **Viii Regularization of unapproved construction**

- § Regularization fees for unapproved constructions at the rate of 5 times the existing building license fee.

#### **xi. Collection of Tract rent**

- § From cable T.V operators - (Rs.3.00 per running metre)
- § From Telecommunication service providers - (Rs.5.00 per running metre)

The urban local body may be empowered to collect the security deposits at Rs.10, 000 per operator and revise the tract rent every three years. The collection of tract rent and deposits can be handed over to Youth SHGs.

#### **X. Capacity assessment and capacity building**

- § Mandatory capacity building and orientation sessions for Municipal Authorities and elected representatives, for which suitable training programs, training manuals and networking with other stakeholders has been initiated by the CMA.

#### **7.2.4 Reforms in privatization initiatives**

##### **i. Privatisation of Collection mechanism**

- Providing a computer fitted mobile van with online access to municipal database for spot billing and collection of all taxes.
- Performance based incentives can be given to the private operators at the rate of 5% of total collection .The support of the Youth SHGs or Fan clubs can be sought for the purpose of collection with adequate sensitization programmes.

#### **Privatisation of Collection of**

1. Property tax
  2. Profession tax
  3. Water - Deposits and tariff
  4. UGSS- Deposits and tariff
  5. Advertisement spaces/rights as a single contract
  6. Parking areas
  7. Solid waste conservancy fees(Domestic and non-domestic)
- Creating database of all assessments , households and category of assessments:
    - ◇ Interfacing with cable operators to arrive at the number of households at ward/zone level.
    - ◇ Interfacing with the sub registrars and creating the database of available vacant lands within the ULB.

### **7.2.5 Reforms in Audit and Accounting**

- § Timely Auditing should be performed with the use of private Chartered Accountants for routine audit and local audit to carry out proprietary audit.
- § Closing all Auditing before September 30 of the next financial year and publishing the audited statement online.
- § GoTN and CMA may continue to give technical assistance and training to ULBs for improving the accounting systems and practices.

### **7.2.6 Reforms in Municipal service delivery**

- § Privatizing the maintenance of WSS and the distribution system
- § All Head works and OHTs may be fitted with water meter to assess the loss due to non revenue water and unaccounted water.
- § Fixing flow control valves for all water service connections.
- § Conducting energy audits, if transmission losses are more than 15%.
- § The options for using available local sources (surface water) in lieu of capital intensive projects should be initiated.
- § Ensuring 100% coverage of the water distribution network to the existing roads in the town.
- § Ensuring 100% coverage of the UGD network to the existing roads in the town.
- § Privatizing the operation and maintenance of STP
- § Privatization of Solid waste Management ensuring 100% collection efficiency.
- § Initiating IEC activities
- § Provision of energy saving lights, and equipments like dimmer and timer switches to reduce energy consumption.
- § Privatizing the maintenance of street lights.

Table 7.1 Agenda for Mandatory Reforms-Thoothukudi Municipality									
1	Reforms in taxation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 15	Year 20
	Assessing unassessed and under assessed properties	100%							
	Area based system for property tax					100%			
	Property tax revision at 25%	100%							
	Revising Profession tax as per CFC recommendations		100%						
	Vacant land tax		100%						
2	Reforms in Privatisation of Municipal functions								
A	Privatisation of Collection mechanism								
	Collection of property tax (45%)	70%	75%	80%	85%	95%			
	Collection of profession tax (38%)	60%	70%	80%	90%	95%			
	Procurement of mobile collection vehicle	100%							
	Collection of conservancy fees	60%	100%						
B	Water Supply present level								
	O&M of the supply and distribution system					100%			
	Conducting IEC activities								
C	Under Ground Sewerage System								
	Provision and maintenance of STP	50%	100%						
	O&M of the Sewer network		100%						
	Conducting IEC activities								
D	Solid Waste Management								
	Wards with door-to-door collection	100%							
	Secondary collection		50%	80%	100%				
	Source segregation of waste		100%						
	Vermi composting	60%	100%						
E	Roads								
	Provision and maintenance of Road medians/round about					60%	100%		
F	Street Lights								
	Provision of new lights, retrofits, energy saving devices		100%						
3	Reforms in Audit and Accounting								
	Timely auditing of accounts		100%						
	Improved auditing system	100%							
	Appointing a private chartered accountant as consultant	100%							
	Publishing auditing statement online		100%						
	Training of the ULB staff for proper accounting and maintaining transparency of accounts	100%							

Source: Analysis and research

### 7.3 ACTION PLAN

The action plan is a layout for the Municipality to implement the proposed City Corporate cum Business Plan. The action plan lists out all major activities to be under taken during year 1 (2008-09) with a broad outline of developmental activities to be completed within the next 5 years.

The important activities covered are project status, implementing agency, technical assistance needed, proposed reforms, risks and mitigation measures. The action plan for the following sectors are detailed out for the sectors of Water supply, Under Ground Sewerage, Storm water drains, Solid waste Management and Roads.

#### 7.3.1 Water Supply

<b>Proposals</b>	: Improvements to the existing water supply scheme
<b>Project Status</b>	: Awaiting Administrative Sanction from authorities
<b>Implementing Agency</b>	: Private contractor, Project Management Consultancy and Municipality.
<b>Technical Assistance</b>	: PMC for execution of the proposed work.
<b>Proposed Investment</b>	: Investment comprises of Grants (30%), Public contribution (60%) and local body contribution (10%).

<b>Proposed reform</b>	:
	1. Collection for deposits and tariff
	2. Privatization of O&M as pilot project in Zone-1.
	3. Implementation of graded tariff structure and metering water supplied

<b>Expected outcome</b>	: Improvement in revenue collection, Increase in HSCs, Reduction in O&M expenditure of the municipality.
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<b>Next step</b>	: Arrange for loans and grants from funding agencies. Call for EOI and short list potential contractor and Project Management consultants for improvement works
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**Table 7.2 Water Supply-Risks and mitigation measures**

Risks	Mitigate measures
Lack of public awareness and co-operation.	IEC activities through voluntary organizations, CBOs, resident welfare organizations.
Cost escalation due to site soil condition	Consolidating contract packages and calling tender at state level or National level.
Lack of bidders for the project.	Short listing of potential contractors at regional level and tendering the contract in a planned manner.



**7.3.2. Under Ground Sewerage System****Project Description**

Phase-1 : Rehabilitation of existing system and proposed UGSS for un-sewered areas.

Phase-2 : Providing UGSS for the omitted areas

**Project Status**

Phase-1 : TNUIFSL funding, Project finalized and tender awarded.

Phase-2 : Awaiting sanction form CMA

**Implementing Agency**

: Phase-2 TWAD Board/ PMC for sewer network and DBOOT model for STP

**Technical Assistance**

: Frame work for DBOOT model for STP, Short listing of PMC firms, Short listing of private contractor for O&M of proposed system.

**Proposed investments**

:

Phase-1 : Investment comprises of Grants (22%), Loans (45%), and Local Body's Contribution (33%)

Phase-2 : Investment comprises of Grants (22%), Loans (45%), and Local Body's Contribution (33%)

Sewage Treatment Plant : STP is proposed under BOT model.

**Proposed reform**

1. Privatization of collection for deposits and tariff
2. Privatization of O&M of UGSS
3. Implementation of graded tariff structure

**Expected outcome**

: Improvement in revenue collection, Increase in HSCs, Reduction in O&M expenditure of the municipality, improvement of health conditions and buckle channel

**Next step**

: Collection of deposits and Implementation and graded tariff structure

Short listing potential contractors for DBOOT of Sewage Treatment Plant.

Preparation of DPR for omitted areas as Phase-II

**Table 7.3 UGSS-Risks and mitigation measures**

Risks	Mitigate measures
Inadequate capabilities for project execution.	Appointing PMC for project execution.
Cost escalation due to site sandy soil condition and delays.	Built in cost provision for escalation depending on year of implementation and site conditions.
Lack of bidders for the project.	Consolidating contract packages and calling tender at state level or National level.

### 7.3.3 Solid Waste Management

<b>Project Description</b>	: Integrated Solid Waste Management Plan
<b>Project Status</b>	: Revised DPR awaiting sanction from CMA
<b>Implementing Agency</b>	: Municipality and private contractor
<b>Technical Assistance</b>	: Frame work law for PPP for integrating private operator and municipality.
<b>Proposed Investment</b>	: PPPP mode and 12th SFC grants.
<b>Proposed reform</b>	: <ol style="list-style-type: none"> <li>1. Implementation of conservancy fees</li> <li>2. Implementation source segregation</li> <li>3. Privatization of primary and secondary collection, compost yard management, transfer to land fill site.</li> </ol>
<b>Expected outcome</b>	: Better efficiency in collection, revenue generation from vermi-composting and enhancement of revenue from conservancy fees, reduction in revenue expenditure towards O&M and staff salary.
<b>Next step</b>	: Call for EOI and short list potential private operator for the components identified under PPPP model. Identifying alternate sources of funding.

**Table 7.4 Solid waste Management-Risks and Mitigation measures**

<b>Risks</b>	<b>Mitigation measures</b>
Lack of bidders for the project.	Short listing of potential contractors at regional level and tendering the contract in a planned manner. Consolidating contract packages and calling tender at state level or National level.
Lack of willingness to collect and pay conservancy fees. Absence of market for compost. Lack of public awareness and co-operation.	IEC activities through voluntary organizations, CBOs, resident welfare organizations.
Opposition from existing sanitary staff	Retain for zones identified or reallocate existing sanitary staff for other Municipal functions .

### 7.3.4 Roads

<b>Project Description</b>	: Upgradation of roads in the town and new roads at extension areas
<b>Project Status</b>	: Concept stage
<b>Implementing Agency</b>	: Municipality, Highways Authority
<b>Proposed Investment</b>	: Rs.325.00 lakhs. - Investment comprises of Grants (30%), Loans (60%) and local body's contribution (10%).
<b>Proposed reform</b>	: Preparing parking management plan Implementation of proposed parking fee. Maintenance of road medians, traffic islands, green spaces to private sectors

**Expected outcome** : Improvement to road conditions and circulation, fuel efficiency, reduction in accidents etc

**Next step** : Preparation of DPR.

**Table 7.5 Roads Management-Risks and Mitigate measures**

Risks	Mitigate measures
Damages to existing roads due to the proposed water supply and UGSS	Speedy expedition of water supply and UGSS and relaying of existing roads thereafter.
Delay in sanctions and funds allotment	New avenues in own resource mobilization or alternative mechanisms of funding.

### 7.3.5 Truck terminus

**Project Description** : Construction of Truck terminus-  
The truck terminal project proposes to provide an integrated facilitates of high way transport functions, such as, truck parking facility, transit and transshipment facilities for goods & trucks, communication & networking, amenities and facilities to crew, transport agency offices, vehicles repairs and maintenance and related activities etc., it should also act as logistics centre for goods warehousing, inter-nodal transport, container transport and freight forwarding services etc.,

**Project Status** : Concept stage

**Implementing Agency** : Private Operator

**Technical Assistance** : Frame work for DBOOT model

**Proposed Investment** : Rs.400.00 lakhs

**Expected outcome** : Reduced congestion due to haphazard parking of trucks  
Increased revenue base for the Municipality.

**Next step** : Acquisition of land.  
Finalizing design and project Management consultants  
Inter phasing with TNUIFSL for techno-legal issues.  
Selecting an appropriate PPP option  
Short listing potential private operator for BOOT

**Table 7.6 Truck Terminus -Risks and Mitigate measures**

Risks	Mitigate measures
Non-availability of private contractor for DBOOT scheme.	Calling for National level tenders
Delays due to land acquisition	Enter upon permission to be acquired at the earliest
Environmental impacts	EIA report to be prepared in the pre-construction phase

## **7.4 POLICY INTERVENTION AND TECHNICAL ASSISTANCE**

### **7.4.1 National level and State level**

- Implementation of the Community participation law
- Framework for Private-Public-People Partnership for developmental activities.
- Maintaining tenure of key officials for atleast 3 years - Commissioner, Municipal engineer, Overseer.
- Provide guidelines to the Urban Local Bodies in closing their books of accounts and to submit their accounts to the Local Fund Audit within the stipulated time limit.

### **7.4.2 Regional level**

- Empanelment of DBOOT contractors for water supply and UGSS works
- Mandatory capacity building and orientation sessions for Municipal Authorities, Elected representatives, NGOs, SHGs.

### **7.4.3 Municipality level**

- Orientation sessions for privatisation of street lighting system.
- Involve local auditors and legal advisors to handle contract framing, review of contracts, reforms in accounting, closure of accounting, etc.

**FINANCE OPERATING PLAN**

The Finance operating plan for the next 20 years has been prepared for two scenarios namely base case and sustainable case.

**8.1 SCENARIO 1-** The FOP is prepared considering that the Municipality does not take up development projects and does not avail any loans for improvement purposes.

**8.2 SCENARIO 2 –** All the projects identified by the ULB and by CCCBP consultants are considered, with financing mix as suggested in the following sections. The sustainability of the projects is ascertained based on the individual cash flow statements and the Net Present Value of operating surplus projections.

**SCENARIO 1**

**Assumptions considered for revenue income per annum are:**

- 3% growth in property tax
- 10% growth in profession tax, vacant land tax.
- 2% growth of assigned revenue
- 2% growth in devolution funds
- 1% growth in revenue grants and contribution
- 6% growth in service charges and fees
- 8% increase in sales and hire charges
- 8% increase in other income

**Assumptions considered in revenue expenditure per annum are:**

- 1% growth in personnel cost
- 0.5% increase in terminal and retirement benefits
- 15% increase in operating expenses
- 3% increase in repairs and maintenance expenses
- 0.5% increase in programme expenses
- 7% increase in administrative expenses
- 0.5% increase in finance expenses

The Revenue income and expenditure under each account head projected for a period of 20 years is tabulated below.

**Table 8.1. Finance Operating Plan- Scenario 1**

Account Head	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Opening Balance	2929.93	3554.59	4216.51	4917.07	5781.85	6687.83	7639.29	8637.31	9682.82	10776.49	11990.42	13254.73
Total Receipts	1556.24	1627.61	1704.07	1910.33	1998.38	2096.09	2201.05	2313.89	2435.31	2637.80	2780.59	2934.56
Total Expenditure	931.59	965.69	1003.51	1045.56	1092.39	1144.64	1203.02	1268.38	1341.64	1423.87	1516.28	1620.26
<b>Surplus / Deficit</b>	<b>624.66</b>	<b>661.92</b>	<b>700.56</b>	<b>864.77</b>	<b>905.99</b>	<b>951.46</b>	<b>998.02</b>	<b>1045.51</b>	<b>1093.67</b>	<b>1213.93</b>	<b>1264.31</b>	<b>1314.30</b>
Annuities / Debt Servicing	28.76	29.05	29.34	29.64	29.93	30.23	30.53	30.84	31.15	31.46	31.77	32.09
TE/TR	0.60	0.59	0.59	0.55	0.55	0.55	0.55	0.55	0.55	0.54	0.55	0.55
DS/TR	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Closing Balance	3554.59	4216.51	4917.07	5781.85	6687.83	7639.29	8637.31	9682.82	10776.49	11990.42	13254.73	14569.03

Source: Analysis and computations

Account Head	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Opening Balance	14569.03	15936.53	17355.85	18824.80	20340.21	21897.76	23491.73	25124.64	26787.86	28470.47	30158.88
Total Receipts	3104.87	3288.73	3487.35	3702.09	3934.42	4185.95	4468.35	4774.35	5106.11	5466.00	5868.18
Total Expenditure	1737.37	1869.41	2018.40	2186.68	2376.87	2591.98	2835.44	3111.13	3423.50	3777.59	4179.18
<b>Surplus / Deficit</b>	<b>1367.50</b>	<b>1419.32</b>	<b>1468.95</b>	<b>1515.41</b>	<b>1557.55</b>	<b>1593.97</b>	<b>1632.91</b>	<b>1663.22</b>	<b>1682.61</b>	<b>1688.41</b>	<b>1689.00</b>
Annuities / Debt Servicing	32.41	32.74	33.06	33.40	33.73	34.07	34.41	34.75	35.10	35.45	35.80
TE/TR	0.56	0.57	0.58	0.59	0.60	0.62	0.63	0.65	0.67	0.69	0.71
DS/TR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Closing Balance	15936.53	17355.85	18824.80	20340.21	21897.76	23491.73	25124.64	26787.86	28470.47	30158.88	31847.88

Source: Analysis and computations

### 8.3 CAPITAL INVESTMENT PLAN

The capital Investment for the proposed projects in Thoothukudi Municipality under CCCBP has been detailed out in the tables below. The projects include major infrastructural projects initiated by the State government recently for water supply and drainage, medium and small projects by way of meeting the long felt needs to provide comfortable living environment to the citizens of the town.

**Table 8.2 Project wise Funding Pattern**

S.N	Project Items	Estimated capital cost (in lakhs)	Grants	Loans	Municipal contribution	Private sector Investment	Scheme/source
<b>Physical Infrastructure</b>							
1	Water Supply	269.00	90% (60%public Contrib.)		10%		Grants, Public contribution, loan from financial agencies
2	Sewerage System						
	Phase I	6387.96	14%	39%	39%		Grants, Public contribution and loan from financial agencies
	STP	574.31	-	-	-	100%	BOT / BOOT
	Phase II	1940.00	30%	60%	10%		Grants, public contribution, loan from financial agencies
3	Storm Water Drains	480.00	30%	60%	10%		Grants, Financial agencies,
4	Solid Waste Management	828.60	30%	60%	10%		12 <sup>th</sup> Finance, PPP model
5	Roads	325.00	30%	60%	10%		Financial agencies and Town and country planning dev. Fund
6	Truck Terminus	400.00				100%	BOT / BOOT
7	Bus Stand	30.00	100%				TTDC grants
8	Bus shelter	10.00	100%				MLA, MP fund, NGOs
9	Street Lights	42.65				100%	ESCOs
<b>Social Infrastructure</b>							
10	Parks and Playfields	45.00	100%				Grants, NGOs, Voluntary Organisations, MLA/MP funds and funding agencies
11	Amarar Parks	7.00	50%		50%		Part II scheme, MLA, MP fund, municipal fund
12	Public Convenience	10.00	50%		50%		Part II scheme, MLA, MP fund, Voluntary org,
13	Education	197.80	100%				Education Fund
14	Medicare	40.00	100%				Part II scheme, State/Central Govt,
15	Slum improvement	1635.30	90%		10%		IHSDP
16	Market	15.00	100%				MLA / MP funds
<b>Other Projects</b>							



17	Buckle Channel improvements	3360.00	50%	40%	10%		Grants, agencies, Financial
18	E-Governance	5.00	100%				State / Central govt
19	Slaughter House	45.00	50%		50%		Part II scheme,
20	Beautification of the town	300.13				100%	Port Trust
21	Municipal office building	40.00	100%				State/Central/Parastatal agencies
22	Updation of Database - GIS	75.00	100%				State/Central/Parastatal agencies
	<b>Total</b>	<b>17062.75</b>					

Source: Analysis and computations

As observed from the table above, the possibilities for private sector investments have been included as a source of funding. An amount of Rs.1317.09 lakhs has been identified for private sector investments. The table below shows the year wise financing mix suggested:

**Table 8.3 Capital Investment Programme - Abstract**

Year of Implementation	Capital Investment	Grants	Loans	LB Cont.	Private Investment
2008-09	500.00	500.00			
2009-10	3456.89	1395.90	1685.50	67.00	308.49
2010-11	4329.41	1153.63	1302.46	1214.71	658.61
2011-12	3795.79	1024.80	869.77	1551.22	350.00
2012-13	2398.64	1880.77	321.84	196.03	
2013-14	2147.21	1064.83	840.38	242.00	
2014-15	434.82	98.82	0.00	336.00	
<b>Total</b>	<b>17062.75</b>	<b>7118.75</b>	<b>5019.95</b>	<b>3606.96</b>	<b>1317.09</b>

Source: Analysis and computations

The table below gives the Multiyear investment programme for the proposed projects form year 2008-09 to 2014-15.

**Table 8.4 Multi Year Investment phasing**

Projects	Rs. in lakhs	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Water Supply	269.00		269.00					
UGSS Phase I	6962.27	500.00	2472.66	2472.66	1516.95			
UGSS Phase II	1940.00					970.00	970.00	
SWD	480.00					144.00	336.00	
SWM	828.60		71.60	57.00	220.57	240.00	239.43	
Roads	325.00					130.00	195.00	
Truck Terminus	400.00			200.00	200.00			
Bus Stand	30.00		30.00					
Bus Shelter	10.00		10.00					
Street Lights	42.65		21.33	21.32				
Parks and Playfields	45.00				25.00	20.00		
Amarar Parks	7.00		7.00					
Public Convenience	10.00		10.00					
Education	197.80		50.00	100.00	47.80			
Medicare	40.00		40.00					
Slum Improvement	1635.30		435.30	400.00	400.00	400.00		

Market	15.00		15.00					
Buckle Channel	3360.00			883.30	1215.46	494.64	331.78	434.82
E-Governance	5.00		5.00					
Slaughter House	45.00		20.00	25.00				
Beautification of the town	300.13			150.13	150.00			
Municipal Office Building	40.00			20.00	20.00			
GIS Database	75.00						75.00	
<b>TOTAL</b>	<b>17062.75</b>	<b>500.00</b>	<b>3456.89</b>	<b>4329.41</b>	<b>3795.78</b>	<b>2398.64</b>	<b>2147.21</b>	<b>434.82</b>

Source: Analysis and computations

Note:

Phasing of projects based on

- Availability of grants
- Project components

## 8.4 KEY ASSUMPTIONS FOR SCENARIO 2

### 8.4.1 Water Supply

The number of house service connections during 2006-07 is 31433 (including non domestic connections) will generate Rs.291.00 lakhs as tariffs. The House service connection coverage is 49%. The assumptions made to project the cash flow of this project is given below

- Achieving 75% house service connections coverage within the future 5 years
- Increase in assessments at a rate of 1%
- Collection of domestic deposits at Rs.4000 till 2016-17 and revision of deposits at Rs.6000 from 2017-18.
- Collection of domestic tariff at Rs.900 per annum till 2016-17 and revision of tariff at Rs.1200 per annum from 2017-18.
- Collection of non - domestic deposits at Rs.7000 till 2016-17 and revision of deposits at Rs.9000 from 2017-18.
- Collection of non - domestic tariff at Rs.1500 per annum till 2016-17 and revision of tariff at Rs.2100 per annum from 2017-18.
- Collection of Industrial connection deposits at Rs.8000 till 2016-17 and revision of deposits at Rs.10000 from 2017-18.
- Collection of Industrial connection tariff at Rs.2100 per annum till 2016-17 and revision of tariff at Rs.3000 per annum from 2017-18.

### 8.4.2 Under Ground Sewerage

The UGSS phase I covers 60% (37520) of the total domestic and non – domestic assessments in the town. The total income generated from tariffs and deposits from phase I will be Rs.40.00 lakhs and Rs.2300 lakhs. The total income generated from tariffs and deposits from phase II will be Rs.27.00 lakhs and Rs.1500 lakhs. The other assumption made to project the cash flow of this project is given below:

- Achieving target connections in Phase I with in future 3 years (2011-12).
- Achieving target connections in Phase II with in 2012-13 and 2013-14.
- Revision of deposit and tariff rate at 25% during 2020-21.

**Table 8.5 Proposed Graded tariff for UGD – Phase I**

<b>PHASE I</b>						
<b>Domestic</b>				<b>Rs.in lakhs</b>		<b>Rs.in lakhs</b>
Area of the assessments in sq.ft	No. of Assessments	No. of Connections	Tariff in Rs	Tariff to be collected	Deposits in Rs	Deposits to be collected
Less than 500 sq ft	30550	18330	75.00	13.7475	4000.00	733.2
500-1200	22741	13645	90.00	12.2805	5000.00	682.25
1200-2400	8262	4957	110.00	5.4527	6000.00	297.42
Greater than 2400	980	588	130.00	0.7644	7000.00	41.16
	<b>62533</b>	<b>37520</b>		<b>32.2451</b>		<b>1754.03</b>
<b>Non Domestic</b>				<b>Rs.in lakhs</b>		<b>Rs.in lakhs</b>
Area of the assessments in sq.ft	No. of Assessments	No. of Connections	Tariff in Rs	Tariff to be collected	Deposits in Rs	Deposits to be collected
Less than 500 sq ft	6554	3932	140.00	5.5048	8000.00	314.56
500-1200	1430	858	160.00	1.3728	15000.00	128.70
1200-2400	595	357	220.00	0.7854	18000.00	64.26
Greater than 2400	480	288	300.00	0.864	35000.00	100.80
	<b>9059</b>	<b>5435</b>		<b>8.527</b>		<b>608.32</b>

Source: TNUIFSL

**Table 8.6 Proposed Graded tariff for UGD – Phase II**

<b>PHASE II</b>						
<b>Domestic</b>				<b>Rs.in lakhs</b>		<b>Rs.in lakhs</b>
Area of the assessments in sq.ft	No. of Assessments	No. of Connections	Tariff in Rs	Tariff to be collected	Deposits in Rs	Deposits to be collected
Less than 500 sq ft	30550	12220	75.00	9.165	4000.00	488.80
500-1200	22741	9096	90.00	8.1864	5000.00	454.80
1200-2400	8262	3305	110.00	3.6355	6000.00	198.30
greater than 2400	980	392	130.00	0.5096	7000.00	27.44
	<b>62533</b>	<b>25013</b>		<b>21.4965</b>		<b>1169.34</b>
<b>Non Domestic</b>				<b>Rs.in lakhs</b>		<b>Rs.in lakhs</b>
Area of the assessments in sq.ft	No. of Assessments	No. of Connections	Tariff in Rs	Tariff to be collected	Deposits in Rs	Deposits to be collected
Less than 500 sq ft	6554	2622	140.00	3.6708	8000.00	209.76
500-1200	1430	572	160.00	0.9152	15000.00	85.80
1200-2400	595	238	220.00	0.5236	18000.00	42.84
greater than 2400	480	192	300.00	0.576	35000.00	67.20
	<b>9059</b>	<b>3624</b>		<b>5.6856</b>		<b>405.6</b>

Source: TNUIFSL

### 8.4.3 Solid Waste Management

It is proposed to collect conservancy fee from the domestic and non-domestic assessments for the collection of Solid Waste. The proposed tariff structures for types of assessments are as follows

**Table 8.7 SWM Conservancy fees**

<b>S.No</b>	<b>Assessment Type</b>	<b>Tariff per month (Rs)</b>
1	Houses	15.00
2	Shops	25.00
3	Institutions	50.00
4	Industries	75.00
5	Hotels and Marriage Halls	100.00
6	Clinics and Hospitals	Managed by IMA

Source: Analysis and computations

**8.4.4 ASSUMPTIONS for O&M EXPENDITURE****Table 8.8 Assumed O & M expenditure**

<b>Project Items</b>	<b>% of O&amp;M</b>
Water Supply	3
Sewerage	2
Storm water drains	3
Solid waste management	5
Bus Stand	2
Bus Shelter	1
Roads	3
Streetlights	3
Parks	3
Public Convenience	3
Amarar Parks	2
Education	1.5
Medicare	1.5
Slums	3
Market	3
Slaughterhouse	2
GIS	1
Truck Terminal	2
Buckle channel	1
E-governance	1
Beautification of town	2
Municipal building	1

Source: Analysis and computations

**8.5 FINANCE OPERATING PLAN – Scenario 2**

The table below represents the FOP projections for account heads including income from CCCBP projects and debt servicing over a period of 20 years. The individual project wise cash flows are given in annexure-6.

**Table 8.9 FOP projections for scenario 2 - Thoothukudi Municipality**

Account Head	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Opening Balance	2929.93	3589.74	4325.16	5243.29	6914.57	7552.74	8034.96	10174.84	12414.48	14794.06	17637.06	20607.62
Total Receipts	1592.35	1703.03	1924.55	2682.59	2927.23	3138.42	3759.15	4072.78	4803.24	5095.94	5346.98	5772.36
Total Expenditure	932.54	967.61	1006.42	1049.47	1305.36	1485.22	1808.26	1911.15	2108.50	2273.78	2397.26	2513.88
Surplus / Deficit	659.81	735.43	918.13	1633.12	1621.88	1653.20	1950.89	2161.63	2694.74	2822.16	2949.72	3258.48
Annunities / Debt Servicing	30.76	32.85	33.81	35.50	180.54	268.28	281.99	295.10	349.31	395.38	424.01	438.00
TE/TR	0.59	0.57	0.52	0.39	0.45	0.47	0.48	0.47	0.44	0.45	0.45	0.44
DS/TR	0.02	0.02	0.02	0.01	0.06	0.09	0.08	0.07	0.07	0.08	0.08	0.08
Closing Balance	3589.74	4325.16	5243.29	6914.57	7552.74	8034.96	10174.84	12414.48	14794.06	17637.06	20607.62	23888.36

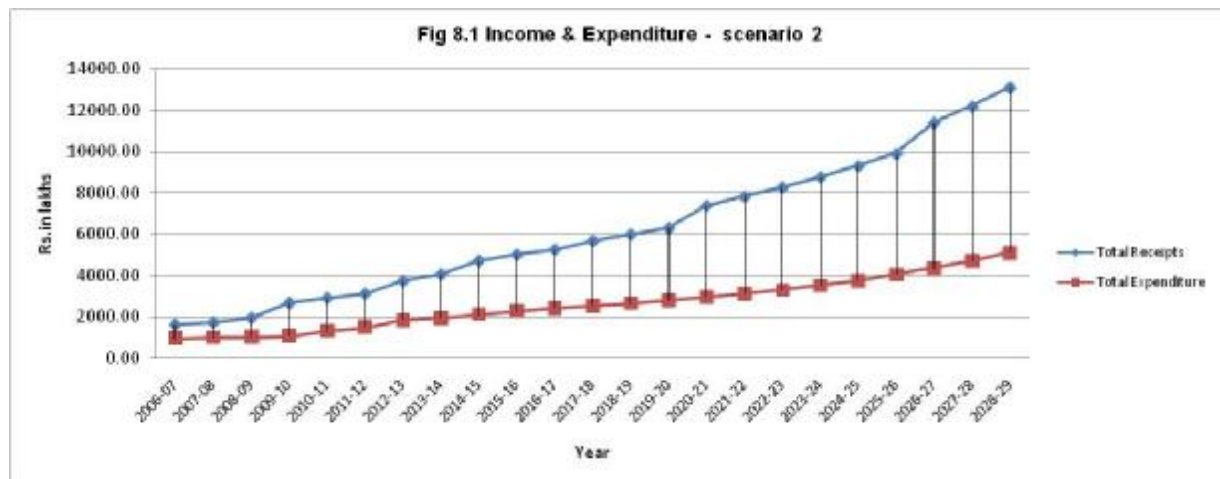
Source: Analysis and computation

Account Head	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Opening Balance	23888.36	27362.65	31001.69	35469.87	40196.94	45159.45	50365.74	55823.50	61542.57	68014.55	74783.78
Total Receipts	6092.21	6405.21	7380.64	7809.04	8235.92	8696.08	9192.32	9730.63	10797.26	11449.96	12226.80
Total Expenditure	2640.18	2788.43	2938.64	3108.15	3299.59	3515.98	3760.73	4037.74	4351.45	4706.91	5109.88
Surplus / Deficit	3452.03	3616.78	4442.00	4700.89	4936.33	5180.10	5431.59	5692.89	6445.80	6743.05	7116.92
Annunities / Debt Servicing	444.00	461.78	464.67	467.70	470.89	474.24	477.75	481.44	485.32	489.39	493.66
TE/TR	0.43	0.44	0.40	0.40	0.40	0.40	0.41	0.41	0.40	0.41	0.42
DS/TR	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04
Closing Balance	27362.65	31001.69	35469.87	40196.94	45159.45	50365.74	55823.50	61542.57	68014.55	74783.78	81926.88

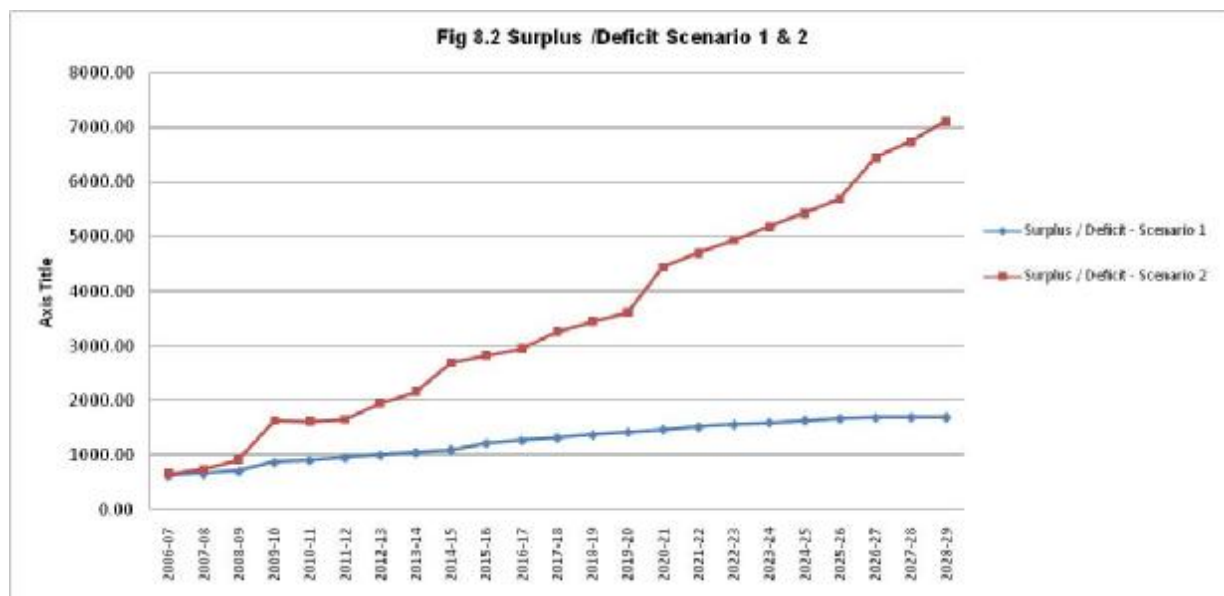
Source: Analysis and computation

The consolidated statement of income & expenditure, Surplus / deficit is given in annexure 7.

The figure below shows the total income and total expenditure projections for scenario 2, clearly indicating the surplus and growth in revenue income.



The figure below represents a comparative projection of net surplus /deficit for scenario 1 and scenario 2.



The Borrowing capacity of Thoothukudi Municipality is assessed as **Rs.4807.00 lakhs** from the Net Present Value of 30% of the operating surplus projections during the 20<sup>th</sup> year. Therefore, the Municipality would be able to take up the entire projects proposed under the CCCBP, as the loan component is Rs.5072.00 lakhs.

**ASSETS MANAGEMENT**

The Local Body possesses immovable and movable assets. Immovable assets are of great importance as the indicators for the municipality's financial worth which would help in its borrowing capacity and credit worthiness. Thoothukudi Municipality owns the following movable and immovable assets:

**9.1 LANDS AND BUILDINGS****9.1.1 Water Supply**

Number of OHTs - 8

Infiltration well 3.5 m diameter - 5 No.

Infiltration Gallery

2 rows of 375 mm stone ware pipe - 136m

2 rows of 450 mm RCC perforated pipe - 100m

Collector well cum pump house - 1 No

Pump sets

Suction well I : 35 HP

Suction well II : 40 HP

Collector well : 35 HP

Main pump set : 3 Nos

Common sump : 3 LL

Power supply

Transformer : 500 KVA

Collector well : LT supply and 63

KVA generator

Ridge point Reservoir

Capacity : 16.84 LL

Pumping Main

700 mm	14KSC	PSC pipe	-	2500 m
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700 mm	12KSC	PSC Pipe	-	730 m
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700 mm	CI	LA CLASS	-	3350 m
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**Gravity Main I** (Duplication)

LS	0 to 7381	:	500 mm 4 KSC	PSC Pipe
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LS	7381 to 28620m	:	600 mm RCC P2 Class (Existing 1980)
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**Gravity Main II**

LS	0 to 11700 m	:	600 mm PSC	4 KSC
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LS	11700 to 13500m	:	600 mm PSC	6 KSC
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LS	13500 to 22500 m	:	600 mm PSC	8 KSC
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LS	22500 to 28620m	:	600 mm PSC	10 KSC
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Earlier the two gravity mains consisted of



- (c) 400mm CI for 28620 m  
 (d) 400 mm CI for 7381 m and 600mm RCC p2 Pipe for 21239m

### Transmission Main

Pumping main	In meter	In km
Ist line(1932)	6580	6.58
IIInd line(1980)	3230	3.23
	6.58	3.38
IIIrd line(2001)	3230	3.32
Gravity main		
Ist line	28.62	28.62
IIInd line	7381	7.38
	28.62	21.24
IIIrd line	22500	22.25
	28620	6.10
Duplication main		
	7381	7.38 km

### Number of HSCs

Domestic	- 30058
Commercial	- 1370
Industrial	- 5
Total Number of Public Fountains	- 658
Service Reservoirs	- 8

### 9.1.2 STORM WATER DRAINS

Length of storm water drain	- 69.47 km
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### 9.1.3 ROADS

CC Roads	- 11.799 km
BT Roads	- 107.94 km
WBM Roads	- 18.67 km
Earthen Road	- 36.021 km

### 9.1.4 BUS STAND

#### New Bus Stand

'A' class bus stand with 51 bus bays

Area - 6.88 acres

No. of shops - 80

#### Old Bus Stand

'C' class bus stand

Area - 1.51 acres

No. of shops - 48

**9.1.5 STREET LIGHTS**

Number of 40W tube lights	-	6166
250 W sodium vapour lamp	-	782
250 W Mercury vapour lamp	-	140
70W Sodium vapour lamp	-	11
High Mast Light	-	1
Automatic Timer Switch	-	14

**9.1.6 PARKS AND PLAY FIELDS**

Notified parks	-	10
Un-notified parks	-	4
Number of play fields	-	7

**9.1.7 AMARAR PARKS**

No. of Burial Ground : 1

**9.1.8 PUBLIC CONVENIENCE**

Public Toilets (Free)	-	15
Pay & Use Toilets	-	8
ISP	-	3
VAMBAY	-	9

**9.1.9 EDUCATION**

Municipal schools	-	10
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**9.1.10 MEDICARE**

Number of Hospitals	-	3
Maternity Center	-	2

**9.1.11 MARKET**

No. of markets	-	5
Municipal V.O.C market		
S.S. Pillai market		
Boobalarayerpuram Fish Market		
Thoothukudi vegetable private market		
Gopalasamy market		

**9.1.12 SLAUGHTER HOUSE**

No. of Slaughter house	-	1
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**9.2 COMMENTS ON THE ASSETS MANAGEMENT IN THE LOCAL BODY**

The management of assets in the local bodies is at the initial stage where, only the assets are listed and status is described. Invariably in all the cases, the management component is missing as to the techniques and methods of managing the assets either in improving the state and value or in

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sustaining them with a growth motive. There is hardly any case where a local body has made use of its immovable assets for raising loans or improving its borrowing capacity. It requires an overall approach outlining the alternative options of maintaining and managing the assets in a worthwhile mode.

In so far as the Municipal assets in the form of structures and other service networks are concerned, the rate of depreciation is taken into consideration. In many of the cases, the rate of depreciation adopted by the local bodies is found to be not reasonable. This requires a re-look.

The values of the structural assets as provided by the Municipality are only upto 2004-05. Since every year there is an addition to such assets, an indication of the values is a must in calculating the present values and also projecting to the future. In the absence of any trend, the values of the structural assets have become difficult to be computed. However, the values of the proposed projects in the form of assets both for structural elements and certain movable items are indicated in the statement.

The new assets proposed under CCCBP are indicated with the capital project cost in the table given below

**Table 9.1 New Assets for the year – 2009-10 to 2014-15**

<b>Projects</b>	<b>Rs. in lakhs</b>
Water Supply	269.00
UGSS Phase I	6962.27
UGSS STP	
UGSS Phase II	1940.00
SWD	480.00
SWM	828.60
Roads	325.00
Truck Terminus	400.00
Bus Stand	30.00
Bus Shelter	10.00
Street Lights	42.65
Parks and Playfields	45.00
Amarar Parks	7.00
Public Convenience	10.00
Education	197.80
Medicare	40.00
Slum Improvement	1635.30
Market	15.00
Buckle Channel	3360.00
E-Governance	5.00
Slaughter House	45.00
Beautification of the town	300.13
Municipal Office Building	40.00
GIS Database	75.00
<b>TOTAL</b>	<b>17062.75</b>

Source: Analysis and Computation

### 9.3 MANAGEMENT OPTIONS FOR LAND ASSETS

The land asset register is incomplete and lacks relevant data (Schedule-I of Assets Register of Thoothukudi Municipality). The schedule –I of the Asset register needs to be prepared afresh. The help of the SHGs or voluntary organisations can be sought for the purpose.

The land value also varies from location to location and time to time as per the weightage of the area arrived at based on various factors. It is invariably found that the value of the Municipality land varies substantially from that of the adjacent private land for obvious reasons. These differences need a practical moderation to estimate the true credit worthiness of the local body.

The rate of increase of the municipal land in its value, vis-à-vis that of the adjacent private land at the various locations will be useful in drawing up a reasonable assets management technique.

The foregoing account of the movable and immovable assets of the Municipality includes basically land parts of which are occupied by construction of structures for various uses. The structural elements in the form of buildings including OHTs, flow elements relating to essential services such as water supply, drainage, UGD, street lights and the like are designed with a design life time. The lands however as a base have no such limiting factor in terms of time. Thus the super structures and the constructed elements below the ground are depreciating in their values as they age. But the land assets both constructed and un-constructed keep appreciating in the standard and market values. In fact, the rate of appreciation of the lands is of great significance from the point of worthiness of the concerned local body and, it is invariably much faster in its appreciating value compared to the rate of depreciation of structures imposed on them. Also, the rate of depreciation standardized for various items of the structures is much more than the actual while taking into consideration the life time of such structures till the point of their condemnation. Refer Annexure 5.

The assets particularly the lands owned by the local body could be used for borrowing loans showing them as the properties of the local body and / or leasing where possible. Certain land parcels may be leased / rented for private uses for a specific period of time. Moreover, the rate of depreciation may have to be considered from the actual life time of such structural elements instead of taking their design life time for valuation. Rationalizing both the aspects as mentioned may give the real value and worthiness of the assets of the local body. This may require a comprehensive re-look item-wise, pertinent to the locality and for valuating in terms of both appreciation and depreciation.

Generally, the assets of the local body, particularly the lands are rarely maintained and their values in the management of the resources of the local body are little considered. There must be a scientific approach town wise to evolve a dynamic model of the changing values of the assets both in terms of appreciation and depreciation from time to time, particularly when sizable developments take place. It is important to keep in view that as per the objectives of the devolution of functions and powers to the urban local bodies under the 74<sup>th</sup> Constitutional Amendment Act, the value of the lands and properties are necessarily to be assessed depending on their location, land use and intensity of development over a time scale. In order to systemize the highly dynamic factor of values of the

properties under local body, it is essential for an efficient management of the total assets owned by local body.

The suggestions for the improvement of land asset management are listed below:

1. Create land asset register listing all Municipal properties with the following data:
  - ◇ Survey number
  - ◇ Location
  - ◇ Ownership data
  - ◇ Date of acquisition
  - ◇ Extent in Sq.m
  - ◇ Present status
  - ◇ Rate per sq.m
2. Establishment of GIS inventory for Municipality lands.
3. Removal of encroachments on Municipal lands.
4. Alternatively, levy of rent on Encroached Municipal lands.
5. Use of land assets for borrowing loans from capital market.
6. Identifying the most remunerative activity by Public Private Participation, BOT, BOLT, BOOT initiatives.
7. Lease or rent out of land parcels for a specific period of time.
8. Asset creation by acquiring lands in peri-urban areas.

## PUBLIC CONSULTATION MEETING

As the essential part of the preparation of City Corporate Plan component for the town, all the stakeholder groups need be consulted with specific reference to the short term and midterm needs at the street, ward and town level, as the plan is primarily **“with them, of them and for them,”** the habitants of the town. In this process, residents of various sections of the communities in the town were enquired into at random during reconnaissance survey and visits to all the sites of the projects identified by the Municipality and also otherwise suggested by the elders. As a very important step, all the 51 Councilors of the Municipal Council and the Chairman were individually discussed with and the ward and town level requirements relating to, especially the Municipal services and other promotive projects have been gathered in writing on a structured questionnaire. At the initial stage of this exercise in preparing the CCCBP for the town, as an underlining essential principle of consultation with the beneficiaries of the plan, the stakeholders starting from the Councilors of the town Council including the Honorable Minister for Animal Husbandry, Govt. of Tamil Nadu, Municipal Chairman, Municipal Officials ,NGOs, CBOs, Clubs, Associations, representatives from Government offices and educational institutions located in the town, town elders, ladies' forums, etc., have been explained the context, concept and contents of the plan. The outcome of the consultative process in the form of their requirements, comments, suggestions and opinions for the future, the orientation of the plan structure has been treated. Thus, the outcome of this exercise in the form of Corporate Plan is conscious consent and with the approval of the town Council and other stakeholders of the town.







VELA

தினகரன் 17  
மார்ச்சு 25-ம் தேதி 2007

தூத்துக்குடி நகராட்சியில்  
நகர மேலாண்மை திட்டம்  
குறித்த கலந்தாய்வு கூட்டம்

[illegible]

This plan focuses largely on the totally implementable urban infrastructure and other projects to adequately meet the present and future demands of the growing town. The attendant results and concomitant effects are in terms of town's economic development, societies' standard of living, improvement in the living environment, equality in the access to the necessary services, facilities and amenities for all the sections of people largely sub-serving alleviation of the urban poverty element, on the completion of the project proposals.



These suggestions are quantified and projectised in the report. The suggestions of the Councilors are listed in the statement and a sample copy of the questionnaire is annexed for reference. Refer annexure – 8

The list of attendees and the key suggestions from the stakeholders are listed below:

#### List of attendees

1. Ms.Geetha Jeevan, Honourable Minister for Animal Husbandry
2. Ms.Kasthuri Thangam , Honourable Municipal Chairman.
3. Ms.R.Lakshmi , Municipal Commissioner
4. Mr.Rajagopalan, Municipal Engineer
5. Municipal Authorities
6. Ward councilors
7. Representatives of Voluntary Organisations.
8. Representatives of SHGs.
9. Representatives from educational institutions.
10. Press reporters from Dinamani, Dina thanthi and Dinakaran
11. SPECK project team.

**Table 10.1 Highlights of Stake holder suggestions-16.5.07**

	<b>Stakeholder suggestion</b>	<b>Consultants reply</b>
1	Implementation of the UGSS	Except a few pockets on the periphery, the UGSS works for the entire Municipality is in progress with loan assistance from TNUDF-III.
2	Congestion due to haphazard parking of lorries and trucks.	Truck terminus proposed on Madurai bye-pass on BOOT mode.
3	Traffic congestion at the 3 railway crossings	Fly over in progress, shifting of railway station proposed as a long term measure.
4	Upgradation to Corporation Status	Under progress
5	Improvement of Buckle Channel	TNUIFSL study under progress
6	Need for parks and play grounds	Improvements proposed
7	Beautification of beach area.	Funds allocated from Port trust
8	Improvement of slum areas	Awaiting sanctions from IHSDP
9	Traffic congestion due to absence of grade separators at the three level crossings	Grade separator work under progress at one level crossing.
10	Need for recreational areas	Study proposed for Tourism development Plan

Source: Compiled from Stake holder feed backs from Consultative meetings

In all, 22 projects consisting of obligatory and discretionary service requirements, facilities and amenities have been finally listed with the projection for the planned future in consultation with the town Council, Municipality and other prominent stakeholders implementation of the proposed projects will together ensure enhance the sustainability, enhance the quality of living environment, and economic status. The projects have been detailed out in terms of the capital needs, funding pattern, development priority and implementation cum investment schedule, their physical locations, be it land parcels or linear land strips within or without the Municipality's jurisdictions.