Tamil Nadu Urban Infrastructure Financial Services Limited

City Corporate Plan cum Business Plan for Pattukottai Municipality

Final Report

April 2008

ICRA Management Consulting Services Limited

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Executive Summary

The Tamil Nadu Urban Infrastructure Financial Services (TNUIFSL) mandated ICRA Management Consulting Services (IMaCS) for preparation of City Corporate Plan cum Business Plan (CCP-BP) of Pattukottai Municipality (Pat-M).

This exercise intends to enable Pat-M to develop a holistic, structured and consultative approach to fine-tune and define its development priorities going forward. The objectives of the exercise are three-fold: a) to assess existing demand-supply gaps in service delivery and derive a comprehensive infrastructure improvement plan (including a Capital Investment Plan) required, b) to identify revenue enhancement and financial improvement measures and c) to develop a Financial and Operating Plan to implement a sustainable infrastructure improvement plan.

City profile and growth potential

Constitution	Selection grade
Area	21.83 sq.km
Wards	33
Population (2001)	65533
Decadal growth %	13.2%
Population Density per ha	30
Slum population (% of total)	27%

Pattukottai is a taluk head quarters and is located in Thanjavur district. Pattukkottai is renowned for its ancient sculptures and temples. Major attraction in Pattukkottai is the Old fort built by Raja Serfoji Maharaja. This Fort, is a well-known picnic spot, located in the village Sarabondrarajanpattinam. Pattukottai Municipality is a Selection Grade Municipality with an administrative area of 21.83 sq.km.

Population projections indicate characteristics of medium growth town over the next couple of decades with the population of the town potentially going up up by more than 33 % in the next two decades. As per the master plan of the town, more than 72% of the town is classified non-urban indicating scope for further development.

Apart from the cereals and horticulture crops, Pattukkottai is well known for production of coconuts. Pattukkottai is one of the major centers of coconut production in the country and a Coconut research station is located in Veppakulam, 8 kilometers from Pattukottai. The town has a downstream coconut based industry, which comprises of a number of units manufacturing products based on coconut coir. The Tamil Nadu Coir Manufacturers Association and Thanjavur Coir Manufacturers associations are also located in Pattukkottai. Recently, Pattukottai has been identified for setting up a coir processing cluster.

A brief SWOT analysis of the town is presented below:

Strengths	Weakness
• Proximity to other tourism centres like Trichy and Thanjavur • Trading and commercial centre for agrarian produce in nearby areas	• Limited industrial activity and employment generation potential • Poor infrastructure and connectivity • Weak municipal finances
Opportunities	**Threats**
• Economic, Trade and Education hub for nearby villages • Trade hub for agri produce • Coir industry and downstream processing opportunities	• Outward migration of skilled workforce • Continued constraints on ability and willingness to pay for urban services in view of limited economic potential • Increase in slum population

The key economic development themes for Pattukottai town are summarized below:

1. **Build on the recent initiative to develop Pattukottai a coir cluster.** Pattukottai is one of the major centers of coconut production in the country and a Coconut research station is located in Veppakulam, 8 kilometers from Pattukottai. The coir industry in Pattukottai has received a fillip following Pattukottai being declared a 'coir cluster' recently under a Central scheme called Scheme Fund for Regeneration of Traditional Industries (SFURT). As per press releases[1], a proposal to the tune of Rs 1.17 crore has been forwarded for implementation and is under consideration of the Union Ministry of Agro and Rural Industries. The proposal is expected to benefit 500 families in the district. The objective is to promote coir-related products with value addition. The Government has also allotted Rs 4 crore for construction of a coconut complex at Pattukottai and infrastructure facilities would be provided for farmers to set up industries for value addition.
2. **Develop Pattukottai as a agri-processing and trading hub by incentivizing investments in market infrastructure and processing industries.** Given the status of Thanjavur district as the rice bowl of the state, initiatives to set up aggregation centres and agri-trade related infrastructure should also be explored. Consultations with the municipal council also reinforced that focus on agri-processing could be a critical ingredient in economic development in the region. The Chairperson of the municipal council also stressed the need to focus on sugarcane, coir and straw based industries in the region. The need for better agri-procurement and storage infrastructure was also stressed during the Council meetings.
3. **Guide developments around the town through development of a bypass / ring road around town.** There is a need to widen and strengthen the arterial road networks along with provision of a bypass / ring road to the town to guide and facilitate future developments in a planned manner.

[1] *http://www.thehindubusinessline.com/2007/09/10/stories/2007091051321500.htm*

Municipal Services - Status assessment, gaps and actions being taken

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

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

Sl. No	Name of the Indicator	Value	Issues and Gaps / Initiatives
Water Supply			
1	Daily Per Capita Supply (LPCD)	~ 100	• Water supply level more than municipal norms of 90 LPCD, but only bore-well supply is a cause for concern. • Water connections are only 31 % of property tax assessments and indicate scope for improvement •
2	Storage Capacity / Daily Supply (%)	~ 61 %	
3	Distribution Network / Road Length (%)	~ 114%	
4	Water connections / Assessed properties (%)	~ 31%	
5	Population per Public Fountain (Nos.)	171	
Sanitation			
6	Presence of UGD network (Yes / No)	Planned	• Planned UGD scheme critical for improving sanitation needs of town • Large number of water bodies in town. Several in poor condition and need restoration. • Storm water drain and public convenience coverage needs improvement.
7	Septic Tanks / assessed properties (%)	80%	
8	Slum Population per Public convenience seat (nos.)	414	
9	Storm Drain Length / road network (%)	43%	
Roads and Street Lights			
10	BT roads / Total (%)	97%	• Comprehensive road upgradation would be required on completion of UGD scheme
11	Road length per Street Light (m)	29	
Solid Waste Management			
11	Waste generation per capital (gms)	414	• Vermi composting being implemented • Proposed actions for equipment purchase need to be taken up on priority • Need for additional land in the long term.
12	Collection efficiency (% of waste generated)	100%	
14	Disposal area gap (in meeting 1 acre per 10,000 population for 2020)	2 acres	

Analysis of financial performance

Exhibit 1 provides a summary of the income and expenditure of Pattukottai Municipality. This summary has been prepared based on information provided by Pattukottai Municipality.

Exhibit 2 Income and Expenditure summary

INCOME	2002-03	2003-04	2004-05	2005-06	CAGR %
OWN INCOME	***212***	***223***	***241***	***240***	4%
Property tax	90	97	103	109	6%
Profession tax	12	11	15	15	9%
Water & Sewerage Charges	50	47	44	43	-5%
Other Service Charges & Fees	15	14	18	21	12%
Other Income	45	54	60	52	5%
ASSIGNED REVENUE	***145***	***100***	***70***	***48***	-31%
DEVOLUTION FUND	***110***	***144***	***105***	***155***	12%
GRANTS & CONTRIBUTIONS	***2***	***21***	***10***	***1***	-12%
PRIOR PERIOD INCOME	***19***	***0***	***4***	***0***	-81%
TOTAL	**488**	**488**	**431**	**445**	-3%
EXPENDITURE	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**CAGR %**
Salaries	142	135	137	131	-3%
Operating Expenses	100	128	131	118	6%
Program Expenses	0	0	2	0	55%
Administrative Expenses	18	22	22	46	37%
Finance Expenses	34	61	30	2	-60%
Depreciation	111	141	122	0	-100%
Prior Period Expenses	0	1	1	14	
TOTAL	**294**	**348**	**322**	**311**	1%
SURPLUS-(Excl.Depr)	**194**	**139**	**108**	**133**	**-9%**
Operational Ratio (TE/TI)	**02-03'**	**03-04'**	**04-05'**	**05-06'**	Average
Excluding depreciation	60%	71%	75%	70%	**69%**
Including depreciation	83%	100%	103%	70%	**89%**
Debt Servicing				**Rupees in Lacks**	
Loan Interest	22.96	31.14	24.53	2.26	**80.89**
Loan Repayment	6.37	7.95	15.57	10.17	**40.06**
DS / TR	**6%**	**8%**	**9%**	**3%**	**7%**

Source: Pat-M accounts.

Overall, income of Pat-M declined 3% during 2003-06, primarily due to a 17% decline in Assigned revenue and 1% decline in devolution income. Own income grew by 3% with professional tax growing by 6% annually during this period. Expenditure showed a marginal increase of 2% annually during this period largely on account of a growth in operating expenditure at 7% CAGR Overall the municipality reported a growth in cash surplus during the period.

Capital Investment Plan

The CIP has been prepared based on

- Status and progress on projects identified as part of the Vision Plan (2004-09)
- Consultations with stakeholders and feedback on our presentation to the Council.
- Discussion with Pat-M officials and review with TNUIFSL and CMA

Exhibit 3 provides a summary of the CIP for Pat-M.

Exhibit 3 Capital Investment Plan summary

Segment	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Water Supply	-	105	105	167	167	594	1,358	1,081	3,033
Sanitation	1,056	1,056	1,056	101	101	3,371	417	1,046	4,835
Solid Waste Management	4	-	7	15	-	25	141	95	262
Transportation and street lights	13	13	456	456	456	1,394	289	1,707	3,390
Urban Services for the poor	700	700	797	1,129	1,129	2,258	1,694	1,694	7843
Others	74	40	70	20	20	224	400	590	1,214
TOTAL	**892**	**1,913**	**2,490**	**2,842**	**1,873**	**7,866**	**4,299**	**6,213**	**20576**

Priority projects

Priority projects identified for implementation by Pat-M are listed below in Exhibit 4.

Exhibit 4 Priority projects - FY 2008-12

Sl. No	Sector	Project	Cost *Rs. Lakh*	Status
1	Water Supply	Construction of check dams - Maharaja samudram (at Kondikulam and Santhankadu)	125	Proposal stage
2	Water Supply	Receiving Cauveri water from Kallanai	425	Proposal stage
3	Sanitation	Restoration of 18 water bodies	900	Proposal stage
4	Sanitation	Implementation of UGD scheme	2864	Under implementation
5	Sanitation	Storm Water drains (55 km)	507	Proposal stage
6	Sanitation	Public conveniences (37 seats)	13	Proposal stage
7	Transportation	Roads after UGD scheme (87km)	1159	Proposal stage
8	Transportation	New Bus stand	100	Proposal stage
9	Solid waste management	Land acquisition, vermin composting and procurement of secondary collection equipment	25	Under implementation
10	Other assets	Gasifier crematorium and slaughter house	75	Under implementation
11	Parks	Development of 5 parks	50	Proposal stage
12	Education	16 Schools buildings improvement	80	Proposal stage
13	Health	2Health centres - building improvement	20	Proposal stage
14	Slum improvement	IHSDP project (5 slums)	2197	Under implementation

Technical assistance requirements

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

1. Development of a comprehensive GIS for the town with updated information on all urban assets including roads, water supply, sanitation etc.
2. DPR for comprehensive water supply upto 135 LPCD and roadmap for 24x7 supply including evaluation of source augmentation and creation of non-borewell sources including check dams across Maharaja Samudram and linking of water tanks and drawing transmission line from Cauvery river at Kallanai.
3. DPR for solid waste management with focus on scientific disposal and mechanised handling.

Projects by other departments / agencies

Other projects to be taken up for implementation by various Government departments include the following:

1. **Industries department -** Evaluate feasibility for setting up agri-processing industries in the vicinity of the town and build on the recent announcement to set up a coir processing cluster in Pattukottai.
2. **PWD** – Develop a plan for rehabilitation of all the water bodies coming under its jurisdiction.
3. **State Highways / NH / NHAI–** a) Conduct feasibility study for developing a bypass/ring road for the town and c) Develop and implement a traffic improvement plan for the 5 major arterial roads in the town.

Reform Agenda

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

State level

1. Implement recommendations of the Third State Finance Commission, particularly those relating to the revenue buoyancy including property tax reform and devolution income from GoTN.
2. Ensure stability of tenure of key officials and ensure that except for extraordinary circumstances, there should be a minimum tenure of at least 2 years for all the key positions including Commissioner, Municipal Engineer, Manager, Town Planning Inspector, Sanitary and public health head and Accountant. Further, guidelines need to be clarified and enforced for formal charge handover whenever there is a transfer of officials to ensure continuity.
3. Carry out an independent assessment of skill gaps and manpower needs of ULBs to ascertain the appropriate manpower plan in terms of skill sets and experience/seniority. This is particularly relevant given the recent developments, specifically in urban planning and GIS, municipal accounting and systems, e-governance and modern practices in infrastructure service delivery including potential for Public-Private Partnerships.

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

ULB level

Pat-M could potentially by FY ending 2012 through focused interventions in the following areas:

1. **Property tax**: – through revision in ARV, widening assessee base and closer scrutiny.
2. **Professional tax** – sustaining a growth in assessments through widening tax base among traders and self-employed professionals
3. **User charges** – through increased penetration of water connections and new sewerage connections.
4. **PPP / remunerative projects** - Pat-M also needs to explore land development as a revenue enhancement mechanism and should focus on attracting private sector participation through appropriate BOT/ SPV structures for implementing remunerative projects.
5. **Energy costs** -
6. **Collection Efficiencies** – Collection efficiencies in taxes as well as user charges indicate significant scope for improvement.
7. **NGOs / Corporate participation -** Intensify focus on attracting NGOs/advertising revenue for city beautification projects to reduce reliance on grants for such projects.

FOP, borrowing capacity and investment capacity

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

Exhibit 5 Financial and Operating Plan – summary

Estd. Revenues – FY 2008 (Rs. Lakh)	743
Estd. Revenues – FY 2016 (Rs. Lakh)	2,057
Estd. Revenues - FY 2027 (Rs. Lakh)	4,252
Revenue CAGR % - FY 2008-17	11.9%
Revenue CAGR % - FY 2008-27	9.6%
Average TE (excluding depreciation)/TR (%)	55%
Average DS/TR (%)	17%
Average DSCR	3.11
Borrowing Capacity	4673
Investment Requirement	20,576
Investment Capacity (at 50% loan)	9,345
IC/IR (including Urban Service for Poor)	45%

Based on these criteria, the borrowing capacity of Pattukottai works out to Rs. **4673** lakh. At an aggregate level, assuming loans to be equivalent to **50%** of investment, sustainable investment capacity works out to Rs. **20576 lakh**, which translates to about 45 % of the total investment requirement (including slum rehabilitation).

The finances of Pat-M look stretched and there is substantial revenue enhancement effort required even to achieve the baseline financial projections assumed in the FOP. Therefore Pat-M would require significant grant support to implement its CIP in full. While Loans and own funds should be used to finance core infrastructure projects which also have an identifiable revenue component (such as UGD), Pat-M should utilize Grants from schemes like UIDSSMT and IHSDP to undertake non remunerative projects relating to slum development, canal de-silting etc. Further, Pat-M should get private sector participation to implement land development projects (such as re-development of markets).

1. Introduction

1.1 Background to the study

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

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

1.2 Objectives, Scope of Work and study modules[2]

1.2.1 Objectives of the study

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

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

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

1.2.2 Scope of work

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

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

Annexure I provides the detailed Terms of reference and scope of work provided by TNUIFSL.

1.2.3 Study outputs and modules

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

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

1.3 Approach and Methodology

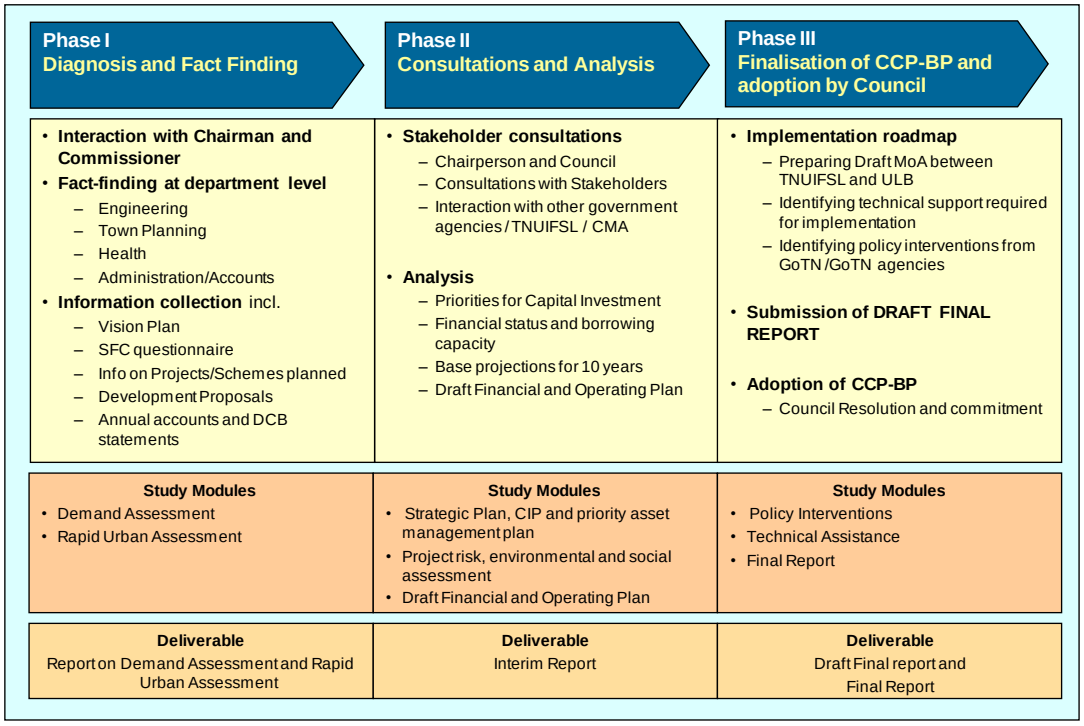
We conducted this study in three phases. Exhibit 1.1 provides a snapshot of the approach and methodology along the study modules and the deliverable(s) covered in each phase.

1.3.1 Phase I – Diagnosis and Fact-finding

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

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

Exhibit 1.1 IMaCS' approach and methodology



Our methodology for this phase covered the following:

a) Primary research

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

b) City Visits

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

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

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

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

1.3.2 Phase II - Consultations and Analysis

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

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

b) **Public consultations –** We also had public consultations with key stakeholders in the city. . The objective of this session is to complement the information gathered from our interactions with the council members to facilitate a wider participation of stakeholders in this exercise. Annexure III provides minutes of our meeting with the public stakeholders.

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

Phase II of the report culminated with the submission of the report on Strategic Plan, Capital Investment Plan and Asset Management Plan report for the municipality. The report was presented to TNUIFSL, CMA and officials of Pattukottai municipality before moving on to Phase III.

1.3.3 Phase III – Finalisation of report

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

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

1.4 Organization of this report

This document presents our Final Report of the study and is structured along the sections given below. Prior to finalisation, the Draft Final Report was submitted and reviewed by TNUIFSL, CMA and Pat-M. The report with the incorporated changes was presented to the municipal council, which passed a **Council Resolution**[3], approving the report in its meeting on **27.02.08**

- Section 1 Introduction
- Section 2 City profile and demographics
- Section 3 Economic profile and Land use
- Section 4 Rapid urban assessment – services, issues and gaps
- Section 5 Urban Governance and management
- Section 6 Analysis of financial performance
- Section 7 Vision and strategic plan, CIP and asset management plan
- Section 8 Project profiles including analysis of risks and ESA considerations
- Section 9 Reform Agenda and Technical Assistance
- Section 10 Financial and Operating Plan

[3] Copy enclosed with Executive Summary of report

2. City profile and city demographics

2.1 Location and connectivity

Located in Thanjavur district at an altitude of 17.70 meters above mean sea level, Pattukkottai is a taluk headquarter and is well connected by district roads with the nearby urban centers and has a railway link with Karaikudi, Thiruthuraipoondi, Thiruvarur, Mayiladuthurai and to Chennai.

Distance of major urban centers from the town is shown in the table below.

Exhibit 2.1 Population characteristics of Pattukottai town (1961-2001)

Urban Centre	Distance from Pattukkottai (Km)
Chennai	360
Thanjavur	45
Thrichy	56
Pudukkottai	70

The general topography of the town is flat. Soil of the region is classified as clay and sandy clay with lesser alluvium content. With implementation of Cauvery Mettur Project (C.M.P) soil on either side of the CMP canal is fertile. Two rivers, Maharaja Samundram river on the west and Nasuvini river on the east, flow parallel to the town on either side and serve to drain excess water from the town, especially during monsoons. The main water body in the town is the CMP Canal passing through the western part of the town. Besides, a number of small water bodies are distributed across the town.

Pattukkottai, is located 47 km south of Thanjavur - the district headquarters. The town is well connected by district roads with the nearby urban centres and has railway link with Karaikudi, Thiruthuraipoondi, Thiruvarur, Mayiladuthurai and Chennai. Located at 17.7 km above mean sea level, the town is situated within 15 kilometers from the coastal strip of Palk Straits of the Bay of Bengal. The proximity to the sea gives the town an almost even climate round the year, with little variations in seasonal temperatures. The town receives rainfall from northwest monsoons, which last from October to December. Average annual rainfall is 100 mm.

Pattukkottai is bounded on the north by Santhankadu , Aladidululi, Surappalam ,Attikkottai , Nattuchalai villages on the west by Vendakkottai, Ponnavaranyankottai , Anaikkadu , Villages on the south by Mudalcheri , Nainakulam, Kargarvayal villages and on the west by Kuttadivayal , Paingattuvayal , Kazhugapulikadu , kondikulam ,Naduvikkottai Villages. A number of towns in the vicinity including Mannargudi, Madukkur, Muthupettai, Adiramapattinam, Peruvurani and Orathanadu are situated within 15-35 km of Pattukkottai town.

2.1.1 Historic significance

Pattukkottai is renowned for its ancient sculptures and temples. Major attraction in Pattukkottai is the Old fort built by Raja Serfoji Maharaja. This Fort, is a well-known picnic spot, located in the village Sarabondrarajanpattinam, is an example of Architecture of Marattas. It was built in 1814 to commemorate the Victory of the British over Nepolean Bonapart in the war of Waterloo. Pattukkottai is the birthplace of eminent and profound personalities like former President Mr. R. Venkataraman, famous poet Pattukkottai Kalayansundaram.

Other places of tourist interest in and around the town include the shrine of Sheik Alauddin Sahib, Goddess Nadiamman Temple, shrine of Venkidu Subbaiah Swamigal, Arulmigu Thurgai Amman Temple and Gandhi Park. Nearest airport is at Tiruchirapalli. Pattukkottai Railway Station is on the Karaikkudi-Tiruturaipundi line. Pattukkottai municipality was upgraded as selection grade in 1984.

2.2 Pattukottai municipality

Pattukkottai Municipality has been constituted as third grade Municipality from 1.4.1965, upgraded in to Second grade from 1.4.1975, First grade from 7.4.1984 and selection grade from 22.5.98. This Municipality consist revenue villages of Nadiyambal Puram, Kailasanatha Puram, Maharaja Samudram, Rengojiyappa Thottam and Pappaveli Palayamkottai Revenue villages. Pat-M has 33 wards each being represented in the municipal council.

2.3 Population and other social indicators of Pat-M

2.3.1 Population trends

Exhibit 2.1 provides a snapshot of the population growth over the last few decades.

Exhibit 2.2 Population growth trend

Census Year	Population	Growth %	
		Decadal	Annual
1961	24726		
1971	37682	52.4%	4.3%
1981	49484	31.3%	2.8%
1991	57909	17.0%	1.6%
2001	65533	13.2%	1.2%

Source: Census 2001

As per the latest census, Population of Pat-M was 65533 (~ 14788 households). Population in Pattukottai town has seen a decline in growth across the last few decades, although it increased in absolute terms throughout the period. The town witnessed a rapid pace of growth in population after independence, which can be attributed to the growing concentration of commercial activities in the town and provision of physical and social infrastructure providing livelihood opportunities for a large section of the population.

Population is largely concentrated in central parts of the town where there is largest concentration of residences. Residential areas are otherwise dispersed in various parts of town

a) North of Anaivilunthan Kulam Street, Chettiar Street east of Chunnampukarthery and Arisikaratheru upto C.M.P canals.
b) In old fort area and west of Thanjavur road.
c) In between Nadimuthu Nagar High School road and Punitha Anthoniyar Koli Street.
d) On both sides of the railway line between railway station and Seethubhavachatram road level crossing.
e) In between Valanpuram road and Kandiyan street.
f) Along Perumalkoil Street and Pannavel Road.

Commercial activities are concentrated in the central pocket bounded on the north by Chowkandi Street, Pillaiyar Koil Street and post office Street,. Thickly developed commercial centers are also noticed in Palaniyappan Street leading to bus stand, Chinnaya Street, Thalayyari street and Thanjavur road.

Most public offices are located around the bus stand area. The major industries in the town include rice mills, which are dispersed in large numbers along the Thanjavur road, Aranthangi road, Sethubhavachatram road and weekly shandy area.

2.3.2 Literacy Rate and sex ratio

Exhibit 2.3 provides details of the male and female population of the town along with details of Literates.

Exhibit 2.3 Literacy and sex ratio

Particular	Male	Female	Total	Sex Ratio
Population	32718	32815	65533	**1003**
Literates	25850	22040	47890	
Literacy % - Pattukottai	90.03%	75.98%	82.97%	
Literacy % - State - Urban	**88.97%**	**75.99%**	**82.53**	**982**

Source: http://www.census.tn.nic.in

As seen, literacy rates in the town are in line with the overall urban literacy scenario in Tamil Nadu. The sex ratio for Pat-M at 1003 is also higher than the state average of 982 (as per Census 2001)

2.4 Population projections

Population projection for Pattukottai town has been made using the following methods:

a) Arithmetical Increase Method
b) Geometric Increase Method
c) Incremental Increase Method

Exhibit 2.4 provides the summary of the population projections made for the town. Detailed projections are given in annexure IV.

Exhibit 2.4 Population Projections

Year	Arithmetic	Geometrical	Incremental	Average
2001	65533	65533	65533	65533
2011	75735	81672	73957	77121
2016	80836	91176	77503	83172
2021	85937	101786	80605	89442
2026	91037	113630	83262	95976
2031	96138	126853	85474	102822

As seen, the population of Pattukottai town could potential go up to more than 100,000 in the next two decades. This growth needs to be factored in planning for urban services. The next two sections detail aspects of the economic development of the town and the status and the gaps in urban service delivery respectively.

PATTUKKOTTAI MUNICIPALITY

3. Economic profile and land use

3.1 Economic development

3.1.1 Primary Sector - Agriculture and Mining

Commercially exploitable mineral resources are not found in the town. The town has a significant area under agricultural land use. Irrigated farming is the predominent farming type, dryland-farming being miniscule in proportion. Canals, wells, filter points and tanks form the sources of irrigation, canal forming the major source. The land on either side of the CMP canal that passes through the town is fertile. Paddy Oilseeds Chilly and Maize are the predominant crops grown within the town area. Paddy is one of the prominent crops grown in the region and a number of small rice mills are located in Pattukkottai on Thanjavur road. The town also serves as the commercial center for trade in agricultural produce harvested form the neighbouring villages. Products grown in the adjoining region and traded in Pattukkottai are shown in the table below.

Exhibit 3.1 List of categorised agricultural produce in Pattukottai town

Category	Produce
Cereals	Rice, cumbu, maize, ragi and varagu
Pulses	Black gram, green gram and red gram
Oil seeds	Groundnut, Coconut, Gingelly and soy bean
Fibres	Cotton
Sugars	Sugarcane
Condiments	Chilies and turmeric
Drugs	Betel vine
Other crops	Banana, Casuarina, bamboo and karuvelan

Apart from the cereals and horticulture crops, Pattukkottai is well known for production of coconuts. Pattukkottai is one of the major centers of coconut production in the country and a Coconut research station is located in Veppakulam, 8 kilometers from Pattukottai. The town has a downstream coconut based industry, which comprises of a number of units manufacturing products based on coconut coir. The Tamil Nadu Coir Manufacturers Association and Thanjavur Coir Manufacturers associations are also located in Pattukkottai.

3.1.2 Secondary Sector – Manufacturing Base

The town does not have a significant industrial activity either within or in its adjacent region. The predominant industrial activity in the town relates to manufacture of coir products and related machinery. There are manufacturing 37 units in the town, classified as industrial units. These are mainly medium scale industries manufacturing coir products and related machinery, rice mills and small automobile workshops. The limited industrial activity in the town is also reflected in the land allocated for industrial usage (15.65% of the developed area of the total town) in the city's approved master plan.

3.1.3 Tertiary sector- Commercial Services

Pattukkottai serves as an important commercial centre for its adjoining villages. Agriculture being the main activity in the region surrounding Pattukkottai, commercial activities linked to crop production, harvesting and sale of agriculture produce are the major trading activities. Pattukottai also serves as the market for trading harvested agricultural produce. One daily and one weekly market support these activities. The town also serves as the nodal point to surrounding villages for professional services like medical facilities, banks and educational institutions.

The town is not an important tourist destination as there are no significant tourism resources in the town. The sole tourist destination of the town would be the old fort, which can serve as a tourist spot but has not been developed as one. Apart from the heritage site there are a couple of shrines in the town that attract infrequent religious tourists.

Although Pattukkottai does not have any significant tourists visiting the town, it does serve as a transit point for tourists visiting Manora Tower and the seacoast, which is barely 9 kilometers from the town. Some of the major tourist attractions in and around the town include:

- Manora Tower – 13 kilometers
- Shrine of Sheik Alauddin Sahib located at Adirampattinam
- Goddess Nadiamman Temple in Pattukkottai
- Shrine of Venkidu Subbaiah Swamigal in Pattukkottai

Pattukkottai can serve as transit centre for tourists visiting these sites. However tourist arrivals have been low and it is not a major economic activity in the town. The scope for development of tourism in the town is limited, as the region does not have significant tourist spots to fall into popular tourist circuits. Religious spots in the town do attract outside population, but that tourist inflow is not significant.

3.2 Occupational pattern

As per census data of year 2001 on occupational pattern of the town's population, the primary sector employs only about 3910 persons, which is 17% of the total workers population in the town. Industries employ about 850 workers, which is 4% of the total worker population. The largest segment in terms of employment is the "Services and trading" sector, contributing almost 80% of the total employment in the town.

Exhibit 3.2 Occupational distribution in Pattukottai town (2001)

Sector	Employment	Percentage (%)
Primary Sector	3910	17.04
Secondary	849	3.70
Tertiary	18188	79.26
Total	22947	100

3.3 Land use and Growth management

The Local Planning Area consists of Pattukkottai town and the following revenue villages

- Maharajasamudram
- Pattukkottai
- Rajgojiappa Thottam
- Pappaveli Palayakottai
- Kalisanathapuramc
- Nadiyambalpuram.

Master plan for the Local Planing Area was prepared in 1984 and revised in 1995. The administrative area of Pattukkottai town extends over 2183 hectares. The approved land use pattern for Pattukkottai, as per the approved master plan, is given below.

Exhibit 3.3 Land Use Distribution (1991)

Land Use	Area in ha	% of developed area	% of total area
Residential	184.28	56.60	8.4
Commercial	13.7	4.21	0.6
Industrial	15.65	4.81	0.7
Educational	22.5	6.91	1.0
Public & Semi public	21.64	6.65	1.0
Transportation / Roads	67.79	20.82	3.1
Total Developed Area	**326**	**100.00**	**14.9**
Agricultural Dry.	1337.44		61.3
Agricultural Wet	237.64		1. 10.9
Water Bodies	282.33		12.9
Total area	**2183**		**100.0**

Pattukottai is predominantly a residential town as can be seen from the land distribution pattern for the town which shows that residential use occupies the maximum area. Besides residential, public buildings and educational institutions together occupy the second largest area in the town. Commercial and industrial land use is very less. Agricultural land occupies almost three fourths of the total area of the town, suggesting a predominantly rural setting of the surroundings of the town. This further adds to the role of the town to serve as an urban centre to serve the commercial and educational needs of surrounding villages.

4. Rapid Urban Assessment – services, issues and gaps

This section provides details of the current status and summarizes the key issues:

4.1 Water Supply

4.1.1 Current requirement

As per municipal norms of 90 litres per capita per day (LPCD), Pattukottai Municipality's water supply demand was 5.9 MLD in 2001. (based on Census 2001 population).

4.1.2 Sources of supply and storage infrastructure

The town has a protected water supply scheme, which was implemented in the year 1971. Water to the town is provided through sub surface water supply system. The town draws its water supply from ground water sources located at various points of the town as shown in the table below in Exhibit 4.1. The total water supplied from the bore wells is 7.96 MLD from 19 borewells from town.

Exhibit 4.1 Water supply - sources of supply and storage

Sl. No.	Location of Bore well	No. of Bore well	Service Reservoir Fed by the Bore Wells	Location of SR
1	Santhankadu	5Nos	3.64 lakh Lits.	Santhankadu
2	Vandipetai	2Nos.	10.00 Lakh Lits.	Vandipetai
3	Thangavel Nagar			
4	Gandhi Nagar	5Nos	10.00 Lakh Lits	Karikkadu
5	Nadiammbalpuram School			
6	Near Highways T.B.			
7	Dhairyampillai Street			
8	Bharathi Salai			
9	Mannai Nagar	1No	15.00 Lakh Lits.	Near Pattukkottai Municipal office
10	Santhankadu,	1 No		
11	Sandaipettai	2 No		
12	Aranthangi road	1 No		
13	Maharajasamudram river	2 No		

4.1.3 Storage and distribution

Exhibit 4.2 provides details of storage and distribution infrastructure in Pat-M.

Exhibit 4.2 Water Supply - Storage tanks and capacities

Distribution and storage system	Unit	Particular
Length of distribution line	Km	85.5
Length of pumping main	Km	8.3
Overhead Storage tanks (OHT')	No (Total capacity in ML)	6 (3.984)
Source: Primary data from municipality		

4.1.4 Issues and gaps

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

Exhibit 4.3 Water Supply – Gap analysis

Indicator	Unit	Norm	Existing	Gap
Per Capita Water Supply	LPCD	90	~110	-
Storage and Distribution				
Storage - % of Current Demand	%	50%	61%	-
Distribution Network - % of Road Network	%	80%	100%	-
Connections / Properties	%	70%	33%	(38%)
Demand - Supply Gap				
Water Demand - Current	MLD		6.5	
Water Demand – 2026 (at 120 LPCD)	MLD		8.65	
Water Supply – Current	MLD		7.96	
Demand Supply Gap – Current	MLD			-
Demand Supply Gap – 2026	MLD			~ (0.69)

Source: Inputs from Pat-M and IMaCS analysis

1. **Access –** Inspite of reliance on bore-well supply, Pat-M is currently well placed in terms of meeting the municipal norm of 90 LPCD. Water supply frequency at 2 hours per day is also in line with norms. However, the sustainability of supply needs examination.
2. **Storage infrastructure** appears to be adequate to meet future needs.
3. **Water connections** account for only 33% of assessed properties reflecting a relatively low penetration. From discussions with the municipal corporation it emerged that there are about 500 unauthorized standpipes across the town. These unauthorized standpipes are able to meet the daily requirement of the uncovered populations and therefore there is not demand for water distribution systems from the uncovered residents.

4.2 Sewerage and Sanitation

At present there is no under ground sewerage system available except open drainage for a length of 32 Km. In general the public are utilizing pit type latrines. The roadside drains are used for carrying both the sullage and rainwater. The main mode of individual disposal in the town is through septic tanks, Low Cost Sanitation units and public conveniences. 80% percent of the total population have resorted to private arrangements, in the form of septic tanks and low cost sanitation units. There are seven public conveniences throughout the town, which serves 20% of the population.

The surplus from septic tanks and sullage water are indiscriminately let into Cauvery Mettur Project Canal, thereby causing pollution. The sewage and sullage water from the open drain in the municipal area is also polluting the canals and thereby affecting the environmental status of the town.

4.2.1 UGD network

A new Underground Drainage scheme has been proposed for Pat-M at an outlay of Rs. 25.87 crore and envisages providing more than 12000 connections. The salient features of the proposed UGD scheme is given in Exhibit 4.3 below:

Exhibit 4.4 Salient features of proposed UGD system

Particulars	Details
Implementing Agency	**TWAD**
O & M Agency	**Pattukottai Municipality**
Estimated Cost-	**Rs. 25.87 crore**
Total Connections planned	**12225**
Ultimate population served (2038)	**103200**
Length of Sewer system	**~ 62 km**
STP capacity / process	**100 LPCD**
STP Location	**Pannaivayal village**

Source: Extract of DPR (prepared by TWAD) provided by Pat-M

4.2.2 Public conveniences (PC)

Exhibit 4.4 provides details of PCs within Pattukottai municipality.

Exhibit 4.5 Public Conveniences

Public Conveniences	Unit	Pay & Use
a. No. of Units	Nos.	7
b. Total No. of Seats	Nos.	62

4.2.3 Storm water drains

Storm water drains carry the wastewater in addition to storm water generated during rains. With a total length of 32 km, the open drainage system covers partial road network of the town. As per the municipality, records, there are no kutcha drains; however there are no covered drains in the town.

4.2.4 Issues and gaps

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

1. **Poor access of household sanitation** –The UGD scheme needs to be implemented on priority
2. **Need for better maintenance of Public conveniences** - Given the high slum population, there is a need for a greater thrust on providing adequate public conveniences and on their upkeep and maintenance.
3. **Poor coverage, inadequacies in design in Storm water drains** – Storm drain length translates to only 37% of the road length indicating a significant portion of uncovered areas.

4.3 Solid Waste Management (SWM)

Exhibit 4.5 summarizes the status of SWM in Pattukottai.

4.3.1 Waste Generation

Pattukottai town generates around 21 MT of waste every day at a rate of 290 grams per capita per day. Other than residential sources, commercial and institutional establishments contribute nearly 20% to the total waste generated by the town. Managed by the health department of the local body, waste is collected by 59 vehicles from 15 collection points of the town on a regular basis. On an average 30 MT of waste is being collected from all the health zones and disposed off through dumping by the agency with a collection efficiency of 100%.

4.3.2 Collection and transportation

Pat-M is responsible for collection of solid waste in 22 wards. Collection has been privatized in 11 wards(4,13,14,15,17, 18,19,20,21,22&24). Involvement of Self-Help Groups in primary collection has also been proposed in the Solid Waste Management Action Plan of the town. Door-to-door collection has been implemented and conservancy staff use pushcarts for primary collection. The mini trucks and lorry are used for removal of waste from collection points to the dumping yard.

The collection system available with the municipality comprises of open masonry bins where the waste is collected by the municipal staff and thereafter disposed in the disposal yard. Waste is also transported in open vehicles. The vehicular fleet available with the municipality for disposal of solid waste includes lorry, mini trucks and tractor-trailers.

Exhibit 4.6 Solid Waste Management - Current status

Particulars	Units	Values
Generation		
Daily Waste Generation	MT	21
Daily Waste Collection	MT	21
Waste generation per capita	gms	290
Collection efficiency	%	100
Transfer Stations / Compost Yard / Dumping Yard		
Disposal Yard / Composting	6.81 acres Vermi-composting being implemented	
Collection / Transfer		
Wards with door-to-door collection	All Wards	
Privatisation of collection	11 wards	
	Pat-M	**Private**
Number of Wards	22	11
Population (2004)	45495	
Daily Collection (MT)	16	14
Primary Collection		
Door-to-Door collection	Implemented	Implemented
Tricycles in use	33	10
Secondary Collection		

Particulars	Units	Values
Lorry	1	
Mini lorry	2	
Truck and tipper	1	3

4.3.3 Dumping Yard / Composting

At present, waste is disposed off through dumping in a disposal yard outside the town. The disposal yard is situated at a distance of about 5 km from the town and is spread over an area of 6.81 acres. As per the Solid waste management action plan of the municipality, 11.85 acres are required, indicating a shortfall of 5.04 acres. Pat-M has initiated steps to acquire an additional 3.25 acres of land near the existing compost yard.

4.3.4 Issues and Gaps

Specific issues in Solid waste management at Pat-M are highlighted below:

1. **Collection and Equipment –** Pat-M has initiated steps to convert an existing public health lorry into an hydraulic tipper at the cost of Rs. 2 lakh. Tricycles have also been procured and there are plans to buy dumper bins for each ward and 2 dumper place lorries.
2. **Disposal –** The shortage of land for disposal has to be addressed. Compost yard project needs to be expedited.

4.4 Roads, Bus stands and street lights

4.4.1 Road length and type

As per the latest master plan, roads cover 21% of the total developed area in Pattukottai with total road length of 68 km. About 97% of the total road length is surfaced. The total length does not include the length of unauthorized layouts, which have developed in the outer areas of the town. Detail of roads inside the town is shown in exhibit 3.12 below.

Exhibit 4.7 Road network

Type	Length in km
Municipal Roads	
C.C. road	9.531 km
B.T. road	63.307 km
WBM road	1.8130 km
Un surfaced	0.118 km
Total	**74.769 km**
Roads maintained by other agencies	
National Highways	
State Highways	11 km
Other Roads	
Total	**10 km**
Total Length of Road	**85.769 km**

The major road network, which links the town to other surrounding towns, are listed in Exhibit below.

Exhibit 4.8 Important roads

SN	Name of the road	Classification
1	Orathandu – Thanjavur	State Highway 28
2	Vadaseri – Mannargudi Road	Major District Road
3	Madukkur – Mannargudi Road	Major District Road
4	Muthupettai Road	Major District Road
5	Adirampattinam Road	Major District Road
6	Sethubhavachatram Peravurani Road	Major District Road
7	Aranthangi Road	State Highway 28

A major problem of the road network within the town is the raised level of the drains with reference to the surface level of the carriageway. The level of drains varies from one part of the road to the other along the same road. Encroachments on the roads are also a common problem faced in the town. On the Aranthangi road, there is a problem of accumulation of mud on both sides of the roads, which can be attributed to silt overflow from drains. This results in improper drainage and flooding.

Aranthangi road carries the major portion of the traffic from Pattukottai. The other major roads include Thanjavur road, Aranthangi Road and Madukkur Road. Bus traffic was higher on Aranthangi and Thanjavur roads compared to Mudukkur road. Animal drawn vehicles are prevalent on all the roads. The clock tower forms the main centre of the town from which big street, Palaniappa road, Thalayari Street and Chinnaya road emanate as branches. All the four arms are one way for buses and heavy vehicles. Palaniyappa road has important institutions and commercial activities. These include bus stands, general hospital and Government offices. Bazaar road accommodates most of the marketing activities in the town.

Aranthangi Road intersection is the gateway of the town to the south and southwest directions. Fotpaths are either not provided or have been encroached. Vadaseri road intersection is the entry and exit point for traffic in the northern region. Vadaseri road intersection also has four roads intersecting, which have a preponderance of commercial activities, which has a spill over effect. All the four streets – Sowkandi Street, Pillayar Koil Street, Vadaseri Road and Theradi Street that intersect at this intersection have dense commercial development. The mini bungalow t-junction is the entry / exit point from traffic from the eastern direction.

4.4.2 Bus terminus

There is one B grade bus stand (as per state government standards) with cloakroom, waiting rooms, toilets, Cycle Stand, Shopping Complex and Lodging facilities. There are few shops to meet the requirements of the passengers. There are 18 bus shelters distributed throughout the town.

4.4.3 Street Lights

The town has a total of 2869 streetlights of which 85% is tube lights as shown in exhibit 4.7. The town has a spacing of 29.5 meters between lampposts, which compares favourably with the prevailing norms being adopted in the state.

Exhibit 4.7 Street Lighting

Type	Nos	%
Tube lights	2423	84%
Sodium Vapor Lamps	443	15%
Mercury Vapor Lamps		0%
High Mast lamps	3	0%
Focus Lamps		
Total	2869	**100%**
Average distance between street lights		**~ 29.5 m**

4.4.4 Issues and gaps

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

1. **Poor quality of roads -** Inadequate road widths to cater to future traffic in the town in light of its proposed developments. Quality of road is not good in and around trading/ commercial markets in the inner areas of the town. Approximately, 50% of the roads are in bad condition.
2. **Lack of organised parking facilities -** Currently there are no dedicated parking areas for general vehicles/ trucks in the important nodes of the town. Absence of traffic management measures in the town at nodal points. Encroachments along the major roads lead to congestion
3. **Bus terminus -** Inadequate commercial facilities at bus stand to cater to increased traffic movement in the town.
4. **Need for planning restoration post UGD scheme -** With the plans to create an UGD scheme in the city, the entire road network in the town would need to be restored. So it may be appropriate to take up any large scale upgradation of the road network keeping this in consideration.
5. **Energy efficiency in street lighting –** There appears to be scope for increasing street light coverage (one street light for every 34 m against 30m) and also to accord priority to improve energy efficiency and to reduce power costs incurred on street lighting.

4.5 Urban Services for poor

4.5.1 Slum details

A recent survey by Pattukottai municipality indicates that there are 19 slums in Pat-M with over 5132 households and a population of 25695. Pattukottai has a substantial slum population (estimated at approximately 35 % of estimated 2007 population). Therefore, provision of urban services to poor is an area of significant importance to Pat-M.

4.5.2 Initiatives planned as part of IHSDP

Pat-M proposes to take up 5 slums (covering 2142 households) covering both housing component and infrastructure component under the Integrated Housing and Slum Development Program (IHSDP). This project is envisaged to be financed with 80% contribution from Government of India and 20% contribution from GoTN. Exhibit 4.9 provides the details of the proposed scheme.

Exhibit 4.9 IHSDP scheme at Pat-M – components

Particulars	Details
Total Project cost	**Rs. 2197 lakh**
Housing component	**Rs. 1717 lakh**
Total no. of houses	**2410**
No. of shelters to be constructed	**2146**
Other Infrastructure cost	**Rs. 480 lakh**

Source; IHSDP DPR extract Pat-M

4.6 Markets and other assets

4.6.1 Markets

There is one Daily market in the town, which functions in the mornings and evenings. This daily market is located on the Bazaar road. Bazaar road virtually functions as a market. A private person owns the market, which has 427-shopsA weekly shandy, operates on Mondays. There are various issues related to the markets in the town. Few of these issues are

- Lack of infrastructure facilities like proper parking roads and pavements leading to traffic congestion and public inconvenience.
- Lack of pedestrian facilities that lead to congestion on an already encroached road.

4.6.2 Slaughter house

At present there is no slaughter house in Pat-M. A new slaughter house is being envisaged under the scheme announced by Government of Tamil Nadu last year.

4.6.3 Crematorium and burial facilities

There are 7 large municipal burial / cremation grounds in the town which include:

- Sethubavachatram road
- Sembirankulam
- Uthandikulam
- Adirampattinam road
- Pappavelipalayakottai
- Thattankulam
- Vettikadu maharaja samuthiram

Damaged burning sheds and approach roads need improvements in these burial grounds. Water supply and lighting arrangements need to be provided to these grounds. A Gasifier crematorium has been proposed and DPR for the same is under preparation.

4.7 Social infrastructure

4.7.1 Schools

Pattukottai serves as a hub for education for surrounding region and thus there are number of institutions both private and public in the town catering to the needs at all levels. The town has a number of educational institutions to meet the education requirement of all levels. There are elementary schools, middle schools and high school for girls and higher secondary schools.

Exhibit 4.10 Details of Educational institutions in Pattukottai town

Nature of Educational Institution	Municipal	Private	TOTAL
Primary Schools	2	5	7
Middle Schools	7	0	7
Higher Secondary School for Girls		1	1
Higher Secondary Schools		2	2
Total	9	8	17
Source: Primary data from Mly			

Besides these institutions, there are 9 noon meal centers in the town. The town does not have any institution for higher education. There is one private polytechnic that is situated on the outskirts of the town that offers technical and vocational education. A State Government owned Rural Extension Training Centre, located at Muthupettai Road offers academic and field training in agriculture and handicrafts.

All the primary schools are located throughout the town, covering all the remote areas. Higher secondary schools are located in the densely populated parts of the town, whereas the colleges are located both in the central and outskirts of the town.

4.7.2 Hospitals and medical facilities

Being the nodal centre to cater to the specialist medical needs of the surrounding villages, Pattukkottai has one Government Taluk Headquarter Hospital and two Municipal Child and Maternity Centers. Besides these there are 15 private nursing homes in the town that provide specialist medical help. as shown in exhibit 4.10 below.

Exhibit 4.11 Details of Health care institutions in Pattukottai town

Hospital	Numbers
General Hospital	1
Maternity Centers	2
Private Clinics / Nursing homes	15

Supplementing govt. health care facilities, town has a healthy mix of private health care facilities, private nursing homes with consulting and dispensary to cover the needs of the people of the town. As per benchmark, there is one health center every 1.2 sq. km of the town.

4.7.3 Parks and recreational facilities

Besides providing basic amenities and utilities to its citizens, municipal bodies are also responsible for providing recreational facilities. Recreational facilities include parks, playgrounds, open spaces and cinema theaters. By norms, open spaces including parks and playgrounds should constitute about 7% of the town area. There are a total of 5 parks and playgrounds in the town. This includes,

- Gandhi Park
- NGGO Nagar Park,
- Lakshathope Housing Unit Park
- VOC Nagar Park
- Karikadu Nagar

The command area per park is 4.37 square kilometers. Besides parks there are a number of water bodies in the town as detailed in the table below.

Exhibit 4.12 Water bodies in Pat-M

Name of the water body	Area (Ha)	Owned by
Kasankulam	2.05	Municipal
A.V. Kulam	3.2	Municipal
Kottaikulam	2.5	Private
Sembirankulam	3.4	G. Promboke
Uthandikulam	1.4	G. Promboke
Thattankulam	2.0	G. Promboke
Nadiamman Ari	10.2	PWD
Nettodai Ari	6.7	PWD
Pottaikulam	6.6	PWD
Sembodaikulam	3.2	PWD
Muthalikulam	6.9	PWD
Perumalkoil Kulam	4.3	Koil
Ayyanarkulam	0.8	G. Promboke
Sethukulam	0.25	G. Promboke
Karppatiyankulam	0.73	G. Promboke

4.8 Summary - performance vis-à-vis select indicators

Exhibit 4.13 below captures the status of core urban services of Pattukottai Municipality in terms of key indicators and summarises key issues and gaps in these areas. The table summarizes the baseline situation in some critical performance indicators from the analysis presented above and highlights the critical gaps in the core urban services namely, Water Supply, Sanitation, Roads, Street lighting and Solid waste Management.

Exhibit 4.13 Core urban services - Baseline performance, issues and gaps

Sl. No	Name of the Indicator	Value	Issues and Gaps / Initiatives
Water Supply			
1	Daily Per Capita Supply (LPCD)	~ 100	• Water supply level more than municipal norms of 90 LPCD, but only bore-well supply is a cause for concern. • Water connections are only 31 % of property tax assessments and indicate scope for improvement •
2	Storage Capacity / Daily Supply (%)	~ 61 %	
3	Distribution Network / Road Length (%)	~ 114%	
4	Water connections / Assessed properties (%)	~ 31%	
5	Population per Public Fountain (Nos.)	171	
Sanitation			
6	Presence of UGD network (Yes / No)	Planned	• Planned UGD scheme critical for improving sanitation needs of town • Large number of water bodies in town. Several in poor condition and need restoration. • Storm water drain and public convenience coverage needs improvement.
7	Septic Tanks / assessed properties (%)	80%	
8	Slum Population per Public convenience seat (nos.)	414	
9	Storm Drain Length / road network (%)	43%	
Roads and Street Lights			
10	BT roads / Total (%)	97%	• Comprehensive road upgradation would be required on completion of UGD scheme
11	Road length per Street Light (m)	29	
Solid Waste Management			
11	Waste generation per capital (gms)	414	• Vermi composting being implemented • Proposed actions for equipment purchase need to be taken up on priority • Need for additional land in the long term.
12	Collection efficiency (% of waste generated)	100%	
14	Disposal area gap (in meeting 1 acre per 10,000 population for 2020)	2 acres	

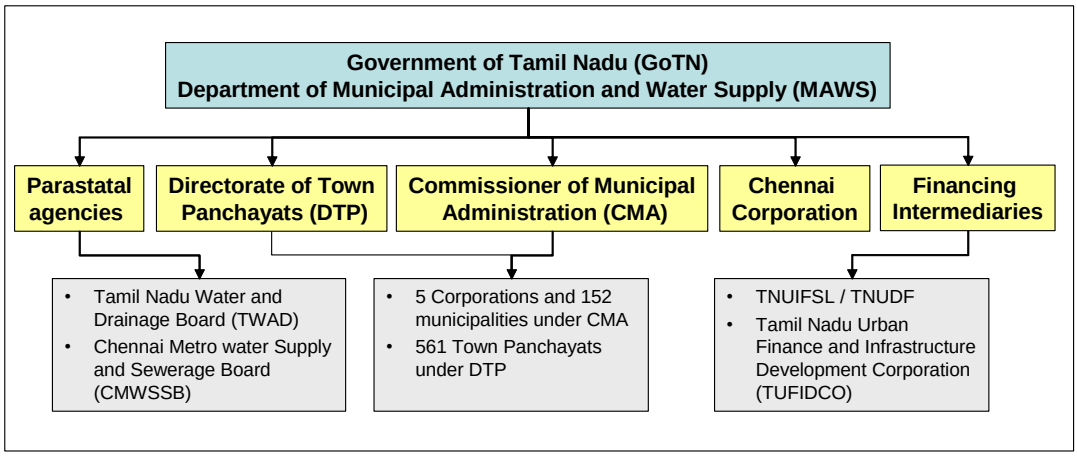
5. Urban governance and management

5.1 Policy oversight and institutional framework – State level

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

The Urban sector in Tamil Nadu comes under the oversight of the Department of Municipal Administration and Water Supply, Government of Tamil Nadu (MAWS). The institutional structure for the urban sector is presented in Exhibit 2.3 below:

Exhibit 5.1 Urban sector - Institutional framework - State Level



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

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

5.1.1 Municipal Administration

At present, there are 6 Corporations, 152 municipalities and about 561 Town Panchayats (smaller ULBs) that comprise the urban sector in Tamil Nadu. The institutional framework for municipal administration is described below:

- **Corporations and Municipalities** - There are 6 Municipal Corporations, namely, Chennai, Madurai, Coimbatore, Tiruchirappalli, Salem and Tirunelveli. Five Corporations (except Chennai) and 152 Municipalities including 49 Third Grade Municipalities are under the oversight of the Commissioner of Municipal Administration. Recently GoTN has announced upgradation of Erode and Tiruppur municipalities as Corporations.
- **Town Panchayats** - The Town Panchayats are governed by the Tamil Nadu District Municipalities Act, 1920. 1920. There are 561 Town Panchayats in the State. Towns have become drivers of economic growth and offer opportunities for social and economic development of people. The population of the Town Panchayats is 76,46,386, which accounts for 12% of the total population of the State as per Census 2001. Town Panchayats have become service centres drawing huge floating population from adjoining rural areas. The Directorate of Town Panchayats was created in1981, to look after the affairs of the Town Panchayats. The Director of Town Panchayats is the Head of the Department and looks after the affairs of 561 Town Panchayats. The District Collector is the controlling authority for the Town Panchayats at the District level. Under the Directorate, the Department has 16 Zonal offices, headed by Assistant Directors of Town Panchayats.

5.1.2 Parastatal agencies

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

5.1.3 Financial Intermediaries

- **TNUIFSL / TNUDF** - The Government of Tamil Nadu established the Tamil Nadu Urban Development Fund (TNUDF) on a 'Public-Private Partnership' mode, with the participation of ICICI, Housing Development Finance Corporation (HDFC) and Infrastructure Leasing & Financial Services (IL&FS). The Fund is managed by Tamil Nadu Urban Infrastructure Financial Services Limited. TNUDF provides various services including project advisory, financial advisory and consultancy services to various ULBs through its fund manager, viz. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).
- **TUFIDCO** - TUFIDCO, a State owned Organization, was incorporated to extend financial assistance to urban infrastructure schemes in Tamil Nadu. The State Government have also appointed TUFIDCO as a State level nodal agency for the following centrally sponsored schemes including Jawaharlal Nehru Urban Renewal Mission (JNNURM) and Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)

5.2 Governance structure of Pattukottai municipality

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

5.2.1 Political wing

The municipal council with a directly elected chairman and 32 other elected councilors, each representing a ward, forms the political wing of the municipality. Three committees viz., appointment committee, contract committee, tax appeal committee have been formed consisting of elected representatives and commissioner as members.

Appointment Committee

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

Contract Committee

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

Tax Appeal Committee

This committee addresses appeals filed by the public against orders on revision of taxes. The committee consists of five members comprising of the chairman and four councilors.

5.2.2 Administrative Wing

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

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

- All executive functions with the Administrative Head (Commissioner)
- Establishment matters such as appointment, transfers, Pay and allowances, etc., correspondence with Government and other departments,
- Public relations, redressal of public grievances, Legal matters etc.
- Sanctioning of estimates and approval of contracts, payments, etc.

5.2.3 Departments of municipality

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

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

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

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

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

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

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

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

5.3 Manpower position

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

Exhibit 5.2 Manpower status (as of October 2007)

Section / Post			Sanctioned	Staff in position	Vacant
A	**General Administration**				
	1	Commissioner	1	1	-
	2	Manager	1	1	-
	3	Junior Assistant	10	8	2
	4	Typist	1	1	-
	5	Record clerk	1	1	-
	6	Office Assistant	4	2	2
	7	Asst. Programmer	1	1	-
	8	Data Entry Operator	1		1
B	**Accounts Department**				
	1	Accountant	1		1
C	**Revenue Section**				-
	1	Revenue Inspectors/Market Superintendents	1	1	-
	2	Bill Collectors	10	9	1
D	**Engineering Wing**				-
	1	Municipal Engineer (E.E.)	1	1	-
	2	Junior Engineer	1	1	-
	3	Work Inspector	1		1
E	**Street Lighting**				-
	1	Wireman	2	2	-
	2	Helper	4	4	-
F	**Water Supply**				-
	1	Electrician	1	1	-
	2	Fitters	1	1	-
	3	Turn Cock Operator	1	1	-
	4	Watchman	3	3	-
	5	Driver	1	1	-
	6	Cleaner	3	3	-
G	**Public Health**				-
	1	Sanitary Officer	1		1
	2	Sanitary Inspector	3	3	-
	3	Supervisor	6	5	1
	4	Conservancy staff	1	1	-
	5	Drain cleaners	1	1	-
	6	Drivers	6	6	-
H	**MEDICAL**				-

Section / Post			Sanctioned	Staff in position	Vacant
	1	Mat. Assistant	2	2	-
	2	Mat. Ayah	1	1	-
I	**SEWERAGE**				-
	1	Workers	120	115	5
J	**Town Planning**				-
	1	Town Planning Officer	1		1
	2	Town Planning Inspector	1		1
	3	Chainman	2	1	1
K	**Parks & Gardens**				-
	1	Watchman	1	1	-
	2	Gardener	1	1	-
	3	Gang mazdoor	2	2	-
L	**Other Staff**				-
	1	Community Organiser (NM)	20	20	-
	2	Community Ayah(NM)	20	18	2
	3	Cook	20	18	2
	4	Assistant	1	1	-
TOTAL			**261**	**239**	

As seen from the table, vacancy rate is currently about 9 % vis-à-vis the sanctioned posts. Important vacancies at the time of analysis included Town planning officer, Accountant and Sanitary officer, apart from a range of positions across departments. Pat-M seems to be placed alright with regard to its sanitary workforce with 115 out of 120 workers sanctioned.

5.4 Role of other agencies

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

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

financed partly through loans from the Housing and Development Corporation (HUDCO) and partly through grants from GoTN and GoI.

5.5 Reforms undertaken by Pattukottai municipality

5.5.1 Accrual accounting

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

5.5.2 E-Governance

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

5.5.3 Citizen's Charter

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

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

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

6. Analysis of financials

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

6.1 Income and Expenditure summary of Pattukottai Municipality

Exhibit 6.1 provides a summary of the income and expenditure of Pattukottai Municipality. This summary has been prepared based on information provided by Pattukottai Municipality including audited accounts of 2002-03, 2003-04, 2004-05 and unaudited accounts of 2005-06. Details of financials and DCB statements are enclosed in annexure V and VI.

Exhibit 6.1 Income and Expenditure

INCOME	2002-03	2003-04	2004-05	2005-06	CAGR %
OWN INCOME	***212***	***223***	***241***	***240***	4%
Property tax	90	97	103	109	6%
Profession tax	12	11	15	15	9%
Water & Sewerage Charges	50	47	44	43	-5%
Other Service Charges & Fees	15	14	18	21	12%
Other Income	45	54	60	52	5%
ASSIGNED REVENUE	***145***	***100***	***70***	***48***	-31%
DEVOLUTION FUND	***110***	***144***	***105***	***155***	12%
GRANTS & CONTRIBUTIONS	***2***	***21***	***10***	***1***	-12%
PRIOR PERIOD INCOME	***19***	***0***	***4***	***0***	-81%
TOTAL	**488**	**488**	**431**	**445**	-3%
EXPENDITURE	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**CAGR %**
Salaries	142	135	137	131	-3%
Operating Expenses	100	128	131	118	6%
Program Expenses	0	0	2	0	55%
Administrative Expenses	18	22	22	46	37%
Finance Expenses	34	61	30	2	-60%
Depreciation	111	141	122	0	-100%
Prior Period Expenses	0	1	1	14	
TOTAL	**294**	**348**	**322**	**311**	1%
SURPLUS-(Excl.Depr)	**194**	**139**	**108**	**133**	-9%
Operational Ratio (TE/TI)	**02-03'**	**03-04'**	**04-05'**	**05-06'**	Average
Excluding depreciation	60%	71%	75%	70%	**69%**
Including depreciation	83%	100%	103%	70%	**89%**
Debt Servicing	All figures in Lacks				
Loan Interest	22.96	31.14	24.53	2.26	**80.89**
Loan Repayment	6.37	7.95	15.57	10.17	**40.06**
Percentage of Income	**6%**	**8%**	**9%**	**3%**	**7%**

Overall, income of Pat-M declined 3% during 2003-06, primarily due to a 17% decline in Assigned revenue and 1% decline in devolution income. Own income grew by 3% with professional tax growing by 6% annually during this period. Expenditure showed a marginal increase of 2% annually

during this period largely on account of a growth in operating expenditure at 7% CAGR Overall the municipality reported a growth in cash surplus during the period. Detailed financials and DCB statements are enclosed in Annexure V and VI.

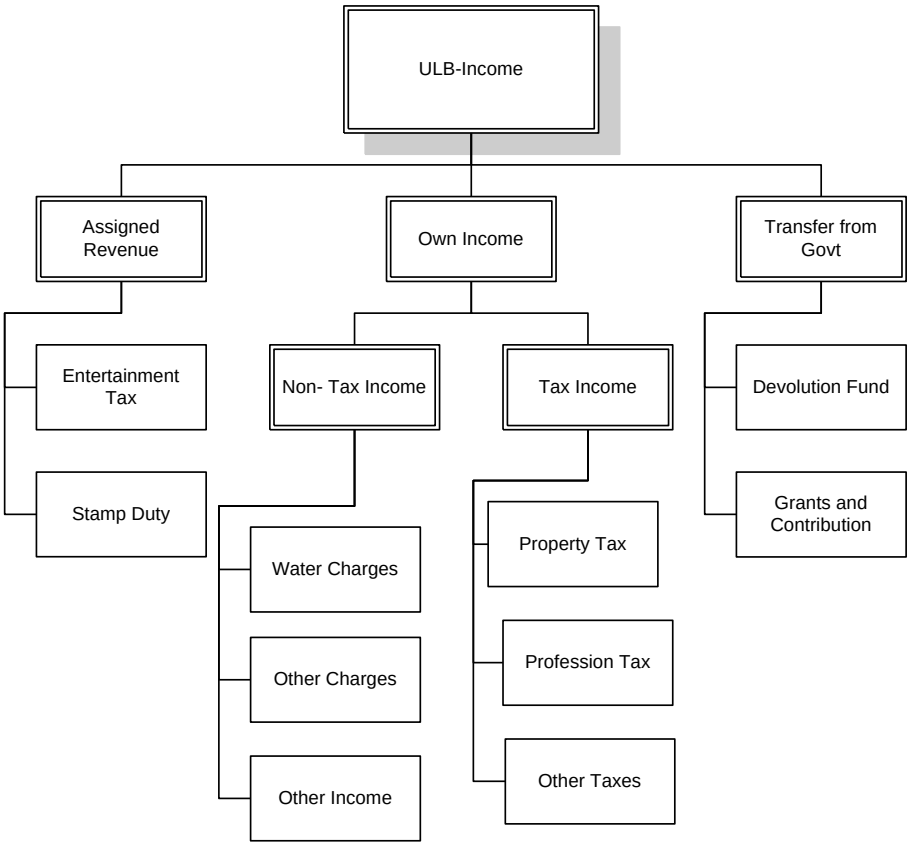
6.2 Revenue streams of ULB in Tamil Nadu

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

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

Exhibit 4.2 provides a detailed classification of the revenue streams.

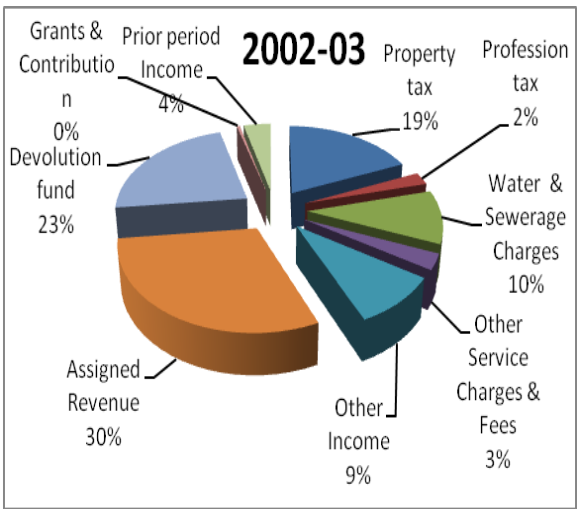
Exhibit 6.2 Revenue streams - ULBs in Tamil Nadu

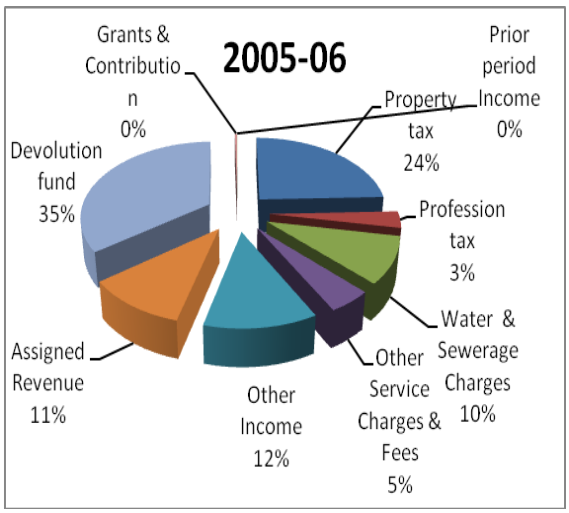


6.3 Revenues

Exhibit 6.1 also provides the composition of revenue of Pat-M along various heads between FY 2003 and FY 2006. While other income streams have largely maintained their contribution to total income, assigned revenue has falled sharply during this period from 30% of income to 16% of income.

6.3.1 Tax Income





6.3.2 Property Tax

Property tax alone accounted for almost a quarter of income of Pattukottai Municipality in FY 2005 and is an important contributor of revenues to Pattukottai Municipality. Following are the key issues / observations with respect to property tax.

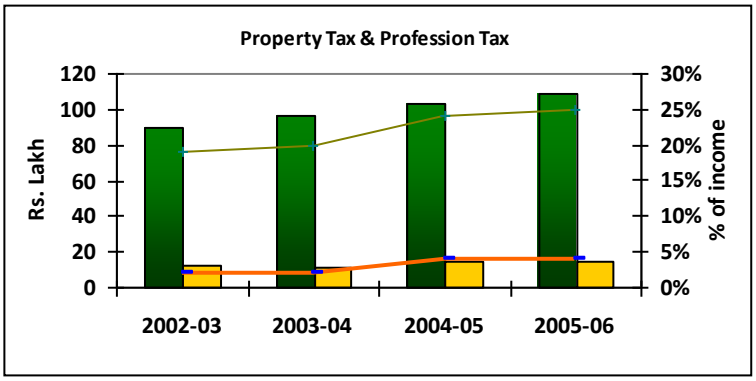


Exhibit 6.5 provides an analysis of the DCB statement for property tax.

Exhibit 6.3 Property tax - analysis of DCB statement

Year	Collection Efficiency			Properties		Growth Rate Of properties	Growth Rate of Current Demand
	Arrears	Current	Total	Numbers	Tax/property		
2002-03	34%	70%	55%	13976	697	NA	NA
2003-04	38%	68%	56%	15526	713	11%	14%
2004-05	36%	68%	54%	16434	675	6%	0%
2005-06	33%	69%	53%	16228	724	-1%	6%
2006-07	46%	78%	66%	17387	700	7%	4%

a) Collection efficiency – Current collection efficiency has been in the range of 680% to78% during 2003-07 and is relatively good. Pat-M should strive to bring the collection efficiency above 90% on a consistent basis. Arrears collection efficiency is hovering around the 71% range and needs improvement

b) **Assessments growth –** Assessments have shown a 6 % CAGR

c) **Growth in demand and demand per property -** Current demand has grown at a CAGR of 6% as well.

d) **Break-up of assessees –** Exhibit 6.4 shows the break-up of property tax assessees (This analysis is based on property tax data for 2006-07 from Pat-M). Residential assessments account for 83% of the assessments and 83 % of demand, while commercial properties account for 17 % of assessments and 17% of demand.

Exhibit 6.4 Property tax – break up of assessees and demand

Category	Assessments	%	Demand (Rs. Lakh)	%
Residential	14572	83.00	58.00	83.00
Commercial	2815	17.00	12.00	17.00
State Government				
Exempted Properties				
TOTAL	**17387**	**100**	**70.00**	**100**

Source: Pat-M

6.3.3 Professional Tax

Exhibit 6.5 provides an analysis of key drivers for professional tax revenue.

Exhibit 6.5 Professional Tax - revenue drivers

Year	Collection Efficiency			Assesses		Growth rate of Assesses	Growth Rate of Current Demand
	Arrears	Current	Total	Numbers	Tax demand/assessee		
2002-03	10%	73%	29%	1296	951	NA	NA
2003-04	32%	87%	73%	1396	1007	8%	14%
2004-05	5%	82%	30%	1424	1072	2%	9%
2005-06	5%	50%	24%	1526	1655	7%	65%
2006-07	5%	73%	32%	1742	1077	14%	-26%

Source: Pattu.Mply

a) **Collection efficiency** – Current collection efficiency has been in the range of 50% to 87% during 2003-07 and indicates scope for improvement. Arrears collection efficiency at 55 is very low and is a cause for concern

b) **Assessments and assessment growth –** Assessments have shown a 8 % CAGR during this period.

c) **Growth in demand and demand per property -** Current demand has grown at a CAGR of 15% and has grown faster than assessments. This is reflecting in the increase in demand per assessment.

d) **Break-up of assessees –** Exhibit 6.6 provides a break up of assessees. Government employees account for 12% of the assessments and nearly 84 % of the demand. Traders account for only 88 % of the assessments and 16% of the demand.

Exhibit 6.6 Professional tax – break up of assessees and demand

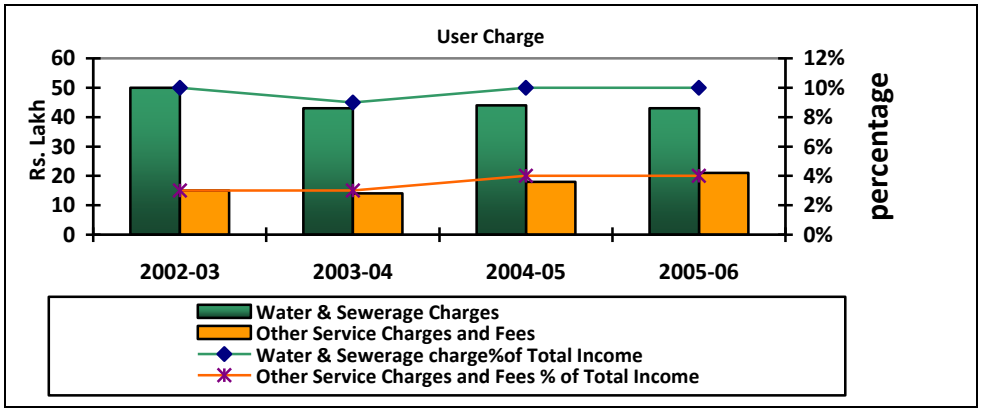
Category	Assessments	%	Demand (Rs. Lakh)	%
State/Central/Quasi Govt. Employees	1787	39	11.96	88
Traders	2829	61	3.32	22
Self-employed professionals				
Private employers / Companies				
Private employees				
TOTAL	**4616**	**100**	**15.28**	**100**

Source: Pattu .Mply

6.3.4 User Charges / Fees

Exhibit 6.7 captures the trend in water charges and other service fees

Exhibit 6.7 Water charges and other service charges – 2003-05



6.3.5 Water charges

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

Exhibit 6.8 Water charges - revenue drivers

Year	Collection Efficiency			Connections		Growth rate of Connections	Growth Rate of Current Demand
	Arrears	Current	Total	Numbers	water charges per assessee		
2002-03	48%	69%	61%	3926	618	NA	NA
2003-04	69%	72%	71%	4704	689	20%	34%
2004-05	47%	65%	58%	5349	673	14%	11%
2005-06	50%	92%	73%	5568	561	4%	-13%
2006-07	48%	72%	64%	5708	771	3%	41%

Source: Pat M.

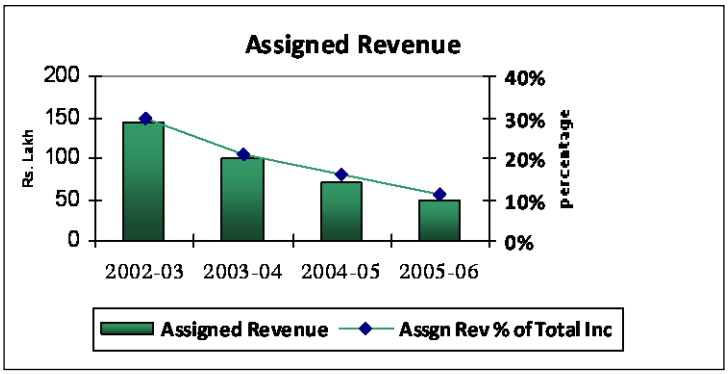
a) **Collection efficiency** – Current collection efficiency has been in the range of 65% to 92% during 2003-07. Pat-M should strive to bring the collection efficiency above 85% on a consistent basis. Arrears collection also needs improvement

b) **Assessments and assessment growth –** Assessments have grown at 10% but there is potential for more considering that connections contribute only 32% of property tax assessments.

c) **Water tariff -** The average revenue per connection has increased reflecting the increase in tariffs during the period.

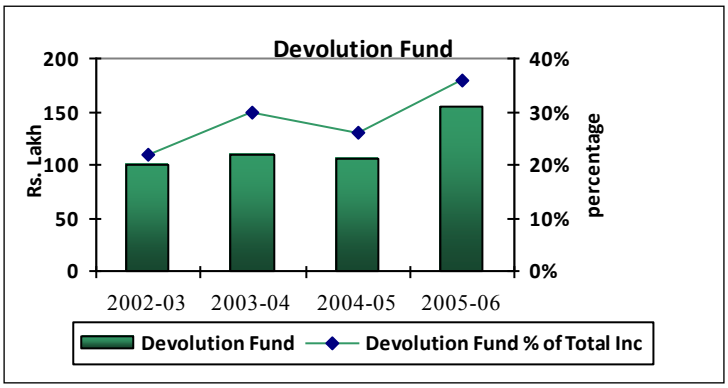
6.3.6 Assigned Revenue

Assigned Revenue (which includes transfers of stamp duty and entertainment tax) decreased from Rs 145 lakh in FY2003 to Rs 70 lakh in FY2005. Share of assigned revenue in total income declined from 30 % of revenue in FY 2003 to 16 % of revenue in FY 2005.



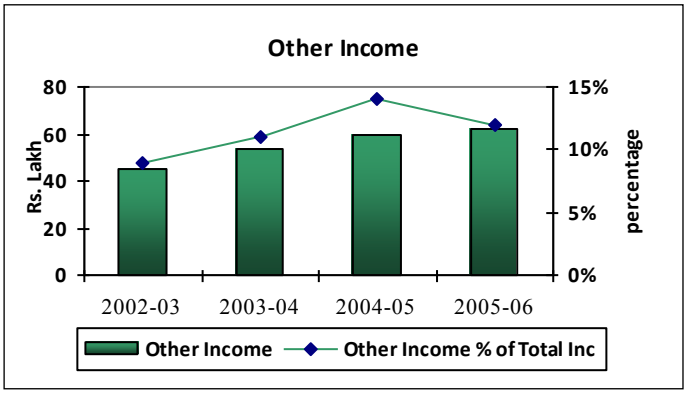
6.3.7 Devolution Fund

Devolution fund has decreased from Rs 110 lakh in FY2003 to Rs 155 lakh in FY2006 though its share in total revenue of the municipality has increased from 22% to 24 % in respective years.



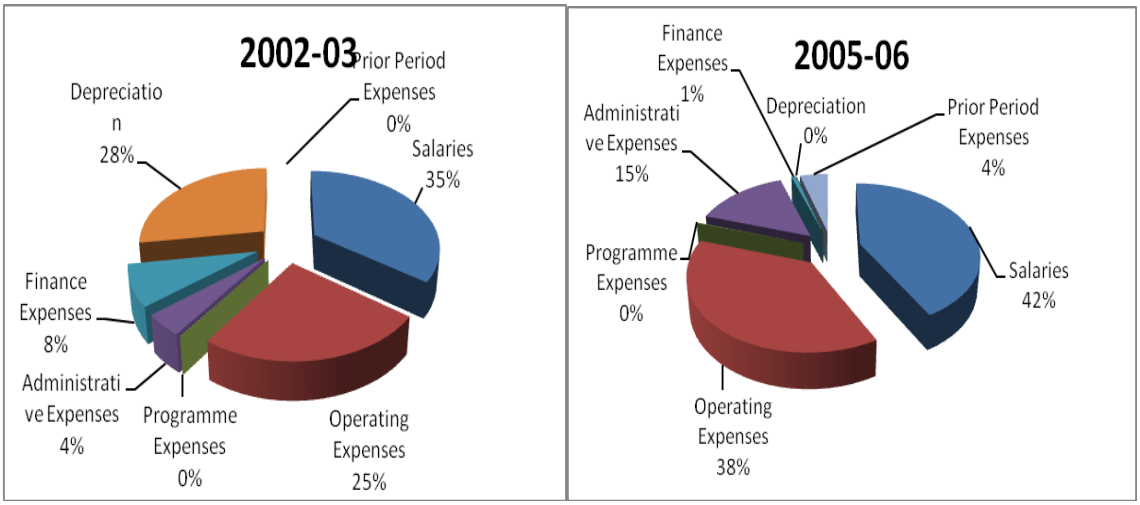
6.3.8 Other Income

Other Income has decreased from Rs.45 lakh in FY2003 to Rs.52 lakh in FY2006. Its share in total income of the municipality has decreased from 9 %in FY2003 to around 12 % in FY2006.



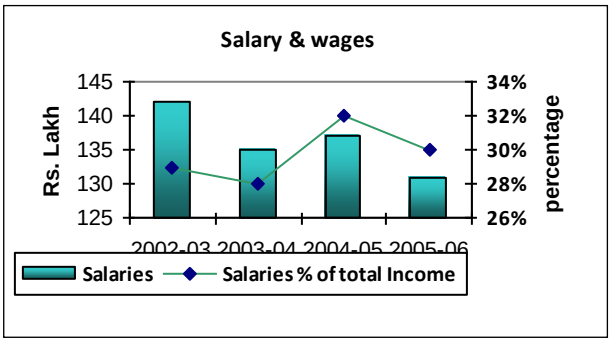
6.4 Analysis of Costs

Exhibit – 6.9 Expenditure analysis



6.4.1 Salary and wages

Salary and wages account for nearly 30% of the income of the municipality. It has decreased from Rs. 142 lakh to Rs. 131 lakh over this period.



6.4.2 Operations and Maintenance

O&M expenditure form the other major component of total expenditure. In absolute terms, repairs and maintenance expenditure has grown from Rs 100 lakh in FY2003 to Rs 118 lakh in FY2006. Its share in total expenditure has increased from 20 % in FY2003 to 27 % of income in FY2006.

Exhibit 6.10 provides details of sector wise composition. Water and sewerage account for the major proportion of operating expenses and has more than doubled during FY 2003-06. Overall repairs and maintenance has grown at a CAGR of 22% over the period.

Exhibit 6.10 Repair and maintenance expenditure - Sector wise break up

Item	FY2002	%	FY2003	%	FY2004	%	FY2005	%
Roads	18.24	18%	9.10	7%	10.04	8%	13.27	11%
Water & Sewerage	16.95	17%	24.54	19%	8.95	7%	6.40	5%
Street Lights	7.10	7%	9.60	8%	9.12	7%	6.54	6%
Others	57.74	58%	84.60	66%	103.01	79%	91.31	78%
Total	**100**	**100%**	**127.84**	**100%**	**131.13**	**100%**	**117.51**	**100%**

6.4.3 Power costs

Exhibit 6.11 gives the details of power costs out of the total repair and maintenance expenditure relating to Water & Sewerage and Street lights.

Exhibit 6.11 Power costs - Water & Sewerage and Street Lights (Rs in Lakh)

Item	FY2002	%	FY2003	%	FY2004	%	FY2005	%
Water	**39**	**100%**	**56**	**100%**	**52**	**100%**	**45**	**100%**
Power	22	57%	31	56%	43	83%	38	86%
Non Power	16.95	43%	24.54	44%	8.95	17%	6.40	14%
Street Lights	**37**	**100%**	**48**	**100%**	**44**	**100%**	**35**	**100%**
Power	30	81%	38	80%	35	79%	29	81%
Non Power	7.10	19%	9.60	20%	9.12	21%	6.54	19%
Total	**77**		**104**		**96**		**80**	

6.5 Loans

Exhibit 6.12 gives the details of outstanding loans of Pattukottai Municipality at the end of year 2006.

Exhibit 6.12 Loans

Lending Agency	Loan amout	Year of drawal	Interest Rate %	Repayment period (years)	Purpose / Scheme	Outstanding loan amount
1	2	3	4	5	6	8
Government Loan	**142.55**	**1996**	**13%**	**22**	**Various**	**250.87***
TUFIDCO - IDSMT	96.16	1982	8%	20	Bus stand and complex	15.84
TUFIDCO -Spl roads	120.00	2003	9%		Improvement of road works	120.00
TUFIDCO – TIFS	76.51	2004	8%		Shopping complex/ roads	92.35
TNUDF	95.63	**2001**	**16%**	**20**	Road works	94.66
IUDP (take over finance)	20.00	**1992**	**8%**		Shopping /Bus stand	32.52
TOTAL	**550.85**					**606.24**

Source: Pat M. ** Government loans written off*

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

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

7.1 Potential themes for economic development

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

7.1.1 Build on the recent initiative to declare Pattukottai a coir cluster

Pattukkottai is well known for production of coconuts. Pattukottai is one of the major centers of coconut production in the country and a Coconut research station is located in Veppakulam, 8 kilometers from Pattukottai. The town has a downstream coconut based industry, which comprises of a number of units manufacturing products based on coconut coir. The Tamil Nadu Coir Manufacturers Association and Thanjavur Coir Manufacturers associations are also located in Pattukkottai. The coir industry in Pattukottai has received a fillip following Pattukottai being declared a 'coir cluster' recently under a Central scheme called Scheme Fund for Regeneration of Traditional Industries (SFURT). As per press releases[4], a proposal to the tune of Rs 1.17 crore has been forwarded for implementation and is under consideration of the Union Ministry of Agro and Rural Industries. The proposal is expected to benefit 500 families in the district. The objective is to promote coir-related products with value addition. Adding value to coir products is not in practice among coconut farmers. The Government has also allotted Rs 4 crore for construction of a coconut complex at Pattukottai and infrastructure facilities would be provided for farmers to set up industries for value addition.

7.1.2 Develop Pattukottai as a agri-processing and trading hub by incentivizing investments in market infrastructure and processing industries

Apart from this, given the status of Thanjavur district as the rice bowl of the state, initiatives to set up aggregation centres and agri-trade related infrastructure should also be explored. Consultations with the municipal council also reinforced that focus on agri-processing could be a critical ingredient in economic development in the region. The Chairperson of the municipal council also stressed the need to focus on sugarcane, coir and straw based industries in the region. The need for better agri-procurement and storage infrastructure was also stressed during the Council meetings.

[4] *http://www.thehindubusinessline.com/2007/09/10/stories/2007091051321500.htm*

7.1.3 Guide developments around the town through development of a bypass / ring road around town.

Considering that developed area comprises only 14% of the total area (1991 master plan) and Pattukottai's low population density of 3000 per sq.km (2001 census), Pattukottai seems to have scope for future growth of the town. Development of a bypass /ring road would enable guiding the future developments of the town in a planned manner.

7.2 SWOT analysis

A brief SWOT analysis of the town is presented below:

Strengths • Proximity to other tourism centres like Trichy and Thanjavur • Trading and commercial centre for agrarian produce in nearby areas	**Weakness** • Limited industrial activity and employment generation potential • Poor infrastructure and connectivity • Weak municipal finances
Opportunities • Economic, Trade and Education hub for nearby villages • Trade hub for agri produce • Coir industry and downstream processing opportunities	**Threats** • Outward migration of skilled workforce • Continued constraints on ability and willingness to pay for urban services in view of limited economic potential • Increase in slum population

7.3 Strategic plan – focus areas and time horizon

The focus of the City Corporate Plan exercise and the strategic plan is on provisioning of urban services in 8 areas including

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

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

7.4 Population projections underlying the strategic plan

Exhibit 2.1 provides the population projections that form the basis of arriving at the sector wise service delivery gaps, interventions required and capital investment estimates.

Exhibit 7.1 Population projections and related estimates - Pattukottai town

	Unit	Baseline	Projected		
		2007	2012	2017	2027
Population	nos	72486	78,354	84,514	97,470
Households (Estd.)	nos	16357	17,681	19,071	21,995
Assessed Properties	nos	17387	18,805	21,129	24,368
Road length	km	86	92	104	127

The population projections have been arrived at as an average of the population projected based on Arithmetical Increase Method, Geometric Increase Method and Incremental Increase Method. A household size of 4.5 is assumed (in line with Census 2001), while property tax assessments are assumed to be 24% of population by 2012, gradually going up to 25% of population by 2027. This reflects a 1.8 %annual growth in number of properties during 2008-27 against a projected population growth of 1.6 %.

7.5 Water Supply

7.5.1 Service Goals and Reform targets

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

Exhibit 7.2 Water supply - Service Goals and Reform Targets

FACTOR	Unit	Baseline	Target		
		2007	2012	2017	2027
Service Goals					
Per capita supply at doorstep	LPCD	110	110	135	135
Storage capacity / Total demand	%	61%	80%	90%	100%
Distribution network / Road length	%	100%	100%	100%	100%
Frequency of supply	hours/day	4	4	8	24X7
Reform targets					
Current collection efficiency	%	74%	90%	100%	100%
House Service Connections / Assessed Properties	%	33%	50%	75%	100%
Population per water fountain	nos.	153	250	250	250
Implementation of graded / metered tariff	Yes / No	No	Yes	Yes	Yes
User charge collection - % of O&M plus debt servicing	%	N.A	50%	80%	100%

As observed, Pat-M appears well placed to meet its short term targets. Though the current collection efficiency at 74% is relatively better than many ULBs, it requires improvement to reach 90% in the short term. However, Connection efficiency (as measured by connections / assessed properties) is very poor at 33% and indicates significant scope for improvement. Pat-M appears to have a high level of public fountain access which would require some level of rationalization. While user charges are already being collected, the same need to get progressively linked to usage through implementation of metering / graded tariffs.

7.5.2 Identified interventions - short term

Exhibit 7.3 lists out the identified set of interventions and project components in the short term over the next 3-5 years based on ongoing initiatives and proposals of Pat-M.

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

ONGOING / PLANNED INTERVENTIONS	2008	2009	2010	2011	2012	TOTAL
Proposals for construction of check dams - Maharaja samudram (at Kondikulam and Santhankadu)		31	31	31	31	124
Linkage of 5 water tanks in the mpty to Cauveri water flowing from Kallanai		105	105	105	105	418
TOTAL		136	136	136	135.5	1442

While Pat-M appears to be well placed in terms of access to water supply, it should be noted that the entire water supply is drawn from bore-wells. Consultations with the municipal council indicate strong concerns of the declining ground water levels in and around the borewells (already water is being drawn from a depth of 350 feet). Therefore the municipality has proposals for setting up check dams and for linkage of 5 water tanks within the municipality with river Cauvery flowing at Kallanai. Further there is also a need to restore water bodies in the municipality (18 water bodies) which the municipality intends to take up in the medium term.

7.5.3 Baseline status and requirements – short term & long term

Exhibit 7.4 provides details of the water supply infrastructure and the requirements and gaps in the short, medium and long term after taking into account the interventions mentioned above.

Exhibit 7.4 Water Supply - Baseline status and gaps (short term and long term)

INFRASTRUCTURE - Baseline and Gaps	Unit	Baseline	Required			Incremental addition		
		+ Ongoing	2012	2017	2027	2012	2017	2027
Gross water supply	MLD	8.62	8.62	11.41	13.16		2.79	1.75
Storage infrastructure	ML	3.98	4.31	5.70	6.58	0.33	1.40	0.87
Distribution network length	km	92	92	104	127	-	12	24
HSCs	nos	5,719	8,841	14,303	21,995	3,122	5,463	7,691
Public fountains	nos	473	313	338	390			

As can be seen, there are a surplus of public fountains in the short term and potential for adding significantly to House service connections in the short term. While supply and storage infrastructure appear to be adequate in the short term, there is a need of augmenting supply particularly for reducing reliance on borewell sources. Further there is a significant potential for increasing penetration of house service connections.

7.5.4 Interventions - medium-long term

Based on normative gaps, we have provided for storage capacity augmentation which is marginal and is required only towards the end of the projection period. Pat-M should strive towards 24x7 water supply in the medium to long term. This would require comprehensive metering of all HSC

connections and implementing user charges on the basis of consumption. Given that Pat-M is yet to even meet access targets, we have provided for investments in metering only during 2018-27.

7.5.5 Project components and Capital Investment

The total outlay and phasing of investments for water supply is given in Exhibit 7.5 below.

Exhibit 7.5 Water Supply - Capital Investment outlay and phasing

Rs. Lakh

CAPEX PLAN AND PHASING	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
ONGOING / PROPOSED PROJECTS									
Check dams - Maharaja samudram (at Kondikulam and Santhankadu)	-	-	-	62	62	124			124
Linkage of 5 tanks to Cauveri at Kallanai	-	105	105	105	105	418			418
Renovation of 18 tanks						-	300	600	900
ADDITIONAL REQUIREMENT									-
Supply augmentation				-	-	-	698	437	1,135
Storage augmentation						16	70	44	130
Public fountains					-	-	-		-
Pumping and Distribution network						35	71		106
Metering							220		220
TOTAL CAPEX - Water supply	**-**	**105**	**105**	**167**	**167**	**594**	**1,358**	**1,081**	**3,033**

7.6 Sanitation

7.6.1 Service Goals and Reform targets

Exhibit 7.6 provides the service goal/outcomes and reform targets for 2008-12..

Exhibit 7.6 Sanitation - Service Goals and Reform Targets

	Unit	Baseline	Target		
		2007	2012	2017	2027
Service Goals					
UGD Network					
Availability	Yes/no	No	Yes	Yes	Yes
Design capacity per capita (treatment and pumping)	LPCD	-	120	120	120
Sewer network - % of road length		-	80%	80%	80%
Storm Water Drains					
Drain length / Road length	%	37%	60%	80%	120%
Public Conveniences					
Slum population per PC seat	%	257	200	200	200
Reform targets					
Sanitation coverage - % of population	%	23%	100%	100%	100%
User charges - Current collection efficiency	%	NA	70%	90%	90%
Household connections / Assessed Properties	%	NA	40%	60%	75%

As seen Pat-M has does not yet have a UGD network. A DPR for UGD scheme has been prepared and the project is expected to be implemented shortly.

Ongoing / Proposed projects

Exhibit 7.7 presents the list of ongoing and proposed projects of Pat-M in the immediate term.

Exhibit 7.7 Sanitation – Ongoing/proposed projects

ONGOING / PLANNED INTERVENTIONS	Outlay	2008	2009	2010	2011	2012
Comprehensive UGD Scheme	2864		955	955	955	
TOTAL	**2864**		**955**	**955**	**955**	

UGD scheme

An UGD scheme is being proposed for Pat-M at an outlay of Rs. 28.64 crore. The Detailed Project Report for the same has been prepared by TWAD and the project is to be taken up shortly.

7.6.2 Baseline status and gaps

Exhibit 7.8 provides the baseline status on sanitation and the requirements and gaps in the short, medium and long term after taking into account the above projects.

Exhibit 7.8 Sanitation- Baseline status and gaps (short term and long term)

	Unit	Baseline + Ongoing	Required			Gap		
			2012	2017	2027	2012	2017	2027
UGD scheme - capacity	MLD	Planned	9.40	10.14	11.70			
Drain length	km		74	83	102	-	9	19
Household connections	nos	-	7072	11443	16496	7072	4370	5053
Storm Water Drains	km	32.08	55	83	153	23	28	70
Public convenience seats	nos	100	137	139	151	37	2	12

The proposed UGD project is likely to address the sewerage disposal needs of the town within the next 5 years. Apart from this the storm water drains development and the water bodies restoration (already covered under Water supply) would take care of most of the sanitation infrastructure requirements in the short term.

7.6.3 Interventions - Immediate priorities

There are significant gaps in sanitation in the immediate term and the following actions are required within the next 5 years.

a) Completion of proposed comprehensive Underground Drainage Scheme
b) Rehabilitation of storm water drain coverage to cover all flood-prone areas initially followed by the entire town.
c) Restoration of 18 identified water bodies.

7.6.4 Interventions – Long term

The proposed investments in UGD and storm water drains recommended in Exhibit 7.7 will take care of bulk of the sanitation requirements in the medium to long term as well. However, additional investments will required to take care of growing population and increase in road length due to new formations / layouts in the areas of public conveniences, addition to sewer and storm drain network. There is also a need to undertake restoration of other water bodies in the town in a phased manner. We have provided for investments in these areas on a normative basis, depending on the demand emerging from Exhibit 7.8 above.

7.6.5 Project components and Capital Investment

Exhibit 7.9 provides a summary of the project components, capital outlay and phasing for sanitation.

Exhibit 7.9 Sanitation - Capital Investment outlay and phasing

Rs. Lakh

CAPEX PLAN AND PHASING	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
ONGOING / PROPOSED PROJECTS									
Comprehensive UGD Scheme	-	955	955	955		2,864			2,864
ADDITIONAL REQUIREMENT									-
Storm water drain construction	101	101	101	101	101	507	417	1,046	1,971
Public convenience construction	3	3	3	3	3	13	1	4	18
SANITATION	**101**	**1,056**	**1,056**	**1,056**	**101**	**3,371**	**417**	**1,046**	**4,835**

7.7 Solid Waste Management

7.7.1 Service goals and reform targets

Exhibit 7.10 provides the service goal/outcomes and reform targets in SWM during 2008-27.

Exhibit 7.10 Solid Waste Management - Service Goals and Reform Targets

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

7.7.2 Baseline status and gaps – short term & long term

Exhibit 7.11 provides the baseline status in solid waste management and the requirements and gaps in the short, medium and long term.

Exhibit 7.11 Solid Waste Management - Baseline status and gaps (short term and long term)

	Unit	Baseline	Required			Incremental gap		
		+ Ongoing	2012	2017	2027	2012	2017	2027
Waste Generated	MT	**21**	**27**	**34**	**44**	**6**	**6**	**10**
Primary collection								
Number of trips	Nos.	1	2	2	2			
Vehicle capacity	MT	0.18	0.15	0.15	0.15			
Number of Tricycle equivalent	Nos.	**177**	**91**	**113**	**146**			
Replacement - Tricycle equivalents	MT			**177**	**91**		177	91
Secondary collection / Transfer								
Number of trips	Nos.	2.80	3.00	3.00	3.00			
Vehicle capacity	MT	7.50	9.14	11.27	14.62	1.64	2.13	3.35
Equipment replacement	MT						7.50	9.14
Disposal								
Land	Acres	6.81			9.75			2.94
Compost yard development	Acres				3.90			
Sanitary land fill development	Acres				5.85			

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

7.7.3 Ongoing / Proposed projects

Pat-M is in the process of implementing a vermi-compost yard at Nariyampalayam at an outlay of Rs. 4 lakh. At present, waste is disposed off through dumping in a disposal yard outside the town. The disposal yard is situated at a distance of about 5 km from the town and is spread over an area of 6.81 acres. As per the Solid waste management action plan of the municipality, 11.85 acres are required, indicating a shortfall of 5.04 acres. Pat-M has initiated steps to acquire an additional 3.25 acres of land near the existing compost yard.

7.7.4 Interventions required - immediate priorities

a) Compost yard improvements @ an outlay of Rs. 4 lakh
b) Acquisition of 3.25 acres of land near the existing compost yard.

7.7.5 Interventions required - Medium / Long term priorities

Investment / Project component

a) Acquisition of additional land
b) Procurement of equipment to address the gaps indicated above.
c) Investment in sanitary land fill development.

7.7.6 Project components and Capital Investment

Exhibit 7.12 provides a summary of the project components, capital outlay and phasing for Solid Waste Management in Pattukottai town.

Exhibit 7.12 Solid Waste Management - Capital Investment outlay and phasing

CAPEX PLAN AND PHASING	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
ONGOING / PROPOSED PROJECTS	4					4			4
ADDITIONAL REQUIREMENT									-
Primary collection	-					-	44	23	67
Secondary collection		7				7	39	73	118
Land acquisition		15				15			15
Development cost - Landfill site							58		58
TOTAL	**4**	**22**	**-**	**-**	**--**	**25**	**141**	**95**	**262**

7.8 Roads, Transportation and Streetlights

7.8.1 Service goals and reform targets

Exhibit 7.13 provides the service goal/outcomes and reform targets for the horizon period.

Exhibit 7.13 Transportation and street lighting - Service Goals and Reform Targets

SERVICE LEVEL GOALS AND OUTCOMES	Unit	Baseline	Target		
		2007	2012	2017	2027
Municipal roads as % of Total Area	%	7%	8%	9%	11%
Surfaced roads to Total roads	%	98%	100%	100%	100%
Pedestrian walkways to Total road length	%	-	20%	40%	50%
Street Lights - Distance between streetlights	metres	30	30	30	30
Street Lights - Proportion of high power lamps	%	100%	100%	100%	100%
Street Lights – High power lights with energy savers	%		100%	100%	100%

7.8.2 Baseline status and gaps

Exhibit 7.14 provides the baseline status and interventions in transportation and street lighting in the short term and long term.

Exhibit 7.14 Transportation and street lights - Interventions - Physical

	Unit	Phasing (outcome)		
		upto 2012	2013-17	2018-27
Muncipal road network				
Non-surfaced roads to BT roads	km	1.93		
Re-surfacing of roads	km	83.84		
New road formation / Surfacing	km	6	12	24
Re-laying all roads between 2018-27	km			86
Road facilities				
New bus stand	nos	1		
Pedestrian walkways	Km	18	21	13
Bus shelters	Nos.	15		

	Baseline	Required			Gap		
		upto 2012	2013-17	2018-27	upto 2012	2013-17	2018-27
Street lights	2874	2,859	3,066	3,458	-	207	392
High power lamps	451	715	920	1,038	264	205	118
Tube lights	2423	2,144	2,146	2,421	-	2	275
Lights with Energy savers	na.	715	920	1,038	264	205	118

98 % of the total road network is surfaced. However, there is a need for substantial investment in the road network even in the short term given the ongoing and proposed underground sewerage projects in the town. Pat-M maintains 1 bus stand and requires a new modernized bus stand. Gaps in other road facilities that have been considered in the CIP are also indicated in the table above.

7.8.3 Interventions required – immediate term

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

a) Road upgradation, surfacing and restoration – Pat-M has nearly 86 km of roads of which 84 km are BT/CC roads. Most of this network would need to be restored and upgraded with new BT surface at an outlay of Rs. 1006 lakh.
b) Bus stand – New bus stand development at an outlay of Rs.100 lakh.
c) Street lights – based on normative gaps shown in table 7.14.

7.8.4 Capital outlay and phasing

Exhibit 7.15 provides the details of outlay for transportation and street lighting requirements

Exhibit 7.15 Transportation and Street lighting - Capital Investment outlay and phasing

	Phasing (Outlay)			Total
	upto 2012	2013-17	2018-27	
ROADS				
Municipal road network				
Upgrading non-surfaced roads to BT roads	29	-	-	29
Re-surfacing after UGD implementation	1,006	-	-	1,006
New road formation / Surfacing	124	177	353	654
Re-laying all roads once between 2018-27	-	-	1,287	1,287
Road facilities				-
New bus stand	100			100
Bus shelters upgradation	55	62	38	156
Pedestrian walkways	15			
SUB –TOTAL – Transportation	**1,329**	**239**	**1,678**	**3,246**
STREET LIGHTS				
High power lamps	32	25	14	70
Tube lights	20	15	9	44
Lights with Energy savers	13	10	6	29
SUB –TOTAL – Street lights	65	50	29	144
TOTAL	**1,394**	**289**	**1,707**	**3,390**

7.9 Urban services for the poor

In Pattukottai Municipality there are 19 slums. As per a presentation made by Pat-M for funds access under IHSDP, the population of the slums is 25695 with 5132 households.

7.9.1 Service levels goals and outcomes

Exhibit 7.16 gives a snapshot of the service level goals and outcomes of Pat-M with respect to provision of urban services for the poor

Exhibit 7.16 Urban Services for poor – Service level goals and outcomes

	Unit	Target		
		2012	2017	2027
Road Coverage for slum household	%	100%	100%	100%
Sanitation coverage for slum households	%	100%	100%	100%
Streetlights	%	100%	100%	100%
Pucca houses for all slum households	%	100%	100%	100%

7.9.2 Capital outlay and phasing

Pat-M has taken up a comprehensive proposal for upgradation of 5 slums at an outlay of Rs. 2197 lakh. Exhibit 7.17 provides the summary of capital outlay and phasing of investments for provision of urban services for the poor.

Exhibit 7.17 Urban Services for the poor - Capital outlay and phasing

CAPEX PLAN AND PHASING	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Ongoing	700	700	797	-	-	2197			
Provision for future slum rehabilitation	-	-	-	1,129	1,129	2,258	1,694	1,694	7843
TOTAL	**700**	**700**	**797**	**1,129**	**1,129**	**4455**	**1,694**	**1,694**	**7843**

7.10 Social infrastructure and other urban amenities

Exhibit 7.18 provides the summary of interventions, capital outlay and phasing of investments for provision of other urban service amenities in Pat-M.

Exhibit 7.18 Social infrastructure and other urban amenities – Capital outlay and phasing

Basis	Phasing								
	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Health care - Rs. 10 lakh/ centre every5 years			20			20	20	80	120
Schools - Rs. 5 lakh per school every 5 years		20	20	20	20	80	80	160	320
Remunerative assets									0

Basis	Phasing								
	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Slaugher House	25					25	0	0	25
Gasifier crematorium	49					49			49
Remunerative assets (20000 sq.ft @Rs. 1500/sq.ft)							150	150	300
Parks		20	30			50	50	100	200
Tourism and related proposals							100	100	200
TOTAL	**74**	**40**	**70**	**20**	**20**	**224**	**400**	**590**	**1214**

Improvements to building assets of healthcare centres and government schools account for nearly a tenth of investment in other urban assets and social infrastructure. Apart from ongoing initiatives of slaughter house and crematorium, we have allocated Rs. 300 lakh for new remunerative project proposals that that municipality would need to take up in the medium term (including markets and other related infrastructure). Development of parks have also been factored.

7.11 Capital Investment Plan – summary

7.11.1 Priority projects

The critical priority projects to be implemented by Pat-M in the short term (2008-12) are summarized below in Exhibit 7.19.

Exhibit 7.19 Priority projects - FY 2008-12

Sl. No	Sector	Project	Cost *Rs. Lakh*	Status
1	Water Supply	Construction of check dams - Maharaja samudram (at Kondikulam and Santhankadu)	125	Proposal stage. DPR required
2	Water Supply	Receiving Cauveri water from Kallanai	425	Proposal stage
3	Sanitation	Restoration of 18 water bodies	900	Proposal stage
4	Sanitation	Implementation of UGD scheme	2864	Under implementation
5	Sanitation	Storm Water drains (55 km)	507	Proposal stage
6	Sanitation	Public conveniences (37 seats)	13	Proposal stage
7	Transportation	Roads after UGD scheme (87km)	1159	Proposal stage
8	Transportation	New Bus stand	100	Proposal stage
9	Solid waste management	Land acquisition, vermin composting and procurement of secondary collection equipment	25	Under implementation
10	Other assets	Gasifier crematorium and slaughter house	75	Under implementation
11	Parks	Development of 5 parks	50	Proposal stage
12	Education	16 Schools buildings improvement	80	Proposal stage
13	Health	2Health centres - building improvement	20	Proposal stage
14	Slum improvement	IHSDP project (5 slums)	2197	Under implementation

7.11.2 CIP summary

Exhibit 7.20 provides a summary of sector wise phasing of investment needs of Pat-M.

Exhibit 7.20 Capital Investment Plan summary

Segment	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Water Supply	-	105	105	167	167	594	1,358	1,081	3,033
Sanitation	101	1,056	1,056	1,056	101	3,371	417	1,046	4,835
Solid Waste Management	4	-	7	15	-	25	141	95	262
Transportation and street lights	13	13	456	456	456	1,394	289	1,707	3,390
Urban Services for the poor	700	700	797	1,129	1,129	2,258	1,694	1,694	7843
Others	74	40	70	20	20	224	400	590	1,214
TOTAL	**892**	**1,913**	**2,490**	**2,842**	**1,873**	**7,866**	**4,299**	**6,213**	**20576**

7.11.3 Technical assistance requirements

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

1. Development of a comprehensive GIS for the town with updated information on all urban assets including roads, water supply, sanitation etc.
4. DPR for comprehensive water supply upto 135 LPCD and roadmap for 24x7 supply including evaluation of source augmentation and creation of non-borewell sources including check dams across Maharaja Samudram and linking of water tanks and drawing transmission line from Cauvery river at Kallanai.
5. DPR for solid waste management with focus on scientific disposal and mechanised handling.

7.11.4 Interventions required from other agencies/departments of GoTN

Other projects to be taken up for implementation by various Government departments include the following:

1. **Industries department -** Evaluate feasibility for setting up agri-processing industries in the vicinity of the town and build on the recent announcement to set up a coir processing cluster in Pattukottai.
6. **PWD** – Develop a plan for rehabilitation of all the water bodies coming under its jurisdiction.
7. **State Highways / NH / NHAI**– a) Conduct feasibility study for developing a bypass/ring road for the town and c) Develop and implement a traffic improvement plan for the 5 major arterial roads in the town.

7.11.5 Reform agenda

Exhibit 7.21 presents the targets and reform agenda for Pat-M.

Exhibit 7.21 Service level and reform targets – a summary

FACTOR	Unit	Baseline	Target		
		2007	2012	2017	2027
WATER SUPPLY					
Service Goals					
Per capita supply at doorstep	LPCD	110	110	135	135
Storage capacity / Total demand	%	61%	80%	90%	100%
Distribution network / Road length	%	100%	100%	100%	100%
Frequency of supply	hours/day	4	4	8	24X7
Reform targets					
Current collection efficiency	%	74%	90%	100%	100%
House Service Connections / Assessed Properties	%	33%	50%	75%	100%
Population per water fountain	nos.	153	250	250	250
Implementation of graded / metered tariff	Yes / No	No	Yes	Yes	Yes
User charge collection - % of O&M plus debt servicing	%	N.A	50%	80%	100%
Service Goals					
UGD Network					
Availability	Yes/no	No	Yes	Yes	Yes
Design treatment capacity per capita	LPCD	-	120	120	120
Sewer network - % of road length		-	80%	80%	80%
Storm Water Drains					
Drain length / Road length	%	37%	60%	80%	120%
Public Conveniences					
Slum population per PC seat	%	257	200	200	200
Reform targets					
Sanitation coverage - % of population	%	23%	100%	100%	100%
User charges - Current collection efficiency	%	NA	70%	90%	90%
Household connections / Assessed Properties	%	NA	40%	60%	75%
SOLID WASTE MANAGEMENT					
Collection efficiency	%	100%	100%	100%	100%
Door-to-door collection	%	100%	100%	100%	100%
Source Segregation	%	30%	60%	100%	100%
Mode of disposal	%	n.a	50%	100%	100%
Conservancy fee	Yes / no		yes	yes	yes
Municipal roads as % of Total Area	**%**	7%	8%	9%	11%
Surfaced roads to Total roads	**%**	98%	100%	100%	100%
Pedestrian walkways to Total road length	**%**	-	20%	40%	50%
Street Lights - Distance between streetlights	M	30	30	30	30
Street Lights - Proportion of high power lamps	**%**	100%	100%	100%	100%
Street Lights – High power lights with energy savers	**%**		100%	100%	100%
URBAN SERVICES FOR POOR					
Road Coverage for slum household	%		100%	100%	100%
Sanitation coverage for slum households	%		100%	100%	100%
Streetlights	%		100%	100%	100%
Pucca houses for all slum households	%		100%	100%	100%

7.12 Asset Management

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

In the following paragraphs we analyse the information provided to us on land and building assets available with Pat-M and outline specific observations and suggestions on maintaining and updating these assets. The Asset Management Plan for core services areas namely Water Supply, Sanitation, Solid Waste Management and Transportation follows largely from the Capital Investment Plan outlined in the earlier paragraphs and is outlined below under sections 7.14.2 to 7.14.5 below. Specific actions relating to asset management and reform steps in these areas are also summarized in Exhibit 7.24.

7.12.1 Land and building assets of Pat-M

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

- Annexure VII – Land details as per Schedule I of asset register
- Annexure VIII – Building details as per Schedule II of asset register
- Annexure IX – Ward wise details of road assets

Exhibit 7.22 and 7.23 summarises the details of land and building assets in Pat-M as shown in schedule I and II of the asset register of the municipality.

Exhibit 7.22 Summary of Land assets

Sl.No	Particulars	No of sites	Area in SM
	Basic Amenities	**4**	**145,493**
1	Water Bodies	4	145493.33
2	Toilets	0	
	Social	**13**	**54918.95**
1	Burial Ground	9	26362.95
2	Bus stand	1	16588
3	Composite Yard	1	3564
4	Market	1	5280
5	Shopping complex	1	3124
6	Parks & Playground	1	3728.62
7	Schools	10	19608.83
8	Office Building	1	10912
9	Vacant Place	15	11533.41
	Total	**44**	**246,195**

Source: Pat-M

Exhibit 7.23 Summary of Building Assets

Particulars	No of sites	Total area	Plinth area
		Area in sm	
Basic Amenities	**15**	**5.76**	**1630.52**
Water bodies	13	5.76	1492.94
Toilets	2		137.58
Social	**11**		**167.53**
Reading room	4		88.25
Maternity centre	1		14.4
Bus shelters	5		45.88
Public stage	1		19
Schools	**6**	**11469.28**	**367.8**
Office Buildings	**11**	**10144**	**982.28**
Remunerative Purpose	**6**	**17765.8**	**2568.74**
Noon Meal centre	**17**	**6494.13**	**1224**
Others	**1**		**2.25**
Total	**67**	**45878.97**	**6943.12**

Source: Pat-M

We observe that the asset register of Pat-M has not been updated. Several items in the asset register reflect status as of year 2000, when the asset register was initially created. Also information is incomplete (as in the case of land area for a number of building assets). We recommend the following actions in terms of managing the land and building assets of Pat-M

1. There are several discrepancies between the land details shown in land schedule and in the buildings schedule. We therefore strongly suggest a zero base validation and updation exercise covering the asset register be taken up on priority.
2. Pat-M should prepare and implement an annual maintenance plan (along with an assessment of cost implications) for all land and building assets. This maintenance plan should precede budget preparation process and should feed into the budget, so that the plan is adequately funded.
3. Pat-M should progressively move towards achieving revenue realisations in line with market trends from all its remunerative assets including shops, markets etc. This is achievable through a combination of a) periodic increases in rates charged and b) improvement and better maintenance of the assets through periodic and planned maintenance.

Specific actions relating to management of assets in water supply, sanitation, solid waste management and roads are outlined below and are summarized in Exhibit 7.24

7.12.2 Water Supply

Short term

a) Review and update asset register to reflect the latest status and establish process along with accountability for updating asset register on a periodic basis.
b) Provide a ward wise report on capital works undertaken online on a quarterly basis.

c) Undertake an independent study to assess loss levels in transmission, storage points and distribution and develop a roadmap for providing 24x7 water supply.
d) Conduct periodic IEC campaigns on water conservation and rainwater harvesting practices.
e) Review losses and illegal connections and widen the base of house service connections.

Long term

a) Critical asset management and development activities in the medium to long term are listed below:
b) Implement metering and metering-based-tariff /graded water tariff at household level
c) Implement 24x7 water supply on a pilot basis in select zones / wards and replicate the same in a phased manner within a ten-year timeframe.

7.12.3 Sanitation

Short term

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

It would be prudent in the medium term for Pat-M to incorporate the sanitation asset details as part of a wider GIS implementation program. Further, tariffs can be structured on a slab rate structure with property tax assessments as the basis.

7.12.4 Solid waste management

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

Long-term

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

7.12.5 Transportation

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

Exhibit 7.24 Asset Management Plan and timeline – summary

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

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

Interventions requiring technical assistance/support in DPR preparation

8. Project profiles including analysis of risks and ESA considerations

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

8.1 Project profiles

Project profiles for select projects that are to be implemented in the short term are outlined below:

8.1.1 Water supply

Sector	Water Supply
Project Description	Construction of check dams - Maharaja samudram (at Kondikulam and Santhankadu)
Project Status	**Concept stage**
Need for the project	The project is required to reduce the dependence of Pat-M on borewell water supply and develop alternative source of water supply
Technical assistance	**DPR preparation**
Project Cost	~ Rs. 125 lakh. To be confirmed through a detailed feasibility study
Revenue impact	Direct incremental revenue impact unlikely as Tvr-M already levies user charges. However, it could enable Tvr-M to improve service levels and hence could have an indirect effect.
Financing mix	Loan – 50%, Grant -30% and own funds – 20%
Remarks	The existing water supply scheme is already functional and has taken into account ultimate population requirements. Hence the extent of supply and reliability of the same may need to be evaluated before making this investment decision. However, locals have expressed concern on the declining water table and the need to evaluate alternate sources. Therefore, this project may need to be taken up on priority to address water supply service levels in a sustainable manner
ESA analysis and tentative rating	E1 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), S1 or S2 – is likely to have PAPs and hence need fairly detailed assessment.

Sector	**Water Supply**
Project Description	Headworks, transmission line and reservoir/tank restoration for eceiving Cauveri water from Kallanai
Project Status	**Concept stage**
Need for the project	The project is required to reduce the dependence of Pat-M on borewell water supply and develop alternative source of water supply
Technical assistance	**DPR preparation**
Project Cost	~ Rs. 125 lakh. To be confirmed through a detailed feasibility study
Revenue impact	Direct incremental revenue impact unlikely as Tvr-M already levies user charges. However, it could enable Tvr-M to improve service levels and hence could have an indirect effect.

Financing mix	Loan – 50%, Grant -30% and own funds – 20%
Remarks	The existing water supply scheme is already functional and has taken into account ultimate population requirements. Hence the extent of supply and reliability of the same may need to be evaluated before making this investment decision. However, locals have expressed concern on the declining water table and the need to evaluate alternate sources. Therefore, this project may need to be taken up on priority to address water supply service levels in a sustainable manner
ESA analysis and tentative rating	E1 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), S1 or S2 – is likely to have PAPs and hence need fairly detailed assessment.

8.1.2 Sanitation

Sector	Sanitation
Project Description	Implementation of Underground Drainage (UGD) Scheme
Project Status	Concept stage / DPR preparation / Sanctioning and appraisal / **Implementation**
Need for the project	Pat-M does not have a UGD scheme yet. The town faces significant pollution due to release of untreated sullage.
Technical assistance	The DPR for the project is already under preparation by TWAD.
Project Cost	Rs. 2864 lakh
Revenue impact	Pat-M intends to levy user charges for connections.
Financing mix	Loans, own funds, Grant and public deposits.
Remarks	UGD schemes require significant pre-construction development work including acquisition of land for pumping stations and STP. Further design considerations are critical. Several UGD schemes faces delay risk. Further Pat-M could face resistance to public deposits and user charges for the proposed UGD scheme.
ESA analysis and tentative rating	E1 – Project could have major environmental impacts thus necessitating Environmental Assessment Reports (EAR), S1 or S2 – is likely to have PAPs and hence need fairly detailed assessment.

Sector	Sanitation
Project Description	Storm water drains
Project Status	**Concept stage**
Need for the project	Storm water drain coverage in the town is only 37 % of the road length and hence there is a need for a comprehensive project to address the storm water drain requirements of the town.
Project Cost	Rs. 507 lakh
Revenue impact	Non-remunerative project.
Financing mix	Given the size of the project and the non-remunerative of the project proposals, implementation of the project would require significant grant support.
Remarks	Storm drains have often tended to fail due to poor maintenance. There is a need for a pre-construction DPR for comprehensive design and guidelines for ward level storm drains. This should be backed by a clear O&M strategy involving local community participation at the project implementation stage itself.
ESA analysis and tentative rating	E2 -Expected to have only moderate environmental issues. Mostly generic impacts in nature S3 - No social issues expected. Hence socially benign no social mitigation measures required, need to submit SSR

8.1.3 Transportation

Sector	Roads
Project Description	Upgradation of road network post UGD implementation
Project Status	**Concept stage**
Need for the project	Since UGD scheme is expected to be implemented over the next few years, there is a need to restore the entire road network post implementation
Project Cost	Rs. 1159 lakh
Revenue impact	Non-remunerative project
Financing mix	Combination of loans (30%), grant (50%) and own funds
Remarks	The road network upgradation should comprehensively take into account storm water drain design and other road assets including pedestrian foot paths, signages and road medians as appropriate.
ESA analysis and tentative rating	E2 -Expected to have only moderate environmental issues. Mostly generic impacts in nature S3 - No social issues expected. Hence socially benign no social mitigation measures required, need to submit SSR

Sector	Transportation
Project Description	Development of new bus stand complex
Project Status	**Concept stage**
Need for the project	Existing bus stand is in the town area which is very congested and leads to lot of traffic problems. The proposal is to develop a new bus stand in the periphery of the town and convert the existing bus stand into a town bus stand.
Project Cost	Rs. 100 lakh
Revenue impact	Remunerative project. can be implemented on PPP mode with upfront deposits from potential commercial establishments and revenue share from private developer.
Financing mix	Combination of loans (30%), grant (50%) and private capital
Remarks	Considering that a ring road / bypass is also being planned for the town, the bus stand could be planned in coordination with this in order to facilitate orderly development.
ESA analysis and tentative rating	E2 -Expected to have only moderate environmental issues. Mostly generic impacts in nature S3 - No social issues expected. Hence socially benign no social mitigation measures required, need to submit SSR

9. Reform agenda and Technical assistance

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

9.1 Urban sector reform in Tamil Nadu – an overview

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

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

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

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

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

While not mandatory, the provisions direct state governments to decide the powers and functions to be devolved to local bodies. Tamil Nadu has delegated functions 2 to 6 and 8 to 18 to ULBs[5]. Though Urban Planning as a function is vested with the Department of Town and county planning, both the political and administrative heads namely the Chairman and the commissioner are typically involved in the process of preparing master plans.

9.2 Reform agenda – interventions required at the state level

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

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

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

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

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

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

6. **Create technical standards with specific applicability to municipal projects construction and execution. These are particularly required in 2 areas:**

- **Integrated road asset creation and management –** The quality of road construction particularly in urban areas is inconsistent ranging from well-laid roads in select areas to poorly designed roads that does not last even a single monsoon season. In this regard **CMA along with the State Highways department** should
  - ***Standards*** **-** Define standards for urban roads construction covering technical specifications (construction material, equipment use, process for road construction)
  - ***Procurement guidelines*** - Review procurement guidelines for empanelment / selection of contractors including incentives and penalties to ensure adequate accountability
  - ***Showcase projects*** **-** Identify one major arterial high-density road corridor (typically maintained by the State Highways department) in all towns for development in an integrated manner covering strengthening/widening, encroachment removal, de-bottlenecking through junction improvements and grade separators, streamlining parking, guidelines for right of way for road users (such as TNEB, BSNL etc) and aesthetics/signages. Implementation of such projects could potentially have a demonstration effect and could contribute to widespread replication and adoption.
- **Flood management –** Maintenance and upkeep of storm water drains is often accorded low priority, inspite of significant investments that go into creating these assets. Further there is inadequate planning and sub-optimal drain construction in an isolated manner without a detailed review of interlinking needs with arterial canals and water bodies. In this regard, we recommend that
  - TNUIFSL and CMA should considering initiating a technical assistance study at a city level in Tamil Nadu in a phased manner to develop a blueprint for an integrated water and flood management plan covering a) identification of potential water catchment points (including restoration of water bodies), b) Identify arterial canal networks that need to be developed/strengthened based on a review of flooding and water flow patterns and c) specify ward level guidelines for storm water drain construction in terms of linkages and gradient of local storm water drain construction initiatives.

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

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

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

9.3 Measures for improving financial performance

Overall, revenue declined by 6% while expenditure declined by about 10% during FY 03-06. The revenue decline appears to be on account of decrease in devolution fund and assigned revenue, even though own income of the municipality has shown an increase of 5%. Most of the expenditure heads have shown a decline particularly, Salaries and finance charges. Current collection efficiencies in property tax and water user charges are abysmally low at 50% and 54 % respectively.

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

9.3.1 Revenue enhancement

Property tax

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

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

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

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

Professional Tax

Professional tax has grown at 6% over the last four years and is becoming an important revenue stream. It is also a visible revenue stream and hence collection efficiency (especially on current demand) should be higher than the 73 % that was achieved in FY 2007. In this regard,

31. Pat-M should focus on **widening its professional tax base** by bringing more traders and independent professionals within the ambit of professional tax. Specifically, Pat-M should consider tapping into databases of potential professional tax assesses including
- Professional associations including Institute of Chartered Accountants of India (ICAI), the Bar Council, Medical Council etc.
- Commercial Taxes Department, GoTN to get details of sales tax registrations (existing and new) within Pat-M.

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

• Banks (Commercial and Cooperative) • Government Staff • Doctors • Engineers • Surveyors • Contractors • Advocates • Architects • Chartered Accountants (Firms) • Income Tax Practitioners	• Computer Hardware Shops • Computer Education Institutes • Medical Shops • Private Companies • Business Entities (other than companies) • Stock Broking concerns • Hospitals • Schools and other educational institutions • Cinema Theatres • Clubs

User charges

With the commissioning of the new UGD system and recent implementation of the Combined Water supply scheme, user charges would need increased monitoring and follow-up given their potential to contribute to Pat-M's revenue. Specifically Pat-M should

33. Increase penetration of connections for water supply. As of FY 2006, Pat-M has about 5400 connections, which accounts for only 33% of the properties assessed. Pat-M should target to increase this to at least 50 % in the next 5 years progressively going up to 75% in the next decade.
34. Providing water fountains only in areas with a predominantly low income population to minimise revenue loss.
35. Improve revenue per connection through implementation of either a graded water tariff scheme (as is being considered by CMA, GoTN) or a metering based tariff. While the metering based system would a better system in principle (charges on the basis of usage) and in terms of incentivising water conservation, ULBs have faced resistance in implementation of metered tariffs. Pat-M could also consider implementation of meter based tariffs through involvement of Self Help Groups as meter readers.
36. Adopt measures to improve collection efficiency. Overall collection efficiency at 64% needs to be improved. PAT-M should consider stiff penalties for non-payment of user charges. Specifically PAT-M should consider implementation of late payment fines and in case of extreme overdue situations, disconnecting supply.

Public private partnerships (PPP)

Well-structured PPPs apart from relieving ULBs of some investment burden could also be a potential revenue enhancement option, particularly in structuring remunerative projects. Pat-M could

37. Develop its proposed remunerative projects namely, a) re-development of markets through private participation.
38. Actively encourage corporate / NGO partnerships for city beautification projects including bus stops, street lighting, parks

9.3.2 Measures for cost management

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

39. Pat-M should conduct a comprehensive energy audit to identify areas for reducing power consumption and related costs.
40. Pat-M should implement automatic time based dimmers on street light network and ensure that all pumps / motors are energy efficient.
41. Pat-M indicated that leakages in its water supply network are in the region of 25-30%, which adds to overall cost of service delivery. A focused study is needed to assess the level of leakages and to recommend measures to minimise the same.

10. Sustainable financial and operating plan

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

10.1.1 Time-horizon

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

10.1.2 Demographic projections

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

Exhibit 10.1 Population projections and related estimates - Pattukottai town

	Unit	Baseline	Projected		
		2007	2012	2017	2027
Population	nos	72486	78,354	84,514	97,470
Households	nos	16357	17,681	19,071	21,995
Slum population	nos	25675	27,424	27,890	30,216
Slum households	nos	5132	5,482	5,575	6,040
Assessed Properties	nos	17387	18,805	21,129	24,368
Road length	km	86	92	104	127

10.1.3 Revenues

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

Exhibit 10.2 Revenue related assumptions

Segment	Revenue driver	Basis / Assumptions
Property Tax	Baseline property tax / property (2006)	Rs. 794 per year
	Growth in tax rate	70% in 2008 followed by 40% every 5 years.
	Assessments growth	Population growth. As per trend captured in Exhibit 10.1
Professional Tax	Baseline tax / assessee (2006)	Rs. 1655 per year
	Growth in tax rate -	30% every 5 years from 2008
	Growth in assessments -	Population growth
Water charges	Penetration (Connections / properties)	Baseline – 33 %. Connections growth assumed to reach 50% by 2012 and 90% by 2027.
	Deposit and user charges	Connection deposit assumed at Rs. 5000 and Rs. 9000 for household and commercial connections respectively and user charges assumed at Rs. 100 per month and Rs. 250 per month for residential and commercial

Segment	Revenue driver	Basis / Assumptions
		connections respectively. Tariffs are escalated at 5% annually
Sewerage charges	Penetration (Connections / properties)	Connections growth assumed to reach 40% by 2012 and 75% by 2027.
	Deposit and user charges	Connection deposit assumed at Rs. 5000 and Rs. 9000 for household and commercial connections respectively and user charges assumed at Rs. 100 per month and Rs. 250 per month for residential and commercial connections respectively. Tariffs are escalated at 5% annually
Devolution Income	State sales tax	States' sales tax projections assumed to grow at 5%. 10% of sales tax receipts assumed to devolve to ULBs and to the municipality based on 2001 population base.
Assigned revenue and other income	Growth over baseline income (2006)	5% growth during projection period

10.1.4 Expenditure

Exhibit 10.3 provides details of the assumptions for projecting expenditures for Pattukottai.

Exhibit 10.3 Expenditure related assumptions

Segment	Revenue driver	Basis / Assumptions
Staff Costs	Growth over base salary	8% annually
Operating Expenditure	**Existing asset base** – Growth on base O&M expenditure of 2006	Assumed to grow at 5% annually
	For new capital investments – O&M has been assumed as a % of capital costs given in Exhibit 10.4 CIP	
	Water Supply	2.00%
	Sewerage and Sanitation	2.00%
	Solid Waste Management	8.00%
	Transportation & Street lighting	20.00%
	Urban services for poor	2.00%
	Others	2.00%
Administrative expenditure	Growth over average base expenditure during 2002-06	4%
Interest expenditure	Refer section 10.1.6 below.	

10.1.5 Assets

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

Exhibit 10.4 Capital Investment Plan

Segment	2008	2009	2010	2011	2012	2008-12	2013-17	2018-27	TOTAL
Water Supply	-	105	105	167	167	594	1,358	1,081	3,033
Sanitation	1,056	1,056	1,056	101	101	3,371	417	1,046	4,835
Solid Waste Management	4	-	7	15	-	25	141	95	262
Transportation and street lights	13	13	456	456	456	1,394	289	1,707	3,390
Urban Services for the poor	700	700	797	1,129	1,129	2,258	1,694	1,694	7843
Others	74	40	70	20	20	224	400	590	1,214
TOTAL	**892**	**1,913**	**2,490**	**2,842**	**1,873**	**7,866**	**4,299**	**6,213**	**20576**

10.1.6 Liabilities

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

Exhibit 10.5 Loan related assumptions

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

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

10.2 Estimation of borrowing capacity and investment capacity

We have arrived at the borrowing capacity based on the Income and expenditure projections including debt servicing of existing loans as of FY ending 2005. We have arrived at the borrowing capacity of Pattukottai as the minimum of

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

10.3 Possible financing mix for achieving full investments

Based on these criteria, the borrowing capacity of Pattukottai works out to Rs. **4673** lakh. At an aggregate level, assuming loans to be equivalent to **50%** of investment, sustainable investment capacity works out to Rs. **20576 lakh**, which translates to about 45 % of the total investment requirement (including slum rehabilitation). If we exclude slum rehabilitation and urban services for poor projects which are largely grant funded, the borrowing capacity translates to **30** % of the total investment requirement. Hence Pat-M is constrained in meeting its capital investment requirements and would need additional grant support to fully fund its capital investment program.

10.4 Financial and Operating Plan

Exhibit 10.6 below provides a summary of the financial projections for 10 years. As seen the financials of Pat-M are highly constrained and significant efforts in revenue enhancement are required to improve the financial position of Pat-M.

Exhibit 10.6 FOP projections

	Actual	Estd.	Projections									
Income	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2012**	**2014**	**2015**	**2016**	**2017**
Own income	247	257	361	374	387	693	867	1,005	1,082	1,164	1,321	1,240
Property Tax	118	119	206	210	213	216	220	312	317	322	327	335
Profession Tax	25	26	34	34	35	35	36	48	48	49	50	51
Water Charges	31	34	38	42	46	173	194	225	249	274	371	287
Sewerage Charges	-	-	-	-	-	169	311	307	346	389	435	419
Service Charges & Fees	21	23	25	27	30	33	36	40	44	48	53	59
Other Income	52	55	58	61	64	67	70	74	78	81	85	90
Assigned Revenue	91	96	102	108	114	121	129	136	144	153	162	172
Devolution Fund	232	254	279	307	334	364	398	436	477	522	571	625
Total Income	**570**	**607**	**742**	**789**	**836**	**1,179**	**1,393**	**1,578**	**1,703**	**1,839**	**2,055**	**2,037**
Expenditure												
Salaries	131	138	144	152	159	167	176	184	194	203	213	224
Operating Expenses	118	126	154	167	252	351	347	291	313	337	366	398
Administrative Expenses	108	2	2	3	3	3	3	3	3	4	4	4
Finance charges	2	35	40	85	139	210	238	257	278	292	300	303
Total Expenditure	**359**	**366**	**431**	**557**	**782**	**1,081**	**1,174**	**1,174**	**1,252**	**1,328**	**1,402**	**1,476**
Surplus	**210**	**242**	**311**	**232**	**54**	**97**	**219**	**404**	**451**	**511**	**652**	**562**

10.4.1 Summary

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

Exhibit 10.7 FOP summary

Estd. Revenues – FY 2008 (Rs. Lakh)	743
Estd. Revenues – FY 2016 (Rs. Lakh)	2,057
Estd. Revenues - FY 2027 (Rs. Lakh)	4,252
Revenue CAGR % - FY 2008-17	11.9%
Revenue CAGR % - FY 2008-27	9.6%
Average TE (excluding depreciation)/TR (%)	55%
Average DS/TR (%)	17%
Average DSCR	3.11
Borrowing Capacity	4673
Investment Requirement	20,576
Investment Capacity (at 50% loan)	9,345
IC/IR (including Urban Service for Poor)	45%

Disclaimer: ***The report is based on information collected by IMaCS from sources believed to be reliable. While all reasonable care has been taken to ensure that the information contained herein is not untrue or misleading, IMaCS is not responsible for any losses that the client may incur from the use of this report or its contents. The assessment is based on information that is currently available and is liable to change. The analysis that follows should not be construed to be a credit rating assigned by ICRA's Rating Division for any of the company's debt instruments. IMaCS is not a legal firm and our advice/recommendations should not be construed as legal advice on any issue.***

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