1

PROJECT OVERVIEW

1.1 ASSIGNMENT BACKGROUND

The World Bank has been a partner in urban reform program of Government of Tamil Nadu (GoTN) with engagement through Tamil Nadu Urban Development Project (TNUDP) - TNUDP-I, TNUDP-II and TNUDP-III (in progress). Towards taking forward the urban reform agenda, the GoTN is now implementing the TNUDP-III with focus on furthering the reforms initiated under TNUDP-II.

The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), as a financial intermediary, intends to assist the Commissionerate of Town Panchayats (CTP) in strengthening and improving the financial position of its Town Panchayats for effective capital investment management and urban service delivery. These towns possess a good potential for implementation of such financial reforms for which it is essential to formulate a City Corporate Cum Business Plan. The CTP has started the process of capacity building in Town Panchayats through this process to enhance the vision of the ULBs in growth of their towns.

1.1.1 CITY CORPORATE PLAN

A City Corporate Plan (CCP) is the ULB's corporate strategy that presents both a vision of a desired future perspective for the city and the ULB's organization, and mission statements on how the ULB, together with other stakeholders, intends to work towards achieving their long-term vision in the next ten years. A CCP translates mission into actions and actions into outcomes. When a CCP is developed in close consultation with, and endorsed by all relevant local stakeholders, a ULB and others who commit themselves to action can be held accountable for their mission statements, actions and expected outcomes. The CCP will make economic development and improved quality of life the long-term objective for all of the actions defined in the plan. The full set of proposed regulations, tax policies, infrastructure and other local government program expenditures will be framed with long-term economic development and improved quality of life, especially for the poor, firmly in mind.

City Corporate Plan

A City Corporate Plan (CCP) helps a city take stock of its opportunities and endowments, gauge its place in relation to its hopes for the future, and to link these objectives to choices for improving its competitive position, for instance in producing tradable, identifying critical investments, mobilizing private sector partnerships, and to reduce poverty. A CCP is visualized as a document that would provide a perspective and a vision for the future development of a city. It should present the current status of city's development; set out the directions of change; identify the thrust areas; and suggest alternative routes, strategies and interventions for bringing

about the change. It should establish a logical and consistent framework for evaluation of investment decisions. A CCP will specifically comprise of the following:

- Situation analysis, with regard to the context i.e., demographic and economic trends, city governance, service provision & delivery including systems & structures, financial status of the city government and agencies concerned with service provision including an analysis of their creditworthiness; and effectiveness and efficiency of the institutional frameworks;
- Perspective and a vision for the city;
- Strategy identifying key strategic issues, risks and opportunities facing the city, with focus on reform and reform priorities; and
- City Investment Plan, referring to order of investment needed to implement the perspective and alternative financing strategies.

A CCP clearly defines how a ULB will a) serve its customers (businesses and citizens), e.g. how it intends to guarantee basic level of urban services to all citizens, make urban planning responsive to emerging needs, become responsive to the needs of, and improve its services, to local businesses; b) run its business, e.g. how it intends to manage public finance in a modern and transparent way, execute urban planning and governance in line with an established framework, become more responsive, cost and time efficient through integrating technology in their governance and service delivery processes; and c) manage its resources, e.g. how it intends to increase revenues and expand its tax base to allow for self-sustaining urban service delivery, improve its creditworthiness, but also how it intends to recruit and retain a skilled workforce.

Context of a City Corporate Plan

Past efforts to produce this kind of broad, integrated approach have been fraught with coordination problems and multiple implementation agencies, which have lead to confusion and wasted resources. Moreover, past planning, like city master plans, have been excessively technical and unresponsive to citizen input and demand. The CCP is different from master planning as cities are now more open to outside influences in a globalized economy, and more able to act on opportunities for growth. At the same time, decentralization is giving cities more scope for action, and democratization is opening the planning and political process to much greater participation and accountability. A CCP is geared to respond to these new circumstances.

1.1.2 OBJECTIVES OF THE ASSIGNMENT

The aim of the assignment is to prepare consensus-based city corporate plan for a period of 10 years (2007-2017 with 5 yearly updates and if desired, the annual plans) indicating policies, programmes, strategies and funding mechanisms to meet the development requirements. The corporate plan would be formed as shared vision for the city involving various stakeholders with a long-term development perspective. The coverage of the CCP should focus on the following:

- What does the analysis of town's profile show? Where are the opportunities and where are the key constraints?
- Given the opportunities and constraints, where does the town wishes to move in a medium-term perspective? While the vision is forward-looking, it is also a

realistic vision, achievable with a given time frame.

- What strategic options are available to achieve the vision? What are the costs and benefits of alternative strategic options? Which of the strategies will help the town achieve the vision at least cost or maximum impact?
- What would be the aggregate investment needed to implement the vision? What are the options for mobilizing resources for implementing the City Corporate Plan (CCP)?
- What reforms other than those embodied in the JNNURM, UIDSSMT & IHSDP are necessary for effectively implementing the City Corporate Plan (CCP)?

The specific objective of this exercise is to visualize the town in the next 10 years and to–

- Define the growth directions and service up-gradations in relation to the activity mix / growth;
- Look at the demand for the projects specified by the ULBs, and come out with gap in services with respect to the vision;
- Broadly outline the infrastructure needs;
- Define specific rehabilitation and capital improvement needs with regard to priority city infrastructure in both slums and other areas;
- Define revenue enhancement and revenue management improvements required to sustain the rehabilitation proposed;
- Reforms required in local administration and service delivery;
- Management changes required at the local level to improve O&M of assets, and
- Measures to address common growth and infrastructure issues.

1.1.3 SCOPE OF WORK OF THE ASSIGNMENT

The general scope of work for the assignment covers following three key stages:

- **City Assessment & Optional Strategy Formulation Stage:** This stage of the assignment will focus on fact finding and analysis with regards key development elements of the city and will be based on secondary data and extensive consultation with relevant stakeholders at the disaggregate level. Following are the components:
  - Demography, Economic Development & Growth Assessment;
  - Institutional Arrangements;
  - Infrastructure - Housing and Urban Basic Services ;
  - Physical and Environmental Aspects; and
  - Financial Assessment covering a detailed financial assessment of key stakeholder agencies and a preliminary Financial Operating Plan and Project Cash Flows

- **Stakeholder Consultation:** A City-level Stakeholder Consultation Workshop to discuss the “State of the City Report” covering elements of growth and economic development; institutional framework for service delivery; current service levels, gaps and future requirements in terms of services and investments; and key financial issues; optional strategy elements for service delivery enhancement and financial sustainability. This stage would articulate stakeholders’ expectations and formulate city’s development vision, prioritize city development issues, strategy / action consensus and choice of strategy options

- **Finalization of City Corporate Plan:** This stage would finalize and recommend strategies to achieve the city’s development vision, in consultation with the concerned stakeholder agencies. The strategies will be supported with specific

projects and action points as relevant, phased over a 10-year horizon, with specific annual action plans for the first five years, indicating stakeholder roles and responsibilities.

The scope of work specifically covers but not limited to the following:

1. Assess the demand for the projects listed out by these Municipalities and analyze demand for the next 10 years
2. Financial assessment of the ULBs- an assessment of local finances (past 5 years) in terms of sources and uses of funds, base and basis of levy, revision history and impacts, State assignments and transfers- base and basis of transfer and its predictability; uses of funds outstanding liabilities (loans, power dues, pension etc) and, a review of revenue and service management arrangements. Levels of service, coverage and quality of municipal services in both poor and non-poor localities. Staffing and management arrangements in delivery of services
3. Outline issues in revenue realizations, quality of existing assets in relation to service levels and coverage, and institutional constraints. Develop quick indicators of performance, based on -
    - Current coverage and additional population in the medium term (10 years) and unit costs, indicate city level investment requirement for upgradation of city wide infrastructure.
    - To improve service coverage and asset quality:
        - prepare a comprehensive Asset Management Plan and use fiscal notes and policy analysis to assist in making informed investment choices to achieve sector/ city goals
        - define priority assets and indicative costs of rehabilitation
        - conduct fiscal impact analysis of investments: life- cycle O&M costs, revenues from project, and costs/ impacts on finances and of not doing the project
        - explore funding options for rehabilitation of facilities
4. Prepare a financial and operating plan (FOP). The FOP is a medium term framework of the ULBs, and shall present the following–
    A. Additional data to be collected
        - Break up of energy cost on UG, WS etc.
        - Salary for all the departments including staff and payments to private operators
        - Finding out the benchmark cost i.e. at ideal condition what will be the cost of the identified investments, a table indicating the investment plan for next 5 years with identified source of finance.

    B. Areas of reduction in expenditure
        - Energy audit resulting in savings in energy.
        - Leak detection resulting either in connections or in the tariff (or) maintaining the same supply and achieving a reduction in energy cost.
        - Privatizing the MSW collection and identifying a BoT operator for elim9inating, composting etc, items of revenue can be identified.
        - Laying of Cement concrete road / Fly ash and savings on maintenance cost resulting in increasing operating surplus.
        - Water recycling / reuse
        - Rejuvenation of tanks and reduction of cost / liters of water produced
        - Privatization & option for revenue rising.

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

- Land development for raising revenue (not the traditional commercial complexes)
- Suggestion for improvement of revenues

5. Prepare a draft Memorandum of Association between ULB and TNUIFSL. The MoA will outline the base line (based on the Situation Analysis) and the Performance Benchmarks to be monitored, apart from other financial and loan covenants. The targets will be based on service development targets and outputs of the financial and operating plan.
6. Initiate consultations with council and local stakeholders on the priorities; redefine priorities (rerun FOP if required) and work with the Council to resolve on adoption of the City's FOP and CCP actions.
7. Finalize Action Plan for the City, with a resolution from the council on the priorities and commitment to implement revenue and management improvement measures.

1.2 OUTLINE APPROACH AND METHODOLOGY

The whole approach for this assignment was, both a process and a product and the focus was to identify ways of creating the conditions for improved service delivery with appropriate and suitable management action plan for the service provision and delivery including operation and maintenance of existing services on a sustainable manner. The approach adopted for the study involves the following four broad phases.

1. Framing the Process provided the essential assessment of the readiness of the ULB to take forward and helped in identifying stakeholders and come to consensus on CCBP preparation process. This phase of the assignment also drew out initial conclusions to the chief concerns of the various stakeholders. This phase also provided the basic inputs for preparing the draft template of the CCBP addressing key issues on the ULB, governance, service provision & delivery and finances;

2. CCBP Preparatory Phase includes preparation of CCBP for the select ULB based on the template and integrates the findings of the phase with a more in-depth participative analysis of the situation. This helped in identifying the structure and trends in the local economy, the dimensions of poverty in the city, gaps in infrastructure, the constraints and obstacles to progress-institutional, financial, environmental and social by collation and analysis of previous study findings, and particular primary research. This phase also focused on to finalize the consensus on the strategic options derived using the CCBP;

3. Strategic Consensus Phase focused on preparing the CCBP and building capacity among the officials of the ULBs to prepare CCBPs for their administrative jurisdictions and deriving strategic options. This phase also provided inputs for refining the outputs of the CCBP along with identified sources of assistance. This phase also addressed how the local and other national international partners can help the ULB to achieve its goals;

4. Initiating Implementation Phase involved both onsite and back-office support to the ULBs for preparing the CCBP and advised these ULBs to generate all necessary strategic outputs and make use of such outputs in implementation.

1.3 TASKS INVOLVED

The aim of the assignment is to prepare consensus-based city corporate plan indicating policies, programmes, strategies and funding mechanisms to meet the development requirements. The corporate plan would be formed as shared vision for the city involving various stakeholders with a long-term development perspective. The assignment is split into a number of following defined tasks:

1. Project Commissioning, Start-up and Mobilization
2. Framing the Process for Developing the CCBP
3. Rapid Assessment Report
4. Analytical Framework for Preparing CCBP for the ULBs
5. Development Options and Suggestions
6. Implementation, Monitoring, Evaluation and Review Arrangements
7. Report on CCBP for the ULBs
8. Project Costing and Determination of Funding Sources

1.3.1 DELIVERABLES COMPLETED

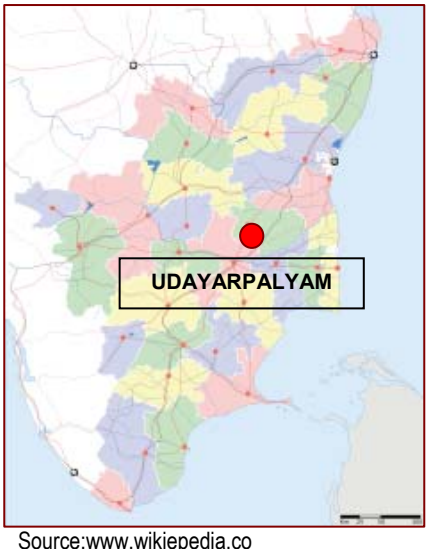
- Rapid Urban Assessment (RUA) Report, including demand assessment of Identified Projects and Strategies towards preparation of the CCBP for Udayarpalayam Town Panchayat was submitted. The report comprised of a review of town's economic development, physical planning and growth management issues, physical and social infrastructure status and municipal fiscal status.
- The aforementioned deliverable was reviewed by the Technical Review Committee comprising the officials of TNUIFSL, Commissionerate of Town Panchayats (CTP) and Executive and Elected Representatives from the study town and approved for proceeding to the subsequent stages of the assignment.
- In continuation, the study team formulated a vision statement through stakeholder's consultations, strategies to achieve the vision, Capital Investment Plan (CIP) and the same were submitted as part of the revised deliverable schedule in the form of "Strategic Plan" and "Interim Report".
- The aforementioned deliverables were also reviewed by the Technical Review Committee and approved for preparation of the "Draft Final Report".
- Draft Final Report was prepared covering all the project tasks and consultation with CTP and Stakeholders were also performed for finalizing the priorities and investment sizing and funding options.
- The Draft Final Report was reviewed by the above mentioned Technical Review Committee and accorded the approval for submission of Final CCBP Report with Draft MoA and Council Resolution.

2

PROFILE OF UDAYARPALAYAM

2.1 REGIONAL SETTING

Udayarpalayam Town Panchayat comes under the administrative territory of Udayarpalayam Taluk, Ariyalur District. The town is located at a distance of 45kms form the district head quarters on the State highways, which runs form Tiruchirappalli to Chidambaram.



Source:www.wikiepedia.co

History of the town dates back to about 400 years, it was then under reign of Zamindars and their descendants are still in the town. The town is bounded by various small and big hamlets on all its sides.

The town has Kalyermangalam on its north. Village named Katchi perumal is found on the eastern side of the town. Parnam and CholanKurichi are found on the western and southern sides of the town. All important towns such as Tiruchirappalli, Thanjavur and Chidambaram are located with in the radius of 100 kms form the town.

2.2 LOCATION AND LINKAGES

Udayarpalayam is found on the State highway (SH 4). The town is located at a distance of 50 kms on the north eastern side of Tiruchirappalli. The town is well connected to all the parts of TamilNadu by roads.

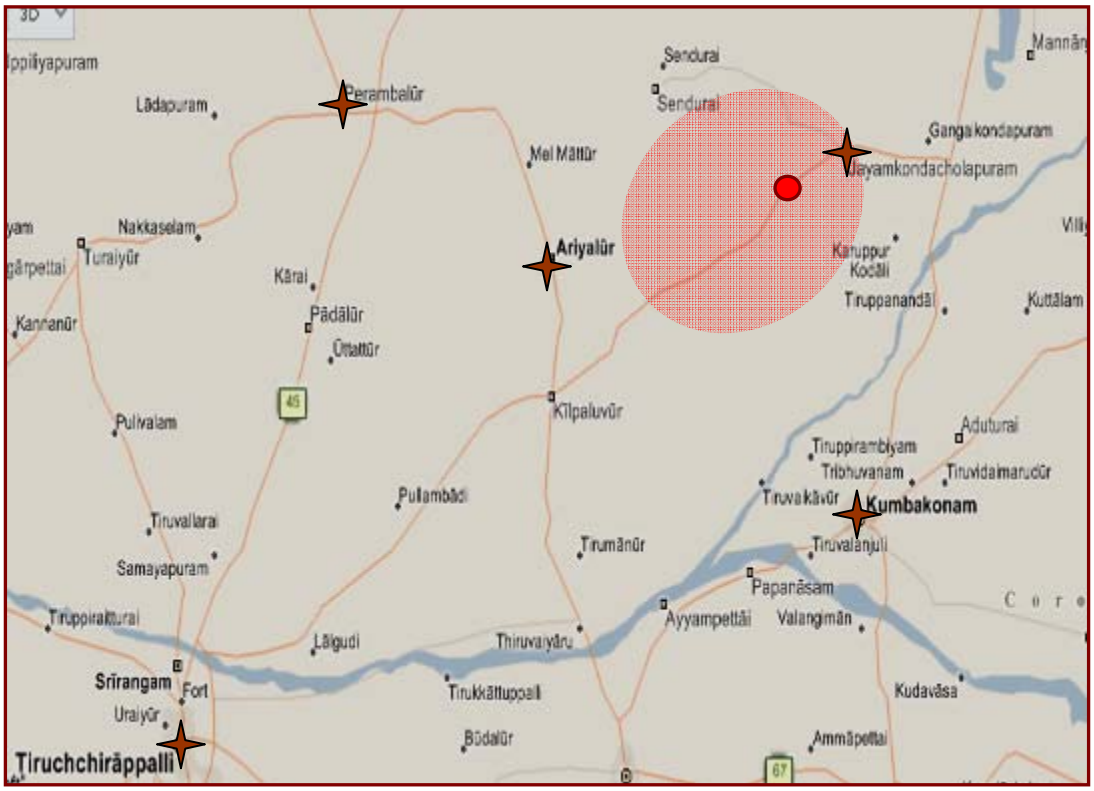
Table 2.1 Salient Features of UDAYARPALAYAM Town

TOWN	**UDAYARPALAYAM**
District	Ariyalur
Area	12 sq. km.
Census population	11,302 (year 2001)
Connectivity	**Road:** Frequent bus services connect the town with other urban centers of the state.
Climate	Tropical - Max. 38°C Min. 26.4°C; Winter- Max. 32°C Min. 20.6°C; Annual Precipitation: 750 mm.

ROADWAYS: The town is found in the corridor of Tiruchirappalli – Chidambaram and is well connected to the towns of Viruthachalam and Kumbakonam and Tanjore and Perambalur. Private and Government buses are in operation in the town.

RAILWAYS: The nearest railway station to the town is Arialyur, which is a distance of 28 kms from the town.

AIRWAYS: The nearest Airport to the town is Tiruchirappalli

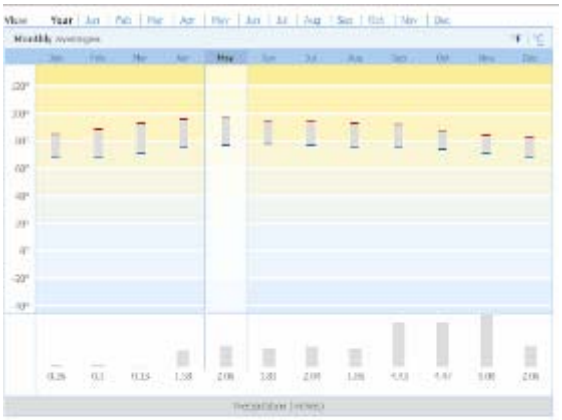


Source: msnmaps.com

2.3 PHYSICAL CHARACTERISTICS

GEOGRAPHY

The town is located in the inland district of Ariyalur, the region falls in the delta basin of River Kollidam, the tributary of River Cauvery. The topography of the town is slightly undulated, with large number of water bodies within it, wherein the water from the town drains.



January			0.26 in
February			0.2 in
March			0.13 in
April			1.06 in
May			2.06 in
June			1.63 in
July			2.04 in
August			1.06 in
September			4.42 in
October			4.47 in
November			5.06 in
December			2.06 in

CLIMATE

TEMPERATURE: The town has hot, dry climate almost throughout the year. There is no much variation between the maximum and minimum temperatures in the town.

RAINFALL: The town receives rain mainly during the months of October, November through the North East monsoon. On an average the town receives 750mm of rainfall.

SOIL TYPE

The major soil type found in the town is Red Soil. The principal crop cultivated in this area is Cashew nut.

2.4 HISTORY OF UDAYARPALAYAM

POLIGAR OF UDAYARPALAYAM

The town was named after the rulers "The Udayars". Udayarpalayam was under the Zamindar rule nearly four Hundred years. When the Vijayanagara king Viranarasmha Raya (A.D.1509) was ruling, the Tamil Nadu was divided in to Gingee, Tanjore, Trichy, Mysore and Madurai petty kingdoms, Only during his regime, the poligar of Kachi Rangappa Udayar, was appointed to assist the Gingee king Udayagiri Ramabhadra Nayak,

KALAKKA THOLA UDAYAR, otherwise called 'Kaduvettigal' that means one who destroyed the forest and converted them for cultivation. Their origin is not clearly known some one says, they were the descendants of pallavas. According to ancient Tamil Literature, 'they were the descendents of Kurumbas, and they come from Tondaimandalam. Kalakka Thola Udayars are purely vanniyars but until today they speak Telugu.

SINNA NALLAKALAKKA THOLA UDAYAR, He was the second son of kachi Rangappa Udayar, who succeeded his elder brother. Kachi periya kalakka thola udayar was of short region. He erected a temple Udaryarkoil, in memory of his elder brother, which later became kalakka thola puram. As per the guidelines of his teacher Namasivam, he had renovated the Chidambaram temple. After this, he had excavated a tank near cholapuram, in 1475 A.D. and erected a town around it. This place became the Udayarpalayam town. The legend of this place tells the importance of Siva, Rama, Angaraba, Brahma, Arjuna. Only on the banks of the temple tank 'Kandi Thirtam' there are mutts for the Thiruvavaduthurai and adhinams.

During their time they constructed many temples, and made the donation of land and other things to the temple, they excavated a lot of lakes for irrigation facilities, and did many welfare activities in this region. During the English rule, only 56 villages remained under their reign. The zaminadiri system existed still 1956, Chinnanalla Udayar, was the last Zamindar, who ruled till 1956.Even now their successors are found in the town. The town has a large palace and a temple and temple tank within its premises.

2.5 AREA AND POPULATION

As per 2001 census the town has a population of the town is 11,320 persons and 2700 households. The town has 5730 males (51%) and 5595 females (49%) in the town. In Udayarpalayam, 13% of the population is below 6 years. The town is divided into15 Wards. Ward wise population of the town is given in the following table.

Table 2.2: Ward Wise Population Details in Udayarpalayam Town Panchayat

WARD NO	NO. OF HOUSE HOLDS	TOTAL POPULATION		
		Total	Male	Female
1	214	602	326	276
2	247	1224	627	597
3	152	365	180	185
4	172	893	442	451
5	282	1867	931	936
6	212	543	275	268
7	168	647	316	331
8	122	667	348	319
9	92	78	41	37
10	177	544	274	270
11	153	616	315	301
12	214	1256	622	634
13	112	693	355	338
14	245	264	128	136
15	138	1061	537	524
Total	**2700**	**11325**	**5717**	**5603**

Source: Census of India 2001

Table 2.3: Population and growth Trend in Udayarpalayam Town Panchayat

YEAR	POPULATION		GROWTH RATE IN %	
	Total Population	Variation	Decadal	nnual
1951	6512		--	
1961	7524	1,012	15.54%	1.5
1971	8533	1,009	13.41%	1.3
1981	9408	875	10.25%	1.0
1991	9992	584	6.21%	0.6
2001	11325	1,333	13.34%	1.3

Source: Census of India 1951,61,71,81, 91and 2001

Density of the town is about 943 persons per sq.km, and the growth is in the increasing trend for the town.

2.5.1 GENDER RATIO

Udayarpalayam Town Panchayat has an average gender ratio of 1020. The maximum of the Gender ratio is 1181 in the Ward No: 1 and the minimum of the ratio 941 is found in ward: 14.

Table 2.4: Gender Ratio: Udayarpalayam Town Panchayat

YEAR	TOTAL POPULATION	MALE	FEMALE	FEMALES PER THOUSAND MALES
1991	9992	5115	4877	1048
2001	11325	5717	5603	1020

Source: Census of India 1991and 2001

2.5.2 LITERACY RATE

Udayarpalayam Town Panchayat has an average literacy rate of 62%, which is higher than the national average of 59.5%. Male literacy rate is 73% and the female literacy rate is 52%.

The ward wise details of the literate and the illiterate population are given in the following table.

Table 2.5. Literacy Rate: Udayarpalayam Town Panchayat

Ward No	Literate Population			Illiterate Population		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
1	362	178	184	240	148	92
2	816	418	398	408	209	199
3	244	120	124	121	60	61
4	590	189	301	303	153	150
5	1169	545	624	698	386	312
6	311	132	179	232	143	89
7	369	148	221	278	168	110
8	419	206	213	248	142	106
9	53	28	25`	25	13	12
10	346	166	180	198	108	90
11	324	123	201	292	192	100
12	838	415	423	418	207	211
13	462	236	226	231	119	112
14	176	85	91	88	43	45
15	708	358	350	353	179	174
	7187	**3447**	**3740**	**4133**	**2270**	**1863**

Source: Census of India. 2001

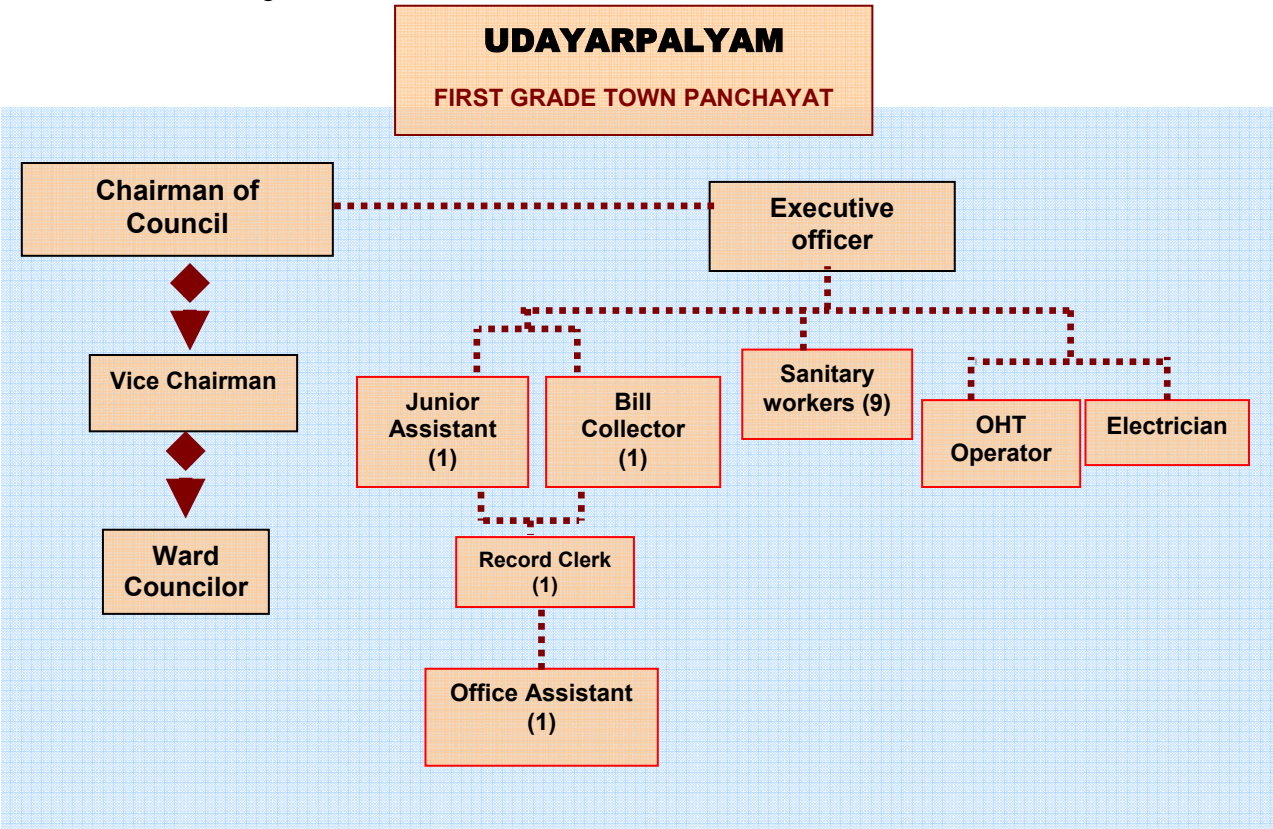
2.6 URBAN GOVERNANCE

The town was constituted as Town Panchayat in the year 1956 and the chronological order of formulation of Town Panchayat was formed

- Udayarpalayam was constituted as Village Panchayat in the year 1886 by Village Panchayat G.O.No.805 dated: 12.07.1886.
- This Town was constituted as Town Panchayat in the year of 1956 by Town Panchayat G.O.No.NS.1888 dated: 31.10.1956.

- In the year 1982 Director of Town Panchayat Proceeding No .4665/82 J5 dated 24.02.1982 Udayarpalayam town Panchayat was upgraded into First Grade Town Panchayat.
- This Town Panchayat came under the Municipal Act from the year 1996.
- In the year 11.6.2004 wide G.O.No.270 Date. 04.06.2004 coming under Panchayat act of 1994, it was again degraded as Special Village Panchayat.
- Again on 14.7.2006 wide G.O.No.55 dates 14.7.2006 the town was upgraded as First Grade Town Panchayat.

The Town Panchayat is formed by enclosing Udayarpalayam town Panchayat and 2 other habitations namely, Moorthy Nagar and Muniotharan Patti. Udayarpalyam Town Panchayat is dived into 15 wards. and representatives from each ward constitute the council. The organziation chart of the town Panchayat is explained in the following chart



3

PROJECTION OF FUTURE POPULATION

3.1 BASIS AND METHODS

A critical factor in estimating the requirement of the urban infrastructure for future planning, project formulation, capital investment estimation and outlay is the projection of population. Projection of the future population for the Udayarpalayam Town Panchayat is based on the following factors:

- Past census population and relevant details;
- Decadal growth and growth rates of the country, state (TN) and the ULB;
- Population density pattern and availability of land for the future development;
- Socio-economic characteristics and economic base along with employment generating potential;
- Development (Master) Plan for the region considering the contextual issues stated and growth pattern in terms of land use and land availability for growth including proposed plans and potential for significant change in land use (within project period/ design life);
- Positioning of the hinterland, linkages with core of region and connectivity, importance and contribution as an economic base for the region;
- Availability of resources to facilitate provision and delivery of services and facilities;
- Implications of the ongoing and proposed projects towards improving the provision and delivery of services;
- Other external and internal growth dynamics responsible for migration; and
- Other factors - tourism, natural disasters and related.

Population Projection Methods

Numerical Methods
- Arithmetic Increase
- Incremental Increase
- Geometric Increase

Graphical Methods
- Exponential Series
- Polynomial 2nd Order Series
- Power Series
- Logarithmic Series
- Linear Series

The impact of the above factors was considered while performing the projection. Population projection has been performed based on CPHEEO guidelines that are generally acceptable for urban planning and infrastructure development related projects. The base criteria adopted for the projection of future population are listed below:

- Year of Study - 2007
- Census Years – 2011 to 2061
- Design Stages - 2010 (Commissioning/Present Stage), 2025 (Intermediate Stage) and 2040 (Ultimate Stage)

Per CPHEEO guidelines and general construction practices, civil works/structures in the case of urban infrastructure projects such as water supply and sewerage are designed for a service life of 30 years and mechanical/electrical equipment for 15 years. Therefore, design stages essentially reflect the period/duration for which projection is required to design the replacements, renewals and reconstruction activities. Projection of future population has been performed for the vision period exceeding 50 years (2007 - 2061).

3.2 METHODOLOGY AND EVALUATION OF PROJECTION METHODS

The methodology used to project growth of population for the Udayarpalayam Town Panchayat is outlined below:

- A pilot projection was performed to evaluate the past trend of decadal growth, i.e. the population of 2001 was projected by utilizing available census data from 1961 to 1991. The projected value (by numerical and graphical methods) was then compared with the actual census population to identify the method that resulted in the minimum variation (nominal - +/- 10%);
- Projection of future population (2007 - 2061) was then performed by utilizing the method(s) that resulted in the minimum variation (< 10 percent). In cases where the variation was found to be significant (> 10 percent), the applicable methods were utilized for comparison;
- Results from the aforementioned methods were compared, average decadal growth rates estimated and submitted for review and approval by the Review Committee.

Details of the past and present census population as provided by the ULB and verified with the Department of Census are furnished in Table.3.1.

Table 3.1: Census Population (1961 - 2001) of Udayarpalayam Town Panchayat

Year	Area	Census Population	Decadal Growth Rate	Density
	sq.km.	pers.	%	pers./sq.km.
1951	12.00	6,512	--	543
1961	12.00	7,524	15.54%	627
1971	12.00	8,533	13.41%	711
1981	12.00	9,408	10.25%	784
1991	12.00	9,992	6.21%	833
2001	12.00	11,325	13.34%	944

Source: Analysis based on the Data provided by Udayarpalayam Town Panchayat; 2007 & Census of India.

3.3 PROJECTION OF FUTURE POPULATION

Based on the aforementioned methodology and evaluation performed, population has been projected for the Udayarpalayam Town Panchayat for the specified stages based on numerical and graphical methods. Details of the comparison of population projection by the aforementioned methods for the Udayarpalayam Town Panchayat and the evaluation of projection methods (pilot projection) are enclosed as Annexure – 1.

A comparison of results of population projection for Udayarpalayam Town Panchayat is shown below in Table 3.2.

Table 3.2: Population Projection for Udayarpalayam Town Panchayat – Comparison

YEAR	CENSUS	ARITH	GEOM	INCR	Exponential
1951	6,512				
1961	7,524				
1971	8,533				
1981	9,408				
1991	9,992				
2001	11,325				
2007		11,903	12,070	11,941	12,146
2010		12,191	12,461	12,260	12,540

2011		12,288	12,594	12,368	12,674
2021		13,250	14,006	13,491	14,094
2025		13,635	14,614	13,963	14,705
2031		14,213	15,576	14,694	15,673
2040		15,079	17,139	15,846	17,245
2041		15,175	17,322	15,978	17,429
2051		16,138	19,264	17,342	19,381
2057		16,716	20,532	18,199	20,657
2061		17,101	21,423	18,786	21,553

3.4 RECOMMENDED PROJECTED POPULATION

The projection of future population has been performed for the Udayarpalayam Town Panchayat based on the pertinent factors, potential impacts, related aspects and the applicable methods.

It can be observed that the projection of future population by 'Arithmetic Increase Method' is optimal projections for the purposes of planning for urban infrastructure projects. Thus, it is recommended to select the lower projected value of the aforementioned methods, i.e. 'Incremental Increase Method' as the design population for the respective project design stages and vision period. The recommended projected population is as follows:

Table 3.3: Recommended Projected Population

Year / Stage	Census Population	Recommended Projected Population
1951	6,512	
1961	7,524	
1971	8,533	
1981	9,408	
1991	9,992	
2001	11,325	
2007		11,903
2010		12,191
2011		12,288
2021		13,250
2025		13,635
2031		14,213
2040		15,079
2041		15,175
2051		16,138
2057		16,716
2061		17,101

3.5 PROJECTION FOR PROJECT FORMULATION/DETAILED DESIGN

The aforementioned projection has been performed only for the purpose of assessment of the demand versus the supply gap in urban infrastructure provision and delivery. It is recommended to conduct a detailed projection during the Detailed Project Report preparation stage by considering the below listed factors:

- Project-specific requirements and characteristics;
- Present and past population, area and density of each ward in the Corporation;
- Classification of wards as high, medium and low-density zones (relative grading) to assess the localized development and growth pattern of population;
- Potential for future development in each ward based on proximity to city/town center, its position/location in the District, established road network and access to related infrastructure and transport facilities; and
- Present land use pattern and possible significant change in land use over the project period (generally 30 years); and
- Growth rates published by the Department of Census, GoI, and are characteristic/specific to similar cities.

4

ASSESSMENT OF DEVELOPMENT NEEDS

4.1 ASSESSMENT OF NEEDS

The existing system/situation is observed to be far from desirable and the town is in need of improvement across the identified mission areas and sectors. The need was not only revealed during the analysis, but was also brought out, by the stakeholders and beneficiaries during field visits, discussions and consultations conducted by the study team. Therefore, it is imperative to assess the potential for future development and evolve strategies to set the Town Panchayat on the road to a well planned development.

The objective of the CCBP for Udayarpalayam is to develop a long term vision and short term strategic plan covering the priority sectors over the next five years. A City Corporate Plan (CCP) is the corporate strategy of the ULB that presents both a vision of a desired future perspective for the town and the ULB's organization, and mission statements on how the ULB, together with other stakeholders, intends to work towards achieving their long-term vision in the next five years. Thus, a CCP preparation process is essentially a consultative process and therefore identification of stakeholders to be involved in the process is of crucial importance. The Strategic Plan has been developed in partnership with various stakeholders and interest group dedicated to the town's well being. Areas considered for development in the future are given below:

- Physical Development
- Social Development
- Slum Improvement
- Economic Development
- Urban Governance
- Finance Improvement

Accordingly, an assessment on the problems, performance and potentials of the areas of development was carried out which served as the critical input for evolving the desired framework for the Strategic Plan. The sectors covered under this assessment and an overview of the sectors including the prevailing issues are illustrated in the following sections.

4.2 PHYSICAL DEVELOPMENT

The sectors covered under physical development are listed below:

- Land Use;
- Water Supply;
- Sewerage and Sanitation;
- Storm Water Drainage;
- Solid Waste Management;
- Traffic and Transportation;
- Street Lighting; and
- Other Amenities

4.2.1 LAND USE

The town does not have a Development (Master) Plan. The ancient town of Udayarpalayam was ruled by zamindars, whose descendants are still found in the town. The palace and the temple in the town form the focus of growth, around which settlements have sprung up.

DEVELOPMENT PATTERN

The spatial distribution of town shows two distinct characters, The older settlements of the town around the old temple area and the Palace of Zamindar, which are in existence for more than 200 years, these developments have strong roots of the ancient tradition and still display those characters. Most of these developments are rural in nature. The older town areas acts as central nucleus around which the residential activities are arranged in concentric manner.

Urban character of the town is more pronounced along the Trichy road and in the main Bazaar Street, wherein the commercial activities are found to be concentrated. The new developments are happening in ribbon pattern parallel to the state highway

GROWTH DIRECTIONS AND AREAS

Location of the town on the State highway of Tiruchirappalli – Chidambaram and the nearness to the neighboring urban centers like Jayakondam and Ariyalur, enhance the growth of the town along these directions. New colonies are developed on the southern side of the town indicating the direction of growth in the town.

Growth Constraints: The major constraint for the town is poor connectivity with the neighboring villages which is hampering the development. The out migration of people from the town in search of employment opportunities has brought the growth stagnant in general.

Growth Potentials: Growth potential of the town is more pronounced at the regional level, being the nodal centre for nearby villages. The location of the town on the highways makes it easily accessible and supports the town's economic potential. Weaving is the only significant economic activity of the town. The development of this household industry can induce development in the town.

4.2.2 WATER SUPPLY

ASSESSMENT OVERVIEW

Udayarpalayam Town Panchayat is served with protected water supply scheme commissioned in the year 2001 -02 by the TWAD Board.

SOURCE: Under this Scheme the main source of water is Kollidam River. The head works consists of eight infiltration wells (3.66m dia and 9.14m depth) and one ring well (1.8m dia and 6.3m depth) in Kollidam River at Kodalikaruppur. Water from the ring well is pumped to the collection well cum pump house (4.88m dia cap 60000 liters) by means of 7.5 HP Submersible pump set through 14cv 0mm OD PVC pipe for a length of 276m. Water

Table No.4.1: Other Sources of Water Supply

Source	Quantity (Nos.)	Yield
Collection wells	3	4.5
Bore wells	16	-

Source: Udayarpalayam T.P; 2007

from the Infiltration well is pumped to the collection well cum pump house through 225m dia C Class B pipe. The other sources of water in the town are listed in the table 4.1.

Table No.4.2: Existing Storage Capacity

Type of Reservoirs	Quantity (Nos.)	Capacity (LL)	Ward Coverage
Pusari Theru	1	2.5	1,2,5,6,7,8,9,10, 11,13,15
Vellai Pillayar Koil Theru	1	1.0	1,2,3
North Harian Street	1	1.0	3,4
South Harijan Street	1	0.60	12,14
Moorthyan Nagar	1	0.30	14
Total		5.40	

Source: Udayarpalayam T.P; 2007

SERVICE RESERVOIRS: From the booster station at Edayur located a distance of 28 kms from the source; the pumping main is branched to the service reservoir of 2.5 LL capacity in Pusari Theru, for a length of 145 m of size 150 mm AC CL 10 pipe and 140mm OD PVC pipe for a length of 795 m to service reservoir. The location and capacity of the OHT's in the town are given in the following Table.

DISTRIBUTION SYSTEM: The total length of the distribution lines in the town is 24 kms. The ward Coverage of the OHT's is given in the table. The town has a total of 1010 connections in the town, of which 10 connections are commercial.

SUPPLY: The town Panchayat is supplied with 70 lpcd of water daily. All the areas of the town are covered with the distribution system. There are about 58 public fountains in the town to supply water other the house connections. All the connections in the town are unmetered. Flat rate of Rs.50 per month is collected by the local body for the residential connections and Rs.100 is collected for the Commercial connections.

Table No. 4.3: Water Supply Charges

Type of Connections	Deposit Charges	Tariff Charges
Residential	3500	50
Commercial	7000	100
Industrial	7000	100

Source: Udayarpalayam T.P; 2007

Table 4.4 shows Key service indicators of the existing water supply system

Table No. 4.4: Performance Indicators - Existing Water Supply System

Sl. No.	Service Indicator	Unit	Current Status	Normative Standard
1.	Daily per capita supply (2006/2007)	Litres	74	70
2.	Roads covered with distribution network	Percent	126.45	> 100
3.	Storage capacity with respect to supply	Percent	100	33
4.	Treatment capacity available with respect to supply	Percent	100	100
5.	Property tax assessments covered by service connections	Percent	11	85
6.	Proportion of non-domestic service connections	percent	1	> 5.00
7.	Slum population per public stand post	persons	126	150

Source: Udayarpalayam T.P; 2007 and Analysis

KEY ISSUES

Discussions were held with ULB officials, stakeholders and elected representatives of the Town Panchayat to assess the key issues in the present water supply system and its scope for improvement. The issues identified through discussions, field visits and service analysis are outlined below:

- ***Improvements to the Existing System:*** The existing distribution system was laid in 1988 and requires specific improvements to improve the water supply conditions.
- ***Inadequate Service Coverage:*** Only about 11% of the properties assessed for tax are provided with water supply through house service connections. In terms of absolute numbers, 1010 properties have been provided with house service connections against the 3,000 properties for which tax assessment has been made. In the extended areas, the quantity of water supplied is found to be less.
- ***Inadequate Summer Storage***: Storage of Rainwater for summer needs / recharging ground water in the water bodies is not utilized to the optimum capacity.
- ***Seasonal Variation:*** Water is supplied only once in two or three days during the summer season due to reduced availability at the source.
- ***Need for Asset Management Action Plan***: It is required to maintain an effective O&M Schedule, for water supply assets, for regular maintenance and energy optimization

POTENTIALS FOR SYSTEM IMPROVEMENT

The prevailing situation of Water supply system in the town was analyzed from all perspectives to articulate and assess the future possible requirements for the town. The objective of this analysis is to essentially demarcate potentials and drawbacks of the existing system, weigh the possibilities and prepare the frame work for establishing an improved, effectively planned, designed, operated and maintained system:

- Distribution lines in the town cover about 82% of the existing road network and there is scope for increasing the House Service Connections by extending the HSC to the entire town.
- Town has the capacity to expand its service connections as the consumers are willing to pay and avail service connections once defects are addressed and rectified.

4.2.3 SEWERAGE AND SANITATION

OVERVIEW

UNDERGROUND SEWERAGE SYSTEM: Udayarpalayam Town is not provided with under ground drainage scheme. Sewage and sullage is discharged to open drains and disposed into the water bodies.

SANITATION FACILITIES: The town has 2 community toilets one constructed at Tiruchirappalli Road and the other at North Harijan Road under the VAMBAY Scheme. These toilets were found to be not in use.

Table No.4.5: Sanitation Facilities

Location of the Toilets	No of Seats		No of Bathrooms
	Male	Female	
Trichy Road	4	4	4
North Harijan Road	4	4	4

Source: ULB.

Public are very reluctant to use this facility due to lack of awareness. These toilets are to be maintained by the self help groups and are provided with water supply through bore wells.

ADEQUACY ANALYSIS

Table No.4.6: Key Performance Indicators - Sewerage and Sanitation

Sl. No.	Service Indicator	Unit	Current Status	Normative Standard
.	Roads covered by UGD network	percent	NA	85
.	Sewage treatment capacity	percent	NA	80
.	Water supply connection having access to UGD	percent	NA	85
.	Assessment covered with septic tanks	percent	2	--

Source: ULB and Analysis

KEY ISSUES

The following issues and scope of improvement for sewerage and sanitation services were identified for the town based on the discussions with the officials of local body, stake holders, site visits and subsequent service analysis:

- ***No proper Drains for Sewer Collection:*** The town does not have adequate drains. The sewage water from the households are let into the streets causing an unhealthy environment.
- ***Insufficient Public Sanitation Facilities:*** The numbers of persons using public toilets are minimal. The ratio of the persons using the facility is 911 persons per seat.
- ***Public awareness*** on Health and sanitation appears to be very low.
- ***Poor drainage conditions:*** The town has large number of water bodies within the town area and non availability of sewerage facility in the town has degraded the condition of these water bodies.

POTENTIALS FOR SYSTEM IMPROVEMENT

In order to appreciate and articulate the current situation and present future possibilities, the Sewerage and Sanitation sector was analyzed from all perspectives. The objective of this analysis is to prepare the roadmap for an improved, effectively planned, designed operated and maintained system. Such an analysis point out the following points:

- Low cost sanitation facilities need to be provided to Low income Groups
- Subsidized Sanitation facilities for the other House holds.

4.2.4 STORM WATER DRAINAGE

OVERVIEW

DRAINAGE SYSTEM: The terrain of the town is mostly flat; the rain water gets collected in the low lying areas of the town. There are 10 water bodies in the town, which are the major Flood moderators of the town. The rain water from the storm water drains are collected in theses water bodies. There are 2 water bodies in the town, which are used by the people for their domestic activities such as washing and other domestic activities.

DRAINS: The total length of the drains in the town is 16.50 km. The type and length of the drains is shown in the Table 4.7. The extended areas of the town do not have any drains. Even the pucca drains constructed do not carry any storm water in many areas due to missing links in the network of drains due to encroachments. A critical example of such drains is shown in the figure.

Table No. 4.7 Storm Water drains

Type of Drains	Length (Kms.)
Pucca Drains	15.00
Kutcha Drains	1.50
Total	16.50

Source: ULB

The table below shows the indicators of Storm water Drains of the town.

Table No. 4.8: Key Performance Indicators - Storm Water Drains

Sl. No.	Service Indicator	Unit	Current Status	Normative Standard
1.	Road length covered with storm water drainage	percent	89.93	130
2.	Pucca Drains (Open & Closed)	percent	90.91	100
3.	Road length covered with Pucca drains	percent	79.83	130

Source: ULB and Analysis

KEY ISSUES

Discussions were held with principal stakeholders of the Town to assess the key issues that surround the system and its scope for improvement. The issues identified through discussions, field visits and service analysis are outlined below:

- The town **Lacks Proper Drain Network.**
- ***Silting and Solid Waste Accumulation:*** Silting and uncontrolled garbage dumping also causes blockage and stagnation of rain water or waste water is a common scene in drains as well as the areas around these drains. Tanks around the town, which can act as flood moderators, have also got silted.
- ***Underutilized Water Bodies:*** Areas under water bodies within the town limit are not maintained properly resulting to under utilization. Presently, only sewage flows into many of these water bodies
- ***No drainage facilities in the Slum Areas:*** The slum in the town does have adequate drains and the water gets clogged on the streets during rainy seasons, causing un-healthy environment.

POTENTIAL FOR SYSTEM IMPROVEMENT

The objective of this analysis is to essentially demarcate potentials and drawbacks of the existing system, weigh the possibilities and prepare the roadmap for an improved, effectively planned, designed, operated and maintained system. The potentials identified are as follows:

- Terrain, though very gentle, helps easy flow of storm water into the channels and water bodies.
- Available natural gradients are enough for achieving self cleansing velocities for open drainage system.
- The town has better storm water disposal points

4.2.5 SOLID WASTE MANAGEMENT

OVERVIEW

WASTE GENERATED: The town generates about 2.5 tons of solid waste daily. The Solid waste generated includes the waste from households, hotels, market areas, bus stands and other commercial and trade establishments of the town.

COLLECTION SYSTEM: About 2 tons of the waste generated in the town is collected by the Local body daily. The Self Help Groups of the town collect waste from 15 wards of the town. The number of vehicles available for waste collection is mentioned in Table.3.9. A total of 4 sanitary workers are involved in street sweeping activities.

DISPOSAL METHOD: The wastes collected from the households are transported using pushcarts and power tiller to the dumping yard. The Local body has constructed the Compost facility adopting vermi-composting as the method of processing. An extent of 1.03 acres of land is earmarked for this purpose at the southern end of the town.

Table No. 4.9: Vehicles used for Collection of Waste

Type of Vehicles	Nos
Push carts	4
Power tillers	1
Total	5

Source: ULB.

An analysis is made with regard to adequacy of the existing system of Solid Waste Management and indicators are presented in the following table:

Table No. 4.10: Key Performance Indicators - Solid Waste Management

Sl. No.	Service Indicator	Unit	Current Status	Normative Standard
1.	Estimated waste generation per capita per day	grams	177	210
2.	Waste collected as estimated by ULB (w.r.t. waste generation)	percent	100	100
3.	Road length per conservancy staff	metres	2109	500

Source: ULB and Analysis

KEY ISSUES

Based on the discussions with the stake holders, site visits and the service analysis certain issues and scope of improvement of Solid waste management services were identified for the town as illustrated in following points:

- ***No segregation of waste at Source:*** Household segregation of the waste has to be done in the town to adopt better method of waste treatment and disposal.
- ***No proper method of Waste Disposal:*** The waste collected is dumped in the yard without any treatment. Composting Facility is not in use.
- ***Insufficient number of sanitary workers:*** There are only 4 sanitary workers in the town, while the numbers of posts available are 9. Due to the vacancies, the collection of waste is not done daily and efficiently.

POTENTIAL FOR SYSTEM IMPROVEMENT

In order to appreciate and articulate the current situation and future possibilities, the existing Solid Waste Management system was analyzed from all perspectives. The potentials identified are:

- Adequate land is available to required infrastructural facilities.
- Financial support is available from GoTN for ULB to introduce scientific methods of treatment and proper disposal of solid wastes.
- The town also has the potential to involve the private sector to increase efficiency in collection and disposal mechanism.

4.2.6 ROADS, TRAFFIC & TRANSPORTATION

Overview: Construction and maintenance of roads are the major role of the ULB with in its jurisdiction, except roads belonging to the PWD and Highway Department. The ULB is also responsible for implementing proposals from Master Plan with regard to formation of new major roads and road widening proposals. The existing road system comprises of one State Highway and other local roads, totaling up to a road length of 16.74 km within the town limits.

Table No. 4.11: Typology and Distribution of Roads in Udayarpalayam Town Panchayat

Sl. No.	Road Typology	Length (in km)	Distribution (Percentage)
A.	**Municipal Roads**		
1.	Surfaced Roads		
	- Cement Concrete	1.240	5.97
	- Blacktop/Asphalted	8.000	38.57
	- WBM	2.500	12.05
	Sub Total (Surfaced Roads)	***11.740***	***56.60***
2.	Non-Surfaced Roads		
	- Stone Slab	--	--
	- Gravel	--	--
	- Earthen	5.000	24.10
	Sub Total (Non-Surfaced Roads)	***5.000***	***24.10***
	Sub Total (Municipal Roads)	**16.740**	**80.42**
B.	**Roads Maintained by Other Departments**		
1	Major District Roads and Highways	4.00	19.58
	Total (All Roads)	**20.740**	**100.00**

Source: Udayarpalayam T.P; 2007 and Analysis

Udayarpalayam abuts the state highway running from Tiruchirappalli to Chidambaram. The State Highways runs through the full length of the town. The total length of the highways road in the town is about 4.00 km, which is about 19.58 % of the road length of the town. Udayarpalayam town Panchayat has a length of 16.74 kms of Panchayat roads running inside the town. Road network acts the as the guiding network of growth in the town and also the major lines of connectivity to the town.

PANCHAYAT ROADS: The total length of Panchayat roads within the town is about 16.74 kms. The length, type and conditions of the roads are displayed in the table. No: 4.11. Of the total length, 24% of the roads are earthen roads and requires to be upgraded for further improved connectivity in the town. Also the other ULB maintained roads provides road links to the adjoining rural habitations of the town. Most of the main roads in the town have inadequate carriage width and these roads are encroached upon by various developments in the town.

OTHER MAJOR ROADS: The Other district roads in the town are,

- Udayarpalayam – Edyar Selai Road
- Udayarpalayam – Kalumangalam Road

These roads account a total length of 2 kms with in the town. These roads are maintained by the Highways department. They come under the category of rural roads.

BUS STAND

The town has a bus stand maintained by the town Panchayat. Both state owned and private buses pass through this bus stand. The bus stand was observed to lack basic amenities and adequate shelter. The poor condition of the bus stand is shown in the figure.

An analysis has been conducted examining the adequacy of road density with reference to the extent of town and following is the table indicating the results.

Table No. 4.12: Performance of Key Road related Service Indicators in Udayarpalayam

Sl. No.	Service Indicator	Unit	Current Status
1.	Road density	km/sq. km	1.58
2.	Proportion of surfaced municipal roads	percent	0.1766
3.	Proportion of blacktop/asphalted roads (w.r.t. total municipal roads)	percent	50

Source: Udayarpalayam T.P; 2007 and Analysis

KEY ISSUES

Discussions were held with principal stakeholders to assess the key issues that surround the present road, traffic and transportation system and its scope for improvement. The issues identified through discussions, field visits and service analysis are outlined below:

- ***Status of Roads:*** Most of the roads which carry traffic in the town are old and narrow; the conditions of these roads are very poor. These roads are required to be renewed to avoid the traffic chaos and bottlenecks and enable better traffic circulation within the town.
- ***Linkages with nearby villages and Towns:*** The town does not have any proper linkages with the nearby villages and urban centres. A proper connectivity would improve the urban characteristics of the town.
- ***Bus Stand:*** The existing Bus stand does not have any basic facilities. The approach roads of the bus stand has to be improved. The bus shelters lack

seating facilities, shelters and toilet facilities, which are to be provided and improved. The site for a new bus stand proposed is located 2kms away from the town and thus require realignment of the roads to provide connectivity to the bus stand.

- ***Providing Bus Trips within the Town:*** The existing Bus service does not cover all parts of the town as they pass only through certain major roads in the town.

POTENTIAL FOR DEVELOPMENT

The objective of this analysis is to essentially demarcate potentials and drawbacks of the existing system, weigh the possibilities and effectively plan for design, operation and maintenance of the system and the potentials noted are as follows:

- Virtue of Location on the State Highway enhances the regional contextually of the town.
- Adequate Carriage way is available along the main roads, which permits widening of the roads to meet the increasing demand in the town.
- GoTN is committed to improve the roads and transportation for the town.

4.2.7 STREET LIGHTING

ASSESSMENT OVERVIEW

STREET LIGHTS: The town has 385 fixtures with a high mast light fixed at a road junction near the bus stand. All the wards of the town are provided with the street lighting facility. The street lights are placed at an average spacing of 50 mts. The ward wise distribution of the streetlights in the town is shown in the table.

Table.No.4.13: Existing Street Lighting

Ward No	Details			
	Mercury Light	Sodium Bulb	Tube Light	Total
1		2	22	24
2	-	1	19	20
3	1	1	23	25
4	-	1	20	21
5	-	1	30	31
6	-	3	35	38
7	1	4	25	30
8	1	-	18	19
9	1	1	15	17
10	1	-	30	31
11	-	13	15	28
12	-	2	35	37
13	1	-	2	3
14	1	3	25	29
15	1	10	20	31
Total	**8**	**42**	**334**	**384**

Source: ULB, 2007.

ADEQUACY OF SERVICES

Table No. 4.14: Performance of Key Street Lighting Service Indicators in Udayarpalayam

Service Indicator	Unit	Current Status	Normative Standards
Spacing between lamp posts	mts	49	30
Proportion of fluorescent lamps (tube lights) w.r.t. total fixtures	%	87	60
Proportion of high power fixtures w.r.t. total fixtures	%	13	40

Source: Udayarpalayam T.P; 2007 and Analysis

KEY ISSUES

Key issues in street lighting include shifting of poles along the kerb-side of the road and inadequate street lighting as the average spacing of street lights in this town is maintained at 49 m which is far more than the standard spacing of 30 m. Street lights in densely populated areas shall be increased. Also new street lights in the newly formed extension areas and major junctions needs to be studied and provided.

POTENTIAL FOR DEVELOPMENT

In order to appreciate and articulate the current situation and present future possibilities, the Street Lighting facility was analyzed from all perspectives. The objective of this analysis is to essentially demarcate potentials and drawbacks of the existing system, weigh the possibilities and prepare the roadmap for an improved, effectively planned, designed, operated and maintained system:

- The town has the potential to involve private sector for operation and maintenance of street lighting.
- Proportion of fluorescent lamps is to total lights is more than 80% of total street lights existing in the town.

4.3 SOCIAL DEVELOPMENT

EDUCATION: Udayarpalayam town Panchayat has 7 Government Schools and 1 Private School within the town limits. The list of schools are in the town are listed below,

Government Schools:

- Government Higher Secondary School - 1
- High Schools (Girls) - 1
- Primary School - 6
- Adi Dravidar Welfare School - 1

Private Schools:

- Jesu balan School - 1

Higher order educational facilities are found in the nearby town of Jayamkondan at a distance of 9kms from the Town Panchayat area.

HEALTH: There are 2 Government hospitals in the town. Government Hospital in the town has 20 beds and separate hospital for maternity services with 7 beds. There are also private clinics in operation in the town. A total of 8 staffs are in the hospital.

BURIAL GROUND: There are 8 burial grounds in the town. Most of these burial grounds lack basic infrastructural facilities. The location of these burial grounds are listed below,

- North Street
- Near Sekkankuttai
- Near PeriyaEri
- Near Velappan Chettair Eri
- Kai kalandar Street
- Cholan Kurichi
- Vellaipillayar Koil Street
- Munithuyar Patti

COMMUNITY HALLS AND KALYANA MANDAPAMS: The town has no community halls. The town has 4 private Kalyana Mandapams in function.

LIBRARY: There is one public library in the town, which is maintained by District Library Council, Ariyalur.

MARKETS: The town has a weekly market place in Trichy Road. The market meets on all Saturdays. Shops of all categories are found in the market. There are about 100 -150 shops in the weekly market. The market lacks all the basic amenities like water supply, fence, toilets, lighting etc.

4.4 SLUM IMPROVEMENT

4.4.1 AN OVER VIEW

The unplanned urbanization forced poor to settle for informal solutions resulting in mushrooming of slums and squatter settlements. The problem of slums has been faced at some point of time by almost all the towns and cities throughout the nation. Udayarpalayam has not been an exception. The nodal character of the town in the region attracts people form the neighboring villages and the urban poor found to be distributed in all regions of the town. They are normally found in pockets, referred as slums.

As per the Census 2001 and data available from the ULB, Udayarpalayam town has 3 notified slums in which there are approximately 869 households with a population of 3,387 persons. Slum population accounts 30% of the total population town. Most of these slums are located in the habitation encroaching both Private and Town Panchayat land. Discussions with officials indicated that most of the notified slums are not provided with adequate basic services and amenities. Discussions have also indicated that the major problems in slum area are the inadequate provision of roads, drains and sanitation facilities. List of slums in Udayarpalayam is given in the adjacent table:

Table: 4.15: Population in Slums

Name of the Slum	Population
North Street	1867
South Street	1256
Moorthiyan Nagar	264
TOTAL	**3387**

Source: ULB

4.4.2 SERVICE PROVISION IN SLUMS

Housing: Housing condition in slums is observed to be significantly deficient. Large proportions of households were found staying in rudimentary households and remaining in pucca houses, where percentage of households staying in RCC is very less. Majority of households reside in thatched houses with built area less than 100 sq. ft. It was noticed that residential status of most of the unapproved slum households was temporary, where settlement have developed within the last 20 years.

The levels of services provided in slums are discussed in the following paragraphs.

INFRASTRUCTURE SERVICES: In par with the discussions with various officers of the local body and site visits of the slums the existing infrastructure facilities of the slums are explained in the following paragraphs.

Water Supply; Most of the slums are found in the extended areas and are dependent on public connections for Water Supply. The water supply is provided only on

alternate hours and also the hours of supply are variable, making the conditions of slum dwellers more pathetic.

Sanitation: Most of the slums are not provided with Public Conveniences. These facilities are not regularly used. Majority of the slum population is found to defecate in open. The conditions of drains are also in very bad state in slums.

Solid Waste Management: Primary collection of the waste is not done. The slums are not provided with any collection bins /points. The house hold wastes are thrown into the streets polluting the environs.

Roads: The conditions of the roads in the slums are bad. They are very narrow and also unable to handle the increasing volume of traffic daily. The total length of the roads in slums accounts to 10% of the total length of the roads within the town.

Strom Water Drains: There is no proper Strom water drain network in the Town. The drains in the slums are only earthen drains and are also under bad state affecting the environs. The slums on the banks of the canals are in worst conditions.

Street lighting: The slums are provided with streetlights at a distance greater than the average distance in the town. Some slums do not have any lighting facilities.

4.4.3 KEY ISSUES

Some of the key issues pertaining to provision and delivery of services to urban poor in Udayarpalayam Town are presented below:

- Slums are densely populated and not provided with adequate infrastructure
- Poor water supply and sanitation is a major concern. Slums are not provided with adequate number of public convenience seats and existing facilities are in dilapidated conditions. Hence, the slum population resorts to open defecation at a number of locations
- Slums are not provided with waste collection bins, thus resulting in dumping of garbage on road-side and in the drains;
- Houses in the slums are with poor standards.

4.4.4 POTENTIAL FOR IMPROVEMENT

In order to appreciate and articulate the current situation and present future possibilities, infrastructure facilities in the slums are analyzed from all perspectives. The objective of this analysis is to essentially demarcate potentials and drawbacks of the existing system, weigh the possibilities and prepare the roadmap for an improved, effectively planned, designed, operated and maintained system. Following are the potentials:

- Basic services like water supply, sanitation, drainage, solid waste management are extendable to many slums.
- There has been an active participation and involvement of slum dwellers and NGOs/CBOs in slum upgrading and urban poverty alleviation initiatives. This would provide a platform for coordinated efforts for undertaking such initiatives in future.
- There is a desire among slum dwellers to form community organizations.

4.5 ECONOMIC DEVELOPMENT

4.5.1 ECONOMIC BASE

The major economic activities of the town are agriculture and silk (saree) weaving. The principal agricultural activity in the town is cashew-nut cultivation. The soil and geographical conditions of the town does not support the growth of other crops. There is a cashew nut factory near the town to support the cultivation.

More than 1500 people are involved in Silk Saree weaving activity which is the other major occupation of the town. Both wholesale and retail trade of these silk saris are undertaken in the town. The silk saris weaved here are sold to the major clothing emporiums in other parts of the state.

4.5.2 OCCUPATIONAL PATTERN

As per 2001 census the total workers population in the town is 4271. Workers population constitutes about 37.71% of the total Population. Of them male workers are 3057 and female workers are about 1214. Of the total workforce in the town, the maximum percentage is the tertiary sector which is about 45.96 % and the minimum is the Secondary sector, accounting about 21.63%.

Table 4.16: Occupation Pattern: Udayarpalayam Town Panchayat-1991 & 2001

Year	Total Population	TO\TAL WORKERS		PRIMARY SECTOR		SECONDARY SECTOR		TERTIARY SECTOR	
		no. of workers	% of workers	no. of workers	% of workers	no of workers	% of workers	no. of workers	% of workers
1991	9992	1982	19.83	1553	78.39	248	12.51	69	0.03
2001	11325	4271	37.71	1384	32.40	924	21.63	1963	45.96

Source: Census of India 1991 and 2001

The primary sector is about, cultivation of Cashew nut is the only agricultural activity done in the town, which is also in the declining trend due to the out migration of people from the town area. Employment generating opportunities are also lesser in the town, for the town does not have any major industrial establishments and also the lack of skilled labor within the town.

4.5.3 LOCATIONAL ADVANTAGE

Udayarpalayam town is located at a distance of 45 Kms form the district head quarters on the State Highway (SH 4), which runs form Tiruchirappalli to Chidambaram. The town is located at a distance of 50 kms on the north eastern side of Tiruchirappalli. The other towns of the region namely, Ariyalur, Virudhachalam, Kumbakonam, Tanjore and Perambalur are located within a distance of 50 kms from the town and are well connected by state and private run buses. The town is also connected to all the parts of the state. Ariyalur is the nearest railway station and is located at a distance of 28 kms from the town.

4.5.4 TOURISM IMPORTANCE

As far as tourism potential of the town is concerned, the historic monuments and the heritage elements which are to be utilized to optimum levels and included in the tourist circuit of the region. The palace and the Puyarneeshwarar temple are the major attractions of the town. There are large numbers of tourist places, namely Gangaikonda Chozhapuram, Chidambaram; Thanjavur etc, located within a radius of 100 km of the town.

4.5.5 URBAN GOVERNANCE

Udayarpalayam was constituted as Village Panchayat in the year 1886. Through a G.O.No.55 dated 14.7.2006, the town was upgraded as Grade I Town Panchayat. The Town Panchayat is formed by enclosing Udyarapalayam town and 2 other habitations namely, Moorthy Nagar and Muniotharan Patti. Udayarpalayam Town panchayat is divided into 15 wards and representatives from each ward constitute the council. The town administration is governed by an Executive Officer of Town Panchayat.

5

STAKEHOLDER CONSULTATIONS

5.1 IDENTIFICATION OF STAKEHOLDERS

Preparation of a City Corporate cum Business Plan (CCBP) is essentially a consultative process and therefore identification of stakeholders to be involved in the process is of crucial importance. The identified stakeholders may be broadly categorized as under:

- Elected Representatives;
- Service Providers/ GoTN Departments; and
- NGOs/ CBOs and Resource Persons

The identified stakeholders are involved in a proactive manner through all stages of the consultative process.

5.2 CONSULTATION PROCESS

5.2.1 GENERAL

Phase 1 of the assignment involved extensive consultations with the Stakeholders at the ULB and Departmental levels. Pursuant to the Rapid Assessment Report submission, a workshop was conducted including a wider list of stakeholders comprising non government and other representatives.

In Phase II stage of this assignment, detailed consultations were also held with the elected representatives and other non-governmental entities at the ULB level to obtain necessary feedback and development requirements. In this Phase vision of the town was also formulated through consultation process. Subsequently, development strategies, proposals, projects, estimated capital investment plan and scheduling have been formulated and submitted in the form of Strategic Plan and Interim Report. A meeting was then organized to review the reports and the review committee approved the same.

Under Phase III of the assignment, the Draft Final Report was submitted. The report was submitted subsequent to the meeting with the ULB Council & Client to finalize the identified projects, their priorities and capital investments. The draft final report then submitted was also reviewed by the Review Committee and accorded approval to submit Final City Corporate Cum Business Plan Report for Udayarpalayam Town Panchayat. This Final Report submitted towards this assignment addresses the findings and recommendations of the study.

5.2.2 INDIVIDUAL / SECTOR-SPECIFIC DISCUSSIONS

The Consulting Team had a series of individual and sector-specific discussions with various stakeholders, representing both government and non-government sectors.

Broadly, individual consultations were held for discussing the existing constraints / weaknesses, felt needs, opportunities and focus areas for the proposed CCBP. Sector-specific discussions were also held with service providing agencies to understand the current situation, system details, technical and administrative issues, prospects, and their preparedness to meet the emerging challenges. These discussions also focused on the town's strengths and weaknesses in facilitating economic growth and improving quality of life for all citizens.

5.2.3 CONSULTATION WORKSHOPS AND REVIEW MEETINGS

Each phase of the study was culminated with a workshop followed by a review meeting, to endorse the findings with specific remarks and suggestions. All these workshops were organized with a plenary session in which the Consulting Team presented the findings of the consultations, relevant data analysis and findings for discussions, clearly specifying the objective, agenda and expected outcome of the workshop.

The First Workshop (Workshop 1) was organized on May 11, 2007 to commence the study, discuss the initial aspects of the proposed study and key issues such as the logistics and data collection involved. This workshop was convened by the Chairperson of Udayarpalayam Town Panchayat and attended by Executive Officer and other Officials of Udayarpalayam town Panchayat, representatives from other key stake holding departments and service providing agencies.

Subsequent to the submission of Rapid Assessment Report a review meeting was held on July 13, 2007 in the office of TNUIFSL. Aforementioned report was reviewed by the Technical Review Committee comprising the TNUIFSL, DTP and executive and elected representatives from the ULB and the same had been approved.

Followed by a review meeting, a Second Workshop was organized on September 11, 2007 to discuss the findings of the Rapid Assessment Report. The study team presented the Rapid Assessment Report and the vision for the town and development strategies to achieve the vision was formulated during this workshop.

Consequent to the review meeting, the study team prepared the Draft Final Report for the town highlighting the borrowing capacity of the ULB and Financial Operating Plan for the projects identified and proposed capital investment under different cases. Draft Final Report also highlights the Policy Interventions and Technical Assistance required for the successful implementation of the CCBP Projects. On preparation of the Draft final report a Third Workshop was organized on April 08, 2008 to discuss the findings of the Draft Final Report. The study team presented the Draft Final Report to the ULB council by highlighting the sector wise proposals identified, investment required for implementation, borrowing capacity of the ULB, funding options available etc and the priority of the projects was finalized.

These deliverables were then reviewed by the Technical Review Committee members on June 12, 2008 and suggestions were made. Subsequent to the review meeting, approval for the submission of Final Report was obtained.

Minutes of the consultations workshops and review meetings held are enclosed as Annexure – 2, 3, 4, 5, 6, 7 and 8.

5.2.4 DISCUSSION WITH OFFICIALS OF COMMISSIONERATE OF TOWN PANCHAYATS (CTP)

The study team had a consultation meeting with the CTP, on the policies and priorities of CTP, Government of Tamil Nadu (GTN). The Draft Final Reports on the City Corporate cum Business Plan (CCBP) for ten Selection Grade Town Panchayats were to be finalized after policy consultations. Towards the same, a discussion on the policies and priorities for development of the CTP & GoTN was held at the CTP, Kuralagam, Chennai on 01.04.08 and was attended by the TNUIFSL and the Consultants (CCI). The CTP chaired the meeting. The Joint Director of Town Panchayats was also present during the meeting. Also present were the Executive Officers of Gingee, Bargur, Kangayam and Katpadi Town Panchayats representing the ten town panchayats for which the CCBP are prepared.

At the outset, the CTP was briefed on the study related tasks progress and the process involved in the preparation of CCBPs for the ten towns. He also enquired about the stakeholders who were met in connection with the study and the feedback received as a result of interactions with them.

The CTP advised the consultants to consider the spurt in growth of population among these Town Panchayats. The consultants assured the Commissioner that relevant aspects have been taken into consideration duly in assessing and projecting the population. It was also informed by the TNUIFSL that during the Detailed Project Preparation exercise for each sub sector project, a detailed population projection sequence would be performed including the ward-level projection which shall in-turn be the basis for the design and corresponding investment.

The Commissioner had stressed the need for an extended coverage and enhanced collection of property tax and it would go a long way in the revenue generation and sustaining aspects. He requested the concerned Town Panchayat officials to identify the un-utilized and under utilized (performing and non-performing) properties and bring them to the beneficial use of the Public. He also emphasized the need for a 100% revenue collection towards the revenue mobilisation efforts of the ULBs. Satisfied with the performance of the consultants in the tasks covered so far, the Commissioner requested them to be pragmatic in advising on various project proposals to the local bodies. He stressed that ways and means should be suggested to attain self sufficiency in the financial sector. Prioritisation of projects should be based on the financial healthiness of the local body and the basic infrastructural needs of the public. He indicated that though the projects like Underground Sewerage System are of utmost necessity, caution should be exercised in prioritising them in view of the significant capital cost involved and the financial healthiness of the local bodies.

It was suggested that such projects can be taken up on long term basis after improving the financial sustainability of the local bodies and requested the capital investment to reflect with and without the UGSS component. The consultants thanked the Commissioner for his valuable suggestions, feedback on priorities towards the finalization of the CCBP.

6

REVIEW OF ULB IDENTIFIED PROJECTS

6.1 PROJECTS AT GLANCE

The Local body has prepared Detailed Project Reports to procure funds from "Integrated Housing And Slum Development Programme" (IHSDP) .Udayarpalayam Town Panchayat has identified various infrastructure projects under this scheme for slum improvements and these proposals highlight the immediate requirements of the ULB covering the following sectors:

- Housing;
- Storm Water Drain;
- Roads;

This project report was prepared during the year 2006 and council also passes the resolution by approving the identified projects. The project has been sent to the Commissioner of Town Panchayat, Chennai for the approval. The following table outlines total estimated cost of the project sector wise.

S.No	Description	No. of Works	Length in k.m	Amount Rs. In lakhs
1	Housing	150		120.00
2	Storm Water Drain		1.00	19.40
3	Roads – BT Roads		1.50	15.00
	Roads - C.C. Roads		0.25	4.25
	TOTAL			**158.65**

Description of the above identified projects is given in the following table.

Sl.No.	*Name of work*	No's / Length in Km	Width in Meter	Estimate Amount in Lakhs
	HOUSING			
1	*Construction of New Shelters for the Slum Areas*	150	-	120.00
	TOTAL	**150**	**-**	**120.00**
	STORM WATER DRAIN			
1	*Construction of Drain at 12th ward South Harijana Colony*	0.50	1.45	9.70
2	*Construction of Drain at 14th ward South Harijana Clony*	0.50	1.40	9.70
	TOTAL	**1.0**		**19.40**
	ROADS			
1	*Providing BT Road in 5 th ward North Harijana Street*	0.50	3.75	5.0
2	*Providing BT Road in 14 th ward North Harijana Street*	0.50	3.75	5.0
3	*Providing BT Road in 12 th ward Moorthiyan Street*	0.50	3.75	5.0
4	*Providing Cement Concrete at 5 th ward North Harijana Street*	0.25	-	4.25
	TOTAL	**1.75**		**19.25**

Apart from the projects identified by the ULB, the study team made an effort in identifying the projects which are essential for the town's development perspective by means of First Stake holder's workshop held at the Town Panchayat.

7

VISION AND STRATEGIC PLANNING

7.1 VISION OF UDAYARPALAYAM TOWN

The community and its felt need are the major forces in determining the growth and development of the town. The existing community and their livelihood activities make Udayarpalayam a unique place. The following concepts articulate the futuristic needs of the community and the directions of growth in the town are outlined in the vision statement

- *Preserve and promote the town's historic downtown and heritage of the community.*
- *Retain, grow, promote, and support the unique local businesses and encourage a diverse economic base with year-round job opportunities.*
- *Expand the spectrum of recreational opportunities to the residents of the town.*
- *Provide quality and environmentally sustainable infrastructural facilities.*
- *Promote an open and resourceful governance system in the town*.

Vision Statement

"Udayarpalayam aspires to be a safe, attractive, livable and economically viable town with the profound sense of preserving the cultural identity and rich historical traits of the town."

The overall vision for the city paved the way to formulate sector specific vision and strategies. This sector specific approach with year wise strategies and corresponding year wise investments will be instrumental in framing the action plan/ implementation plan. The sector specific reforms and investments are an integral part of the year wise strategies.

Based on the above 'Vision Statement', the following broad focus Areas were identified:

- Primary Focus Areas
  - Economic & Urban Development;
  - Infrastructure Development (Provision & Delivery);
  - Environment Improvement;
  - Urban Poor and Slum Upgrading;
  - Urban Management and Sectoral Reforms; and
  - Urban Governance.
- Secondary Focus Areas
  - Public-Private-People-Partnerships;
  - Community Interface; and
  - Social Development.

7.1.1 SECTOR SPECIFIC VISION STATEMENTS

Extensive consultations were held with various stakeholders to identify the inputs for the aforementioned focus Areas. These consultations formed the basis for the 'Vision Statements' for each of the focus Areas. Following table presents such focus Areas and the 'Vision Statements'.

Table 7.1: Focus Areas and Vision Statements

Sl.	Focus Areas	Vision Statements
1.	Economic and Urban Development	Strengthen the town's economy by creating conducive environment for development in the town and the hinterland
2.	Infrastructure Development (Provision & Delivery)	Achieve adequate and equitable distribution of all services coupled with efficiency enhancement and sustainability
3.	Environment Improvement	Prevent pollution in all respects, which affects the safety of the inhabitants of the town along with protecting the existing natural resources from man-made intervention to maintain the environment balance in the region
4.	Urban Poor and Slum Upgrading	Improve overall living conditions of urban poor through improved housing, proper tenure and equitable basic services to bring them into the main stream
5.	Urban Management and Reforms	Strengthen the finances & resources through reform driven urban management initiatives
6.	Urban Governance	Bring transparency and accountability in the town administration through technology interface, human resource development and citizen orientation

The CCP process of Udayarpalayam has undergone extensive consultative process with its key stakeholders in prioritizing the key sectors for development. The list of stakeholders consulted and the outcome of such consultations are enclosed in Annexure - 2, 3, 4, 5, 6 and 7. The priorities of the central and state governments development goals have been considered in prioritizing these critical sectors, presented below.

- Water Supply
- Sewerage
- Solid Waste Management
- Traffic and Transportation
- Storm Water Drainage
- Urban Poverty

Selection and formulation of strategies are made on the basis of judgment of "outcomes" not on the bases of "inputs".

7.2 STRATEGIC PLAN

A strategy is a set of actions, policies and programs/projcts designed to achieve a specific goal. Strategies provide a direction that takes advantage of the unique conditions that exist in a location. Thinking strategically creates not only a shared vision for the future, but also a framework for decision-making and the allocation of limited resources.

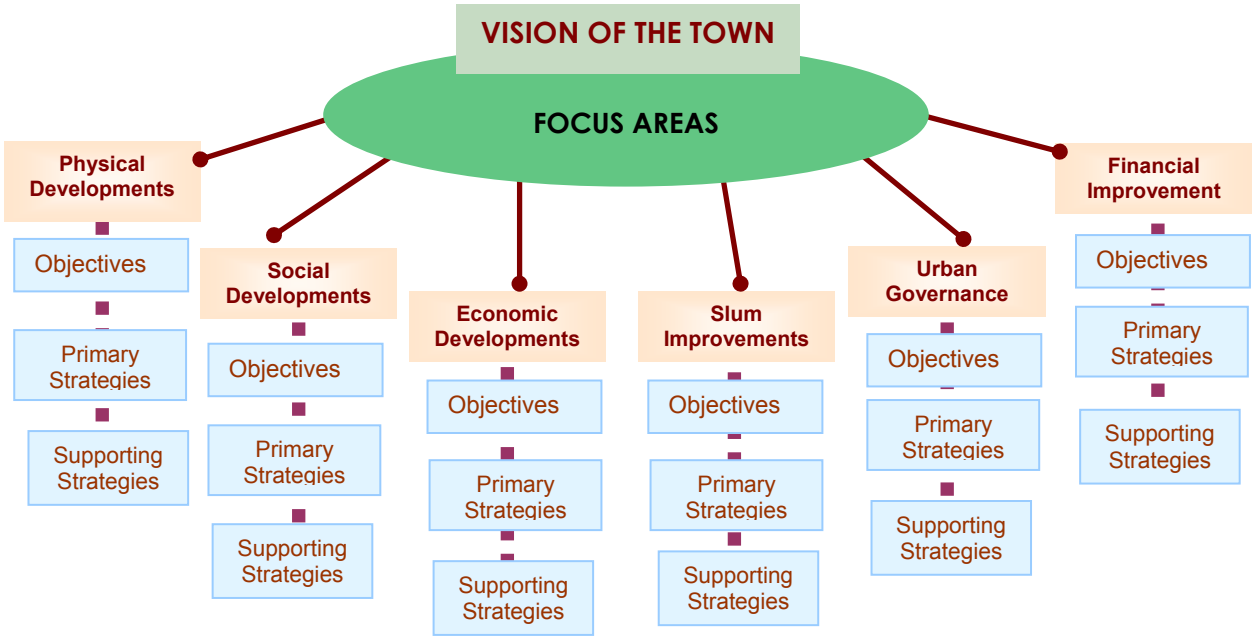
The essence of the process of strategic plan for physical development is the involvement and participation of the target population or the beneficiary. Strategic plan starts from the conception of the idea of business mechanism in planning to the completion and maintenance of the plan in a sustainable mode.

The strategic plan also suggests a ten year phasing of the proposals of the plan and it intends to address the 'essential" need in terms of services, in order of micro level priority, so that a sound base would be built at the end of ten years as a take-off point, when the citizens and citizen groups will be prepared to spare their attention without pre-occupation or reservation from the priority, needs at individual locality level (i.e ward level), to the town level and consciously involve themselves in the city building process. For this there should be a target or vision at town level to pursue and accordingly channelise the efforts in their thinking, saying and doing. To arrive the future vision of the town in its perspective few relevant queries relating to resource generation management, project feasibility with sustainability and other support pre-requisites will be put across to the concillors and other stakeholders.

7.2.1 STRATEGIC FRAMEWORK

The Strategic Framework organizes actions and policies suggested by the community to achieve the community vision. The Strategy Framework provides a way to organize goals and specific actions as part of the town's future growth and vision. The strategic framework proposed for Udayarpalayam is comprised of three focus areas, for each focus areas an objective is arrived to achieve the vision of the town by means of formulating primary and supporting strategies. The Implementation Matrix summarizes these strategies in a series of proposed actions.

Primary Strategies – Primary strategies for the town include major new development initiatives based on town and region-wide trends, and the unique position. Primary Strategies are those initiatives that are expected to have the greatest influence to redirect the role of the town in the region.



Supporting Strategies – Supporting strategies are activities and programs that would enhance the overall environment and support the primary strategies. Although these strategies are shown on a second tier, it should be understood that in many

cases, they are the projects that are necessary in order to implement the primary strategies.

The strategies adopted primarily have three dimensions; improving the service delivery by higher efficiency, improving service delivery by creating infrastructure assets and improving the governance aspects of the town panchayat. In order to tackle the issues of basic, economic and social infrastructure and to achieve the vision statement, the study team in consultation with the stakeholders has identified the following broad strategies under the following sectors:

- Land Use -- Compatible land use, Development Control rules to promote and support economic activities, development of transport links.
- Core Municipal Infrastructure-- Adequacy, reliability and accessibility to core municipal services for all citizens with town panchayat as the prime service provider.
- Traffic & Transportation-- Road widening, dedicated bus lanes, cycle tracks and improvement of the public transport system in the short run; exploring the possibility of regional linkages in the long run.
- Urban Environment-- Conservation of rivers, water bodies, and natural environment of the town; making environment an integral part of every decision-making process.
- Urban Poor-- Affordable housing, tenure security, integrated service provision, access to basic infrastructure needs and social amenities
- Culture & Heritage– Preservation of heritage structures, promotion and facilitation of cultural activities, and encouragement of tourism appropriate to the town environs.
- Economic Development-- Improving infrastructure, service delivery and governance by attracting public private partnerships (PPP), creating coordination for implementing economic policies in the urban region, developing collaborations between industries and institutions to further establish Udayarpalayam as a dynamic town of the Region.
- Urban Governance-- Redefining the roles of administration, making it accountable and transparent and empowering and involving citizens.

The Strategic framework for development has been evolved based on the outcomes of the Rapid Assessments and stakeholders consultations carried for this town earlier. Issues and Potentials for the development have been the main product of such assessment and the same has been considered for evolving sector specific development objectives, primary and supporting strategies and appropriate action plan. The following table illustrates the Strategic Framework evolved for Udayarpalayam Town Panchayat

Table 7.2 Strategic Framework for Identification of Actions – Udayarpalayam Town Panchayat

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
PHYSICAL DEVELOPMENT			
Land use Management			
1	To encourage planned development.	1. Preparation of Master Plan to regulate development activities. 2. Develop available vacant lands in the town for future land requirements.	1. Delineation of Local Planning Area towards planning/regulation of land use activities in Udayarpalayam. 2. Provision of better linkages with southern part of town around Palace area to achieve balanced development. 3. Identification of potential areas for residential development through preparation of Detailed Development Plan. 4. In order to meet the space requirement for future, commercial and mixed residential zoning shall be earmarked within the region. 5. Provision of more public spaces for the future need. 6. Zoning of land uses specifically for Agro - Industrial purposes to attract economic activities within the region. 7. Resolving conflicting land uses by means of proper planning and land use allocations. 8. Provision of urban open spaces and higher order facilities with in the region. 9. Promotion of activities in the peripheral/outskirts in a phased manner. 10. Identification and Implementation of newer roads for guiding the future development. 11. Assessment of feasibility of establishment of regional linkages with the other urban nodes.
2	To achieve Optimum Utilization of land.	1. Channelizing the developments considering the policies and programmes of the government. 2. Optimum utilization of ULB / Govt. owned lands.	
3	To promote a spatial structure of the town that caters to the emerging economic activities and Population growth.	1. Addition of commercial infrastructure in the potential wards. 2. Promotion of neighborhood schemes to meet the future housing demand under private partnership. 3. Improvements to public domain areas - road space and institutions.	
4	To Integrate land use and transport development.	1. Improve more road open space on major arterial roads to improve the traffic flow. 2. Regulate mixed land use based road widths.	
5	To Preserve natural assets and heritage elements in the town.	1. Specific guidelines for building permission to match with road width. 2. Conservation of environmental resources & heritage. 3. Generate more urban land through market friendly mechanisms. 4. Formulate water bodies' networking programme to supply integrated open spaces to support physical and economic infrastructure.	
Water Supply			
1	To provide water supply at the prescribed rate of supply	1. Comprehensive Water Sector Development / Augmentation Plan. 2. Water Supply Operation & Maintenance Plan.	1. Water supply system to meet the 30-year demand (2010-2040). 2. Creation of local sources to meet the need in summer. 3. Augmentation of Clear Water Transmission Mains for ultimate stage demand. 4. Ensuring equitable and daily supply. 5. Developing efficient operation and management of water supply systems. 6. Redistribution/re-zoning of distribution system in existing areas.
2	To ensure daily supply of water to the users	1. Planning and capacity augmentation for adequate and equitable water supply.	
3	To provide 100% Coverage	1. Water supply system for uncovered and extension areas to ensure 100% coverage	
4	To Minimize NRW component	1. Performance monitoring - energy audit, leak detection, NRW studies, water quality, etc.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		2. Creation of public awareness.	7. Rehabilitation of existing service reservoirs. 8. Construction of additional service reservoirs. 9. Proposed distribution system in uncovered areas and extended development areas. 10. Rehabilitation and upgrading of pump stations and transmission systems. 11. Maximizing cost recovery from system beneficiaries/users of the services. 12. Drive against illegal service connections. 13. Promote individual house service connections (HSCs) as a policy measure and to increase accountability. 14. Prepare an asset inventory and map the water supply systems for effective monitoring. 15. Capacity Building of the ULB staff to undertake efficient management and administrative decisions. 16. Creating Public Awareness with regards water conservation activities. 17. Assessment of gaps and investment needs in the urban poor/ slum locations.
5	To achieve cost recovery	1. Comprehensive Asset management plan. 2. Institutional strengthening and capacity building. 3. Revenue enhancement through collection drives, metering and tariff rationalization to raise annual collection. 4. Establishment of GIS based assessment mechanism.	
Sewerage and Sanitation			
1	To provide sewerage system	1. Comprehensive Sewer Master Plan. 2. Prevent discharge of sewage and sullage to open lands 3. Treatment of sewage - decentralized advanced systems.	1. Sewage collection and conveyance system for unsewered and extension areas considering ultimate stage sewage generation. 2. Ensure 100% coverage. 3. Improve and ensure access to sanitary facilities for the urban poor and slum dwellers. 4. Encourage pay & use category of public conveniences with community involvement in the maintenance of the same in all parts of the town. 5. Removal of encroachment along the water bodies. 6. De-silting of existing water bodies (i.e. Periyakullam, Ranaga Samudram, Chitaeri etc.). 7. Re-development of tank / lake bunds. 8. Re-development of perimeter area - paved walkway, area lighting, compound wall/fencing, access control and landscaping. 9. Treatment and recirculation including passive
2	To provide proper sewage disposal facility	1. Development of treated waste water re-use systems	
3	To provide sanitation facilities to low income groups	1. Identification of beneficiaries under various Central and State funded schemes to establish sanitation facility. 2. Expanding sanitation program to low income communities. 3. Providing subsidies to poorer communities for setting LCS facility.	
4	To protect water bodies	1. Identification of water bodies within town limits for conservation. 2. Manage and control developmental activities along water front areas. 3. Rehabilitation of existing water bodies.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		4. Re-development of area adjoining water bodies for community use, if available. 5. Improvements to supply channel / catchment facilities, water quality maintenance and groundwater recharge in water bodies. 6. Inventory measures to control the pollution of water bodies. 7. Periodical testing of water samples as per norms.	aeration systems for stagnant water bodies. 10. Installation of water quality monitoring stations. 11. Assessment of gaps and investment needs in the urban poor/ slum locations.
Storm Water Drainage			
1	To ensure network coverage	1. Storm Water Drainage Master Plan. 2. Removal of encroachments along major and minor drains. 3. Rehabilitation of existing drains. 4. Expansion of drain network to uncovered areas.	1. Identification of hierarchy of drains in the town. 2. Identification of flood prone area. 3. Improve drainage network on a priority basis in flood-prone areas. 4. De-silting of existing storm water drains. 5. Perimeter protection of major drains. 6. Re-grading/re-surfacing of drains as required. 7. Reconstruction and restoration of drains leading into and out of the water bodies including by-pass and flood control. 8. New drain network for uncovered areas. 9. Construction of new roads integrated with construction of drains. 10. Exploring Rain water harvesting measures to recharge ground water. 11. Assessment of gaps and investment needs in the urban poor/ slum locations.
2	To achieve efficient Management of natural system	1. Identify, delineate, sanitize and protect the natural drainage system of the town. 2. Awareness programs to prevent solid/liquid waste dumping into drains.	
3	To Recharge / Reuse storm water	1. Assessment of possibilities for recharge/reuse of storm water in the town. 2. Expansion of Rain water harvesting system/structures town wide.	
Solid Waste Management			
1	To comply with MSW handing rules, 2000	1. Standardized approach for Street Sweeping. 2. Source segregation of municipal solid waste. 3. Augmentation and expansion of primary collection of waste. 4. Modernization and expansion of existing waste transportation system. 5. Municipal solid waste treatment and disposal. 6. Regulation of recyclable wastes handling and re-use. 7. Proper handling and disposal of slaughter house and other categories of wastes.	1. Implementation of 'Door to Door collection System' through community organisations by mobilizing, facilitating, organizing and supporting community activities with the help of local NGOs and SHGs. 2. Create a separate multi-disciplinary SWM cell with expertise in engineering, human resources/personnel management, awareness generation/ health. 3. Implementation of TWO BIN System of solid waste collection. 4. Placement of dumper bins sufficient in number at market and Bus Stand. 5. Ensure optimum utilization of existing fleet. 6. Improvement of infrastructure facilities in the
2	To ensure effective processing of waste through composting.	1. Increase the ambit of Solid Waste Management to include "recycling" and to facilitate and regulate the sector accordingly. 2. Encouraging local level aerobic vermin composting. 3. Compost the organic fraction of the waste.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		4. Sanitary land filling of inorganic fraction of waste and the compost rejects. 5. Ensuring cost recovery/return from compost processing. 6. Implementation through PPP mode.	waste processing site. 7. Initiate Information -Education-Communication (I-E-C) campaigns to raise awareness among the urban poor and slum dwellers of better SWM practices. 8. Initiate steps towards sharing the responsibility of primary collection of segregated garbage with citizens. 9. Expanding the 'Voluntary Garbage Disposal Scheme' for more number of restaurants/hotels and commercial establishments and collecting user charges. 10. Ensuring that bio-medical waste does not get mixed with MSW and disposal of bio-medical waste per applicable rules 11. Assessment of gaps and investment needs in the urban poor/ slum locations.
3	To achieve Human resource development goals	1. Work shops and training program to educate staff 2. Entrusting responsibilities to the authorities to hold them accountable for any non conformation. 3. Encourage performance based incentives to enhance efficiency and output.	
Roads, Traffic and Transportation			
1	To ensure adequate road network facility / coverage	1. Comprehensive Traffic Study for entire town. 2. Augmentation and rehabilitation of roads. 3. Widening and strengthening of road structure and removal of encroachments.	1. Improvements to the existing roads. 2. ULB maintained roads - upgradation of existing earthen / gravel road to BT / CC roads based on the incidental traffic volume count. 3. Departmental roads - widening of major roads to 2/4/6 lanes with provision of service road (pedestrians, two- and three-wheelers) within town limit. 4. Construction of New Bus Stand along Tiruchirappalli State Highway. 5. Provision of pedestrian crossings, median, traffic island and signage's at JKM Road Junction. 6. Pedestrian Footpaths to be provided in all the major roads for better movement. 7. Establishment of new linkages with the neighboring villages and towns.
2	To ease traffic congestion in the town	1. Study of city-wide parking requirements and development of parking infrastructure. 2. Improvement of Pedestrian Facilities. 3. Traffic streamlining. 4. Segregation of slow and fast moving vehicular traffic. 5. Construction of underpass/ over bridges at crossings. 6. Proper re-alignment of road furniture and utilities	
3	To offer regional linkages	1. Establishment of regional linkages considering the future growth potentials.	
Street Lighting			
1	To ensure adequate street lighting facility	1. Comprehensive Street light management plan. 2. Development/up-dation of Asset Register.	1. Upgradation of existing street lights. 2. Installation of high-mast cluster lighting at important junctions. 3. New street lights for uncovered and extension areas. 4. Power consumption management and
2	To Reduce/minimize energy cost	1. Energy audit studies. 2. Innovation of new technologies. 3. Utilization of alternate renewable energy sources.	
3	To Establish PPP	1. Exploration of possibilities of public private	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		partnerships.	implementation of energy efficiency measures. 5. Use of energy saving equipment 6. Identification of possibilities of using renewable energy sources for street lighting. 7. Identification of possibilities of underground cabling. 8. Encouraging private operators for O&M. 9. Assessment of gaps and investment needs in the urban poor/ slum locations.
SOCIAL DEVELOPMENT			
1	To enhance quality of life.	1. Ensure a safe, healthy environment for the residents. 2. Inter- sectoral convergence for Urban Health Care. 3. Establish a successful and sustainable living environment.	1. Expansion of existing educational facility. 2. Expansion of existing health care facility. 3. Establishment of new educational institutions based on future need. 4. Establishment of new health care institutions based on future need. 5. Provision of parks, play fields and community facilities based on the demand. 6. Assessment of gaps and investment needs in the urban poor/ slum locations.
2	To achieve universal access to social facilities	1. Increasing private sector and NGO participation.	
SLUM IMPROVEMENT			
1	To ensure all poor will have access to qualitative and affordable basic services	1. Development of Comprehensive data base. 2. Community empowerment. 3. Institutional Strengthening and Capacity Building. 4. Relocation of slums located in vulnerable Areas. 5. Channelize all programs and activities of various government agencies for the urban poor through the special purpose vehicle.	1. Comprehensive listing of slums. 2. Preparation of a database on socio-economic characteristics of all slum dwellers in the listed slums. 3. Mapping and assessment of physical characteristics of slums (housing and services) for all tenable slums. 4. Preparation of DPRs for each of the slums as an integrated scheme covering both housing and services. 5. Provision of basic infrastructure - both physical (water, roads, sanitation and sewerage) and social infrastructure (clinics, schools, training facilities, etc). Construction of EWS housing schemes & fixing priorities to BPL. 6. Identify Target Beneficiaries. 7. Integrate Community Development -Provide economic generation activities.
2	To confirm 100 % literacy	1. Evolving a comprehensive education system. 2. Improving Educational facilities.	
3	To achieve Universal access to primary health care and no one should die of preventable diseases	1. Evolving a comprehensive health care policy. 2. Improving health facilities. 3. Improving Access to Social Services.	
4	Livelihood to all urban poor	1. Evolving a comprehensive Livelihood Policy. 2. Linking livelihoods to city's economy. 3. Community Based Approach. 4. Target women and children. 5. Economic Support/Enterprise Development.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
5	Security of tenure and Affordable Housing	1. Development of housing through partnerships – PPP. 2. Provision of land tenure security. 3. Formulation of Notification and De-notification Policy.	8. Improving living condition of slum dwellers. 9. Conduct livelihood Training Program. 10. Identification of land parcels for resettlement of slum dwellers of all non-tenable slums and involvement of NGOs/CBOs in the process. 11. Awareness on health and hygiene shall be created among slum dwellers in line with the long-term goal of moving towards individual toilets and doing away with public convenience systems.
ECONOMIC DEVELOPMENT			
1	To provide employment opportunities to all	1. Formation of Integrated economy development plan. 2. Creation of organized commercial centres for retail and wholesale trade. 3. Encouraging service sector by implementation of training Programmes.	1. Relaxation of polices and procedures in order to attract investors. 2. Facilitate assistance for enterprises to build export capabilities and access global markets 3. Developing civic infrastructure like water supply, drainage, sewerage, waste management etc. 4. Provision of market and trading facilities in the town.. 5. Creating infrastructure to facilitate development of agro based industries in the region. 6. Creation of Co-operative societies to showcase silk sarees and establishment of training centers for silk weavers. 7. Making available serviced land for real estate development. 8. Creating amusement parks and other entertainment facilities especially for local citizens and tourists. 9. Promote non-polluting small scale and cottage industries.
2	To encourage economic activity.	1. Expansion of daily and weekly markets in the town. 2. Exploring possibilities of promoting commercial activities. 3. Active promotion of public- private partnership (PPP) for development and operation of infrastructure and utilities. 4. Initiate collaborative arrangements with other departments and economic development agencies to facilitate implementation. 5. Facilitate assistance for enterprises to improve export supply chains thereby increasing competitiveness through enhanced supplier and customer relationships and reduced operating costs.	
URBAN GOVERNANCE			
1	Greater local participation and involvement	1. Capacity Building Program. 2. Full adoption of 74th CAA Model. 3. Conduct citizen satisfaction surveys & analysis on annual basis to assess citizen needs and demands including satisfaction levels. 4. PR strategies to enhance community participation and create awareness.	1. Promotion of town identity and a sense of citizenship for all. 2. Public meetings, participatory planning and budgeting. 3. Involvement of marginalised groups in the city systems. 4. Efficient investment in infrastructure.

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		5. Innovative citizen complaint redressal system including e-Governance. 6. Augment and strengthen new initiatives on citizen interface and orientation. 7. Regular interface with citizen associations/forum to understand public needs.	5. Delegation of decision taking to the lowest appropriate level. 6. Collaboration and partnerships, rather than competition 7. Appropriate training to improve capacity of ULB officials 8. Using information technology to best advantage 9. Environmental planning and management carried out in co-operation with the citizens 10. Disaster preparedness and crime control for safer environments. 11. Monitoring of government activities by coalitions of organizations. 12. Easy and Efficient accounting procedures. 13. Open procurement and contracting systems. 14. Ensuring transparency in financial arrangements. 15. Disclosure of information. 16. Fair and predictable regulatory frameworks. 17. Independent and accessible complaints procedures. 18. Regular flow of information on key issues. 19. Regular and structured consultation with representative bodies from all sectors of society including individuals in the decision making processes. 20. Access to government by all individuals and organizations. 21. Instruments to improve efficiency through enhanced technical, administrative and financial capacities. 22. Setting in place an active and online public Grievances' Redressal System, with automated department-wise complaint loading and monitoring system.
2	Efficient urban management	1. Establishment of town-wide framework for planning and governance 2. Functional Restructuring. 3. Proposal to develop the GIS as a tool for development planning. 4. Exposure to innovative practices of service delivery followed across the country. 5. Establishing a Project Monitoring Unit. 6. Tax Reforms. 7. Credit enhancement options other than state guarantees need to be adopted.	
3	Accountability/ Transparency/ Accessibility	1. Formation of Standing Co-ordination Committee. 2. Private Sector Participation. 3. Specific code of conduct for municipal executives and elected representatives. 4. Public education, resource mobilization, good leadership and transparent processes applied to municipal finance and development work. 5. Closer networking with media and their engagement in creating public awareness and creating demand for good governance. Cautious engagement of private sector with continuous monitoring is necessary. 6. Preparation of annual Environmental Status Report through a multi-stakeholder consultation process. 7. Modern and transparent budgeting, accounting, financial management system for all urban services and governance functions.	
FINANCIAL IMPROVEMENT			
1	Computerization Initiatives.	1. Billing and collection of taxes and user charges through e-services. 2. Speed up development of e-Governance system and accounting system. 3. Database management of assets, records, lands,	1. Implementation of MIS to provide relevant information on accounts, commercial and operating systems for better decision-making and information dissemination to citizens; 2. Application of e-Governance is equally

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		properties, etc.	important for municipal finance.
2	Reforms.	1. Innovations both at policy and project levels to speed up the urban reform process. 2. Accounting reforms - shifting from single entry cash based accounting system to accrual based double entry accounting system. 3. Reforms to have in-built mechanism of participation and commitment. 4. Institutional strengthening and financial capacity building to be an integral part of the reform measures. 5. Establishment of financially self-sustaining agency for urban governance service delivery through reforms.	3. Mapping of properties and developing GIS-enabled property tax management system for enhancing property tax net/coverage and better administration. 4. Areas of reform measures include property tax, accounting and auditing and resource mobilization and revenue enhancement. 5. Bringing transparency and uniformity in taxation policies. 6. Tax policy and operational procedures should be simple and clear. 7. Development of templates for property tax (for self-assessment) to increase tax collection (without levying fresh taxes), including implementation strategies. 8. Property tax base should be de-linked from rental value method and should be linked to unit area or capital value method. 9. Legislative changes in the accounting systems and reporting requirements and designing of accounting procedures. 10. Standardized recognition norms for municipal assets and revenues. 11. Auditing of accounts should be carried out effectively and regularly to promote transparency and accountability. 12. Increasing revenue through measures for better coverage, assessment, billing, collection and enforcement. 13. Improving the organization and efficiency of the tax administration system. 14. Augmentation of resource mobilization/revenue generation from properties belonging to ULB for improving the overall financial health. 15. Energy audit to minimize expenditure and increase useful service life of equipment 16. Staff training and motivation programs to bring about awareness on recent developments and technologies.
3	Privatization Initiatives.	1. Exploring areas of privatization. 2. Formulation of framework for attracting private investors.	
4	Resource Mobilization Initiatives.	1. Collection of arrears through fast track litigation measures. 2. Strengthen the fiscal powers of ULB to fix tax rates, fee structure and user charges through specific guidelines and notifications, which should find a place in the Municipal Rules. Prepare model guidelines for the city to allow greater flexibility in levying taxes, fees and user charges, borrowing funds and incurring expenditures;	
5	Capacity Building	1. Staffing pattern, organizational restructuring and performance appraisal. 2. Prepare and conduct capacity building programmes for elected representatives, especially women representatives, with a view to enable them to focus on gender based issues. 3. Promote the creation of interactive platforms for sharing municipal innovations, and experiences among municipal managers. 4. Better human resources management through assessment of the training needs of personnel involved in urban administration to enhance management and organizational capabilities. 5. Assessment of fund requirement and resource persons to tackle the training needs of all personnel. 6. Capacity building to strategically position the ULB to employ highly qualified personnel based on need.	

8

INFRASTRUCTURE & FINANCIAL IMPROVEMENT NEEDS

8.1 INTRODUCTION

This section of the Report pertains to the probable proposed development initiatives and specific improvements that shall be recommended to upgrade the existing systems in Udayarpalayam to normative standards pertaining to Urban Infrastructure provision, delivery, operation and maintenance and bringing out the characteristics required for the town.

A City Corporate Cum Business Plan (CCBP) is the corporate strategy of the ULB that presents both a vision of a desired future perspective for the town and the ULB's organization, and mission statements on how the ULB, together with other stakeholders, intends to work towards achieving their long-term vision in the next five years. Thus, a CCBP preparation process is essentially a consultative process and therefore identification of stakeholders to be involved in the process is of crucial importance. The identified stakeholders represented both government and non-government sectors.

The identified stakeholders may be broadly categorized as under:

- Elected Representatives;
- Service Providers/GoTN Offices;
- Business Houses and Associations; and
- NGOs/CBOs and Resource Persons

The above stakeholders were further categorized as Vision Stakeholders, Mission Stakeholders and Action Stakeholders, to define specific roles for each of the participating stakeholders. Needless to say, the ULB has to play an important role in identifying the above stakeholders and involve them in a proactive manner through all stages of the consultative process.

8.2 CONSULTATION PROCESS

The entire CCBP preparation process has been divided into three phases. The outcomes of each of the phases were based on extensive consultations and consensus emerged thereon. Phase 1 of the assignment involved extensive consultations with 'Vision Stakeholders, while Phase 2 has a wider list of stakeholders comprising representatives from various walks of life, identified as 'Mission Stakeholders'. Phase 3 of the assignment involved 'Action Stakeholders' who were identified to participate in implementation of the CCBP. The study team had specific consultations with these stakeholders and specific roles and responsibilities were evolved so as to implement the CCBP. Each of the above phases culminated with a workshop, which endorsed the findings with specific remarks and suggestions.

Broadly, the consultation process was carried out in the following manner:

- Individual/sector specific discussions;
- Workshops.

Consultations were held in three stages as follows:

- First stage of consultations primarily addressed the concerns of the 'Vision Stakeholders'. This stage of consultations aimed at defining the draft Vision and Mission Statements for further discussions, streamlining and adoption;
- Second stage of consultations targeted the various identified 'Mission Stakeholders' and this stage of the consultative process streamlined the Vision and Mission Statements and has identified various priority actions and proposals to be addressed in the CCP; and
- Third phase of consultations looked at the feasibility assessments and investment scheduling, which were finalized in consultation with the 'Action Stakeholders'.

8.3 MISSION AREAS

An assessment of existing physical infrastructure and various basic urban services (social infrastructure - education, recreation, community, health facilities, etc.) in the town to be performed was made. Description and mapping to quantify the condition of basic amenities and urban services was also made, highlighting the needs and deficiencies sector-wise as follows:

- Water supply;
- Sewerage and storm water drainage;
- Solid waste management;
- Roads, traffic and transportation;
- Streetlights;
- Other basic urban services and facilities; and
- Slum upgrading and housing for the poor;

An assessment of the existing situation covering all the sectors like water supply, sanitation, drainage, solid waste management, internal roads, bridges, traffic management, public private transportation and streetlights at the town level was carried out specifically covering the following illustrative aspects:

Sector-Specific Analytical Instruments:

Sl. No.	Study Component	Analysis / Coverage
1.	Water Supply	Appraisal of water supply augmentation proposals in conjunction with existing distribution systems, leak detection and UFW levels, replacement needed, measures that need to be undertaken to promote continuous system of water supply, and other requirements for optimum economic performance. Review of existing status of the service in terms of sources, storage and distribution, treatment, alternative supply, connections and tariff, utility maps, nature of complaints and origins. Metering system and revenue generation/enhancement.
2.	Sewerage and Drainage	Appraisal of the sewerage and drainage systems with reference to their adequacy; augmentation of collection system, sewage treatment facilities and treated wastewater re-use/disposal systems. Review of existing status of the system in terms of type, O&M aspects, nature of complaints and origins, areas prone to flooding, etc. Reviewing of the environmental procedures and plans, low-cost sanitation and system integration.
3.	Solid Waste Management	Existing facilities and system management for handling solid waste. characteristics of solid waste, quantity generated, collection and transportation system, transfer stations, and waste processing/disposal facilities
4.	Roads, Traffic and Transportation	Road Length, Density, Coverage, Types, Connectivity, Linkages, Congestion, Parking Requirements, capacity utilization, traffic flow, infrastructure such as bus terminals, O&M aspects and related., appraisal of efficiency and equity of urban transport models, including public and private transportation system, traffic management, etc.
5.	Streetlights	Spacing, coverage, capacity utilization, energy efficiency, O&M aspects and related

Sl. No.	Study Component	Analysis / Coverage
6.	Education, Health and Community Facilities	Number and location of various education, health, leisure and community facilities, O&M aspects, coverage, adequacy with respect to normative standards, catchment, etc.
7.	Deficiency Analysis	Identification of criteria for deciding deficiency for various services; Based on study of existing situation and criteria identified, assessment of deficiencies in existing service levels; Identification of priorities and technical alternatives; and Estimation of unit costs for providing minimum level of services based on certain norms.

8.4 PRIORITY ACTIONS – INFRASTRUCTURE IMPROVEMENT

In order to formulate infrastructure needs of the town following priority actions would be recommended to be implemented by the ULB undertaken in consultation with the stakeholders.

Water Supply:
- Planning and capacity augmentation for adequate and equitable water supply and related capital investment.
- Water supply system for unserved areas to ensure 100% coverage
- Continuous system of water supply.
- Improvement of O&M of the system
- Performance monitoring - energy audit, leak detection, NRW studies, water quality, etc.
- Institutional strengthening and capacity building.

Sewerage and Sanitation:
- Provision of Underground sewerage system.
- Integration of existing and proposed LCS & community toilets to UGSS - the capital investment for proposed units is covered under the Urban Poor and Slum Upgrading component.
- Treatment of sewage - decentralized advanced systems.
- Re-use of treated wastewater.
- Performance monitoring - energy audit, quality, etc.

Storm Water Drainage:
- Removal of encroachments along major and minor drains.
- Rehabilitation of existing drains.
- Expansion of drain network to uncovered areas.
- Awareness programs to prevent solid/liquid waste disposal into drains.

Roads, Traffic and Transportation:
- Improvement to existing road network for present and future traffic requirement
- By-pass access for national and state highways (as applicable)
- Flyovers at major intersections and railway crossings for traffic improvement (if applicable).
- Traffic signage and junction improvement measures
- Study of city-wide parking requirements and development of parking infrastructure, specifically in commercial areas.

Street Lighting:
- Upgrading street lighting in existing areas
- Installation of high-mast cluster lighting at important junctions not presently covered with such lighting arrangements.
- New street lights for uncovered areas.
- Power consumption management and energy efficiency measures.

Solid Waste Management:
- Comprehensive Solid Waste Management Scheme (per the MSW Rules, 2000).
- Minimization of generation of Solid Waste.
- Source segregation of municipal solid waste.
- Augmentation and expansion of primary collection of waste.
- Modernization and standardization of existing waste transportation system.
- Municipal solid waste processing and disposal.
- Recyclable waste handling and recovery.
- Proper handling and disposal of slaughter house, biomedical, hazardous and related non-municipal wastes.

Conservation of Water Bodies:
- Identification of water bodies within ULB limits for conservation.
- Rehabilitation of existing water bodies.
- Re-development of area adjoining water bodies for community use.
- Development of catchment facilities, water quality maintenance and groundwater recharge in water bodies.

Slum Upgradation:
- Project formulation for integrated development of all notified tenable slums covering housing, provision of basic services and amenities.
- Provision of water supply, sanitation, access roads, etc. in all tenable slums.
- Formulation of public-private partnership projects for slum upgrading.
- Exploration of rehabilitation option as an alternative to resettlement.
- Adoption of a 'community-based approach' in service provision and delivery to suit the local context and requirements.
- Ensure involvement of women and children from project formulation to implementation to achieve sustainability.
- Target service provision like water supply, sanitation and electricity on individual household basis - to facilitate improvement in performance & collection of user charges.

8.5 PRIORITY ACTIONS – FINANCIAL IMPROVEMENT

The ULBs have been found to be proactive in their commitment to introduce reforms at the ULB level. All these reforms may be broadly categorized under the following:
- Computerization Initiatives;
- Property Tax Reforms;
- Privatization Initiatives;
- Accounting Reforms; and
- Resource Mobilization Initiatives.

The following policy framework and priority actions are required for the sustainable financial improvement of town.

STRATEGY
- Innovations both at policy and project levels to speed up the urban reform process.
- Reforms to have in-built mechanism of participation and commitment.
- Institutional strengthening and financial capacity building to be an integral part of the reform measures.
- Areas of reform measures include property tax, accounting and auditing and resource mobilization and revenue enhancement.

PROPERTY TAX
- Bringing transparency and uniformity in taxation policies.
- Tax policy and operational procedures should be simple and clear.
- Development of templates for property tax (for self-assessment) to increase tax collection (without levying fresh taxes), including implementation strategies.

- Mapping of properties and developing GIS-enabled property tax management system for enhancing property tax net/coverage and better administration.
- Collection of arrears through innovative ideas and approaches using tools for community participation and fast track litigation methods.
- Property tax base should be de-linked from rental value method and should be linked to unit area or capital value method.

ACCOUNTING AND AUDITING

- Accounting reforms - shifting from single entry cash based accounting system to accrual based double entry accounting system.
- Legislative changes in the accounting systems and reporting requirements.
- Designing of accounting procedures.
- Accounting manual - chart of accounts, budget codes, forms and formats, etc.
- Standardized recognition norms for municipal assets and revenues.
- Auditing of accounts should be carried out effectively and regularly to promote transparency and accountability.

RESOURCE MOBILIZATION AND REVENUE ENHANCEMENT

- Increasing revenue through measures for better coverage, assessment, billing, collection and enforcement.
- Controlling growth of expenditure.
- Improving the organization and efficiency of the tax administration system.
- Augmentation of resource mobilization/revenue generation from properties belonging to ULB for improving the overall financial health.
- Energy audit of fuel and energy consumption by various depts. of ULB to minimize expenditures on fuel and energy, including energy audit and metering of street lights.
- Streamlining and strengthening of revenue base of the ULB:

    - Strengthen the fiscal powers of ULB to fix tax rates, fee structure and user charges through specific guidelines and notifications, which should find a place in the Municipal Rules. Prepare model guidelines for the city to allow greater flexibility in levying taxes, fees and user charges, borrowing funds and incurring expenditures;
    - The annual report of the ULB shall devote a section highlighting the amounts of subsidy given to a particular service, how the subsidy was funded, and who were its beneficiaries;
    - Implementation of MIS to provide relevant information on accounts, commercial and operating systems for better decision-making and information dissemination to citizens; and
    - Application of e-Governance is equally important for municipal finance.

Apart from the above, following are some of other reform measures which should be implemented to support the above identified key municipal reforms.

URBAN ENVIRONMENTAL MANAGEMENT

The costs of maintaining a healthy urban environment need to be recovered through various municipal taxes and user charges following the “polluter pays” principle. For this, the functional role of the ULB as envisaged in Item 8, 12th Schedule of the Constitution has to be resolved keeping in view the role of the Tamil Nadu Pollution Control Board, and the organizational and fiscal strength of the ULB.

ACCESS OF URBAN SERVICES TO THE POOR

Since “ability-to-pay” for the cost of environmental infrastructure service’ provision is an important criterion, cross-subsidization of tariffs, innovative project structuring and user/ community participation is the means to ensure access of these services to the poor. Again the functional and financial role of ULB with respect to the Items 10 and 11 of 12th Schedule vis-à-vis those of central and state government agencies need to be resolved.

TRANSPARENCY AND CIVIC ENGAGEMENT IN MUNICIPAL MANAGEMENT

Laws/rules/regulations specific to city/local issues should be employed to facilitate effective implementation. These should be lucid and easily understood. Participatory mechanisms should be so structured that they have legal standing and administrative power. Local bodies should be responsive and innovative and involve community participation in civic engagement as follows:

- Specific code of conduct for municipal executives and elected representatives.
- Public education, resource mobilization, good leadership and transparent processes applied to municipal finance and development work.
- Closer networking with media and their engagement in creating public awareness and creating demand for good governance. Cautious engagement of private sector with continuous monitoring is necessary.
- Setting in place an active and online public Grievances' Redressal System, with automated department-wise complaint loading and monitoring system.
- Instruments to improve efficiency through enhanced technical, administrative and financial capacities.
- Credit enhancement options other than state guarantees need to be adopted.
- Preparation of annual Environmental Status Report through a multi-stakeholder consultation process.

CAPACITY BUILDING OF THE ULB

Following are some of the key aspects of capacity building measures for ULB:

- The ULB shall maintain data to generate indicators as suggested in this document for evaluating its performance.
- Prepare and conduct capacity building programmes for elected representatives, especially women representatives, with a view to enable them to focus on gender based issues.
- Promote the creation of interactive platforms for sharing municipal innovations, and experiences among municipal managers.
- Better human resource management through assessment of the training needs of personnel involved in urban administration to enhance management and organizational capabilities.
- Assessment of fund requirement and resource persons to tackle the training needs of all personnel.
- Development of training material in the local language and impact and evaluation studies of the training programmes.
- Capacity building to better position the urban local body to employ highly qualified staff and seek superior quality of out-sourced services.

TECHNOLOGY INTERVENTIONS THROUGH COMPUTERIZATION

- Billing and collection of taxes and user charges through e-services.
- Speed up development of e-Governance system and accounting system.
- Database management of assets, records, lands, properties, etc.

HUMAN RESOURCE DEVELOPMENT

- Staffing pattern, organizational restructuring and performance appraisal.
- Development of MIS for effective and efficient management & decision-making.
- Publication of newsletters for creating awareness and participation.
- Staff training, exposure visits and motivation programs to bring about awareness on recent developments and technologies.

CITIZEN ORIENTATION AND INTERFACE

- Conduct citizen satisfaction surveys & analysis on annual basis to assess citizen needs and demands including satisfaction levels.
- PR strategies to enhance community participation and create awareness.
- Innovative citizen complaint redressal system including e-Governance.

- Augment and strengthen new initiatives on citizen interface and orientation.
- Regular interface with citizen associations/forum to understand public needs.

8.6 PROBABLE CAPITAL INVESTMENT NEEDS

Following are the identified capital investment needs which shall be discussed in detail with the stakeholders during consultation.

- **WATER SUPPLY SYSTEM**
- Rehabilitation of existing distribution system in covered areas
- Rehabilitation of existing Service Reservoirs
- Construction of additional service reservoirs
- Proposed distribution system in uncovered areas
- Raw Water Supply System to meet 30 yr demand (2010-2040)
- Augmentation of Existing Raw Water Supply System
- SCADA, Electrical Works, Site Clearing/Restoration
- Replacement/Renewal of existing equipment (mech/elec.) at source
- **UNDERGROUND SEWERAGE SCHEME**
- Rehabilitation of existing Collection System
- Proposed Collection System
- House Service Connection
- Pump Stations including Pump Mains and Eqp.
- Road Restoration for HSCs
- Sewage Treatment Plants (WSP)
- Railway / NH Crossings
- Community Toilets and Integration with UGSS.
- **ROADS, TRAFFIC AND TRANSPORTATION**
- Improvement to Existing Roads
- Upgrading Gravel/Earthen Roads to BT/CC
- New Roads Formation & network development including periphery roads
- Improvement to NH/SH incl. formation
- Traffic Junction Improvements
- Construction of bus terminus and bus stops incl. construction of new bus stops
- Preparation of Traffic and Transportation Management Plan incl. traffic studies
- **STORM WATER DRAINS**
- Preparation of Comprehensive SWD Master Plan
- Improvement to existing minor drains
- Improvement to Major Drains/Channels
- Proposed drains on existing roads (130% of Existing road deducting existing drain)
- Formation of new drains along proposed road network (130% of new roads)
- Proposed Storm Water Pump Stations
- **STREET LIGHTING**
- Proposed SV lamps in uncovered areas
- Proposed FL lamps in uncovered areas
- Proposed High Mast light in major junctions
- Proposed Timers for existing / new lights
- Proposed Sensor Lighting
- Proposed Solar Lights
- Proposed Power Saver (Capacitors)
- Proposed dedicated sub-stations/transformers
- Proposed Tri-vector meters

- Development of Lighting Management Plan
- **SOLID WASTE MANAGEMENT**
- Proposed SW Collection & Interim Storage System
- Collection System at Vegetable Market
- Transportation System Improvements - Tfr & Trans Vehicles
- Proposed Transfer Stations
- MSW Composting Plant & Miscellaneous Works
- **ENVIRONMENT IMPROVEMENT**
- Improvements to Water Bodies
- Park Development Existing/Proposed
- Greening / Avenue Development
- Environmental Monitoring Station
- **SLUM UPGRADING**
- Construction of housing
- Water Supply
- Sewerage & Sanitation
- Solid Waste Management
- Roads & Pavements
- Streetlights
- Community Centers
- Open Spaces/Gardens
- **REMUNERATIVE PROJECTS**
- Construction of Shopping Complexes
- Construction of Kalayanamandapam
- Construction of Lodges
- Improvement to burial grounds
- Electrical Crematorium
- Improvement of existing and proposed playgrounds
- Rehabilitation/proposed community centers/halls
- Improvement to town library/proposed libraries
- Proposed truck terminal
- Improvement of existing markets
- Proposed /dedicated vegetable/meat market
- Slaughterhouse development
- **URBAN GOVERNANCE**

9

DEVELOPMENT PROPOSALS

9.1 INTRODUCTION

This section outlines the proposed development initiatives and specific improvements that are recommended to upgrade the existing system of Urban Infrastructure provision, delivery, operation and maintenance to normative standards and characteristics required for a State Capital. Rapid assessment performed provides for cognitive navigation through the analysis and recommendations in various phases in the preparation of the City Corporate Plan for the town. The sectors covered in this chapter are given in the adjacent box.

Sectors covered

- Water Supply;
- Sewerage and Sanitation;
- Storm Water Drains;
- Solid Waste Management;
- Roads, Traffic and Transportation;
- Street Lighting;
- Basic Services for the Urban Poor;
- Other Amenities;
- Environmental Improvement, and
- Urban Governance.

Details of the investment components, capital investment phasing plan based on the above, and discussions with Stakeholders are enclosed in subsequent sections of the report.

- The sector-wise estimated capital investment and investment components required to achieve stated objectives within the period (2007-2012) is given in this section.

Sectoral investment for proposed interventions across all sectors has been estimated based on the following parameters:

- Information available/provided by concerned departments, detailed discussions with pertinent authorities, field/site visits, techno-economic evaluation/analysis conducted by the consulting team;
- Standard Schedule of Rates issued by PWD, Highways, and other engineering boards/organizations, OP rates, prevailing market rates, and relevant information;
- Consultant's database and experience on design of projects of similar scale/nature;
- Costs indicated are only estimated costs. Detailed cost estimation shall be performed for each item of work pursuant to detailed design engineering (during the DPR preparation);
- Land procurement and/or acquisition costs have not been included;
- Capital and annual O&M cost of the water and sewage treatment facilities, as applicable, has been estimated considering the techno-economically most feasible alternative technologies; and
- Necessary provision for physical contingencies, cost escalation for implementation period greater than 18 months, administration/supervision and consultancy charges have been included.

a
sed on the assessment of the existing situation, projected demand, the prevalent gap and key issues/problems in the existing system, upcoming section outlines the priority actions, proposals for improvement, estimated capital investment and the strategy for implementation along with suggestive timelines.

9.2 WATER SUPPLY

9.2.1 OBJECTIVES / GOALS

The objectives and goals listed below are identified for the improvements of the existing water supply system:

- Equitable distribution at an average per capita supply as specified in CPHEEO guidelines on Water Supply and Treatment
- Mitigation of Non-Revenue Water / Unaccounted for Water (NRW/UFW)
- Continuous Monitoring to ensure that the total losses do not exceed allowable limits as specified in the CPHEEO guidelines
- Continual Leak Detection and Water Audit programs for further reduction of the losses which would prove economical in the long-term.

Based on the projected population and the recommended supply levels as specified in the "Manual on Water Supply and Treatment" by CPHEEO, the total future water demand is estimated as follows:

Table 9.1: Estimated Future Water Demand

No.	Description / Parameter	Present Stage (2010)	Intermediate Stage (2025)	Ultimate Stage (2040)
1.	Projected Population	12,191	13,635	15,079
2.	Per capita supply (lpcd)	70	70	70
3.	Installed Capacity of source (MLD)	0.65	0.65	0.65
4.	Augmentation of the distribution system	15.41	17.00	16.76
5.	Augmentation of the Source (mld)	0.85	0.95	1.06

*- includes capacity proposed in the on-going scheme to be implemented by 2008.

The above table indicates the existing system and their augmentation needs. Augmentation measures need to be identified for the existing distribution network. It is felt that the existing scheme has to be augmented for meeting the ultimate stage water demand. It is important that capital investments in the water supply sector are planned to broadly address the following issues.

- Augmentation of installed capacity of existing facilities to meet the growing demand and
- Rehabilitation of existing facilities to avoid higher costs of deferred and inadequate maintenance.

Therefore, the priority options identified through discussions with stakeholders and the proposals planned for the system improvement have been recommended for achieving the following objectives:

- Optimal utilization of the available strengths of the system through requisite identification and creation of opportunities for system improvement and sustainability.
- Implementation of remedial measures for identified weaknesses of the system / sector to ensure that imminent and potential threats are eliminated and also prevented from recurring.
- Distribution losses due to Leaks should be reduced below permissible limits.

9.2.2 STRATEGIES FOR DEVELOPMENT

In the light of the discussions with the stakeholders, the approach would be that the ULB should facilitate creation of capital assets so as to meet the future requirements in water supply sector. A total water-supply-planning would be needed for improvement of water supply system focusing on the following aspects:

- Exploring new sources
- Optimum use of existing water resources
- Improvements of the existing system
- Conservation of ground water
- Reduction of unaccounted water and
- Institutional strengthening & Capacity building.

Considering the current deficits and the future requirements for water supply, the following strategies are proposed:

Sector Approach: Capital investments in water supply have to focus on the following issues:
- Augmentation of Source to meet the Per Capita Demand of Water.
- Increasing storage and distribution facilities to meet ultimate stage and
- Rehabilitation of existing facilities to avoid higher costs of deferred maintenance.

System Augmentation: Development of a self sustaining and high standard water supply system in the town is imperative to meet the seasonal demand of the town.

Design Criteria: The ULB should increase the water supply level to achieve an average per capita supply level of 70 lpcd and coverage 100 % of the population. On increasing the distribution network to 95% of the Roads within ULB area, all the citizens would enjoy the recommended per capita water supply.

Asset/ Life cycle Management Plan: The plan has to be prepared in the town to improve the water supply assets in the town.

Metering System: For the projected population for the ultimate horizon year of 2040 about 1413 metered connections are expected to be installed. ULB has to initiate metering system in the town. The metering system is very important as it would provide a platform for proper accounting of the water consumption and reduce the UFW losses and thereby increasing revenue generation.

Tariff Revision: Future capital investments on system up-gradation are imminent, the tariff structure shall be revised from time to time to enable cost recovery and to service the additional debt from the capital investments.

Un-accounted Water: ULB shall implement necessary studies to ascertain the physical and financial component of unaccounted water. Leaks, if corrected properly, would help realizing more water for supply.

Mapping & GIS: To address the issue of system rehabilitation, mapping and establishing a GIS system is pertinent to detail out system location, characteristics, age and condition. This would enable identifying defective / dilapidated sections of the network which require repair / replacement.

Institutional Strengthening & Capacity Building: ULB officials need to be trained for Project Planning, Implementation, and Monitoring and Evaluation programs to ensure that the reform agenda outlined in CCBP can be implemented on par with the progress of identified proposals.

9.2.3 PRIORITY ACTIONS AND PROPOSALS

Priority Actions

Following table presents the priority actions needed in the town for improved water supply and a schedule for implementing them during a short-term period (2007-2012).

Table 9..2: Priority Actions and Implementation Plan - Water Supply

Component	Activity	Year 1	Year 2	Year 3	Year 4	Year 5
Water Resource Management	Water Supply Improvement Scheme to extended areas		√	√		
	Development of Distribution network for extended areas	√	√			
	Rainwater Harvesting Measures	√	√	√		
Augmentation of Water Supply System	Source Augmentation / Treatment Plant		√	√		
	Redistribution/ Re-zoning of the system in existing areas	√	√			
	Rehabilitation of Existing Service Reservoirs	√	√			
	Expansion of House Service Coverage	√	√			
	Installation of Water Meters	√	√			
	Construction of summer storage tanks		√	√		
	Upgradation and Improvement of Distribution System	√	√			

Proposals

The actions and improvements to the water supply system is designed to ensure that the installed water supply infrastructure meets the community's needs (water demand) for adequate and equitable supply at reasonable charges. The projected demand for the year 2040 is compared with the optimum supply available from the existing source, to verify the adequacy and need to augment the capacity of certain components.

Proposed Capital Works - Water Supply

- Provision of Water supply scheme to the extension areas
- Rehabilitation of storage and distribution system in existing areas;
- Augmentation of Transmission Mains and
- Extension & Augmentation of Distribution Network

Table 9.3: Demand, Supply and Required Augmentation of Water Supply System for 2040

Component	Unit	Supply Status	Demand					
			Current Year 2007		Short-term Year 2010		Long-term Year 2040	
			Demand	Surplus (+) Deficit (-)	Demand	Surplus(+) Deficit (-)	Demand	Surplus (+) Deficit(-)
Water Intake Pumping	MLD	0.65	0.83	**(0.18)**	0.85	**(0.20)**	1.06	**(0.41)**
Water Treatment Plant (if Surface water Used)	MLD	--	0.83	**(0.18)**	0.85	**(0.20)**	1.06	**(0.41)**
Service Storage (if daily supply adopted)	ML	0.54	0.27	**0.27**	0.28	**0.26**	0.35	**0.19**
Distribution System	Km	24.00	17.85	**(6.15)**	20.29	**3.71**	22.80	**1.20**

Source: Analysis

As reported by the ULB, the average drawl of water from the existing sources is worked out to be 0.65 MLD. The total requirement of water is calculated as 0.85 MLD for the short term period (2010) and 1.06 for the long term period (2040). Deducting the existing quantum of water availability, the net requirement of water for 2010 and 2040 are 0.20 MLD and 0.30 MLD respectively. Based on the evaluations, discussions and priority actions following proposals have been mutually agreed upon by the study team and the Stakeholders:

- Provision of Water Supply Scheme to extended areas
- Raw water supply system to meet the 30-year demand (2010-2040)
- Augmentation of local sources to meet the growing demand
- Redistribution / re-zoning of distribution system in existing areas
- Rehabilitation of existing service reservoirs
- Rehabilitation and upgrading of Pumps / Machineries in the existing system and
- Augmentation of WTP and Clear Water Transmission Mains for ultimate demand.

9.2.4 ESTIMATED SECTORAL INVESTMENT

The capital cost estimated for the proposed intervention based on the parameters specified in the earlier section, are listed below:

Table 9.4. Estimated Sectoral Investment (in Lakhs) - Water supply

Component	Activity	Investment
Water Resource Management	Water Supply Improvement Scheme to extended areas	73.94
	Construction of additional Storage reservoirs	18.03
	Development of Distribution network for extended areas	90.17
	Rainwater Harvesting Measures	60.11
`Augmentation of Water Supply System	Source Augmentation / Treatment Plant	57.23
	Redistribution/Re-zoning of D-system in existing areas	90.17
	Expansion of House Service Coverage	33.98
	Installation of Meters	42.50
	Construction of summer storage tanks	0.00
	Upgradation and Improvement of Distribution System	114.51
	Rehabilitation of Existing Service Reservoirs	1.14
Total		**581.78**

Necessary clearances from concerned ministries or authorities need to be acquired at the earliest. The authorities/departments/agencies that are proposed to be responsible for project formulation/implementation/monitoring are listed below, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat;
- Formulation/Implementation Agency: Udayarpalayam_Town Panchayat;
- Monitoring Agency: State Pollution Control Board, Tamil Nadu.

9.3 SEWERAGE AND SANITATION

9.3.1 OBJECTIVES / GOALS

Objective in respect of sewerage and sanitation sector is to ensure a full fledged system with coverage of 95% and improved overall health and hygiene at the town level. Sewage generation is estimated as per CPHEEO norms w.r.t. per capita water supply, infiltration flows and related factors. About 0.83 MLD is estimated to be generated as sewage and adequate facilities are required fro treatment and disposal. The demand gap of the sewage generated for various periods and land requirement for treatment facilities as estimated above are indicated in the following table:

Table 9.5: Demand, Supply and Required Augmentation of UGS System for 2040

Project Sub-Component	Unit	Existing Status Year 2007	Demand					
			Base Year 2010		Intermediate Year 2025		Ultimate Year 2040	
			Demand	Surplus/ (Deficit)	Demand	Surplus/ (Deficit)	Demand	Surplus/ (Deficit)
Population	*Numbers*	11,903	12,191	--	13,635	--	15,079	--
Sewage Generation	*MLD*	0.51	0.67	--	0.75	--	0.83	--
New Infrastructure								
Sewage Pumping	*MLD*	--	0.67	**(0.67)**	0.75	**(0.75)**	0.83	**(0.83)**
Sewage Treatment Plant	*MLD*	--	0.67	**(0.67)**	0.75	**(0.75)**	0.83	**(0.83)**
Sewer Network	*Km*	--	18.26	**(18.26)**	20.45	**(20.45)**	22.62	**(22.62)**
Estimate of Requirement of Land for Sewage Treatment Alternatives								
Waste Stabilization Pond @ 4 acres / MLD	Acres/ MLD	--	2.68	**(2.68)**	3.00	**(3.00)**	3.32	**(3.32)**
Activated Sludge Process @ 0.25 acres / MLD	Acres/ MLD	--	0.167	**(0.167)**	0.187	**(0.187)**	0.207	**(0.207)**

Source: Analysis.
Note: Requirement of land has been estimated based on available information on sewage treatment plants of similar scale, process of treatment, scalability and related issues. The nominal footprint/area required for a specific plant is known to vary based on the degree of treatment required, configuration of the land available, detailed design of treatment facilities and related factors. The land requirement indicated in this report is provided only for comparison/reference purposes. Actual land requirement for the proposed STP(s) in related procurement/acquisition/estimation should be arrived at pursuant to relevant surveys, investigation and detailed engineering design of the proposed facility

9.3.2 STRATEGIES FOR DEVELOPMENT

The analysis of the existing and projected demand of under ground drainage system, has envisaged that during the year 2040, 95% population will be covered and sewage generation of 0.83 MLD from net water supply of 59 LPCD (80% of 70 lpcd water supply rate + 8-10% infiltration rate) and treatment facility amounting to the same are set with the following strategies

- Overall Master Plan for collection, conveyance, treatment and disposal/re-use of generated sewage.
- Plan for increasing coverage over a specific period to recommended levels to ensure that beneficiaries are migrated away from the present system of sanitation.
- Assessment of present coverage and condition of sewage disposal in slums and other

urban poor areas.

- Provision of sanitation through low-cost units / community facilities in slums and integration of sanitation facilities with the main sewerage scheme.
- Planning for a sewage treatment plant with a capacity of 2.01 MLD to fulfill the long-term demand assessed for the year 2040.
- Availability of land for proposed sewage treatment facilities and related procurement and socio-environmental issues.
- Potential for re-use of treated wastewater (i.e. flushing of sewers and others).
- Full cost recovery of the expenditure made for both provision and maintenance.

Sewage Operation & Maintenance: It is supported to privatize the O& M works. It is found more effective, & economical.

Coverage of Low Income Settlements: There are 4 notified slum areas within the town limit. All these slum areas are partially provided with the underground sewerage system. Therefore it is proposed to cover this locality by using Pay & Use type toilet facility under GoI & GoTN schemes.

Mapping & GIS: The O&M shall also include mapping & GIS of the sewer system, for proper upkeep and maintenance and regular updation.

Asset Management Plan: To address the condition assessment and the performance of the Sewerage assets, it is recommended that an asset management plan be prepared for the assets of UGSS Assets in ULB.

Tariff Revision: Future capital investments on system up-gradation being imminent, the tariff structure shall be revised periodically, not withstanding the request to increase service coverage, to enable cost recovery and to service the additional debt from the capital investments. It is proposed to introduce a separate sewer charge to service the debts and sustain O&M of the proposed investment.

Institutional Strengthening and Capacity Building: An important pre-requisite to ensure efficient O&M of the system.

Alternate Treatment Facility: The aforementioned strategies to a significant extent assist in provision of an efficient system of sewerage, adequate coverage, treatment and disposal in accordance with applicable discharge standards and full cost recovery. Considering the priority of the ULB and CTP, the implementation of full fledged UGSS to small towns like this is costlier and difficult to operate and maintain the system. Hence it is proposed to implement the UGSS in the long term period. In short-term period, an interceptor drains with treatment plant (i.e. Sand filters) are suggested to control / minimize the sewage and sullage load which are being disposed into the major water bodies in the town through road side drains.

Interceptor Drain with Treatment Plant: In order to make the system to function effectively primary treatment for the wastewater before discharging in to the water bodies is necessary. This system use Interceptor drain to divert the sewage and sullage waste to collection well / screen well and grit chamber to provide pre treatment to the household wastewater and allow the bulk of the solids materials to settle out.

The point where the drain system begins must always be higher than where it ends, and no part of the system can be higher in elevation than the starting point. The variable grade of the drain crates low spots at different points in the system. Drains are to be covered throughout its entire stretch. A manhole at 30m interval as in conventional sewerage system is also required. Annual inspection of the drain is recommended and solids need to be periodically removed from the drain.

9.3.3 PRIORITY ACTIONS AND PROPOSALS

Priority Actions

Following table presents priority actions needed for implementation of an underground sewerage scheme during the mission period (2007-2012):

Table 9.6: Priority Actions and Implementation Plan - Underground Sewerage Scheme

Component	Activity	Year 1	Year 2	Year 3	Year 4	Year 5
Sewage Collection, Treatment & Management	Implementing underground Sewerage Scheme	√	√			
	Provision of Sewage Treatment Plant		√			
	Integrating Community Toilets in the system	√				
	Recycle & Reuse of treated water.		√	√		
	Evolving system for alternate uses of treated waste water			√		

Proposals

An analysis for checking the adequacy of the existing system together with the ongoing project was done to dispose off the estimated quantity of sewage for the year 2040. Based on the evaluations and the discussions necessary priority actions were mutually agreed upon by the Stakeholders and the Study Team. The proposals identified are listed below and the corresponding capital works are given aside.

- Providing collection system for ultimate stage peak flow (2010-2040)
- Establishing sewage treatment plants on a modular basis initially for a 15-year design period with upgrading facilities to handle ultimate stage flow
- Designing wastewater pumping and out-fall systems.
- Recycle and reuse of treated waste water.

Proposed Capital Works - UGSS

- Providing sewage collection system to all areas
- Establishment of Sewage Treatment Plants and
- Evolving Wastewater pumping and out-fall systems.

9.3.4 ESTIMATED SECTORAL INVESTMENT

Based on the parameters specified in the earlier section, the capital cost has been estimated for the proposed intervention and are listed below:

Table 9.7.Estimated Sectoral Investment – Sewerage and Sanitation (Rs. in Lakhs)

Component	Activity	Investment
Sewerage Collection, Treatment & Management	Development of Sewerage System	1605.43
	Provision of Sewage Treatment Plant	45.08
	Community toilet integration	225.42
	Recycle & Reuse of waste water	18.03
	Community Toilets	28.85
Total		**1922.83**
Estimated Sectoral Investment – Interceptor drains (Rs. in Lakhs)		
Sewerage Collection, Treatment & Management	Interceptor drains	115.42
	Community Toilets	28.85
Total		**144.27**

Necessary clearances from concerned ministries or authorities need to be acquired at the earliest. The authorities/departments/agencies that are proposed to be responsible for project formulation/implementation/monitoring are listed, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat:
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat:
- Monitoring Agency: State Pollution Control Board, Tamil Nadu.

9.4 STORM WATER DRAINS

9.4.1 OBJECTIVE / GOAL

Development of storm water drains is to be considered as a joint activity along with the development / reconstruction of roads. Since the existing network along major roads serves as the primary conduit for the whole area, road drains have to convey storm water from the point of origin to the major channels / drains.

A well designed and developed master plan for storm water drainage should be developed taking into consideration the projected population, incidental development of road network, updated rainfall details, low-lying areas, rainwater harvesting requirements and other relevant parameters.

It is also imperative to conduct awareness programs at the town level to cover all classes of residents. The programs should propagate the necessity for prevention of encroachment of storm water drains. They should also highlight the points for effective functioning of storm water drains through prevention of dumping of solid waste and discharge of sewage / sullage from households and other related issues.

9.4.2 STRATEGIES FOR DEVELOPMENT

Strategies for storm water drainage are based on the fact that roadside storm water drains are as important as the flood protection scheme for natural drains. The following are strategies identified after due consultation with the stakeholders:

Storm water Pilot Project: Under this programme a study shall be taken up to identify the flood spots within the town based on the past history of floods and a survey of all the drains in the town and their conditions.

Drainage Rehabilitation Program: The flood prone areas identified are to be relieved of the problem in future by undertaking a drainage rehabilitation program. As a part of this program, the leading drains and connections from primary to secondary and tertiary drains have to be improved and strengthened. In addition, control of weed growth, prevention of dumping of solid and construction wastes into the drains and controlling the growth of encroachments on the drains are to be given top priority.

Primary Drain Rehabilitation and Improvement Program: The primary drains are inadequate to handle the floods as they are not designed for such an eventuality and are not fully constructed in some sections. Moreover, significant reduction in depth and width are noticed due to siltation and encroachments on drain bunds. To alleviate these, a rehabilitation and improvement program is recommended.

Improvement Works and Construction of Tertiary Drains: Construction of tertiary drains would be taken up on a priority basis as the town comprises of 16.50 km. of tertiary drains covering about 89% of the road length which can be increased. It is proposed to construct tertiary drains to all the major arterials and important roads to increase the coverage and also to convert the kutcha drains to pucca drains to facilitate proper draining of storm water into natural drains.

Rehabilitation of Water bodies: Efforts need to be made to develop an 'integrated catchment management' plan suitably connecting all the existing water bodies. Further, hydraulic

capacity of the channels and water bodies would be improved through widening and deepening and construction of side walls thereby limiting the risk of floods. De-silting need to be carried out to increase the water holding capacity and water bodies need to be protected from dumping toxic and hazardous wastes.

Operation & Maintenance Schedule: Adoption of an O&M Schedule for works varying from Drain Cleaning to Desilting, including options of using the private sector for O&M (e.g. Management Contract) is recommended for effective storm water drainage.

Monitoring and Quality Control: Monitoring of water quality parameters need to be conducted on a regular basis. The ULB needs to take up the responsibility of monitoring the parameters in the water bodies within its jurisdiction and take preventive measures, if the results are above the permissible limits, ULB would co-ordinate with other agencies for monitoring the parameters in the water bodies.

9.4.3 PRIORITY ACTIONS AND PROPOSALS

Priority Actions

The priority actions identified through discussions with stakeholders and the proposals evolved for improvement should specifically be intended to achieve dual objectives, viz. optimal utilization of the available strengths of the system through requisite identification and creation of opportunities for system improvement and sustainability, and implementation of remedial measures based on the identified weaknesses of the system / sector to ensure that the imminent and potential (future) threats are eliminated and prevented from recurring. An adequacy analysis of the existing Storm Water Drainage Infrastructure in terms of the various components of the system is presented in the following Table 9.8.

Table 9.8. Demand, Supply and Required Augmentation of Drainage System for 2011

Project Sub-Component	Unit	Existing Status	Demand			
			Year 2007		Year 2011	
			Demand	Surplus (+) / Deficit (-)	Demand	Surplus (+) / Deficit (-)
Road Length	Kms	16.98	17.85		18.29	
System Rehabilitation						
Upgrading of Kutcha drains to Pucca drains	kms	1.50	1.50	**(1.50)**	--	--
Strengthening of Natural Drains	Kms	--	**--**	**--**	--	**--**
New Infrastructure						
Storm Water Drains - (@130% of road length)	Kms	16.50	23.21	**(6.71)**	23.77	**(7.27)**
Open Pucca Drains	Kms	15.00	18.57	**(2.07)**	19.02	**(2.52)**
Closed Pucca Drains	Kms	0.00	4.64	**(4.64)**	4.75	**(4.75)**
Kutcha drains	Kms	1.50	---	**--**	--	**--**

Source: Analysis

The above table infers that:

- The total length of storm water drains is to be increased from the present 16.50 km to 23.77 km (130% of road length)
- New Pucca drains (open and closed types) for a total length of 23.77 Km are to be constructed
- Existing 1.50 km 'kutcha' drains are to be upgraded to 'pucca' status and natural drains are to be strengthened.

Priority actions identified by the stakeholders in respect of development of the existing network of major and minor storm water drains including catchment, surface and area drains in the town are furnished below:

- Removal of encroachments along major and minor drains.
- Rehabilitation of existing drains.
- Expansion of drain network to uncovered areas.
- Awareness programs to prevent solid / liquid waste dumping into drains.

Following table presents priority actions and their implementation time frame for storm water drainage during the mission period (2007-2012):

Table 9.9. Priority Actions and Implementation Plan - Storm Water Drains

Component	Activity	Year 1	Year 2	Year 3	Year 4	Year 5
Rehabilitation of Drains	Rehabilitation of Major drains / channels		√	√	√	
	Rehabilitation of Storm Water Drains	√	√			
	Formation of Interceptor / Diverter Channels		√	√		
	Improvement measures to existing water bodies	√	√			
Construction of Drains	Provision of storm water drains along existing roads	√	√			
	Providing new drains along proposed road network	√	√	√	√	
Supporting Measures	Awareness Programs for effective use of storm drains		√	√		

Proposals

Detailed list of proposals suggested by the stakeholders during the consultation workshop are enclosed in the Annexure 6. The following proposals have been identified by the study team based on evaluations, discussions and priority actions as required and were mutually agreed upon by the Stakeholders as well as the study team:

Proposed Capital Works – Storm Water Drainage

- Improvement to existing minor drains;
- Rehabilitation of existing major drains;
- Fencing and greenway development along major drains;
- Development of a storm water drain master plan; and
- New drain network for uncovered areas.

- To achieve coverage of road length, through built drains as per norms.
- Development of a storm water drain master plan
- De-silting of existing storm water drains
- Re-grading / re-surfacing of drains as required
- New drain network for uncovered areas and
- Improvement measures to existing water bodies

Considering the drainage requirement for the town, the ULB should plan for capital investments (given aside) in drainage sector focusing upon,

- Construction & Improvement Works of Tertiary Drains.
- Drainage Rehabilitation works for low lying areas, through improvement of networking of Secondary and Tertiary Drains with Primary Drains;
- Improvement and Rehabilitation of Primary Drains through widening, deepening, construction of Side-Walls, and Cross-Drainage Works and Diversion works at Critical locations;
- Rejuvenation and Rehabilitation works for Water Bodies through de-silting, bunding works and Intersection and diversion of sewage wherever required. Through net-working of Water Bodies sustainability can be achieved.

It is proposed to augment additional capacity by (i) Construction of additional Open Pucca Drains to a length of approximately 19.72 km (ii) Upgrading kutcha drains to a length of approximately 1.50 km into pucca drains and improve networking, and (iv) Provision of storm water drains for a length of 23.21 km along the proposed road network during the short-term period.

9.4.4 ESTIMATED SECTORAL INVESTMENT

The capital cost estimated for the proposed intervention based on the parameters specified in the earlier section, are listed below:

Table.9.10.Estimated Sectoral Investment - Storm Water Drains (Rs. in Lakhs)		
Component	**Activity**	**Investment**
Drains Rehabilitation	Rehabilitation of Storm Water Drains	160.08
Construction of Drains	Provision of storm water drains along existing roads	6.91
	Formation of new drains along proposed road network	125.34
	Treatment and re-use of storm water	24.26
Total		**316.59**

Necessary clearances from concerned ministries or authorities need to be acquired at the earliest. The authorities/departments/agencies that are proposed to be responsible for project formulation/implementation/monitoring are listed, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat & Public Works Department, Tamil Nadu.
- Monitoring Agency: State Pollution Control Board, Tamil Nadu.

9.5 ROADS, TRAFFIC & TRANSPORTATION

9.5.1 OBJECTIVE

Based on the identified issues in Roads, Traffic and Transportation sector, it is imperative to ensure that typical upgrading of the road network is not limited only to widening and re-grading / paving which can provide succor only to a certain extent. In addition to increasing the area under roads and traffic movement, it is important to provide adequate parking and traffic infrastructure that will match the town's present and future needs for both private and public transport.

9.5.2 STRATEGIES FOR DEVELOPMENT

Strategies under Roads, Traffic and Transportation sector focus at improving town wide transportation network and linkages and provision of town and regional level transport facilities.

Connectivity: There is a need for ULB to increase the network, to achieve an average cover to cater to 100 percent of the population. Given the area for development and also the settlement locations, the emphasis should be on providing connectivity to all, to address the issue of missing links and taking up road widening and strengthening measures.

Preparation of Traffic Management Plan: This plan shall focus of junction improvements, traffic management within core areas of the town, regional level proposals, parking and pedestrian facilities. It has been observed that, in most of the major roads in the town pedestrians are forced to use the carriageway due to the absence or poorly maintained footpaths. Footpaths of 1.5m wide are proposed along the major roads where heavy pedestrian movements are observed. For traffic safety and convenience, appropriate signage, markings, lighting and guideposts are required to be provided on curves, intersections, public utility places, etc. Proposals for road furniture are made considering the importance of the road safety and aesthetics.

Road Planning and Demand: The newly developing areas are lacking in terms of proper roads and new linkages. The road widening projects can, to a certain extent, increase the area under roads especially in certain commercial corridors and provide critical link roads. Planning shall also ensure that roads and provision of parking and traffic infrastructure would match the town's present and future needs for both private and public transport.

Pedestrian Facilities and Safety Measures: Pedestrians are most vulnerable road users in urban areas. It is therefore necessary to provide better facilities for pedestrians in areas where their movement is predominant. Pedestrian footpaths are proposed and these foot paths should be seen that they are free from encroachment in all the bus routes.

Asset Rehabilitation: An upgrading program for all road assets shall be undertaken to extend, refurbish and enhance the roads. Plans would be phased to optimum cost and surface condition and shall include upgrading earthen roads to Bitumen Topped Roads. This phased up-gradation would considerably reduce the costs of providing the road network.

The most critical issue is not only planning for such infrastructure, but also ensuring active and effective coordination across other sector departments. The development activities across each front, i.e., installation of sewer mains, water mains, street lights, storm water drains are to be undertaken in coordination with all the departments concerned without any repetition of works or time loss.

9.5.3 PRIORITY ACTIONS AND PROPOSALS

Priority Actions

The potential increase in road length in the future has been assessed based on road density and per capita road length norms. A projected road length of approximately 13.09 km as been envisaged. Standards adopted for service level in respect of road surface are 5 % of the roads can be of cement concrete (CC) paved and balance to be bitumen topped (BT).

An analysis for checking the adequacy of road lengths, types of roads etc for the projected population has been made. The future trend of road network development is envisaged based on population growth & land use, efficiency of road networking system, segregation of various types of traffic, de-signalizing of junctions and up-gradation, widening & strengthening of major roads. Details are shown in Table 5.8.

Table No: 9.11. Demand for Internal Roads (excluding SH, MDR's) for 2011

Project Sub-Component	Unit	Existing Status	Demand	
		Year 2007	Year 2011	
			Demand	Surplus (+) / Deficit (-)
Road Length	Kms	16.98	18.29	**1.31**
Concrete Road	Kms	0.03	0.88	**(0.85)**
BT Road (Approved + Unapproved)	Kms	8.41	4.39	**4.02**
WBM Road	Kms	5.40	--	**--**
Cut stone slab	Kms	--	--	**--**
Earthen Road	Kms	3.14	--	**--**
System Rehabilitation – Up-gradation of Internal Town Roads				
BT Roads to Concrete Roads	Kms	-	-	**(9.05)**
Restoration of BT Roads	Kms	-	-	**(5.40)**
WBM Roads to BT Roads	Kms	-	-	**-**
Earthen Roads to BT Roads	Kms	-	-	**-**
New Infrastructure – New Roads Formation				
Concrete Road	Kms	-	0.88	**(0.88)**
BT Road	Kms	-	2.54	**(2.54)**
WBM Road	Kms	-	5.27	**(5.27)**
Earthen Road	Kms	-	-	**-**

Source: Analysis

The following table presents priority actions and their implementation schedule in respect of roads, traffic and transportation sector during the mission period (2007-2012):

Table 9.12: Priority Actions and Implementation Plan - Roads, Traffic and Transportation						
Component	**Activity**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
Improved Safety, Service delivery and Customer Satisfaction by providing better infrastructure	Construction of ROBs & RUBs /Sub-ways	√	√			
	Strengthening existing roads	√	√			
	Up gradation of important roads		√	√		
	Formation of new roads		√	√		
	Widening of Major roads	√	√			
	Parallel Roads, New Link Roads		√	√	√	
	Junction Improvements		√	√		
	Bridges		√	√		
	Culvert		√	√		
	Signals	√	√			
	Signage and markings	√				
	Road divider & Medians	√				
	Parking Lots/ complexes	√	√			
	Bus Terminals	√	√			
	New Ring Road			√	√	√
Improved Pedestrian Facilities, comfort and safety	Accessibility to the disabled	√	√			
	Pedestrianization	√				
	Pedestrian crossings	√	√			
	Foot paths	√	√			

Proposals

Proposed Capital Works – Roads, Traffic and Transportation

- Pavement Improvements to ULB maintained roads widening and improvement to HD maintained roads;
- Construction of NH by-pass roads; and
- Studies on parking requirements and town-wide public transportation system.

The proposals listed below have been identified by the Study Team based on evaluations, discussions and priorities assigned and mutually agreed upon by the Stakeholders:

Additional New / Improvements to existing Roads: It is proposed to augment additional area under road network through (i) Formation of new additional length of 0.88.km of Cement Concrete Road 2.54 km of Black Topped Road (ii) Strengthening of existing BT roads to a length of 5.40 Km (iii) Up-gradation of BT to CC roads to a length of 9.45 km and (iv) Up-gradation of 5.27 km of Earthen Roads to BT roads.

Junction Improvements: Intersections must be designed and operated for simplicity and uniformity. The design must take into account limitations of drivers and pedestrians using intersections. The main objective of the intersection design would be to minimize conflict points. The improvement measures normally include:

- Proper channelisation for the free left turn
- Foot path on approaches of the junctions
- Planned pedestrian zebra crossing
- Shifting of electric poles and cutting of trees
- Land acquisition / removing structures
- No parking on the approaches of the junction for at least 50 m
- Adequate and safe turning radius
- Appropriate gradient of the road at the intersection

9.5.4 ESTIMATED SECTORAL INVESTMENT

Based on the parameters specified in the earlier section, the capital cost has been estimated for the proposed intervention and are listed below:

Table 9.13.Estimated Sectoral Investment – Roads, Traffic and Transportation (Rs. in Lakhs)		
Component	**Activity**	**Investment**
Improved Safety, Service delivery and Customer Satisfaction by providing better infrastructure	Strengthening existing roads	121.28
	Up gradation of important roads	218.30
	Formation of new roads	500.26
	Junction Improvements	12.13
	Culvert	4.85
	Signals	12.13
	Signage and markings	18.19
	Road divider & Medians	12.13
	Traffic Island	6.06
	Improvements to Bus Terminus	121.28
	Provision of Bus Shelters	21.83
Improved Pedestrian Facilities, comfort and safety	Accessibility to the disabled	30.32
	Pedestrian crossings	6.06
	Foot paths	72.77
Total		**1157.57**

Necessary clearances from the concerned ministries or authorities need to be acquired at the earliest. The authorities/ departments/ agencies that are proposed to be responsible for project formulation/ implementation/ monitoring are listed but shall not be necessarily limited to, the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat and Highways Department.

9.6 SOLID WASTE MANAGEMENT

9.6.1 OBJECTIVES

The objectives of assessment of solid waste management (SWM) sector is to ensure implementation of a full fledged MSW management system in accordance with MSW (Management and Handling Rules) 2000.

9.6.2 STRATEGIES FOR DEVELOPMENT

SOURCE SEGREGATION
Involving the community and citizens in proper SWM is an essential strategy. Segregating waste at source by the community is a pre-requisite. The ULB shall be responsible for collection of segregated waste through a standardized transportation system and ensure proper treatment/ processing and disposal.

ULB should organize public awareness programs through suitable modes of communication to educate waste generators on not indiscriminately disposing solid waste onto streets, open spaces, vacant plots and drains.

PRIMARY COLLECTION
Following are the broad interventions suggested for improvement of primary collection:

- Provide daily waste collection bins/ bags to all households and establishments for separately keeping organic/ wet bio-degradable waste. Ensuring regular and reliable service by deploying street sanitary workers to clear such wastes during their street

sweeping operations so that bio-degradable wastes are collected within 24 hours of generation;
- Community may be educated through awareness programs on proper source segregation, storage and handling prior to primary collection

ULB can evaluate the option of involving NGOs and SHGs for solid waste collection.

STREET SWEEPING

The most important aspect of improving effectiveness of street cleansing operations may be addressed by improving the working environment of the sanitary workers and fixing norms for each sanitary worker so that the factor of accountability may be established to review the performance of each sanitary worker.

Sanitary workers shall sweep the roads and footpaths in the area allotted to them as well as collect the domestic, trade and institutional wastes in their handcart from all households, shops and establishments situated along the stretch of road / street allotted. Roads / streets, which have a central median or divided section, should be considered as two roads and road length allocated accordingly. Alternatively, separate sanitary worker may be engaged for sweeping two sides of such roads. All above shall include cleaning the surface drains abutting the road. Sanitary workers should be assigned fixed individual beats and 'pinpoint' work according to the density of the area to be swept.

The sweeping norms mentioned below are for cleaning streets in the first 4 hours of the working day:

- High-density area : 250 to 350 running meters of road length.
- Medium-density area: 400 to 600 running meters of road length.
- Low-density area : 650 to 750 running meters of road length.

In order to avoid inconvenience to the citizens by dust generated from street sweeping and also to facilitate sweepers to perform their duty without interruption from constant vehicular movement,

TEMPORARY STORAGE

ULB should ensure that containers are provided at an average distance of 250 meters from the place of work of the sanitary workers. The average distance between 2 containers should, therefore, not exceed 500 meters. The distance between the containers shall be determined on the basis of the load of waste / refuse that is likely to be received at the container from the area concerned. The containers should be placed on cement concrete or asphalt flooring having a gradual slope towards the road to keep the site clean. The flooring should facilitate the transfer of waste from the handcart/tricycle into the container. A catch pit may be provided close by if storm water drains exist in the town. In areas where placement of large containers (dumper placer containers) is inconvenient, small containers of 1.00 cu. m size may be placed on the roads, lanes and by-lanes at specific distances. It is of paramount importance to ensure compatibility of the containers with the existing and proposed transportation fleet.

Another option that could be considered in such a situation is to avoid placing a container altogether and instead press into service small waste collection vehicles for direct transfer of waste from the handcarts/tricycles into such vehicles. Such vehicles can be parked at suitable locations in the congested areas where sanitary workers can bring the waste easily. It is suggested to use innocuous agents like bleaching powder and other permitted insecticides to prevent the menace of breeding of flies and mosquitoes at the community storage points. Further, such an application of innocuous agents would facilitate maintaining a hygienic environment. Further, proposed training of rag pickers by NGOs would facilitate collection of recyclable waste at the doorstep avoiding the necessity to pick-up such wastes from the community waste storage points.

The standards and norms prescribed in the Manual[1] pertaining to temporary waste storage points are based on the total waste generation and the spacing, viz. a) the total capacity of the temporary waste storage points should be equivalent to at least 1.5 times the total waste generation, and b) the spacing between two temporary waste storage points should be less than or equivalent to 500 m.

TRANSPORTATION

Synchronization of collection with the transportation process is one of the key steps to be initiated by the ULB. The collection of waste needs to be containerized and the proposed transportation system should be compatible with the collection system. The synchronization of transportation with that of the collection process should be planned in a phased manner considering the financial capability and operation and maintenance capacity of the ULB. The vehicles used for the transportation of waste shall synchronize with that of the collection system. Based on the market surveys and situation analysis and discussion with the ULB, two types of vehicles are envisaged for the town as described below:

- Dumper Placer -Twin Container is proposed to cater to the needs of the fast moving vehicles. This vehicle would have two containers, each of capacity 3 cu. m with side loading and unloading facilities using hydraulic system. This vehicle is envisaged to undertake 4 trips per day with total waste carrying capacity of 12 MT per day, primarily used for the wider roads within the town; and
- Three-Wheeler Auto Cargo is proposed to cater to the needs of the small and congested lanes of the town especially in the old town areas. These vehicles would have an open container of capacity 1.4 cu. m with manual loading and rear hydraulic unloading facilities. This vehicle is envisaged to undertake 5 trips per day with total waste carrying capacity of 3-4 MT per day.

The transportation of wastes is envisaged to be containerized as per the norms / standards prescribed in the Manual. Accordingly, it is envisaged to replace the existing open transport system in a phased manner. As per the norms / standards, it is suggested to have a vehicular capacity equivalent to 1.25 times that of the actual generation of waste. However, from the economic point of view, vehicles less than 10 years (economic life) are proposed for regular routes on a daily basis. Those approaching their economic life would be used as reserves and for pinpoint operations, thereby achieving the requisite carrying capacity of the fleet. With containerization of the transport, the number of trips may be considerably increased due to saving in time for handling, loading and unloading the generated waste.

TREATMENT AND DISPOSAL

Presently, ULB has adopted only dumping as the method of waste disposal. It is recommended to implement an effective mechanism for treatment and disposal of generated solid waste. Evaluation of available technologies for solid waste treatment and disposal should be performed on the following lines:

- Available project experience information or proven technology (domestic/international)
- Suitability of process for region-specific field condition
- Scale of operation
- Technical feasibility
- Feasibility of capacity upgrade
- Economy of operation - capital and annual O&M cost
- Requirement of land, water and power
- Manpower and level of skill requirement
- Capability of the ULB to manage the facility
- Environmental impact of such technology

[1] Manual on Municipal Solid Waste Management.

- Process aesthetics and
- Overall life cycle cost.

Based on the scale of waste generated in the town and viability of the treatment technologies, aerobic composting is recommended as the techno-economically feasible process. However the process may be subjected to further detailed investigation and for subsequent implementation. A detailed study needs to be made on this alternative prior, to finalization.

Operation and Management Schedule: Adoption of an O&M Schedule, including options of using the private sector for O&M (e.g. management contract). In view of the criticality of the information on vehicle movement in assessing the collection and disposal efficiency of the local body, it is recommended that a standard register at the disposal site and transfer station be maintained. The register should contain information on each of the vehicle trips at both the locations and the origin of waste collection. The Schedule can be used for periodic maintenance of vehicles to defer Costs. A summary of this information shall be prepared at the end of the day, to be verified by the health officer.

Approach for Optimal Manpower Utilization it is considered that there would not be much further requirement to induct conservancy workers. The existing street sweeping operations in the ULB a shall be regulated to ensure operational efficiency of the system, the following measures are suggested, (i) Markets and other areas of the town shall be swept at least twice a day and sweeping should be done on Sundays and holidays in core areas and denser areas. (ii) Sweepings shall be collected separately as degradable and non-biodegradable waste and deposit in containers kept at various locations and de-silting of larger drains may be done by a separate crew equipped with appropriate tools. Additional man power shall be employed on Contract basis for street sweeping.

Institutional Strengthening and Capacity Building: Recruitment of trained engineering personnel for management is an important issue confronting the ULB, and as well of more importance is to keep them technically updated. It is necessary that periodic training be imparted to the operations staff of the ULB.

Training & Public Awareness: Training may be given at all levels. NGOs and private sector be fully involved. IEC activities have their role in SWM but the best approach to ensure general cleanliness may be through imposition of administrative charges on erring citizens.

9.6.3 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

Priority actions identified by the stakeholders, discussed and finalized in respect of development of the solid waste management sector are furnished below:

- Comprehensive Solid Waste Management Scheme (per the MSW Rules, 2000).
- Minimization of generation of Solid Waste.
- Source segregation of municipal solid waste.
- Augmentation and expansion of primary collection of waste.
- Modernization and expansion of existing waste transportation system.
- Municipal solid waste treatment and disposal.
- Regulations of recyclable waste for re-use.
- Proper handling and disposal of slaughter house and related wastes.

Following table presents priority actions and their implementation plan for solid waste management during the mission period (2007-2012):

Table 9.14 : Priority Actions and Implementation Plan - Solid Waste Management						
Component	**Activity**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
Primary Collection	Providing bins for Door-Door Collection	√	√	√		
	Introducing Containerized Tri-Cycles		√	√		
	Providing Equipment for Garbage Recovery Personnel		√	√		
	Providing Equipment for Street Sweeping Personnel		√	√		
	Use of Tipper Lorries for Debris Collection			√		
Secondary Collection	Container Bins (1.25 MT Capacity) for Residential Areas		√	√	√	
	Container Bins (1.25 MT Capacity) for Market, Bus Stand, Commercial Areas & Railway Station		√	√	√	
Transportation	Use of Dual Load Dumper Placer Vehicles		√	√	√	
Waste Processing & Disposal	Integrated Waste Treatment		√	√		
	Sanitary Landfill Facility	√	√			
	Scientific Closure of the abandoned dump sites		√	√		
Administration Complex	Establishing Administration and Utilities Complex including HT Electrical Sub-station			√		

PROPOSALS

Proposed Capital Works - Solid Waste Management

- Source segregation system;
- Augmentation of primary collection system;
- Augmentation of transportation system;
- Transfer stations with required equipment;
- Municipal solid waste treatment plant; and
- Establishment of landfill sites.

The total Solid Waste Generation in 2007 at a per capita generation of approximately 265 grams / day is estimated to be 2.50 MT, indicating a priority need for Scientific Disposal of Waste. Waste generation at the present rate has been assumed as 210 grams / day (based on present rate). A growth rate of generation of waste at 2 percent per year is assumed and the demand for future is assessed. The total Solid Waste Generation for 2025 is estimated to be 2.86 MT. The Present Disposal method of Open Waste Dumping poses a potential health and environmental hazard considering the quantity of waste generated, location of disposal site and its environs. Hence options for Scientific Waste processing / disposal need to be explored on a priority basis. The details of Service Levels suggested for future are presented in Table 9.14.

Table 9.15: Design Criteria and Target Service Level

Description	Unit	Based On CPHEEO Norms
		2025
Population	Numbers	13,365
Per capita Waste Generation	Grams / day	210
Collection Type	-	Door-to-Door Collection and Source Segregation of Waste
Collection Demand	Percent of Generation	100
Vehicle Capacity Adequacy	Percent of Rated Capacity	100
Treatment Type	-	Composting of Waste & Sanitary Landfill
Treatment Demand	Percent of Generation	100
Total Solid Waste Generation	MT	2.86

Source: Norms

Highest priority has to be accorded for segregation & storage of waste at source to facilitate an organized and environmentally acceptable waste collection, processing and disposal system. Source segregation of recyclable and bio-degradable (organic) waste provides an efficient way for resource recovery and also results in substantial reduction of pressure and pollution in Landfill sites. The following measures have been recommended for improving the present primary collection and Street Sweeping practices of the ULB;

Primary Collection: Implementation of 'Door-to-door collection' through 100 percent privatization is recommended through a 'two-bin' system. Source segregation and collection

of commercial waste including hotels and market waste can be privatized. Construction waste has to be stored at the premises of the construction, either in skips or suitable containers, and has to be directly emptied to the notified disposal site by the generator. Meat and fish markets should store waste in non-corrosive bins of maximum 100-liter capacity each and transfer contents to large container to be kept at the market just before lifting of such large containers. Slaughterhouses should keep separate containers for animal waste and other wastes and disposed separately in accordance with applicable rules and regulations. It is also being recommended that this system of source segregation and storage is encouraged through community education and awareness campaigns and hence no capital investments are envisaged in this regard. Introduction of bio-medical waste management facility with support from Indian Medical Association is also recommended.

Details of 'Collection System' and 'Specific Actions' for storing the segregated waste are summarized in Table 9.15 and Table 9.16 respectively.

Table 9.16: Proposed Primary Collection System

Mode of Collection	Area of collection	Primary collection vehicle	Secondary storage
Door to Door	1. Residential colonies of High and Middle income group	Multi-bin cart / tricycle-with 2 bins for Biodegradable waste and 1 for recyclable	1.Bio-degradable in Skips / wheel containers 2. Non-biodegradable- Sell or hand over to waste collector
	2. Hotels / Restaurants	Closed vehicle to collect Biodegradable	Direct transport to Disposal site
Community Bin System - Large	Fruit and Vegetable Markets/ Transfer Stations	Carrying bins to Transfer Point	Skip / Dumper Placer
Community Bin System - Small	Slums / urban poor Colonies	Carrying bins to Transfer Point	Transfer contents of biodegradable to community bins

Table 9.17: Specific Actions for Storing Segregated Waste

S. No.	Source	Storage of Segregated Waste	
		Bio-Degradable	Non-Bio-degradable
1	Households in Residential Areas	10-15 liters capacity plastic/ reinforced plastic/ LDPE/ metal bin with lid	A bin or Bag of suitable Size
2	Hotels & Restaurants	60 liters capacity-LDPE /HDPE	A bin or Bag of suitable Size
3	Shops, Offices and Institutions	Suitable container not exceeding 60 liters	A bin or Bag of suitable Size
4	Market Stalls	40-60 liters bin-LDPE/HDPE	A bin or Bag of suitable size
5	Function Halls	Bin/ Skip matching to Municipal Collection system	A bin or Bag of suitable size
6	Hospitals & Nursing homes	60 liters capacity bin for non-infectious bio-degradable waste	Store waste as per Bio-medical Waste Mgmt Handling Rules 1998
7	Construction/ Demolition waste	-	Store with in premises and deposit in the Site notified by the ULB or to the Vehicle o f the ULB
8	Garden Waste	Store with in premises	Deposit in large community bin or to the ULB vehicle

It is proposed that the entire area of the ULB be brought under door-to-door collection. The existing dust bins shall be phased out in an organized manner based on the implementation of the Municipal Solid Waste Management system. Based on these assumptions, the equipments for primary collection required for future waste generation has been estimated.

Secondary Collection and Transportation: The following measures have been recommended for improving the practices of the ULB regarding secondary collection and transportation of wastes: Following table presents the system demand for collection and transportation of solid wastes in the town by the year 2025.

Table 9.18: System Demand for Solid Waste Management

S.No	Type	Required as per Design and norms of CPHEEO
Primary Collection		
1	Tri-Cycles	15
2	Push-carts*	10
Secondary Collection & Transportation		
1	Dumper Bins for Dual Dumper Placers (1.25 MT capacity)	2
2	Dual Dumper Placer Vehicles (2.5 to 3 MT cap.)	1
Aerobic Composting Complex		
1	Compost Turner and Aeration Attachment with Tractor	1
2	Front End Loaders with Shovel (JCB Model or equiv)	1
3	Tractor with Water Tank, Pump, Spray Nozzle with Extender Arm Attachment for Fine Spray Dispensing	1
4	Tipper Trucks w/ custom built body and Double Ram Hydraulic Tipping Arrangement for Waste Handling (Eicher Model 10-90, Ashok Leyland or Equivalent)	1
5	Mini-Loaders (BobCats or equiv.) with Skid Steering or suitable arrangement	1

Note: * Existing Push carts should be used for sold waste collection in slums and areas where width of street is less than 10 ft. only.

Based on the estimated generation of Solid Waste, it is recommended that a landfill site for safe disposal of Solid Waste be developed by the ULB. Based on the successful implementation of the door-to-door collection and source segregation practices in the town, the options of converting waste into wealth and implementing composting projects may be explored.

The following proposals have been identified by the study team based on reported evaluations, discussions and priority actions as required and mutually agreed upon by the Mission Stakeholders:

- Implementation of source segregation system;
- Installation of additional primary collection bins and related component;
- Augmentation of transportation fleet - tractors, dumper-loader trucks
- Installation of transfer stations with compactors, material handling equipment and wastewater disposal facility (drains, pump station etc.);
- Implementation of municipal solid waste treatment system; and
- Construction of landfill for non-bio-degradable waste including lining, under-drains, gas extractor/burners and perimeter protection.

9.6.4 ESTIMATED SECTORAL INVESTMENT

Based on the parameters specified in the earlier section, the capital cost has been estimated for the proposed intervention and are listed below:

Table 9.19.Estimated Sectoral Investment – Solid waste Management (Rs. in Lakhs)

Component	Activity	Investment
Primary Collection	Providing bins for Door-Door Collection	0.76
	Containerized Tri-Cycles	1.97
	Equipment for Garbage Recovery Personnel	0.61
	Push Carts	0.45
	Equipment for Street Sweeping Personnel	0.64
Secondary Collection	Container Bins for Residential Areas (1.25 MT Capacity)	1.19
	Container Bins for Market, Bus Stand, Commercial, Railway Station etc., (1.25 MT Capacity)	0.59
Transportation	Dual Load Dumper Placer Vehicles	34.56

Table 9.19.Estimated Sectoral Investment – Solid waste Management (Rs. in Lakhs)		
Component	**Activity**	**Investment**
Waste Processing & Disposal	Integrated Waste Treatment	482.90
	Sanitary Landfill Facility	31.65
	Scientific Closure of the abandoned dump sites	16.60
Administration Complex	Administration and Utilities Complex including HT Electrical Sub-station	18.19
Total		**590.11**

Necessary clearances from the concerned ministries or authorities need to be acquired at the earliest. The authorities/ departments/agencies that are proposed to be responsible for project formulation/ implementation/monitoring are listed, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat.
- Monitoring Agency: State Pollution Control Board, GoTN, Ariyalur

9.7 STREET LIGHTING

9.7.1 OBJECTIVES

The objective of the sector is to provide adequate lighting in the town and at the same time identify measures to reduce energy charges by considering the present & future energy requirements.

9.7.2 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS
Priority actions identified by the stakeholders, discussed and finalized in respect of improvement of the street lighting sector in the town are furnished below:

- Provision of new street lights for uncovered areas
- Upgrading street lighting in existing areas which essentially entail replacement of fluorescent lights with sodium vapor or equivalent lamps and installation of high-mast cluster lighting at important junctions that are not presently covered with such lighting arrangements.
- Identifying power consumption management and devising energy efficiency measures.
- Development of General Lighting Plan.

Following table presents priority actions and their implementation plan for street lighting during the mission period (2007-2012):

Table 9.20: Priority Actions and Implementation Plan - Street Lighting						
Component	**Activity**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
Street lighting improvement measures	Proposed SV lamps in uncovered areas	√				
	Proposed FL lamps in uncovered areas	√				
	Proposed High Mast light in major junctions	√				
	Proposed Timers for existing / new lights	√	√			
	Proposed Sensor Lighting	√	√			
	Proposed Solar Lights		√	√		
	Proposed Power Saver (Capacitors)	√	√			
	Proposed dedicated sub-station/transformers	√	√			
	Proposed Tri-vector meters	√				

PROPOSALS

The proposals listed below have been identified based on discussions and evaluations of priority actions as required:

- Replacement of FL with SV or equivalent lamps at major intersections
- Extension of street lighting to uncovered areas (poles, bulk-head fittings, control systems and solar panels as-applicable)
- Enhancement of transformers / sub-stations (as applicable) and
- Installation of capacitors, timers / trip sensors and other operational control equipment at control nodes.

Proposed Capital Works – Street Lighting

- Provision of new street lighting for uncovered areas;
- Upgrading street lighting in covered areas;
- Augmentation of Power Supply Infrastructure; and
- Installation of operational control and energy efficiency equipment.

It is proposed to improve the lighting facilities in the town by

- Installation of 776 Light Poles,
- Installation of New High Power Fixtures and Conversion of Tube Lights to High Power Fixtures, of 155 Nos and
- Installation of 621 nos. of Tube light fixtures.

The measures required for improvement of Street Lighting sector by 2011, for the town are tabulated below:

Table 9.21 Demand, Supply and Required Augmentation of Street lighting for 2011

Project Sub-Component	Unit	Existing Status	Demand			
			Year 2007		Year 2011	
			Demand	Surplus/ (Deficit)	Demand	Surplus/ (Deficit)*
Street Lights	*No's*	386	662	**(276)**	776	**(390)**
New Infrastructure						
Tube Light Fixtures	*Nos.*	334	529	**(195)**	621	**(287)**
High Power Fixtures	*Nos.*	64	132	**(68)**	155	**(91)**
High Mast Lights	*Nos.*	--	2	**(2)**	5	**(5)**

Source: Analysis

9.7.3 ESTIMATED SECTORAL INVESTMENT

The capital cost estimated for the proposed intervention based on the parameters specified in the earlier section, are listed below:

Table 9.22: Estimated Sectoral Investment - Street Lighting (Rs. In Lakhs)

	Activity	Investment
Service Improvement	Proposed SV lamps in uncovered areas	9.10
	Proposed FL lamps in uncovered areas	15.29
	Proposed High Mast light in major junctions	21.22
	Proposed Timers for existing / new lights	11.82
	Proposed Sensor Lighting	0.00
	Proposed Solar Lights	0.00
	Proposed Power Saver (Capacitors)	0.21
	Proposed dedicated sub-station/transformers	1.52
	Proposed Tri-vector meters	4.85
Total		**64.01**

Necessary clearances from the concerned ministries or authorities need to be acquired at the earliest. The authorities/ departments/ agencies that are proposed to be responsible for project formulation/ implementation/ monitoring are listed, but shall not be necessarily limited to, the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat and TNEB.

9.8 BASIC SERVICES FOR THE URBAN POOR

9.8.1 OBJECTIVES

Slum upgrading (including rehabilitation) initiatives and improving the quality of life of the urban poor in general and slum dwellers in particular, shall be an integral part of the CCBP.

The ULB needs to supplement the current initiatives on its part with aggressive strategies to fulfill the requirements of the urban poor. The best practices and strategies outlined in this chapter shall be at the macro level, specific to social development, as infrastructure provision and deficiencies are already addressed by the underlined strategies under each sector in the previous chapter covering Infrastructure development. The priority actions identified through discussions with stakeholders and the proposals evolved for improvement are to be specifically intended to achieve dual objectives, viz. optimal utilization of the available strengths of the system and implementation of remedial measures based on the identified weaknesses of the system/ sector to ensure that the imminent and potential (future) threats are eliminated and prevented from recurrence.

9.8.2 STRATEGIES FOR DEVELOPMENT

The ULB shall initiate community development activities within its administrative jurisdiction and integrate this aspect in its overall plan. Hence, various Central and State Government programmes shall converge into the overall development plan.

9.8.3 POVERTY ALLEVIATION AND COMMUNITY DEVELOPMENT PROGRAMS

Beneficiary Selection: The target beneficiaries need to be identified based on a socio-economic survey and efforts need to be initiated to form community development societies (CDS's) covering the target population and implement guidelines on the lines of SJSRY in beneficiary selection. The community needs to be encouraged to avail the benefits under various slum development programs by developing linkages with lead bankers and ensuring the free flow of communication and a proper reporting procedure. A town level training strategy shall be formulated to focus on the targeted beneficiaries. The strategy will aim at the people to be trained including policy makers, town officials, community members as well as the beneficiaries.
Programme Monitoring: Monitoring of the programme is equally important as implementation. Effective monitoring paves the way for replication and improving of such initiatives.

Social Inclusion of Vulnerable Groups: The vulnerable groups are socially under-privileged women and the aged who are generally restricted by the dominant groups in any community. Voice for these vulnerable groups in community development programs is necessary. It can be ensured only through effective awareness campaigns. Improving the literacy levels among the poor and the slum dwellers will also ensure the elimination of the differences among the communities and ensure participation of vulnerable groups. This initiative aims at a long-term goal and needs sustained longstanding efforts on the part of CDS's. The activities of the CDS's shall be monitored through an evaluation procedure on a periodic basis.

9.8.4 COMMUNITY DEVELOPMENT

Community development needs to be integrated to provide economic and employment generation activities. The ULB has to strengthen its efforts to identify NGOs and CBOs and encourage them to work specifically for the empowerment of the urban poor in general, and slum dwellers in particular.

The ULB may concentrate on organizing specific training programs on tailoring, housekeeping, mechanic work, lathe working, computer operation, coir works, etc. to guarantee employment/self-employment for the identified beneficiaries. Training needs assessment, designing the training programs, identification of training institutions and resource persons to bring in community development also needs to be focused.

Education: Support from various sections for involvement in education and to enhance opportunities for increased access to literacy development is to be encouraged. There is a need to develop strong linkages between education, training programs and resources. Value added services (computer coaching classes, tuition, etc.) may be encouraged. The ULB shall facilitate school-linked programs and support services.

Strengthening Community Development Initiatives: The ULB should strengthen efforts to involve people in planning and decision-making and encourage participation of community in physical as well as economic development activities. Government departments, schools, institutions and community-based organizations are to be encouraged to provide opportunities for people's participation. Proper coordination between the various actors in community development is also to be effected. The ULB has to identify NGOs/ CBOs to develop appropriate linkages with town level authorities and community. Following are some of the policy initiatives required to support/ facilitate 'best practices':

- Support transformation of informal settlements which are notified. Allow for incremental development and gradual improvement of settlements without loading excessive infrastructure and construction costs. Provide the support required to speed up the process through access to financial, organizational and technical inputs.
- Draw up a town level plan quantifying present informal settlement population, and prepare an action plan to target integration of the population into the town. Communities residing in these settlements must be encouraged towards self-assessment and identification of priorities through which they can initiate changes in their settlements.
- Provide the poor with better access to housing finance at affordable cost through micro-credit schemes and community-based lending.
- Promote the cluster, collective or cooperative society approach in allocation of land to the poor. Develop a range of tools through which communities of the poor and their organizations begin a dialogue with the ULB on issues of tenure, infrastructure and housing.
- Develop innovations in delivery mechanism through which communities can begin to work with local authorities to ensure universal provision of basic sanitation and other amenities and services.
- The poor should be empowered to take full part in town governance and thereby access their due share of resources. Action for economic empowerment should include facilitating self-managed thrift and credit societies in order to link the poor to institutional credit.
- Eviction without provision of full resettlement and livelihood opportunities should be avoided. In-situ upgrading should always be the preferred option, except in completely untenable situations. The ULB should play an enabling role in linking poor people to a range of innovative housing and livelihood options.
- The ULB should work with communities using participatory methods to map their access to infrastructure services (water supply, toilets, drainage, garbage removal, etc.) and prioritize their needs/demands. Opportunities should be actively explored for the poor to participate in both infrastructure construction and ongoing service delivery. Although individual family facilities should be the priority, constraints of space may require innovative service delivery options such as community-managed and shared facilities.

9.8.5 PRIORITY ACTIONS AND PROPOSALS

Priority actions identified by the stakeholders and discussed and finalized for development works relating to slum upgrading in particular and betterment of urban poor in general in Udayarpalayam are described below. These actions will focus on creation of opportunities for improvement of the present system and its sustainability. The policy framework and priority actions listed below have been identified by the study team based on discussions and evaluations as required and agreed upon by the Stakeholders.

POLICY DIRECTIVES / ACTIONS

- Development of comprehensive 'slum upgrading' policy to identify, notify and upgrade the slums with clear assignment of responsibilities.
- Finalization of parameters for listing and categorization of slums as tenable and non-tenable category.
- Establishment of a sustainable continuous and non-lapsable fund flow for slum improvement programs.
- Appropriate institutional arrangements for transfer of land from the GoTN to ULB for undertaking slum improvement schemes and housing for urban poor.
- Exploration of the possibility of land acquisition for slums located on private lands.

PREPARATORY ACTIVITIES

Proposed Capital Works – Slum Upgrading

- Construction and upgradation of dwelling units; and
- Integrated development of slum through all basic amenities like water supply, sanitation, solid waste management, roads, storm water drains, streetlights, etc.

Based on the policy directives described above certain preparatory activities are to be initiated prior to taking up the improvement works and such preparatory activities are listed below:

- Comprehensive listing of slums.
- Notification of tenable slums within ULB area and mapping.
- Preparation of a database on socio-economic characteristics of all slum dwellers in the listed slums.
- Mapping and assessment of physical characteristics of slums (housing and services) for all tenable slums.
- Identification of land parcels for resettlement of slum dwellers of all non-tenable slums and involvement of NGOs/CBOs in the process.
- Preparation of DPRs for each of the slums as an integrated scheme covering both housing and services.

IMPROVEMENT MEASURES

Following are the improvement measures recommended by the Study Team for improvement of urban poor in the ULB:

- Provision of basic coverage/provision of water supply, sanitation, access roads, etc. in all tenable slums.
- Project formulation for integrated development of all notified tenable slums covering housing, provision of basic services and amenities.
- Formulation of public-private partnership projects for slum upgrading.
- Exploration of rehabilitation option rather than resettlement.
- Adoption of a 'community-based approach' in service provision and delivery to suit the local context and requirements.
- Ensure involvement of women and children from project formulation to implementation to achieve sustainability.
- Target service provision like water supply, sanitation and electricity on individual household basis - to facilitate improvement in performance & collection of user charges.
- Facilitation of 'e-service' provision and delivery, by communities with appropriate supervision by the ULB.

- It is recommended that the ULB bear the cost of provision of services with complete or partial recovery.

Following table presents priority actions and their implementation plan during the mission period (2007-2012):

Table 9.23: Priority Actions and Implementation Plan - Slum Upgrading

Sl. No.	Activity	Y1	Y2	Y3	Y4	Y5
I. Policy Directives / Actions						
1.	Develop comprehensive 'slum upgrading' policy to identify, notify and upgrade slums with clear assignment of responsibilities					
2.	Finalize parameters for listing and categorization of slums (tenable & non-tenable category)					
3.	Establish a sustainable continuous and non-lapsable fund flow for slum upgrading programs					
4.	Institutional arrangements for land transfer from GoTN to ULB for slum improvement schemes and housing for urban poor					
5.	Explore the possibility of land acquisition for slums located on private lands					
II. Improvement Measures						
1.	Comprehensive listing of slums					
2.	Notify tenable/non-tenable slums and mapping within ULB area					
3.	Prepare a database on socio-economic characteristics of all slum dwellers in listed slums					
4.	Mapping and assessment of physical characteristics of slums (housing and services) for all tenable slums					
5.	Identify land parcels for resettlement of slum dwellers of all non-tenable slums and involve NGOs/CBOs in the process					
6.	Prepare DPRs for each of the slums as an integrated scheme - both housing and services					
7.	Implement DPR covering both housing and services in all tenable slums					
8.	Formulate public-private partnership projects for slum upgrading					
III. Improvement Measures in Notified Slums						
1.	Prepare a database on socio-economic characteristics of all notified slums					
2.	Mapping and assessment of physical characteristics of all notified slums (housing and services)					
3.	Adopt community based approach for preparing projects and involve NGOs/CBOs in the process					
4.	Prepare DPRs as an integrated scheme covering both housing and services					
5.	Implement DPR covering both housing and services in all tenable slums					

9.8.6 ESTIMATED SECTORAL INVESTMENT

Based on the parameters specified in the earlier section, the capital cost has been estimated for the proposed intervention and are listed below:

Table 9.24 : Estimated Sectoral Investment - Slum Upgrading and Urban Poor (Rs. in Lakhs)		
Sl. No.	**Particulars / Capital Investment Components**	**Investment**
1.	Dwelling Units	205.38
2.	Water Supply	20.54
3.	Sewerage and Sanitation	41.08
4.	Solid waste Management	30.81
5.	Roads and Pavements	49.29
6.	Street Lights	4.93
7.	Community Centers	24.26
8.	Open Spaces/Gardens	24.26
	Total Capital Cost	**400.53**

Necessary clearances from the concerned ministries or authorities need to be acquired at the earliest. The authorities/departments/agencies that are proposed to be responsible for project formulation/implementation are listed, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat and TNSCB.

9.9 OTHER AMENITIES

Following table presents priority actions and their implementation plan during the mission period (2007-2012):

Table 9.25: Priority Actions and Implementation Plan – Other Amenities						
Component	**Activity**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
Service Improvement	Improvement to burial grounds (w/o gasifier)	√	√			
	Improvement of existing and proposed playgrounds	√	√			
	Rehabilitation/proposed community centers/halls	√	√			
	Improvement to town library/proposed libraries	√	√			
	Proposed /dedicated vegetable/meat market		√	√		
	Proposed weekly markets		√	√		
	Improvements to the School Buildings		√	√		
	Proposed Medical Treatment Facilities within the town.		√	√		
	Slaughterhouse development with Treatment plant facility		√	√		

9.9.1 ESTIMATED SECTORAL INVESTMENT

Based on the parameters specified in the earlier section, the capital cost has been estimated for the proposed intervention and are listed below:

Table 9.26 : Estimated Sectoral Investment – Remunerative Facilities (Rs. in Lakhs)		
Sl. No.	**Particulars / Capital Investment Components**	**Investment**
1.	Improvement to burial grounds (w/o gasifier)	31.76
2.	Improvement of existing and proposed playgrounds	63.53
3.	Proposed community centers/halls	38.12
5.	Proposed /dedicated vegetable/meat market	121.97
6.	Improvements to weekly markets	50.82

Table 9.26 : Estimated Sectoral Investment – Remunerative Facilities (Rs. in Lakhs)		
Sl. No.	**Particulars / Capital Investment Components**	**Investment**
7.	Improvements to the School Buildings	38.12
8.	Construction of Shopping complex	215.99
9.	Slaughterhouse development with Treatment facility	12.71
	Total Capital Cost	**573.02**

Necessary clearances from the concerned ministries or authorities need to be acquired at the earliest. The authorities/departments/agencies that are proposed to be responsible for project formulation/implementation are listed, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat and the concerned departments.

9.10 ENVIRONMENTAL MANAGEMENT

9.10.1 OBJECTIVES

The existing urban environment in Udayarpalayam needs to be improved since the developments and the environmental conditions have two way relationship in the sense that if one gets affected the other will also get affected.

This section pertains to the proposed development initiatives and specific improvements that are recommended to upgrade the existing urban environment and supporting infrastructure such as conservation of water bodies, improvement of greeneries etc.

9.10.2 DEVELOPMENT STRATEGIES

The strategies for environmental management in Udayarpalayam encompass various segments and each one segment has to be dealt with relevant strategies as indicated below:

MANAGEMENT MEASURES - RAIN WATER HARVESTING

Strategies / Implementation Measures
- Rain Water Harvesting;
- Protection of Resources;
- Slum Networking;
- Pollution Abatement; and
- Eco-systems' Rehabilitation.

Most state governments have recently started to focus on rainwater harvesting to protect environmental resources, recharge the ground water table, create awareness on water usage, etc. Though the merits of rainwater harvesting are a known fact, they have not trickled down to required policy measures like pollution abatement, resource' networking, eco-system rehabilitation, etc. Therefore, it is imperative that the strategies mentioned below are implemented together with rainwater harvesting measures in an integrated manner.

PROTECTION OF ENVIRONMENTAL RESOURCES

One of the most critical interventions is the protection of environmental resources. The protection of natural water bodies, channels and open spaces from further encroachments shall be carried out in a coordinated manner. Areas adjoining water bodies shall be developed and clearly marked and notified to prevent further encroachment.

SLUM NETWORKING PROGRAM

Slum networking should be viewed as integrated improvement of the entire town using slums, not as isolated islands, but as an urban net. The spatial spread of slums together with contiguity between informal settlements gives an opportunity to strengthen town level

infrastructure networks. There is a close correlation between slum locations and the natural drainage paths of the town, which needs to be tapped and improved upon with the infrastructure services. This approach would help in building low cost service trunks, particularly for gravity-based systems of sewerage and storm drainage, together with environmental improvements such as cleaning of channels and major drains.

MONITORING AND QUALITY CONTROL

Monitoring of water quality parameters is being conducted by the SPCB. It is imperative that other departments that provide urban infrastructure should consult and coordinate all developmental initiatives with the SPCB and the SPCB shall, in turn, ensure that all applicable norms and standards are complied with.

Water Quality Monitoring Parameters
- BOD levels;
- Nitrate levels;
- Extent of heavy metals; and
- Extent of toxic substances.

9.10.3 AIR POLLUTION CONTROL

INVENTORY OF AIR QUALITY

There is an imminent need to augment and update the database on air quality indicators and initiate research on the health impacts of specific contaminants. The database shall include sources, emission concentrations and identify non-scheduled industrial and commercial premises with air pollution potential so as to develop emission reduction strategies. This shall be taken up in co-ordination with SPCB and the Traffic Police.

Principal Causes - Air Pollution
- Vehicular emissions;
- Industrial emissions; and
- Construction related activities.

LOCAL EDUCATION AND ENFORCEMENT PROGRAM

Identification of potential air pollution sources shall require mitigation through a structured education program. This program shall be drafted in consultation with the SPCB and the Traffic Police Department. It would focus primarily on vehicular pollution and would include promotion of emission testing of vehicles.

9.10.4 POLLUTION FROM SOLID & HAZARDOUS WASTES

STUDY ON WASTE SOURCES AND CHARACTERISTICS

There is a clear inability on the part of the ULB to maintain data on waste characteristics and thereby identify suitable mitigation methods. Data from waste characteristic studies shall be periodically collected, updated and validated to maintain information on the identification of sources of generation, quantum of per capita generation, physical and chemical characteristics of the waste etc.

Issues - Hazardous Waste Management
- Collection & disposal of medical waste;
- Lack of disposal facilities; and
- Lack of initiatives on reuse and recycle.

LOCAL EDUCATION AND COMMUNITY PARTICIPATION

With high per capita generation trends, measures shall be adopted to reduce waste generation at source. This shall be made possible only through awareness creation and by eliciting active community involvement. The ULB shall take a pro-active role in sensitizing communities on waste minimization through a robust awareness campaign and education. The support of NGOs/CBOs and other agencies can be solicited in conducting such mass awareness programs.

IDENTIFICATION OF COMMERCIAL OPPORTUNITIES

Identification of waste characteristics, sources and creation of public awareness is expected to open avenues for commercial opportunities for waste management. With the ULB successfully contracting out waste collection to the private sector, it would be appropriate if further avenues like treatment and disposal, etc. are explored to carry out sustainable waste disposal practices on a public-private-partnership format.

9.10.5 PLANNING FOR OPEN SPACES & OTHER RESOURCES

Open spaces and other connected resources have to be planned so that they become lungs for the town. The development of open spaces would also enhance overall environmental quality. It is suggested that proposals should be framed for carrying out studies or planning exercises required for framing capital projects. Some of the best practices and strategies that can be adopted are listed below.

SITE SELECTION AND MARKING

Potential green areas have to be identified, rehabilitated and maintained in order to reduce the deficit of open spaces and parks. Resources like gardens, parks, cemeteries, wastelands, heritage sites, industrial areas, forest, agricultural land, institutions and the road network shall be identified for potential greening activities.

NETWORKING OF RESOURCES

As specified in the earlier sections, open spaces along or next to water bodies shall be identified, rehabilitated and maintained in order to connect recreational and cultural areas. Restoration shall start simultaneously at various areas by clearing the obstacles and greening the areas. Special emphasis shall be given to planting trees. The immediate action plan consists of greening areas where new developments are proposed and areas that are rapidly developing.

The integration of natural resources in the city for recreational and cultural purposes shall be targeted to attract investments, increase commercial exchanges, and create job opportunities.

LAND USE INTERVENTIONS

Broadly three land uses can be identified for distributing green corridors - residential, commercial and industrial. It is difficult to define clear-cut strategies to convert them to green spaces, as each will have a characteristic of its own. However, residential areas seem to be the easiest to link and make part of a green network. Industrial locations consist partly of open spaces and land reserves that can be integrated to the green corridors.

The implementation of green corridors might be slow due to access and financial constraints. A convincing argument for planting trees is the impact of the increase on property values. Areas which are not available for connection may be given incentives by the government to form green corridors.

MAINTENANCE OF PARKS & PLAYGROUNDS

The possibility of entrusting resident associations and private agencies with the responsibility of maintaining parks, playgrounds and the proposed green corridors can be evaluated. Resident associations can contribute minimum amounts towards maintenance, while the balance can be borne by the ULB.

9.10.6 PRIORITY ACTIONS

Following table presents priority actions and their implementation plan during the mission period (2007-2012):

Table 9.27: Priority Actions and Implementation Plan – Environmental Improvement						
Component	**Activity**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**
Service Improvement	Improvement of Existing Parks	√	√			
	Landscaping of the residential colonies	√	√			
	Greening / Avenue Development		√	√		

9.10.7 ESTIMATED SECTORAL INVESTMENT

Based on the parameters specified in the earlier section, the capital cost has been estimated for the proposed intervention and are listed below:

Table 9.28 : Estimated Sectoral Investment – Parks & Greening Development (Rs. in Lakhs)		
Sl. No.	**Sector / Component Description**	**Investment**
1.	Rehabilitation and Improvement of Water Bodies	530.49
2.	Improvement of Existing Parks	24.05
3.	Greening / Avenue Development in residential areas	7.09
	Total Capital Cost	**561.63**

The authorities/departments/agencies that are proposed to be responsible for project formulation/ implementation/monitoring are listed, but shall not be necessarily limited to the following entities:

- Nodal Agency: Udayarpalayam Town Panchayat.
- Formulation/Implementation Agency: Udayarpalayam Town Panchayat and Forest Department.

9.11 URBAN MANAGEMENT AND GOVERNANCE

The ULBs have been found to be proactive in their commitment to introduce reforms at the ULB level. All these reforms may be broadly categorized under the following:

- Computerization Initiatives;
- Property Tax Reforms;
- Privatization Initiatives;
- Accounting Reforms; and
- Resource Mobilization Initiatives.

9.11.1 POLICY FRAMEWORK AND PRIORITY ACTIONS

As specified earlier, priority actions have been discussed and finalized by the stakeholders for urban management and sectoral reforms for ULBs. The following policy framework and priority actions have been identified by the study team based on reported evaluations, discussions and priority actions as required and mutually agreed upon by the stakeholders:

STRATEGY

- Innovations both at policy and project levels to speed up the urban reform process.
- Reforms to have in-built mechanism of participation and commitment.
- Institutional strengthening and financial capacity building to be an integral part of the reform measures.
- Areas of reform measures include property tax, accounting and auditing and resource mobilization and revenue enhancement.

PROPERTY TAX

- Bringing transparency and uniformity in taxation policies.
- Tax policy and operational procedures should be simple and clear.

- Development of templates for property tax (for self-assessment) to increase tax collection (without levying fresh taxes), including implementation strategies.
- Mapping of properties and developing GIS-enabled property tax management system for enhancing property tax net/coverage and better administration.
- Collection of arrears through innovative ideas and approaches using tools for community participation and fast track litigation methods.
- Property tax base should be de-linked from rental value method and should be linked to unit area or capital value method.

ACCOUNTING AND AUDITING

- Accounting reforms - shifting from single entry cash based accounting system to accrual based double entry accounting system.
- Legislative changes in the accounting systems and reporting requirements.
- Designing of accounting procedures.
- Accounting manual - chart of accounts, budget codes, forms and formats, etc.
- Standardized recognition norms for municipal assets and revenues.
- Auditing of accounts should be carried out effectively and regularly to promote transparency and accountability.

RESOURCE MOBILIZATION AND REVENUE ENHANCEMENT

- Increasing revenue through measures for better coverage, assessment, billing, collection and enforcement.
- Controlling growth of expenditure.
- Improving the organization and efficiency of the tax administration system.
- Augmentation of resource mobilization/revenue generation from properties belonging to ULB for improving the overall financial health.
- Energy audit of fuel and energy consumption by various depts. of ULB to minimize expenditures on fuel and energy, including energy audit and metering of street lights.
- Streamlining and strengthening of revenue base of the ULB:

    - Strengthen the fiscal powers of ULB to fix tax rates, fee structure and user charges through specific guidelines and notifications, which should find a place in the Municipal Rules. Prepare model guidelines for the city to allow greater flexibility in levying taxes, fees and user charges, borrowing funds and incurring expenditures;
    - The annual report of the ULB shall devote a section highlighting the amounts of subsidy given to a particular service, how the subsidy was funded, and who were its beneficiaries;
    - Implementation of MIS to provide relevant information on accounts, commercial and operating systems for better decision-making and information dissemination to citizens; and
    - Application of e-Governance is equally important for municipal finance.

Apart from the above, following are some of other reform measures which should be implemented to support the above identified key municipal reforms.

URBAN ENVIRONMENTAL MANAGEMENT

The costs of maintaining a healthy urban environment need to be recovered through various municipal taxes and user charges following the “polluter pays” principle. For this, the functional role of the ULB as envisaged in Item 8, 12th Schedule of the Constitution has to be resolved keeping in view the role of the Tamil Nadu Pollution Control Board, and the organizational and fiscal strength of the ULB.

ACCESS OF URBAN SERVICES TO THE POOR

Since “ability-to-pay” for the cost of environmental infrastructure service’ provision is an important criterion, cross-subsidization of tariffs, innovative project structuring and user/ community participation is the means to ensure access of these services to the poor. Again the functional and financial role of ULB with respect to the Items 10 and 11 of 12th Schedule

vis-à-vis those of central and state government agencies need to be resolved.

In addition to the above, the GoI has formulated a Reform Agenda under JNNURM. Adherence to this Reform Agenda and Timeline is mandatory for accessing funds under the proposed UIDSSMT.

Good governance in the municipal context stands on two broad principles, viz. transparency and civic engagement and capacity building measures. Following sections highlight key elements of the above two principles of good governance specific to the ULB.

TRANSPARENCY AND CIVIC ENGAGEMENT IN MUNICIPAL MANAGEMENT

Laws/rules/regulations specific to city/local issues should be employed to facilitate effective implementation. These should be lucid and easily understood. Participatory mechanisms should be so structured that they have legal standing and administrative power. Local bodies should be responsive and innovative and involve community participation in civic engagement as follows:

- Specific code of conduct for municipal executives and elected representatives.
- Public education, resource mobilization, good leadership and transparent processes applied to municipal finance and development work.
- Closer networking with media and their engagement in creating public awareness and creating demand for good governance. Cautious engagement of private sector with continuous monitoring is necessary.
- Setting in place an active and online public Grievances' Redressal System, with automated department-wise complaint loading and monitoring system.
- Instruments to improve efficiency through enhanced technical, administrative and financial capacities.
- Credit enhancement options other than state guarantees need to be adopted.
- Preparation of annual Environmental Status Report through a multi-stakeholder consultation process.

CAPACITY BUILDING OF THE ULB

Following are some of the key aspects of capacity building measures for ULB:

- The ULB shall maintain data to generate indicators as suggested in this document for evaluating its performance.
- Prepare and conduct capacity building programmes for elected representatives, especially women representatives, with a view to enable them to focus on gender based issues.
- Promote the creation of interactive platforms for sharing municipal innovations, and experiences among municipal managers.
- Better human resource management through assessment of the training needs of personnel involved in urban administration to enhance management and organizational capabilities.
- Assessment of fund requirement and resource persons to tackle the training needs of all personnel.
- Development of training material in the local language and impact and evaluation studies of the training programmes.
- Capacity building to better position the urban local body to employ highly qualified staff and seek superior quality of out-sourced services.

As specified earlier, priority actions have been discussed and finalized by the stakeholders for urban governance for ULB. The following policy framework and priority actions have been identified by the study team based on reported evaluations, discussions and priority actions as required and mutually agreed upon by the stakeholders.

TECHNOLOGY INTERVENTIONS THROUGH COMPUTERIZATION

- Billing and collection of taxes and user charges through e-services.
- Speed up development of e-Governance system and accounting system.

- Database management of assets, records, lands, properties, etc.

HUMAN RESOURCE DEVELOPMENT

- Staffing pattern, organizational restructuring and performance appraisal.
- Development of MIS for effective and efficient management & decision-making.
- Publication of newsletters for creating awareness and participation.
- Staff training, exposure visits and motivation programs to bring about awareness on recent developments and technologies.

CITIZEN ORIENTATION AND INTERFACE

- Conduct citizen satisfaction surveys & analysis on annual basis to assess citizen needs and demands including satisfaction levels.
- PR strategies to enhance community participation and create awareness.
- Innovative citizen complaint redressal system including e-Governance.
- Augment and strengthen new initiatives on citizen interface and orientation.
- Regular interface with citizen associations/forum to understand public needs.

The above assignment will be carried out by the concern ULBs with full support from the GoTN. The outcome of the above assignment shall provide clear guidelines and impetus to the towns for good urban governance.

9.11.2 CAPITAL INVESTMENT ESTIMATE

In order to provide financial assistance for continuing ongoing reforms and strengthening these reforms in line with the priority actions and proposals highlighted above, an amount of Rs. 0.63 crores has been estimated and incorporated in the CIP. The above estimate has been prepared based on the information available / provided by concerned departments, detailed discussions with pertinent authorities, and Consultants database and experience on similar initiatives.

10

CAPITAL INVESTMENT PLAN

10.1 CAPITAL INVESTMENT PLAN

The City Investment Plan (CIP) is the multi-year scheduling of identified and prioritized investments. The scheduling or phasing of the plan has been developed keeping in mind likely fiscal resources availability (for new investments and O & M), technical capacity for construction and O & M, and the choice of specific improvements to be carried out for a period of six years, and in subsequent phases.

The need for the CIP is on account of:

- Assessment of town growth and infrastructure needs (to be carried out once every five years)
- Preliminary outline feasibility and engineering studies carried out for new projects
- Scheduling of investments of ongoing and committed projects with funding from other sources
- Assigning of priorities within the constraints of available financial resources

10.1.1 PROCESS

The Capital Investment Plan involves the identification of public capital facilities to cater to the demands of the town population during different stages (design stages) as per the requirements of various urban services. The following process is adopted in identifying capital investment requirement and formulating the CIP.

Capital Investment Plan - Process

- Project Identification
- Project Screening and Prioritization
- Project Phasing

PROJECT IDENTIFICATION

The general criteria used in identifying projects were the goals of the various departments with regard to efficient service delivery, prompt customer service, environmental sustainability, strategic implementation of projects, community benefits, infrastructure maintenance needs, and the growing demand. The town stakeholder consultations and focus group discussions held as part of the CCP preparation process were another important aspect in the identification of projects. These consultations brought out deficiencies at the macro and micro levels and have provided the first platform for the identification of projects. Infrastructure delivery benchmarks in the form of indicators were also used to arrive at the demand and the gaps in service delivery, which further correlated with the results of the stakeholder consultations to arrive at specific project proposals.

PROJECT SCREENING, PRIORITIZATION AND PHASING

From the identified list of proposals and priority actions, projects are prioritized based on need and funding options. The prioritization also considered various alternatives for FOP, which is phased based on the sustainability of the ULB with regard to its finances. Specific importance is given to the Stakeholders and opinions/feedback of the elected representatives for institutionalizing the CIP process. As a final step, project phasing is carried out considering investment sustainability for various options of the FOP.

10.1.2 STRATEGIES

STRATEGIC CAPITAL INVESTMENT

The town shall use fiscal notes and policy analysis to assist in making informed capital investment choices to achieve the stakeholders' long-term goals. This process provides guidance for capital budgeting and long-term planning of capital facilities for all departments, for identifying and balancing competing needs, and for developing short- and long-term capital finance plans for all capital investments.

Capital Investment Plan - Strategies
- Strategic Capital Improvement
- Facility Siting
- Decision Making
- Program Funding

This process includes defining desired outcomes of capital investments, evaluating potential investments at the town level by applying standard criteria for assessing alternative investments, and making more efficient use of all potential resources. The town shall budget sufficient funds to perform major and preventive maintenance of existing facilities that is considered cost effective. The town shall use maintenance plans for capital facilities and a funding allocation plan for such maintenance, and may revise these plans from time to time.

There is a need for fiscal impact analyses of all major capital projects considered for funding. Such analyses shall include, but not be limited to, one-time capital costs, life-cycle operating and maintenance costs, revenues from the project, and costs of not doing the project. The ULBs shall make major project specific capital decisions through the adoption of the Town's operating and capital budgets, and the CIP.

FACILITY SITING

Encourage the location of new community-based capital facilities. The town shall consider providing capital facilities or amenities as an incentive to attract both public and private investments.

DECISION MAKING AND PLAN FUNDING

Work together with other stakeholders towards coordinated capital investment planning, including coordinated debt financing strategies to achieve the goals of the CCP. Explore funding strategies for capital facilities, particularly for those that serve or benefit citizens throughout the region.

10.1.3 INSTITUTIONALIZING THE CIP PROCESS

The City Investment Plan is an important element of, and is significant in terms of, the town's management process and sustainability with regard to the delivery of basic services. The CIP also provides a framework for the annual budget cycle of ULB for the next 6-10 year period, and thereafter for subsequent investment phases.

As a part of the process of CIP preparation for the CCP, ULB and para statals have:

- Analyzed and discussed with the stakeholders, the existing applicable norms and standards for infrastructure services;
- Agreed and recommended a reasonable and realistic option;
- Justified and provided rationale if the chosen option is not within the existing service level standards; and
- Identified the roles and responsibilities of various stakeholders in the implementation of identified projects.

10.1.4 SECTORS COVERED

In order to streamline the responsibilities for implementation and operation & maintenance (O&M) of the assets created, and in line with the provisions of the 74th CAA, Tamil Nadu Urban Local Bodies Act, 1998, and the commitment/assurance of the GoTN to transfer different functions to the ULB as per the 74th CAA, all the proposed capital investments have been broadly categorized under the following sectors:

- Water supply;
- Underground sewerage system.
- Roads, traffic and transportation;
- Storm water drains;
- Street lighting;
- Solid waste management;
- Slum upgrading;
- Environment Improvement; and
- Urban governance.

10.2 CAPITAL FACILITIES, INVESTMENT PHASING AND IMPLEMENTATION

The City Investment Plan involved the identification of public capital facilities to cater to the demand of the town populace in two phases - by the year 2025 and by 2040 - according to the likely short- and long-term infrastructure needs.

The project identification has been done through a demand-gap analysis of the services and reconciliation of the already identified projects as part of various outline, preliminary and in some cases detailed engineering studies. The analysis has also built on recently completed technical studies where these are available. Further project prioritization and strategizing of the investments, and phasing of these investments are based on the strategies listed out under each service sector through stakeholder consultations. The projects derived are aimed at ensuring the optimal and efficient utilization of existing infrastructure systems and enhancing the capacity of the systems and services to cater to the demands of future population additions. Certain other projects listed as part of the CIP include developmental projects other than those addressing the core service sectors viz. system modernization, river conservation etc. The City Investment Plan and forecast future of needs for provision of capital facilities under each identified sector are presented below. These assets will help ULB to universalize services for the current population as well as accommodate the expected increase in population. In sectors where long-term planning is required (for example, source development for water supply), a 30- year planning horizon (till the year 2040) is considered. Assets created in such sectors consider the projected population in this horizon. ULB expects that these infrastructure assets would not only guarantee services to its citizens, but also signal a proactive commitment to potential investors considering the Udayarpalayam Local Planning region.

10.3 CAPITAL INVESTMENT ESTIMATE

An estimate of the capital investment that is required to achieve the objectives of various Mission Areas and comply with the respective Mission Statements is presented in this section. This estimate is based on the following:

- Discussions held with stakeholders;
- Review of available information on the existing system;
- Discussion with Stakeholders during the respective stages of preparation of the CCP;
- Assessments through field visits and specific discussions with entities responsible for system implementation, operation and maintenance;
- Available Standard Schedule of Rates (SSOR);
- Consultant's database and experience with projects of similar scale and nature;

- Requisite cost escalation on materials and labor for 2007-2008 rates of implementation;
- Requisite cost escalation for contracts over 18-month implementation period; and
- Requisite provision for unforeseen items of work and physical contingencies.

10.4 SUMMARY OF INVESTMENTS

The total estimated capital investment required for providing efficient services to the present population and future population of ULB by the year 2040 is Rs.6, 342 lakhs at 2007 prices. The planning horizon for the projects identified in sectors of urban poor slum improvements, land use development planning and other similar sub-projects for 2011 and accordingly the entire identified investment is proposed for funding in short term. The planning horizon for core service sectors of Water Supply, Sewerage are planned for Long-term period of 2040 and projects under Storm Water Drainage and Solid Waste Management are designed for immediate and short-term needs of 2011 and 2025 respectively. Hence, mindful of the need for efficient resource planning, only part of the identified investment is proposed for funding in short-term. In case of Roads, Traffic and Transport sectors, part of the identified investment is proposed for funding in short-term considering the immediate need for improving road network and transport systems in the town.

Table 10.1 Summary of Sector-wise Total Investment Proposed – With Underground Sewerage Project

Sl.No	Sectors	Estimated Investment (Rs. In Lakhs)	% to Total
1	Water Supply System	581.78	9.17
2	Underground Sewerage & Sanitation	1,922.83	30.32
3	Roads, Traffic and Transportation	1,157.57	18.25
4	Storm Water Drains	316.59	4.99
5	Street Lighting	64.01	1.01
6	Solid Waste Management	590.11	9.30
7	Environment Improvement	561.63	8.86
8	Other Development Proposals	573.00	9.03
9	Slum Upgrading	400.53	6.32
10	Urban Governance	174.35	2.75
	Total Capital Investment	**6,342.40**	**100.00**

The above table describes the sector wise capital investment proposed for the infrastructure development of Udayarpalayam Town Panchayat. Out of all the basic amenities, Underground Sewerage Scheme and Roads improvement measures accounts to 1,922lakhs which is about 30 percent of total capital investment estimated. It is then followed by Roads, Traffic and Transportation with a share of 18 percent. Provision of water supply and Solid Waste management accounts to a share of 9 percent of capital investment proposed.

10.4.1 SUMMARY OF INVESTMENTS – WITHOUT UGS

From the discussion with the CTP, Technical Review Committee and stakeholders of the ULB it was observed that Underground sewerage system takes the long-term priority of the town taking into consideration huge capital investment requirements and operation and maintenance requirements. Hence, instead of typical underground sewerage system the study suggested to implement interceptor drains in short-term period. The interceptor drains with treatment plant are suggested to control / minimize the sewage and sullage load which are being disposed into the major water bodies in the town through road side drains.

Table 10.2 Summary of Sector-wise Total Investment Proposed – Without Underground Sewerage Project

Sl.No	Sectors	Estimated Investment (Rs. In Lakhs)	% to Total
1	Water Supply System	581.78	12.75
2	Sanitation & Interceptor Drain	144.27	3.16
3	Roads, Traffic and Transportation	1,157.57	25.36
4	Storm Water Drains	316.59	6.94
5	Street Lighting	64.01	1.40
6	Solid Waste Management	590.11	12.93

Sl.No	Sectors	Estimated Investment (Rs. In Lakhs)	% to Total
7	Environment Improvement	561.63	12.31
8	Other Development Proposals	573	12.56
9	Slum Upgrading	400.53	8.78
10	Urban Governance	174.35	3.82
	Total Capital Investment	**4,563.84**	**100.00**

Out of all the proposed amenities, Roads improvements accounts to 1,157.57 lakhs which is about 25 percent of total capital investment estimated. It is then followed by water supply system, Solid waste management and environmental improvement with a share of 12 percent. Provision of Storm Water Drains accounts to a share of 6 percent of capital investment proposed.

10.4.2 PHASING AND PRIORITIZATION OF PROPOSED CAPITAL INVESTMENT PLAN

The Capital Investment Plan (CIP) has been prepared for a period of 5 years (FY 2008-09 to FY 2012-13). The phasing has been worked out based on the priorities assigned by the stakeholders and preparedness of the service providing agencies to prepare the DPRs and initiate implementation of the proposals. The phasing of the identified projects and investments is based on the following principles:

- Priority needs, with developed areas receiving priority over future development area.
- Inter and intra-service linkages, viz. water supply investments shall be complemented by corresponding sewerage/ sanitation improvements.
- Size and duration of the requirements, including preparation and implementation period.
- Project-linked revenue implications, such as installing house connections where supply and distribution capacities have been increased.
- The scheduling of adequate time to allow pre-feasibility, full feasibility and safeguard investigations for those large sub-projects which will require such analysis.
- Scheduling additional infrastructure requirements to match with the population, and tourist inflow growth over the plan period.

RANKING OF PRIORITIES BY STAKEHOLDERS

It is to be mentioned although a town may find it suitable to implement projects on a sequential basis through an assessment of its priorities, in the specific case of Udayarpalayam development through a multi-pronged approach is the need of the hour.

Table 10.3: Sector wise Ranking of Priority

Sl. No	Sector	Priority of ULB	
		Short-term Projects	Long-term Projects
1	Water Supply System	1	
2	Underground Sewerage & Sanitation		5
3	Roads, Traffic and Transportation	4	
4	Storm Water Drains	3	
5	Sanitation & Interceptor Drains	3	
6	Street Lighting	5	
7	Solid Waste Management		1
8	Environment Improvement		3
9	Remunerative Projects	2	
10	Slum Upgrading		2
11	Urban Governance		4

An indicative priority-based capital investment plan has been outlined below to ensure that the much needed improvement on a cross-sectoral basis can be achieved. Table 10.3 outlines the overall priority ranking based on an assessment of need and as evinced by the stakeholders. Water Supply, Remunerative Projects, Storm Water Drains, and Improvements of Roads predominate the priority requirement for Udayarpalayam due to the following factors:

- Improvement to the Water Supply and Distribution System is ranked as No.1 since existing supply rate is less than the normative standard of 70 lpcd.
- Further the existing system is combined water supply Scheme and was laid in 1992 and

the system requires to be improved extensively to ensure equitable and adequate supply to all the areas of the town.

- The extended areas of the town require to be provided with water supply distribution system.
- Next to Water Supply, Implementation of remunerative projects was ranked as no. 2 by the stakeholders. Remunerative projects like construction of shopping complex, Construction of Community halls, improvement of weekly market, development of park & playfields etc.
- Sanitation & Interceptor drains & Storm Water Drains take the 3rd rank. In consultation with stakeholders, as the town has about 19 water bodies and the existence of network of irrigation and feeder channels in the town has to be improved to ensure proper flow and also to prevent the flooding during the rainy season.
- Road improvement is ranked as No. 4 to exploit the locational advantage of the town in the region. the link and connecting roads of the town with the nearby villages has to be improved to ensure development in the town.
- Sub-Sectoral priority identified during stakeholder's consultation is given in the Table 10.4.

Table 10.4: Sub-Sectoral Priority

Water Supply		
Component	**Activity**	**Priority**
Water Resource Management	Water Supply Improvement Scheme to extended areas	3
	Construction of additional Storage reservoirs	2
	Development of Distribution network for added areas	3
	Rainwater Harvesting Measures	7
Augmentation of Water Supply System	Source Augmentation / Treatment Plant	1
	Redistribution/Re-zoning of D-system in existing areas	5
	Expansion of House Service Coverage	4
	Installation of Meters	8
	Construction of summer storage tanks	7
	Upgradation and Improvement of Distribution System	3
	Rehabilitation of Existing Service Reservoirs	6
Underground Sewerage Scheme and Sanitation		
Component	**Activity**	**Priority**
Sewerage Collection, Treatment & Management	Development of Sewerage System for Town	3
	Provision of Sewage Treatment Plant	2
	Community toilet integration	5
	Recycling Plant & Reuse system	4
Sanitation Facility	Community toilets	1
Roads, Traffic and Transportation		
Component	**Activity**	**Priority**
Improved Safety, Service delivery and Customer Satisfaction by providing better infrastructure	Strengthening existing roads	1
	up gradation of important roads	3
	Formation of new roads	2
	Junction Improvements	5
	Culverts	4
	Signals, Signage and markings	10
	Road divider & Medians	9
	Traffic Island	6
	Improvements to Bus terminus	8
	Provision of Bus Shelters	7
Improved Pedestrian Facilities	Accessibility to the disadvantaged	11
	Pedestrian Crossings	13
	Foot paths	12
Storm Water Drains		
Component	**Activity**	**Priority**
Drains Rehabilitation	Rehabilitation of Major drains/channels	2
	Rehabilitation of Storm Water Drains	1
Construction of	Provision of storm water along existing roads	3

Drains	Formation of new drains along proposed road network	4
	Treatment and re-use of storm water	5
Street Lighting		
Component	**Activity**	**Priority**
Service Improvement	Proposed SV lamps in uncovered areas	1
	Proposed FL lamps in uncovered areas	2
	Proposed High Mast light in major junctions	3
	Proposed Timers for existing / new lights	6
	Proposed Sensor Lighting	9
	Proposed Solar Lights	5
	Proposed Power Saver (Capacitors)	4
	Proposed dedicated sub-station/transformers	7
	Proposed Tri-vector meters	8
Solid Waste Management		
Component	**Activity**	**Priority**
Primary Collection	Providing bins for Door-Door Collection	1
	Containerized Tri-Cycles	2
	Push Carts	3
	Equipment for Garbage Recovery Personnel	2
	Equipment for Street Sweeping Personnel	2
	Tipper Lorries - Used for Construction/Other Debris Collection	3
Secondary Collection	Container Bins for Residential Areas (1.25 MT Capacity)	4
	Container Bins for Market, Bus Stand, Commercial, Railway Station etc., (1.25 MT Capacity)	5
Transportation	Dual Load Dumper Placer Vehicles	4
Waste Processing & Disposal	Integrated Waste Treatment	6
	Sanitary Landfill Facility	9
	Scientific Closure of the abandoned dump sites	7
Administration Complex	Administration and Utilities Complex including HT Electrical Sub-station	8
Environmental Improvement		
Component	**Activity**	**Priority**
Service Improvement	Rehabilitation and Improvement of Water Bodies	1
	Greening / Avenue Development	3
	Development of Parks & Play fileds	2
Other Development Proposals		
Component	**Activity**	**Priority**
Service Improvement	Improvement to burial grounds (w/o gasifier)	4
	Improvement of existing and proposed playgrounds	7
	Proposed community centers/halls	3
	Proposed /dedicated vegetable/meat market	1
	Improvements to weekly markets	1
	Improvements to the School Buildings	6
	Construction of Shopping complex	2
	Slaughterhouse development with Treatment facility	5
Slum Upgradation		
Component	**Activity**	**Priority**
Service Improvement	Dwelling Units	6
	Water Supply	4
	Sewerage and Sanitation	5
	Solid waste Management	1
	Roads and Pavements	2
	Street Lights	3
	Community Centers	7
	Open Spaces/Gardens	8

BORROWING CAPACITY OF THE TOWN CONSIDERING 30% DSR

Borrowing Capacity for the ULB is prepared after taking into consideration, the revenue inflows and outflows from the base scenario, i.e. the income from sewerage and water charges and O&M on assets is taken. In order to arrive at the sustainability, three different parameters were used which are,

- TE[2] /TR[3] <1
- DS[4] /TR <=30%
- 30% of the operating surplus should be retained as surplus and the balance can only be leveraged.

The least of the above 3 factors was arrived at as the possible annuities payable by the ULB. With this a conversion factor was worked out to determine the Borrowing Capacity and the Investment Capacity. The maximum sustainable investments for the next 5 years are summarized as follows:

Table 10.5: Borrowing & Investment Capacity of ULB *(Rs. In lakhs)*

Details	2008-09	2009-10	2010-11	2011-12	2012-13
Borrowing Capacity	22.12	34.84	38.74	50.08	379.57
Investment Capacity	34.03	53.59	59.61	77.04	583.96

From the above table, borrowing capacity of the town is estimated as Rs. 525.25 lakhs and the investment capacity of the ULB is estimated as Rs. 808.23 lakhs within the proposed CCBP project implementation period (Short-term period). Borrowing capacity of the town is taken as the base for prioritizing the identified projects under CCBP.

FINALIZATION OF FUNDING OPTIONS AND THE OPTIMAL WAY TO IMPLEMENT THE IDENTIFIED INVESTMENT REQUIREMENTS

In order to finalize the funding options, the study team had a meeting with CTP, TNUIFSL, ULB and other stakeholders. It was then finalized that the projects within the borrowing capacity (i.e. Rs. 583.96 lakhs) of the ULB would be taken up for implementation. Taking into consideration the present policies and priorities of CTP and other stakeholders, the study team suggested the ULB to implement the **CCBP IDENTIFIED PROJECTS WITHIN THEIR BORROWING CAPACITY** for a short-term period.

As specified earlier, although the sectors have been ranked for prioritization, it is recommended that the Udayarpalayam Town Panchayat initiates necessary action on a cross-sectoral basis and phases out the identified investment pursuant to development of necessary details and based on sustainability and availability of funds. Necessary action may involve preparation of master plans, feasibility studies/assessments (where required), detailed project reports and spade work of pertinent administrative/technical sanctions and approvals towards obtaining funds for implementation of identified proposals/priority actions. Sector wise prioritized investment needs based on the borrowing and investment capacity of the ULB are given in the following tables.

As specified earlier, although the sectors have been ranked for prioritization, it is recommended that the Udayarpalayam Town Panchayat initiates necessary action on a cross-sectoral basis and phases out the identified investment pursuant to development of necessary details and based on sustainability and availability of funds. Necessary action may involve preparation of master plans, feasibility studies/assessments (where required), detailed project reports and spade work of pertinent administrative/technical sanctions and approvals towards obtaining funds for implementation of identified proposals/priority actions.

[2] TE – Total Expenditure
[3] TR – Total Revenue
[4] DS – Debt Service

Sector wise prioritized investment needs based on the borrowing and investment capacity of the ULB are given in the following Tables.

Table 10.6: Phasing of Proposed Capital Investment – Short-term Period

Sector	Phasing (Rs. in lakhs)				
	2008-09	2009-10	2010-11	2011-12	2012-13
Water Supply System	34.03	41.52	34.66	22.14	91.84
Remunerative Projects	0.00	0.00	0.00	38.12	150.82
Sanitation	0.00	12.07	18.03	16.78	0.00
Storm Water Drains	0.00	0.00	6.91	0.00	81.22
Roads, Traffic and Transportation	0.00	0.00	0.00	0.00	260.08
Total Capital Investment	**34.03**	**53.59**	**59.60**	**77.04**	**583.96**

Considering the borrowing capacity of the ULB, the sector wise breakup of projects and their investment requirement are phased for short-term and long-term implementation in consultation with the stakeholders of ULB and CTP.

Table 10.7: Priority Based Phasing of Proposed Capital Investment – Sector wise (Rs. in lakhs)

WATER SUPPLY SYSTEM	Short-Term Period					Total	Long-Term Period	Cost (Rs. in lakhs)
	2008-09	2009-10	2010-11	2011-12	2012-13			
Water Supply Scheme to Added areas		23.49				23.49	50.45	73.94
Construction of additional Storage reservoirs		18.03				18.03	0.00	18.03
Development of Distribution network for added areas					56.84	56.84	33.33	90.17
Rainwater Harvesting Measures						0.00	60.11	60.11
Source Augmentation						0.00	57.23	57.23
Redistribution/Re-zoning of D-system in existing areas	32.89			22.14	35.00	90.03	0.14	90.17
Expansion of House Service Coverage						0.00	33.98	33.98
Installation of Meters						0.00	42.50	42.50
Construction of summer storage tank						0.00	0.00	0.00
Upgradation and Improvement of Distribution System			34.66			34.66	79.85	114.51
Rehabilitation of Existing Service Reservoirs	1.14					1.14	0.00	1.14
Sub Total (A)	**34.03**	**41.52**	**34.66**	**22.14**	**91.84**	**224.19**	**357.59**	**581.78**
REMUNARATIVE PROJECTS								
Improvement to burial grounds (w/o gasifier)						0.00	31.76	31.76
Improvement of existing and proposed playgrounds						0.00	63.53	63.53
Proposed community centers/halls				38.12		38.12	0.00	38.12
Proposed /dedicated vegetable/meat market						0.00	121.97	121.97
Improvements to weekly markets					50.82	50.82	0.00	50.82
Improvements to the School Buildings						0.00	38.12	38.12
Construction of Shopping complex					100.00	100.00	115.99	215.99

Slaughterhouse development with Treatment facility						0.00	12.71	12.71
Sub Total (B)	**0.00**	**0.00**	**0.00**	**38.12**	**150.82**	**188.94**	**384.06**	**573.00**
SANITATION								
Recycling Plant & Reuse system			18.03			18.03	0.00	18.03
Community toilets		12.07		16.78		28.85	0.00	28.85
Sub Total (C)	**0.00**	**12.07**	**18.03**	**16.78**	**0.00**	**46.89**	**0.00**	**46.89**
STORM WATER DRAINS								
Rehabilitation of Storm Water Drains					30.00	30.00	130.08	160.08
Provision of storm water along existing roads			6.91			6.91	0.00	6.91
Formation of new drains along proposed road network					51.22	51.22	74.12	125.34
Treatment and re-use of storm water						0.00	24.26	24.26
Sub Total (D)	**0.00**	**0.00**	**6.91**	**0.00**	**81.22**	**88.13**	**228.46**	**316.59**
ROADS, TRAFFIC AND TRANSPORTATION								
Provision of Bus Shelters					21.83	21.83	0.00	21.83
Strengthening existing roads					100.00	100.00	21.28	121.28
up gradation of important roads						0.00	218.30	218.30
Formation of new roads						0.00	500.26	500.26
Culvert					4.85	4.85	0.00	4.85
Parking Lots/ complexes					6.06	6.06	0.00	6.06
Bus Stand Improvement					121.28	121.28	0.00	121.28
Accessibility to the disadvantaged						0.00	30.32	30.32
Pedestrian crossings					6.06	6.06	0.00	6.06
Foot paths						0.00	72.77	72.77
Sub Total (E)	**0.00**	**0.00**	**0.00**	**0.00**	**260.08**	**260.08**	**842.92**	**1103.00**
GRAND TOTAL	**34.03**	**53.59**	**59.60**	**77.04**	**583.96**	**808.23**	**1813.02**	**2621.25**

In the prioritization of projects, Solid waste management Projects, Rehabilitation of Storm water drains and Bus stand Improvements are not considered since these projects requires major loan funding and hence the study team suggested ULB to go for various funding options suggested in the section 12.1

11

MUNICIPAL FINANCIAL STATUS

11.1 OVERVIEW

The ULBs normally have their own sources of revenue, collected in the form of taxes and/or user charges though most of their revenue/ income is in the form of assigned revenue and/or budgetary revenue grant. Barring the ULBs, all other departments and agencies provide the services through budgetary support.

11.2 MUNICIPAL FINANCES

11.2.1 GENERAL

Accounts of the ULB are maintained on cash basis (single entry accounting system) till the FY 2002-2003. The financial status of each ULB has been reviewed for the past six years, commencing from FY 2002-03. Currently ULB in Tamil Nadu maintain three separate funds, namely General Fund, Water & Drainage Fund and Education Fund. All these funds are managed under two heads namely, Revenue Account and Capital Account. For the purpose of this analysis, revenue & capital account of the ULB is considered and Education Fund is clubbed with General Fund, because it is predominantly reimbursement inclined. Key financial indicators have been computed and compared with the desired benchmark to ascertain strength or weakness inherent to the system and appropriate remedial measures that can be envisioned.

For the purposes of analysis, all the account items are broadly categorized under the following major heads:

- Revenue Account: All recurring items of income and expenditure are included under this head. These include taxes, charges, salaries, maintenance expenses, debt servicing, etc.
- Capital Account: Income and expenditure items under this account are primarily non-recurring in nature. Income items include loans, contributions by GoTN, other agencies and capital grants under various State and Central Government programmes and income from sale of assets. Expenditure items include expenses booked under developmental works and

Table 11.1: Summary of Finances of the Udayarpalayam Town Panchayat

All figures in Rs. Lakhs

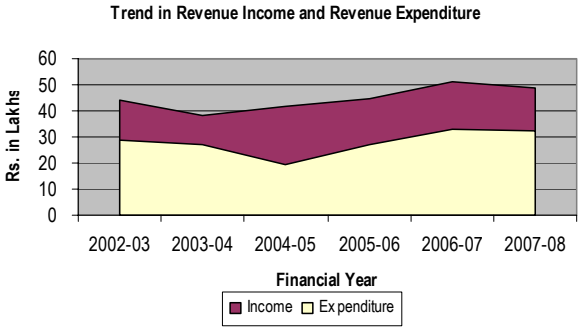
Sl. No.	Account Head	Summary Statement (All figures in Rs. Lakhs)					
		2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
		Actuals					Budget
REVENUE ACCOUNT							
1	Income	44.30	38.30	42.01	44.83	51.23	48.80
2	Expenditure	28.68	27.30	19.39	27.20	32.92	32.26
3	Status (Surplus/Deficit)	15.62	11.00	22.62	17.63	18.31	16.54
CAPITAL ACCOUNT							
1	Income	16.31	11.87	17.71	21.25	1.50	2.00
2	Expenditure	19.68	11.17	17.01	18.35	1.58	1.60
3	Status (Surplus/Deficit)	(3.37)	0.70	0.70	2.90	(0.08)	0.40
OVERALL STATUS							
1	Income	49.34	38.30	49.45	45.83	52.23	50.80
2	Expenditure	38.85	40.54	29.15	36.88	48.83	46.57
3	Status (Surplus/Deficit)	10.50	(2.24)	20.30	8.95	3.40	4.23

Source: Udayarpalayam Town Panchayat; 2007

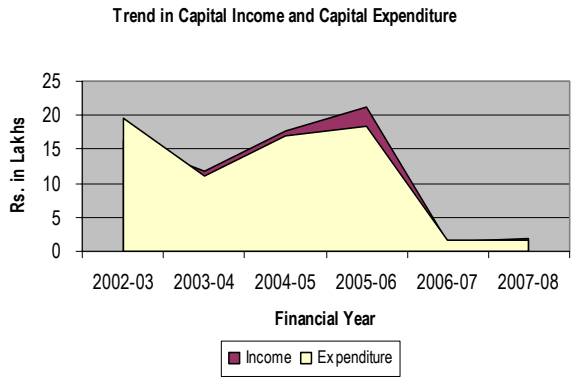
purchase of capital assets.

- Advances, Investments and Deposits: Under the municipal accounting system, certain items are compiled under advances, investments and deposits. These items are temporary in nature and are essentially adjustments for the purpose of recoveries and payments. Items under this head include income tax deductions, investments/realization, pension payments, provident fund, payment and recoveries of advances to employees and contractors, etc.

11.2.2 FINANCIAL STATUS



Financial assessment of the Udayarpalayam town panchayat has been carried out based on the financial information collected for six financial years, i.e. FY 2002-03 to FY 2006-07. In addition, the budget estimate of the ULB for FY 2007-08 was also taken up for analysis. Income of the ULB has grown to a level of Rs. 48.80 lakhs in FY 2007-08 from Rs. 44.20 lakhs in FY 2002-03, at a compounded annual growth rate (CAGR) of 3.34 percent. However, the revenue expenditure has shown a CAGR of 8.80 percent during this period. Udayarpalayam has maintained an overall surplus consistently over the assessment period. The figures on the municipal finances along with the charts are given for reference.



Capital income comprises loans, grants and contributions in the form of sale proceeds of assets, and contributions and deposits received. A major share on capital income is in the form of deposits received on account of capital work assignment. The capital account has witnessed a deficit-implying utilization of revenue surpluses to fund capital works. During the assessment period, the ULB has received major capital grant under road improvement scheme and drought relief scheme for the implementation of infrastructure projects. The following sections present a detailed review of revenue and capital accounts, primarily aimed at assessing the municipal fiscal status and provide a base for determining the ability of the ULB to sustain the planned investments.

11.2.3 REVENUE ACCOUNT

The revenue account comprises two components, revenue income and revenue expenditure. Revenue income comprises internal resources in the form of tax and non-tax items. External resources are in the form of assigned revenues and revenue grants from the GoTN. Revenue expenditure comprises expenditure incurred on salaries, operation & maintenance, administrative expenses and debt servicing.

REVENUE INCOME

The revenue sources can be broadly categorized as own sources (includes both tax and non-tax revenues), assigned revenues and grants. The source-wise income generated during the review period is presented in the table below. The base and basis of each income source has been further elaborated in the following section.

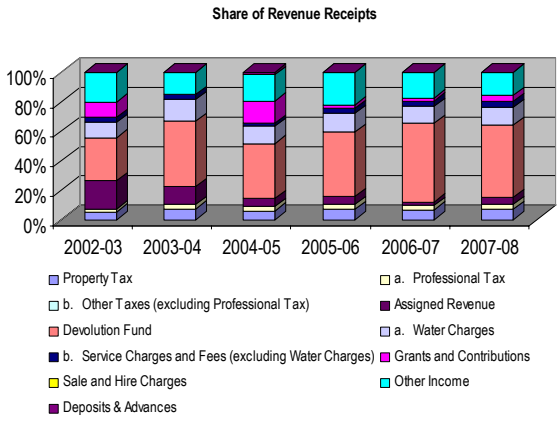
Table 11.2: Source-wise Revenue Income

Sl. No.	Account Head	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
		Actuals					Budget
REVENUE ACCOUNT							
1	Property Tax	2.72	2.86	3.06	3.28	3.51	3.60
2	Other Taxes						
	a. Profession Tax	0.99	1.18	1.38	1.42	1.68	1.80
	b. Others	0.00	0.00	0.00	0.00	0.00	0.00
3	Assigned Revenue	9.43	4.65	2.77	2.60	1.20	2.25
4	Devolution Fund	14.31	16.87	18.37	20.00	27.82	25.00
5	Service Charges and Fees						
	a. Water Charges	5.18	5.63	5.71	5.77	5.88	6.05
	b. Service Charges and Fees (excluding Water Charges)	1.75	1.34	1.04	1.56	2.00	2.06
6	Sale and Hire Charges	0.00	0.00	0.03	0.00	0.01	0.03
7	Other Income	9.93	5.77	8.67	10.21	9.14	8.01
SECTORAL CONTRIBUTION TO TOTAL REVENUE							
1	Property Tax	5.50	7.46	6.18	7.15	6.72	7.09
2	Other Taxes						
	a. Profession Tax	2.01	3.09	2.80	3.10	3.21	3.54
	b. Others	0.00	0.00	0.00	0.00	0.00	0.00
3	Assigned Revenue	19.12	12.13	5.61	5.68	2.29	4.43
4	Devolution Fund	29.00	44.04	37.16	43.63	53.27	49.21
5	Service Charges and Fees						
	a. Water Charges	10.49	14.71	11.55	12.58	11.27	11.91
	b. Service Charges and Fees (excluding Water Charges)	3.54	3.50	2.10	3.39	3.83	4.06
6	Sale and Hire Charges	0.00	0.00	0.05	0.00	0.01	0.06
7	Other Income	20.13	15.06	17.54	22.28	17.50	15.77
GROWTH TRENDS IN %							
1	Property Tax	--	5.28	6.95	7.15	7.07	2.64
2	Other Taxes	--	0.00	0.00	0.00	0.00	0.00
	a. Profession Tax	--	19.22	16.74	2.82	17.93	7.32
	b. Others	--	--	--	--	--	--
3	Assigned Revenue	--	(50.75)	(40.29)	(6.13)	(54.09)	88.22
4	Devolution Fund	--	17.90	8.93	8.84	39.12	(10.14)
5	Service Charges and Fees		0.00	0.00	0.00	0.00	0.00
	a. Water Charges	--	8.83	1.38	0.95	2.07	2.81
	b. Service Charges and Fees (excluding Water Charges)		(23.37)	(22.33)	49.62	28.56	2.99
6	Sale and Hire Charges	--	--	--	(100.00)	--	500.00
7	Other Income	--	(41.92)	50.39	17.74	(10.52)	(12.35)

Source: Udayarpalayam Town Panchayat; 2007

Property tax is the major source of tax revenue while other taxes include tax on carriages & carts, advertisement tax, profession tax and tax on animals. Non-tax sources included all non-tax revenues such as fees and charges levied as per the Act. Such revenue sources include rent from municipal properties, fees & user charges, sale & hire charges and others.

Major source of revenue income is in the form of Property Tax, Assigned Revenue and Devolutions, which contributes to about three-fourth of the revenue income on average. As a whole, revenue income has registered an annual growth of about 3.34 percent on average during the assessment period. The composition of income during the last five years is graphically represented above.



Details	Share (%)
Own tax revenues	9.64
Non-tax revenues	33.55
Assigned revenues	8.21
Devolution funds	42.72

While the growth pattern is a common feature to be talked about while analyzing the financials, it is equally important to analyze the composition of income which actually reveals the status of the local body with respect to the sustainability of revenues; i.e., if the share of own revenues is higher, it means that the local body's dependence on devolutions and grants are much less and hence they are capable of taking up capital projects. As for the composition of income of Udayarpalayam TP, the major contributors are the devolution funds with approximately 42% of the total income followed by income from Water charges to the extent of 12% of the total income. Property tax constitutes 9% and assigned revenue extending to 8% of total revenue. Devolution funds and assigned revenues together take approximately 50% share.

The analysis clearly reveals that the assigned source of revenues are at least 1 ½ times higher than that of the own sources. This is not a healthy trend as the ULB is entirely dependent on the sources from the Govt. rather than depending on their own sources. If in some case, Govt. does not devolve the funds, the entire balance sheet gets a hit that year, which would lead to huge overdrafts for even managing the revenue expenditure. This trend needs to be changed by innovating financing models in the projects taken up by the local body. Such attempts have been mentioned in this CCP exercise, where innovative modeling of finances could be attempted.

The main own source income comes from deposits and advances and other income. However going into details of the head "Other income" from the books, it is seen that the major income is from market fees and rent from shopping complex.

Even though there is a steady income arising out of income from shopping complex, consultants feel that this may not be a sustainable income, as it depends on the occupancy ratio of the shopping complex, which is fragile. Income from fees is another head of income which shows a major income.

Property Tax: The most important category in the own sources of income is the property tax[5]. This tax is imposed on land and buildings depending on their nature of use. Property tax component comprises holding tax, latrine / drainage tax and lighting tax. Property tax is based on the Annual Rental Value (ARV) of property and is the single largest and most elastic source of revenue. The ARV of the property varies with the nature of use, viz. a) residential use - owner occupied, b) residential use - rental and c) commercial use.

Table 11.3: Demand-Collection-Balance (DCB) Statement for Property Tax

Particulars	2001-02	2002-03	2003-04	2004-05	2005-06
No. of Assessments	2520	2682	2774	2861	3000
Growth in Assessments (%)	--	6.43	3.43	3.14	4.86
Demand (Rs. in lakhs)					
Arrear	0.00	0.00	0.00	0.00	0.00
Current	2.20	2.69	2.86	3.06	3.36
Total	2.20	2.69	2.86	3.06	3.36
Collection (Rs. in lakhs)					
Arrear	0.00	0.00	0.00	0.00	0.00
Current	2.20	2.69	2.86	3.06	3.36
Total	2.20	2.69	2.86	3.06	3.36
Balance (Rs. in lakhs)					
Arrear	0.00	0.00	0.00	0.00	0.00
Current	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00
Collection Performance (Percentage)					
Arrear	0.00	0.00	0.00	0.00	0.00
Current	100.00	100.00	100.00	100.00	100.00
Total	100.00	100.00	100.00	100.00	100.00

Source: Udayarpalayam Town Panchayat; 2007

The ARV is calculated based on the plinth area, building and land cost. The present tax rate is 12.00 percent of the ARV, which comprises 7 percent of ARV on holding tax, 2.5 percent on latrine/ drainage tax and remaining 2.5 percent on lighting tax. ULB is empowered to revise the property tax at least once in five years (quinquennial revision).

[5] Property tax belongs to the class of general benefit taxes, primarily indirect user charges for municipal services whose benefits are collective and not confined to any particular individual / community.

The property tax collection has increased from Rs. 2.20 lakhs in FY 2002-03 to Rs. 3.36 lakhs in FY 2005-06. This significant increase has been due to the proactive efforts of the ULB to bring in more assessments into the tax net and improve collection performance as there was no tax revision earlier during this period. As a whole, the property tax component has registered an average annual growth rate of 5.8 percent during the assessment period.
Property tax demand-collection-balance (DCB) statement analysis indicates a uniform increase in number of property tax assessments during the last five financial years with an average increase of over 6 percent per annum. Average property tax per property works out to Rs. 109 while average ARV of the property works out to Rs. 933 during the assessment period. About 14 percent of the total assessments are commercial properties. The overall collection performance was 100 percent during the assessment period.

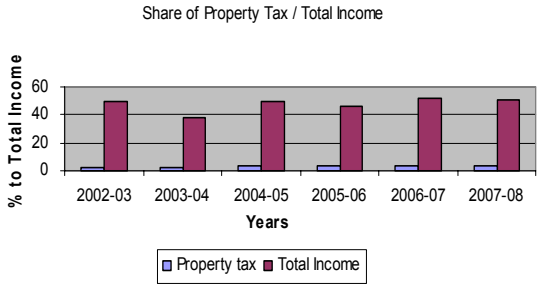
Other Taxes: Other tax revenues are in the form of taxes levied on carriage & carts, animals, advertisement, professional tax and others. The most important category in own sources of income is the property tax. Professional tax is the other most important tax and it contributes about 3 percent of the total tax revenue. The other taxes contributed about 7 percent of the total own sources on average during the assessment period.

Assigned Revenues: Assigned revenues include revenues transferred to the ULB by the GoTN under specific acts. This source of revenue income comprises duty on transfer of properties, entertainment tax / public resort and other assigned revenues. Income through assigned revenue contributes to about 10 to 20 percent of revenue income, the growth of which however has been inconsistent. Other sources of assigned revenue include duty on transfer of properties, entertainment tax/public resort, and others and these sources have not contributed during the last three financial years of the assessment period as indicated. As a whole, the assigned revenue has shown inconsistent growth rate during the assessment period.

Devolution: Based on the Second State Finance Commission recommendations, GoTN transfers 8% of its state revenue to the local governments. It is the one of the single largest source of revenue to the ULB, it accounts to 40% of total revenue over the assessment period.

Non-Tax Revenue / Remunerative Enterprise: Income from remunerative enterprises is categorized as non-tax income received in the form of rentals from assets like shopping complexes, market fees, parking fees and income from other real assets owned by the ULB. Rent from the municipal properties is the major contributor among non-tax revenue items, which contributes about 34 percent on average, about Rs. 30 lakhs per annum on average during the assessment period.

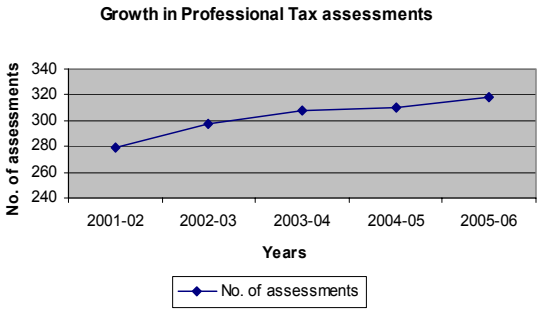
GROWTH PATTERN OF REVENUE INCOME:
Growth pattern is mainly required for big ticket incomes like property tax, professional tax, and income from water supply. The below graph represent growth in property tax in absolute terms. However if we look at the share of property tax to the total income it has been fluctuating over the last five years which is indicated in the graph below. This clearly indicates lack of collection efficiency as property tax assessments cannot reduce. The ULB shall look into the possibilities of resurveying the entire property with its present value by which un-assessed and under assessed property could be roped into the tax stream.



The above graph represents growth in property tax is gradual but steady. However if we look at the share of property tax to the total income it has been consistently around 6-7% over the last five years which is indicated in the above graph. There are two reasons for such low composition, (i) due to lack of collections, (ii) lack of growth of no. of assessments. Analysis of growth of no. of assessments reveal that the growth in assessments has been steeply increasing over the past 5 years. The collection performance from the figures in the DCB statement indicates that collections have been close to 100%. Therefore, the low composition of property tax to total income could require an entire relook of the properties in the town, resurvey the entire property with its present value by which unassessed and under assessed property could be roped into the tax stream.

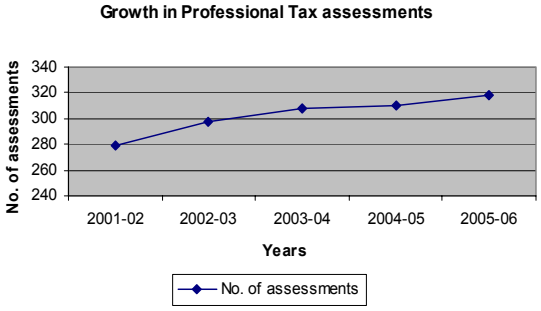
Property Tax:

The graph indicates that PT is meager compared to the total income generated by the ULB. To analyze if the above is due to lack of collections or due to non-increase in PT assessments, the following graph would help. The graphical representation indicates that growth in the number of assessments is definitely higher than the property tax collections. Moreover there is steep increase in the PT assessments. The average increase year on year on the PT has been roughly 4.46%.



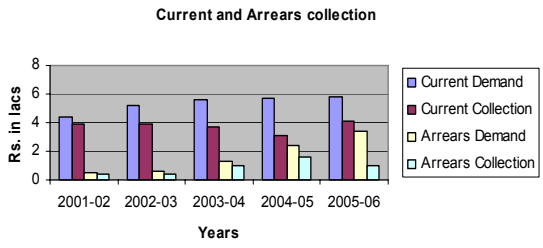
Professional Tax:

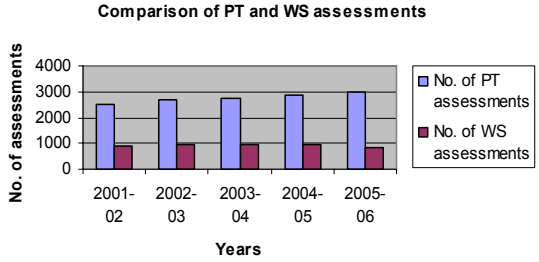
Even though the share of professional tax is fairly lower, it is a sustainable income, the pattern of which should be analyzed. The average share of professional tax over the period of last five years is 2.96%, which is less in composition compared to other heads of income. The no. of assessments has been gradually increasing over the last five years. The average collections over the last year are around 100%.



Water Charges:

Income from water charges is normally said to be a major source of income. But in case of Udayarpalayam TP, income from water charges was forming around 12% of the total income. An analysis of no. of water assessments in comparison to no. of property tax assessments could reveal the status of water supply in the town. The graph clearly reveals that there is a requirement of increasing the no. of connections to house holds. The analysis reveals that the average water supply assessments are around 33 % in the last four years, of the total property tax assessments.



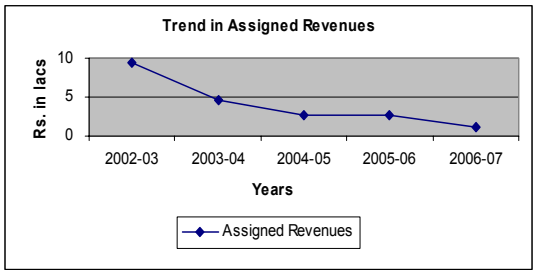


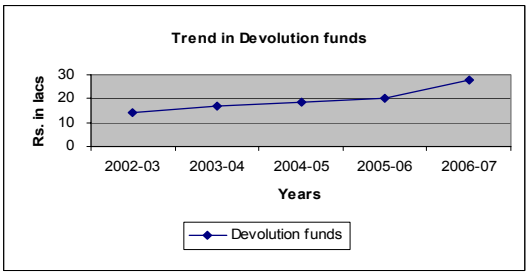
It can be seen that as against the demand raised for water charges, collection has been an average of 55%, which could be improved. The result of the analysis is that there is

requirement of increasing the water supply connections to the house holds, and as may be the demand, source needs to be augmented. As part of the CIP, the consultants have proposed certain measures to augment water sources and also to construct the collection system for water supply in the town.

Assigned Revenue:

This includes Stamp duties and entertainment tax. The major income under this head is from duty on transfer of property (stamp duty), which is around 95% of the assigned duty and balance from entertainment tax. Assigned revenue constitutes approximately 8% of the total income and there is a decreasing trend throughout the last five years.





It is not known if it is, because of reduced no. of land transactions over a period of years, or if it is due to non-transfer of funds from the Govt. However, on a thumb rule basis, if PT assessment increases, there should be an increase in this revenue also, which hasn't happened in this case.

Devolutions:

There has been a consistent and substantial income from the devolutions. The devolution forms an average of 40% approx. of the total income of the TP. There is a steep increase in the devolution funds during the last financial year. The reason for the steep increase is not known. For smaller ULBs, this revenue may be a huge source of revenue, however, Udayarpalayam TP shall take efforts to rely on more own sources than assigned sources.

Table 11.4: Head-wise Revenue Expenditure

Sl. No.	Account Head	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
		Actuals					Budget
EXPENDITURE ACCOUNT							
1	Personnel Cost	12.47	6.73	8.02	8.95	9.64	10.34
2	Terminal and Retirement Benefits	0.20	0.05	0.04	0.09	0.09	0.16
3	Operating Expenses	11.52	15.75	6.04	14.00	16.83	17.43
4	Repair and Maintenance	10.16	13.24	9.76	9.68	15.91	14.31
5	Administrative Expenses	2.58	2.70	2.20	1.71	3.03	4.28
6	Finance Expense						
	a. Interest on Loans	1.12	1.06	1.01	0.00	0.00	0.00
SECTORAL CONTRIBUTION TO TOTAL EXPENDITURE							
1	Personnel Cost	32.11	16.59	27.53	24.27	19.75	22.20
2	Terminal and Retirement Benefits	0.51	0.12	0.14	0.24	0.18	0.34
3	Operating Expenses	29.65	38.84	20.73	37.97	34.46	37.43
4	Repair and Maintenance	26.17	32.66	33.49	26.25	32.58	30.73
5	Administrative Expenses	6.64	6.65	7.56	4.63	6.21	9.19
6	Finance Expense						
	a. Interest on Loans	2.88	2.62	3.45	0.00	0.00	0.00
GROWTH TRENDS IN %							
1	Personnel Cost	--	(46.08)	19.30	11.56	7.74	7.21
2	Terminal and Retirement Benefits	--	(75.00)	(20.80)	126.26	0.00	78.57
3	Operating Expenses	--	36.74	(61.63)	131.69	20.19	3.58
4	Repair and Maintenance		30.25	(26.27)	(0.82)	64.35	(10.06)
5	Administrative Expenses	--	4.45	(18.21)	(22.49)	77.56	41.07
6	Finance Expense						
	a. Interest on Loans	--	(4.84)	(5.52)	(100.00)	--	--

Source: Udayarpalayam Town Panchayat; 2007

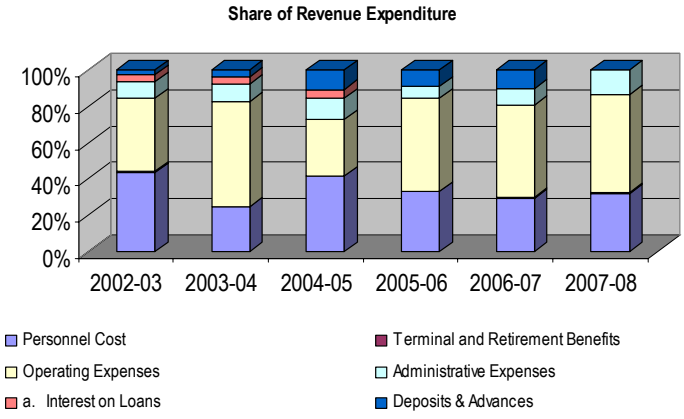
REVENUE EXPENDITURE

Revenue expenditure of the ULB has been analyzed based on expenditure heads broadly classified under the following

heads:

- Personal cost;
- Administrative expenses;
- Operating expenses;
- Interest & finance charges;
- Revenue grants, contributions and subsidies; and
- Miscellaneous / other expenses.

Application of funds by each sector and head-wise utilization of the revenue expenditure is presented in the table and charts. It may be observed that the establishment expenditure accounts for about 20 to 25 percent of total expenditure on average during the assessment period.



In comparison with revenue income, about one fourth is utilized for payment of salaries. The other major sector having higher utilization is the operating expenses, which accounts for about 35 percent of the revenue expenditure on average.

During the assessment period, revenue expenditure has indicated an average growth of about 8 percent per annum while the corresponding growth in revenue income was 3 percent, indicating a mismatch. A sector-wise break up of costs is shown graphically. A Detailed analysis of each head of expense follows-

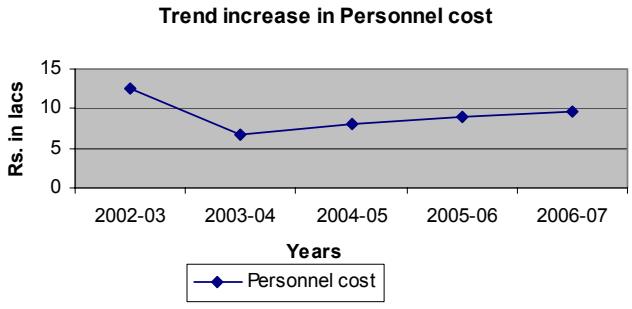
Personnel cost & terminal benefits to employees:

This include salaries and other related payments to employees. The expense has been more or less steadily increasing; it reaches the maximum in the year 2006-07. The growth trend of personnel expenses is as follows-

The personnel cost has been gradually increasing but not in a great pace. The ULB shall try to outsource certain activities like solid waste management, and outsource sanitary workers. Many of such activities would help in reducing the personnel cost.

Operating Expenses:

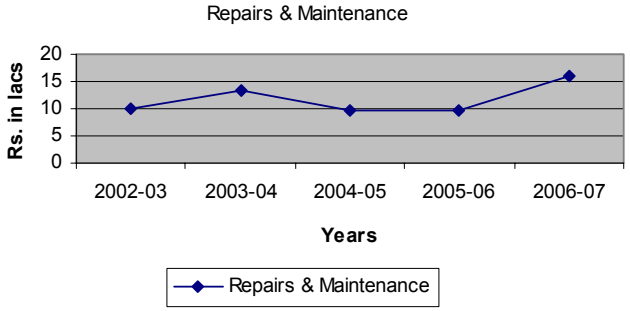
This head of expenditure include power charges, maintenance expenses of gardens, parks hospitals, removal of debris, purchase of scavenging materials, etc. The major item under this head is the power charge which constitutes roughly 12% of the total expenditure (during 2006-07) and 53% of the expenditure under this head. The balance is taken away by Street light maintenance. This excludes power charges pertaining to sewerage system and includes only water works. Power charges towards street lighting consume 24% of the operating expenses and towards sewerage system is 29%, which appears too high. The composition of power charges as part of the total operating



expenses is given in the above chart.
From the numbers and the graph, it is seen that power charges consumes the majority portion. This is a bad trend because, as mentioned earlier, the revenues generated from water supply are comparatively lesser as against the expenditure incurred. The TP may conduct a separate study to analyze the defects in the water supply system. There is also a need to find out the age of pumps need to be checked for replacement. There could also be energy efficient pumps, which the TP could seek for.

It is to be noted that the above analysis does not include sewerage systems. If sewerage systems are proposed, the ULB cannot sustain the expenditure in their balance sheet. Energy efficiency measures can be attempted by the TP in a small scale.

Repairs & Maintenance:



This is the major head of expenditure and includes repairs and maintenance of assets like drainage, bridges, roads, etc. The bigger item of expenditure under this head is school and water supply maintenance which roughly constitute 44%. The next major expenditure is basically light vehicle maintenance and road pavement expenditure. With proper water supply systems in place, this could be reduced. Moreover, the ULB shall also do a leak detection study, upon implementation of which the maintenance costs of water supply could be less. Reportedly, the other major expenditure is the heavy vehicle maintenance. In absolute terms, it does not appear to be huge.

Administrative expenses:

This is a minor head of expenditure for Udayarpalayam TP constituting around 7% of the total expenditure. All expenses stated are towards routine administrative expenses and are found normal.

DEBT SERVICING
ULB is having an outstanding debt liability of Rs. 7.33 lakhs as on March 31, 2006. It accounts to twice of current property tax demand. Considering the current property tax demand (FY 2007-08) of Rs. 3.5 lakhs, the ULB can leverage debt to finance its projects to an extent of Rs. 7 - 10 lakhs as this would be within the threshold range of minimum 2 and maximum 3 times the current property tax demand generally considered by financial institutions for the purposes of lending. However, based on the revenue receipts and revenue expenditure during the assessment period, the ULB would be in a position to draw loans[6] to an extent of about Rs. 5 lakhs on average.

11.2.4 CAPITAL ACCOUNT

The capital account comprises two components, viz. capital income and capital expenditure. The base and the basis of transactions in this account are elaborated below.

CAPITAL INCOME
Capital income mainly comprises income/receipts for capital works like loans/ borrowings, capital grants from the Central/State Government, and sale proceeds from assets apart from transfers from the revenue account to the three capital funds maintained by the ULB, viz.

[6] Based on the acceptable thumb-rule, about 25 percent of the total revenue receipts and/or about 30 percent of the total revenue expenditure, whichever is lower, can be considered as leverageable surplus.

Municipal General Funds, Earmarked Funds and Reserve Funds. This account also has contributions received in the form of security deposits/EMD from suppliers, contractors, etc. It is noteworthy that the ULB has received capital grants of Rs. 21 lakhs during the FY 2005-06 through the Self Sufficiency scheme and Road improvement grant.

Table 11.5: Break-up of Capital Receipts/Income

Particulars	2002-03	2003-04	2004-05	2005-06
Grants in aid from State Government				
Basic Amenities	5.00	3.00	0.00	0.00
11th Central Finance Commission	0.00	1.00	1.90	0.00
Specific Grants - Part II Scheme	0.00	0.00	0.00	5.00
Drought Relief	0.00	5.00	1.80	0.00
Namakku Namae/Self sufficiency	0.00	0.00	0.00	5.00
Road Improvement	0.00	0.00	6.50	7.35
Storm Water Drain	0.00	0.00	2.20	0.90
Others	0.00	0.87	0.00	0.00
Total Grants from State Govt (A).	**5.00**	**9.87**	**12.40**	**18.25**
Grants from Central Government				
National Slum Development	2.20	1.50	0.00	3.00
Total Grants from Central Govt (B)	**2.20**	**1.50**	**5.00**	**3.00**
Total Capital Income (A+B+C)	**7.20**	**11.37**	**17.40**	**21.25**

Source: Udayarpalayam Town Panchayat; 2007

CAPITAL EXPENDITURE

Capital expenditure may be broadly categorized under three broad heads, viz. a) acquisition/ purchase of fixed assets; b) capital projects; and c) other capital expenses like refund of deposits, spending from the municipal funds, etc. The ULB has been spending almost half of total capital expenses on Roads, Water Supply and sanitation improvement projects during the assessment period. The ULB has spent about Rs. 18 lakhs during the FY 2005-06.

Table 11.6: Break-up of Capital Expenditure

	Particulars	2002-03	2003-04	2004-05	2005-06
1	Roads	6.66	3.79	12.70	12.35
2	Culverts	0.82			
5	Water Supply	6.65	2.38	4.31	3.00
Public Health & Sanitation					
I	Pay & Use latrines		2.89		3.00
ii	Low Cost Sanitation	5.29			
Conservancy					
i	Purchase of Vehicles	0.26			
ii	Others		2.11		
Total Capital Expenditure		**19.68**	**11.17**	**17.01**	**18.35**

Source: Udayarpalayam Town Panchayat; 2007

11.3 REVIEW OF FINANCE

Highlights of the finance of Udayarpalayam Town Panchayat under different heads are listed below.

		Minimum	Maximum	Average	Unit
A.	**Resource Mobilization Indicators - General**				
1	Share of Property Tax Component	5.50	7.46	6.68	percent
2	Share of Other Taxes (including Professional Tax)	2.01	3.54	2.96	percent
3	Share of Assigned Revenue	2.29	19.12	8.21	percent
4	Share of Devolution Funds	29.00	53.27	42.72	percent
5	Share of Service Charges and Fees	13.65	18.20	15.49	percent
6	Share of Grants and Contributions	0.00	15.05	5.55	percent
7	Share of Sale and Hire Charges	0.00	0.06	0.02	percent
8	Share of Other Income	15.06	22.28	18.05	percent
9	Share of Deposits & Advances	0.00	1.96	0.33	percent
10	Per Capita Income -Year 2006-07			448.76	Rupees
11	Growth in Property Tax Component	2.64	7.15	5.82	percent
12	Growth in Other Taxes (including Professional Tax)	2.82	19.22	12.80	percent
13	Growth in Assigned Revenue	(54.09)	88.22	(12.61)	percent
14	Growth in Devolution Funds	(10.14)	39.12	12.93	percent
15	Growth in Service Charges and Fees (including Water Charges)	(3.17)	8.44	3.31	percent
16	Growth in Service Charges and Fees (excluding Water Charges)	(23.37)	49.62	7.09	percent
17	Growth in Grants and Contributions	(100.00)	100.00	(21.64)	percent
18	Growth in Sale and Hire Charges	(100.00)	500.00	200.00	percent
19	Growth in Other Income	(41.92)	50.39	0.67	percent
20	Growth in Total Receipts	(22.39)	29.12	2.13	percent
B.	**Resource Mobilization Indicators - Property Tax**				
1	No. of Assessments as on 2006/2007			3000	Nos.

2	Growth in Assessments	3.14	6.43	5.95	percent
3	Current Tax Rate			12	percent
4	ARV per Property - 2006/2007			933	Rupees
5	Tax Per Property (Average)			108	Rupees
6	Collection Performance				
	a. Arrear Demand	0.00	0.00	0.00	percent
	b. Current Demand	100.00	100.00	100.00	percent
	c. Total Demand	100.00	100.00	100.00	percent
C.	**Resource Mobilization Indicators - Profession Tax**				
1	No. of Assessments as on 2006/2007			318	Nos.
2	Growth in Assessments	0.65	6.81	4.47	percent
3	Current Tax Rate			25	percent
4	Tax Per Assessment (Average)			440	Rupees
5	Collection Performance				
	a. Arrear Demand	0.00	0.00	0.00	percent
	b. Current Demand	100.00	100.00	100.00	percent
	c. Total Demand	100.00	100.00	100.00	percent
D.	**Resource Mobilization Indicators - Water Charges**				
1	No. of Connections as on 2006/2007			818	Nos.
2	Growth in Connections	(14.79)	1.80	(3.35)	percent
3	Share of Water Tax in Property Tax Component			0.00	percent
4	Collection Performance				
	a. Arrear Demand	29.33	95.74	68.84	percent
	b. Current Demand	54.29	87.98	70.88	percent
	c. Total Demand	55.59	88.73	69.02	percent
E.	**Expenditure Management**				
1	Share of Personnel Cost (Establishment)	16.59	32.11	23.74	percent
2	Share of Terminal and Retirement Benefits	0.12	0.51	0.26	percent
3	Share of Operating Expenses	20.73	38.84	33.18	percent
6	Share of Administrative Expenses	4.63	9.19	6.82	percent
7	Share of Finance Expenses	0.00	0.00	1.49	percent
8	Share of Deposits & Advances	0.11	0.11	4.20	percent
9	Per Capita Expenditure - 2006-2007			431.40	Rupees
10	Growth in Personnel Cost (Establishment)	(46.08)	19.30	(0.05)	percent
11	Growth in Terminal and Retirement Benefits	(75.00)	126.26	21.81	percent
12	Growth in Operating Expenses	(61.63)	131.69	26.11	percent
15	Growth in Administrative Expenses	(22.49)	77.56	16.48	percent
16	Growth in Finance Expenses	(100.00)	(4.84)	(36.79)	percent
17	Share of Deposits & Advances	(98.50)	103.28	17.52	percent
18	Share of Debt Servicing Expenditure	0.00	3.45	1.49	percent
19	Operating Ratio	0.59	1.06	0.85	Ratio
20	Growth in Debt Servicing Expenditure	(100.00)	(4.84)	(27.59)	percent
21	Growth in Total Expenditure	(28.10)	32.41	6.11	percent
F.	**Debt and Liability Management**				
1	Agency wise Outstanding Loan Amount				
	a. Government of Tamil Nadu			6.95	Rs. Lakhs
	b. MUDF/TNUDF			0.00	Rs. Lakhs
	c. Other Financial Institutions			0.35	Rs. Lakhs
	Total			7.30	Rs. Lakhs
2	Outstanding Loan Per Capita			64.49	Rupees
3	Ratio of Outstanding Loan to Property Tax Demand			2.39	Ratio

11.4 KEY FINANCIAL INDICATORS

To assess the financial situation and performance of the ULB, certain key financial indictors have been generated. Following are the heads under which specific indicators of financial status and performance of the ULB have been assessed:

- Resource mobilization;
- Expenditure management; and
- Debt and liability management.

Following table provides performance of various key financial indicators of the ULB during the assessment period, along with the comparison with certain desirable benchmarks for evaluation.

Table 11.7: Performance of Key Financial Indicators in Udayarpalayam Town Panchayat

Sl. No.	Account Head	Summary Statement					
		(All figures in Rs. Lakhs)					
		2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
		Actuals					Budget
1	Revenue Account Status (Incl. OB)	11.23	11.22	31.53	40.48	43.87	48.10
2	Operating Ratio (Rev. Expen./Rev. Inc.)	0.79	1.00	0.59	0.80	0.93	0.92
3	Debt Servicing - % of Income	2.27	2.78	2.03	0.00	0.00	0.00

Source: Udayarpalayam Town Panchayat; 2007

Performance of Udayarpalayam Town Panchayat

	Minimum	Maximum	Average	Desirable Benchmark
Existing (2000-01 to 2005-06)				
OR (Ratio)	0.59	1.00	0.83	Less than 1.00
DSR (%)	0.00	2.78	1.18	Less than 25 percent
Category			1	

Note: **1**: **Financially Sound**; **2**: Financially Fragile; **3:** Financially Insolvent

12

FINANCIAL OPERATING PLAN

12.1 OVERVIEW

The Financial Operating Plan (FOP) is a multi-year forecast of finances of the urban local body. The FOP can be generated for a short term (5 to 7 yrs) and also for the long-term (20 yrs) period. In the context of this assignment, the FOP is generated for the short term (2008-09 to 2012-13). The projection has also been extended for the long-term (20 years) to essentially provide a snapshot of the impact of identified investments on the municipal finances in the long run.

The objective of this section is to assess the investment sustenance capacity of the ULB vis-à-vis the projects identified in the CIP as part of the CCBP preparation. FOPs are essentially a financial forecast, developed on the basis of the growth trends of various components of income and expenditure, based on time-series data. Accordingly, the financial forecast has been prepared for the ULB. Broadly, all the sectoral components envisaged for funding are under the ULB. The FOP is in full consonance with the town's vision & approach to development and priorities and action plans approved by the stakeholders. Several assumptions were made while forecasting finances. The study team has adopted necessary caution to adopt the assumptions based on current growth trends, contribution pattern of various revenue drivers, and utilization pattern of various expenditure drivers. In addition, various quantifiable assets and liabilities of the ULB were also taken into account and phased over a period of time. The following section provides insight into the various assumptions made, necessary logic and justifications for such assumptions.

12.2 BASE AND BASIS

In order to assess the investment sustaining capacity of the ULB, the fiscal situation is simulated through a Financial Operating Plan (FOP). The FOP is a multi-year forecast of finances for a term of 20 years. It is used to forecast revenue income and operating expenditure for the period between FY 2008-09 and FY 2012-13 and between FY 2012-13 and FY 2027-28. However, capital expenditure is planned from FY 2009-10. Following are the important considerations towards simulating the fiscal situation of the ULB and include both existing and new resources.

- Income considerations
  - Revision of property tax ARV by 35 percent in FY 2007-08 and FY 2012-13 from the existing previous base (quinquinennial revision);
  - Revision of about 30 percent in the base tariff for water and sewerage (as applicable) during FY 2008-09, matching with the commissioning of the proposed schemes has been proposed. A concurrent increase of 5 percent per annum for other years as per the prevailing procedure of the GoTN Notification is also taken into consideration;
  - Improving arrears tax collection efficiency to at least 75 percent and current collection efficiency to at least 85 percent;
  - Growth in other revenue income items based on past performance and/or likely growth; and
  - Any additional resources generated as part of proposed investments are taken into consideration.
- Expenditure considerations
  - Establishment expenditure assumed to increase at the rate of 8 percent per annum

(8 percent is considered as there has been a consistent low growth rate over the past years and also there is a restriction by the GoTN for fresh recruitment);
- Repairs & maintenance to grow based on past performance and/or likely growth;
- Proposed capital expenditure and phasing based on investments recommended;
- Additional O&M for new investments are also taken into account.

12.3 KEY ASSUMPTIONS

In forecasting income and expenditure, key assumptions and guiding principles adopted are indicated in Table 12.1 below:

Table 12.1: Basic Assumptions for the FOP

No.	Particulars	Assumption for Forecast
A.	**REVENUE INCOME**	
1.	**Taxes**	
	Property Tax	
	- ARV Revision	30% during FY 2008-09 and FY 2013-14
	- Growth in Assessments	Ceiling 7% Gradually stabilize at 4-5%
	- Collection Performance	Arrear demand - 75% Current demand - 85%
	Other Taxes	5% annual growth
2.	**Water Supply**	
	Water Tariff Revision	30% revision of base tariff during FY 2008-09 while commissioning the new scheme 5% automatic revision every year as per prevailing practice and GoTN Notification
	Coverage	Ceiling 85% of Property Tax Assessments
	Connection Charges	20% increase every 3 years starting from FY 2008-09
	Collection Performance	Arrear demand - 65% Current demand - 75%
3.	**Sewerage**	
	Sewer Charges Revision	30% revision of base tariff during FY 2008-09 while commissioning the new scheme 5% automatic revision every year as per prevailing practice and GoTN Notification
	Coverage	Ceiling 75% of Property Tax Assessments
	Connection Charges	25% increase every 3 years starting from FY 2008-09
	Collection Performance	Arrear demand - 70% Current demand - 75%
4.	**Assigned Revenue**	
	Other Assigned Revenues	--
5.	**Other Revenue Items**	
	Rent from Municipal Properties	Ceiling 15%
	Fees and User Charges	Ceiling 20%
	Sale and Hire Charges	15% annual growth
	Revenue Grants, Contributions and Subsidies	Ceiling 5%
	Other Income	Ceiling 15%
B.	**REVENUE EXPENDITURE**	
1.	Establishment	8% annual growth
2.	Administrative Expenses	8% annual growth
3.	Repairs and Maintenance - Existing Assets	20% annual growth
4.	Interest and Finance Charges - Others	Based on annuity calculation on the loans outstanding
5.	Revenue Grants, Contributions and Subsidies	Ceiling 5%
6.	Miscellaneous / Other Expenses	Ceiling 10%
C.	**CAPITAL STRUCTURING**	
1.	Capital Grants - GoI/UIDSSMT	80% of capital expenditure
2.	Capital Grants - GoTN as Counterpart Contribution	10% of capital expenditure

No.	Particulars	Assumption for Forecast
3.	ULB as Counterpart Contribution	10% of capital expenditure To be transferred from revenue surplus (primary operational surplus) Resource gap to be met through debt
4.	Loans/Borrowings	8% interest repayable in 15 years.
5.	Investment phasing	Optimum Scenario: As per the CIP under 'optimum scenario', full investment. Sustainable Scenario: As per the CIP under sustainable investment level only.

12.4 SCENARIOS AND FINANCIAL PROJECTIONS

Based on the above assumptions and the proposed and prioritized CIP, separate FOPs have been generated. As stated earlier, the investments pertaining to all sectors have been incorporated in the FOP prepared for the ULB. Pertinent O&M expenses (on new assets) and the receivables thereon are also incorporated into the FOP. The FOP is generated under the following scenarios:

- Base Case - Optimum Scenario: This scenario assumes the capital investment estimate and the phasing as per the 'Optimum Scenario'. The FOP has been generated assuming full CIPs under the 'Optimum Scenario' for ULBs; and
- Sustainable Scenario Option: This scenario is envisaged to ascertain a sustainable level of the ULB for the proposed CIP considering the ULB's capital investment capacity and its capacity to maintain the new assets.

From the discussion with the CTP and stakeholders of the ULB it was observed that Underground sewerage system takes the long-term priority of the town taking into consideration huge capital investment requirements and operation and maintenance requirements. Hence the study team worked out the implementation and financial operating plan with and without Underground sewerage project. In short-term period, an interceptor drains with treatment plant are suggested to control / minimize the sewage and sullage load which are being disposed into the major water bodies in the town through road side drains. FOP has been evolved for the following four cases.

- Case 1 – FOP under Sustainable Scenario within their Borrowing Capacity
- Case 2 – FOP without Underground Sewerage Project under Optimum Scenario
- Case 3 – FOP with Underground Sewerage Project under Optimum Scenario
- Case 4 – FOP within their Borrowing Capacity – Zero Grant

Even though scenarios are worked out, there is a possibility of reducing the capital investment and thus increasing the borrowing / investment capacity of the ULB. Certain projects have been identified, which can be outsourced or privatized, the list of which and their costs are given as follows:

S.No.	Projects	Description	Amount	Remarks
1	Roads	Strengthening existing roads, upgradation of roads, formation of new roads, widening of roads	839.83	Government periodically announces grant programs for development or upgradation of roads. This particular project identified can be posed under these grant projects, in phases, as UIDSSMT does not support individual projects, but takes an integrated approach. Further, the ULB does not have surplus financials to meet the expenditure by themselves
2	Storm water drains	Provision of Storm water along existing roads, Formation of new drains	292.33	As said above, this can also be included in Govt. sponsored programs as part of the road project.
3	Street Lighting		62.50	It is now prevalent to take up maintenance of

				street lighting by Energy Saving Companies, which are being tested in municipalities. This can be done here, where the initial investment will be made by the ESCO, and they will maintain the street light system for a particular concession period. This initiative can be taken up by Udayarpalayam TP, through the advice of CTP
4	Solid Waste Management	Primary, Secondary collection, transportation and disposal	590.11	Almost all municipalities in Tamil Nadu have now started privatizing most of their SWM activities, in order to have better efficiency in service and also cost-effective. This is cropping up in the light of the Supreme Court ruling. It is felt that Udayarpalayam TP shall follow the same principle, so that there is a better efficiency in service, and does ends up neither in capital investment nor O&M costs. Alternatively, if it is felt that the amount of garbage generated is not attractive to a private investor, there are programs coming up like Integrated Solid Waste Management piloted by the TNUDF, where studies have commissioned for Corporations. This study envisages a single contract for primary, secondary collection, transportation, composting and landfill activities by one BOT operator. When there is a cluster of ULBs, it would be an attractive investment for the operator and this project could be implemented through this mechanism.
5	Other Development Proposals	Proposed Community Centers / halls	38.12	Since the finances of the ULB are very poor, and the value of the project is less, it is suggested that these may be taken up under various grants and contributions flowing into the revenue stream of the ULB, like the MLA / MP funds. But, the ULB shall take adequate care that these funds henceforth shall be properly utilized for the projects envisaged, in the light of demands.
		Vegetable / meat market	121.97	There are two ways of doing this project – i.) With the initial investment of a BOT operator, the entire market could be constructed by him, and the rentals collected by the operator himself. There could be a contractual binding as to payments to the ULB by the operator annually or half-yearly, on the basis of the rental income. ii) The second option would be prepare designs, showcase the designs and identify lessees, get upfront rentals from them so that it covers the capital cost, then start construction. This method will help the ULB in firming up the lessees for the market, as well as meet the construction cost without touching the balance sheet
		Improvements to weekly market	50.82	Since it is an improvement the project can be executed by the ULB, but go in for the second option mentioned above
		Slaughter development with treatment	12.71	As said above, for the weekly daily market, if option (i) is considered, the operator himself can run the slaughter house, or, if (ii) is considered, the ULB can construct this with MP grants, as the size of the project is very less
		Shopping complex / office complex	215.99	As suggested for vegetable / meat market

In order to give a base scenario, as expected, none of the above measures are incorporated in the FOP. Hence with the base case, the FOPs are worked out under each case. The results of the FOP under the abovementioned cases are given in Annexure– 10, 11, 12 and 13.

CASE 1: CAPITAL INVESTMENT CONSIDERED UNDER THE SUSTAINABLE SCENARIO:

This is a scenario where the investments are sized according to the financial capabilities of the ULB. This is worked out based on certain assumptions. The method of such workings and the results thereon are given in the forthcoming sections.

Method and Assumption:

The sustainable scenario is prepared after taking into consideration, the revenue inflows and outflows from the base scenario, i.e. the income from sewerage and water charges and O&M on assets is taken. In order to arrive at the sustainability, three different parameters were used which are,

- TE /TR <1
- DS /TR <=30%
- 30% of the operating surplus should be retained as surplus and the balance can only be leveraged.

The least of the above 3 factors was arrived at as the possible annuities payable by the ULB. With this a conversion factor was worked out to determine the Borrowing Capacity and the Investment Capacity. The maximum sustainable investments for the next 5 years are summarized as follows:

Table 12.2: Borrowing & Investment Capacity of Sustainable Case Scenario *(Rs. In lakhs)*

Details	2008-09	2009-10	2010-11	2011-12	2012-13
Borrowing Capacity	22.12	34.84	38.74	50.08	379.57
Investment Capacity	34.03	53.59	59.61	77.04	583.96

Therefore FOP for the revised investment estimates was worked out. It is quite obvious that when there is no revenue deficit at the base scenario, there cannot be a revenue deficit in this scenario. However a detailed FOP has been worked out with the basic assumption that O&M is 2% on the overall investment. The summary of the results of the sustainable scenario under this case is as follows:

Under this scenario, 40% of the proposed investment is funded through grant support from GoI and GoTN under various schemes, and remaining 60% is from ULB contribution either as a revenue surplus or loan from any financial institutions. Assumptions under this scenario and means of finance are given in the adjacent table. The summary of results from 2008-09 to 2012-13 (short-term) is provided as follows:

Table 12.3: Assumptions on Means of Finance (Rs. In Lakhs)

Loan Assumptions	2008-09	2009-10	2010-11	2011-12	2012-13
Tenor	15	15	15	15	15
Rate of Interest	8.75%	8.75%	8.75%	8.75%	8.75%
Loan Amount	17.01	26.80	26.82	34.67	233.58
Annuities	2.08	3.28	3.28	4.24	28.55
Cumulative annuities		2.08	5.36	8.63	12.87
Total annuities for the year	2.08	5.36	8.63	12.87	41.42

Table 12.4: Summary of Sustainable Scenario (Under Case 1) *(Rs. In lakhs)*

Summary Statement	2008-09	2009-10	2010-11	2011-12	2012-13
Opening Balance	48.10	52.41	56.89	58.26	58.81
Revenue Receipts	66.25	73.69	79.98	88.24	190.20
Revenue Expenditure	51.85	56.94	62.55	68.71	75.50
Operating Ratio	0.78	0.77	0.78	0.78	0.40
Debt Servicing Ratio	0.11	0.10	0.10	0.09	0.05
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	52.41	56.89	58.26	58.81	(10.99)

Capital Grants	13.61	21.44	23.84	30.82	175.19
ULB Contribution - Transfers from Revenue Surplus	3.40	5.36	8.94	11.56	175.19
Loans / Borrowings of ULB	17.01	26.80	26.82	34.67	233.58

Short Term (Upto 2012-13)	Maximum	Minimum
Borrowing Capacity	379.57	22.12
Investment Capacity	583.96	34.03
Long-Term (Upto 2027-28)	**Maximum**	**Minimum**
Borrowing Capacity	1836.13	22.12
Investment Capacity	2824.81	34.03

It can be observed that there is no operational deficit in any of the FY during the short-term period and a marginal surplus is available in all the years expect the FY 2012-13, in spite of the huge investments made. This is also due to income assumptions made on certain projects like Water Supply where user charges are collected. However, based on assumptions, the capital components of the assumed investments are the loans and the own contributions to be made by the ULBs. The interest portion is taken for calculation of the revenue surplus; the principal repayment is taken as a capital expenditure. It is seen from the results that the ULB generates a surplus even after meeting the ULB contribution. However the figures given above are indicative as these are based on certain assumptions. The actual working / financial structuring can be done only when the project takes off.

CASE 2: CAPITAL INVESTMENT CONSIDERED UNDER THE BASE CASE – OPTIMUM SCENARIO:

This scenario assumes the capital investment estimate and the phasing as per the 'Optimum Scenario'. The FOP has been generated assuming **full CIPs excluding underground sewerage project** under the 'Optimum Scenario'.

CAPITAL INVESTMENT CONSIDERED FOR FOP GENERATION (CASE 2: FOP WITHOUT UGSS):

In order to formulate FOP, projects that are directly implementable and having the impact over the finance of ULB are considered. In this case UGS scheme to the town is not considered since implementation of this scheme requires heavy capital investment. Also in this case, projects which are implemented by other departments like Junction improvements in the SH and improvements of the PWD owned water bodies etc are not considered for FOP iteration. Sector wise capital investments considered are given in the following table.

Table 12.5: Proposed Capital Investment for FOP Generation – Without Underground Sewerage Project

Sl.No	Sectors	Estimated Capital Investment (Rs. In Lakhs)	% to Total
1	Water Supply System	581.78	13.41
2	Sanitation & Interceptor Drain	144.27	3.33
3	Roads, Traffic and Transportation	981.72	22.64
4	Storm Water Drains	265.65	6.13
5	Street Lighting	64.01	1.48
6	Solid Waste Management	590.11	13.61
7	Environment Improvement	561.63	12.95
8	Other Development Proposals	573.00	13.21
9	Slum Upgrading	400.53	9.24
10	Urban Governance	174.35	4.02
	Total Capital Investment	**4,337.06**	**100.00**

Assumptions:

Based on the phasing assumed the financials are done with

Table 12.6: Assumptions on Means of Finance

Fund Option	2008-09	2009-10	2010-11	2011-12	2012-13
Loan	50%	50%	45%	45%	40%
Grant	30%	30%	40%	40%	30%
Own	20%	20%	15%	15%	30%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

certain basic assumptions on the means of finance. Loan assumptions were made conservatively, and are an average of the various grants and loans available. Moratorium is not considered on a conservative side. The O&M is assumed based on sectors.

Table 12.7: Assumptions on Means of Finance (Rs. In Lakhs)

Loan Assumptions	2008-09	2009-10	2010-11	2011-12	2012-13
Tenor	15	15	15	15	15
Rate of Interest	8.75%	8.75%	8.75%	8.75%	8.75%

The following table summarizes the outcome of the FOP under the 'Base Case - Optimum Scenario' against select key indicators. The O&M is assumed based on sectors. Recent trends on O&M have been adopted for making these assumptions.

Table 12.8: Estimated O&M Requirements for Proposed Capital Investments *(Rs. In lakhs)*

O&M Costs	% of O&M	2008-09	2009-10	2010-11	2011-12	2012-13
Water Supply System	2%	3.61	4.12	3.90	0.00	0.00
Underground Sewerage Scheme	2%	0.38	0.20	2.31	0.00	0.00
Roads, Traffic and Transportation	1.50%	2.27	4.13	8.32	0.00	0.00
Storm Water Drains	1.50%	1.20	1.01	0.65	0.65	0.47
Street Lighting	1%	0.60	0.04	0.00	0.00	0.00
Solid Waste Management	2%	0.00	6.65	5.00	0.15	0.00
Environment Improvement	2%	7.57	3.56	0.11	0.00	0.00
Other Development Proposals	1%	1.88	2.94	0.91	0.00	0.00
Slum Upgrading	2%	1.23	3.28	3.50	0.00	0.00
Urban Governance	1%	0.44	0.44	0.44	0.44	0.00
Total		19.18	26.37	25.14	1.24	0.47
Cumulative O&M		19.18	45.55	70.68	71.92	72.39

FINANCIAL OPERATING PLAN - Base Case: Optimum Scenario (Under Case 1)

Existing (2002-03 to 2007-08)	Minimum	Maximum	Average
OR (Ratio)	0.59	1.00	0.83
DSR (%)	0.00	2.78	1.18
Category			**1**
Short-Term (2008-09 to 2012-13)			
OR (Ratio)	0.40	0.78	0.70
DSR (%)	1.48	343.74	173.20
Category			**2**
Long-Term (2008-09 to 2027-28)			
OR (Ratio)	0.40	0.90	0.70
DSR (%)	0.04	343.74	97.45
Category			**2**

Note: 1: Financially Sound; **2: Financially Fragile;** 3: Financially Insolvent

Under the above scenario ('Base Case - Optimum Scenario'), if the full investment of Rs.4,337 Lakhs is assumed for ULB and the FOP is forecast based on the above assumptions, the ULB will be in a deficit of Rs. 655.72 Lakhs by the year 2012-13 (Short term Period). In Long-term period also ULB will be in a deficit position of Rs.2118.17 Lakhs by the year 2027-28 provided necessary financial reforms are accomplished within the recommended duration. Further, in order to meet resource requirements of its own contribution, the ULB would need to take loan of Rs. 2474.14 Lakhs during this period. In order to sustain the proposed capital investment, the ULB may require grant support from the GoTN and GoI to the extent of at least Rs. 1734.82 Lakhs during this period. This is

expected capital grant contribution from the GoTN at and GoI at 10 percent each.

In order to meet resource requirements of its own contribution, the ULB would need to transfer its revenue surpluses of Rs.128.09 Lakhs during this period. The summary of results from 2008-09 to 2012-13 (short-term) is provided as follows:

Table 12.9: Summary of Base Case – Optimum Scenario (Under Case 2) - *(Rs. In lakhs)*

Summary Statement	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Balance	48.10	62.13	(4.75)	(184.35)	(467.62)	(655.72)
Revenue Receipts	66.25	73.69	79.98	88.24	190.20	208.20
Revenue Expenditure	51.85	56.94	62.55	68.71	75.50	82.97
Operating Ratio	0.78	0.77	0.78	0.78	0.40	0.40
Debt Servicing Ratio	1.48	114.27	247.03	343.74	159.45	145.65
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00	0.00
Closing Balance	62.13	(4.75)	(184.35)	(467.62)	(655.72)	(833.28)
Capital Grant - GoI/UIDSSMT	0.00	232.49	314.96	294.79	18.90	6.27
Capital Grant - GoTN	0.00	232.49	314.96	294.79	18.90	6.27
ULB Contribution - Transfers from Revenue Surplus	0.00	16.38	17.07	19.15	56.70	18.80
ULB Contribution - Loan/Borrowings	0.00	681.11	927.83	865.21	0.00	0.00
Public Contribution	0.00	0.00	0.00	0.00	0.00	0.00

It can be observed that there has been no operational deficit in all the years and a marginal surplus is available in only in the FY 2008-09. This is also due to higher loan dependency for the projects identified under CCBP since revenue surplus is very minimal.

However, based on assumptions, the capital components of the assumed investments are the loans (Rs. 2474.14 lakhs) to be made by the ULBs. The interest portion is taken for calculation of the revenue surplus; the principal repayment is taken as a capital expenditure. The negative surplus in the closing balance is due to transfers from revenue account to capital expenditure in order to meet the ULB contribution.

CASE 3: CAPITAL INVESTMENT CONSIDERED UNDER THE BASE CASE – OPTIMUM SCENARIO:

This scenario assumes the capital investment estimate and the phasing as per the 'Optimum Scenario'. The FOP has been generated assuming full CIPs under the 'Optimum Scenario'.

Capital Investment Considered for FOP Generation (Case 3: FOP with UGSS): In order to formulate FOP, projects that are directly implementable and having the impact over the finance of ULB are considered. Under this case, Projects which are implemented by other departments like Junction Improvements on SH and Improvements of PWD owned Water bodies etc., are not considered. Sector wise capital investments considered are given in the following table.

Table 12.10: Proposed Capital Investment for FOP Generation – With Underground Sewerage Project

Sl.No	Sectors	Estimated Capital Investment (Rs. In Lakhs)	% to Total
1	Water Supply System	581.78	9.25
2	Underground Sewerage Scheme	1,922.83	30.59
3	Roads, Traffic and Transportation	1,103.00	17.55
4	Storm Water Drains	316.59	5.04
5	Street Lighting	62.50	0.99
6	Solid Waste Management	590.11	9.39
7	Environment Improvement	561.63	8.93
8	Other Development Proposals	573.00	9.11
9	Slum Upgrading	400.53	6.37
10	Urban Governance	174.35	2.77
	Total Capital Investment	**6,286.31**	100.00

Assumptions:

Based on the phasing assumed the financials are done with certain basic assumptions on the means of finance. Loan assumptions were made conservatively, and are an average of the various grants and loans available. Moratorium is not considered on a conservative side.

Table 12.11: Assumptions on Means of Finance

Fund Option	2008-09	2009-10	2010-11	2011-12	2012-13
Loan	50%	50%	45%	45%	40%
Grant	30%	30%	40%	40%	30%
Own	20%	20%	15%	15%	30%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

The following table summarizes the outcome of the FOP under the 'Base Case - Optimum Scenario' against select key indicators.

Table 12.12: Assumptions on Means of Finance (Rs. In Lakhs)

Loan Assumptions	2008-09	2009-10	2010-11	2011-12	2012-13
Tenor	15	15	15	15	15
Rate of Interest	8.75%	8.75%	8.75%	8.75%	8.75%

FINANCIAL OPERATING PLAN - Base Case: Optimum Scenario (Under Case 3)

Existing (2002-03 to 2007-08)	Minimum	Maximum	Average
OR (Ratio)	0.59	1.00	0.83
DSR (%)	0.00	2.78	1.18
Category			**1**
Short-Term (2008-09 to 2012-13)			
OR (Ratio)	0.33	0.78	0.69
DSR (%)	1.48	448.98	222.44
Category			**2**
Long-Term (2008-09 to 2027-28)			
OR (Ratio)	0.30	0.89	0.67
DSR (%)	0.04	448.98	117.12
Category			**2**

Note: 1: Financially Sound; **2: Financially Fragile**; 3: Financially Insolvent

Under the above scenario ('Base Case - Optimum Scenario'), if the full investment of Rs.6,286 Lakhs is assumed for ULB and the FOP is forecast based on the above assumptions, the ULB will be in a deficit of Rs. 915.29 Lakhs by the year 2012-13 (Short term Period). In Long-term period deficit may increased to Rs.2934.95 Lakhs by the year 2024-25 provided necessary financial reforms are accomplished within the recommended duration.

Further, in order to meet resource requirements of its own contribution, the ULB would need to take loan of Rs. 3381.61 Lakhs during this period. In order to sustain the proposed capital investment, the ULB may require grant support from the GoTN and GoI to the extent of at least Rs. 2514.82 Lakhs during this period. This is expected capital grant contribution from the GoTN at and GoI at 10 percent each.

In order to meet resource requirements of its own contribution, the ULB would need to transfer its revenue surpluses of Rs.221.16 Lakhs during this period. Public contribution in the form of deposits collected for UGS to the tune of Rs. 169.02 lakhs need to be mobilized by the ULB in advance. The summary of results from 2008-09 to 2012-13 (short-term) is provided as follows:

Table 12.13: Summary of Base Case – Optimum Scenario (Under Case 3) *(Rs. In lakhs)*

Summary Statement	2008-09	2009-10	2010-11	2011-12	2012-13
Opening Balance	48.10	62.13	(30.98)	(275.57)	(651.70)
Revenue Receipts	66.25	73.69	79.98	88.24	225.63

Revenue Expenditure	51.85	56.94	62.55	68.71	75.50
Operating Ratio	0.78	0.77	0.78	0.78	0.33
Debt Servicing Ratio	1.48	149.87	328.29	448.98	183.57
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	62.13	(30.98)	(275.57)	(651.70)	(915.29)
Capital Grant - GoI	0.00	319.68	448.82	383.32	99.17
Capital Grant - GoTN	0.00	319.68	448.82	383.32	99.17
ULB Contribution - Transfers from Revenue Surplus	0.00	16.38	17.07	19.15	149.76
ULB Contribution - Loan/Borrowings	0.00	895.73	1244.89	1093.24	147.75
ublic Contribution – UGS Deposits	0.00	46.95	84.51	37.56	0.00

It can be observed that there is no operational deficit in any of the FY during the short-term period, and a deficit in a closing balance in all the FYs expect FY 2008-09, due to huge investments made. This is also due to higher loan dependency for the projects identified under CCBP since revenue surplus is very minimal.

However, based on assumptions, the capital components of the assumed investments are the loans (Rs. 3381.61 lakhs) and the own contributions (Rs. 169.02 lakhs) to be made by the ULBs. The interest portion is taken for calculation of the revenue surplus; the principal repayment is taken as a capital expenditure. The negative surplus in the closing balance is due to transfers from revenue account to capital expenditure in order to meet the ULB contribution.

CASE 4: CAPITAL INVESTMENT CONSIDERED UNDER THE SUSTAINABLE SCENARIO – ZERO GRANT:

This is a scenario where the investments are sized according to the financial capabilities of the ULB. This is worked out based on certain assumptions. The method of such workings and the results thereon are given in the forthcoming sections.

Method and Assumption:

The sustainable scenario is prepared after taking into consideration, the revenue inflows and outflows from the base scenario, i.e. the income from sewerage and water charges and O&M on assets is taken. In order to arrive at the sustainability, three different parameters were used which are,

- TE /TR <1
- DS /TR <=30%
- 30% of the operating surplus should be retained as surplus and the balance can only be leveraged.

The least of the above 3 factors was arrived at as the possible annuities payable by the ULB. With this a conversion factor was worked out to determine the Borrowing Capacity and the Investment Capacity. The maximum sustainable investments for the next 5 years are summarized as follows:

Table 12.14: Borrowing & Investment Capacity of Sustainable Case Scenario *(Rs. In lakhs)*

Details	2008-09	2009-10	2010-11	2011-12	2012-13
Borrowing Capacity	22.12	34.84	38.74	50.08	379.57
Investment Capacity	34.03	53.59	59.61	77.04	583.96

Therefore FOP for the revised investment estimates was worked out. It is quite obvious that when there is no revenue deficit at the base scenario, there cannot be a revenue deficit in this scenario. However a detailed FOP has been worked out with the basic assumption that O&M is 2% on the overall investment. The summary of the results of the sustainable scenario under this case is as follows:

Under this scenario, 90% of the proposed investment is funded through loan funding, and remaining 10% is from ULB contribution either as a revenue surplus or loan from any financial institutions. Assumptions under this scenario and means of finance are given in the adjacent table. The summary of results from 2008-09 to 2012-13 (short-term) is provided as follows:

Table 12.15: Assumptions on Means of Finance (Rs. In Lakhs)

Loan Assumptions	2008-09	2009-10	2010-11	2011-12	2012-13
Tenure	15	15	15	15	15
Rate of Interest	8.75%	8.75%	8.75%	8.75%	8.75%
Loan Amount	30.63	48.24	50.67	65.49	408.77
Annuities	3.74	5.90	6.19	8.00	49.97
Cumulative annuities		3.74	9.64	15.83	23.84
Total annuities for the year	3.74	9.64	15.83	23.84	73.80

Table 12.16: Summary of Sustainable Scenario – Zero Grant (Under Case 4) *(Rs. In lakhs)*

Summary Statement	2008-09	2009-10	2010-11	2011-12	2012-13
Opening Balance	48.10	52.30	56.49	57.38	57.21
Revenue Receipts	66.25	73.69	79.98	88.24	190.20
Revenue Expenditure	51.85	56.94	62.55	68.71	75.50
Operating Ratio	0.78	0.77	0.78	0.78	0.40
Debt Servicing Ratio	0.11	0.11	0.10	0.10	0.06
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	52.30	56.49	57.38	57.21	(14.76)
Capital Grants	0.00	0.00	0.00	0.00	0.00
ULB Contribution - Transfers from Revenue Surplus	3.40	5.36	8.94	11.56	175.19
Loans / Borrowings of ULB	30.63	48.24	50.67	65.49	408.77

It can be observed that there is no operational deficit in any of the FY during the short-term period and a marginal surplus is available in all the years, in spite of the huge investments made. This is also due to income assumptions made on certain projects like Water Supply where user charges are collected.

Short Term (Upto 2012-13)	Maximum	Minimum
Borrowing Capacity (Rs. in lakhs)	379.57	22.12
Investment Capacity (Rs. in lakhs)	583.96	34.03
Long-Term (Upto 2027-28)	**Maximum**	**Minimum**
Borrowing Capacity (Rs. in lakhs)	1836.13	22.12
Investment Capacity (Rs. in lakhs)	2824.81	34.03

However, based on assumptions, the capital components of the assumed investments are the loans and the own contributions to be made by the ULBs. The interest portion is taken for calculation of the revenue surplus; the principal repayment is taken as a capital expenditure. It is seen from the results that the ULB generates a surplus even after meeting the ULB contribution. However the figures given above are indicative as these are based on certain assumptions. The actual working / financial structuring can be done only when the project takes off.

Suggestions:

- As mentioned in the earlier sections, the ULB can go in for BOT projects wherever possible, in order to reduce initial investments, preferably in remunerative projects, Sanitary Landfill and Composting Facility and also in traffic and transportation sector.
- Energy efficiency measures can be adopted in order to reduce O&M costs in areas of street lighting, etc.

The ULB contribution can be managed by the leveraging concept. A bridge loan can be obtained from cheaper sources so that the initial upfront investment of ULB can be avoided and as a result the negative closing balance can also be avoided. This can be managed as there is still a revenue surplus available and repayments can be accommodated. Results of FOP for both scenarios under case – 1, case - 2 and case -3 are enclosed in the Annexure – 9A, 9B and 9C.

Recommendations on Capital Investment Plan

- It is recommended that the ULB plan for utilizing capital investment within their Investment Capacity (i.e. Rs.808.23 Lakhs) during the period from 2008-09 to 2012-13 to effectively manage the finances of the ULB.
- In the case where the GoTN assures additional budgetary support through revenue grants for the O&M of the new assets created, the ULB should explore capital investment plan under the 'Optimum Scenario'.
- The decision on the capital utilization under the 'Optimum Scenario' should be made only based on a commitment from the GoTN on the extent of capital grant support and revenue grant support.

12.5 REVENUE ENHANCEMENT MEASURES

ULB often face the pressure of inadequate resources to meet recurring expenditure and investment needs for core urban civic services. There is a growing realization among urban managers on the need to innovate, especially in the context of declining state and central government's financial support to ULB, to sustain investments and to carry on their functions. In addition to state level initiatives in the form of legislative and regulatory measures, ULBs need to make efforts to enhance their resource base through a series of reforms at local levels.

"Innovation" is now recognized as the key to success in resource mobilization efforts of ULB to tap revenue sources, both tax and non-tax. In addition to raising municipal resources, ULB need to adopt innovative mechanisms in cost cutting or expenditure management for effective financial planning. Besides, additional resource mobilization at local government levels is usually possible through "taxation" (under which property tax is the mainstay of ULB) and "user charges".

In recent years, apart from internal resource mobilization, ULB need to tap funds in the form of direct borrowings from Financial Institutions, capital markets (through municipal bonds), or through appropriate financial intermediaries or institutions and various other arrangements for attracting direct private investment (indirect access). In order to access such funds or supplement resources by way of external borrowing, ULB need to assess their sustaining capacities and requires steps to gain investor confidence by enhancing tax rates, improving collection efficiencies, enabling public-private partnerships, etc.

This section of the report highlights the salient features of the innovative resource mobilization practices need to be included in the ULB to enhance its revenue base to sustain the proposed investments in the CCP:

1. Public Participation through Beneficiaries Contribution
2. Property Tax Rate Enhancement
3. Improving Property Tax Collection
4. Levy of New User Charges
5. Cost Reduction

1. Public Participation through Beneficiaries Contribution

Beneficiary's contribution is emerging as an effective instrument for generating resources to meet capital needs and sustaining investments. The beneficiary contribution can indeed be a significant source of finance for local bodies, especially for financing capital-intensive projects. ULB need to keep the debt component of the project fund as low as possible and solicited beneficiary contribution to fund the project. Beneficiary's contribution can be sort for infrastructure projects like provision of Underground Sewerage scheme for the town at an estimated investment of Rs. 1,922 lakhs. Under this scheme ULB need to borrow a loan amount of Rs. 864 lakhs (45% of proposed investment) from the financial institutions. ULB can levy a non-refundable, one-time deposit charge for domestic and non-domestic connections to the tune of Rs. 10,000 and Rs. 15,000 per connection respectively in order to reduce the loan amount considerably.

Public private partnership would be encouraged so as to complement the resources and the efforts of the ULBs in development and provision of urban services. The Government would take a leading role in creating & enabling environment for facilitating these partnerships. Private sector participation would be encouraged across the following areas:

- Property and water tax assessment.
- Operation and maintenance of water treatment plants and pumping stations
- Municipal solid waste management
- Construction, operation and maintenance of bio-medical and hazardous waste treatment facility
- Awareness campaigns for cleaner environment
- Maintenance of roads, public parks, streetlights and public toilets.
- Large scale township development projects.
- Construction of bridges, flyover and by-passes around town.
- Make non-performing municipal assets to performing assets by suitable methods.

2. Property Tax Rate Enhancement

Enhancement in tax rate is one of the essential requirement for the ULB to improve their base of the own resources. As per SFC recommendations revision of Annual rental value (ARV) has fallen due in 2003. Government of Tamil Nadu should implement the SFC recommendation of revision of property tax every five years.

3. Improving Property Tax Collection

Map based system of maintaining records using Geographic Information system (GIS) would improve the coverage of information on the properties and widen the tax net.

Special tax collection camps and door-to-door campaigns need to be initiated for collection of taxes and charges. Councilors shall take interest in organizing such camps, through which people are encouraged to utilize facilities and pay taxes which will increase the collection performance. The following revenue enhancement measures are suggested to improve the revenue base of the ULB:

- Carrying out Legal and Procedural reforms for enhancement of property tax and its effective collection.
- Comprehensive assessment of properties to enhance base of property tax
- Stricter enforcement of tax.
- Normalization of property valuation and tax assessment mechanism to capture appreciation in value of property.
- Creation of a property valuation cell to ensure uniform procedures for valuation of properties.
- Comprehensive communication with the public to address their concerns regarding property tax assessment.
- Enhancement in the non-tax collection by improving the rate structure and collection mechanism.
- New areas need to be explored for rent and fee collection.
- Computerization of database of properties and other income sources.
- Full cost recovery for urban utilities: Ensure cost recovery for urban utilities especially water, through rationalization of tariff structure.

4. Levy of New User Charges

Imposition of Solid Waste Charges as an additional source of local revenue, which is a fairly recent innovation can be tried.

Levy of vacant Land Tax (VLT) as per the GoTN provision will improve the revenue base and it will also encourage the development of urban activities.

5. Cost Reduction

- Implementation of energy saving measures in street light sector will reduce the energy cost considerably. An Energy Management Plan need to be prepared by the ULB and an option/feasibility of privatization of O&M activities need to be studied. Alternate energy sources shall be generated with the involvement of private operators (i.e. Wind Mills) to subsidize the energy cost.
- Privatization of MSWM activities will reduce the operation cost and ensure better service delivery since ULB lacks sufficient staff strength both at managerial and field level.

13

PRIORITY ASSET MANAGEMENT PLAN

13.1 OVERVIEW

This section focuses on priority asset management to inform, help and guide policymaking by city governments. Assets can be used by the city administration to help them achieve their objectives; yet studies find that municipal assets are often underutilized by the local governments or improperly transferred or sold. Assets can be put into productive use, or they can be acquired, sold, transformed or otherwise disposed of to benefit ultimately the citizenry.

The ultimate purpose of an Asset Management Plan is to ensure that assets are operated and maintained in a sustainable and cost effective manner, so that they provide the required level of service for present and future customers.

> *"The combination of management, financial, economic, engineering and other practices, applied to physical assets with the objective of providing the required level of service in the most cost effective manner".*

And an Asset Management Plan is:

> *"A plan developed for the management of one or more infrastructure assets that combines multi-disciplinary management techniques (including technical and financial) over the life cycle of the asset in the most cost-effective manner to provide a specified level of service".*

Asset management plan is "knowing" about assets, what they are, where they are, what condition they are in, how much they are worth, what level of service is expected of them and at what cost, how they are performing, what extra capacity they have, what future capacity is required, when they need to be replaced/upgrade, what will the cost be to replace / upgrade, what further works are required to meet future demand and what improvements are programmed. A brief about Asset Management Process (AMP) is enclosed in Annexure - 10.

13.2 INVENTORY OF MUNICIPAL ASSETS

The Asset Management starts with the identification and inventory of assets that the municipalities own, control, or administer and the inclusion of this listing in an orderly asset management system. In some municipalities, a register of land and other assets includes both private and public properties, a database that provides municipal government information from which to manage real estate and infrastructure use, and to administer taxes and services effectively. Maps and lists of real estate property, including surplus property earmarked for disposal are available at Local Planning Authorities, but these properties do not necessarily have assigned values. Long term planning document like Master Plan incorporates a framework for planning the use and management of physical assets especially land. There are significant differences in the availability of information because cadastral registers for land have different time spans and years of operation, and municipal authorities and communities assign different priorities to establishing effective registries.

The first stage of implementation of an asset management program for municipal

infrastructure relies on the essential element of inventory. For each element in each category of infrastructure it is fundamental to know about all as mentioned bellow:

- Available Assets
- Location of Assets
- Age of Assets
- Quantity of Assets
- Physical Characteristics of Assets

It is starting point and for the determination of the high level strategy and objectives of the program. The inventory can consist of approximations of the quantity, size, materials, and age of each category of asset. For the project level decisions more detail is necessary for condition and performance assessment. This level of inventory detail can require a commitment to a multi year program of data collection and field verification.

CLASSIFICATION

A useful distinction for the classification of properties is the division between core properties or assets needed for the basic operation of the municipality and often assigned to the municipal government by law, and surplus properties or assets that are not necessary for the normal operations of the municipal government but are still in under public ownership. Assets needed for the operation of the municipality are sometimes further differentiated according to use: necessary governmental use or social use. Governmental use would refer to the assets used in the provision of public goods and services such as municipal buildings, schools, hospitals, and police and fire stations, where the goal would be efficient provision of public services. Social use would refer to property used for parks and recreation.

SOME GUIDELINES FOR MUNICIPAL ASSET INVENTORY PREPARATION

A municipal asset inventory can be set up incrementally, based initially on existing information, and improved through consultation, campaigns and surveys. The focus should be on identifying major physical assets and subsequently on making this list publicly available. The process should be seen as an ongoing effort and should be placed under a responsible office or unit with appropriate mandate and resources. The basic approach should be to:

- List major municipal assets
- Identify properties in use by major function
- Examine current development plans and requests for the modification of status of property
    - New uses
    - Private sector interest, potential for sale, lease
    - Proposal to use the asset by other municipal or government departments
    - New public sector projects, might include public assets as well as private assets in the proposal (e.g. road project)
- . Identify properties that are vacant or otherwise indicated as surplus

13.2.1 CONDITION ASSESSMENT

Historically asset monitoring to determine condition has been subjective based on local knowledge and experience. Formal procedures now exist to assess asset condition. The development and continued use of condition assessment data will allow preparation of verifiable predictive decay curves for particular asset types and hence permit prediction of remaining life. Consideration of economic influences and other factors will also be required in the adopted life for the asset type.

By considering the current condition point on an assumed decay curve, the profile can predict the effective life (time) before failure. This failure time can by physical end of life,

minimum level of acceptable service, or limit of capacity of the asset.
Condition assessment ranks assets on a five step scale as follows:

1. Very Good - Very good condition, where only normal maintenance is required.
2. Good - Minor defects only where minor maintenance is required to approximately 5% of the asset.
3. Fair - Maintenance required returning to accepted level of service where significant maintenance is required to 10-20% of the asset.
4. Poor - requires renewal where significant renewal or upgrade is required to 20-40% of the asset.
5. Very Poor - Assets unserviceable where over 50% of the asset requires replacement.

It is not necessary to assess all assets immediately. It is only necessary to assess those that are going to be critical in the next 5 years. The extent and repetition of condition assessment will be influenced by:

- The criticality of the assets
- The type of assets
- The relative age of the assets
- The rate of deterioration of the assets
- The economic value of the outcomes to the business
- Unplanned maintenance history

Generally the older the assets the more frequent the assessment of condition is required. It is necessary to know whether failure is imminent, and if previous assessments have shown degradation, at what rate.

13.2.2 VALUATION OF MUNICIPAL ASSETS

Valuation of assets is an important consideration and challenge. Accurate information is needed on the state, the financial value, and physical and environmental characteristics of the assets that the municipal governments own or manage. The condition of municipal assets is a factor that needs to be considered since assets such as infrastructure tend to have a life cycle. A good understanding of the value of assets is needed when decisions are to be made on sale or disposal of assets, when reinvestment efforts are needed or when joint ventures, investments or partnerships are launched.

There are different methodologies for valuation of municipal assets depending on the objectives for which this is done. For record keeping purposes, properties and their physical and economic characteristics might be recorded according to the following normative criteria:

- Nominal book values, cadastral information, maps, number of property, etc.
- Replacement values (updated values to recent cost estimates, taking into consideration depreciation due to technical obsolescence and wear and tear).
- Comparative market values of property. If it is real estate property, comparative values and ranges for market transactions might be a good approximation. Rental values should be noted if relevant. For very important items with a commercial opportunity cost, engaging valuation consultants might be cost effective.
- Asset valuation with potential costs and benefits of alternative uses.
- Expected values: for properties that could have alternative economic use and that might be subject to sales, transfer or negotiation for concessions or joint ventures, the responsible official of asset management for the municipality could estimate an opportunity cost as a minimum reservation price. The information asymmetries and capacity between the local governments and the private sector are normally so high, that for purposes of transaction, open bidding processes are recommended. As mentioned above, asset management professionals could be retained in preparing internal reservation prices.
- Social and cultural value of assets: these may not easily translate into financial values,

but these should be considered and from the perspectives of different segments of a municipality. Assets such as sacred sites, historical markers or cultural treasures should be noted on inventories. Before action is taken that in any way will affect these relevant assets, very careful consideration should be given and consultations organized.

The financial valuation of properties and different forms of assets on a net present value (or cost benefit) analysis framework might be appropriate, if the property has a minimum level of value (defined as percent of total expenditures for the period, say initially 2% and upward) and depending on the potential use of the asset. For smaller valued items, a more accessible comparative conversion table could be used as the first approximation, with automatic indicators adjusted for inflation and depreciation (both physical and technical) in order to reduce administrative costs but keeping the system transparent. Capital valuation methods, returns on assets, assessment of values from different perspectives and use of property, should form part of the administrative tools of asset management.

13.3 ASSET DESCRIPTION

ULB's assets include physical assets such as land, infrastructure and movable assets, financial assets such as cash, stocks and bonds, and intangible assets such as goodwill. Under this assignment the study team focus on first category, namely the major physical (fixed) assets: **land or real estate assets**, which constitute a major portion of municipal assets, and **infrastructure** such as buildings, water supply and related systems, road networks, storm water drains, transportation and communication systems.

Considering the aforementioned Asset Management Process (AMP's), following infrastructure and land assets are identified in the ULB:

Infrastructure Assets cover accessories in the water supply system, sanitation facilities provided by the local body, storm water drains both pucca and kutcha drains, roads of different typology, various accessories involved in street lighting, solid waste equipments, vehicles and communication system etc., Sector wise assets of Udayarpalayam Town Panchayat is given in the following section.

Water Supply Sector:

All the units relating to water supply systems covering Head works, Transmission Ducts, OHT's, Reservoirs, Supply and distribution mains, House connections, Treatment units and other related appurtenances that belong to the town Panchayat. The following table highlights the list of water supply and the existing assets

Water Supply Sector:

All the units relating to water supply systems covering Head works, Transmission Ducts, OHT's, Reservoirs, Supply and distribution mains, House connections, Treatment units and other related appurtenances that belong to the town Panchayat. The following table highlights the list of water supply and the assets existing in Udayarpalayam town:

Type of Assets	Quantity (Nos.)	Remarks
Infiltration wells in River Kollidam	3	--
Sump	1	60000
Pump at Booster Stations	2 nos	7.5Hp submersible
Mains from the Source to the Booster Station	276 mts	OD PVC Pipes
Gravity main from head works	28mts	C.C. Class B pipes
OHT's	5	5.40 LL capacity
Distribution System	3" P.V.C.pipe	24 kms
Bore wells	16 nos	Provided with Mini tanks for storage
Hand Pumps	16	--
Public Fountains	58	--

Type of Assets	Quantity (Nos.)	Remarks
House Service Connections	1010	--

Sanitation Sector:

Type of Assets	Quantity (Nos.)	Remarks
Public Conveniences	2	16

Roads Sector:

Sl. No.	Road Typology	Length (in km)
1.	Surfaced Roads	
	- Cement Concrete	1.24
	- Blacktop/Asphalted	8.00
	- WBM	2.50
	Sub Total (Surfaced Roads)	***11.74***
2.	Non-Surfaced Roads	
	- Stone Slab	--
	- Gravel	--
	- Earthen	5.00
	Sub Total (Non-Surfaced Roads)	*5.00*
	Total (Municipal Roads)	**16.74**

Storm Water Drains Sector:

No.	Description	Length (km)
1.	Open Drains (Pucca)	15.00
2.	Open Drains (Kutcha)	1.50
3.	Closed Drains (Pucca)	--
	Total	***16.50***

Solid Waste Management Sector:

No.	Description	Quantity (Nos.)
1.	Power Tillers	1
2.	Push carts	4

Street Lighting Sector:

NO.	Type of Fixtures	Nos
1.	Fluorescent (Tube Lights)	334
2.	High power fixtures	2
3.	Mercury Lights	8
4.	Sodium Vapor Lamps	42

Land Assets includes both productive and un-productive assets. Productive assets include land under commercial uses such as market, shopping complex, marriage hall, community hall, lodges, hotels, cinema halls, bus stand, cycle stand, parking areas and other uses which gain considerable revenue to the local body daily, monthly or yearly.

These assets can be rented or leased for a considerable period of time. Un-productive assets cover land use under parks, play fields, pump house, over head tank, local body office building, educational use, health institutions, burial ground etc. These assets may not fetch revenue to the local body but these assets provide environmental and social benefits to the local community.

Table.13.1. List of Land assets in Udayarpalayam Town Panchayat

Sl.No	Survey No	Location	Usage as per Record	Extent (Area)	Present Status of the Land	Rate Per Sq m Rs. As of 1.4.06	Total Value Rs.
1.	266/218	Chettiar Street	Town Panchayat office RCC for Vacant Land	700	Town Panchayat office	25.00	17500
2.	22513	Trichy Road	Weekly Market	7127	Weekly Market	25.00	178164
3.	453/6	Velappasetti old Pump house	Vacant Land	901	Vacant Land	25.00	22521
4.		Edyar Pumping Station	OHT Pumping Station	200		25.00	5005
5.	269	Poosari ST	Vacant Land	200	Vacant Land	25.00	5005
6.	266/427	J.K.Road OHT	OHT Tank	400		25.00	10010
7.	473/25	Bus Stand	Bus stand	1281		30.00	8435
8.		Murthiyan Nagar	OHT	200		25.00	5005
							2,81,645

Table.13.2. List of Buildings owned by Udayarpalayam Town Panchayat

Sl.No	Name of the Building	Year of Construction	Site in area Sq.m	Plinth area of the building	Net Value as on 31 st March 2006
1.	9 Chettyar ST. Office Building	87-88	70.62	70.62	192500
2.	15 Trichy Road	99-22	73.81	73.81	9215
3.	12 Weekly Market	98-99	13.70	13.70	3925
4.	13 Trichy Road Bus stand		119.00	119.00	15470
5.	7 Pusari Street OHT	87-88	37.00	37.00	2976
6.	Murthiyan OHT	97-98	37.00	37.00	2976
7.	Edyar OHT	90-91	37.00	37.00	2976
	Total				**3,29,135**

13.4 CRITICAL REVIEW OF LAND ASSETS

Strategic use of assets can greatly enhance the ability of a local government to provide better services and engage the participation of residents to achieve the goal of a shared vision. Land based fixed assets are particularly important for the delivery of economic, social and environmental services that people are willing to pay, either through systems of taxation, or special user fees. Some of the productive land assets in the town Panchayat have been taken for review and the findings of the same are given in the following table.

Table.13.3.: Critical Review of the assets owned by Udayarpalayam Town Panchayat

Asset Details of Udayarpalayam Town Panchayat									
S.No	Name of the Asset	Nos	Area in Sq.M.	Land Value	Year of Construction	Net value	Total Asset Value	Revenue Generated	Remarks
1	**Weekly Market**	1	7127	178164	1999-2000		217914	507,000	fairly good
	Shops	12				39750			
2	**Bus Stand**	1	1281	8435	2001		23435	15000	Requires improvements to a greater extent
	Shops	3				5000			

* Land Value is estimated at a rate of Rs. 30 per sq.m in the centre area of the town.
** Construction cost is estimated at Rs.1000 per Sq.ft and a depreciation value of 8% per year.

It is clear from the above table that existing fixed assets in the town need to be utilized in a better manner to fetch more revenue to the local body. Alternate revenue mobilizing

mechanism needs to be identified in consultation with the stakeholders. Following priority actions are suggested for the revenue enhancement of the local body in consultation with the stakeholders.

13.5 PLAN FOR LAND ASSET MANAGEMENT

It is understandable from the vision statement arrived at the instance of CCBP, the stakeholders anticipated that Udayarpalayam town could be the regional node. To achieve this vision, investments need to be routed at appropriate projects. As the vision statement does not directly lay to a specific project, consorted efforts are to be plowed in to achieve the vision. City Corporate cum Business Plan is one such effort to identify projects for development and later implemented under PPP, BOT, BOOT mode. The CCBP looks the local body as a resource center rather than only service provider and tries to emulate projects that are feasible to attract private investments.

The following are the list of projects that are considered under the CCBP for the optimum utilization of land assets of the local body which in turn enhance the town as a tourist town while keeping in mind a better quality of life of the people in the town has to be achieved.

- Improvement to burial grounds (w/o gasifier)
- Improvement of existing and proposed playgrounds
- Proposed community centers/halls
- Proposed /dedicated vegetable/meat market
- Improvements to weekly markets
- Improvements to the School Buildings
- Construction of Shopping complex
- Slaughterhouse development with Treatment facility

The aforementioned projects are identified by the study team based on the consultation with the stakeholders and are proposed after conducting a reconnaissance survey of the project sites. The identified projects aim for improvement of the quality of life of the people of Udayarpalayam town in terms of basic services and specialized services. The details of the above said projects are presented in the subsequent sections of this report.

13.6 O&M PLAN FOR SERVICES

The term 'Operation and Maintenance' (O&M) has been used as a general concept covering a wide range of activities carried out by public utilities, government and communities in order to sustain their services and to maintain existing capital assets.
Specifically, in the present context:

- **Operation** refers to the procedures and activities involved in the actual delivery of services, e.g. abstraction, treatment, pumping, transmission and distribution of drinking-water.
- **Maintenance** refers to activities aimed at keeping existing capital assets in serviceable condition, e.g. cleaning of open drains, repairing public taps, keeping the street lights in burning condition.

Under this assignment a review of O&M performance of the Udayarpalayam town Panchayat has been performed through wide range of stakeholder's consultation covering core infrastructure services.

Following are the identified O&M impacts and ULB constraints during the stakeholder's consultation regarding service provision:

No	Sector	Component	Issue/ Problem Statement/ O&M Aspect	O&M Impact	ULB Constraint/ Capacity Assessment
1	Water Supply	Transmission System	Long length transmission	High Energy Charges, High Risk of System Losses	Cost Constraint, Lack of Dedicated Maintenance Staff, Lack of Energy Efficiency Monitoring System
		Distribution System	Low Coverage through HSCs	Lowered Revenue	Stringent implementation and introducing a chargeable system for PF based connections
			Unauthorized Connections	Risk of high UFW component	Lack of efficient monitoring and curbing mechanism
			System Losses - old lines	Physical losses, low lpcd, low pressure, tail end areas affected	Physical asset survey or records not available and Old system not updated
2	Sanitation	Liquid Waste	No UGSS System	Disposal into storm water drains impacts environmental degradation.	Cost constraint, Not able to provide safe collection and disposal system
				Blockage in SWD frequently	Lack of Dedicated Maintenance Staff
				Pollution on water bodies, land and air.	Lack of Environmental Management Plan and its implementation
		Solid Waste	No Door – Door Collection	Dumping of wastes in the site	Lack of Sanitary Staff, Absence of public awareness, Segregation at source not adequate
			Secondary Transportation	Double handling of wastes	Sufficient vehicles for collection & transportation is absent
			Treatment & Disposal of wastes	Composting done for Biodegradable Waste, Non-bio and Non-recyclable waste dumped causing pollution of groundwater, air and land.	Land availability constraints, Lack of infrastructure and equipment facility for disposal of non-biodegradable waste
		Public Conveniences	Lack of Toilet facility	Disposal into drains and open defecation	Cost constraints to provide facility
3	Storm Water Drain	Network Coverage	Low Coverage	Water stagnation on streets, reduced service life of roads.	Cost constraint
			Improper Network of Drains & Garbage dumping	Leads to unhygienic condition, Dumping of wastes causes SWD blockages Reduced carrying capacity Overflow during heavy flood	Absence of proper disposal points, Absence of Storm Water Drain Master Plan
4	Roads, Traffic & Transportation	Road Coverage	Low coverage	Recent developed and expansion areas less covered, % of surfaced / Paved roads are minimal	Lack of dedicated staff, Cost constraint
			Improper Maintenance of Roads	Frequent repair works, dusty road surface, hassle to commuters	Non-availability of road registers, poor workmanship, lack of skilled staff, cost constraint
			Congested roads, Traffic conflict points	Increased Travel Time, Thrust on Environment Quality	Absence of Traffic Operational & Management Plan
5	Street Lighting	Coverage	Low coverage	Average spacing of street lights are more	Cost constraint
			Lack of power saving equipments	High Energy Charges, frequent repairs & replacements of fixtures	Cost constraint, lack of energy auditing

13.7 OPERATIONAL STRATEGIES

Udayarpalayam Town Panchayat has to monitor the condition and performance of assets, and investigate any system deficiencies, which are outside the parameters of the target level of service. It would then identify the work required to correct defects and the most cost effective renewal option. Monitoring activity would include:

- Monitoring contractor performance
- Analysis of customer complaint and service problem records
- Proactive inspection of critical assets and report on condition
- Analysing condition reports provided by the Contractor during the day-to-day operation of assets and,
- As necessary, carrying out material testing to determine asset condition and decay rates.

Assets are to be operated assets in accordance with the following current operating procedures:

- Inspect assets at least on a monthly basis
- Provide appropriate supervision for installation of connections and other similar work.
- Inspect and report on condition when working on the systems.

It is always necessary to minimise asset ownership costs:

- Identify, evaluate and introduce new technologies and monitoring/control equipment that may improve operational and management efficiency and modify standards as appropriate.

Manage risk exposure:

- Provide a prompt and effective response to system failures.
- Maintaining appropriate insurance cover for key assets.
- Undertaking structural checks of key assets.

13.8 MAINTENANCE STRATEGIES

The short-term maintenance strategy for the Udayarpalayam Town Panchayat is intended to retain the current levels of service with respect to asset condition and functionality whilst minimizing costs. In the longer-term maintenance activity will be modified as necessary to reflect: -

- The age of assets relative to expected economic life cycle
- The risk of failure of critical assets
- Changes in the desired level of service
- The nature and timing of asset upgrading/development works.

To achieve this, the following maintenance activities will be undertaken:

UNPLANNED MAINTENANCE

The activities in unplanned maintenance to be undertaken are as follows:

- Maintain a suitable level of preparedness for prompt and effective response to emergencies and asset failures by ensuring the availability of suitably trained and equipped staff and service delivery contractors.
- Ensure ready availability of serviceable spare parts and equipment necessary for the prompt restoration of service.
- Respond to asset failures due to structural integrity with the initial objective of restoring service as quickly as possible by the most economic method available, making temporary repairs if major repairs or renewals are required.
- Emergency and incident investigation and works as appropriate.

PLANNED (PREVENTATIVE) MAINTENANCE WORKS

Similarly the unplanned maintenance works include the following:

Undertake a programme of planned asset maintenance as necessary to:
- Deliver the required levels of service.
- Minimise the risk of equipment failure.
- Ensure safety.
- Avoid economic inefficiencies due to deferring maintenance.

Once a defect has been identified remedial work is programmed before the risk and consequence of failure become unacceptable, with priority given to defects which:
- are life threatening
- are likely to cause premature failure prior to the next inspection
- safety is compromised, or
- If severe economic deterioration of an asset will occur.

When scheduling maintenance work it is planned to make the best use of available resources wherever possible, including coordination of multiple repair works in the same area. The upgrade and replacement of assets should be done with sizes identified in Management plans and checked by design and modeling.

The effectiveness of the preventative maintenance programmes are continuously monitored and rescheduled as necessary to achieve efficiencies. The frequency and cost of all maintenance activities are monitored wherever possible to enhance decision-making.

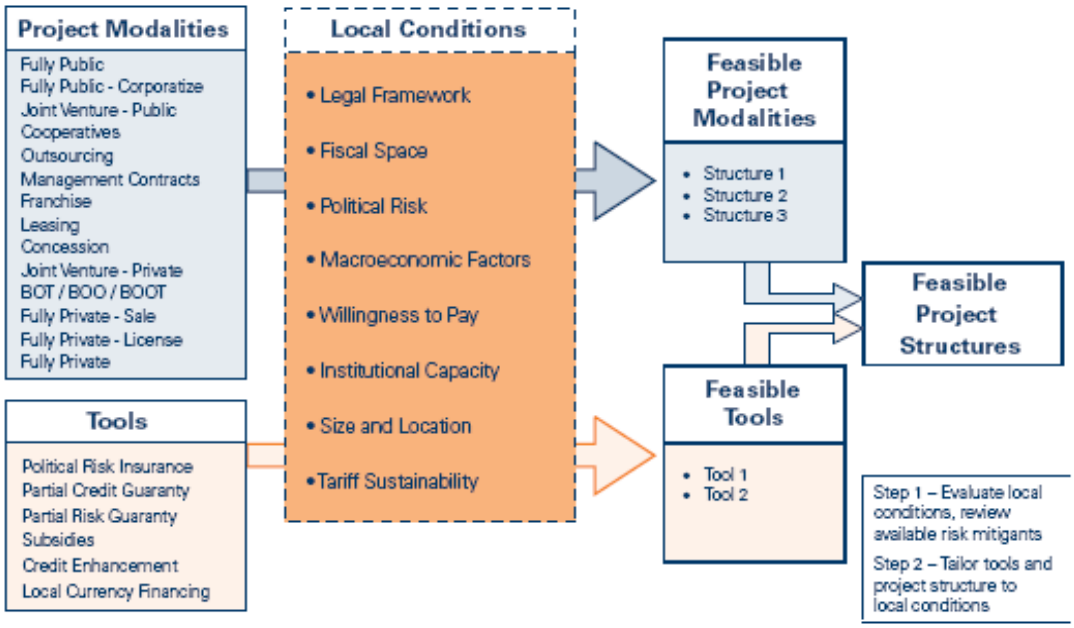
Maintenance work is aimed at ensuring the system functions properly. Many of the maintenance activities are similar and follow comparable methodologies despite occurring in different locations. Other beneficial effects also occur as a result of the maintenance e.g. clearing of refuse and debris from the watercourses and outfalls has aesthetic benefits and prevents ongoing gross contamination of the waterway.

14

PROJECT RISKS, ENVIRONMENTAL AND SOCIAL IMPACTS

14.1 PROJECT STRUCTURING OPTIONS AND ASSOCIATED RISKS

Project Structuring is an integral part of managing the lifecycle of major infrastructural projects. This process has involved the systematic identification, analysis and evaluation of risks across all fronts. The following figure illustrates the framework adopted for formulation of project structuring and identification of associated risks in any kind of infrastructure projects. The following diagram illustrates the determinants of project structuring:



14.2 PROJECT IMPACTS

Any infrastructure project improve general living standards within urban localities, they can also have associated impacts on the local environment and people. The Project structuring and associated risks can be done in three phases. The initial phase is the development and design of the project and is normally denoted as Pre-construction phase in which both the environmental and social screening can be brought out. Training for the understanding the environmental issues to the project implementing authorities by means of capacity building/create awareness on environmental issues, mitigation measures, Developing environmental and social screening formats, information sharing on good practices etc. The second phase is the construction phase, operation and maintenance phase and the last phase is the closure of the project.

14.2.1 ENVIRONMENTAL IMPACTS

Any development project is likely to have an influence on the environment. In order to predict the impacts of proposed project over the environment an Environmental Impact Assessment needs to be performed. "Environmental Impact Assessment can be defined as the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made". The purpose of the assessment is to ensure that decision-makers consider environmental impacts before deciding whether to proceed with new projects. Under this assignment the following list of sectors are identified for development:

- Water Supply
- Underground Sewerage System
- Solid Waste Management (Landfill and Composting)
- Roads and Storm Water Drain Improvements
- Construction of Bus Stands, Shopping Complex and Marriage Halls.

Depending upon the infrastructure project the impact and measures needed to safeguard from any negative impact may vary and are discussed in the subsequent sections of this report.

A.WATER SUPPLY PROJECTS

These projects involve source creation or improvement of existing sources, laying of conveying main, construction of water treatment plants, laying of internal distribution line, construction of pumping stations, construction of overhead tanks, underground sumps etc. The following aspects of environmental impacts need to be given attention while undertaking the aforementioned activities:

DEVELOPMENT AND DESIGN PHASE

POTENTIAL IMPACTS	ACTION TO BE TAKEN
Clearances	▪ All clearances required for Environmental aspects during construction shall be ensured and made available before start of work.
Riparian conflicts	▪ Regulate extraction of water to reduce the effect of downstream users
Tree cutting	▪ Try saving trees by changing the alignment ▪ Provide adequate tree protection (Tree guards) ▪ Identify the number of trees that will be affected with girth size & species type. ▪ Undertake afforestation in the nearby areas ▪ Compensatory re-plantation of trees of at least twice the number of trees cut to be carried out in the project area.
Utility Relocation	▪ Identify the common utilities to be affected such as: electric cables, electric poles, telephone cables, water pipelines, public water taps etc. ▪ Affected utilities shall be relocated with prior approval of the concerned agencies before commencement of construction activities.
Planning Temporary Traffic Arrangements	▪ Adequate actions to direct and regulate traffic shall be taken in consultation with the PIA, Dept. of Police to prevent jamming of roads during construction. While planning alternative routes, care to be taken to minimize congestion and negative impacts at sensitive receptors such as schools & hospitals.
Disposal of waste water	▪ The wastewater shall comply with the standards of TNPCB to let out into the stream/nallah/open land/irrigation purposes, and necessary permission to be obtained from the concerned department. ▪ Ensure efficient working condition of the treatment plant.
Storage of materials	▪ The contractor shall identify the site for temporary use of land for construction sites/storage of construction materials, etc.

CONSTRUCTION AND OPERATION PHASE

SYSTEMS/ IMPACTS	ACTION TO BE TAKEN
Water Head Works	
Change of stream course due to diversion channels to construct intake structures	▪ No appreciable change to stream course shall occur due to diversion channel and structures shall be constructed accordingly.
Restoring river bed/water source	▪ Ensure the restoring of river bed to its natural shape free from any construction debris that may obstruct flow.
Water quality at source	▪ Establish baseline water quality prior to initiation of construction and to be periodically monitored and reported to the Engineer.
Construction of Transmission Mains	
Protection of topsoil	▪ The top soil to be protected and compacted after completion of work, where pipelines run, including open lands and agricultural lands.
Laying of pipeline	▪ Adequate precautions should be taken while laying water supply mains to avoid possibility of cross connection with sewer lines
Water Treatment Plant / Booster Stations	
Disposal of Sludge	▪ A suitable site should be identified for the safe disposal of sludge generated at the WTP site and got approved by the Engineer. Prepare a sludge disposal plan that adheres to the same.
Distribution Network and OHTs	
Laying of distribution pipelines	▪ Adequate precautions should be taken while laying water supply mains to avoid possibility of cross connection with sewer lines.

B.UNDER GROUND SEWERAGE PROJECT

These projects involve developing the contour maps, laying of branch and main sewer lines, conveying mains, pumping stations, treatment plant etc. The following aspects of environmental impacts need to be given attention while undertaking aforementioned activities:

DEVELOPMENT AND DESIGN PHASE

POTENTIAL IMPACTS	ACTION TO BE TAKEN
Clearances	▪ All clearances required for Environmental aspects during construction shall be ensured and made available before start of work.
Disposal of construction debris and excavated materials	▪ The contractor shall identify the sites for debris disposal and should be finalized prior to the start of earthwork excavation; taking into account the following: ▪ The dumping does not impact natural drainage courses. ▪ Avoid disposal on productive land
Tree cutting	▪ Try saving trees by changing the alignment ▪ Provide adequate tree protection (Tree guards) ▪ Identify the number of trees that will be affected with girth size & species type. ▪ Undertake afforestation in the nearby areas ▪ Compensatory re-plantation of trees of at least twice the number of trees cut to be carried out in the project area.
Utility Relocation	▪ Identify the common utilities to be affected such as: electric cables, electric poles, telephone cables, water pipelines, public water taps etc. ▪ Affected utilities shall be relocated with prior approval of the concerned agencies before commencement of construction activities.
Planning Temporary Traffic Arrangements	▪ Adequate actions to direct and regulate traffic shall be taken in consultation with the PIA, Dept. of Police to prevent jamming of roads during construction. While planning alternative routes, care to be taken to minimize congestion and negative impacts at sensitive receptors such as schools & hospitals.
Disposal of waste water	▪ The wastewater shall comply with the standards of TNPCB to let out into the stream/nallah/open land/irrigation purposes, and necessary permission to be obtained from the concerned department. ▪ Ensure efficient working condition of the treatment plant.
Storage of materials	▪ The contractor shall identify the site for temporary use of land for construction sites/storage of construction materials, etc.

CONSTRUCTION AND OPERATION PHASE

SYSTEMS/ IMPACTS	ACTION TO BE TAKEN
Construction of Pumping / Lifting Stations	
Locating of vents on sewer system, low cost sanitation and sewage pumping stations	▪ While placing the vent shafts, precautions should be taken to minimize odour nuisance.
Disposal of silt/sludge	▪ A suitable site should be identified for the safe disposal of silt/ sludge generated at the Pumping / Lifting station sites, which should be away from the water bodies, residential & sensitive areas, agricultural areas and etc., and got approved by the Engineer.
Construction of Sewerage Treatment Plant	
Contamination of ground water quality	▪ Ground water quality may get contaminated due to leaching of waste water. So, the treated water quality shall comply with the standards laid down by the PCB for disposal onto land, water body or for irrigation use. ▪ Regular monitoring is required for the treated sewage quality and also the ground water quality in the near by areas and ensure compliance with PCB standards.
Impact on surrounding areas	▪ To avoid problems of foul smell polluted air, insects, noise pollution and other problems buffer zones to be provided in the form of Green Belt around the STP site.
Disposal of treated waste water	▪ The treated water quality shall comply with the standards of TNPCB before letting out into the stream/nallah/open land/irrigation purposes, and necessary permission to be obtained from the concerned department. ▪ Ensure efficient working condition of the treatment plant ▪ Prevent the pollution of stream water and other water bodies receiving STP discharge.
Disposal of Sludge	▪ A suitable site should be identified for the safe disposal of sludge generated at the WTP site and got approved by the Engineer. Prepare a sludge disposal plan that adheres to the same.

C.SOLID WASTE MANAGEMENT (LANDFILL AND COMPOSTING)

These projects may include developing land fill, compost yards with washing facilities, compound walls, purchase of vehicles for transporting the garbage, etc.,

PUBLIC HEALTH, OCCUPATIONAL HEALTH & SAFETY

Public health may be affected by the project activities by noise and dust pollution during the construction phase especially during landscaping, provision of access road and site preparation. The activities that affect public health during operation and its closure are given below:

OPERATION PHASE & CLOSURE PHASE

Emission of bio-gas, high noise levels during loading and unloading and high dust level affect public health, waste dispersion, bad odour and spreading of infectious diseases are other factors that affect public health during the operation and closure phase of the projects.

SOCIO-ECONOMIC CONDITIONS

The socio-economic impacts of the proposed projects within the local area are given below:

During the Construction phase, employment and visual issues are the two major impacts. The share of local employment needs to be considered carefully during all construction activities. The Visual impacts will result from disposal of debris and dispersion of solid waste generated from the workers.

Impact on the i) Employment and ii) prosperity in Business are the major socio-economic impacts known to occur during the Operation phase. The locals are concerned about sharing the job opportunities with others during this phase. This issue should be given

more attention with regard to training. As far as Business prosperity is concerned, the supply of spare parts and consumable from local market is expected to enhance local life quality.

Rehabilitation of landfill, Electricity generation and Treated leachate may be the other impacts during project closure period. A program for designing a final landscape and site restoration should be provided as far as rehabilitation of land fill is concerned. The electricity generated from the biogas will be supplied to the locals. The treated leachate may be reused for irrigation purpose.

FLORA AND FAUNA

The proposed activities that affect Flora and Fauna species during construction and operation phase are given below:

During the Construction Phase, Flora and Fauna species may be affected by high dust pollution and direct damage especially during landscaping, provision of access road, site preparation and removal of soil cover.

During the Operation Phase, high dust level and dispersion of solid waste affect the flora and fauna species during the project activities such as construction of new cells, loading, unloading and transportation of solid waste.

WATER RESOURCES

The proposed activities that affect water resources during construction and operation phase are given below:

Water resources may be affected due to the demand of water for soil compaction and pollution of ground water during Construction phase. Ground water may be contaminated due to the maintenance of machineries and resulting domestic waste water from workers.

Hazardous waste dumping and leachate leakages are the two major activities that affect the water resources during Operation phase. Leachate treatment unit need to be installed on a paved area to prevent ground water contamination and also a proper reuse and recycle mechanism to be considered for the treated leachate.

ARCHEOLOGY

Unseen archeological remains (if any) might be affected during landscaping and site preparation.

MITIGATION MEASURES AND MONITORING PROGRAM

Following are the mitigation measures that need to be implemented in order to reduce the potential negative impacts:

- Dust level need to be controlled during construction activities and transportation of materials.
- Proper handling of dispersed solid waste during transportation and storage.
- Proper handling and taking safety requirements for collection and storage of the solid waste to prevent odour generation.
- Taking restrict control on animals and insects (vector diseases) like dogs, cats, rats etc.
- Applying continuous cover over the cell during the operation to prevent odor impact.
- Control the existence of the scavengers at the solid waste landfill site to prevent

firing and dispersion of the wastes.

- Noise levels need to be controlled during the construction and operation activities.
- Monitoring programs need to be implemented covering monitoring of noise levels and ambient air quality.
- Implementation of safety procedures and availability of safety equipment for workers.
- Training and awareness programs for drivers and workers on proper handling of waste and personal protective equipments. Conducting routine medical exams for workers.
- Training of employees to identify hazardous waste and proper safety procedure on handling and reporting such items.
- The domestic wastewater resulting during construction and operation phases need to be collected and managed in safe manner.
- The endogenous trees or plants should be used when rehabilitant the site.
- Restrict activities as much as possible to the project site and allocate track roads for construction.
- Hunting and collection of wildlife, especially residents and migratory raptures should be strictly forbidden.

D. ROAD IMPROVEMENTS

ACTIVITIES	MANAGEMENT MEASURES
Pre-Construction Stage	
Land Acquisition R&R	▪ The acquisition of land and private properties will be carried out in accordance with the RAP and entitlement framework for the project. ▪ It should be ensured that all R& R activities are to be completed before the construction activity starts, on any sub-section of the project.
Tree Cutting	▪ Trees will be removed from the Corridor of Impact (CoI) and construction sites before commencement of construction with prior intimation to the Forest Department. Prior permission will be obtained from the District Collector. ▪ Try saving trees by changing the alignment ▪ Provide adequate tree protection (Tree guards) ▪ Identify the number of trees that will be affected with girth size & species type. ▪ Undertake afforestation in the nearby areas ▪ Compensatory re-plantation of trees of at least twice the number of trees cut to be carried out in the project area.
Utility Relocation	▪ Identify the common utilities to be affected such as: electric cables, electric poles, telephone cables, water pipelines, public water taps etc. ▪ Affected utilities shall be relocated with prior approval of the concerned agencies before commencement of construction activities.
Replacement of common amenities	▪ All common amenities such as community sources of water, bus shelters etc., will be relocated wherever necessary. The relocation site identification will be in accordance with the choice of the community and completed before the construction starts

ACTIVITIES	MANAGEMENT MEASURES
Construction Stage	
Clearance and grubbing	▪ Vegetation will be removed from the RoW before the commencement of construction and will be carried out such that the damage or disruption to flora is minimum. ▪ Only ground cover / shrubs that impinge directly on the permanent works or necessary temporary works will be removed with prior approval from the engineer. The contractors, under any circumstances will not damage trees (in addition to those already identified and felled with prior permission from the forest department)
Excavations	▪ All excavations will be done in such a manner that the suitable materials available from excavation are satisfactorily utilized. ▪ The excavation shall conform to the lines, grades, side slopes and levels shown in the drawing or as directed by the Engineer. ▪ The contractor shall take adequate protective measures to see that excavation operations do not affect or damage adjoining structures and water bodies.
Earth fill	▪ Embankment and other fill areas, unless and other wise permitted by the Engineer, be constructed evenly over their full width and the contractor will control and direct movement of construction vehicles and machinery over them.

ACTIVITIES	MANAGEMENT MEASURES
Dust	▪ All earth work will be protected in a manner acceptable to the engineer to minimize dust generation.
Compaction of soil	▪ To minimize soil compaction construction vehicles, machinery and equipment will move or be stationed in designated area (RoW, haul roads as applicable) only
Silting, contamination of water bodies	▪ Silt fencing to be provided around the stockpiles at the construction sites close to water bodies. ▪ Construction materials containing fine particles will be stored in an enclosure such that sediment – laden water does not drain into the nearby water courses.
Environmental Monitoring	▪ The contractor will undertake seasonal monitoring of air, water, and noise and soil quality through an approved monitoring agency.

E. CONSTRUCTION OF BUS STANDS, SHOPPING COMPLEX AND MARRIAGE HALLS

ACTIVITIES	MANAGEMENT MEASURES
Pre-Construction Stage	
Land Acquisition R&R	▪ The acquisition of land and private properties will be carried out in accordance with the RAP and entitlement framework for the project. ▪ It should be ensured that all R& R activities are to be completed before the construction activity starts, on any sub-section of the project.
Tree Cutting	▪ Trees will be removed from the site if arises and construction sites before commencement of construction with prior intimation to the Forest Department. Prior permission will be obtained from the District Collector. ▪ Try saving trees by alternatives ▪ Provide adequate tree protection (Tree guards) ▪ Identify the number of trees that will be affected with girth size & species type. ▪ Undertake afforestation in the nearby areas ▪ Compensatory re-plantation of trees of at least twice the number of trees cut to be carried out in the project area.
Utility Relocation	▪ Identify the common utilities to be affected such as: electric cables, electric poles, telephone cables, water pipelines, public water taps etc. ▪ Affected utilities shall be relocated with prior approval of the concerned agencies before commencement of construction activities.
Replacement of common amenities	▪ All common amenities such as community sources of water, bus shelters etc., will be relocated wherever necessary. The relocation site identification will be in accordance with the choice of the community and completed before the construction starts

ACTIVITIES	MANAGEMENT MEASURES
Construction Stage	
Clearance and grubbing	▪ Vegetation will be removed from the site before the commencement of construction and will be carried out such that the damage or disruption to flora is minimum. ▪ Only ground cover / shrubs that impinge directly on the permanent works or necessary temporary works will be removed with prior approval from the engineer. The contractors, under any circumstances will not damage trees (in addition to those already identified and felled with prior permission from the forest department)
Excavations	▪ All excavations will be done in such a manner that the suitable materials available from excavation are satisfactorily utilized. ▪ The excavation shall conform to the lines, grades, side slopes and levels shown in the drawing or as directed by the Engineer. ▪ The contractor shall take adequate protective measures to see that excavation operations do not affect or damage adjoining structures and water bodies.
Earth fill	▪ Embankment and other fill areas, unless and other wise permitted by the Engineer, be constructed evenly over their full width and the contractor will control and direct movement of construction vehicles and machinery over them.
Dust	▪ All earth work will be protected in a manner acceptable to the engineer to minimize generation of dust
Compaction of soil	▪ To minimize soil compaction construction vehicles, machinery and equipment will move or be stationed in designated area (RoW, haul roads as applicable) only
Silting, contamination of water bodies	▪ Silt fencing to be provided around the stockpiles at the construction sites close to water bodies. ▪ Construction materials containing fine particles will be stored in an enclosure such that sediment – laden water does not drain into the nearby water courses.
Environmental Monitoring	▪ The contractor will undertake seasonal monitoring of air, water, noise and soil quality through an approved monitoring agency.

14.2.2 SOCIAL IMPACTS

Social issues may arise in the proposed projects, if there is need for private land (or) government land that has been occupied or encroached upon. Normally it arises due to the implementation of project that results to:

1. Loss of assets,
2. Loss of income or means of livelihood, and
3. Indirect group oriented impacts due to loss of access to common properties and resources

For mitigating the social Impacts, the need for Resettlement and Rehabilitation plan or Social Management Plan is to be prepared when the land which is acquired /alienated or transferred results in involuntary displacement and /or loss of livelihood, sources of income and access to common properties/ resources on which people depend for economic, social and cultural needs irrespective of their legal status.

OBJECTIVES OF SOCIAL MANAGEMENT PLAN

The main objective of preparing any social management plan/ RAP should be resettlement and rehabilitating of project affected persons with the aim of improving their living standard. A base line survey can be carried to understand the social economic of the project affected persons, plans for minimizing land acquisition/ alienation and transfer of R&R by exploring alternate designs and or technology. The local body during the project appraisal will address the availability of alternate design, site and its suitability, etc and choose the alternate that requires the least land and that involves least R&R

R&R IMPLEMENTATION

It should precede the project activities and the process of R&R will be completed before the commencement of the project activities.

15 POLICY INTERVENTIONS

15.1 INTRODUCTION

Udayarpalayam is a town with a projected population of 13,250 in 2021. In addition, it is anticipated that another 10,000 will form the floating population component in the town. Re-organization of institution, improvement and capacity building programs are required to meet the needs of managing Udayarpalayam 2021. This chapter discusses the agenda for institutional reforms in town governance and urban poor. It also reviews the institutional reform initiatives already undertaken at the ULB level and State Government level to successfully implement and operate the CCBP projects.

15.2 AGENDA AND OBJECTIVE OF INSTITUTIONAL AND POLICY REFORMS

The agenda for further institutional and policy reforms should be guided by the following broad objectives:

- To institute a nodal agency, which could provide effective governance to the ULB;
- To ensure that the function and powers of this agency and its constituents, match their responsibilities and make them fully accountable.
- To enable clarity of jurisdiction of various agencies and entrusting pertinent responsibilities
- To structure administration such that it reaches the people and vice versa, to ensure effective problem solving mechanisms in place
- To evolve an effective system of town planning, keeping in view the needs in the context of Local Planning Area (LPA);
- To strengthen and build capacity within the ULB, its constituents and other agencies entrusted with relevant tasks,; and
- To make the primary focus of the system and its constituents, the functional requirements of management of Udayarpalayam;

15.3 REFORMS

The ULBs of Tamil Nadu have been generally found to be proactive in their commitment to introduce reforms at the ULB level. All these reforms may be broadly categorized under the following:

- Computerization Initiatives;
- Property Tax Reforms;
- Privatization Initiatives;
- Accounting Reforms; and
- Resource Mobilization Initiatives.
-

A brief description on the above reform initiatives and their current stage are given in the following sections of this report.

15.3.1 POLICY FRAMEWORK AND PRIORITY ACTIONS

As specified earlier, priority actions have been discussed and finalized by the stakeholders for urban management and sectoral reforms for the ULB. The following policy framework and priority actions have thus been identified based on reported

evaluations, discussions and priority actions as required and mutually agreed upon by the stakeholders:

STRATEGY

- Innovations both at policy and project levels to speed up the urban reform process.
- Reforms to have in-built mechanism of participation and commitment.
- Institutional strengthening and financial capacity building to be an integral part of the reform measures.
- Areas of reform measures include property tax, accounting and auditing and resource mobilization and revenue enhancement.

PROPERTY TAX

- Bringing transparency and uniformity in taxation policies.
- Tax policy and operational procedures should be simple and clear.
- Development of templates for property tax (for self-assessment) to increase tax collection (without levying fresh taxes), including implementation strategies.
- Mapping of properties and developing GIS-enabled property tax management system for enhancing property tax net/coverage and better administration.
- Collection of arrears through innovative ideas and approaches using tools for community participation and fast track litigation methods.
- Property tax base should be de-linked from rental value method and should be linked to unit area or capital value method.

ACCOUNTING AND AUDITING

- Accounting reforms - shifting from single entry cash based accounting system to accrual based double entry accounting system.
- Legislative changes in the accounting systems and reporting requirements.
- Designing of accounting procedures.
- Accounting manual - chart of accounts, budget codes, forms and formats, etc.
- Standardized recognition norms for municipal assets and revenues.
- Auditing of accounts should be carried out effectively and regularly to promote transparency and accountability.

RESOURCE MOBILIZATION AND REVENUE ENHANCEMENT

- Increasing revenue through measures for better coverage, assessment, billing, collection and enforcement.
- Controlling growth of expenditure.
- Improving the organization and efficiency of the tax administration system.
- Augmentation of resource mobilization/revenue generation from properties belonging to ULB for improving the overall financial health.
- Energy audit of fuel and energy consumption by various departments of ULB to minimize expenditures on fuel and energy, including energy audit and metering of street lights.
- Streamlining and strengthening of revenue base of the ULB:
    - Strengthen the fiscal powers of ULB to fix tax rates, fee structure and user charges through specific guidelines and notifications, which should find a place in the Municipal Rules. Prepare model guidelines for the city to allow greater flexibility in levying taxes, fees and user charges, borrowing funds and incurring expenditures;
    - The annual report of the ULB shall devote a section highlighting the amounts of subsidy given to a particular service, how the subsidy was funded, and who were its beneficiaries;
    - Implementation of MIS to provide relevant information on accounts, commercial and operating systems for better decision-making and information dissemination to citizens; and
    - Application of e-Governance is equally important for municipal finance.

Apart from the above, following are some of other reform measures which should be implemented to support the above identified key municipal reforms.

URBAN ENVIRONMENTAL MANAGEMENT

The costs of maintaining a healthy urban environment need to be recovered through various municipal taxes and user charges following the "polluter pays" principle. For this, the functional role of the ULB as envisaged in Item 8, 12th Schedule of the Constitution has to be resolved keeping in view the role of the Tamil Nadu Pollution Control Board, and the organizational and fiscal strength of the ULB.

ACCESS OF URBAN SERVICES TO THE POOR

Since "ability-to-pay" for the cost of environmental infrastructure service provision is an important criterion, cross-subsidization of tariffs, innovative project structuring and user/ community participation is the means to ensure access of these services to the poor. Again the functional and financial role of ULB with respect to the Items 10 and 11 of 12th Schedule vis-à-vis those of central and state government agencies need to be resolved.

15.4 URBAN GOVERNANCE

Good governance in the municipal context stands on two broad principles, viz. transparency and civic engagement and capacity building measures. Following sections highlight key elements of the above two principles of good governance specific to the ULB.

TRANSPARENCY AND CIVIC ENGAGEMENT IN MUNICIPAL MANAGEMENT

Laws/rules/regulations specific to city/local issues should be employed to facilitate effective implementation. These should be lucid and easily understood. Participatory mechanisms should be so structured that they have legal standing and administrative control. Local bodies should be responsive and innovative and involve community participation in civic engagement as follows:

- Specific code of conduct for municipal executives and elected representatives.
- Public education, resource mobilization, good leadership and transparent processes applied to municipal finance and development work.
- Closer networking with media and their engagement in creating public awareness and creating demand for good governance. Cautious engagement of private sector with continuous monitoring is necessary.
- Setting in place an active and online public Grievances' Redressal System, with automated department-wise complaint loading and monitoring system.
- Instruments to improve efficiency through enhanced technical, administrative and financial capacities.
- Credit enhancement options other than state guarantees need to be adopted.
- Preparation of annual Environmental Status Report through a multi-stakeholder consultation process.

CAPACITY BUILDING OF THE ULB

Following are some of the key aspects of capacity building measures for ULB:

- The ULB shall maintain data to generate indicators as suggested in this document for evaluating its performance.
- Prepare and conduct capacity building programmes for elected representatives, especially women representatives, with a view to enable them to focus on gender based issues.
- Promote the creation of interactive platforms for sharing municipal innovations, and experiences among municipal managers.

- Better human resource management through assessment of the training needs of personnel involved in urban administration to enhance management and organizational capabilities.
- Assessment of fund requirement and resource persons to tackle the training needs of all personnel.
- Development of training material in the local language and impact and evaluation studies of the training programmes.
- Capacity building to better position the urban local body to employ highly qualified staff and seek superior quality of out-sourced services.

As specified earlier, priority actions have been discussed and finalized by the stakeholders for urban governance for the ULB. The following policy framework and priority actions have been identified by the study team based on reported evaluations, discussions and priority actions as required and mutually agreed upon by the stakeholders.

TECHNOLOGY INTERVENTIONS THROUGH COMPUTERIZATION

- Billing and collection of taxes and user charges through e-services.
- Speed up development of e-Governance system and accounting system.
- Database management of assets, records, lands, properties, etc.

HUMAN RESOURCE DEVELOPMENT

- Staffing pattern, organizational restructuring and performance appraisal.
- Development of MIS for effective and efficient management & decision-making.
- Publication of newsletters for creating awareness and participation.
- Staff training, exposure visits and motivation programs to bring about awareness on recent developments and technologies.

CITIZEN ORIENTATION AND INTERFACE

- Conduct citizen satisfaction surveys & analysis on annual basis to assess citizen needs and demands including satisfaction levels.
- PR strategies to enhance community participation and create awareness.
- Innovative citizen complaint redressal system including e-Governance.
- Augment and strengthen new initiatives on citizen interface and orientation.
- Regular interface with citizen associations/forum to understand public needs.

The above assignment has to be carried out by the ULB with full support from the GoTN. The outcome of the above assignment shall provide clear guidelines and impetus to the towns for good urban governance.

15.5 REFORM AGENDA AND TIMELINE

In addition to the aforementioned policy framework and priority actions, the GoI has formulated a Reform Agenda to access financial assistance under the proposed UIDSSMT. Adherence to this Reform Agenda and Timeline is mandatory for accessing funds under the proposed UIDSSMT. This section provides a brief note on preparedness of the GoTN/ULB and a broad timeline.

15.5.1 AGENDA FOR REFORM (OUTLINED IN UIDSSMT)

The main thrust of the UIDSSMT strategy of urban renewal is to ensure improvement in urban governance so that ULBs become financially sound with enhanced credit rating and ability to access the market capital for undertaking new programmes and expansion

of services. In this improved environment, there would be greater possibility of public-private participation in provisioning of various services leading to more investment into the sector and better delivery of urban services. To achieve this objective, the State Governments and urban local bodies will be required to accept implementation of an agenda of reforms. The reforms spelt out under UIDSSMT fall under two categories, viz. mandatory and optional. In order to accomplish the desired reform agenda and to provide an holistic approach, it is proposed to initiate various state level and city level reforms (termed as general reforms) to facilitate smooth and effective implementation of all reforms identified/specified under the UIDSSMT Guidelines. Accordingly, the suggested reform agenda has the following set of reforms:

- General Reforms - State Level Reforms (Reform Initiatives A.1 to A.3)
- Mandatory Reforms - State Level Reforms (Reform Initiatives B.1 to B.7)
- General Reforms - Urban Local Body Level Reforms (Reform Initiatives C.1 to C.5)
- Mandatory Reforms - Urban Local Body Level Reforms (Reform Initiatives D.1 to D.5)
- Optional Reforms (Reform Initiatives E.1 to E.10)

15.5.2 MANDATORY URBAN REFORMS

STATE-LEVEL REFORMS

- Implementation of decentralization measures as envisaged in 74th CAA, 1992, of the GoI: Functions specified in Schedule 12 have been incorporated into the municipal acts. However, the functions of town planning, regulation of land use and construction of buildings, water supply and sewerage have not yet been actually transferred to the ULBs. Operationalization of this would be required through suitable institutional changes, executive orders and some legal actions.

- Repeal of Urban Land Ceiling and Regulation Act: This Act has been repelled in the State.

- Reform of Rent Control Laws: There is a Rent Control Act in the State.

- Rationalization of Stamp Duty to bring it down to no more than 5 percent within the next seven years: At present the Stamp Duty in the State is revised at 8 percent. Some states like Maharashtra and Karnataka have already reduced their stamp duty to less than 5 percent. The experience is very positive with stamp duty revenues increasing due to better compliance. The GoTN may consider reducing the Stamp Duty in a phased manner.

- Enactment of Public Disclosure Law: Public disclosure of municipal budget proposals, performance, service levels and other information required by citizens on a six-month basis through appropriate methods like display at ward/ zonal offices, newspapers, web page, etc. This will increase transparency of the ULBs and bring in efficiency. This can be done by incorporating new clauses in the Municipal Corporation and Municipal Acts.

- Enactment of Community Participation Law: Institutionalizing citizen participation in municipal affairs through community participation in different aspects of municipal administration will improve the municipal citizen interface and enhance effectiveness of administration. This also can be done by incorporating new clauses in the Municipal Corporation and Municipal Acts.

- Associating elected ULBs with City Planning and Civic Service Functions: Suitable action suggested as under 'Implementation of decentralization measures as envisaged in 74th CAA, 1992, of the GoI may be taken.

REFORMS AT ULB LEVEL

- Adoption of modern, accrual-based double entry system of accounting in ULBs: At present, the ULB maintains accounts on a cash based system. This is not sufficient to get information on the financial health of the ULB and to improve the financial management. The GoI and the Comptroller and Auditor General of India (C&AG) have developed the National Municipal Accounting Manual (NMAM). There is need to introduce modern, accrual-based double entry system of accounting in the ULB in line with the above manual. As a first step, a State-Level Municipal Accounting Manual should be prepared based on the NMAM.
- Introduction of system of e-Governance in ULBs: Introduction of e-Governance in ULBs is recommended to improve delivery of services and help them to create citizen-centric and business-centric environments for good governance. This will also be in line with the proposed e-Governance project of the GoI.

- Reform of Property Tax in ULBs: Introduction of objective based property tax system such as unit area and self-assessment systems will help rationalize the tax base. Moreover, introduction of MIS and GIS based mapping will help to bring all properties into the tax system and increase tax collection. Based on the experience of other states it may be ascertained whether any changes in the Municipal Corporation Act are needed.

- Levy of reasonable user charges by ULBs to recover full cost of operation and maintenance: At present cost recovery from urban water supply and sewerage services is relatively low and unsatisfactory when compared with the incurred O&M expenditure. Low cost recovery is one of the potential causes for poor efficiency of the services. It is necessary that user charges for these services reflect the actual costs and recover at least O&M costs.

- Provision of basic services to urban poor: Provision of basic services to the urban poor including security of tenure at affordable prices, improved housing, water supply, sanitation, while ensuing delivery of other already existing universal services of the Government such as education, health and social security is required.

15.5.3 ISSUES FOR APPROVAL OF THE GOTN

- Town Planning: Views of the ULBs should be incorporated in town planning and regulation of land use and building construction. Provisions may be made for obtaining the views of municipal councils/corporations on development plans. Size of building (by use) and layout plan will be decided from time to time through a Government Order. Necessary changes may be made in the Town Planning Act and Rules.

- Water Supply and Sewerage: Consequent to the 74th CAA, the ULBs are responsible for ensuring these services to the citizens. Different options of service management either by the ULB or by a private operator through a management contract can be explored. Necessary amendments should be carried out to the applicable Acts and Rules in accordance with set norms and standards by the GoTN/GoI in this regard.

- Reduction in Stamp Duty: Stamp Duty to be reduced to 5 percent from the existing 8 percent over the next seven years at the rate of 0.50 percent per year. The Finance Department may initiate the necessary action in this regard.

- Public Disclosure: The existing Municipal Acts may be amended to incorporate a provision for public disclosure of budgets, capital projects, revenue and expenditure, level of services, etc. The type, periodicity and method of disclosure will be as per rules made from time to time under these provisions in the Acts.

- Increasing Community Participation: The Municipal Acts may be amended to enable formation of area committees in municipal corporations and ward committees in municipal councils. Number and manner of selection of members and functions of the area/ward committees will be as per rules framed under provisions in the Acts from time to time.

- Accounting System: Amend the Municipal Act to enable introduction of the accrual-based double entry accounting system. Prepare a State-Level Municipal Accounting Manual based on NMAM. The new system should be introduced in all municipal corporations of the State.

- E-Governance: e-Governance should be introduced in ULBs of the State. It should cover the following functions in the first phase: (a) registration and issue of births/deaths certificates; (b) payment of property tax, utility bills; (c) grievances and suggestions; (d) building approvals; (e) procurement and monitoring of projects; (f) health programs; (g) accounting system; and (h) personnel information system.

- Property Tax: The applicable act should be amended to introduce the unit area and self-assessment system for property tax. Rules for introduction of the unit area and self-assessment system for property tax to be prepared under the applicable act.

- User Charges: The ULB in the identified municipalities and town panchayats should prepare an information system that provides data on O&M for water supply and sewerage services. Pricing of water supply and sewerage services should reflect actual costs and should cover O&M costs within five years. The GoTN will provide support to ULBs to implement this reform.

- Delivery of Services to Poor: The State Government should continuously support ULBs to extend basic services to the urban poor. A policy paper on this subject should be prepared.

Adherence to the above reform agenda and efficient implementation, especially the ULB level reforms, would go a long way in improving the creditworthiness of the ULB and in enhancing sustainability of the proposed capital investments. Based on the above, a suggestive timeline for the reform agenda has been developed during the study process and is furnished in Table 15.1.

Reforms already implemented by ULB would be discussed in detail during the next stake holder's consultation and also reforms which need to be implemented by the ULB and a time frame for the implementation of the same would be presented to the stakeholders for further refinement through consultation.

Table 15.1: Suggestive Timeline for the Reform Agenda

Sl.	Particulars/Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
A.	**GENERAL REFORMS - STATE LEVEL REFORMS**							
A.1	**Implementation of State Water Sector Reforms**							
	Organize Reform Workshop							
	Review Present Policies							
	Strengthen Legislative Framework							
	Review Institutional Structure							
	Review Regulatory Arrangements							
	Prepare Roadmap for Implementation							
	Implement the Roadmap							
A.2	**Review the Municipal Acts**							
	Review of Law in context of JNNURM / UIDSSMT							
	Link with Town Planning Law							
	Legal basis for DPC							
	Provision for Area Committee							
	Provision for Disclosure							
	Procedure Compliance for Amendment to Municipal Law							
	Amendment to Municipal Law							
A.3	**Development of Municipal Accounting Manual**							
	Preparation of State Accounting Manual as per NMAM							
	State Municipal Accounting Manual							
B.	**MANDATORY REFORMS - STATE LEVEL REFORMS**							
B.1	**Implementation of Decentralization Measures as envisaged in 74th CAA, 1992 of the GoI**							
	Review Present Policies							

Sl.	Particulars/Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	Strengthen Legislative Framework							
	Review Institutional Structure							
	Review Regulatory Arrangements							
	Prepare Roadmap for Implementation							
	Implement the Roadmap							
B.2	**Repeal of Urban Land Ceiling and Regulation Act**	**ALREADY REPEALED**						
B.3	**Reform of Rent Control Laws**	**NOT RELEVANT**						
B.4	**Rationalization of Stamp Duty to bring it down to less than 5 percent**							
	Preparation and Approval of Cabinet Note on Stamp Duty Rationalization							
	Implementation and Rationalization to bring it down to less than 5 percent							
	Accomplishing desired Rationalization as per the JNNURM Guidelines							
B.5	**Enactment of Public Disclosure Law** (as part of Reform Initiative **A.2**)							
B.6	**Enactment of Community Participation Law** (as part of Reform Initiative **A.2**)							
B.7	**Associate elected ULBs - City Planning & Civic Services** (as part of Reform Initiative **A.2**)							
C.	**GENERAL REFORMS - URBAN LOCAL BODY LEVEL REFORMS**							
C.1	**Enhancement of Creditworthiness of the ULB**							
	Review of Income and Expenditure							
	Identification of Steps to Increase Revenue							
	Finalization of Rules for Property Tax Assessment							
	Survey and GIS of Properties for Property Tax Assessment							
	Implementation of Resource/ Revenue Mobilization Measures							
C.2	**Improvement of Financial Management in the ULB**							
	Appoint Local CA as Consultant							

Sl.	Particulars/Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	Training of Employees on new Accounting System							
	Opening Balance Sheet							
	Parallel Accounting System							
	Shift to New System							
	Improved Expenditure Management							
	Improved Financial Management							
	Introduce Improved Audit System							
C.3	**Water and Sanitation Charges**							
	Financial Diligence							
	Measures to Improve Cost Recovery							
	Energy Savings Plan							
	Prepare Implementation Plan							
	Implement Improvement Plan							
C.4	**Development of E-Governance System**							
	Assess existing IT Initiatives							
	Develop Options to Introduce E-Governance System							
	Develop Service Delivery Strategy							
	Assessment of Functional Requirement							
	Develop Technical Options							
	Project Management Framework							
	Implementation Framework							
	Explore PPP Options							
	Initiate and/or Upgrade ULB Website							
C.5	**Devolution of Functions**							
	City / Town Planning and Building Approvals							

Sl.	Particulars/Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	Water Supply and Sewerage							
D.	**MANDATORY REFORMS - URBAN LOCAL BODY LEVEL REFORMS**							
D.1	**Accrual-based Double Entry Accounting System** (as part of Reform Initiative **C.2**)							
D.2	**Introduction of System of E-Governance** (as part of Reform Initiative **C.4**)							
D.3	**Reform of Property Tax in Urban Local Bodies** (as part of Reform Initiative **C.1**)							
D.4	**Levy Reasonable User Charges - recover Full O&M Cost** (as part of Reform Initiative **C.3**)							
D.5	**Provision of Basic Services to Urban Poor**	**ALREADY IN PLACE**						
E.	**OPTIONAL REFORMS**							
E.1	**Revision of Bye-Laws - Building Approval Process**							
E.2	**Simplification - Conversion Agriculture to Non-Agriculture Use**							
E.3	**Property Title Certification System**							
E.4	**Earmarking 20-25% Lands for EWS Housing**							
E.5	**Computerization of Land & Property Registration**	**NOT POSSIBLE TO INTRODUCE**						
E.6	**Bylaws - Rainwater Harvesting Mandatory**							
E.7	**Byelaws - Reuse of Recycled Water**							
E.8	**Administrative Reforms - Reduction in Establishment**							
E.9	**Structural Reforms**							
E.10	**Encouraging Public-Private Partnerships**							

16 TECHNICAL ASSISTANCE

16.1 INTRODUCTION

The objective of the Technical Assistance (TA) is to strengthen project management and institutional capabilities, and improve overall readiness for project implementation by the ULB. TA shall assist the ULBs, to efficiently and effectively manage, coordinate, implement, and monitor the Projects identified, including the institutional and financial reform initiatives under the CCBP. The key outcome of TA shall be (i) identification of key project personnel and creation of project management and project implementation units; (ii) training for the executing and implementing agencies to familiarize them with policies and procedures; (iii) completion of consultants' selection and prequalification of contractors; (iv) preparation of standard bid documents for works and procurement of goods, materials, machinery and supplies; (v) identification of required land and acquisition notification with disclosure to affected people issued by the implementation agencies and prepared resettlement guidelines; and (vi) introduction of institutional and financial reforms. The TA shall assist the ULBs in conducting public awareness and stakeholder consultations to improve understanding and acceptance of the Project and build consensus for introducing institutional and policy reforms outlined in UIDSSMT, whose completion is expected in March 2012.

16.2 METHODOLOGY AND KEY ACTIVITIES

As each ULB has its own historical background, institutional arrangements, financial situation and project implementation experience, the needs and readiness for capacity building will differ. To support up-front capacity building, each ULB should formulate a nodal body for the Project implementation, and to identify the department responsible for each of the three components of the Project. Key activities under each TA component include the following:

1. Component A: Project Implementation Support and Establishment of Managerial Structure

The TA shall refine the managerial and personnel structure for the ULB, and prepare a detailed ToR for the key personnel. The TA shall assist the ULB to define their clear role in undertaking activities under the CCBP. In doing so, the TA has to prepare an operational manual defining the role of each entity in implementing the Project and delegating suitable powers. Furthermore, the TA has to strengthen the supervisory capacity of DTP, TNUDF, the ULBs in monitoring activities related to project implementation.

The TA shall implement the project management systems and procedures proposed in the CCBP. They include, among others, overall project management, contract management, project performance monitoring and evaluation, procurement, recruitment of consultants, project accounting, construction supervision, fund management, and reporting. The TA has to assist the ULB in preparing for project start-up activities, including, among others, preparing of short-range action plans, recruiting and training staff, establishing a steering committee and a central-level project management unit (PMU) within DTP/ TNUDF and state-level PMUs and project implementation units (PIUs), satisfying the conditions for loan effectiveness, short listing, and recruiting of

project consultants, preparing budgets and early disbursement requests, preparing standard procurement documents and contracts, and firming up arrangements for land acquisition and resettlement.

The TA shall assist the ULB in learning about TNUDF policies and procedures for procurement, recruitment of consultants, disbursement, fund management, environmental and social safety guards, corruption prevention, auditing, reporting, and other key aspects of project operations. Furthermore, the TA need to help train the ULB personnel in planning, leading, organizing, and coordinating project activities through participatory workshops and on-the-job involvement in project management. These activities shall be carried out after an assessment of the training needs of project states and ULBs.

2. Component B: Institutional and Financial Reforms

The TA consultants need to assist the ULB in carrying out urban management, institutional, and financial reforms recommended by the GoI/GoTN. This include strengthening of ULB with severe deficiencies; initiation of water utilities arrangement in ULB; improvement of urban planning; and improvement of property taxation and user charges for such services as water supply, sewerage, and solid waste management. The following specific activities have to be undertaken in the ULB:

(i) Verify and evaluate infrastructure assets in the ULB.
(ii) Prepare and digitize the customer database.
(iii) Assess human resource capacities and deficiencies in the various sectors, and formulate options for the current employees in the sector.
(iv) Assess and register property (for tax purposes) and develop a database supported by a management information system/geographical information system to increase property tax and tariff revenues.

3. Component C: Public Relations and Stakeholder Consultation

The TA has to assist the ULB in organizing and carrying out stakeholder consultation and awareness campaigns to (i) improve public understanding and acceptance of the Project, and (ii) seek feedback and build consensus for introducing the institutional reforms recommended by the GoI/GoTN.

16.3 IMPLEMENTATION ARRANGEMENTS

First step towards implementing the projects, ULB may have to establish a tri party agreement with CTP and TNUDF. A Draft Memorandum of Agreement (MoA) is enclosed in the Annexure – 15 and 16 for review.

ULB shall be the Executing Agency for the TA, and is responsible for overall coordination with the TNUDF and CTP. A central-level steering committee and a Project Monitoring Unit (PMU) need to be established within CTP, and a state-level steering committee and PMU / Project Implementation Unit (PIU) is to be established. CTP and the TNUDF shall provide full administrative and technical support to the appointed consultants and coordinate activities with the ULB. Recently, Municipal Administration and Water Supply (MAWS) Department has issued a G.O dated 11-04-2008 on the subject of delegation of additional powers and functions to Local governments (Refer Annexure – 17 for G.O. No.61). A plan like the City Corporate Cum Business Plan (CCBP) is the first step to accomplish the G.O issued by MAWS department. ULB need to implement the CCBP identified projects under phased manner considering the priority of the stakeholders of the town in conjunction with the policy of GoTN and CTP. The implementation framework for the identified projects is given in the following sections of this report.

17

IMPLEMENTATION FRAMEWORK

17.1 AGENCIES INVOLVED

The ULBs are presently governed by seven Acts, one each for six city Municipal Corporations and one for Municipalities and Town Panchayats. The Town Panchayats which were governed by the Tamil Nadu Panchayats Act (1958) were brought under Tamil Nadu District Municipalities Act (1920) consequent on the historic 74th Constitutional Amendment Act (74th CAA) and on the basis of conformity legislations adopted by the State Legislature from 1st June 1994.

The town Administration is vested with the Local body. With the enactment of Tamil Nadu Urban Local Bodies Act 1998, a full-fledged local body came into function with an elected Chairperson and Councilors. The ULB discharges various obligatory and discretionary functions as per the provisions of the TN ULB Act, 1998, and provides various specified civic services/infrastructure facilities to the citizens of the town. Apart from the ULB, there are other Government departments and their directorates with development related responsibilities and functions. The following table provides an insight into the development related responsibilities and functions of various Government departments/institutions in the region which have a direct bearing on service provision and delivery:

Table 17.1: Development Related Responsibilities and Functions of Various State Government Departments / Institutions

Sl. No.	Name of the Department/ Institution	Responsibilities and Functions
1.	Local Planning Authority, (LPA)	▪ LPA was constituted under the Town & Country Planning Act, 1971. ▪ Responsible for development of Local Planning area. ▪ Preparation of interim, comprehensive and zonal development plans. ▪ Enforcement of the provisions of the development plan, zoning regulations and planning and building standards by way of issuing permissions for construction of buildings. ▪ Preparation of development schemes and its implementation. ▪ All Town planning functions, development controls and building / layout sanctions. ▪ Principal objectives of the authority include creation of housing stock, creation of commercial complexes, improvement of city level infrastructure, environmental improvement, parks and plantations in colonies, blocks, institutions and roadsides.
2.	Public Works Department (PWD)	▪ Responsible for construction, repair and maintenance of buildings and other related structures financed from the state and capital budget allocations of the GoTN. ▪ Also responsible for ensuring that no encroachment or structure, whether temporary or permanent is erected on the land and property under the control of PWD. It is also responsible for removal of such encroachments as per the GoTN rules. ▪ Maintaining a register of land, buildings and properties belonging to the GoTN and under the administration of PWD.
3.	Highways Department,	▪ Responsible for construction, repair and maintenance of roads, bridges, flyovers and other related structures financed from the state and capital budget allocations of the GoTN. ▪ All major arterial roads and link roads that enable links to other parts of the district and state are under the control of the Highways department.
4.	Tamil Nadu Water Supply and Drainage Board	▪ Responsible for construction and maintenance of water supply (combined), sanitation and sewerage schemes on behalf of local bodies at ULB cost and in

Sl. No.	Name of the Department/ Institution	Responsibilities and Functions
	(TWAD)	cases of CWSS, appropriate bulk supply charges.
5.	Water Resources Organization, (WRO), GoTN	▪ Responsible for maintenance of major rivers / tanks/ irrigation canals and construction and maintenance of major dams including Rain water Harvesting Works under the ownership of PWD within the state.
7.	Tamil Nadu Pollution Control Board, (TNPCB)	▪ Responsible for pollution control and environmental protection ▪ Dealing with environmental monitoring, certification/clearances and pollution control in the State ▪ Also undertakes environmental planning studies, district profiles and environmental management plans
8.	Directorate of Town & Country Planning, (DTCP)	▪ Advises the GoTN on matters pertaining to urban and regional planning ▪ Supervises the functioning of the respective Local Planning Authority
9.	a) Industries Department, GoTN b) Small Industries Development Corporation (SIDCO), GoTN	▪ Responsible for planning and establishment of industrial zones in the State. ▪ Responsible for development of industrial estates and industrial areas in districts, creation of industrial infrastructure and amenities there in.
10.	Tamil Nadu Tourism Development Corporation, (TTDC)	▪ Responsible for identification and development of tourism importance sites, publicity and development of infrastructure facilities. Arrangement of different tourism packages covering different tourist sites.
11.	Tamil Nadu Slum Clearance Board, (TNSCB)	▪ Develops improvement schemes for notified/regularized slum settlements in the state of Tamil Nadu; and ▪ Infrastructure provision is financed through loans and grants from GoTN and GoI.
12.	Tamil Nadu Housing Board, (TNHB)	▪ Responsible for construction of Group tenements and individual houses for Low, Middle and High-Income Groups.
13.	Tamil Nadu Electricity Board, (TNEB)	▪ Responsible for provision of electricity and maintenance within the state.
14.	Tamil Nadu State Transport Corporation, (TNSTC)	▪ Responsible for provision of transport facilities through operating buses to the various destinations within state and to neighboring states as well. ▪ Responsible for administration and maintenance of buses owned by the TNSTC.
15.	Hindu Religious and Charitable Endowments Administration Department, (HR&CE), GoTN	▪ Responsible for administration and maintenance of Temples within the state of Tamil Nadu.
16.	1. Archaeological Survey of India (ASI), GoI 2. State Archaeological Department, GoTN	▪ Responsible for identification, protection and preservation of ancient monuments of national and state importance. ▪ Also responsible for excavation of new sites of archeological importance.

Source: Analysis

Following table provides an insight into the institutional responsibilities, including the roles played by the private sector for various urban infrastructure and services:

Table 17.2: Institutional Responsibility - Urban Infrastructure

Urban Infrastructure	Planning and Design	Construction	Operation and Maintenance
Water Supply	Local Body/TWAD	Local Body/TWAD	Local Body
Sewerage	Local Body/TWAD	Local Body/TWAD	Local Body
Sanitation	Local Body	Local Body	Local Body
Storm Water Drainage – *Major Drains & Canals*	PWD/WRO	PWD/WRO	Local Body
Storm Water Drainage & Related Structures along major roads/highways	Highways Department	Highways Department	Local Body
Storm Water Drainage – *Minor Drains*	Local Body	Local Body	Local Body
Solid Waste Management	Local Body	Local Body	Local Body with Private Sector Participation
Roads (including Flyovers) - *Major Roads*	Highways Department	Highways Department	Highways Department

Urban Infrastructure	Planning and Design	Construction	Operation and Maintenance
Municipal Roads (including Flyovers) - *Minor/Internal Roads*	Local Body	Local Body	Local Body
Street Lighting	Local Body	Local Body	Local Body with Private Sector Participation

Source: Analysis

17.2 PROJECT FORMULATION

Pursuant to identification of the required investments, development of Detailed Project Reports is an important activity that will essentially jump-start the pre-implementation process. The following recommendations are made to ensure effective project formulation:

- A "Project Formulation & Design Coordination Committee" at the regional level to cover all the identified ULBs may be instituted which may be composed of senior engineers from relevant departments, boards and experts who are involved in related engineering, research and development activities
- A central design database shall be developed by the Committee containing the following information:
  - Design infrastructure (specifications and drawings) from earlier contracts and on the existing system.
  - Design information on the proposed improvements.
  - Details and data on surveys and field investigations performed (topographical/ geotechnical /traffic volume counts, etc. as applicable).
- The aforementioned database shall be upgraded and validated into a "Project Implementation and Commissioning Database", which is explained in the following section.
- The Committee shall also ensure efficient and reliable data sharing between the various entities that are involved in preparation of the projects for subsequent implementation; this measure is intended to mitigate and possibly prevent/ significantly reduce future rework and ensure timely implementation in a cost effective manner.
- It is also recommended that the aforementioned Committee be involved in the implementation stage to ensure that the design intent is conveyed into system implementation, operation and maintenance.

17.3 PROJECT MANAGEMENT

It is recommended to appoint a Project Management Consultant (PMC) who will be entrusted with, but not necessarily be limited to, the following responsibilities:

- Overall project management including financial (specific to project-related investment) management.
- Field coordination of capital works between the client, contractor and design consultant to ensure that the approved design intent is conveyed into implementation and that system operation reflects the same.
- Quality control and specification compliance in all spheres of equipment, labor, material and construction methods.
- Verification and provision of critical decision-making support and recommendations on change orders and/or physical contingencies.
- Facilitate approvals from pertinent authorities for implementation, commissioning and licenses to operate.
- Enforce stringent adherence to an Environmental Management Plan that should be developed specific to each project/sectoral improvement.

- Facilitate creation and operation of a “Project Implementation & Commissioning Database” which shall contain at a minimum, the following information:
  - All information from the Central Design Database;
  - Documentation pertaining to the present project:
    - Design
    - Specifications
    - Drawings
    - Change orders
    - As-built drawings
    - Communication/correspondence files.
- It is also imperative for the Project Management Consultant (PMC) to perform the aforementioned responsibilities to the highest degree of quality since this database will be the ultimate record of the project for future upgrades/modifications.
- Specific attention needs to be paid to documentation/correspondence files since these files will provide future insight to the past chronology of events, issues, resolutions and other relevant information.
- The PMC must also facilitate and assist in implementing a system for sequentially and chronologically appending future modifications to the database, so that all changes made are accurately reflected and available for future reference.
- The PMC should involve the ULB officials in the process so as to take up further such projects bythemselves.