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 was 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 was 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 was to prepare consensus-based city corporate plan indicating policies, programmes, strategies and funding mechanisms to meet the development requirements. The corporate plan was 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

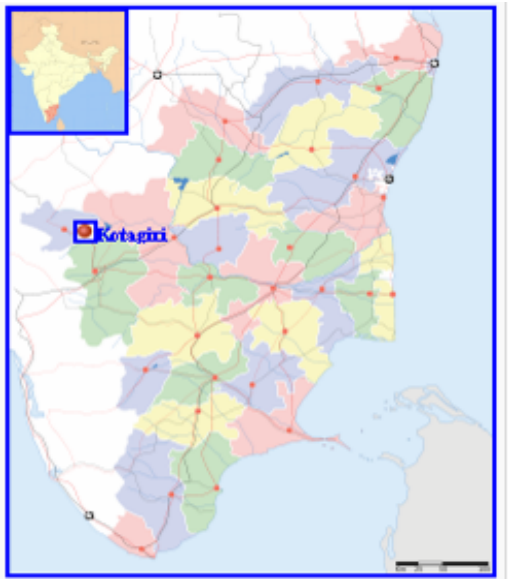
- Rapid Urban Assessment (RUA) Report, including demand assessment of Identified Projects and Strategies towards preparation of the CCBP for Kotagiri Town Panchayat was submitted. The report comprised of a review of town's economic development, physical planning and growth management issues, physical 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 KOTAGIRI

2.1. REGIONAL SETTING

Kotagiri, a taluk head quarters well known for its best climatic condition in Nilgiris, Kotagiri is the third Hill station of the Nilgiris plateau. Kotagiri attracts tourists from many parts of world. It acts as a gate way to the Nilgiris. It is bounded on the North by Nedugula Village. In the south Jacknarai Village forms the town boundary. In the east and west Konnavakorai and Naduhatty village are the physical boundaries. It is about 30 km from Udhagamandalam, 24 km from Coonoor and 33 km from Mettupalayam and well connected by roads. Kotagiri is comparatively less built up areas and commercial activities. The total extent of Kotagiri is 30.93 sq.km. and it constitutes 46 rural habitations. It is the only Special Grade Town Panchayat in the Nilgiris District. This 30,000 populated town is divided into 21 wards and 46 blocks.



Source: www.wikipedia.com

2.2. LOCATION AND LINKAGES

Kotagiri is a Special Grade Town Panchayat town in the Nilgiris District in the state of Tamil Nadu. Kotagiri is a serene town in the Nilgiris Hills, 30 km away from Ooty district headquarters. It is located on the North Eastern crest of Nilgiris Plateau at an average elevation of 1793 metres (5882 feet) above MSL.

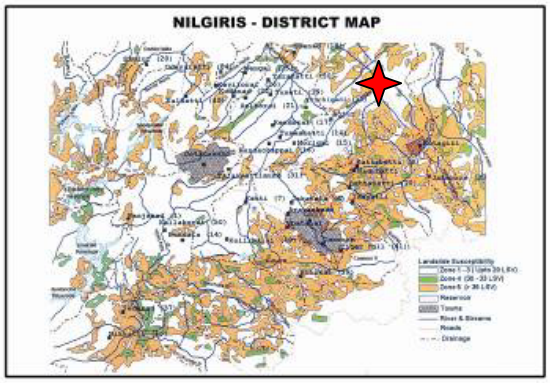


Table 2.1 Salient Features of Kotagiri Town

TOWN	**KOTAGIRI**
District	Nilgiris
Area	30.93 sq. km.
Geographic Location	11°43'N 76°88'E Elevation : 1793 m above MSL
Population	29,192 (year 2001)
Connectivity	**Road:** Frequent bus services connect the town with Mettupalayam, Coonoor, Udhagamandalam and other rural centres in the northern part of state. **Rail:** Nearest Railway station is located at Coonoor.
Climate	Tropical - Max. 37°C, Min. 24°C; Winter- Max. 31°C, Min. 19°C; Annual Precipitation: 1960 mm.

Kotagiri enjoys a climatic advantage over Ooty in that it is protected by the Doddabetta range from the onslaught of the south-east monsoon. Kotagiri with its bracing climate occupies best position in the Nilgiris and the second best in the world amongst the hill stations. Kotagiri town is well connected by the State Highway, Major District Roads and local roads. State Highway (Ooty to Mettupalayam) forms the major road connectivity to Kotagiri town.

2.3 PHYSICAL CHARACTERISTICS

2.3.1 GEOGRAPHY

Kotagiri is located on the North Eastern crest of Nilgiris Plateau and it is surrounded by Ghats with sloping fields in which numerous tea estates and thick woods adds to its beauty. Also it is encircled with reserve forests at its east and northeastern directions. Kotagiri falls in the coordinates of 11.43° N 76.88° E. It has an average elevation of 1793 meters (5882 feet) above MSL. The town has undulating terrain, with steep hills and fantastically narrow valleys with numerous rivers and rivulets running in all directions with a few fine waterfalls.

2.3.2 CLIMATE

Monthly averages			
January	Avg Low: 19°	Avg H: 31°	Avg Precp: 0.37 cm
February	Avg Low: 20°	Avg H: 34°	Avg Precp: 0.62 cm
March	Avg Low: 22°	Avg H: 36°	Avg Precp: 1.78 cm
April	Avg Low: 24°	Avg H: 37°	Avg Precp: 4.18 cm
May	Avg Low: 24°	Avg H: 35°	Avg Precp: 3.91 cm
June	Avg Low: 23°	Avg H: 32°	Avg Precp: 1.99 cm
July	Avg Low: 22°	Avg H: 31°	Avg Precp: 1.94 cm
August	Avg Low: 22°	Avg H: 32°	Avg Precp: 2.55 cm
September	Avg Low: 22°	Avg H: 33°	Avg Precp: 3.52 cm
October	Avg Low: 22°	Avg H: 32°	Avg Precp: 12.42 cm
November	Avg Low: 21°	Avg H: 30°	Avg Precp: 10.15 cm
December	Avg Low: 19°	Avg H: 30°	Avg Precp: 2.59 cm

Source: www.weather.msn.com

Kotagiri enjoys a pleasant climate throughout the year. Due to the presence of high mountain ranges, southwest monsoon is not very strong but northeast monsoon causes heavy downpour during the months of October and November. The region experiences four main seasons:

- Cool Months - December to February
- Summer Months - March to May
- Windy Months - June to August and
- Rainy Months - September to November

Kotagiri experiences an average rainfall close to 2000 mm in a year and its temperature ranges from 19°C in the winter months of December-February to 35°C in the summer months of April-June. The temperature in November will be between 21-30°C.

2.3.3 SOIL TYPE

Predominant type of soil prevail in this region falls under three major types - (1) clay, (2) clayey loam and (3) loam with laterite sub-soil. The depth of the soil usually varies from one to three feet and that of the sub-soil from 10 to 14 feet. The sub- soil is invariably porous. The report of the All India Soil and Land Use survey carried out by the Central Soil Conservation Board includes the Nilgiris Region in the Red and Laterite soil region II and classifies the soil of the plateau as Ootacamund soil series. In this region soil is mainly derived from igneous and metamorphic rocks.

2.4 HISTORY AND GROWTH

Kotagiri, although having no written history of the pre-British period, has been around for eons possibly. The area just below Coonoor and the slopes of the Nilgiris hills has been the traditional home of the "kota" tribes. The name ‘Kota-giri’ itself means ‘mountain of the kotas’. While the todas are the traditional agriculturists of the Nilgiris, the kotas are the traditional artisans and are experts in the art of pottery and terracotta baking. The ‘kota’ tribe is known for their reclusiveness and their reluctance to meet or mix with any outsider. They currently number just around a 1000 members, and are fast declining. After the forgotten expedition made by Keys and McMohan to the Nilgiris, two civil servants of the Madras Government, J.C. Whish and N.W. Kindersley, made a journey to the hills in 1819. They went through a pass in the hills (now the village of Kil Kotagiri), and as reported back to their superiors, had “discovered a tableland possessing a European climate”. They called the tableland ‘Kotercherry’. Soon after, the Collector of Coimbatore, John Sullivan, himself journeyed into the hills and built himself a home in Kotagiri. He was the first European resident of the Nilgiris hills. On his suggestion, the Madras Government opened a ‘sanatorium’ in Ooty and started the practice of moving the whole government to the hills during summer. With the town becoming their personal health resort, several Englishmen followed and settled here. The environment could have been to them reminiscent of the valleys and dales of old England which they had left behind for service to the King/Queen.

Nevertheless, Kotagiri remained the first choice for homesick Englishmen wanting to settle in the hills. The area was of a pleasant climate of neither extreme unlike Ooty or Coonoor, which were colder. The climate was for them, ‘like home’. The plateau also had more of a warm wind than rain through the year. John Sullivan was followed by others including numerous elite like the Marquis of Dalhousie, and by the 1830s, there were some twenty bungalows built around here. Kotagiri was neglected only when the new Ghat road was built from Mettupalayam at the foothills to Coonoor. Until then the only way to get to Ooty was the horse trail that led through Kotagiri. This trail was built in 1821 by Evan McPherson and was the only way up till around 1870 when a proper road was built. Kotagiri today, is one of the smaller towns in the Nilgiris hills and remains relatively unknown to outsiders. Kotagiri however has many firsts to its name. It has the distinction of being the first area in the Nilgiris to be discovered and settled by the English Government, to use as a summer retreat before it sank into anonymity, and before the other two towns of Ooty and Coonoor took over in terms of popularity.

2.5 AREA AND POPULATION

As per 2001 census, Population of Kotagiri Town Panchayat is 29,192. The ward wise population details of the town is given in the below table. Of the total population, 14,299 are males and 14893 are female's. 258 tribal peoples and 7823 – Schedule caste peoples are living in this Town Panchayat. However, a recent enumeration of population is raised to around 35,000 and these people are living in 8690 Houses in 46 Hamlets out of which 20 Hamlets are in slum areas. The town constitutes of 21 wards. Males constitute about 49% of the population and females 51%. In Kotagiri, 10% of the population is under 6 years of age.

Table 2.2: Ward wise Population in Kotagiri Town Panchayat – 2001 Census

Ward	Total Households	Total Population	Male Population	Female Population	Gender Ratio
1	408	1,633	763	870	1,140
2	318	1,231	599	632	1,055
3	280	1,096	524	572	1,092
4	125	536	272	264	971
5	333	1,310	631	679	1,076
6	435	1,692	854	838	981
7	491	1,973	995	978	983
8	397	1,583	731	852	1,166
9	412	1,544	738	806	1,092
10	245	937	462	475	1,028
11	265	1,374	629	745	1,184
12	275	1,306	646	660	1,022
13	320	1,260	627	633	1,010
14	299	1,049	510	539	1,057
15	241	925	451	474	1,051
16	582	2,314	1,134	1,180	1,041
17	485	2,053	990	1,063	1,074
18	322	1,299	667	632	948
19	377	1,466	727	739	1,017
20	409	1,625	838	787	939
21	251	986	511	475	930
Total	**7,270**	**29,192**	**14,299**	**14,893**	**1042 (Avg.)**

Source: Census of India 2001

Table 2.3: Population and Growth Trend in Kotagiri Town Panchayat

Year	Population		Growth rate in %	
	Total population	Variation	Decadal	Annual
1951	12,640	--	--	--
1961	15,509	2,869	22.70	2.27
1971	18,909	3,400	21.92	2.19
1981	24,177	5,268	27.86	2.78
1991	29,557	5,380	22.25	2.22
2001	29,192	-365	-1.23	-0.12

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

2.5.1 GENDER RATIO

Kotagiri has an average gender ratio of 1042. Of the total 21 wards, highest is in the eleventh (11) ward and eighth (8) ward, which is about 1184 and 1166 respectively.

Table 2.4 Gender Ratio –Kotagiri Town Panchayat

Year	Total Population	Male	Female	Females per Thousand Males
1991	29,557	14,775	14,782	1000
2001	29,184	14,285	14,899	1042

Source: Census of India 1991 and 2001

2.5.2 LITERACY RATE

Kotagiri has an average literacy rate of 75%, higher than the national average of 59.5%. Male literacy is 82%, and female literacy is 68%.

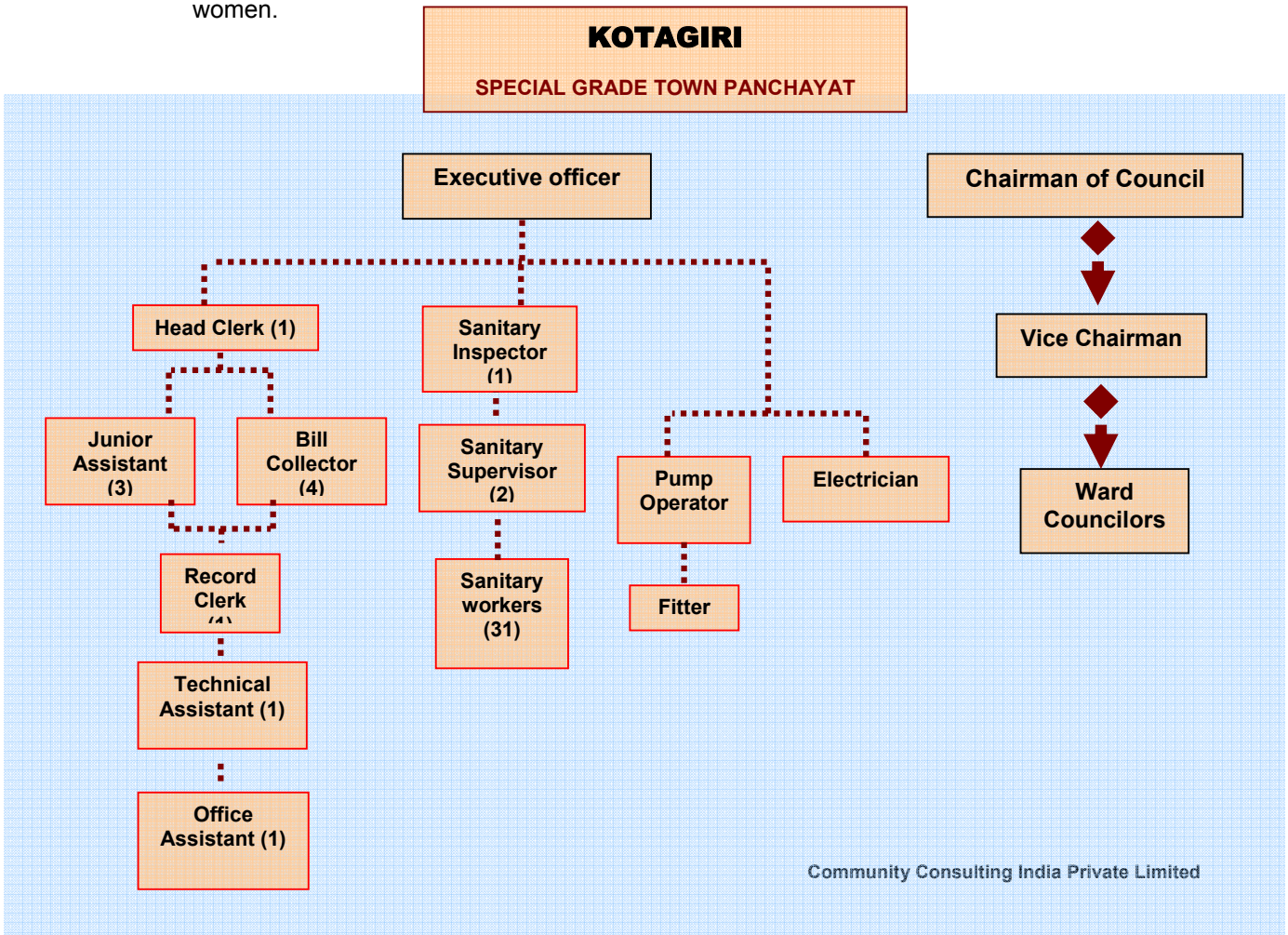
Table 2.5: Literacy rate: Kotagiri Town Panchayat

Year	Parameters	Male	Female	Total
1991	Population	14,775	14,782	29,557
	Literate	11,135	8,478	19,613
	% of Literate	75.36%	57.35%	66.36%
2001	Population	14,299	14,893	29,192
	Literate	11,817	10,246	22,063
	% of Literate	82.64%	68.80%	75.58%

Source: Census of India 1991 and 2001.

2.6 URBAN GOVERNANCE

Kotagiri Town Panchayat was constituted during the year 1932. Then it was upgraded as I[st] Grade Town Panchayat on 27-09-1950, again on 16-06-1967 the town panchayat was upgraded to Selection Grade status. Later it was upgraded as Special Grade Town Panchayat from 09-06-1993 onwards. Then, on 14-06-2004, this Town Panchayat was declassified as Special Grade Village Panchayat and from 14-07-2006 onwards. It was again reclassified as Special Grade Town Panchayat. Kotagiri town is constituted by 46 habitations which are predominantly exhibiting rural character. Kotagiri is divided into 21 wards during the year 1996. There are 21 ward members including a chairperson. Out of 21 wards, 5 wards are reserved for general women and 6 are reserved for schedule caste in which 2 wards are reserved for schedule caste women.



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 and capital investment estimation and outlay is the projection of population. Projection of the future population for the Kotagiri 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 landuse and land availability for growth including proposed plans and potential for significant change in landuse (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.

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)

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

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 Kotagiri 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 Kotagiri Town Panchayat

Year	Area	Census Population	Decadal Growth Rate	Density
	sq.km.	pers.	%	pers./sq.km.
1951	30.93	12,640	--	409
1961	30.93	15,509	22.70	501
1971	30.93	18,909	21.92	611
1981	30.93	24,177	27.86	782
1991	30.93	29,557	22.25	956
2001	30.93	29,192	-1.23	944

Source: Analysis based on the Data provided by Kotagiri Town Panchayat; 2007

3.3 PROJECTION OF FUTURE POPULATION

Based on the aforementioned methodology and evaluation performed, population has been projected for the Kotagiri 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 Kotagiri Town Panchayat and the evaluation of projection methods (pilot projection) are enclosed as Annexure – 1. A comparison of results of population projection for Kotagiri Town Panchayat is shown below in Table 3.2.

Table 3.2: Population Projection for Kotagiri Town Panchayat – Comparison

Year	Census Information	Arithmetic Increase	Geometric Increase	Incremental Increase	Linear Series
1951	12,640				
1961	15,509				
1971	18,909				
1981	24,177				
1991	29,557				
2001	29,192				
2007		31,178	26,840	30,790	33,194
2010		32,171	25,735	31,480	34,309
2011		32,502	25,378	31,694	34,681
2021		35,813	22,061	33,387	38,400
2025		37,137	20,860	33,838	39,888
2031		39,123	19,179	34,272	42,120
2040		42,103	16,908	34,377	45,467
2041		42,434	16,673	34,349	45,839
2051		45,744	14,494	33,617	49,558
2057		47,730	13,326	32,789	51,790
2061		49,054	12,600	32,076	53,277

3.4 RECOMMENDED PROJECTED POPULATION

The projection of future population has been performed for the Kotagiri 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 and Linear Series' are the optimal projections for the purposes of planning for urban infrastructure projects. Thus, it is recommended to select the higher projected value of the aforementioned methods, i.e. 'Linear Series' as the design population for the respective project design stages and vision period. The recommended projected population is given in the adjacent table:

Table 3.3: Recommended Projected Population

Year / Stage	Census Population	Recommended Projected Population
1951	12,640	
1961	15,509	
1971	18,909	
1981	24,177	
1991	29,557	
2001	29,192	
2007		33,194
2010		34,309
2011		34,681
2021		38,400
2025		39,888
2031		42,120
2040		45,467
2041		45,839
2051		49,558
2057		51,790
2061		53,277

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 town;
- 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 landuse pattern and possible significant change in landuse over the project period (generally 30 years); and
- Growth rates published by the Department of Census, GoI, and are characteristic/specific to similar towns.

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 analyses, 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 Kotagiri 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

OUTLINE OF MASTER PLAN

The GoTN has notified Local Planning Area (LPA) for Kotagiri, extending over an area of 30.93 sq. km under the Town and Country Planning Act, 1971 under section 10(4) by

Government of Tamil Nadu in their G.O. Ms. No. 1634 F.D.L.A dated 08.07.1974. This LPA area exclusively consists of Kotagiri Town Panchayat area only. First Master Plan for Kotagiri was prepared by Directorate of Town and Country Planning (DTCP), and received the final approval in 1995. Given the trends in development and spatial growth, a Reviewed Master Plan for Kotagiri town, for 2015, is under approval from DTCP.

EXISTING AND PROPOSED LAND USE

Existing Land-Use Pattern: The Master plan for the town prepared in 1986 was revised in 2005. Review of the land-use pattern of Kotagiri LPA for 2005, indicates that approximately 7% of land falls under the developed use category as against 6% in 1986. At present, approximately 6% of developed area is put to residential use. Details of land-use pattern and variation are shown in Table 4.1.

Table No. 4.1: Existing Land use Pattern in Kotagiri LPA (Year 1986 and 2005)

Landuse Type	Year 1986		Year 2005	
	Area in Ha	% to Total	Area in Ha	% to Total
Residential Use	159.57	5.16	175.50	5.68
Commercial Use	12.99	0.42	13.64	0.44
Industrial Use	11.17	0.36	12.00	0.38
Education Use	13.00	0.42	15.00	0.49
Public & Semi-Public Use	11.82	0.38	12.00	0.38
Sub Total (Developed Area)	*208.55*	*6.74*	*228.14*	*7.37*
Agriculture & Vacant	2,884.45	93.26	28,64.86	92.63
Sub Total (Undeveloped Area)	*2,884.45*	*93.26*	*2,864.86*	*92.63*
Total	**3,093.00**	**100.00**	**3,093.00**	**100.00**

Source: Master Plan for Kotagiri, 1986 & 2005

Area under agricultural use has decreased by 20 Ha as compared to 1986. There is a marginal increase in the area under residential use, resulting in increased density of the existing residential areas.

Proposed Landuse Pattern: The Local Planning Authority has prepared the Review of Master Plan for Kotagiri LPA for the horizon year 2015. This plan indicates that approximately 69% of land is being put to Agro Industrial use. It is followed by a share of 15% for reserve forest. About 8% of land is proposed for residential use, and 5% area for Multiple Use Zone. Proposed land-use pattern is furnished in Table 4.2:

Fig 4.1: Existing Land use Pattern: Kotagiri LPA'2005

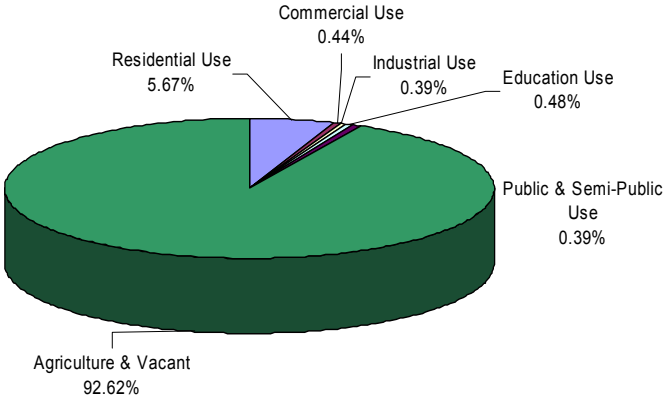


Table No. 4.2: Proposed Landuse Pattern in Kotagiri LPA (Year 2015)

Land use Type	Area in Hectares	% to Total Area
Primary Residential Zone	248.00	8.00
Multiple Use Zone	166.00	5.39
Primary Vegetative Zone	5.00	0.16
Agro – Industrial Zone	2,134.00	69.00
Reserved Forest	482.00	15.58
Wooded Area	45.00	1.45
Agricultural Use Zone	13.00	0.42
Total	**3,093.00**	**100.00**

Source: Revised Comprehensive Development Plan for Kotagiri, 2015

About 73 hectares of additional area is proposed for residential use over a period of 10 years, assuming a gross density of 150 persons per hectare. In order to encourage Plantation of Tea, Coffee, Cinchona, Rubber and other forest products, 2134 hectares of land has been reserved in the proposed land use zoning.

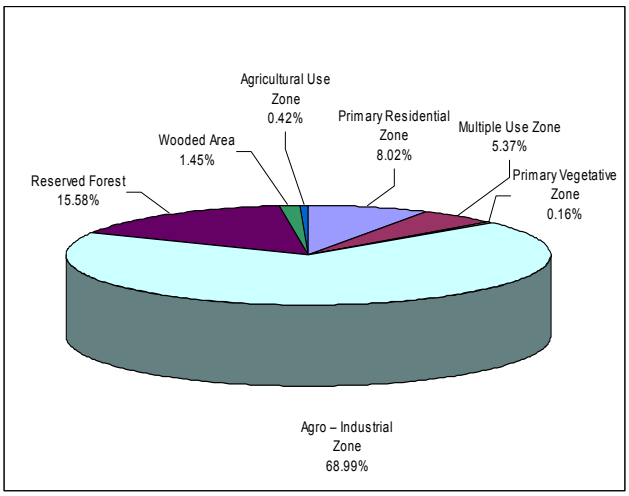
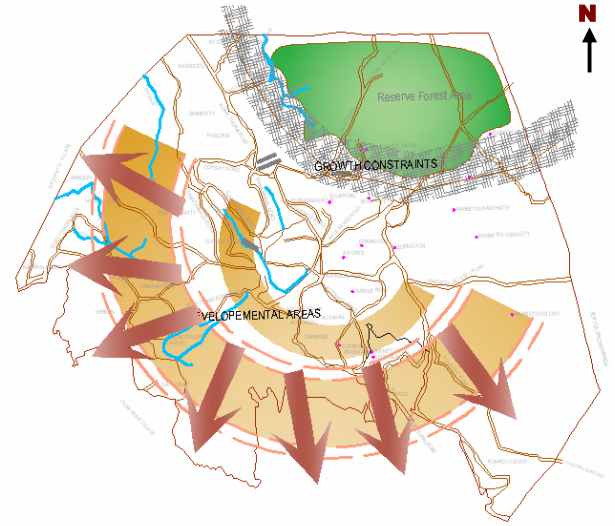


Fig 4..2: Proposed Landuse Pattern: Kotagiri LPA'2016

GROWTH AREAS AND DIRECTIONS

Kotagiri's development revolves around the bus stand, market in the wards 7, 11, 18, 19, and 21. Rest of the wards are predominantly of rural in character hence development activities are lesser as compared with the central area.

Subsequently, development occurred in the south and southwest portion of the town since in the north and northeastern part of the town is covered with reserve forest. Also the southern side has gained prominence over the last two decades with the establishment of government offices and institutional buildings. As in case of most of the regions, Kotagiri's growth pattern is also guided along the major transportation corridors i.e. State Highway from Mettupalayam to Udhagamandalam.



GROWTH CONSTRAINTS

Constraints: Major growth constraint for Kotagiri is the scarcity of land for development since the topography of the town is made of deep valleys and reserve forests. This has placed excess pressure on provision of infrastructure services resulting in deteriorated quality of life in recent years.

Specifically very high residential density pattern is observed in the wards 7 and 11. Some of the hills now look like concrete jungles (see adjacent fig.). The actual density in this area is observed to be high in view of the commercial establishments located in and around the market and bus stand. Rapid conversion of activities to mixed land use and lack of open spaces adversely affects the identity and sustained growth of Kotagiri.

POTENTIAL FOR DEVELOPMENT

Growth potential for development needs to be explored at the regional level within the LPA. Kotagiri has a conducive climate to attract tourist from all over the world but it is not been fully utilized. Tourism importance of Kotagiri is technically unknown to the rest of the world. There is a need to capitalize on the growth potential nodes in the LPA, through transportation linkages and special development areas, to increase the spatial growth potential of the town. Development potential of the region is linked to its economic and agro-industrial base. Therefore, a comprehensive program to review and revamp certain sick industries (Tea estates) in the region is also required.

4.2.2 WATER SUPPLY

ASSESSMENT OVERVIEW

The first protected water supply to the town was commenced during 1972 by the TWAD Board at Elada Village. It is located at a distance of 16 km from the town. Under this scheme Kotagiri receives 1.70 LL of water daily.

Service Reservoirs: At present there are 2 OHTs with a total storage capacity of 2.0LL. The ULB has also constructed 61 nos. of 3,000 litres to 5,000 litres capacity mini tanks at various locations. Table 4.3 presents the storage capacity details of the existing service reservoirs of the distribution system.

Table No. 4.3: Existing Storage Capacity

Type of Reservoirs	Quantity (Nos.)	Capacity (LL)
GLR	2	1
Mini tanks	61	(3,000 to 5,000 litres)
Sump	1	0.3

Source: Kotagiri T.P; 2007

Other Sources: Apart from Elada scheme, 14 gravity schemes are also installed in Kotagiri. Using these gravity schemes nearly 250 HHs are provided with water supply. Also few public fountains receive water from these sources. Village habitations in Kotagiri are provided with water supply system using 59 nos. of open wells with pump sets.

Distribution System: Kotagiri town is provided with 852 service connections out of which 28 are commercial connections and 5 are Industrial use. Distribution mains are laid of 3" PVC pipe of 20km length. The other service reservoirs in the system are provided with hand pumps (98) at the point of distribution and are served by the same. The ULB also has installed 254 public fountains to supply water to the public of certain locality.

Table No. 4.4: Existing System Coverage

Service Reservoirs	Ward Coverage
Ramchand	11, 12, 15, 17 & 21
Sakthi malai	6, 19 & 20

Source: Kotagiri T.P; 2007

System Coverage & Per Capita Supply: The existing system of distribution covers 8 wards in Kotagiri. Rest of the wards are not provided with the piped water supply system. Water supply is effected once in three days. Considering the coverage based on the distribution pipe length vs. road length ratio, the existing network of 20 km translates to coverage of approximately 60 percent of the total road length of 33 km. Based on the present population and the total quantum supplied, on an average the per capita water supply works out to 40 lpcd which is lower than the normative standard of 70 lpcd (w/o sewerage scheme) as per CPHEEO guidelines.

ADEQUACY OF SERVICES

Table 4.5 shows key service indicators of the existing water supply system

Table No. 4.5: Performance Indicators - Existing Water Supply System

Sl. No.	Service Indicator	Unit	Current Status	Acceptable Norms/ Prescribed Standards
1.	Daily per capita supply (2006/2007)	Litres	40	70
2.	Roads covered with distribution network	Percent	60	> 100
3.	Storage capacity with respect to supply	Percent	63	33
4.	Treatment capacity available with respect to supply	Percent	N.A	100
5.	Property tax assessments covered by service connections	Percent	10	85
6.	Proportion of non-domestic service connections	percent	4	> 5.00
7.	Slum population per public stand post	persons	230	150

Source: Kotagiri T.P; 2007 and Analysis

KEY ISSUES

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

- Source Availability: The present source of water is not adequate to meet the existing and future demand, and augmentation is required to meet future requirements. Water supply is highly fluctuating during summer as the water table goes down, affecting the per capita supply (30 to 40 lpcd);
- Low Supply Levels: Low per capita supply is noticed. The situation becomes worse in summer season with per capita supply coming to as low as 40 lpcd on an average. The frequency of water supply in the town is once in three days in normal season, which deteriorates to once in five or seven days in summer season;
- Treatment Capacity: At present there is no water treatment facility other than chlorination. In respect of increasing demand in the future and alternate sources such as surface water, treatment facilities will have to be implemented;
- Inadequate Service Coverage: Only about 10% of the PTAs are provided with water supply service connections. Existing demand for water supply has not taken into account the requirement of water supply to the expansion areas;
- Inadequate Network Coverage: Distribution network runs approximately 60% of the road length only. Especially habitations of rural characters are not covered with piped water supply system. Considering the high population density within the central area, the network adequacy demand, as percentage of road length, is high;
- Uneven Supply Rate: This is a unique problem in hilly areas because of pipes are laid at very steep slopes tail end receives more water than the HHs near the distribution reservoir.
- Inadequate Summer Storage: Even though the rainfall is good enough, due to the terrain conditions there is no scope for storing rainwater for recharging, as most of the water bodies are encroached, silted and used as sewage outfalls;
- Refurbishment of the Existing System: The distribution system in the core areas has been laid before 30 years. Although intermittent rehabilitation works have been carried out based on complaints received, the system needs a comprehensive rehabilitation measure based on detailed assessment; and
- 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.

POTENTIAL FOR DEVELOPMENT

In order to appreciate and articulate the current situation and present future possibilities, the water supply system 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:

- Habitations of rural character in the TP in Kotagiri are provided with the water supply

through the gravity sources which are rain feed streams and channels.

- Due to gravity supply of water to the consumers O&M cost of the water supply system is very minimal.
- Due to the sloping terrain conditions, there is no problem pertaining to pressure in the water supply system.
- The town has a storage capacity 3.80LL against the estimated supply of 6.00LL, which is more than the prescribed norm.
- Town has the capacity to expand its service connections when compared with the present low level of coverage.
- This service has the potential to involve the private sector in the current format to bring in efficiency.

4.2.3 SEWERAGE AND SANITATION

ASSESSMENT OVERVIEW

Underground Sewerage System: Kothagiri Town Panchayat is not provided with Underground Sewerage System. Most households in the town area have septic tanks and soak pits to treat and dispose the sewage. The sullage/kitchen wastes are collected through open drains and conveyed to open channels leading to water bodies and low-lying areas within town limits. But households in the outer habitations of the TP are not provided with the protected system of sewage disposal. Open defecation and disposal into the street drains are commonly observed method of disposal.

Sanitation Facilities: There are about 5891 septic tank connections in the town. Nearly 3927 households are not provided with latrine facility. In order to maintain proper sanitation facility, 3 Pay & use Public Convenience complexes each with 12 seats are constructed in the town at Bus Stand, Market and Dannington. The town Panchayat has also constructed 100 low cost sanitation latrine facilities in rural habitations. Apart from Pay & use toilets the ULB also has constructed 9 nos. of community toilets.

ADEQUACY OF SERVICES

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

Sl. No.	Service Indicator	Unit	Current Status	Normative Standard
1.	Roads covered by UGD network	percent	--	85
2.	Sewage treatment capacity with respect to water supplied	percent	--	80
3.	Water supply connection having access to UGD	percent	--	85
4.	Assessment having access to UGD facility	percent	--	70
5.	Population covered by UGD (Year 2005/2006)	percent	--	85
6.	Assessment covered with septic tanks	percent	66	--
7.	Assessment covered with LCS	percent	1	--
8.	Assessment covered with safe disposal facility - Total	percent	0.00	--
9.	Slum population per seat of public convenience	persons	116	--
10.	Seats under pay & use category	percent	57	--

Source: Kotagiri T.P; 2007 and Analysis

KEY ISSUES

Discussions were held with principal stakeholders of the Kotagiri Town Panchayat to assess the key issues that surround the present sewerage system. The issues identified through discussions, field visits and service analysis are outlined below:

- The town is not provided with a underground sewerage scheme
- Discharge of untreated sewage to streams via storm water drains and low-lying areas and the resultant degradation of the environment and health risk was highlighted as a major hazard
- Households in Kotagiri were equipped only with septic tanks and soak pits. These were

cleaned on an infrequent basis and the collected sewage was disposed to open spaces and low-lying areas in an indiscriminate manner;

- Inadequate and Ill-Maintained Public Sanitation: There is a high dependency by slum population on public conveniences, the seat per person is limited and most slum dwellers resort to open defecation;
- Public awareness regarding safe sanitation is very poor.

POTENTIAL FOR DEVELOPMENT

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 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:

- More than 60% of households in Kotagri are having septic tank facility to dispose sewage.
- Low cost sanitation facilities are provided in rural habitations by the ULB.
- Slum areas are provided with a limited number of public toilets.

4.2.4 STORM WATER DRAINAGE

ASSESSMENT OVERVIEW

Drainage system: Natural sloping terrain of the town helps the easy disposal of storm water in to the outlet points without any stagnation. The town has two major channels maintained by the PWD. Numerous streams and water channels are also flowing across length and breadth of the town. While these water bodies form the rain water collection points, the drains bringing water to these water bodies are not properly protected. Poor protection and maintenance make these to turn into dumping place for garbage and also a disposal point for sewage water in the nearby areas, thus converting these natural resources as “Urban Sinks”.

Drains: Kotagiri is provided with a network of storm water drains up to the length of 17 km, which forms only 52% of the total road network of the town. The networks of drains are supported by numerous streams and river. The ULB maintains the storm water drains inside the municipal limit while the natural channels & streams are maintained by the PWD of GoTN. Table 4.7 provides the details regarding the types of storms water drains in the town.

Table No. 4.7: Existing Storm Water Drains

No.	Description	Length (km)	% of total
1.	Open Drains (Pucca)	10.20	59.30
2.	Open Drains (Kutcha)	6.40	37.21
3.	Closed Drains (Pucca)	0.60	3.49
	Total	*17.20*	*100.00*

Source: Kotagiri T.P; 2007

ADEQUACY OF SERVICES

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	52.34	130
2.	Pucca Drains (Open & Closed)	percent	40.70	100
3.	Road length covered with Pucca drains	percent	21.30	130

Source: Kotagiri T.P; 2007 and Analysis

KEY ISSUES

Discussions were held with principal stakeholders of the town to assess the key issues that surround the present storm water drainage system and its scope for improvement. The

issues identified through discussions, field visits and service analysis are outlined below:

- Inadequate Coverage: Drains cover only 52% of the road length. Besides, kutcha drains are not well defined and are damaged during heavy rains, thus reducing the meaningful coverage of built up drains;
- Problem Areas: Brick work, Random Rubble Masonry, Plain cement concrete drains damaged at many places are common within the town and drains are not properly networked causing certain missing links in many places, Lack of proper disposal system at certain identified problem areas etc.,
- Silting and Solid Waste Accumulation: Silting and uncontrolled garbage dumping causes blockage and stagnation in water channels/wastewater runoff. Consequently, drains choke and overflow into neighboring areas. Tanks around the town, which act as flood moderators, have also witnessed silting; and
- Underutilized Water Bodies: Area under water bodies within the town limit is not being put to productive use as summer storage tanks. Presently, the tanks are in dilapidated condition and are only used for recharge purpose. Misuse of water bodies is also noticed in terms of uncontrolled solid waste dumping.

POTENTIAL FOR DEVELOPMENT

In order to appreciate and articulate the current situation and present future possibilities, the Storm Water 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:

- Natural sloping terrain helps the easy flow of storm water into the streams and channels.
- Major drains are available for conveyance of storm water away from residential dwellings and low-lying areas.
- Adequate natural gradients are available for achieving self cleansing velocities for open drainage system.
- Existence of good basic infrastructure of drainage system.
- Kotagiri has better storm water disposal points.
- Town is not subjected to flooding problem.

4.2.5 SOLID WASTE MANAGEMENT

ASSESSMENT OVERVIEW

Waste Generation: According to the discussions with the officials of the ULB, the town generates about 1.45MT of waste every day at the rate of 50 grams per capita.

Sources of Waste Generation: Solid waste in the town mainly comprises of waste generated from households and commercial establishments. In Kotagiri solid waste is generated from 8,913 Householders, 1,239 shops daily market, Bus stand and other parts in the town.

Waste Collection & Disposal: Presently, the collection of waste is managed by the TP's sanitary workers. At present solid waste are not collected from door to door, sanitary workers collects the waste from dust bins and by street sweeping. Town panchayat has 31 sanitary workers supervised by two sanitary supervisors controlled by a Sanitary Inspector to monitor the

Table No. 4.9: Ward wise waste Generation

Ward No.	Waste Generated Daily (in M.T)
1&2	0.10
3&4	0.11
5&6	0.10
7&8	0.13
9&10	0.09
11&12	0.16
13&14	0.4
15&16	0.19
17&18	0.16
19,20&21	0.27
Total	**1.45**

Source: Kotagiri T.P; 2007

collection and disposal of solid wastes. In central area, wastes are collected daily but in habitations of rural in character wastes are collected once in a week through mass collection program by the ULB. Segregation of plastic wastes is done at the disposal site only. Godown has been constructed to store the segregated plastic waste at the dump site. The fleet of vehicles deployed for the collection and disposal of solid waste consists of two tractors cum trailers of 1MT capacity each, one tipper mini lorry and 10 pushcarts.

At present, the ULB is not practicing any safe or scientific solid waste treatment and disposal method. These solid waste are dumped at garbage collection centre in 1.79 acre Town Panchayat owned land (survey number 309/1,2) located at 3km distance from Kotagiri town at Kannegadevi Colony, ward No. 16. Improvement works in Vermin compost shed has been completed at an estimate cost of Rs. 9.10 lakhs utilizing the H.A.D.P. Funds during the year 2005-06 and Vermin-composting system is being implemented. However the entire facility is found to be idle as it was reported that the worms are not alive and immune to the cold climatic condition.

ADEQUACY OF SERVICES

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	41	300
2.	Waste collected as estimated by ULB (w.r.t. waste generation)	percent	100	100
3.	Waste collected as per the available capacity (w.r.t. waste generation)	percent	21	--
4.	Road length per conservancy staff	metres	1060	500

Source: Kotagiri T.P; 2007 and Analysis

KEY ISSUES

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

- Absence of Effective Primary Collection Mechanism: The absence of the door-to-door solid waste collection system in the town is basically leading to unhealthy conditions in the town. The practice of throwing of the waste onto the streets is exaggerating the problem. Segregation of waste is not being practiced at the household level. Segregation and primary collection of waste through private participation, is under active consideration by the ULB;
- Inadequate Collection Vehicles: Inadequate fleet size of the collection vehicles, mainly handcarts and tricycles, is hampering the collection efficiency. Also, additional transfer station and dumper bins needs to be located at various locations in the town panchayat;
- Future Inadequacy of Waste Dumping Facility: Based on the present method of disposal (waste dumping), it is estimated that the facility will reach its ultimate capacity by 2011, thus indicating a need for further land acquisition;
- Lack of Scientific Waste Disposal: There is no method of scientific disposal of the waste is observed. The waste is disposed only through open dumping, posing problem to environment and health of the local people. Though the data pertaining to the ground water quality around the site is not available, there is a probability of ground water contamination due to leachate runoff and percolation; and
- Occupation Health Hazards: The waste collection, loading and unloading operations have been carried out manually. The sanitary workers have not been provided with any protective equipment thereby posing severe health hazards.

POTENTIAL FOR DEVELOPMENT

In order to appreciate and articulate the current situation and present future possibilities, the Solid Waste Management 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:

- Per capita solid waste generation in Kotagiri is around 40 Gms per day which is less than the normative standard of 300 Gms for towns of similar population.
- Land is available for a scientific solid waste treatment and disposal facility.
- Support available from GoTN for scientific treatment and disposal of solid wastes.
- It has the potential to involve the private sector to increase efficiency in service delivery.
- Desire of citizens for a clean town.

4.2.6 ROADS, TRAFFIC AND TRANSPORTATION

ASSESSMENT OVERVIEW

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 32.86 km within the town limits.

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

Sl. No.	Road Typology	Length (in km)	Distribution (Percentage)
A.	**Municipal Roads**		
1.	Surfaced Roads		
	- Cement Concrete	2.06	6.27
	- Blacktop/Asphalted	21.27	64.73
	- WBM	1.13	3.44
	Sub Total (Surfaced Roads)	*24.46*	*74.44*
2.	Non-Surfaced Roads		
	- Stone Slab	--	--
	- Gravel	--	--
	- Earthen	3.40	10.35
	Sub Total (Non-Surfaced Roads)	*3.40*	*10.35*
	Sub Total (Municipal Roads)	**27.86**	**84.78**
B.	**Roads Maintained by Other Departments**		
1	Major District Roads and Highways	5.00	15.22
	Total (All Roads)	**32.86**	**100.00**

Source: Kotagiri T.P; 2007 and Analysis

ULB is maintaining 27.86 km length of roads and the remaining 5 km length of roads are maintained by State Highways Department. About 75% of the total municipal road length has surfaced roads (comprising BT, CC and WBM surfaces). Discussions with officials have indicated that there are 25 km length earthen road stretches connecting 46 habitations. The ULB also maintains 15.70 km length of C.C foot paths and 22.00 km of earthen foot paths.

- Road Network / Traffic Pattern: The travel pattern in the town is guided by the road network and landuse pattern in the town. The major road pattern that guides the major traffic within the town is the State Highway from Udhagamandalam to Mettupalayam. Also other ULB maintained roads provides road links to the rural habitations which are dotted across the 30 sq.km. area within the town.

Due to the aforementioned constraints majority of the roads are having inadequate carriage way width especially in the bazaar area and near the bus stand area. Kotagiri is a well-

known destination for tourists from all over the country and is the gateway to Nilgiris. During season months (March, April and May), State Highway (Mettupalayam to Udhagamandalam) road becomes vulnerable for major traffic congestion, since it has been diverted for the vehicular flow for the tourists who come from Udhagamandalam to Mettupalayam via Kotagiri. The local roads within the Kotagiri town also suffer heavily due to bottlenecks and congestion. Major traffic bottlenecks are observed in the following areas in Kotagiri:

- At Bus Stand junction,
- John's Square and
- Ramchand.

Some of the major limitations noticed in the existing system of roads are inadequate road width, inadequacy of pedestrian sidewalks, absence of two-wheeler tracks/service lanes, and absence of parking spaces and bus lay-by. There is one Vehicle parking space provided by the ULB opposite to Nehru Park. Kotagiri Bus stand is situated in the main junction of Ooty, Coonoor and Mettupalayam Road owned by Town Panchayat at a total extent of 3.30 acres. Nearly 80 Buses are plying from here covering local villages in Kotagiri Taluk, Ooty, Coonoor Mettupalayam, Coimbatore, Pollachi, and Tiruppur. As this is the only Bus stand for general public in Kotagiri Taluk, congestion is more due to the presence of commercial traffic, mainly trucks loading and unloading goods from markets. The problem is aggravated as this town is also a major market centre of the region.

ADEQUACY OF SERVICES

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

Sl. No.	Service Indicator	Unit	Current Status
1.	Road density	km/sq. km	1.06
2.	Proportion of surfaced municipal roads	percent	74.44
3.	Proportion of blacktop/asphalted roads (w.r.t. total municipal roads)	percent	64.73

Source: Kotagiri T.P; 2007 and Analysis

This town has a very low density (1.06 km/sq. km). The condition of major roads is observed to be good. However, minor roads and roads within individual residential colonies are in bad condition. Footpaths and parking facilities were found to be inadequate.

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:

- Inadequate Coverage: There is only 0.14 m per capita road coverage as compared to a norm of 1.75 m per capita coverage. Inadequate coverage is noticed in the newly developed and extension areas. Scope of providing new roads to the areas which are presently covered by foot path shall be explored wherever feasible;
- High Density and Congested Lanes: Roads in the central areas and surroundings of old areas are narrow and surrounded by heavily built-up areas. These roads also carry large volumes of traffic that cater to visitors and commercial trading in the area. These factors make the lanes highly susceptible to air pollution and delayed travel times;
- Encroachment: The margins of roads are encroached upon in several sections of major roads of the town by small time street vendors, illegal parking and other informal activities. With little margins left on the roads, the effective carriageway of the road is reduced drastically leading to congestion and accidents; and
- Absence of Street Furniture/Signage: The roads/junctions lack signals, signage, and footpaths.

POTENTIAL FOR DEVELOPMENT

In order to appreciate and articulate the current situation and present future possibilities, the Roads, Traffic and Transportation sector 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:

- Town has more than 60% of roads surfaced with black top or asphalt.
- An extensive network of roads providing for internal and radial connectivity is available which can be streamlined and enhanced for improved traffic management.
- GoTN is committed to improve the roads and transportation.
- The master plan proposal (scheme roads) of Kotagiri towards improving regional connectivity with other urban nodes reveals the potential for sustenance of the present and potential tourism, commercial and residential activities in the town.

4.2.7 STREET LIGHTING

ASSESSMENT OVERVIEW

Street lighting: Kotagiri Town Panchayat is provided with 751 lighting fixtures placed at a distance of 44 m interval approximately. Almost all the lights are in working condition. The compositions of street lights are given in the following table:

Table No. 4.13: Existing Street lights

Type of Fixtures	Nos
Fluorescent (Tube Lights)	625
Sodium Vapor Lamps	126
Total	751

Source: Kotagiri T.P; 2007

ADEQUACY OF SERVICES

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

Sl. No.	Service Indicator	Unit	Current Status	Normative Standards
1.	Spacing between lamp posts	metres	44	30
2.	Proportion of fluorescent lamps (tube lights) w.r.t. total fixtures	percent	83	60
3.	Proportion of high power fixtures w.r.t. total fixtures	percent	17	40

Source: Kotagiri 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 44 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

- Kotagiri has a Public Park called Nehru Park owned by Town Panchayat maintained by the Horticultural Department in which every year a Flower Show is held during summer season. Apart from the ULB owned park, there is also a private owned park is located at Pandiyan Estate.
- Kotagiri has a beautiful play ground owned by Town Panchayat named as Gandhi Maidan. A Mini stadium has been constructed at an estimated cost of Rs.30 lakhs funded by Sports Development Authority of Tamil Nadu and executed by Town Panchayat and the inauguration of the same is expected soon.
- There is a flood centre building constructed by Town Panchayat near the Gandhi Maidan in order to accommodate the affected people during the natural calamities.
- A shopping complex with 9 shops a restaurant and one pay & use toilet earning an annual income of Rs. 2.00 lakhs is located within the town owned by the TP.
- A daily market is also owned by the Town Panchayat which is situated in the centre of the town, wherein 405 shops (54 permanent shops and 351 temporary shops) are let out on hire by Town Panchayat yielding annual revenue of Rs.12.00 lakhs.
- There are many Government and Private Educational institutions at present in Kotagiri Town, some of the important educational institutions are as follows:
    - Govt. Higher Sec. School - 1
    - Govt. High School - 1
    - Govt. Elementary School - 1
    - Private Schools - 9
    - Private Collage - 1
    - Polytechnic - 1
    - District Institution of Educational Training centre 1
- Students from many parts of the State and the Country are studying in certain famous educational institution located in Kotagiri Town.
- There are six private hospitals and one Government hospital catering to the public health needs of the town.

4.4 SLUM IMPROVEMENT

4.4.1 AN OVERVIEW

Owing to rapid urbanization in and around the town, large influx of migrants from economically weaker sections has been observed, which has resulted in formation of slums. The town presents a wide range of activities in various institutional, commercial and tourism sectors. Growth in such activities, possibilities of absorption in various service sectors, scope of employment in trade and business activities, hawking, retailing etc. could have attracted rural poor to the town. The ULB is the agency responsible for provision of services to urban poor settlements within town limits.

As per the Census 2001 and data available from the ULB, Kotagiri town has 20 notified slums in which there are approximately 1,457 households with a population of 7,286 persons. 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 Kotagiri is given in the adjacent table:

List of Slums:

1. Kamaraj Nagar
2. Krishnaputhur
3. Indhira nagar
4. Kumaran colony
5. Kannigadevi colony
6. Papthish colony
7. Camp line
8. Murugan colony
9. Ambethker nagar
10. Sikkattubettu
11. Edukkorai colony
12. Puthur
13. K.K. Nagar
14. Paraimedu
15. Ganapathi Nagar
16. Periyar Nagar
17. Thavittumedu
18. Kaithala
19. Selvapuram
20. H.M.C. Nagar

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 due to the development of tea estates. Most of the slum dwellers are employed in tea estates as daily waged laborers.

Infrastructure Services: As per the discussion with the officials of the ULB, the overall view about the existing infrastructure in the slums is understood and presented below:

- Water Supply: The main sources of water supply in slums are from open wells, hand pumps and public stand posts (PSPs). The ULB has provided 254 units of water taps/ PSPs covering all the slums (95 persons per PSP against the standard norm of 75 persons per PSP).
- Sanitation: Most of the slums do not have access to sanitation facilitates. Safe sanitation facilities comprise of public conveniences and ISPs. Public toilets are provided at 9 locations of all the slums. Some people in the slums even resort to open defecation on vacant lands, which is a cause of serious health concern. Dependency on public convenience seat and urinals are very high, as each public convenience seat serves approximately 116 persons, against prescribed norms of 30 to 50 persons per public convenience seat/urinal. Unavailability of land close to the slums is one of the main reasons for not extending the facilities to the slums areas.
- Solid Waste Management: According to the discussions held with the ULB officials, it was indicated that there are no designated solid waste collection points or waste bins provided in slums. Also waste from this place is collected once in a week. As a result, in most of the slums, waste is disposed in nearby vacant areas and in open drains creating unhygienic conditions.
- Roads: The ULB has provided about 6 km length of surfaced roads within the slums and rest in the form of foot paths. The per capita road maintained by the ULB in slums works out to be 0.15 m that is less than the total roads maintained by the ULB at the town level.
- Storm Water Drains: Slum settlements in the town are not provided with a proper storm water drain network. Earthen drains were mostly damaged or clogged due to solid waste dumping and silting. New formation of drains along existing roads and new roads is essential need of these areas.
- Streetlights: Overall, streetlight spacing in the town is about 44 m, and in slums is noticed to be far higher. It is noticed that several road junctions and street stretches are poorly lit, and some of the slums are devoid of adequate street lighting.

4.4.3 KEY INDICATORS AND ISSUES

Following are a set of indicators, for which the current situation and the desired values are presented. The desired values can be used as benchmarks by the ULB to check its performance annually/ periodically and set targets for itself to be achieved in the next financial year. The details of performance indicators are furnished in the table below.

Table No. 4.15: Performance Indicators for Slums in the Kotagiri

Sl. No.	Service Indicators	Unit	Current Situation	Benchmark/ Standards
1.	Proportion of slum population to total city population (2005/2006)	percent	25	< 10
2.	Household size in slums (per HH)	persons	5.41	--
3.	Distribution network reach (against road length in slums) in slums	percent	NA	> 100
4.	Slum population per public stand post	persons	95	75
5.	Slum population per seat of public convenience/ ISP Complex	persons	75	60

Source: Kotagiri T.P; 2007 and Analysis

Key Issues: Following are some of the key issues pertaining to provision and delivery of services to urban poor in Kotagiri Town:

- Slums are clustered and not provided with adequate infrastructure;
- Poor water supply and sanitation is a major concern. The 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; and
- Slums are not extended with day to day waste collection programme thus resulting in dumping of garbage on road-side and in the drains;

4.4.4 POTENTIAL FOR DEVELOPMENT

In order to appreciate and articulate the current situation and present future possibilities, infrastructure facilities in the slums 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:

- Basic services like water supply, sanitation, drainage, waste management are available in many slums. However, there are some shortfalls.
- 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.
- Desire to form community organizations.
- Good awareness level in slum areas.

4.5 ECONOMIC DEVELOPMENT

4.5.1 ECONOMIC BASE

The Tea gardens are the life line of local populace besides vegetables like Potatoes, Cabbages and Carrots that are grown and sent down to Mettupalayam by lorries for sale. Delicious fruits like Orange, Pears and Plums are also planted in this place extensively. There are 19 major Tea Factories that provide employment opportunities to the residents of Kotagiri town and its hinterland. The tasteful tea dust for this area is exported worldwide. There are beautiful Tea Garden surrounded by shoals and long wood shoals right inside and around the Kotagiri has beautifully laid out by nursery of various kinds of Tree plants also.

The first tea plantation owes its existence to a lady, the daughter of M.D. Cockburn, who opened an estate in 1863, followed by Kodanad. Tea soon took over, and coffee growing was given up. There was a steady growth of tea planting. By the end of the 19th century, it was around 3000 acres (12 km²), and today it is almost 30,000 acres (120 km²) of land has been used for Tea plantation in this region.

Kotagiri is also well known for its comfy climatic condition; hence it attracts tourists from all over the world. It is also a gateway to Udhagamandalam and Coonnor, other two major hill stations in Nilgiris plateau. Hence tourism based tertiary activities are the next major economic driver of Kotagiri town. About 14,000 workers are employed in the Tea estates and tourism related activities per 2001 census.

4.5.2 OCCUPATIONAL PATTERN

The total workers in the town as per 2001 census are 14,103 which include 1341 Marginal workers. The workers constitute about 48% of the total population, Male workers are about 8272 and Female workers are 5831.

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

Year	Total Population	Total Main Workers		Primary Sector		Secondary Sector		Tertiary Sector	
		No. of Main Workers	% of Main Workers	No. of Main Workers	% of Main Workers	No. of Main Workers	% of Main Workers	No. of Main Workers	% of Main Workers
1991	29,557	10,869	36.77%	6,252	57.52%	660	6.07%	3,957	36.41%
2001	29,192	12,762	43.72%	68	0.53%	52	0.41%	12,642	99.06%

Source: Census of India 1991 and 2001

Tertiary sector constitute 99% of the total workforce with insufficient portions accounting for secondary sector (0.47%) and primary sector (0.53%). Agriculture, in a declining trend because of its geographical constraints and employment generating opportunities are also lesser in the town.

4.5.3 TOURISM IMPORTANCE

Kotagiri is well known tourist spot in South India, owing to its climate and the presence of tea estates also attract tourists from all over the world. The town also acts as a gateway to Nilgiris and other tourist spots like Udhagamandalam and Coonnor that are located within 35 km distance. During tourist season months, nearly 1.80 lakh tourists visit Coonnor and Kothagiri as per the Tourism Department. Important tourist spots located near Kotagiri are listed below:

1. Nehru Park; Nehru Park is situated in the heart of the Kotagiri town adjacent to the Gandhi maithanam. This beautiful park is owned by Kotagiri Town Panchayat and maintained by Horticultural Department. The remarkable Kothas Tribal temple is also situated in the center of this park. This memorable Nehru Park fetched many a prices every year, during the annual flower show contests held at Udhagamandalam.

2. Jhon Sullivan Bungalow: During the British regime, John Sullivan reached Kannerimukku from Sirimugai Thanayakkan fort during the year 1819 via Boopathi kambai, Kokkodu, Denaducombai, Milidhane and Dhimbatty Valley. He constructed this bungalow at Kannerimukku and used this bungalow as holiday home and office from 1918 to 1922. It is notable that this John Sullivan bungalow was the First Collector Office of the Nilgiris District during the year 1922. This has also become a principal tourist attraction of the town.

3. Kodanadu View Point: Kodanadu View point is situated 18 km from Kotagiri Town. Throughout the year, tourists from various places visit this view point. This is one of the important tourist spot in Nilgiris District as well.

4. Cathorine Water Falls: This beautiful waterfall is situated at the border of the Jackanarai Village panchayat at a distance of 10 km from Kotagiri. This is also one of the prominent tourist sites in the Nilgiris District.

4.5.4 LOCATIONAL ADVANTAGE

Kotagiri is a Special Grade Town Panchayat in the Nilgiris District, of Tamil Nadu. Kotagiri is a serene town in the Nilgiris Hills, 30 km away from Udhagamandalam, the district headquarters town. It is located on the North Eastern crest of Nilgiris Plateau at an average elevation of 1793 metres (5882 feet) above MSL.

Kotagiri enjoys a climatic advantage over Udhagamandalam as it is protected by the Doddabetta range from the onslaught of the south-east monsoon. Kotagiri with its bracing climate occupies a best position in the Nilgiris and the second best in the world amongst the hill stations. Kotagiri town is well connected by the State Highway, Major District Roads and local roads. State Highway (Udhagamandalam to Mettupalayam) forms the major road connectivity to Kotagiri town.

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.

The Draft Final Report for the town was submitted under Phase III of the assignment. A review meeting with the Client was also held to finalize the identified projects and capital investments. The Draft Final Report was then presented to the ULB Council and comments from Technical Review Committee and ULB Council were addressed and submitted in the form of Addendum to the earlier submitted Draft Final Report. Addendum was also reviewed by the Review Committee and accorded approval to submit Final City Corporate Cum Business Plan Report for Kotagiri 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 16, 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 Kotagiri Town Panchayat and attended by Executive Officer and other Officials of Kotagiri town panchayat, representatives from other key stakeholding departments and service providing agencies.

Subsequent to the submission of Rapid Assessment Report a review meeting was held on June 17, 2007 in the office of TNUIFSL. Aforementioned report was reviewed by the Technical Review Committee comprising the TNUIFSL, CTP 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 July 20, 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.

In continuation to the assignment, the study team prepared the Strategic Plan and Interim Report for the town highlighting the vision evolved during the consultation workshop, development proposals, projects identified and proposed capital investment. These deliverables were then reviewed by the Technical Review Committee members on October 29, 2007 and approved the same.

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. These deliverables were then reviewed by the Technical Review Committee members on February 27, 2008 and suggestions were made. Subsequent to the review meeting, Addendum to DFR by addressing the review comments was submitted to the Client and obtained approval for the submission of Final Report.

Followed by a review meeting, a Third Workshop was organized on April 07, 2008 to discuss the findings of the Draft Final Report. The study team presented Draft Final Report by highlighting the sector wise proposals identified, investment required for implementation, borrowing capacity of the ULB, funding options available etc.

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 COMMISSIONERATE OF TOWN PANCHAYATS

The study team had a consultation meeting with the CTP, on the policies and priorities of CTP, Government of Tamil Nadu (GoTN). The following were the discussion points of the meeting:

The Draft Final Reports on the City Corporate Cum Business Plan (CCBP) for ten Selection Grade Town Panchayats were to be finalised after policy consultations. Towards the same, a discussion on the policies and priorities of the Commissionerate of Town Panchayat, Government of Tamil Nadu was held at the Commissionerate of Town Panchayats, Chennai

at Kuralagam on 01.04.08 and was chaired by CTP and attended by the TNUIFSL, Joint Director of Town Panchayats, Executive Officers of Gingee, Bargur, Kangayam and Katpadi Town Panchayats (from among the ten town panchayats for which the DFRs are to be finalized) and the Consultants (CCI).

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 brings 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 finalisation of the CCBP.

6

REVIEW OF ULB IDENTIFIED PROJECTS

6.1 PROJECTS AT GLANCE

Under "Urban Infrastructure Development Scheme for Small and Medium Town (UIDSSMT)", Kotagiri Town Panchayat has identified infrastructure projects at an estimated capital outlay of Rs. 225 lakhs which includes the following sectors:

- Water supply;
- Storm Water Drain;
- Roads;
- Foot Paths and
- Solid Waste Management;

This project was prepared during the year 2006 and the council has also passed a resolution by approving the identified projects. The project has been sent to the Commissioner of Town Panchayats, Chennai for the approval. The following categories of roads and drainage have been proposed under this Project. The list of proposed works is given below:

S.No	Description	No. of Works	Length in k.m	Amount Rs. In lakhs
1.	Water Supply	1	2.30	22.50
2.	Storm Water Drain	14	4.13	52.15
3.	Road	10	5.53	59.10
4.	C.C.Foot Path	22	3.96	52.90
5.	Solid Waste Management	4	-	39.00
	TOTAL	**51**		**225.65**

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

Sl.No.	*Name of work*	Length in Km	Width in Meter	Estimate Amount in Lakhs
	WATER SUPPLY			
1	*Providing additional water supply from Kakkula*	2.3	-	22.5
	TOTAL	**2.3**	**-**	**22.5**
	STORM WATER DRAIN			
1	*Construction of Drain at Horasholai*	0.22	-	2.75
2	*Construction of Drain at Nattakal, Kerban and Gathukully*	0.36	-	4.5
3	*Construction of Drain at Thanthanadu and mel anaihatty*	0.33	-	4.1
4	*Construction of Drain at Kil Anaihatty and Dhimbatty*	0.32	-	4
5	*Construction of Drain at Kechkutty and Araihatty*	0.28	-	3.5
6	*Construction of Drain at Kanneri mukku*	0.31	-	4
7	*Construction of Drain at Green Valley*	0.32	-	4
8	*Construction of Drain at Riffle Range and Hope park*	0.31	-	4
9	*Construction of Drain at Happy Valley and Saitline*	0.28	-	3.5
10	*Construction of Drain at ision compound and Kalavai*	0.25	-	3.2
11	*Construction of Drain at Rose Cottage*	0.25	-	3.2
12	*Construction of Drain at Gore House*	0.25	-	3.2
13	*Construction of Drain at Darmona*	0.29	-	3.7
14	*Construction of Drain at Krishna Puthur*	0.36	-	4.5

Sl.No.	*Name of work*	Length in Km	Width in Meter	Estimate Amount in Lakhs
	TOTAL	**4.13**		**52.15**
	ROADS			
1	*New formation of Road at Mariappanlane*	0.525	3	14.5
2	*New formation of Road atThalorai*	0.375	3	5.5
3	*New formation of Road atfrom old library to Royan street*	0.46	3	6.5
4	*Strengthening of Natakal road*	0.4	3	2.6
5	*Strengthening of Dr Watts Road*	1	3	5.5
6	*Strengthening of Market to R.C Road*	0.4	3	2.6
7	*Strengthening of Thagamalai Road*	1.35	3	11
8	*Strengthening of Iyyappankoil Road*	0.16	7	3.5
9	*Strengthening of Govt Hrs School Road*	0.46	3	3.7
10	*Strengthening of Gore house Road*	0.4	3	3.7
	TOTAL	**5.53**	**34**	**59.1**
	C.C FOOT PATH			
1	*Providing C.C foot path at Horasholai*	0.18	2	2.3
2	*Providing C.C foot path at Mel Anaihatty and Thanthanadu*	0.18	2	2.3
3	*Providing C.C foot path at Donninton to Kerbetta Hasatty*	0.18	2	2.3
4	*Providing C.C foot path at Kerban*	0.18	2	2.3
5	*Providing C.C foot path at Dhimbatty*	0.18	2	2.3
6	*Providing C.C foot path at Thalorai*	0.18	2	2.3
7	*Providing C.C foot path at Kannermukku*	0.18	2	2.3
8	*Providing C.C foot path at Sait line*	0.18	2	2.3
9	*Providing C.C foot path at Mission compound*	0.18	2	2.3
10	*Providing C.C foot path at Kalpana Cottage*	0.18	2	2.3
11	*Providing C.C foot path at Carsley*	0.18	2	2.3
12	*Providing C.C foot path at Riffle Range*	0.18	2	2.3
13	*Providing C.C foot path at Spring Cottage*	0.18	2	2.3
14	*Providing C.C foot path at Rose Cottage*	0.18	2	2.3
15	*Providing C.C foot path at Kecthuktty*	0.18	2	2.3
16	*Providing C.C foot path at Kumaran Colony*	0.18	2	2.3
17	*Providing C.C foot path at Camp line*	0.18	2	2.3
18	*Providing C.C foot path at Chikattubettu*	0.18	2	2.3
19	*Providing C.C foot path at Paptishcolony*	0.18	2	2.3
20	*Providing C.C foot path at Bharathi Nagar*	0.18	2	2.3
21	*Providing C.C foot path at K.K. Nagar*	0.18	2	2.3
22	*Providing C.C foot path at H.M.C. Nagar*	0.18	2	2.3
23	*Providing C.C foot path at Edukorai*	0.18	2	2.3
	TOTAL	**3.96**		**52.9**
	SOLID WASTE MANAGEMENT			
1	Purchase of dumper placer (Hydraulic) lorry	1No	-	12
2	Purchase of Dumber container	25No	-	5
3	Purchase of Pulverize Machine	1No	-	10
4	Purchase of Mini Lorry with Dipper	1No	-	12
	TOTAL			**39**

Aforementioned schemes are identified for the implementation under the UIDSSMT Phase I. Kotagiri Town Panchayat is also selected by the Commissionerate of Town Panchayat (CTP) under Model Town Program. Under this program certain projects are identified by the ULB for implementation under Phase II of UIDSSMT scheme.

Projects identified under this plan cover the following key sectors:

- Water Supply
- CC Foot paths
- Storm Water Drains
- Sanitary Complexes
- Construction of Retaining wall
- Roads
- Bus Stand improvement
- Street lighting
- Burial ground improvement
- Solid Waste Management and
- Other commercial projects like shopping complex, kalayanamandapam, Jeep stand etc.

Total investment proposed in the Phase II scheme under Model Town Program is Rs. 1425 lakhs. The detailed lists of projects identified under Model Town program are given below:

Sl.No.	Name of Work	Nos.	Estimate Amount in Lakhs
1	Improvements of Elada Water Supply	1	50.00
2	Construction of Shopping Complex at Daily Market	4	200.00
3	Construction of Shopping Complex Near Nehru Park	1	100.00
4	Construction of Shopping Complex at Mini Stadium	1	30.00
5	Construction of Compound Wall at Daily Market	1	30.00
6	Construction of Kalyanamandabam at Kotagiri Town Panchayat	1	100.00
7	Improvement of Kotagiri Bus Stand	1	100.00
8	Providing High Mast Light at Kotagiri Town Panchayat area	5	50.00
9	Improvement of Kotagiri Jeep Stand	1	50.00
10	Electrical Burial Ground at Vandipattai	1	100.00
11	Construction Additional Office Building with godown, Council Hall and Toilet bath	1	50.00
12	Construction of Staff Quarters	1	50.00
13	Providing Street light at Kotagiri Town Panchayat	150	25.00
	Total		**935.00**

Sl.No.	Name of Work	Length in Km	Width in Meter	Estimate Amount in Lakhs
1	Providing C.C. Footpath at Horasolai	300	2.00	6.00
2	Providing C.C. Footpath at Dhimbatty	400	2.00	8.00
3	Providing C.C. Footpath at Thanthadandu	400	2.00	8.00
4	Providing C.C. Footpath at Kechihatty	200	2.00	4.00
5	Providing C.C. Footpath at Keirben	200	2.00	4.00
6	Providing C.C. Footpath at Kannerimukku	400	2.00	8.00
7	Providing C.C. Footpath at 6th Ward	400	2.00	8.00
8	Providing C.C. Footpath at Riffle Rang	400	2.00	8.00
9	Providing C.C. Footpath at Edukkorai	600	2.00	12.00
10	Providing C.C. Footpath at K.K.Nagar	400	2.00	8.00
11	Providing C.C. Footpath at Darmona	300	2.00	6.00
12	Providing C.C. Footpath at Keirbetta	500	2.00	10.00
13	Providing C.C. Footpath at Kannigadevi Colony	500	2.00	10.00
14	Providing C.C. Footpath at Donboco	300	2.00	5.00
15	Providing C.C. Footpath atH.M.C.Nagar	300	2.00	15.00
	Total	**5400**		**120.00**

Sl.No.	Name of Work	Length in Km	Width in Meter	Estimate Amount in Lakhs
1	Construction of Drain at Thavittumedu	400	1.35	15.00
2	Construction of Drain at Periyar Nagar	300	1.35	10.00

Sl.No.	Name of Work	Length in Km	Width in Meter	Estimate Amount in Lakhs
3	Construction of Drain at Kumaran Colony	300	1.35	10.00
4	Construction of Drain at 21st ward	300	1.35	10.00
5	Construction of Drain at 20th ward	300	1.35	10.00
6	Construction of Drain at 8th ward	400	1.35	15.00
7	Construction of Drain at Edukkorai Colony	400	1.35	15.00
8	Construction of Drain at Mission Compound	300	1.35	10.00
9	Construction of Drain at Thanthanadu	300	1.35	10.00
10	Construction of Drain at 6th Ward	300	1.35	10.00
	Total	**3300**		**115.00**

Sl.No.	Name of Work	Nos.	Estimate Amount in Lakhs
1	Construction of sanitary complex at Horasolai	1	6.00
2	Construction of sanitary complex at 19th Ward	1	6.00
3	Construction of sanitary complex at Bus Stand	1	6.00
4	Construction of sanitary complex at Kathukuly	1	6.00
5	Construction of sanitary complex at Camp line	1	6.00
	Total	**5**	**30.00**

Sl.No.	Name of Work	Length in Km	Width in Meter	Estimate Amount in Lakhs
1	Providing C.C. cum retaining wall at Ambethkar nagar	600	3.00	30.00
2	Providing C.C. at Kannerimukku	200	3.00	5.00
3	Providing C.C. cum retaining wall at Kamaraj nagar	200	3.00	30.00
4	Providing C.C.at Kanigadevi colony	400	3.00	15.00
5	Providing C.C. at Old Aggal	300	3.00	10.00
	Total	**1700**	**-**	**90.00**

Sl.No.	Name of Work	Length in Km	Width in Meter	Amount in Lakhs
1	Improvements to Thanthanadu Road	400	3.00	3.00
2	Improvements to Old Boys hostel road & Green Valley Road	400	3.00	3.00
3	Improvements to Donbosco Kottahall Road	600	4.00	4.00
4	Improvements to Puthu Kotagiri Road	800	3.00	5.00
5	Improvements to Aliyoor Road	600	3.00	4.00
6	Improvements to Karsily Gundada Road	800	3.00	5.00
7	Improvements to Sakthimalai Road	800	3.00	5.00
8	Improvements to Alports Road	400	3.00	3.00
9	Improvements to R.C.Church Road	400	3.00	3.00
	Total	**5200**		**35.00**

Sl.No.	Name of Work	Nos.	Estimate Amount in Lakhs
1	Hydro Lorry	1	15
2	Tipper Container	100	50
3	Polarized Machine	1	15
4	Lorry with Tipper	1	15
5	Vehicle Shed	1	5
	Total		**100**

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 Stakeholder's workshop held at the Town Panchayat.

7

VISION AND STRATEGIC PLANNING

7.1 VISION OF KOTAGIRI TOWN

The community and its felt needs are the major forces in determining the Growth and Development of the town. The existing community and natural resources make Kotagiri 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:

- To preserve and promote the veracity, biodiversity and lifestyle which are unique to the community.
- To promote tourism and related activities in the town, without affecting the environmental conditions.
- To provide an effective, efficient, affordable and sustainable living conditions
- Inspire and implement new, innovative and scientific interventions for providing better infrastructure facilities.
- Developing integrated and decentralized planning measures

Vision Statement For Kotagiri

"Kotagiri aspires to be an Eco tourist centre based on the rich environmental treasures traditional and cultural resources in the town and by making better living environment by retaining the unique character and conserving the built and natural heritage"

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 Kotagiri 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, 7 and 8. 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.

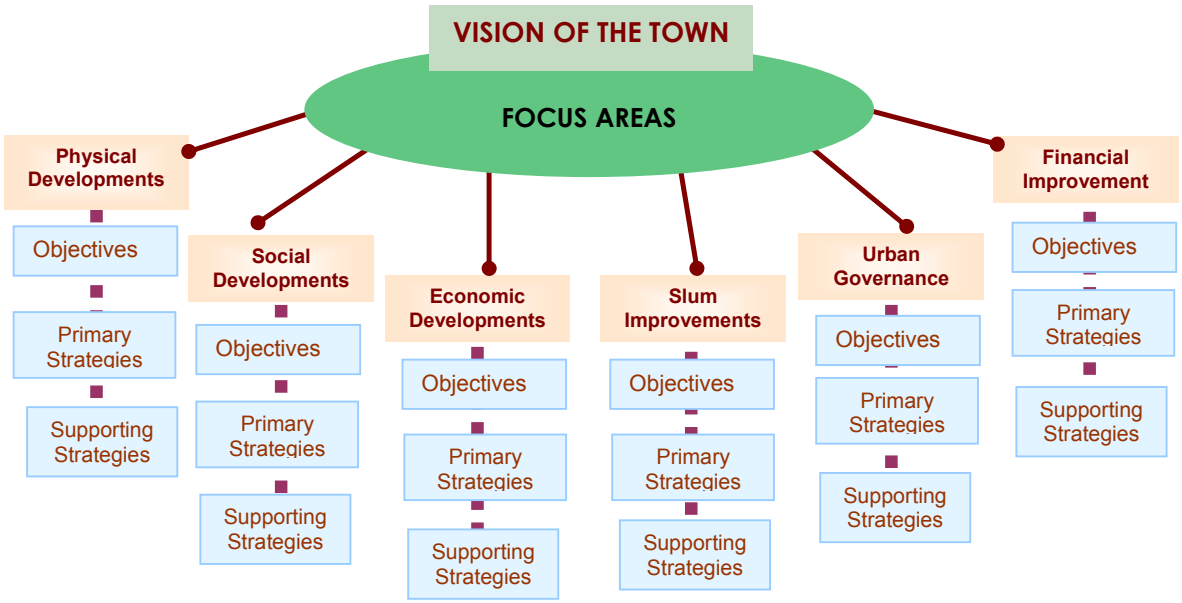
7.2.1 STRATEGIC FRAMEWORK

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 Kotagiri 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 Kotagiri 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 Potetials 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 Kotagiri Town Panchayat.

Table 7.2: Strategic Framework for Identification of Actions – Kotagiri Town Panchayat

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
PHYSICAL DEVELOPMENT			
Land use Management			
1	To regulate development activities	1. Prevent/regulate further construction of high-rise buildings in Kotagiri in view to retain its glory with adequate development control measures.	1. In order to protect the environment of Kotagiri, zoning regulation / development control regulation shall be earmarked within the LPA. 2. Regulate market located close to bus stand and develop the area for tourism related activities. 3. Resolving conflicting land uses with reference to Master Plan Proposal. 4. Identification of potential areas for residential development through implementation of schemes identified in the Master Plan. 5. Zoning of land uses specifically for agro-Industrial purposes to attract economic activities within the LPA. 6. Promotion of activities in the peripheral/outskirts in a phased manner. 7. Assessment of feasibility of establishment of regional linkages with other urban nodes to explore tourism potential. 8. Provision of urban open spaces and higher order facilities with in the LPA. 9. Implementation of Scheme roads as per Master Plan Proposal. 10. Identification of suitable locations for providing parking lots.
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 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 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. Primary and Secondary treatment facility to remove turbidity in the present water supply system. 3. Immediate action to locate perennial water sources. 4. Augmentation of WTP and Clear Water Transmission Mains for ultimate stage demand. 5. Implementing the continuous system of water supply 6. Ensuring equitable and daily supply. 7. Redistribution/re-zoning of distribution system in existing areas. 8. Rehabilitation of existing service reservoirs if applicable. 9. Construction of additional service reservoirs if applicable. 10. Proposed distribution system in uncovered 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. 2. Creation of public awareness.	
5	To achieve cost recovery	1. Comprehensive Asset management plan. 2. Revenue enhancement through collection drives, metering and tariff rationalization to raise annual	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		collection. 3. Institutional strengthening and capacity building. 4. Establishment of GIS based assessment mechanism.	11. Rehabilitation and upgrading of pump stations and transmission systems. 12. Promote individual house service connections (HSCs) in slum locations and discourage public stand posts (PSPs) as a policy measure and to increase accountability. 13. Maximizing of cost recovery from system beneficiaries/users of the services. 14. Assessment of gaps and investment needs in the urban poor/ slum locations. 15. Developing efficient operation and management of water supply systems. 16. Drive against illegal connection. 17. Developing technically feasible and financially viable projects for implementation. 18. Prepare an asset inventory and map the water supply systems for effective monitoring. 19. Capacity Building of the ULB staff to undertake efficient management and administrative decisions. 20. Creating Public Awareness with regards water conservation activities.
Sewerage and Sanitation			
1	To provide sewerage system	1. Comprehensive Sewer Master Plan. 2. Prevent discharge of sewage and sullage to storm water drains.	1. Sewage collection and conveyance system for unsewered areas considering ultimate stage sewage generation. 2. Ensure 100% coverage. 3. Prepare a comprehensive UGS master plan to explore the possibility of the decentralization of the system of operations for effective service delivery. 4. Improve and ensure access to sanitary facilities for the urban poor and slum dwellers. 5. Encourage pay & use category of public conveniences with community involvement in the maintenance of the same. 6. Performance monitoring - energy audit, quality, etc. 7. De-silting of existing water bodies and development of the bed lining. 8. Re-development of tank/lake bunds through slab lining. 9. Re-development of perimeter area - paved walkway, area lighting, compound wall/fencing, access control and landscaping; 10. Water treatment and recirculation including passive
2	To provide proper sewage disposal facility	1. Treatment of sewage - decentralized advanced systems. 2. 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 in slum areas. 4. Integration of existing and proposed LCS & community toilets to Sewerage system.	
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.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		3. Rehabilitation of existing water bodies. 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. Frequent testing of water samples.	aeration systems; 11. Reconstruction and restoration of drains leading into and out of the water bodies including by-pass and flood control; 12. Installation of water quality monitoring stations. 13. 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 / Pilot Project 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. Improve drainage network on a priority basis in flood-prone areas. 3. De-silting of existing storm water drains. 4. Perimeter protection of major drains. 5. Re-grading/re-surfacing of drains as required. 6. New drain network for uncovered areas. 7. Construction of new roads integrated with construction of drains. 8. Exploring Rain water harvesting measures to recharge ground water. 9. 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 waste 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. Scientific approach for Sweeping / waste collection. 2. Minimization of generation of Solid Waste. 3. Source segregation of municipal solid waste. 4. Augmentation and expansion of primary collection of waste. 5. Modernization and expansion of existing waste transportation system. 6. Municipal solid waste treatment and disposal. 7. Regulation of recyclable wastes handling and re-use. 8. Proper handling and disposal of slaughter house and other categories of wastes.	1. Phased implementation of 'Door to Door collection System' through community organisations by mobilising, facilitating, organising and supporting community activities with the help of local NGOs. 2. Create a separate multi-disciplinary SWM cell with expertise in engineering, human resources/personnel management, awareness generation/ health. 3. Installation of 'Community Storage Bins' in areas where door-to-door collection cannot be implemented. 4. Implementation of TWO BIN System of solid waste collection.

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
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. 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.	5. Ensure optimum utilization of existing fleet. 6. Improvement of infrastructure facilities in the 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. Develop transfer stations in a scientific, eco-friendly manner – processing waste at these sites, for different types of material. 10. Expanding the 'Voluntary Garbage Disposal Scheme' for more number of restaurants/hotels and commercial establishments and collecting user charges. 11. Placement of dumper bins sufficient in number at market location. 12. Persuading the hospitals to be part of the existing bio-medical waste management facility.
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 with revetment/retaining wall to avoid land slides. 4. Construction of FOB and pedestrian subways at major intersections including widening of the embankment and ramp landing (access and main) areas. 5. Provision of signals, pedestrian crossings, median, traffic island and signage's. 6. Pedestrian Footpaths to be provided in all the major roads for better movement. 7. Establishment of new road connectivity to the rural habitations.
2	To ease traffic congestion in the town	1. Study of town-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. 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

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
2	To Reduce/minimize energy cost	1. Energy audit studies. 2. Innovation of new technologies. 3. Utilization of alternate renewable energy sources.	junctions. 3. New street lights for uncovered and extension areas. 4. Power consumption management and implementation of energy efficiency measures. 5. Use of energy saving equipment 6. Identification of possibilities of underground cabling. 7. Encouraging private operators for O&M.
3	To Establish PPP	1. Exploration of possibilities of public private partnerships.	
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.
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. 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
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.	
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.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
			convenience systems.
ECONOMIC DEVELOPMENT			
1	To provide employment opportunities to all	1. Formation of Integrated tourism development plan. 2. Creation of tourist potential spots. 3. Encouraging service sector by implementation of training programmes.	1. Developing civic infrastructure facilities to attract tourists. 2. Creating infrastructure to facilitate development of tourist spots. 3. Encourage development of tea estates and tea factories. 4. Promote rural markets to utilize the potential. 5. Promotion of food processing industry. 6. Creating amusement parks and other entertainment facilities especially for local citizens and tourists. 7. Encourage private sector to develop shopping complexes and multiplexes to meet the growing demands of the expanding middle class in the region. 8. Promote non-polluting small scale and cottage industries. 9. Encourage development and growth of housing complexes in the private sector or joint venture. 10. Creating infrastructure including making availability of land to attract educational and research institutes. 11. Relaxation of polices and procedures in order to attract investors. 12. Facilitate assistance for enterprises to build export capabilities and access global markets.
3	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. 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.	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. 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. Rigorous accounting procedures 13. Clear guidelines on conduct for leaders and officials that
2	Efficient urban management	1. Establishment of town-wide framework for planning and governance 2. Functional Restructuring.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		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.	are enforced 14. Open procurement and contracting systems 15. Ensuring transparency in financial arrangements. 16. Disclosure of information. 17. Fair and predictable regulatory frameworks. 18. Independent and accessible complaints procedures. 19. Regular flow of information on key issues. 20. Regular and structured consultation with representative bodies from all sectors of society including individuals in the decision making processes. 21. Access to government by all individuals and organizations. 22. Instruments to improve efficiency through enhanced technical, administrative and financial capacities. 23. Setting in place an active and online public Grievances' Redressal System, with automated department-wise complaint loading and monitoring system.
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, properties, etc.	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 important for municipal finance. 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-
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.	

No.	Sector Specific Objective	Primary Strategies	Supporting Strategies / Actions
		5. Establishment of financially self-sustaining agency for urban governance service delivery through reforms.	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. 10. Designing of accounting procedures. 11. Standardized recognition norms for municipal assets and revenues. 12. Auditing of accounts should be carried out effectively and regularly to promote transparency and accountability. 13. Increasing revenue through measures for better coverage, assessment, billing, collection and enforcement. 14. Controlling growth of expenditure. 15. Improving the organization and efficiency of the tax administration system. 16. Augmentation of resource mobilization/revenue generation from properties belonging to ULB for improving the overall financial health. 17. Energy audit to minimize expenditure and increase useful service life of equipment 18. Staff training, exposure visits and motivation programs to bring about awareness on recent developments and technologies. 19. Development of training material in the local language and impact and evaluation studies of the training programmes.
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 innovative ideas and approaches using tools for community participation and fast track litigation methods. 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. Development of MIS for effective and efficient management & decision-making. 3. Publication of newsletters for creating awareness and participation. 4. Prepare and conduct capacity building programmes for elected representatives, especially women representatives, with a view to enable them to focus on gender based issues. 5. Promote the creation of interactive platforms for sharing municipal innovations, and experiences among municipal managers. 6. Better human resources management through assessment of the training needs of personnel involved in urban administration to enhance management and organizational capabilities. 7. Assessment of fund requirement and resource persons to tackle the training needs of all personnel. 8. 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 Kotagiri 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.

Based 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 WATER DEMAND

The existing water supply levels in Kotagiri need to be increased in terms of coverage and the volume of potable water needs to be supplied in an equitable manner to achieve an average per capita water supply as specified in CPHEEO guidelines on Water Supply and Treatment and to cater to 100 percent of the projected population. Non-Revenue Water/ Unaccounted for Water (NRW/UFW) and system losses need to be mitigated and monitored to ensure that the total losses do not exceed the allowable limits (15 percent) as specified in the CPHEEO guidelines. Further reduction of the losses through an effective and continual leak detection and water audit program is highly recommended and this would prove advantageous in the long-term.

Based on the projected population and the permissible supply levels as specified in the "Manual on Water Supply and Treatment" by CPHEEO, the total future water demand has been estimated and furnished in the table below:

Table 9.1: Estimated Future Water Demand

No.	Description / Parameter	Present Stage (2010)	Intermediate Stage (2025)	Ultimate Stage (2040)
1.	Projected Population	34,309	39,888	45,467
2.	Per capita supply (lpcd)	70	70	70
3.	Installed Capacity of source (MLD)	0.60	0.60	0.60
4.	Augmentation required at Elada Source (MLD)	2.40	2.79	3.18

It can be observed from the above table that the existing system requires immediate augmentation. The system is not capable of meeting the increasing water demand through its present available sources till the year 2010 (assumed based on projected population). Augmentation measures need to be identified considering the utilization plan of the existing source (Elada Scheme). Existing systems should be utilized only to the presently installed capacity and should not be overloaded because of low flow conditions in the Elada Source during the summer months (considerable part of the year). Therefore it is felt that additional Scheme can be augmented for meeting the ultimate stage water demand conditions. 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 actions identified through discussions with stakeholders and the proposals planned for the system improvement have been recommended with the intension of 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; and
- Implementation of remedial measures based on identified weaknesses of the system/sector to ensure that imminent and potential (future) threats are eliminated and prevented from recurring.

9.2.2 STRATEGIES FOR DEVELOPMENT

The Strategies formulated for water supply focus on exploring new sources, optimum use of existing water resources, total water supply planning, conservation of ground water, reduction of unaccounted for water and largely on Institutional strengthening & Capacity building. The ULB should facilitate creation of capital assets so as to meet the future requirements for the provision of water supply.

It is envisages that during the year 2025 water demand would be about 2.80 MLD for 39,888 people at a daily supply rate of 70 LPCD. The distribution network is expected to cover additional 10,100 households by individual water tap connection. Distribution losses due to Leakages would be brought to 10% from the exiting estimated losses of 25%. Daily water supply will be effected from the present supply of once in three days. Considering the current deficit and the future requirements for water supply, the following strategies are suggested.

Sector Approach: Capital investments in water supply have to be planned to address issues focusing upon; (i) Augmentation of Source to meet the Per Capita Demand of Water; (ii) Increase in the storage and distribution of existing facilities to meet growing demand; and (iii) Rehabilitation of existing facilities to avoid the higher costs of deferred maintenance;

Design Criteria: The ULB should increase the supply levels in terms of coverage, to achieve an average gross supply of 70 lpcd and to cater to 100 percent of the population. Assuming that distribution network is extended to more than 95 percent of the Roads within ULB area, given very high population density within the ULB, all the citizens will enjoy the required supply.

Source Augmentation: Development of a sustainable and quality source of water for onward supply with requisite treatment/ disinfection is a critical issue that confronts the Kotagiri town panchayat. Perennial sources need to be identified and tapped effectively. Although raw water intake systems can be installed to meet future demand, the existing system needs to be evaluated and modified, if necessary, since the MWL during summer months in the Elada source may not allow adequate water to flow into the intake well. For future augmentation of water supply from the Elada Scheme, alternative check dam, as listed below can be evaluated for adoption:

- Raising the height of the existing check dam and construction of retaining wall on the sides of bund;
- Construction of road side drains and culverts to divert rain water run-off into the catchment area; and
- Desilting and increasing the catchment area by constructing additional check dam.

An alternative which is practiced in drought-prone areas is also recommended and requires further investigation at the detailed engineering stage. Summer storage tanks can be developed in the vicinity of Elada. These tanks are essentially large earthen structures which can be designed based on the probable holding capacity established through analysis of rainfall intensity, flow during flood conditions and evaporation factors. High discharge pumps can draw water from Elada and other supply channels (based on location) during high flow/ flood conditions and pump the same to the summer storage tanks for later abstraction as a surface source for treatment and supply to the existing distribution system during drought conditions. This measure will also serve to conserve water and enhance groundwater storage potential. In the face of full utilization of the surface source to meet future demand, groundwater use can be restricted and eventually managed in an efficient manner. The existing infrastructure for groundwater abstraction can be used to meet localized distribution requirements during drought seasons when the yield from Elada source is likely to decrease. The aforementioned discussion is indicative of the future requirement for the Kotagiri in the long-term.

Water Supply Operation & Maintenance Plan: The plan shall be designed largely by involving the Private Sector for O & M operations. This may be done through a management contract with a private agency, which would be solely responsible for the O & M of the system, based on agreed annual fee, with built-in incentives for improved performance.

Asset Management Plan: To address the condition assessment and the performance of the water supply assets, it is recommended that a detailed asset management plan be prepared for the assets of water supply in Kotagiri town.

Consumer Metering System: The ULB need to initiate metering system in the town. For the projected population, there shall be about 10,100 nos. of metered connections in ultimate design year of 2040. It is, therefore important that service connections be provided with metering system under this project. The metering system is very important as it would provide a platform for proper accounting of the water production and consumption and help reduce the unaccounted for water and help in revenue generation.

Tariff Revision: Future capital investments on system up-gradation being 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.

Unaccounted for Water: ULB shall implement leak detection studies to ascertain the volume of unaccounted water. This to an extent, if corrected properly, would help ULB to realise more water.

Re-cycle & Re-use: Strategy for Use of Recycled water for Non-potable use, based on a Pilot Study for the ULB.

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 dilapidated sections of the network and those that require replacement.

Institutional Strengthening & Capacity Building: The officials need to be trained for Project Planning, Implementation, and Monitoring and Evaluation programs. It is recommended for strong Strategic Plan database particularly to decrease the duplication of laying of pipeline for same distribution as well as for a strong redressal system and minimizing unaccountable losses & illegal connections.

9.2.3 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

Following table presents priority actions and their implementation plan for water supply during the Short-term period (2007-2011):

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		√	√		
	Construction of additional Storage reservoirs	√	√	√		
	Development of Distribution network for extended areas		√	√		
	Rainwater Harvesting Measures	√	√	√		
	Re-cycle and Re-use treated water			√	√	
Augmentation of Water Supply System	Source Augmentation / Treatment Plant		√	√		
	Redistribution/Re-zoning of D-system in existing areas	√	√			
	Rehabilitation of Existing Service Reservoirs	√	√			
	Expansion of House Service Coverage	√	√			
	Installation of Meters	√	√			
	Construction of summer storage tank		√	√		
	Upgradation and Improvement of Distribution System		√	√		
	Rehabilitation of Existing Service Reservoirs	√	√			

PROPOSALS

The improvement 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 2025 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 extn. areas
- Rehabilitation of storage and distribution system in existing areas;
- Source Augmentation;
- Augmentation of Transmission Mains;
- Augmentation of Storage Capacity; and
- Extension & Augmentation of Distribution Network

Table 9.3: Demand, Supply and Required Augmentation of Water Supply System for 2025

Component	Unit	Supply Status	Demand					
			Current Year 2007		Short-term Year 2010		Long-term Year 2025	
			Demand	Surplus (Deficit)	Demand	Surplus (Deficit)	Demand	Surplus (Deficit)
Water Intake Pumping	MLD	0.60	2.32	(1.72)	2.43	(1.83)	2.79	(2.19)
Water Treatment Plant (if Surface water Used)	MLD	--	2.32	2.32	2.43	2.43	2.79	2.79
Service Storage	ML	0.38	0.77	(0.39)	0.80	(0.42)	0.92	(0.54)
Distribution System	Km	20.00	26.42	(6.42)	32.61	(12.61)	36.75	(16.75)

Source: Analysis

As reported by the ULB the average drawl of water from the existing sources is worked out to be 0.60 MLD. The total requirement of water is calculated as 2.43 MLD for the short-term period (2010) and 2.79 MLD for the long-term period (2025). Deducting the existing quantum of water supply availabilities, the net requirement of water for short-term period is 1.83 MLD and 2.19 MLD for long-term period.

Considering the above requirements the following proposal has been formulated to cater the future water supply needs of ULB:

1. Augmentation of Elada scheme by constructing additional check dam and raising the height of existing check dam.
2. Implementation of Alakarai Scheme by constructing pump house with 2 booster stations and a treatment plant at Rifle range area.
3. Implementation of Kaggula Scheme by increasing the height of the existing check dam and provision of pump house with sump.

From the above table, it is confirmed that additional service reservoirs of 0.54 ML capacity and distribution mains of 16 km length need to be established to fulfill the demand during the short-term period.

The following proposals have been identified by the study team based on the reported evaluations, discussions and priority actions as required and mutually agreed upon by 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;
- Construction of additional service reservoirs;
- Rehabilitation and upgrading of Pumps/Machineries in the existing system; and
- Augmentation of WTP and Clear Water Transmission Mains for ultimate stage demand.

The above proposals are envisaged to initially cover the problem areas within the town as a first priority, and then in later stages the concept of design/implementation similar to that adopted for ULB, can be implemented on a modular/zonal basis in the peripheral areas consistent with future development.

9.2.4 ESTIMATED SECTORAL INVESTMENT

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

Table 9.4: Estimated Sectoral Investment - Water Supply (Rs. in Lakhs)		
Component	**Activity**	**Investment**
Water Resource Management	Water Supply Improvement Scheme to Added areas	207.57
	Construction of additional Storage reservoirs	231.17
	Development of Distribution network for added areas	151.03
	Rainwater Harvesting Measures	60.11
	Re-cycle and Re-use treated water	36.07
Augmentation of Water Supply System	Source Augmentation / Treatment Plant	173.27
	Redistribution/Re-zoning of D-system in existing areas	180.34
	Expansion of House Service Coverage	240.45
	Installation of Meters	123.23
	Construction of summer storage tank	30.06
	Upgradation and Improvement of Distribution System	166.06
	Rehabilitation of Existing Service Reservoirs	5.71
Total		**1605.06**

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

9.3 SEWERAGE AND SANITATION

An assessment of the existing gap in service levels in the town's sewerage sector in relation to the estimated future generation of sewage based on projected growth in population and prescribed guidelines/normative standards has been performed for the following components:

- Sewage generation and sewage collection system;
- Sewage treatment and disposal; and
- Requirement of land for sewage treatment facilities.

The demand-gap assessment has been performed for the short-term period, i.e. intermediate stage (15 years) and for the long-term, i.e. ultimate stage (30 years), and is presented in the table below:

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	*In nos.*	33,194	34,309	-	39,888	-	45,467	-
Sewage Generation	*MLD*	0.47	1.91	-	2.21	-	2.52	-
New Infrastructure								
Sewage Pumping	*MLD*	-	1.91	**1.91**	2.21	**2.21**	2.52	**2.52**
Sewage Treatment Plant	*MLD*	-	1.91	**1.91**	2.21	**2.21**	2.52	**2.52**
Sewer Network	*Km*	-	37.74	**37.74**	43.38	**43.38**	50.01	**50.01**
Estimate of Requirement of Land for Sewage Treatment Alternatives								
Waste Stabilization Pond @ 4 acres / MLD	Acres/ MLD	-	7.64	**7.64**	8.84	**8.84**	10.08	**10.08**

Activated Sludge Process @ 0.25 acres / MLD	Acres/ MLD	-	0.48	**0.48**	0.55	**0.55**	0.63	**0.63**

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. Decentralized sewage treatment facilities may result in a net higher requirement of land. 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.

9.3.1 STRATEGIES FOR DEVELOPMENT

It is envisaged that during the year 2040, 95% population will be covered and sewage generation of 2.53 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 with the following strategies:

Sewerage Master Plan: Preliminary survey need to be performed considering the terrain condition and sewage generation quantity to assess the technical and economical viability of a sewerage project. A plan for sewerage should be prepared and the focus areas shall include, but not necessarily be limited to the following:

- Overall plan for collection, conveyance, treatment and disposal/re-use of generated sewage in the development area.
- A definite plan for increasing coverage over a specific period to recommended levels, which will ensure that beneficiaries are migrated away from the present system of sanitation.
- Present coverage and condition of sewerage 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.
- The sewage treatment plant (waste stabilization ponds) with a capacity of 2.50 MLD to fulfill the long-term demand during 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).

Preferred Treatment Facility: Treatment of collected sewage in accordance with the pollution control norms and river discharge standards is critical and poses a significant hazard to public health if not designed, implemented, operated and maintained in a proper manner. A conventional method of treatment such as waste stabilization ponds (WSP) is the best suitable treatment method for towns having less population and also this method of treatment requires relatively low O&M costs when compared with other treatment methods.

Re-Cycle & Re-Use: Another issue that must be dealt with is the re-use of treated wastewater, which can reduce the overall demand on freshwater. The following uses are recommended for further evaluation:

- Re-use of treated water for supplementing fire-fighting demand. Although it is impractical to install a wet system of fire protection, treated wastewater can be stored at strategic locations at ground level with pumping arrangement or overhead tanks for access by the fire department. These locations will have to be clearly demarcated, accessible and equipped with watch/ward to prevent misuse or human contact with the treated wastewater. In the present scenario, this option may not be viable and is presented here only for future consideration.
- Re-use for wet sweeping of main roads - modern equipment is commercially available to sweep and clean main roads through mechanical brushing/sweeping combined with a water spray to keep suspended particulate matter to a minimum. Water for this operation can be obtained from treated wastewater. This is normally applicable in major cities. In

the case of Kotagiri, this option may not be practical. The option to utilize treated and disinfected wastewater for gardening and related open spaces' maintenance can be evaluated.

- Flushing of head manholes/sewers - This operation is probably the best use for treated wastewater and is most beneficial to the longevity of the sewers that are proposed in all the towns within the Kotagiri region. Periodic flushing of the head manholes using treated wastewater discharged from mobile flushing units is recommended to reduce silt deposition in sewers. The flushing operation can be performed on a rotational basis where each sewer line (starting/head reach within a sewerage zone) is flushed at least once in a month.

Coverage of Low Income Settlements: There are 20 notified slum areas within the town limit. All these slum areas are partially provided with the sanitation facility. Therefore it is proposed to cover this locality by using Pay & Use type / Free / Low Cost Sanitation toilet facility under GoI & GoTN schemes.

Operation & Maintenance Plan: Adoption of an O&M Plan and Schedule, including options of using the private sector for O&M (e.g. management contract). The ULB can privatise O&M of pumping stations and STPs through a service or management contract with the private sector who would be solely responsible for the O & M of the system, based on an agreed annual fee, with built-in incentives for improved performance.

Mapping & GIS: The O&M shall also include mapping & GIS of the sewer system, for proper upkeep and maintenance and regular updation. This would enable constant vigilance with regards to system malfunctions and promote effective maintenance.

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 UGS Assets in ULB.

Tariff Revision: Future capital investments on system up-gradation being 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. It is proposed to introduce a Separate Sewer Charge to service the debts and sustain O&M, of the new Capital Investments.

Institutional Strengthening and Capacity Building: Recruitment of trained engineering personnel for management of Sewer works is an important issue confronting the ULB, the present system is being implemented by TWAD Board and shall be transferred to the ULB for maintenance of Assets, 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.

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. The master plan shall also focus on provision of sewerage and sanitation facilities in the newly planned layouts and peripheral areas to ensure coordinated development.

9.3.2 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

Following table presents priority actions and their implementation plan for underground sewerage during the project 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**
Sewerage Collection, Treatment & Management	Development of Sewerage System for Town		√	√	√	√
	Provision of Sewage Treatment Plant		√			
	Community toilet integration	√	√			
	Recycling Plant & Reuse system			√		
Sanitation Facility	Community toilets	√	√			

PROPOSALS

The projected demand for 2040 is compared with the Sewage generation from the existing source and the ongoing project, to verify the adequacy and the need to augment the capacity of certain components.

Proposed Capital Works - UGSS
- Sewage collection system;
- Sewage Treatment Plants; and
- Wastewater pumping and out-fall systems.

It is proposed to implement the UGSS by, (i) Creation of assets for Pumping Capacity by 2025, (ii) Ultimate stage Treatment Capacity of 2.53 MLD (Waste Stabilization Pond), and (iii) sewer network of approximately 50 km length and creation of new Sewer Zones.

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 Stakeholders:
- Sewage collection system - sewers, manholes, pump/lift stations, etc considering the ultimate stage peak flow (2010-2040);
- Sewage treatment plants designed to handle ultimate stage flow with installation on a modular basis (15-year design period); and
- Wastewater pumping and out-fall systems.

The above proposals are envisaged to initially cover the core areas within the town. However, the concept of design/implementation shall be similar to that adopted for core area, which can be implemented on a modular/zonal basis in the peripheral areas consistent with future development.

9.3.3 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 - Underground Sewerage Scheme (Rs. in Lakhs)		
Component	**Activity**	**Investment**
Sewerage Collection, Treatment & Management	Development of Sewerage System for Town	3774.68
	Provision of Sewage Treatment Plant	45.08
	Community toilet integration	225.42
	Recycling Plant & Reuse system	18.03
Sanitation Facility	Community toilets	72.14
Total		**4135.35**

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

9.4 STORM WATER DRAINS

- Development of drains appears to be performed as a joint activity with development/reconstruction of roads and not as an individual sector. This is specific to drains along major and minor roads. This is a critical deficiency area, since the existing network along major and minor roads serves as the primary conduit for conveying 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 focusing on areas such as projected growth of population and 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 to highlight the function of storm water drains, prevention of encroachment of storm water drain areas, prevention of dumping of solid waste and discharge of sewage/sullage from households and other related issues.

9.4.1 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 the strategies identified in 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. This shall be based on the past history of floods and a survey of all the drains in the town and their conditions. Mere cleaning of the drains could drain most of the flood spots. In almost all the cases, strengthening of the drains and construction of leading drains will have to be taken up. A desilting exercise has to be taken up in all the natural and open drains.

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/connections between secondary and tertiary drains to primary drains have to be improved and strengthened. In addition, control of weed growth, limiting the dumping of solid and construction waste and controlling the growth of encroachments would be given top priority.

Primary Drain Rehabilitation and Improvement Program: The primary drains are inadequate to handle the flash floods as they are not systematically designed and are not fully constructed in some sections. Moreover, significant reduction in depth and width are noticed due to siltation and encroachment of 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 only 17.20 Km. of tertiary drains covering only 52% of the road length against a norm of 130%. 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 ecosystems: Efforts need to be made to develop an integrated catchment management plan suitably connecting all the existing streams/water bodies. Further, hydraulic capacity of the streams, channels and water bodies would be improved through widening and deepening and construction of side walls thereby limiting the risk of floods. Desilting 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).

Monitoring and Quality Control: Monitoring of water quality parameters need to be conducted on a regular basis. ULB need 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. The horticulture department of town would devise pro-active strategies to limit pollution to water bodies within its limits and would co-ordinate with other agencies for monitoring the parameters in the water bodies.

Therefore, the priority actions identified through discussions with stakeholders and the proposals evolved for improvement are specifically 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.

9.4.2 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

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

Table 9.8: Priority Actions and Implementation Plan - Storm Water Drains

Component	Activity	Year 1	Year 2	Year 3	Year 4	Year 5
Drains Rehabilitation	Rehabilitation of Major drains/channels		√	√	√	
	Rehabilitation of Storm Water Drains	√	√			
Construction of Drains	Provision of storm water along existing roads	√	√			
	Formation of new drains along proposed road network		√	√	√	√
	Treatment and re-use of storm water			√	√	

As specified earlier, priority actions identified by the stakeholders, discussed and finalized pertaining to development of the existing network of storm water major and minor drains including catchment, surface and area drains in Kotagiri 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.

PROPOSALS

The ULB should increase the Service levels in terms of coverage, to achieve coverage of 130 percent of Road Length, through Built Drains. The ULB is recommended to adopt the strategy for rejuvenation of Lakes and Ponds, to be used as sources for re-charging and as Summer Storage, and through networking of Water Bodies, to increase Water Sustainability.

Proposed Capital Works - Storm Water Drains
- Improvement to existing minor drains;
- Rehabilitation of existing major drains/streams;
- Fencing and greenway development along major drains;
- Development of a storm water drain master plan; and
- New drain network for uncovered areas.

Considering the requirements, capital investments in Drainage have to be planned to address issues focusing upon; (i) Improvement Works and Construction of Tertiary Drains. (ii) Drainage Rehabilitation works for low lying areas, through improvement of networking of

Secondary and Tertiary Drains to Primary Drains; (iii) Improvement and Rehabilitation of Primary Drains through widening, deepening, construction of Side-Walls, Cross-Drainage Works and Diversion works at Critical locations; (iv) Rejuvenation and Rehabilitation works for Water Bodies, through de-silting, bunding works and Intersection and Diversion of Sewage wherever required.

The Project demand for 2011 is compared with the existing Storm Water Drainage Infrastructure, to verify the adequacy and need to augment the capacity of components. Proposed augmentation of required components of the system is indicated in Table 9.9 below.

Table 9.9: 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	27.86	36.51	-	38.15	-
System Rehabilitation						
Strengthening of Open Pucca Drains	Kms	10.20	-	**(5.00)**	-	-
Strengthening of Closed Pucca Drains	Kms	0.60	-	-	-	-
Upgradation of Kutcha drains to Pucca drains	kms	6.40	-	**(6.40)**	-	-
Strengthening of Natural Drains	Kms	3.00	-	**(3.00)**	-	**-**
New Infrastructure						
Storm Water Drains - (@130% of road length)	Kms	17.20	47.47	**(30.27)**	49.59	**(32.39)**
Open Pucca Drains	Kms	10.20	37.97	**(27.77)**	39.68	**(29.48)**
Closed Pucca Drains	Kms	0.60	9.49	**(8.89)**	9.92	**(9.32)**
Kutcha drains	Kms	6.40	--	**--**	--	**--**

Source: Analysis

It is proposed to augment additional quantity, (i) Construction of additional length of approximately 5 km of Open Pucca Drains to meet the current gap, (ii) Upgradation of additional length of approximately 6 km of kutcha Drains to meet current gap, (iii) Strengthening, Desilting and Removal of encroachments of 7 km of Natural Drains, and improve networking, and (vi) Provision of 32 km length of storm water drains along the proposed road network during the short-term period.

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 Stakeholders:

- Development of a storm water drain master plan;
- De-silting of existing storm water drains;
- Improvement measures to existing water bodies;
- Re-grading/re-surfacing of drains as required; and
- New drain network for uncovered areas.

9.4.3 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 9.10: Estimated Sectoral Investment - Storm Water Drains (Rs. in Lakhs)		
Component	**Activity**	**Investment**
Drains Rehabilitation	Rehabilitation of Major drains/channels	522.05
	Rehabilitation of Storm Water Drains	48.51
Construction of Drains	Provision of storm water along existing roads	118.24
	Formation of new drains along proposed road network	600.31
	Treatment and re-use of storm water	36.38
Total		**1325.49**

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

9.5 ROADS, TRAFFIC AND TRANSPORTATION

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

9.5.1 STRATEGIES FOR DEVELOPMENT

Strategies under Roads, Traffic and Transportation focus at improving town wide transportation network and linkages, and Provision of town and regional level transport facilities. Improvement of Core Town Areas is proposed in terms of Pedestrianisation, Signages and Strengthening.

Design Criteria:

- Strategy shall focus to have 100% coverage of surfaced roads including up-gradation of roads.
- Ensure free flow of traffic through junction improvement and providing sufficient off-street parking
- Ensure free and safe movement of pedestrian providing footpaths and Side Protection Barriers

Approach: The ULB need to increase the network, so as to achieve a full cover that will to cater to 100 percent of the population. Given the high density of population within the ULB area, and also limited area for development, it is proposed to emphasize on strengthening and widening measures for Roads, thus addressing the issues of congestion and incomplete network.

Preparation of Traffic Management Plan: This shall focus on 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 signs, markings, lighting, 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 aesthetic.

Road Planning and Demand: The newly developing areas and habitations are of rural in nature and it requires establishment of new linkages. The road widening projects can provide success to a certain extent in increasing the area under roads, but are limited to certain commercial corridors and critical link roads only. Road planning shall also ensure that roads, parking and traffic infrastructure provision matches 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 cities. It is therefore necessary to provide better facilities for pedestrian movement in areas where pedestrian movement is predominant. Pedestrian facilities in terms of providing footpaths free of encroachment in all the bus route roads.

Building Pay & Park type Complexes: The phenomenal growth of vehicles has lead to increased demand for parking. Being an important tourist centre there is a sudden increase of floating population during season time. The problem is further aggravated by the absence of adequate off street parking facility. Pay and Park complexes are to be built for a better parking and traffic management. Such complexes can be privatized.

Asset Rehabilitation: Upgrading shall be undertaken to extend, refurbish and enhance the roads. Plans would be phased so as to optimise the cost and surface condition and shall include upgrading earthen roads to Bituminous Topped Roads. This phased up-gradation would considerably reduce the costs on new formations.

The most critical issue is not only planning for such infrastructure, but also ensuring active and effective coordination across other departments such that development activities across each front, i.e., installation of sewer mains, water mains, street lights, storm water drains.

9.5.2 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

Following table presents priority actions and their implementation plan for roads, traffic and transportation during the project period (2007-2012):

Table 9.11: 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	Strengthening existing roads	√	√			
	up gradation of important roads		√	√		
	Formation of new roads			√	√	
	Junction Improvements		√	√		
	FOBs	√	√			
	Culverts	√				
	Bus Shelters	√				
	Signals	√				
	Signage and markings	√	√			
	Road divider & Medians	√	√			
	Traffic Island	√	√			
	Parking Lots/ complexes		√			
	Bus Stand Improvement	√				
Improved Pedestrian Facilities, comfort and safety	Accessibility to the disadvantaged	√	√			
	Pedestrian Crossings	√				
	Foot paths	√	√			

PROPOSALS

Proposed Capital Works - Roads, Traffic and Transportation

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

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 Stakeholders:

The Project demand for Roads for 2011 is compared with the existing Road Infrastructure, to verify the adequacy and need to augment the capacity of components. The future trend of road network development is envisaged based on population growth and land use; efficient system of road network; segregation of traffic; designalizing of junction; and Upgradation, widening and strengthening of major junctions. Projected road demand, for town roads, for 2011 is indicated in Table 9.12.

The Road Length demand for 2011, based on the road density of approximately 14 kms per sq. km of area and Per Capita Road Length of approximately 0.90 m is approximately 36.51 km, as against 27.86 km for 2007. Service level based on Road Surface type is maintained at 5 percent for CC Roads, 85 percent for BT Roads and 10 percent for WBM Roads. It is proposed to improve the condition of existing roads through Upgradation, Widening and Strengthening of upto 15 km of road length.

Table 9.12: Demand, Supply and Required Augmentation of 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	**27.86**	**38.15**	**-**
Concrete Road	Kms	2.06	2.82	**-**
BT Road (Approved + Unapproved)	Kms	21.27	29.13	**-**
WBM Road	Kms	1.13	6.20	**-**
Earthen Road	Kms	3.40	-	**-**
System Rehabilitation – Upgradation of Internal Town Roads				
BT Roads to Concrete Roads	Kms	-	-	**(4.17)**
Restoration of BT Roads	Kms	-	-	**(5.20)**
WBM Roads to BT Roads	Kms	-	-	**(2.50)**
Earthen Roads to BT Roads	Kms	-	-	**(3.40)**
New Infrastructure – New Roads Formation				
Concrete Road	Kms	2.06	2.82	**(0.76)**
BT Road	Kms	21.27	29.13	**(7.86)**
WBM Road	Kms	1.13	6.20	**(5.07)**

Source: Analysis

Road Augmentation: It is proposed to augment additional quantity of road network by the following methods, (i) New Formation of additional length of 0.7 km of Cement Concrete Roads; (ii) New Formation of additional length of 7.8 km of Black Top Roads; (iii) New Formation of additional length of 5 km of WBM Roads, (iv) Strengthening of existing BT roads to a length of 5.2 km, (v) Upgradation of BT to CC roads to a length of 4 km, and (vi) Upgradation of Earthen Road to BT road to a length of 3.4 km.

Junction Improvement: Kotagiri Town is densely populated and is an important tourist destination, although the town's road system has many ill-designed road intersections, which lack in many characteristics such as road geometric features, channeling islands, parking lanes for turning vehicles, acceleration and deceleration lanes etc. To improve the town image and the carrying capacity of road junctions, it is proposed to provide grade separated pedestrian subways, Junction landscaping, and improvement at selected Intersections. Following junctions are proposed for the improvements on the basis of observation and with consultation.

- Bus Stand junction;
- John's Square; and
- Ramchand.

Intersections must be designed and operated for simplicity and uniformity and the design must keep the capabilities and limitations of drivers, pedestrians and vehicles using intersections. All the traffic information on road signs and marking should be considered in the design stage prior to taking up construction work. Any location having merging, diverging or crossing maneuvers of two vehicles is a potential conflict point. The main objective of the intersection design should be to minimize the 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

Bus Stand Improvement: As the town is proposed to be developed as a tourist destination and in order to fulfill the present and future expansion of existing bus stand requirements the number of bus bays are proposed to be increased with basic facilities.

It was noted that the land requirement for provision of new roads and other infrastructure in the newly developed areas that are within the development area has been identified and earmarked in the Master Plan. However, formation and development of such roads are not envisaged under the above proposals.

9.5.3 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	63.06
	up gradation of important roads	197.19
	Formation of new roads	331.32
	Junction Improvements	36.38
	FOBs	2.43
	Culverts	6.06
	Bus Shelters	72.77
	Signals	36.38
	Signage and markings	18.19
	Road divider & Medians	30.32
	Traffic Island	12.13
	Parking Lots/ complexes	60.64
	Bus Stand Improvement	121.28
Improved Pedestrian Facilities, comfort and safety	Accessibility to the disadvantaged	30.32
	Pedestrian Crossings	6.06
	Foot paths	72.77
Total		**1097.30**

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

9.6 SOLID WASTE MANAGEMENT

9.6.1 STRATEGIES FOR DEVELOPMENT

While formulating strategies, the MSW (management & handling) rules 2000, serve as guideline. The rules came into existence under section 3, 6 and 25 of the Environment (Protection) Act, 1986 by Central Government. Strategies for solid waste management revolve around optimum use of manpower, equipping them with required gears and making the collection, transportation and disposal effective round the clock.

SEGREGATION AND STORAGE OF WASTE AT THE SOURCE OF GENERATION

Improvement measures should evolve effective strategies to mobilize the community and citizens towards synchronizing the system of waste storage at source with primary waste collection by the ULB and cooperate with the ULB to maintain clean streets and neighborhoods, in particular, and the town in general. The local inhabitants should be advised to keep two separate bins/bags for the purposes of segregation of waste at source and adopt appropriate mode of disposal of such waste from the source as outlined in the Manual on the Municipal Solid Waste Management.

ULB should direct all waste generators (households, institutions commercial establishments and floating population) not to throw any solid waste in the street, open spaces, and vacant plots or into drains by organizing public awareness programs and/or through public notification in leading local newspapers. Any violations in this regard should be penalized and the ULB staff should be empowered to do so.

PRIMARY COLLECTION OF SOLID WASTE

Following are the broad interventions suggested for improvement of primary collection of solid waste:

- Provide daily waste collection to all households and establishments for collection of organic bio-degradable waste from the doorstep by ensuring regular and reliable service so as to clear such waste within 24 hours of its generation;
- Dry and recyclable wastes to be collected on alternative days as these do not decay and need not be collected daily; and
- Domestic hazardous wastes produced occasionally may not be collected from doorstep but the people should be advised to deposit the same in special designated bins.

Accordingly, one of the key steps to be followed towards implementing the above initiatives would be to direct the street sanitary workers to collect the wet waste (organic and bio-degradable) door-to-door during the street sweeping process on a daily basis. Initially, some of the well developed residential areas of the town that can readily afford the cost involved may be covered through this process. This service shall gradually be extended to other areas of the town.

ULB can evaluate the option of enhancing promotion of NGOs and SHGs for collection of dry and recyclable wastes and domestic hazardous wastes from the doorstep on ‘no payment on either side’ basis.

STREET CLEANSING

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. The sweeping norms mentioned below are for cleaning streets in the first 4 hours of the working day. Roads/streets, which have a central median or divided section, should be considered as two roads. In such cases the length of the road allotted for sweeping should be reduced to half or alternatively separate sanitary worker may be engaged for sweeping two sides of the road. All above shall include the surface drains abutting the road having width less than 1 m. the sanitary workers should be assigned fixed individual beats and 'pinpoint' work according to the density of the area to be swept. Alternatively, the following guidelines may be considered while prescribing these norms:

- 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, it is recommended to further the already implemented "night-sweeping" arrangement in the town by the ULB.

TEMPORARY STORAGE OF WASTES

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 be flush with the border of the road (i.e. drains) to maintain hygienic conditions and 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 short distances of about 300 m. These containers should also be kept on paved flooring and cleared daily. It is of paramount importance to ensure compatibility of the containers with the existing and proposed transportation fleet.

Another option that could be used 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 breading of flies and mosquitoes at the community storage points. Further, such an application of innocuous agents would facilitate maintaining hygienic and odorless environment at the community storage points. It may be noted that the proposed containerization of wastes would prevent littering and spreading of wastes at the community storage points by stray animals. Further, proposed training of rag pickers by NGOs would facilitate the rag pickers to collect recyclable wastes 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 OF WASTES

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 envisaged to 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 and based on the market surveys and situation analysis and discussion with the ULB, two types of vehicles are envisaged for the town:

- 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 vehicular capacity equivalent to 1.3 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 while those approaching their economic life would be used as reserves and for pinpoint operations, 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.

SOLID 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;
- Process aesthetics; and
- Overall life cycle cost.

[1] Manual on Municipal Solid Waste Management.

Based on the scale of waste generated in Kotagiri and viability of the treatment technologies, aerobic composting is recommended as the techno-economically feasible process for further detailed investigation and 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: Since all areas under ULB are proposed to be brought under privatisation, it is considered that there would not be any further requirement to induct conservancy workers. The existing street sweeping operations in the ULB are satisfactory and 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 implements.

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 the general cleanliness is through imposition of administrative charges on erring citizens. When citizens do not throw solid waste on roads, the collection of solid waste will become efficient and easy.

9.6.2 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

As specified earlier, certain priority actions identified by the stakeholders are discussed and finalized pertaining to development of the solid waste management sector in Kotagiri and 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.
- Regulation of recyclable wastes handling and 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 project 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	√	√	√		
	Containerized Tri-Cycles		√	√		
	Equipment for Garbage Recovery Personnel		√	√		
	Equipment for Street Sweeping Personnel		√	√		
	Tipper Lorries - Used for Construction/Other Debris Collection			√		
Secondary Collection	Container Bins for Residential Areas (1.25 MT Capacity)		√	√	√	
	Container Bins for Market, Bus Stand, Commercial, Railway Station etc., (1.25 MT Capacity)		√	√	√	
	Transfer Stations Modernisation			√		
Transportation	Dual Load Dumper Placer Vehicles		√	√	√	
Waste Processing & Disposal	Integrated Waste Treatment		√	√		
	Sanitary Landfill Facility		√	√		
	Scientific Closure of the abandoned dump sites		√	√		
Administration Complex	Administration and Utilities Complex including HT Electrical Sub-station			√		

PROPOSALS

The total Solid Waste Generation in 2007 for a Per Capita Generation of approximately 121 grams/day is estimated at 4 MT, indicating a priority need for Scientific Disposal of Waste. Since, the Population Density of the ULB is high, the Waste generation has been considered at 210 grams/day (based on present generation), with a growth of 2 percent per year, against the generation and the demand for future is assessed.

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 facility; and
- Construction of landfill.

The total Solid Waste Generation for 2025 is estimated at 8.38 MT. The Present Disposal system is Open Waste Dumping, which is creating potential health and environment hazard considering the quantity of waste generation, location of disposal site and its environs, hence further option for Scientific Waste Disposal and Composting can be explored on priority basis. The details of Service Levels for future are presented in Table 9.15.

Table 9.15: Design Criteria and Target Service Level

Description	Unit	Based On CPHEEO Norms
		2025
Population	In nos.	39,888
Per capita Waste Generation	Grams/day	210
Collection Type	-	Door-to-Door Collection and Segregation of Waste at Source
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	8.38

Source: Norms

Highest priority has to be accorded for segregation & storage at source irrespective of the area of generation so as to facilitate an organized and environmentally acceptable waste collection, processing and disposal. Source segregation of Recyclables and biodegradable (organic) waste will not only provide an efficient way for resource recovery, but will also substantially reduce the pressure and pollution in Landfill sites.

Approach for Primary Waste Collection and Street Sweeping: The following measures have been recommended for improving the primary collection practices of the ULB;

Implementation of 'Door-to-door collection' through 100 percent privatisation - In order to achieve the above objective, a 'Two Bin system of Solid Waste Storage' at source is being recommended. As per this system, each of the households shall be directed to keep separate bins/ containers for biodegradable and non-biodegradable waste generated within their premises. The segregated waste so stored in these bins will have to be transferred to the dumper placer provided for each area. Details of Collection system and Specifications of segregated waste are summarized in Table 9.16 and Table 9.17 respectively.

Table 9.16: Details of 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
Large Community Bin System	Fruit and Vegetable Markets/ Transfer Stations	Carrying bins to Transfer Point	Skip / Dumper Placer
Small Community Bin System	Slums/urban poor Colonies	Carrying bins to Transfer Point	Transfer contents of biodegradable to community bins

Table 9.17: Details of Specification of Segregated Waste

S. No.	Source	Storage of Segregated Waste	
		Bio-Degradable	Non-Bio-Degradable
1	Households	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, 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 notified Site by the local body or to the municipal Vehicle
8	Garden Waste	Store with in premises	Deposit in large community bin or to the municipal vehicle

Source Segregation and Collection of Commercial Waste, through privatization; and Source Segregation and Collection of Hotels and Market Waste - 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. 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.

Street Sweeping and Moping on Daily Basis - Since further areas and eventually the entire town is proposed to be brought under privatization, it is considered that there would not be any further requirement to induct conservancy workers. The existing street sweeping operations in Kotagiri are satisfactory and to ensure operational efficiency of the system, the following measures are suggested. (a) 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; (b) Sweepings shall be collected separately as degradable and non-biodegradable waste and deposit in containers kept at various locations and a separate crew equipped with appropriate implements may do de-silting of larger drains.

Community Participation and Enforcement of By-laws and Waste Collection and Handling Rules - It is recommended that the community be involved in primary collection through segregation at household level to minimize the number of waste handling operation. Non-biodegradable waste shall be collected separately from premises where door to door collections are organized. Present system of primary collection should be supplemented by introducing multi-bin carts (Push carts / Tricycles) covering the entire area of the town.

It is envisaged that 100 percent area of the ULB be brought under door-to-door collection and hence, no additional dust bins are proposed, except for slums and other areas. These are estimated to be about 20 to 25 percent in 2011. The rest of the 75 to 80 percent shall be privatized. In this scenario, the ULB shall overlook the collection and transportation activities. The existing dust bins shall be phased out in an organized manner according to the implementation of the system. This is proposed to be achieved by the year 2010-11. Based on these assumptions, the equipments for primary collection are estimated, to meet the future Waste Generation.

Approach for Waste Collection and Transportation: The following measures have been recommended for improving the waste collection and transportation practices of the ULB;

Secondary Collection system - It is recommended to retain all Tippers, for secondary collection purpose, in places where Dual Loaded Dumper Placers cannot be introduced.

Efficient Transportation System - It is also recommended that Dual Loaded Dumper Placers (DLDPs) be introduced to improve the collection efficiency and to cover 80 percent area of the town in phased manner. The introduction of Dual Loaded Dumper Placers shall eliminate the need of the Secondary Collection Points. Instead of these collection points, in the end, transfer stations with advanced segregation and recycling facilities may be introduced, in the future.

Presently, the Vehicle Capacity Adequacy Ratio is 75. This indicates an overall capacity deficiency of 3 tons by 2011 for achieving 100% collection efficiency and a deficiency of 5 Tons respectively by the year 2025.

System Demand: Additional 2 Dual Loaded Dumper Placers with 6 numbers of containers will be required for collection of approximately 8.5 tons of waste that will be generated in Kotagiri Town by the year 2025.

Table 9.18: System Demand for Solid Waste Management

Sl.No	Type	Required per Design and CPHEEO norms
Primary Collection		
1	Tri-Cycles	10
2	Push-carts	50
4	Tipper Lorries - Used for Construction/Other Debris Collection	1

Sl.No	Type	Required per Design and CPHEEO norms
Secondary Collection & Transportation		
1	Dumper Bins for Dual Dumper Placers (1.25 MT capacity)	6
2	Dual Dumper Placer Vehicles (2.5 to 3 MT cap.)	2
Waste Processing & Disposal		
Sanitary Landfill Complex		
1	Front End Loader with Shovel for MSW Landfill - waste spreading	1
2	Backhoe Loader (Gen. Purpose) for MSW Landfill - Hydraulic Excavator & Front End Loader Combo - for loading, excavation, embankment construction etc., (3 nos. + 1 standby)	1
3	Landfill/ Soil Compactor with Pad Foot Shell Arrangement	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	Tractor with Water Tank, Pump, Spray Nozzle with Extender Arm Attachment for Fine Spray Dispensing	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

Source: Analysis

Approach and Design for Disposal of Waste: Based on Generation of Solid Waste it is recommended to develop a landfill site for safe disposal of Solid Waste of the ULB. Based on the successful implementation of the door-to-door collection and source segregation practices in the town, the options of waste to energy and composting projects can be developed. The disposal strategies for the ULB will do with.

Composting the organic fraction of the waste - Approximately 60% of the waste generated in Kotagiri is organic nature. In terms of the quantity, it is expected that approximately 3 tons of organic waste is to be generated which can be taken up for Composting. The land requirement for compost facility is estimated at 0.5 acre, which will accommodate Windrow Pads, Ancillaries and Circulation area.

Sanitary land filling of inorganic fraction of waste and the compost rejects - Inorganic waste constitutes approximately 40 percent, quantifying to 1 ton, is proposed to be disposed through Sanitary landfill. The land requirement for Landfill facility is estimated at 2 acres. The Sanitary landfill is proposed for a volumetric capacity of 1.00 cu.m, with at least Three Lifts (One Lift below ground and Two Lifts above ground). Landfill facility design is based on CPHEEO design assumptions for Sanitary Landfills, wherein a landfill height of 5 m and a bulk density of 0.85 Tons/ m3 are assumed. However, the actual height of landfill depends on the geological/ geographical conditions of the site and technology of landfill development.

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.

9.6.3 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	2.36
	Containerized Tri-Cycles	1.32
	Push Carts	3.03
	Equipment for Garbage Recovery Personnel	1.13
	Equipment for Street Sweeping Personnel	1.60
	Tipper Lorries - Used for Construction/Other Debris Collection	10.53
Secondary Collection	Container Bins for Residential Areas (1.25 MT Capacity)	2.38
	Container Bins for Market, Bus Stand, Commercial, Railway Station etc., (1.25 MT Capacity)	1.19
	Transfer Stations Modernisation	95.15
Transportation	Dual Load Dumper Placer Vehicles	34.56
Waste Processing & Disposal	Integrated Waste Treatment	493.38
	Sanitary Landfill Facility	31.65
	Scientific Closure of the abandoned dump sites	22.13
Administration Complex	Administration and Utilities Complex including HT Electrical Sub-station	30.32
Total		**730.71**

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

9.7 STREET LIGHTING

The principal issue in this sector is the present level of power consumption and measures to reduce energy charges in the future that is incurred through provision of adequate street lighting for the town roads.

9.7.1 PRIORITY ACTIONS AND PROPOSALS

PRIORITY ACTIONS

As specified earlier, priority actions identified by the stakeholders, discussed and finalized pertaining to development of the street lighting sector in Kotagiri are furnished below:

- 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.
- New street lights shall be provided for uncovered areas.
- Power consumption management and energy efficiency measures.
- Development of General Lighting Plan.

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

Table 9.20: Priority Actions and Implementation Plan - Street Lighting

Component	Activity	Y1	Y2	Y3	Y4	Y5
Service Improvement	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 Power Saver (Capacitors)	√	√			
	Proposed dedicated sub-station/transformers	√	√			
	Proposed Tri-vector meters	√				

PROPOSALS

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 pertinent Mission Stakeholders:

- Replacement of FL with SV or equivalent lamps at major intersections;
- Installation of street lighting fixtures at uncovered areas - poles, bull-head fittings, control systems and solar panels (as-applicable);
- Augmentation 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

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

Proposed augmentation of required components of the system is indicated in Table 9.21 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	*Nos*	751	1384	**(633)**	1438	**(687)**
New Infrastructure						
Tube Light Fixtures	*Nos.*	625	1107	**(482)**	1151	**(526)**
High Power Fixtures	*Nos.*	126	277	**(151)**	288	**(162)**
High Mast Lights	*Nos.*	-	-	**-**	1	**1**

Source: Analysis

It is proposed to augment additional quantity, (i) Installation of 687 New Light Poles, (ii) Installation of New High Power Fixtures and Conversion of Tube Lights to High Power Fixtures, of 162 Nos., and (iii) Installation of 526 nos. of Tube light fixtures. Based on Discussions and field visits, it is understood that the existing Street Lights are in good functional condition and do not require any major rehabilitation measures.

9.7.2 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 9.22: Estimated Sectoral Investment - Street Lighting (Rs. In Lakhs)		
Component	**Activity**	**Investment**
Service Improvement	Proposed SV lamps in uncovered areas	29.47
	Proposed FL lamps in uncovered areas	64.35
	Proposed High Mast light in major junctions	63.67
	Proposed Timers for existing / new lights	15.77
	Proposed Sensor Lighting	15.16
	Proposed Power Saver (Capacitors)	0.21
	Proposed dedicated sub-station/transformers	15.16
	Proposed Tri-vector meters	4.85
Total		**208.63**

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: Kotagiri Town Panchayat.
- Formulation/Implementation Agency: Kotagiri Town Panchayat and TNHB.

9.8 BASIC SERVICES FOR THE URBAN POOR

9.8.1 GENERAL

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 CCP. With the growth of the town and addition of new areas, migration of people from rural areas to the town is imminent. However, the strategies under growth management shall arrest the extent of the migration. In the wake of the new developments being planned in the town, it is necessary that they are regulated in an integrated manner.

Various schemes introduced by the State and Central governments to improve the socio-economic status of slum dwellers need to be utilized in an effective manner. 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 prior chapter on Infrastructure.

9.8.2 BEST PRACTICES AND STRATEGIES

The ULB shall initiate community development activities within its administrative jurisdiction and integrate this aspect in its overall plan for the development of Kotagiri. 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 (CDSs) 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 up scaling 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 CDSs. The activities of the CDSs 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: Strengthen efforts to involve people in the planning and decision-making at the community level that affect their lives and encourage the participation of community in physical as well as economic generation activities. Encourage government departments, schools, institutions and community-based organizations to provide opportunities for people's participation in discussions that shape decisions and effect proper coordination between the various actors in community development. The ULB has to identify NGOs/CBOs to develop appropriate linkages with town level authorities and community.

Others Policies: Following are some of the policy initiatives which 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.
- There needs to be a better convergence of urban poverty programmes of the centre, state and local governments. The proposed Comprehensive Development Plan should be prepared with special attention to land tenure, basic services, housing and employment needs, including informal enterprises of the poor, of women and children.

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 shared facilities.

Therefore, the priority actions identified through discussions with stakeholders and the proposals evolved for improvement are specifically 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 recurrence.

9.8.5 PRIORITY ACTIONS AND PROPOSALS

As specified earlier, priority actions identified by the stakeholders, and discussed and finalized pertaining to development works related to slum upgrading and urban poor in Kotagiri are described below. The below listed 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.

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

- Comprehensive listing of slums.
- Notification of tenable/non-tenable slums and mapping within ULB area.
- 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

- 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.

Proposed Capital Works - Slum Upgrading

- Land Acquisition/purchase;
- 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.

Following table presents priority actions and their implementation plan during the project 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.	**Preparatory Activities**					
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	441.80
2.	Water Supply	44.18
3.	Sewerage and Sanitation	88.36
4.	Solid waste Management	66.27
5.	Roads and Pavements	106.03
6.	Street Lights	10.60
7.	Community Centers	24.26
8.	Open Spaces/Gardens	24.26
	Total Capital Cost (incl. contingencies, supervision, administration and consulting charges)	**805.76**

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: Kotagiri Town Panchayat.
- Formulation/Implementation Agency: Kotagiri Town Panchayat and TNSCB.

9.9 OTHER AMENITIES

Apart from the core infrastructure facilities other social amenities in the town are proposed for development in the short-term period. Following table presents priority actions and their implementation plan during the project 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 Stadium	√	√			
	Rehabilitation/proposed community centers/halls	√	√			
	Expansion of Daily market	√	√			
	Construction of Shopping complex cum lodge along Boston road		√	√	√	
	Proposed shopping complex opposite to bus stand		√	√	√	
	Jeep Stand Improvement with shopping complex		√	√	√	
	Slaughterhouse development with Treatment facility	√	√			
	Construction of view point @ sakthimalai	√	√			

	Construction of Marriage Hall with ground floor parking facility backside of Town Panchayat office		√	√		
	Construction of Shopping complex cum office complex near daily market		√	√		
	Private parking slot near guest house		√	√		

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: Other Development Proposals

Rs. in Lakhs

Sl. No.	Particulars / Capital Investment Components	Investment
1.	Improvement to burial grounds (w/o gasifier)	31.76
2.	Improvement of existing Stadium	127.05
3.	Rehabilitation/proposed community centers/halls	38.12
4.	Expansion of Daily market	121.97
5.	Construction of Shopping complex cum lodge along boston road	50.82
6.	Proposed shopping complex opposite to bus stand	38.12
7.	Jeep Stand Improvement with shopping complex	107.99
8.	Slaughterhouse development with Treatment facility	12.71
9.	Construction of view point @ sakthimalai	12.71
10.	Construction of Marriage Hall with ground floor parking facility backside of Town Panchayat office	127.05
11.	Construction of Shopping complex cum office complex near daily market	76.23
12.	Private parking slot near guest house	138.36
	Total Capital Cost	**882.87**

9.10 ENVIRONMENTAL IMPROVEMENT

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.

9.10.1 ENVIRONMENTAL MANAGEMENT - 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.

POLLUTION ABATEMENT

Industrial effluent shall be treated separately and shall not be mixed with domestic sewage. Industry shall be encouraged to take up clean technology initiatives. This is particularly applicable for small and medium enterprises. Apart from these specific measures, certain industrial units will need to be shifted to designated areas for prevention of mixing of effluents into storm water drains.

Issues - Water Pollution
- Health risks;
- Contamination of groundwater;
- Encroachments of lakes and channels; and
- Lack of coordination and unclear responsibilities among agencies.

MONITORING AND QUALITY CONTROL

Monitoring of water quality parameters is being conducted by the SPCB and an Environmental Management Plan has been released as a guideline for protecting the overall environment. However, 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.

9.10.2 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.

9.10.3 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 updated and validated to maintain information on the identification of sources of generation, per capita generation, physical and chemical characteristics of the waste.

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.

9.10.4 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 aim is to restore the green cover to its original glory that was lamentably lost during the earlier devastating cyclone. 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. The tasks to be carried out like daily cleaning, watering, weeding, trimming, raising new plantations, etc. need to be clearly spelled out in a contract document. Resident associations can contribute minimum amounts towards maintenance, while the balance can be borne by the ULB.

9.10.5 PRIORITY ACTIONS

Following table presents priority actions and their implementation plan during the project 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	√	√			
	Beautification of Rifle range	√	√			
	Greening / Avenue Development		√	√		

9.10.6 ESTIMATED 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.	Improvement of Existing Parks	24.05
2.	Beautification of Rifle Range area	420.79
3.	Greening / Avenue Development	7.09
	Total Capital Cost	**451.93**

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: Kotagiri Town Panchayat.
- Formulation/Implementation Agency: Kotagiri 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, Rs. 1.74 crores have been estimated for this purpose 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 & PRIORITIZATION

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

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

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.

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:

- Analysed 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 prioritisation and strategising 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 utilisation 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 modernisation, 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 universalise 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 Kotagiri 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 and future population of Kotagiri by the year 2040 is Rs. 10,699.76 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	1,605.06	15.00
2	Underground Sewerage & Sanitation	3,417.65	31.94
3	Roads, Traffic and Transportation	1,097.30	10.26
4	Storm Water Drains	1,325.49	12.39
5	Street Lighting	208.63	1.95
6	Solid Waste Management	730.71	6.83
7	Environment Improvement	451.93	4.22
8	Other Development Proposals	882.87	8.25
9	Slum Upgrading	805.76	7.53
10	Urban Governance	174.35	1.63
	Total Capital Investment	**10,699.76**	**100.00**

The above table describes the sector wise capital investment proposed for the infrastructure development of Kotagiri Town Panchayat. Out of all the basic amenities, Underground Sewerage Scheme accounts to 3417 lakhs which is about 31 percent of total capital investment estimated. It is then followed by Water supply improvement and storm water drain improvement measures with a share of 15 percent and 12 percent respectively. Improvement of traffic and transportation facilities accounts to a share of 10 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	1,605.06	21.49
2	Sanitation & Interceptor Drain	185.15	2.48
3	Roads, Traffic and Transportation	1,097.30	14.69
4	Storm Water Drains	1,325.49	17.75
5	Street Lighting	208.63	2.79
6	Solid Waste Management	730.71	9.79

Sl.No	Sectors	Estimated Investment (Rs. In Lakhs)	% to Total
7	Environment Improvement	451.93	6.05
8	Other Development Proposals	882.87	11.82
9	Slum Upgrading	805.76	10.79
10	Urban Governance	174.35	2.33
	Total Capital Investment	**7,467.26**	**100.00**

Out of all the basic amenities, water supply improvement accounts to 1605 lakhs which is about 21 percent of total capital investment estimated. It is then followed by storm water drain improvement measures with a share of 17 percent. Improvement of traffic and transportation facilities accounts to a share of 14 percent of capital investment proposed.

The above identified investments are phased to meet the priorities in the next five years considering the borrowing and investment capacity of the ULB. The phasing of proposed investment based on demand is given in the following sections of this report.

10.4.2 PRIORITIZATION AND PHASING

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 Kotagiri, development through a multi-pronged approach is the need of the hour.

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 4.3 outlines the overall priority ranking based on an assessment of need and as evinced by the stakeholders. Water Supply, Solid Waste Management, Storm Water Drain, Slum Upgradation and Remunerative Projects predominate the priority requirement for Kotagiri due to the following factors:

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		8
3	Roads, Traffic and Transportation		9
4	Storm Water Drains	3	
5	Street Lighting		10
6	Solid Waste Management	2	
7	Environment Improvement	6	
8	Remunerative Projects	5	
9	Slum Upgrading	4	
10	Urban Governance	7	

- 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, Elada is the only major sources which supplies protected water to Kotagiri with a daily supply of 1.70 LL per day on an average.
- The present source is not adequate to meet the existing and future demand. Hence augmentation of present source was suggested as an immediate requirement during the stakeholder consultation.
- Identification of alternate source, either in the proximity or through long-distance transmission will have to be evaluated in addition to ensuring that the identified sources are sustainable as the cost of abstraction, treatment, transmission and storage will attract a higher investment.
- Next to Water Supply, Solid Waste Management takes the 2nd rank. In consultation with stakeholders, it was observed that growing population and development of commercial establishments put immense pressure on the service delivery of ULB especially in the Solid Waste Management sector.
- Storm water drain improvement is ranked as No. 3 since the town is made of undulating terrain and not provided with proper storm water drain facility lead to disposal of sewage and sullage waste into natural streams and low lying areas.
- Slum upgradation is ranked as No. 4 the town has 20 notified slums. These slums are densely populated and not provided with adequate infrastructure facilities.
- Implementation of remunerative projects was ranked as no. 5 by the stakeholders. Remunerative projects like improvement of existing stadium, Provision of community hall, expansion of daily market, construction of shopping complex cum lodge along Boston road, Shopping complex opposite to bus stand, improvement of Jeep stand with shopping complex, construction of view point at Sakthimalai, construction of marriage hall with ground floor parking facility at backside of Town Panchayat office etc.
- Sub-Sectoral priority identified during stakeholders 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 Added areas	3
	Construction of additional Storage reservoirs	1
	Development of Distribution network for added areas	4
	Rainwater Harvesting Measures	8
	Re-cycle and Re-use treated water	10
Augmentation of Water Supply System	Source Augmentation / Treatment Plant	9
	Redistribution/Re-zoning of D-system in existing areas	12
	Expansion of House Service Coverage	6
	Installation of Meters	11
	Construction of summer storage tank	7
	Upgradation and Improvement of Distribution System	2
	Rehabilitation of Existing Service Reservoirs	5
Underground Sewerage Scheme and Sanitation		
Component	**Activity**	**Priority**
Sewerage Collection, Treatment & Management	Development of Sewerage System for Town	4
	Provision of Sewage Treatment Plant	3
	Community toilet integration	2
	Recycling Plant & Reuse system	5
Sanitation Facility	Community toilets	1
Roads, Traffic and Transportation		
Component	**Activity**	**Priority**
Improved Safety, Service delivery and Customer Satisfaction by providing better	Strengthening existing roads	1
	up gradation of important roads	2
	Formation of new roads	4
	Junction Improvements	9
	FOBs	14

infrastructure	Culverts	7
	Bus Shelters	8
	Signals	13
	Signage and markings	12
	Road divider & Medians	11
	Traffic Island	10
	Parking Lots/ complexes	6
	Bus Stand Improvement	5
Improved Pedestrian Facilities, comfort and safety	Accessibility to the disadvantaged	16
	Pedestrian Crossings	15
	Foot paths	3
Storm Water Drains		
Component	**Activity**	**Priority**
Drains Rehabilitation	Rehabilitation of Major drains/channels	4
	Rehabilitation of Storm Water Drains	1
Construction of Drains	Provision of storm water along existing roads	2
	Formation of new drains along proposed road network	3
	Treatment and re-use of storm water	5
Street Lighting		
Component	**Activity**	**Priority**
Service Improvement	Proposed SV lamps in uncovered areas	3
	Proposed FL lamps in uncovered areas	2
	Proposed High Mast light in major junctions	4
	Proposed Timers for existing / new lights	1
	Proposed Sensor Lighting	5
	Proposed Power Saver (Capacitors)	6
	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	2
	Containerized Tri-Cycles	13
	Push Carts	1
	Equipment for Garbage Recovery Personnel	8
	Equipment for Street Sweeping Personnel	9
	Tipper Lorries - Used for Construction/Other Debris Collection	7
Secondary Collection	Container Bins for Residential Areas (1.25 MT Capacity)	3
	Container Bins for Market, Bus Stand, Commercial, Railway Station etc., (1.25 MT Capacity)	4
	Transfer Stations Modernisation	14
Transportation	Dual Load Dumper Placer Vehicles	5
Waste Processing & Disposal	Integrated Waste Treatment	6
	Sanitary Landfill Facility	10
	Scientific Closure of the abandoned dump sites	11
Administration Complex	Administration and Utilities Complex including HT Electrical Sub-station	12
Environmental Improvement		
Component	**Activity**	**Priority**
Service Improvement	Improvement of Existing Parks	1
	Beautification of Rifle range	2
	Greening / Avenue Development	3
Other Development Proposals		

Component	Activity	Priority
Service Improvement	Improvement to burial grounds (w/o gasifier)	7
	Improvement of existing Stadium	8
	Rehabilitation/proposed community centers/halls	2
	Expansion of Daily market	1
	Construction of Shopping complex cum lodge along Boston road	3
	Proposed shopping complex opposite to bus stand	12
	Jeep Stand Improvement with shopping complex	9
	Slaughterhouse development with Treatment facility	11
	Construction of view point @ sakthi malai	10
	Construction of Marriage Hall with ground floor parking facility backside of Town Panchayat office	5
	Construction of Shopping complex cum office complex near daily market	4
	Private parking slot near guest house	6

Slum Upgradation		
Component	**Activity**	**Priority**
Service Improvement	Dwelling Units	8
	Water Supply	1
	Sewerage and Sanitation	3
	Solid waste Management	4
	Roads and Pavements	2
	Street Lights	5
	Community Centers	6
	Open Spaces/Gardens	7

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	455.42	500.24	545.17	612.42	996.60
Investment Capacity	700.64	769.60	838.72	942.19	1533.23

From the above table, borrowing capacity of the town is estimated as Rs. 3109.85 lakhs and the investment capacity of the ULB is estimated as Rs. 4784.39 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.

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

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. 4784.39 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 Kotagiri 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.

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	223.27	265.82	187.62	120.17	517.71
Sanitation & Interceptor Drain	0.00	0.00	0.00	36.07	113.01
Roads, Traffic and Transportation	121.28	60.64	48.51	131.57	337.82
Storm Water Drains	0.00	0.00	261.02	0.00	427.78
Solid Waste Management	267.36	381.56	10.27	49.39	22.13
Environment Improvement	0.00	31.14	50.00	231.28	100.00
Slum Upgrading	88.74	30.44	281.29	373.71	14.78
Total Capital Investment	**700.64**	**769.60**	**838.72**	**942.19**	**1533.23**

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)

Sl.No	Sectors	Short-Term Period						Long-Term Period (2)	Total Investment (1+2)
		2008-09	2009-10	2010-11	2011-12	2012-13	Total (1)		
A.	**WATER SUPPLY SYSTEM**								
			150.00	57.57			207.57	0.00	207.57
2	Construction of additional Storage reservoirs			100.00			100.00	131.17	231.17
3	Development of Distribution network for added areas					151.03	151.03	0.00	151.03
4	Rainwater Harvesting Measures		60.11				60.11	0.00	60.11
5	Re-cycle and Re-use treated water						0.00	36.07	36.07
6	Source Augmentation	173.27					173.27	0.00	173.27
7	Redistribution/Re-zoning of D-system in existing areas				90.17	90.17	180.34	0.00	180.34
8	Expansion of House Service Coverage	50.00	50.00		30.00	110.45	240.45	0.00	240.45
9	Installation of Meters						0.00	123.23	123.23
10	Construction of summer storage tank			30.06			30.06	0.00	30.06

Sl.No	Sectors	Short-Term Period						Long-Term Period (2)	Total Investment (1+2)
		2008-09	2009-10	2010-11	2011-12	2012-13	Total (1)		
11	Upgradation and Improvement of Distribution System					166.06	166.06	0.00	166.06
12	Rehabilitation of Existing Service Reservoirs		5.71				5.71	0.00	5.71
	Sub Total (A)	**223.27**	**265.82**	**187.62**	**120.17**	**517.71**	**1314.59**	**290.47**	**1605.06**
B.	**SANITATION & INTERCEPTOR DRAIN**								
1	Interceptor Drain & Treatment Facility					76.94	76.94	0.00	76.94
2	Community toilets				36.07	36.07	72.14	0.00	72.14
	Sub Total (B)	**0.00**	**0.00**	**0.00**	**36.07**	**113.01**	**149.08**	**0.00**	**149.08**
C.	**ROADS, TRAFFIC AND TRANSPORTATION**								
1	Provision of Bus Shelters				72.77		72.77	0.00	72.77
2	Strengthening existing roads					63.06	63.06	0.00	63.06
3	up gradation of important roads					150.00	150.00	47.19	197.19
4	Formation of new roads						0.00	331.32	331.32
5	Junction Improvements				36.38		36.38	0.00	36.38
6	FOBs				2.43		2.43	0.00	2.43
7	Culvert					6.06	6.06	0.00	6.06
8	Signals					36.38	36.38	0.00	36.38
9	Signage and markings					15.61	15.61	2.58	18.19
10	Road divider & Medians					30.32	30.32	0.00	30.32
11	Traffic Island			12.13			12.13	0.00	12.13
12	Parking Lots/ complexes		60.64				60.64	0.00	60.64
13	Bus Stand Improvement	121.28					121.28	0.00	121.28
14	Accessibility to the disadvantaged					30.32	30.32	0.00	30.32
15	Pedestrian crossings					6.06	6.06	0.00	6.06
16	Foot paths			36.38	20.00		56.38	16.38	72.77
	Sub Total (C)	**121.28**	**60.64**	**48.51**	**131.57**	**337.82**	**699.82**	**397.48**	**1097.30**
D.	**STORM WATER DRAINS**								
1	Rehabilitation of Major Drains/Channels			261.02		261.02	522.04	0.00	522.05
2	Rehabilitation of Storm Water Drains					48.51	48.51	0.00	48.51
3	Provision of storm water along existing roads					118.24	118.24	0.00	118.24
4	Formation of new drains along proposed road network						0.00	600.31	600.31
5	Treatment and re-use of storm water						0.00	36.38	36.38
	Sub Total (D)	**0.00**	**0.00**	**261.02**	**0.00**	**427.78**	**688.80**	**636.69**	**1325.49**
F.	**SOLID WASTE MANAGEMENT**								
1	Providing bins for Door-Door Collection		2.36				2.36	0.00	2.36
2	Containerized Tri-Cycles	0.66	0.66				1.32	0.00	1.32
3	Push Carts	0.62	0.59		1.82		3.03	0.00	3.03
4	Equipment for Garbage Recovery Personnel		1.13				1.13	0.00	1.13
5	Equipment for Street Sweeping Personnel		1.60				1.60	0.00	1.60
6	Tipper Lorries - Used for Construction/Other Debris		10.53				10.53	0.00	10.53

Sl.No	Sectors	Short-Term Period						Long-Term Period (2)	Total Investment (1+2)
		2008-09	2009-10	2010-11	2011-12	2012-13	Total (1)		
	Collection								
7	Container Bins for Residential Areas (1.25 MT Capacity)	2.38					2.38	0.00	2.38
8	Container Bins for Market, Bus Stand, Commercial, Railway Station etc., (1.25 MT Capacity)		1.19				1.19	0.00	1.19
9	Transfer Stations Modernisation		47.57		47.57		95.14	0.00	95.15
10	Dual Load Dumper Placer Vehicles		34.56				34.56	0.00	34.56
11	Integrated Waste Treatment	247.88	245.50				493.38	0.00	493.38
12	Sanitary Landfill Facility	15.82	15.82				31.64	0.00	31.65
13	Scientific Closure of the abandoned dump sites					22.13	22.13	0.00	22.13
14	Administration and Utilities Complex		20.05	10.27			30.32	0.00	30.32
	Sub Total (F)	**267.36**	**381.56**	**10.27**	**49.39**	**22.13**	**730.71**	**0.00**	**730.72**
G.	**ENVIRONMENT IMPROVEMENT**								
1	Improvement of Existing Parks		24.05				24.05	0.00	24.05
2	Beautification of Rifle range			50.00	231.28	100.00	381.28	39.51	420.79
3	Greening / Avenue Development		7.09				7.09	0.00	7.09
	Sub Total (G)	**0.00**	**31.14**	**50.00**	**231.28**	**100.00**	**412.42**	**39.51**	**451.93**
H.	**SLUM UPGRADING**								
1	Construction of housing	75.00		100.00	250.00		425.00	16.80	441.80
2	Water Supply	13.74	30.44				44.18	0.00	44.18
3	Sewerage & Sanitation			51.40	36.96		88.36	0.00	88.36
4	Solid Waste Management			66.27			66.27	0.00	66.27
5	Roads & Pavements			53.02	53.02		106.04	0.00	106.03
6	Streetlights			10.60			10.60	0.00	10.60
7	Community Centers				24.26		24.26	0.00	24.26
8	Open Spaces/Gardens				9.48	14.78	24.26	0.00	24.26
	Sub Total (H)	**88.74**	**30.44**	**281.29**	**373.71**	**14.78**	**788.96**	**16.80**	**805.76**
	GRAND TOTAL	**700.64**	**769.60**	**838.72**	**942.19**	**1533.23**	**4784.38**	**1380.95**	**6165.34**

In the prioritization, projects such as improvement of existing stadium, Provision of community hall, expansion of daily market, construction of shopping complex cum lodge along Boston road, Shopping complex opposite to bus stand, improvement of Jeep stand with shopping complex, construction of view point at Sakthimalai and construction of marriage hall with ground floor parking facility at backside of Town Panchayat office 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 12.4.

10.5 FINANCIAL RESOURCES

Innovations in terms of

- ***Public-Private-Partnerships***
- ***Private sector participation***

The analysis on financial resources is worked out for the interventions to be carried out within the ULB area. The sectors that are not in the domain of the ULB are not taken for financial analysis and they are considered to be taken by other line agencies. Majority of the investments have to come from the ULB for the provision of water

supply and sewerage and if these are not integrated with other interventions, the deficiencies in services still persist. Though innovations in terms of public-private-partnerships and private sector participation (i.e. BOT, BOOT, DBOT modes) are possible in some sectors, still it is in nascent stage of development and hence public spending should continue in some way in the future.

- ***Beneficiary Contribution for Environmental Services***
- ***Concept of User charges for Sustainability of Service provision***

An important aspect that needs consideration in raising the financial resources should be through beneficiary contribution. Of late, the beneficiary contribution is as much as 30% of the total costs of environmental services. These practices have to be promoted in the right earnest and the concept of user charges need to be introduced to make the services sustainable. The interventions should be in line with achievable targets and their resource generation.

- ***Financially Self-supporting Projects***
- ***Cost of services in line with Level of Service and Affordability of population***

The overall spatial strategy and resultant programs elaborated in the earlier chapters should be supported with financial allocations and a co-ordinated mechanism has to be in place. Efforts should be directed to develop financially self-supporting projects, wherever possible and cost recovery should be the policy for such cases.

The cost of services should be pegged with the level of services and the affordability of the population. Though some assistance can be anticipated in the form of subsidies and external grant, it would not be sufficient to attain the required standards and hence the real earnings have to be improved and this must be the priority of the economic policies and programs formulated for Kotagiri.

Streamlining and Strengthening of

- ***Existing Tax base***
- ***Resource mobilisation efforts***

The assessment of investment sustenance concludes that though the current finances of Kotagiri Town Panchayat are healthy, they would not be in a position to match the proposed investments in infrastructure to achieve the desired vision unless the existing tax base and the resource mobilisation efforts are streamlined and strengthened. In order to augment/ enhance its financial resources ULB should identify alternate resources like user charges for the services for conservancy, parking fee etc.

- ***More Property tax for better Service delivery***
- ***Change of Lease rights to Free hold with respect to current Market rates***

ULB should attempt an enhanced property tax rate (surcharge) in areas which have better infrastructure. Another innovative option of resource mobilization, which most of the local bodies are adopting is to change the lease right to free hold or review all the current lease agreement with respect market rents and take appropriate action.

In combination of aforementioned financial resources, ULB would implement reform measures suggested in the Section - 15.5 for Urban Local Body to improve their revenue base.

10.5.1 FUNDING ASSISTANCE FROM FIS

- ***Assistance from funding agencies like TNUDF, TUFIDCO etc.***

Apart from the aforementioned financial resources ULB shall look for external funding assistance from Financial Institutions (FIs) like TNUDF, TUFIDCO etc to fund CCBP identified projects. Funding pattern of various sectors of development is given below for reference purposes:

Means of Finance	Loan	Grant	Own	Total
Water Supply System	55%	30%	15%	100%
Underground Sewerage Scheme	45%	30%	25%	100%
Roads, Traffic and Transportation	60%	30%	10%	100%
Storm Water Drains	60%	30%	10%	100%
Street Lighting	60%		40%	100%
Solid Waste Management	20%	70%	10%	100%
Environment Improvement	20%	70%	10%	100%
Other Development Proposals	65%	20%	15%	100%
Slum Upgrading	10%	80%	10%	100%
Urban Governance	20%	70%	10%	100%

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 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,

Table 11.1: Summary of Finances of the Kotagiri T.P

All figures in Rs. Lakhs

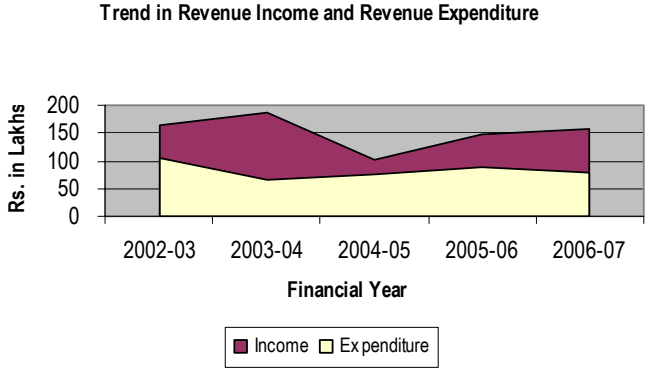
Sl. No.	Account Head	Summary Statement (All figures in Rs. Lakhs)				
		2002-03	2003-04	2004-05	2005-06	2006-07
		Actuals				
REVENUE ACCOUNT						
1	Income	164.71	188.52	103.22	149.02	158.43
2	Expenditure	103.90	66.45	74.28	89.93	78.67
3	Status (Surplus/Deficit)	60.81	122.07	28.95	59.10	79.76
CAPITAL ACCOUNT						
1	Income	47.77	45.66	39.37	71.31	52.00
2	Expenditure	79.53	59.79	58.78	127.00	47.31
3	Status (Surplus/Deficit)	(31.76)	(14.13)	(19.41)	(55.69)	4.69
OVERALL STATUS						
1	Income	212.48	234.18	142.59	220.33	210.43
2	Expenditure	183.43	126.24	133.06	216.93	125.98
3	Status (Surplus/Deficit)	29.05	107.94	9.54	3.41	84.45

Source: Kotagiri Town Panchayat; 2007

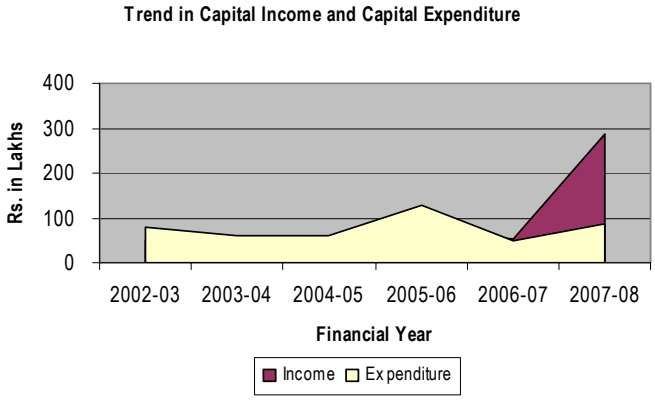
pension payments, provident fund, payment and recoveries of advances to employees and contractors, etc.

11.2.2 FINANCIAL STATUS

Financial assessment of the Kotagiri 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. Revenue income of the ULB has shown a fluctuating trend over the past 5 years, at a compounded annual growth rate (CAGR) of 4 percent. Similarly, the revenue expenditure also has shown a fluctuating trend with a CAGR of -3 percent during this period. Kotagiri 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 through Hill Area Development Program (H.A.D.P) from GoI 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
		Actuals				
REVENUE ACCOUNT						
1	Property Tax	20.44	20.59	21.20	21.42	22.05
2	Other Taxes					
	a. Profession Tax	6.31	7.13	8.23	9.31	10.68
	b. Others	0.00	0.00	0.00	0.00	0.00
3	Assigned Revenue	36.61	38.20	5.38	20.37	0.51
4	Devolution Fund	39.96	67.73	37.55	54.49	81.98
5	Service Charges and Fees					
	a. Water Charges	3.48	5.20	5.00	5.00	4.90
	b. Service Charges and Fees (excluding Water Charges)	8.18	2.18	2.80	6.49	4.77
6	Sale and Hire Charges	0.19	0.00	0.00	0.00	0.00
7	Other Income	49.54	24.72	23.06	31.94	33.53
SECTORAL CONTRIBUTION TO TOTAL REVENUE						
1	Property Tax	12.41	10.92	20.53	14.38	13.83
2	Other Taxes					
	a. Profession Tax	3.83	3.78	7.98	6.25	6.70
	b. Others	0.00	0.00	0.00	0.00	0.00
3	Assigned Revenue	22.21	20.27	5.21	13.67	0.32
4	Devolution Fund	24.25	35.93	36.38	36.57	51.42
5	Service Charges and Fees					
	a. Water Charges	2.11	2.76	4.85	3.36	3.07
	b. Service Charges and Fees (excluding Water Charges)	4.97	1.16	2.71	4.35	2.99
6	Sale and Hire Charges	0.11	0.00	0.00	0.00	0.00
7	Other Income	30.06	13.11	22.34	21.43	21.03
GROWTH TRENDS IN %						
1	Property Tax	--	0.73	2.93	1.07	2.92
2	Other Taxes	--	0.00	0.00	0.00	0.00
	a. Profession Tax	--	13.13	15.40	13.09	14.76
	b. Others	--	--	--	--	--
3	Assigned Revenue	--	4.36	(85.92)	278.61	(97.50)
4	Devolution Fund	--	69.47	(44.56)	45.12	50.45
5	Service Charges and Fees		0.00	0.00	0.00	0.00
	a. Water Charges	--	49.66	(3.80)	(0.09)	(2.00)
	b. Service Charges and Fees (excluding Water Charges)		(73.31)	28.26	131.63	(26.42)
6	Sale and Hire Charges	--	(100.00)	--	--	--
7	Other Income	--	(50.09)	(6.73)	38.50	4.97

Source: Kotagiri 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.

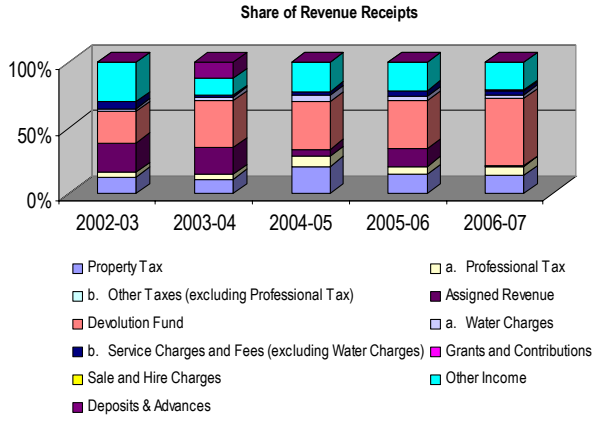
Major source of revenue income is in the form of Property Tax, Assigned Revenue and Devolutions, which contributes to about three-fourth of the revenue income on average. As a whole, revenue income has registered an annual growth of about 5 percent on average during the assessment period.

Details	Composition (%)
Own Tax revenues	20.25
Own Non-tax revenues	30.16
Assigned Revenues	12.34
Grants & Contributions	37.24

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 Kotagiri TP, the major contributors are the devolution funds with 37% and assigned revenues which together take approximately 49% share, and other income with 21% share. Property tax constitutes

roughly 14.5% share of the total revenue income. Service charges constitute 6% out of which water charges take 2.6% of the share. The composition of income during the last five years is graphically represented as follows-

Even though the analysis indicates a higher revenue generation by way of own tax revenues and own non-tax revenues, the absolute numbers are not buoyant in case of the main income namely property tax. 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 rent from shopping complex and all other income like fees etc. which are categorized under this head do not form a major source.



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. Upon scrutinizing the balance sheet it is found that the water charges are categorized as Income from fees, which forms atleast 90% of income under this head.

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	8609	8661	8676	8690	8700
Growth in Assessments (%)	--	0.60	0.17	0.16	0.12
Demand (Rs. in lakhs)					
Arrear	5.63	6.19	9.14	14.68	0.00
Current	20.14	20.43	20.69	21.16	22.00
Total	25.77	26.62	29.83	35.84	36.20
Collection (Rs. in lakhs)					
Arrear	1.80	1.40	0.89	4.98	14.00
Current	17.78	16.08	14.26	16.66	20.00
Total	19.58	17.48	15.15	21.64	34.00
Balance (Rs. in lakhs)					
Arrear	3.83	4.79	8.25	9.70	0.20
Current	2.36	4.35	6.43	4.50	2.00
Total	6.19	9.14	14.68	14.20	2.20
Collection Performance (Percentage)					
Arrear	31.97	22.62	9.74	33.92	0.00
Current	88.28	78.71	68.92	78.73	90.91
Total	75.98	65.66	50.79	60.38	93.92

Source: Kotagiri 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 almost doubled from Rs. 18.69 lakhs in FY 2002-03 to Rs. 28.50 in FY 2006-07. 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 14 percent during the assessment period.

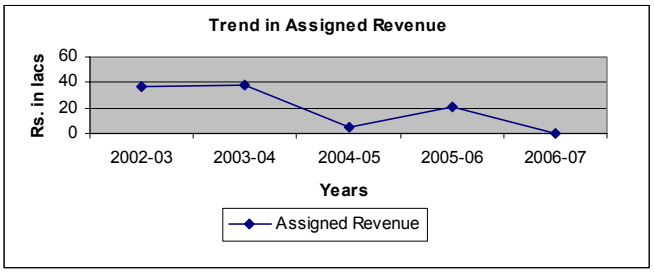
Available estimates indicate that there are about 8,000 holdings/properties within the town limits. Assuming current average property tax per property of Rs. 254, the overall property tax demand for all the holdings/properties within the town limits works out to Rs. 31.00 lakhs, which is about 1.5 times the current property tax demand for FY 2005-06.

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 0.15 percent per annum. Average property tax per property works out to Rs. 254 while average ARV of the property works out to Rs. 2107 during the assessment period. About 12 percent of the total assessments are commercial properties.

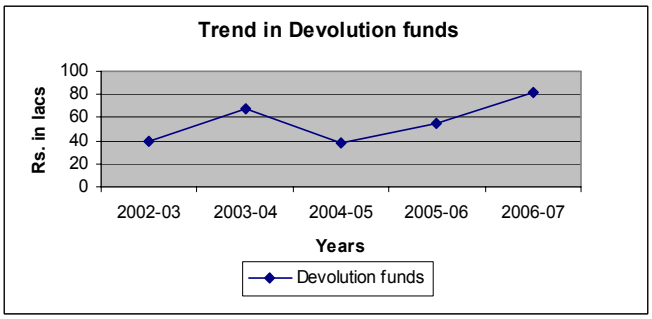
Similar growth trends are also observed in current property tax demand, which has increased from Rs. 25.77 lakhs in FY 2001-02 to Rs. 36.20 lakhs in FY 2005-06. During the same assessment period, the arrear demand has also increased from Rs. 5.63 lakhs in FY 2001-02 to Rs. 14.68 lakhs in FY 2005-06. On average, about 45 percent of the total demand constitutes the arrears. The collection performance also shows improvement during the assessment period. The overall collection performance was about 75 percent during FY 2001-02, which has decreased to 50 percent during FY 2004-05. Similarly, collection performance of current tax has also decreased from 88 percent (in FY 2001-02) to 68 percent (in FY 2004-05) and that of the arrear collection has improved from 31 percent to 33 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 5 percent of the total tax revenue. The other taxes contributed about 8 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 13 to 22 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 in the table above. 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



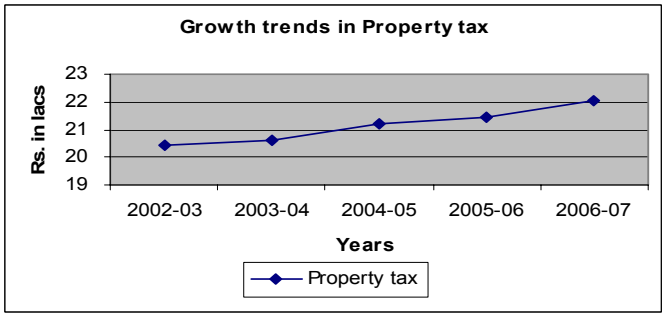
governments. It is the single largest resource for the ULB with an average share of 36 percent of total revenue income.

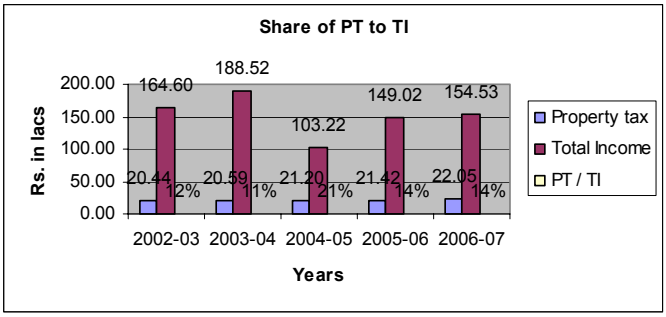
Non-Tax Revenue / Remunerative Enterprise: Income from remunerative enterprises is categorized as non-tax income received in the form of rentals from assets like shopping complexes, market fees, parking fees and income from other real assets owned by the ULB. Rent from the municipal properties is the major contributor among non-tax revenue items, which contributes about 21 percent on average, about Rs. 30 lakhs per annum on average during the assessment period.

GROWTH PATTERN OF REVENUE INCOME:

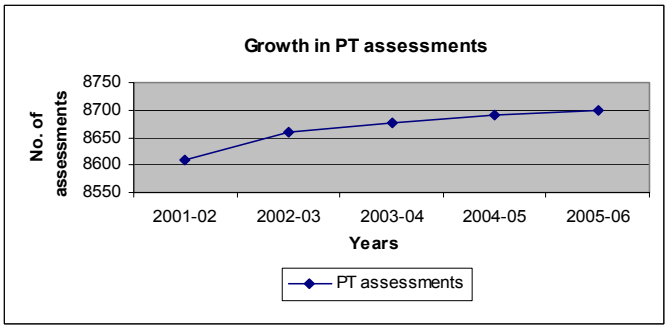
Growth pattern is mainly required for big ticket incomes like property tax, professional tax, and income from water and sanitation. The pattern looks as follows-

The adjacent graph represents growth in property tax in absolute terms. However if we look at the share of property tax to the total income it has been consistently around 12-14% over the last five years which is indicated in the graph below. There are two reasons for such composition, (i) due to lack of collections, (ii) lack of growth of no. of assessments. Analysis of growth of no. of assessments could reveal the reason for the lesser composition. The ULB shall also look into the possibilities of resurveying the entire property with its present value by which unassessed and under assessed property could be roped into the tax stream.

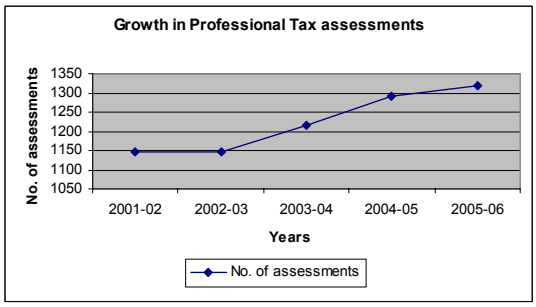




The graphical representation indicates that growth in the number of assessments is definitely higher than the property tax collections. The adjacent graph shown that the collection performance has been lacking and is even lesser than 50%.



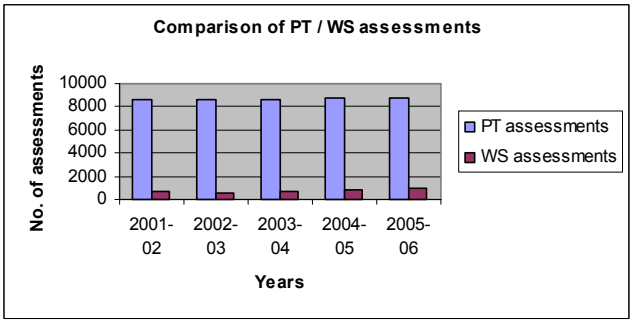
Speeding up of collections could possibly increase the income from properties. If we look at the growth in no. of assessments as shown in graph, it is increasing gradually. Therefore, it is inferred that the local body has to take steps in identifying under assessed and unassessed properties.



Professional Tax-

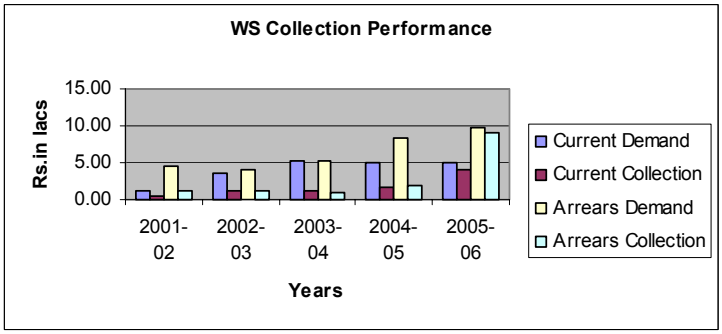
Even though the share of professional tax is fairly lower, it is a sustainable income, the pattern of which should be analyzed. The average share of professional tax over the period of last five years is 5.75%, which is less in composition compared to other heads of income. The no. of assessments has been more or less at the same level over the last five years.

Water Charges:



Income from water is normally said to be a major source of income. But in case of Kotagiri TP, income from water charges forms just 2.61% 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. Analysis shows that the average water supply assessments are roughly just 9% of the total property tax assessments. However, chapter no. 9 of this report contains details of investments required to be made in order to have a full-fledged water supply system.

From the graph below, it can be seen that as against the demand raised for water charges, collection has been only an average of 40%. So, the conclusion is that there is a need to increase water supply connections. 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.



The other main source of own income for this town is from the head 'other income'. However the main income under this head is rent from shopping complex and fees from market, which forms roughly 70% of other income. However maintenance of the shopping complex for sustainable income, and revenue generation by creating more complexes like this could be explored. As reported, there is no major income apart from these two components.

The ULB should try to exploit the potential of markets and create more such avenues for raising resources, which also results in infrastructure development. There is a need for augmenting own sources of revenues.

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 5% of the total income. The revenues under this head seem to be fluctuating. There is no specific trend in this case. The growth in no. of PT assessments is proportional to the assigned revenues. When there is a gradual increase in the PT assessments, there should be an increase in assigned revenue, which is missing. It is not understood as to whether there has not been any land transactions in the past 3 years.

Devolutions:

There has been a consistent and substantial income from the devolutions. The devolution forms an average of 30% approx. of the total income of the TP. There is a steep increase in the devolution funds during the last two financial years. The reason for the steep increase is not known. For smaller ULBs, this revenue may be a huge source of revenue, however, Kotagiri TP shall take efforts to rely on more own sources than assigned sources.

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 30 to 45 percent of total expenditure on average during the assessment period. In comparison with revenue income, about two third is utilized for payment of salaries. The other major sector having higher utilization is the operating expenses, which accounts for about 20 percent of the revenue expenditure on average. During the assessment period, revenue expenditure has indicated an average growth of about -3 percent per annum while the corresponding growth in revenue income was 5 percent, indicating a mismatch. A sector-wise break up of costs is shown graphically. A Detailed analysis of each head of expense follows-

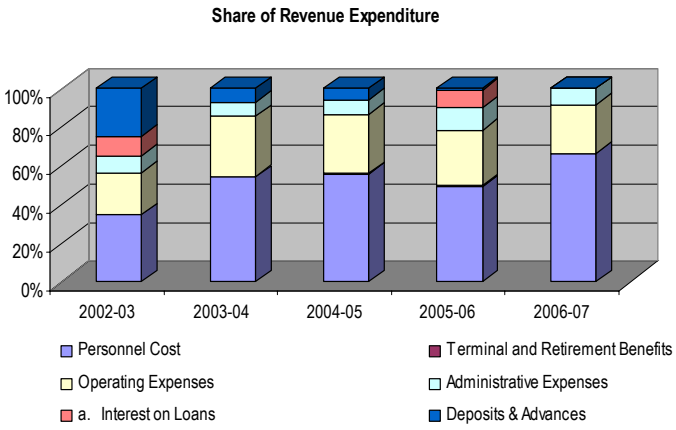
Table 11.4: Head-wise Revenue Expenditure

Sl. No.	Account Head	2002-03	2003-04	2004-05	2005-06	2006-07
		Actual				
EXPENDITURE ACCOUNT						
1	Personnel Cost	35.84	35.98	41.21	44.15	52.06
2	Terminal and Retirement Benefits	0.00	0.22	0.30	0.46	0.14
3	Operating Expenses	22.46	20.73	22.91	25.86	19.68
4	Administrative Expenses	9.51	4.68	5.40	10.47	6.79
5	Finance Expenses					
	a. Interest on Loans	10.33	0.00	0.00	8.24	0.00
SECTORAL CONTRIBUTION TO TOTAL EXPENDITURE						
1	Personnel Cost	29.79	43.43	38.54	37.07	55.47
2	Terminal and Retirement Benefits	0.00	0.26	0.28	0.39	0.15
3	Operating Expenses	18.67	25.03	21.43	21.71	20.97
4	Administrative Expenses	7.90	5.65	5.05	8.79	7.23
5	Finance Expenses					
	a. Interest on Loans	8.58	0.00	0.00	6.91	0.00
GROWTH TRENDS IN %						
1	Personnel Cost	--	0.38	14.55	7.13	17.92
2	Terminal and Retirement Benefits	--	--	36.36	55.19	(69.57)
3	Operating Expenses	--	(7.69)	10.48	12.89	(23.91)
4	Administrative Expenses	--	(50.81)	15.33	94.15	(35.20)
5	Finance Expenses					
	a. Interest on Loans	--	(100.00)	--	--	(100.00)

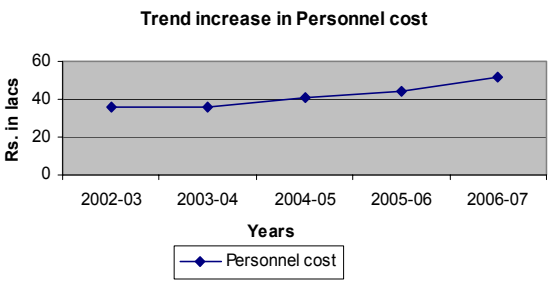
Source: Kotagiri Town Panchayat; 2007

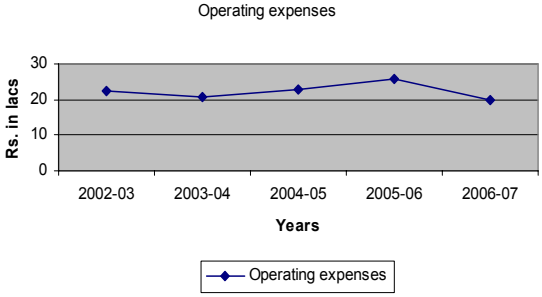
Personnel cost & terminal benefits to employees:

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-



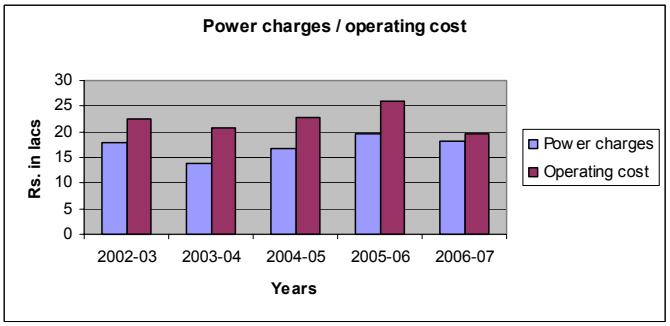
The personnel cost has been gradually increasing but not in a great pace. The ULB shall try to outsource certain activities like solid waste management, and outsource sanitary workers. Many of such activities would help in reducing the personnel cost.





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 over 52% of the total expenditure under this head. This excludes power charges pertaining to sewerage system and includes only water works. Power charges towards street lighting consume 80% of the operating expenses, which is a cause of concern.

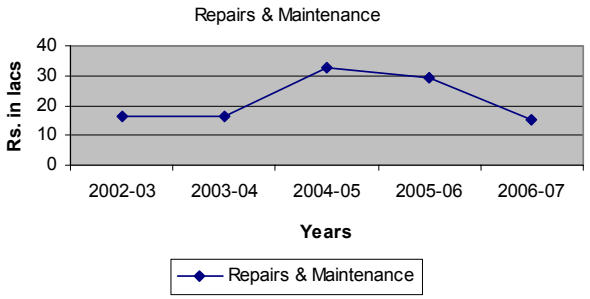


From the numbers and the graph, it is seen that power charges consumes the majority portion. The ULB shall focus its attention on reducing the costs incurred under this head by privatizing the entire street lighting, to the Energy Service Companies. This is the model which is being tried by many local bodies. This applies to both street lighting and water supply.

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. The trend increase in operating expenses is as follows-

Repairs & Maintenance:

This head includes repairs and maintenance of assets like drainage, bridges, roads, etc. The major item of expenditure under this head is maintenance of plant and machinery which is roughly 30%. 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. There is a steep increase in the last two years, the reason for which is not known.



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. 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. 60 lakhs during the FY 2005-06 through the H.A.D.P and Road improvement grant. Also, there were no transfers to the capital funds during this period.

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	0.00	3.53	6.50	7.00
11th Central Finance Commission	0.00	0.00	0.00	0.00
M.P.L.A.P.	3.63	9.13	1.26	1.55
M.L.A., L.A.P.	15.82	15.81	1.00	1.25
Flood Relief	0.00	0.00	0.00	1.00
Drought Relief	2.25	5.50	0.00	0.50
Hill Area Development Grant	19.99	2.17	15.50	20.00
Bus Stand / C.C. Roads	0.00	5.00	0.00	0.00
Road Improvement	0.00	0.00	0.00	20.00
Rain Water Harvesting	0.00	0.00	0.10	0.00
DRS	0.00	0.00	0.00	0.00
Toll Tax Management	0.00	0.00	0.00	0.00
Others - B.G. Imp. Please specify	3.88	0.00	14.00	9.00
Total Grants from State Govt. (A).	**45.57**	**41.14**	**38.36**	**60.30**
Grants from Central Government				
National Slum Development	2.20	1.50	0.00	1.60
Total Grants from Central Govt. (B)	**2.20**	**1.50**	**0.00**	**1.60**
Loan Account				
IUDP	0.00	0.00	0.00	0.26
LIC / GIC	0.00	0.00	0.00	7.73
Go TN	0.00	0.00	0.00	0.41
Total Loan (C)	**0.00**	**0.00**	**0.00**	**8.40**
Total Capital Income (A+B+C)	**47.77**	**42.64**	**38.36**	**70.30**

Source: Kotagiri Town Panchayat; 2007

Table 11.6: Break-up of Capital Expenditure

Particulars	2002-03	2003-04	2004-05	2005-06
Roads	16.40	14.39	12.00	15.00
Culverts	5.49	0.00	0.00	0.00
Stom Water Drains	0.00	3.44	6.50	17.00
Street lighting	0.20	0.00	0.10	0.50
Puplic Health & Sanitation				
1. Mosquito eradication equipment	0.00	3.56	0.00	0.00
2. Community Toilets	7.60	3.66	4.50	5.00
3. Pay & Use Latrines	0.00	0.00	0.00	5.00
4. Solid Waste Managements Shed	0.00	0.00	0.15	9.00
Others				
1. Burial & Burning Ground	0.00	0.00	2.50	1.50
2. Community Hall	3.56	9.28	3.63	7.50
3. Markets	0.00	0.00	0.00	5.00
4. Bus Stand	0.00	0.00	0.00	10.00
5. Shops	0.00	0.00	0.00	10.00
6. Bus Shelter	0.00	0.00	0.00	1.50
7. Foot path	5.02	4.80	17.75	20.00
8. Others(Retaining Wall)	41.26	20.66	11.65	20.00
Total Capital Expenditure	**79.53**	**59.79**	**58.78**	**127.00**

Source: Kotagiri 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, Storm Water Drains and foot paths development projects during the assessment period. The ULB has spent about Rs. 32 lakhs during the FY 2005-06.

11.3 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 Kotagiri Town Panchayat

Sl. No.	Account Head	Summary Statement (All figures in Rs. Lakhs)				
		2002-03	2003-04	2004-05	2005-06	2006-07
		Actuals				
1	Revenue Account Status (Incl. OB)	54.81	160.49	156.79	186.70	252.28
2	Operating Ratio (Rev. Expen./Rev. Inc.)	0.73	0.44	1.04	0.80	0.59
3	Debt Servicing - % of Income	6.27	0.00	0.00	5.53	0.00

Source: Kotagiri Town Panchayat; 2007

Performance of Kotagiri Town Panchayat

	Minimum	Maximum	Average	Desirable Benchmark
Existing (2002-03 to 2007-08)				
OR (Ratio)	0.41	1.04	0.67	Less than 1.00
DSR (%)	0.00	6.27	1.97	Less than 30 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 enclosed in Table 12.1:

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:

Sl. No.	Projects	Description	Amount	Remarks
1	Sanitation	Community Toilets	60.00	This project can be executed with the help of SHGs which also provides for employment opportunities to the BPL population. Under the Second World Bank project, this was one of the best practices developed. The ULB shall try out this methodology which also requires effective communication with the citizens. By this way, the ULB can save the capital cost and also provide an efficient service delivery.
1+	Roads	Strengthening existing roads, upgradation of roads, formation of new roads, widening of	744.80	Government periodically announces grant programs for development or up-gradation of roads. This particular project identified can be posed under these grant projects, in phases, as JnNURM does not support individual projects, but

Sl. No.	Projects	Description	Amount	Remarks
		roads		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	1092.96	As said above, this can also be included in Govt. sponsored programs as part of the road project.
3	Street Lighting		172.03	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 Kotagiri TP, through the advice of CTP
4	Solid Waste Management	Primary, Secondary collection, transportation and disposal	602.53	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 Kotagiri 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. In this context, Kotagiri TP, which is located in the vicinity of Coonoor municipality, can always be one among the cluster, and the project could be implemented through this mechanism.
5	Other Development Proposals	Proposed Community Centers / halls	30.00	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.
		Improvement of weekly and daily market	96.00	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
		Shopping complex / lodge on Boston road	40.00	This can be done in a PPP mode by allowing BOT operator to invest, construct, operate and transfer. In this process, Kotagiri TP can also expect rental income on a monthly / annual basis from the BOT

Sl. No.	Projects	Description	Amount	Remarks
				operator. This will be a source to augment revenues
		Shopping complex opposite to bus stand	30.00	This can also be executed in similar lines mentioned above, so that it is neither an initial investment nor a maintenance cost to the ULB
		Jeep stand improvement along with shopping complex	85.00	This can be executed along with the shopping complex and can be one single package to the operator. In case, BOT is not viable, the cost recovered from the upfront rentals from the shopping complex shall be used for construction of the Jeep stand
		Construction of Marriage Hall with ground floor parking facility backside of Town Panchayat office	100.00	Even though BOT operations are difficult for this project, the TP can outsource the entire management, so that construction is made by the TP, and, the maintenance is carried out by private sources. There could be a model where, the private operator can charge fee of his choice, but finally end up paying the local body rentals. This enables quicker pay back of the project and also lesser maintenance cost with respect to these aspects
		Construction of Shopping complex cum office complex near daily market	60.00	This can also be done in a BOT basis, as suggested for Hotel / lodge facility

By taking the above initiatives, Kotagiri TP can save upto Rs.3,113 Lakhs out of the estimated cost of Rs.10,699 Lakhs, from initial investment and can also augment their sources of revenue. Even though the above reforms can be taken up, the ULB, since they have a borrowing capacity, can execute certain projects of absolute priority with their own funds with a loan-grant mix.

However, to be on a conservative side, the consultants have not taken the above mentioned reforms for preparation of the FOP. The FOP has been done based on a loan-grant mix only. Hence with the base case, the FOPs are worked out under each cases. 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	455.42	500.24	545.17	612.42	996.60
Investment Capacity	700.64	769.60	838.72	942.19	1533.23

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
Tenure	15	15	15	15	15
Rate of Interest	8.75%	8.75%	8.75%	8.75%	8.75%
Loan Amount	350.32	384.80	377.42	423.99	613.29
Annuities	42.82	47.04	46.13	51.83	74.97
Cumulative annuities		42.82	89.86	135.99	187.82
Total annuities for the year	42.82	89.86	135.99	187.82	262.78

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	388.86	424.85	458.15	446.37	431.12
Revenue Receipts	200.07	219.76	239.49	269.04	437.81
Revenue Expenditure	91.15	103.51	116.40	130.44	147.13
Operating Ratio	0.46	0.47	0.49	0.48	0.34
Debt Servicing Ratio	0.02	0.04	0.05	0.06	0.05
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	424.85	458.15	446.37	431.12	244.30
Capital Grants	280.26	307.84	335.49	376.88	459.97
ULB Contribution - Transfers from Revenue Surplus	70.06	76.96	125.81	141.33	459.97
Loans / Borrowings of ULB	350.32	384.80	377.42	423.99	613.29

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. However, based on assumptions, the capital components of the assumed investments are the loans and the own contributions to be made by the ULBs.

Short Term (Upto 2012-13)	Maximum	Minimum
Borrowing Capacity (Rs. in lakhs)	996.60	455.42
Investment Capacity (Rs. in lakhs)	1533.23	700.64
Long-Term (Upto 2027-28)	**Maximum**	**Minimum**
Borrowing Capacity (Rs. in lakhs)	3618.69	455.42
Investment Capacity (Rs. in lakhs)	5567.21	700.64

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. 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	1,605.06	21.49
2	Sanitation & Interceptor Drain	185.15	2.48
3	Roads, Traffic and Transportation	1,097.30	14.69
4	Storm Water Drains	1,325.49	17.75
5	Street Lighting	208.63	2.79
6	Solid Waste Management	730.71	9.79
7	Environment Improvement	451.93	6.05
8	Other Development Proposals	882.87	11.82
9	Slum Upgrading	805.76	10.79
10	Urban Governance	174.35	2.33
	Total Capital Investment	**7,467.26**	**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. The O&M is assumed based on sectors. The following table summarizes the outcome of the FOP under the 'Base Case - Optimum Scenario' against select key indicators.

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%**

Table 12.7 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%

FINANCIAL OPERATING PLAN - Base Case: Optimum Scenario (Under Case 2)

Existing (2002-03 to 2007-08)	Minimum	Maximum	Average
OR (Ratio)	0.41	1.04	0.67
DSR (%)	0.00	6.27	1.97
Category			**1**
Short-Term (2008-09 to 2012-13)			
OR (Ratio)	0.29	0.44	0.41
DSR (%)	0.00	171.30	92.44
Category			**2**
Long-Term (2008-09 to 2027-28)			
OR (Ratio)	0.29	0.61	0.46
DSR (%)	0.00	171.30	58.47
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.7467.26 Lakhs is assumed for ULB and the FOP is forecast based on the above assumptions, the ULB will be in a deficit of Rs. 136.00 Lakhs by the year 2012-13 (Short term Period). In Long-term period ULB may reaches the surplus position of Rs.2979.40 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. 3770.40 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. 2986.90 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.709.96 Lakhs during this period. The summary of results from 2008-09 to 2012-13 (short-term) is provided as follows:

Table12.8: Summary of Base Case – Optimum Scenario (Under Case 2)

(Rs. In lakhs)

Summary Statement	2008-09	2009-10	2010-11	2011-12	2012-13
Opening Balance	388.86	501.27	507.91	323.90	15.40
Revenue Receipts	200.07	219.76	239.49	269.04	437.81
Revenue Expenditure	87.66	96.42	106.06	116.67	128.34
Operating Ratio	0.44	0.44	0.44	0.43	0.29
Debt Servicing Ratio	0.00	53.10	132.55	171.30	105.27
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	501.27	507.91	323.90	15.40	(136.00)
Capital Grant – GoI	0.00	359.33	591.92	441.92	70.26
Capital Grant – GoTN	0.00	359.33	591.92	441.92	70.26
ULB Contribution - Transfers from Revenue Surplus	0.00	123.34	133.43	152.37	210.78
ULB Contribution - Loan/Borrowings	0.00	954.66	1642.33	1173.40	0.00
Public Contribution – UGS Deposits	0.00	0.00	0.00	0.00	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 FY2012-13, 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. 3770.40 lakhs) and the own contributions (Rs. 709.96 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. Sector wise capital investments considered are given in the following table.

Table 12.9: 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	1,605.06	15.00
2	Underground Sewerage Scheme	3,417.65	31.94
3	Roads, Traffic and Transportation	1,097.30	10.26
4	Storm Water Drains	1,325.49	12.39
5	Street Lighting	208.63	1.95
6	Solid Waste Management	730.71	6.83

Sl.No	Sectors	Estimated Capital Investment (Rs. In Lakhs)	% to Total
7	Environment Improvement	451.93	4.22
8	Other Development Proposals	882.87	8.25
9	Slum Upgrading	805.76	7.53
10	Urban Governance	174.35	1.63
	Total Capital Investment	**10,699.76**	**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. The O&M is assumed based on sectors. Recent trends on O&M have been adopted for making these assumptions.

Table 12.10 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%**

Table 12.11: 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%

Table 12.12: 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%	12.02	11.16	8.56	0.36	0.00
Underground Sewerage Scheme	2%	1.12	0.69	1.72	0.18	0.00
Roads, Traffic and Transportation	1.50%	4.51	5.24	6.71	0.00	0.00
Storm Water Drains	1.50%	1.40	7.27	4.87	4.09	2.25
Street Lighting	1%	1.95	0.14	0.00	0.00	0.00
Solid Waste Management	2%	0.01	6.92	7.53	0.16	0.00
Environment Improvement	2%	2.67	6.26	0.11	0.00	0.00
Other Development Proposals	1%	2.41	4.80	1.62	0.00	0.00
Slum Upgrading	2%	2.65	6.73	6.74	0.00	0.00
Urban Governance	1%	0.44	0.44	0.44	0.44	0.00
Total		**29.17**	**49.64**	**38.28**	**5.23**	**2.25**
Cumulative O&M		**29.17**	**78.82**	**117.09**	**122.32**	**124.57**

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

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

Existing (2002-03 to 2007-08)	Minimum	Maximum	Average
OR (Ratio)	0.41	1.04	0.67
DSR (%)	0.00	6.27	1.97
Category			**1**
Short-Term (2008-09 to 2012-13)			
OR (Ratio)	0.24	0.44	0.40
DSR (%)	0.00	216.56	113.13
Category			**2**
Long-Term (2008-09 to 2027-28)			
OR (Ratio)	0.21	0.57	0.42
DSR (%)	0.00	216.56	65.88
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.10,699.76 Lakhs is assumed for ULB and the FOP is forecast based on the above assumptions, the ULB will be in a deficit of Rs. 423.70 Lakhs by the year 2012-13 (Short term Period). In Long-term period ULB may reaches the surplus position of Rs.3963.25 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. 5018.30 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. 5140.20 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.4279.91 Lakhs during this period. Public contribution in the form of deposits collected for UGS to the tune of Rs. 490.15 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	388.86	501.27	469.16	207.75	(222.52)
Revenue Receipts	200.07	219.76	239.49	269.04	540.57
Revenue Expenditure	87.66	96.42	106.06	116.67	128.34
Operating Ratio	0.44	0.44	0.44	0.43	0.24
Debt Servicing Ratio	0.00	70.73	164.87	216.56	113.47
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	501.27	469.16	207.75	(222.52)	(423.70)
Capital Grant – GoI	0.00	510.38	779.03	599.22	221.30
Capital Grant – GoTN	0.00	510.38	779.03	599.22	221.30
ULB Contribution - Transfers from Revenue Surplus	0.00	123.34	133.43	152.37	412.23
ULB Contribution - Loan/Borrowings	0.00	1271.65	1958.60	1536.37	251.68
Public Contribution – UGS Deposits	0.00	136.15	245.07	108.92	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 FY2011-12 to FY2012-13, 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. 5018.30 lakhs) and the own contributions (Rs. 4279.91 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	455.42	500.24	545.17	612.42	996.60
Investment Capacity	700.64	769.60	838.72	942.19	1533.23

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	630.58	692.64	712.91	800.86	1073.26
Annuities	77.08	84.66	87.14	97.89	131.19
Cumulative annuities		77.08	161.74	248.88	346.78
Total annuities for the year	77.08	161.74	248.88	346.78	477.97

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	388.86	419.77	442.60	414.70	377.15
Revenue Receipts	200.07	219.76	239.49	269.04	437.81
Revenue Expenditure	93.95	109.18	125.00	142.15	162.50
Operating Ratio	0.47	0.50	0.52	0.53	0.37
Debt Servicing Ratio	0.03	0.06	0.08	0.09	0.08
Operating Deficit/Revenue Grant Requirement	0.00	0.00	0.00	0.00	0.00
Closing Balance	419.77	442.60	414.70	377.15	160.62
Capital Grants	0.00	0.00	0.00	0.00	0.00
ULB Contribution - Transfers from Revenue Surplus	70.06	76.96	125.81	141.33	459.97
Loans / Borrowings of ULB	630.58	692.64	712.91	800.86	1073.26

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)	996.60	455.42
Investment Capacity (Rs. in lakhs)	1533.23	700.64
Long-Term (Upto 2027-28)	**Maximum**	**Minimum**
Borrowing Capacity (Rs. in lakhs)	3618.69	455.42
Investment Capacity (Rs. in lakhs)	5567.21	700.64

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.

Recommendations on Capital Investment Plan

- It is recommended that the ULB plan for utilizing capital investment within their Investment Capacity (i.e. Rs. 4784.39 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. 4,135.35 lakhs. Under this scheme ULB need to borrow a loan amount of Rs. 1,860.91 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 and help, guide policymaking of 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 as:

"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. Brief about the Asset Management Process (AMP) is enclosed in the Annexure - 14.

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

Municipal 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 (AMPs) following infrastructure and land assets are identified in the Kotagiri Town Panchayat:

Infrastructure Assets covers 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 Kotagiri Town Panchayat is given in the following section.

Water Supply:

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 belong to the town panchayat. The following table highlights list of water supply and other assets that exists in the town:

Type of Assets	Quantity (Nos.)	Remarks
Check dam @ Elada Source	1	-
Pump at Booster Stations 1	1	30 hp
Pump at Booster Stations 1	1	12.5 hp
Pump at Ramchand	1	7.5 hp
Gravity main from Check dam to Pump house at Ramchand	G.I. Pipe – 8" diameter	16 km
Sump	1	0.3 LL
Mini tanks	61	(3,000 to 5,000 litres)
Gravity Schemes (check dam)	14	-
Open Well with pump sets	63	5 to 10 hp
Distribution System	PVC Pipe – 3" diameter	20 km
Hand pumps	98	-
Public Fountains	254	-
House Service Connections	852	-

Sanitation:

Type of Assets	Quantity (Nos.)	Remarks
Pay & Use Toilets	3	12 seats each
Public Conveniences	9	12 seats each

Roads:

Sl. No.	Road Typology	Length (in km)
1.	Surfaced Roads	
	- Cement Concrete	2.06
	- Blacktop/Asphalted	21.27
	- WBM	1.13
	Sub Total (Surfaced Roads)	*24.46*
2.	Non-Surfaced Roads	
	- Stone Slab	--
	- Gravel	--
	- Earthen	3.40
	Sub Total (Non-Surfaced Roads)	*3.40*
	Total (Municipal Roads)	**27.86**

Storm Water Drains:

Sl. No.	Description	Length (km)
1.	Open Drains (Pucca)	10.20
2.	Open Drains (Kutcha)	6.40
3.	Closed Drains (Pucca)	0.60
	Total	***17.20***

Solid Waste Management:

Sl. No.	Description	Quantity (Nos.)
1.	Dust bin (Round Bins)	12
2.	Containers (Mild Steel)	4
3.	Open type (Masonry)	4
4.	Tractor cum trailer	2
5.	Tipper Mini Lorry	1
6.	Push carts	10

Street Lights:

Sl. No.	Type of Fixtures	Nos
1.	Fluorescent (Tube Lights)	625
2.	Sodium Vapor Lamps	126
	Total	**751**

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: Land Asset Details Kotagiri Town Panchayat

Survey No.	Sub-Division No.	Area		Location	Ownership
		Acres	Cent		
1245		2	65	Town Panchayat Office & surroundings	ULB
973	1	6	18	Daily Market	ULB
	3	2	20	Gandhi Play ground, Nehru Park	ULB
944	1	38	53	Town Panchayat Tea Estate	ULB
309	1	0	73	Solid waste dumping yard	ULB
309	2	1	6	Solid waste dumping yard	ULB
314	2	0	2	Slaughter House	ULB
365	1	0	14	Vantyipettai near H.M.K. Lodge	ULB
863	2A	0	78	Town Panchayat Guest House	ULB
864		0	28	Vacant land near Town Panchayat Guest House	ULB
865	4A	2	25	Vacant land near Town Panchayat Guest House	ULB
867	7A	2	30	Vacant land near Town Panchayat Guest House	ULB
884	2	0	14	OHT backside Top hill hotel	ULB
884	3	0	58	OHT backside Top hill hotel	ULB
1256	2	0	16	Near camp line	ULB
1390		0	16	Front of Daily Market near Toilet	ULB
1391		0	23		ULB
1392		0	10		ULB
1393		0	12		ULB
1395		0	18		ULB
1397		0	20		ULB
1394	2	0	4		ULB
1380		2	8	Camp line, Sanitary Workers Quarters	ULB
1417		0	95	Near Camp Line	ULB
1499	2A	1	39	Near Govt. Hospital	ULB
1499	3	0	53	Govt. Students (Gents) Hostel	ULB
1499	4	0	59	Govt. Students (Ladies) Hostel	ULB
1398		0	21	Near Home School	ULB
1400	1	0	44	Near Home School	ULB
870	5A	1	16	Vacant land near Godown	ULB
867	7A	2	30	Panchayat Union Housing quarters and Vacant land	ULB
868	1	0	15	Vacant land near Panchayat Union Housing quarters	ULB
869	1	0	12 ½	Front vacant site near Tamil Nadu Civil Supplies Office	ULB
869	3	0	1 ½		ULB
879	5	0	6	Well and vacant land near Kambai Shop	ULB
936	4p1p	1	81	Village Grassing Land near Thatha Nadu	ULB
930	1A	6	9	Village Grassing Land near Kanarimukuu	ULB
Total		**76**	**93**		

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 critical review and the findings of the same are given in the following table.

Table 13.2: Review of Remunerative Asset of Kotagiri Town Panchayat

Assets	No.	Current Annual Revenue (Rs.)	Land Area		Land Value*	Building Cost** (Rs.)	Total Asset value (Rs.) (5+6)	Interest Rate @ 8% of (7) (Rs.)	Remarks (comparison of 1 & 8)
			Acres	Cent	(Rs.)				
(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)
Daily Market	370	1,100,560	2	65	26,500,000	40,567,900	67,067,900	5,365,432	Requires Improvement
Shopping	18	209,004	-	10	1,000,000		3,028,395	242,2710	Requires

Assets	No.	Current Annual Revenue (Rs.)	Land Area		Land Value*	Building Cost** (Rs.)	Total Asset value (Rs.) (5+6)	Interest Rate @ 8% of (7) (Rs.)	Remarks (comparison of 1 & 8)
			Acres	Cent	(Rs.)				
(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)
Complex @ Ramchand						2,028,395			Improvement
Dannington Mutton stall	1	79,000	-	5	500,000	1,164,139	1,664,138	133,131	Requires Improvement
Bus stand									
Bus stand fee		117,700	-	52	5,200,000	6,490,864	11,690,864	935,269	Requires Improvement
Revenue from shops in Bus Stand	19	202,385							
Bus stand - Canteen	1	58,057							
Bus stand - Land rent		365							
Bus stand – Pay & Use Toilet	1	63,825							
Total		**442,332**							
Slaughter House									
Slaughter house fee		1,520	-	2	200,000	436,885	636,885	50,950	Sufficient
Slaughter Shops	4	61,573							
Total		**63,093**							

* Land Value is estimated at a rate of Rs. 1 lakhs per cent 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

The vision statement formulated as part of CCP reveals that the stakeholders envisage Kotagiri town to become a tourist center. To achieve this vision, investments need to be routed at appropriate projects. As the vision statement is not directly linked to a specific project concerted efforts are to be made to achieve the vision. City Corporate Plan is one such platform to identify projects for development and later get then implemented under PPP, BOT, BOOT mode. The Corporate Plan looks at 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 Corporate Plan 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 to achieve the quality of life of the people in the town.

- Expansion of bus stand
- Expansion of Vegetable market
- Beautification of Rifle Range Area
- Construction of Shopping Complex with lodging facility along Boston Hall Road near Mini Stadium

- Improvement of John's Square
- Improvement of parks
- Shopping complex opposite to bus stand
- Improvement of Jeep Stand
- Provision of View Point at Sakthimalai
- Construction of Marriage hall backside of town panchayat office
- Improvement of Gandhi Stadium
- Construction of Office cum Shopping complex near daily market
- Parking slot near Town Panchayat Guest house

The aforementioned projects are identified by the study team based on the consultation with the stakeholders and are proposed after had the reconnaissance survey of the project sites. The identified projects are as basic services and specialized service for the improvement of the quality of life of the people of Kotagiri town. 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.

Under this assignment a review of O&M performance of the 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

13.6.1 CURRENT O&M EXPENDITURE

Table 13.3: O&M Details of Kotagiri Town Panchayat (Rs. in Thousands)

A	Operation and Maintenance Expenses	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
1	General Administration						
i	Office Management	539.00	881.00	502.00	482.00	750.00	760.00
ii	Others (Contributions)	17.00	53.00	--	--	28.00	29.00
2	Water Supply						
i	Power Charges	413.00	418.00	420.00	537.00	575.00	590.00
ii	Materials	490.00	293.00	497.00	794.00	597.00	600.00
iii	Others(P.P.Repairs)	50.00	26.00	62.00	82.00	104.00	105.00
3	Public Health (Sanitation)						
i	Chemicals	75.00	90.00	120.00	110.00	35.00	40.00
ii	Others	19.00	22.00	42.00	33.00	3.00	15.00
4	Conservancy						
i	Fuel Charges	96.00	107.00	150.00	160.00	130.00	160.00
ii	Others	20.00	49.00	85.00	34.00	14.00	23.00
5	Street Lighting						
i	Materials	290.00	296.00	393.00	407.00	339.00	350.00
ii	Electricity Charges	875.00	897.00	1611.00	1670.00	1261.00	1400.00
iii	Others	7.00	9.00	60.00	48.00	33.00	50.00
6	Discretionary services						
i	Park and play Grounds		38.00				
ii	Library & Reading Room			2.00			
iii	Markets / Bus Stand	21.00					
iv	Building and Properties	120.00	532.00	24.00			
7	SJSRY Self Employment/ Group/ Training / Subsidy						
8	Library Cess Remitted			528.00	300.00	214.00	
	Total	**3032.00**	**3711.00**	**4496.00**	**4657.00**	**4083.00**	**4122.00**

13.6.2 OPERATIONAL & MAINTENANCE PLANNING

Town Panchayat needs 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 need to identify the methods to correct the 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.

Operate assets in accordance with current operating procedures:

- Inspect assets on at least a monthly basis
- Provide appropriate supervision for installation of connections and other similar work.
- Inspect and report on condition when working on the systems.

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.

13.6.3 MAINTENANCE STRATEGY

The short-term maintenance strategy is intended to retain the current levels of service with respect to asset condition and functionality whilst minimising 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 have to be undertaken:

UNPLANNED MAINTENANCE

- 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

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 to be programmed before the risk and consequence of failure become unacceptable, with priority given to defects:

- Which are life threatening
- Which are likely to cause premature failure prior to the next inspection
- where 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.

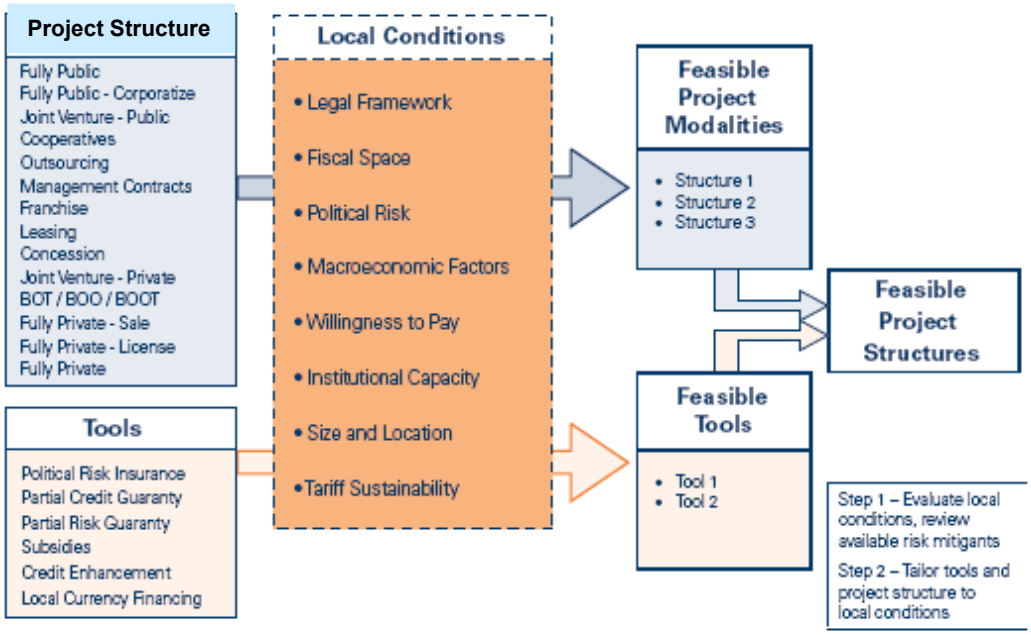
Maintenance work is aimed at ensuring the system functions properly. Many of the maintenance activities are similar and follow comparable methodologies despite occurring in different locations. Other beneficial effects also occur as a result of the maintenance e.g. clearing of refuse and debris from 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.
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.

Activities	Management Measures
Environmental Monitoring	▪ The contractor will undertake seasonal monitoring of air, water, 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

Kotagiri is a town with a projected population of 33,000 in 2021. In addition, it is anticipated that another 10,000 will form the floating population component in the town. Re-organisation of institution, improvement and capacity building programs are required to meet the needs of managing Kotagiri 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 Kotagiri;

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 stakeholder'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							
	Training of Employees on new Accounting System							

Sl.	Particulars/Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	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							
	Water Supply and Sewerage							

Sl.	Particulars/Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
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 CTP, 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 CTP/ 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 (TWAD)	▪ Responsible for construction and maintenance of water supply (combined), sanitation and sewerage schemes on behalf of local bodies at ULB cost and in 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.

Sl. No.	Name of the Department/ Institution	Responsibilities and Functions
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
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.