

Government of Tamil Nadu
Tamil Nadu Urban Development Fund

Business Plan for Coimbatore Corporation

FINAL REPORT

November 2006

Wilbur Smith Associates Private Limited

Abbreviations and Acronyms

| | | |
|--------|---|--|
| BOT | : | Build, Operate and Transfer |
| BPL | : | Below Poverty Line |
| BT | : | Bituminous |
| CAA | : | Constitution Amendment Act |
| CAGR | : | Compounded Annual Growth Rate |
| CC | : | Cement Concrete |
| CDP | : | City Development Plan |
| CMA | : | Chennai Metropolitan Area |
| CMDA | : | Chennai Metropolitan Development Authority |
| CMWSSB | : | Chennai Metropolitan Water Supply and Sewerage Board |
| CPHEEO | : | Central Public Health Environmental Engineering Organization |
| CSC | : | Community Structure Component |
| CUA | : | Chennai Urban Agglomeration |
| DIC | : | District Industries Centre |
| DPR | : | Detailed Project Report |
| DWCUA | : | Development of Women and Children in Urban Areas |
| ELSR | : | Elevated Storage Reservoir |
| FOP | : | Financial and Operating Plan |
| FY | : | Financial Year |
| gm | : | Grams |
| GoI | : | Government of India |
| GoTN | : | Government of Tamil Nadu |
| gpcd | : | Grams per Capita per Day |
| GLSR | : | Ground Level Storage Reservoir |
| ISP | : | Integrated Sanitation Program |
| Ha | : | Hectares |
| HH | : | Households |
| HSC | : | House Service Connection |
| IPT | : | Intermediate Public Transport |
| kg | : | Kilograms |
| LCS | : | Low Cost Sanitation |
| Lit | : | Liters |
| LL | : | Lakh Liters |
| LPA | : | Local Planning Area |
| lpcd | : | Liters Per Capita Per Day |
| m | : | Meters |
| MVL | | Mercury Vapor Lamp |
| ML | : | Million Liters |
| MLD | : | Million Liters per Day |
| MSW | : | Municipal Solid Waste |
| MT | : | Metric Ton |
| MTC | : | Metropolitan Transport Corporation |
| NGO | : | Non-Governmental Organizations |
| NH | : | National Highway |
| Nos | : | Numbers |

| | | |
|---------|---|--|
| NSDP | : | National Slum Development Program |
| O&M | : | Operation and Maintenance |
| OHT | : | Overhead Tanks |
| PSP | : | Public Stand Post |
| PWD | : | Public Works Department |
| SDBC | : | Semi-Dense Bituminous Concrete |
| SFC | : | Second Finance Commission |
| SH | : | State Highway |
| SI | : | Sanitary Inspector |
| SJSRY | : | Swarna Jayanti Shehari Rozgaar Yojna |
| SO | : | Sanitary Officer |
| Sq. km | : | Square Kilometers |
| STP | : | Sewage Treatment Plant |
| SWM | : | Solid Waste Management |
| SVL | : | Sodium Vapor Lamp |
| TCS | : | Thrift & Credit Societies |
| TNEB | : | Tamil Nadu Electricity Board |
| TNRDC | : | Tamil Nadu Road Development Corporation |
| TNSCB | : | Tamil Nadu Slum Clearance Board |
| TNUDP | : | Tamil Nadu Urban Development Project |
| TNUIFSL | : | Tamil Nadu Urban Infrastructure Financial Services Limited |
| tpd | : | Tons per Day |
| TWAD | : | Tamil Nadu Water Supply and Drainage Board |
| UGD | : | Underground Drainage |
| ULB | : | Urban Local Body |
| USEP | : | Urban Self Employment Program |
| UST | : | Urban Skill Training |
| UWEP | : | Urban Wage Employment Program |
| VAMBAY | : | Valmiki Ambedkar Awas Yojana |
| W | : | Watts |
| WBM | : | Water Bound Macadam |

TABLE OF CONTENTS

| | | |
|------|---|----|
| I. | BACKGROUND | 1 |
| A. | Profile of Coimbatore | 1 |
| 1. | <i>Objective</i> | 1 |
| 2. | <i>Scope of Work</i> | 1 |
| B. | City Corporate cum Business Plan- The Approach | 2 |
| 1. | <i>City Corporate Plan-The Approach</i> | 2 |
| 2. | <i>Source of Data</i> | 2 |
| C. | Vision for Coimbatore City..... | 4 |
| D. | Report Structure | 5 |
| II. | CITY DEMOGRAPHY | 7 |
| A. | Geography & Climate | 7 |
| B. | Population Trends and Urbanization..... | 8 |
| 1. | <i>Density Pattern</i> | 11 |
| C. | Economic Development..... | 13 |
| 1. | <i>Sectoral Growth</i> | 13 |
| 2. | <i>Industrial Development</i> | 14 |
| D. | Growth Trends and Projections..... | 14 |
| 1. | <i>Growth Trend</i> | 14 |
| E. | Socio-Economic Profile | 18 |
| 1. | <i>Employment</i> | 18 |
| 2. | <i>Land and Housing</i> | 18 |
| 3. | <i>Health</i> | 19 |
| 4. | <i>Education</i> | 20 |
| 5. | <i>Additional Facilities</i> | 20 |
| III. | URBAN GOVERNANCE | 21 |
| A. | Institutions and Capacity..... | 21 |
| 1. | <i>Institutional Arrangements and Policy Context</i> | 21 |
| B. | Organization Structure of Urban Local Body | 21 |
| 1. | <i>Executive Wing</i> | 21 |
| 2. | <i>Administrative Wing</i> | 22 |
| 3. | <i>Institutional Strengthening and Capacity Building</i> | 24 |
| 4. | <i>Institutions and Capacity of the Urban Local Body</i> | 24 |
| 5. | <i>Service Delivery and Performance of Urban Local Body</i> | 27 |
| C. | Reforms Initiated by the Municipal Corporation | 29 |
| 1. | <i>Accrual Based Accounting System</i> | 29 |
| 2. | <i>E-Governance</i> | 30 |
| 3. | <i>Features of the E Governance System</i> | 33 |
| IV. | PLANNING AND LAND USE MANAGEMENT | 35 |
| A. | Planning Efforts in the Past..... | 35 |
| 1. | <i>Master Plan Outline</i> | 35 |
| B. | Land Use Management | 35 |
| 1. | <i>Land Use Pattern – Current and Future</i> | 35 |
| 2. | <i>Development Patterns – Growth Areas and Direction</i> | 39 |
| 3. | <i>Growth Constraints and Developmental Potentials</i> | 39 |
| C. | Key Developmental Issues..... | 40 |
| V. | INFRASTRUCTURE SERVICES | 41 |
| A. | Physical Infrastructure | 41 |

| | | |
|-------|--|-----|
| 1. | <i>Water Supply</i> | 41 |
| 2. | <i>Sewerage and Sanitation</i> | 48 |
| 3. | <i>Storm Water Drainage and Rejuvenation of Water Bodies</i> | 55 |
| 4. | <i>Solid Waste Management</i> | 58 |
| 5. | <i>Roads and Traffic Management</i> | 62 |
| 6. | <i>Street Lighting</i> | 69 |
| 7. | <i>Environmental Impacts in City:</i> | 71 |
| VI | FINANCES OF COIMBATORE CORPORATION | 72 |
| 1. | <i>Corporation Fund</i> | 72 |
| 2. | <i>Financial Status</i> | 72 |
| 3. | <i>Revenue Account</i> | 73 |
| 4. | <i>Water Supply and Drainage Account</i> | 80 |
| 5. | <i>Capital Account</i> | 81 |
| 6. | <i>Key Financial Indicators and Issues</i> | 83 |
| VII. | URBAN BASIC SERVICES FOR POOR | 86 |
| A. | Infrastructure in Slums - Overview | 86 |
| 1. | <i>Water Supply</i> | 86 |
| 2. | <i>Sanitation</i> | 87 |
| 3. | <i>Roads and Street lights</i> | 87 |
| 4. | <i>Storm Water Drains</i> | 87 |
| 5. | <i>Housing</i> | 87 |
| 6. | <i>Primary Health</i> | 88 |
| 7. | <i>Education</i> | 89 |
| 8. | <i>Service Indicators and Issues</i> | 89 |
| B. | Poverty Alleviation and Community Development | 92 |
| 1. | <i>Policies, Targets and Programs</i> | 92 |
| VIII. | INFRASTRUCTURE DEVELOPMENT AND SERVICE PROVISION | 96 |
| A. | Rationale, Need and Demand | 96 |
| 1. | <i>Water Supply</i> | 97 |
| 2. | <i>Sewerage and Sanitation</i> | 100 |
| 3. | <i>Drainage, Ponds and Lake Development</i> | 104 |
| 4. | <i>Solid Waste Management</i> | 107 |
| 5. | <i>Roads and Traffic Management</i> | 114 |
| 6. | <i>Street Lighting</i> | 122 |
| 7. | <i>Basic Services for Poor</i> | 123 |
| 8. | <i>Other Facilities</i> | 126 |
| B. | Costing for Service Delivery | 126 |
| 1. | <i>Water Supply</i> | 126 |
| 2. | <i>Sewerage and Sanitation</i> | 127 |
| 3. | <i>Drainage, Ponds and Lake Development</i> | 128 |
| 4. | <i>Solid Waste Management</i> | 129 |
| 5. | <i>Roads and Traffic Management</i> | 130 |
| 6. | <i>Street Lighting</i> | 133 |
| 7. | <i>Basic Services for Poor</i> | 134 |
| 8. | <i>Other Investments</i> | 136 |
| C. | Prioritization of Works | 136 |
| IX. | RESOURCE MOBILISATION INITIATIVES | 137 |
| A. | Scope in Savings and Revenue Generation | 137 |
| 1. | <i>Infrastructure</i> | 137 |
| 2. | <i>Assets</i> | 137 |
| B. | Sector Wise Savings | 137 |

| | | |
|----|---|-----|
| 1. | <i>Water supply</i> | 137 |
| 2. | <i>Solid Waste Management</i> | 138 |
| 3. | <i>Street lighting</i> | 139 |
| 4. | <i>Assets</i> | 143 |
| C. | Additional Resource Mobilization | 143 |
| 1. | <i>Parking Fees</i> | 143 |
| 2. | <i>Advertisement Fee</i> | 144 |
| 3. | <i>Conservancy Fee</i> | 144 |
| 4. | <i>Summary</i> | 144 |
| X. | CAPITAL INVESTMENT PLAN & FINANCIAL SUSTAINABILITY | 147 |
| A. | Capital Investment Plan | 147 |
| 1 | <i>Water Supply</i> | 147 |
| 2 | <i>Sewerage and Sanitation</i> | 147 |
| 3 | <i>Roads & Traffic and Transportation</i> | 148 |
| 4 | <i>Storm Water Drainage & Lake Development</i> | 149 |
| 5 | <i>Solid Waste Management</i> | 150 |
| 6 | <i>Street Lighting</i> | 152 |
| 7 | <i>Urban Services for Poor</i> | 152 |
| 8 | <i>Other Identified Projects</i> | 153 |
| B. | Financial Sustainability | 154 |
| 1. | <i>Financial Sustainability</i> | 154 |
| 2 | <i>Basic Assumptions for Projections</i> | 155 |
| 3. | <i>Project Cash Flows and FOP Results</i> | 163 |

APPENDICES

| | |
|--|-----|
| APPENDIX I – Reform agenda of the ULB | 167 |
| APPENDIX II – Reform agenda of the State Government..... | 172 |
| APPENDIX III – Road Sector Projects | 182 |
| APPENDIX IV –Draft Memorandum of Agreement..... | 186 |
| APPENDIX V – Minutes of Stakeholder Meetings..... | 189 |

LIST OF TABLES

| | |
|--|----|
| Table 1.1: Goals and Service Outcomes | 4 |
| Table 2.1: Population Growth in Coimbatore | 11 |
| Table 2.2: LPA Population in Coimbatore..... | 11 |
| Table 2.3: Population Density | 11 |
| Table 2.4: Zone wise Details of Municipal Corporation..... | 12 |
| Table 2.5: Summary of Density Pattern in Coimbatore | 12 |
| Table 2.6: Workforce Participation..... | 13 |
| Table 2.7: Workforce in Predominant Industries | 14 |
| Table 2.8: Population projection for Coimbatore Corporation | 17 |
| Table 2.9: Proposed Population Projection for Coimbatore | 18 |
| Table 2.10: Occupied Census Houses | 18 |
| Table 2.11: Distribution of Census Houses by Type of Roof | 19 |
| Table 2.12: Distribution of Census Houses by Type of Floor | 19 |
| Table 3.1: City Corporation Staff Details. | 24 |
| Table 3.2: Municipal Departments and Functions | 24 |
| Table 3.3: Revenue and No. of Transactions made through Banks | 30 |
| Table 3.4: Property Tax and Water tax collections..... | 32 |
| Table 4.1: City Zones..... | 35 |
| Table 4.2: Land use – Coimbatore Corporation..... | 36 |

| | |
|---|-----|
| Table 4.3: Emerging growth centers in LPA | 39 |
| Table 5.1: Surface Source Details..... | 42 |
| Table 5.2: Bore wells / Open wells | 43 |
| Table 5.3: Service Reservoirs | 43 |
| Table 5.4: Water Supply Connection..... | 46 |
| Table 5.5: Water Tariff Structure..... | 46 |
| Table 5.6: Water Supply Indicators | 47 |
| Table 5.7: Sewerage Zone..... | 48 |
| Table 5.8: Overview of Existing Sewerage system in Zone I, II and III..... | 49 |
| Table 5.9: Existing pumps and pumping main details | 50 |
| Table 5.10: Sewerage – Service Indicators..... | 51 |
| Table 5.11: Overview of proposals in Under Ground Drainage | 52 |
| Table 5.12: Estimated cost for the proposals | 52 |
| Table 5.13: Proposed project details for Under Ground Drainage | 53 |
| Table 5.14: Storm water drains in Coimbatore | 55 |
| Table 5.15: Natural Drains in Coimbatore..... | 55 |
| Table 5.16: Tanks in Coimbatore city..... | 56 |
| Table 5.17: Storm Water Drain – Service Indicators..... | 58 |
| Table 5.18: Salient features of Solid Waste Management. | 58 |
| Table 5.19: Waste Generation..... | 59 |
| Table 5.20: Primary Collection – Infrastructure | 60 |
| Table 5.21: Primary Collection - Indicators..... | 60 |
| Table 5.22: Secondary Collection - Infrastructure | 61 |
| Table 5.22a: Rental Details of Hired Vehicles | 61 |
| Table 5.23: Solid Waste Management – Service Indicators | 62 |
| Table 5.24: Road Network- Details..... | 63 |
| Table 5.25: Corporation Roads - Service indicators. | 63 |
| Table 5.26: Bus Depots in Coimbatore | 68 |
| Table 5.27: Proposals identified by the Corporation..... | 69 |
| Table 5.28: Street light details | 69 |
| Table 5.29: Solar Light installation – Location and Number..... | 70 |
| Table 6.1: Summary of Corporation Fund..... | 73 |
| Table 6.2: Sources of Revenue Income..... | 74 |
| Table 6.3: Own Sources of Revenue Income..... | 75 |
| Table 6.4: Rate of Property Tax..... | 75 |
| Table 6.5: Income from Assigned Revenue..... | 76 |
| Table 6.6: Income from Revenue Grants | 77 |
| Table 6.7: Sector wise Revenue Expenditure..... | 77 |
| Table 6.8: Sector wise Salary..... | 78 |
| Table 6.9: Out standing Loan Statement..... | 79 |
| Table 6.10: Revenue Account Status of Water Supply and Drainage Fund | 80 |
| Table 6.11: Status of Capital Account - General..... | 82 |
| Table 6.12: Status of Water Supply and Drainage Capital Account..... | 82 |
| Table 6.13: Key Financial Indicators | 83 |
| Table 7.1: Slum and BPL Population..... | 86 |
| Table 7.2: Distribution of Public Fountains in Slums | 86 |
| Table 7.3: Distribution of Toilets in Slums..... | 87 |
| Table 7.4: Public Health Facilities in Coimbatore | 88 |
| Table 7.5: Education - Facilities | 89 |
| Table 7.6: Slums – Service Indicators..... | 89 |
| Table 8.1: Goals and Service Outcomes – Water Supply | 97 |
| Table 8.2: Losses in Water Supply System..... | 97 |
| Table 8.3: Requirement until 2026 in Water Supply Sector | 98 |
| Table 8.4: Strategies and Time Frame – Water Supply | 99 |
| Table 8.5: Goals and Service Outcomes - Sewerage | 100 |

| | |
|--|-----|
| Table 8.6 Requirement until 2026 in Sewerage and Sanitation | 100 |
| Table 8.7: Requirement until 2026 in Sewerage and Sanitation | 101 |
| Table 8.8: Strategies and Time Frame – Sewerage & Sanitation..... | 102 |
| Table 8.9: Comparison of Various Sewage Treatment Technologies..... | 103 |
| Table 8.10: Goals and Service Outcomes – Storm Water Drain and Water Bodies | 104 |
| Table 8.11: Requirement until 2026 in Storm Water Drains | 105 |
| Table 8.12: Strategies and Time Frame – Storm water Drain and Water Bodies | 106 |
| Table 8.13: Goals and Service Outcomes – Solid Waste Management | 107 |
| Table 8.14: Projected Waste Generation..... | 108 |
| Table 8.15: Specifications for Bin System of Waste Storage at Source | 109 |
| Table 8.16: Proposed Primary Collection System | 110 |
| Table 8.17: Design Criteria and Target Service Level..... | 111 |
| Table 8.18: Requirement until 2026 in Solid Waste Management | 113 |
| Table 8.19: Strategies and Time Frame – Solid Waste Management | 114 |
| Table 8.20: Goals and Service Outcomes – Traffic and Transportation | 114 |
| Table 8.21: Requirement until 2026 in Roads | 116 |
| Table 8.22: Requirement until 2026 Traffic & Transportation..... | 117 |
| Table 8.23: Strategies and Time Frame – Traffic and Transportation | 120 |
| Table 8.24: Goals and Service Outcomes – Basic Services for Poor..... | 122 |
| Table 8.25: Requirement until 2026 in Street Lighting | 122 |
| Table 8.26: Strategies and Time Frame – Street Lighting | 123 |
| Table 8.27: Goals and Service Outcomes – Basic Services for Poor..... | 123 |
| Table 8.28: Requirement for slums – Water Supply..... | 124 |
| Table 8.29: Requirement for slums – Sanitation..... | 125 |
| Table 8.30: Requirement slums – Roads..... | 125 |
| Table 8.31: Requirement for slums - Solid Waste Management | 125 |
| Table 8.32: Strategies and Time Frame – Basic Services for Poor..... | 126 |
| Table 8.33: Other Facility requirements | 126 |
| Table 8.34: Projects Costing for Water Supply | 127 |
| Table 8.35: Projects Costing for Sewerage System | 127 |
| Table 8.36: Projects Costing for Drains..... | 128 |
| Table 8.37: Estimated Cost for Improvements to Lakes | 129 |
| Table 8.38: Projects Costing for Solid Waste Management | 129 |
| Table 8.39: Projects Costing for Road Enhancement | 131 |
| Table 8.40: Projects Costing for Traffic and Transportation Management | 131 |
| Table 8.41: Project Costing for Street Lighting | 134 |
| Table 8.42: Project Costing for Basic Services for Slums | 135 |
| Table 8.43: Project Costing for other infrastructure facilities..... | 136 |
| Table 9.1: Savings on Sanitary Staff Reduction | 139 |
| Table 9.2: Electric Consumption of Street Lights..... | 140 |
| Table 9.3: Salient features of Retro fit tube lights | 140 |
| Table 9.4: Comparison of conventional tube lights with retrofit lights | 141 |
| Table 9.5: Assumption for calculating energy savings | 142 |
| Table 9.6: Energy savings in street lighting..... | 142 |
| Table 9.7: Additional Revenue Estimation from Remunerative Assets..... | 143 |
| Table 9.8: Estimated Parking Fee | 144 |
| Table 9.9: Estimation of Advertisement fee | 145 |
| Table 9.10: Estimation of Conservancy Fee | 145 |
| Table 9.11: Estimated Additional Revenue from Expenditure Control and Resource Mobilization | 146 |
| Table 10.1: Investment Phasing for the Water Supply Sector | 147 |
| Table 10.2: Investment Phasing for the Sewerage sector..... | 147 |
| Table 10.3: Investment Phasing for Road and Traffic & Transportation Sector | 148 |
| Table 10.4: Investment Phasing for Storm Water Drains and Lake Development | 150 |
| Table 10.5: Investment Phasing for the Solid Waste Management Sector | 150 |
| Table 10.6: Investment Phasing for the Street Lighting Sector | 152 |

| | |
|---|-----|
| Table 10.7: Investment Phasing for Slum Infrastructure | 152 |
| Table 10.8: Investment Phasing for Other Identified Projects | 153 |
| Table 10.10: Key Assumptions for Forecasting Income from Property Tax | 155 |
| Table 10.11: Key Assumptions for Forecasting Income from Water Charges | 156 |
| Table 10.12: Key Assumptions for Forecasting Income from Sewerage Charges | 156 |
| Table 10.13: Key Assumptions for Forecasting Income from SWM Fee | 157 |
| Table 10.14: Growth Rate Assumptions for Income from Other Own Sources | 157 |
| Table 10.15: Key Growth Rate Assumptions for Income from Assigned Sources..... | 158 |
| Table 10.16: Key Growth Rate Assumptions for Income from Grants & Contributions..... | 158 |
| Table 10.17: Key Growth Rate Assumptions for Forecasting Revenue Expenditure..... | 159 |
| Table 10.18: Growth Rate Assumptions for Forecasting WS Revenue Expenditure..... | 159 |
| Table 10.19: Assumptions for O & M Expenditure | 160 |
| Table 10.20: Summary of estimated investment requirement and phasing schedule | 161 |
| Table 10.21: Summary of phased investment in full project investment scenario..... | 161 |
| Table 10.22: Proposed Financing Pattern | 162 |
| Table 10.23: One-time charges for water & sewerage connections..... | 162 |
| Table 10.24: Summary of Financing Plan..... | 164 |
| Table 10.24a: Summary of Financing Plan..... | 165 |
| Table 10.25: Financial Operating Plan Results - Coimbatore Corporation..... | 166 |

LIST OF FIGURES

| | |
|---|-----|
| Figure 1.1: Approach to City Corporate cum Business Plan (CDP)..... | 3 |
| Figure. 2.1: Regional Setting - Coimbatore | 7 |
| Figure 2.2: Linkage & Connectivity - Coimbatore | 8 |
| Figure 2.3: Population Growth Rate | 8 |
| Figure 2.4: Growth trend in Coimbatore..... | 14 |
| Figure 3.1: Administrative Structure | 26 |
| Figure. 4.1: Proposed Land use pattern – 2001..... | 35 |
| Figure. 4.2: Core Residential area..... | 38 |
| Figure. 4.3: Growth Direction - Coimbatore..... | 39 |
| Figure. 5.1: Contributin of Solid Waste | 58 |
| Figure 6.1: Total Revenue Income and Expenditure Trend..... | 72 |
| Figure 6.2: Total Capital Income and Expenditure Trend | 73 |
| Figure 6.3: Source of Income (2000 to 2004)..... | 74 |
| Figure 6.4: Items of Revenue Expenditure (2000 to 2004)..... | 77 |
| Figure 6.5: Sector Wise Salary Composition (2000 to 2004) | 78 |
| Figure 6.6: Water & Drainage Account Expenditure Trend..... | 81 |
| Figure 10.1: Sector wise Investment..... | 164 |

LIST OF MAPS

| | |
|---|-----|
| Map 2.1: Administrative wards of Coimbatore Corporation | 9 |
| Map 2.2: Coimbatore Localplanning area Map | 10 |
| Map 2.3. Industrial location Map..... | 15 |
| Map 4.1: Land use plan for Coimbatore - 1991 | 37 |
| Map 5.1: Existing water supply system - Coimbatore | 45 |
| Map 5.2: Sewerage coverage | 54 |
| Map 5.3: Major water bodies and Primary Drains – Coimbatore | 57 |
| Map 7.1: Slum pockets in Coimbatore..... | 91 |
| Map 8.1: Traffic and Transportation - Proposals..... | 121 |

I. BACKGROUND

A. Profile of Coimbatore

1. Coimbatore, known, as 'The Manchester of South India' is the district headquarters of Coimbatore district. It is the third largest city in Tamil Nadu and houses numerous textile mills and small scale engineering units. The city is well connected to its region by rail, road and air. It is a major junction on the Madras- Palghat Broad Gauge section and the NH 47 runs through the center of the city. A domestic airport in the city links it with all major cities of the country.

1. Objective

2. The main objective for the City Corporate cum Business Plan is emphasis on issues of priority local concerns for livability, and the implied requirements in terms of
 - a. Enhancing City Productivity
 - b. Reducing Poverty
 - c. Improving Urban Governance & Management
 - d. Enhancing Financial Sustainability
3. The objective of the assignment is to formulate a Plan comprising of appropriate policies and actions that are implementable to accomplish the objectives of the CDP.

2. Scope of Work

4. The CDP outlines the strategic policy and investments interventions to achieve the vision of Coimbatore including formulation of sectoral plans for the identified sectors. The scope of the work is to
 - Assess the existing situation with regards to demographic and economic growth and potentials for growth in the light of economic interventions
 - Assess the existing infrastructure services with regards to provision and delivery, coverage, institutional arrangements, cost recovery mechanisms, etc.
 - Identify the gaps in service delivery and the issues confronting the same
 - Outline the issues faced by the City's poor with regards to infrastructure and housing
 - Outline the urban governance framework of Coimbatore including the reforms in enhancing service delivery and citizen participation
 - Analyze the existing municipal fiscal situation of Coimbatore
 - Prepare a vision and sectoral strategic framework outlining the goals, strategies, interventions / projects to achieve the vision and
 - Formulate a City Investment Plan (CIP) with appropriate financing strategies and an implementation action plan.
5. In addition to that, the CDP will also focus on the reforms to be carried out at the state and local level in consonance with the vision and strategic plan outlined to sustain the planned

interventions.

B. City Corporate cum Business Plan- The Approach

6. The corporate plan is a strategic plan, which sets out in detail the policy and investment options. The plan sets out baseline for the performance of the municipality, its priorities and aims for future. The CDP is a tool to implement comprising of projects and reforms to be under taken by the ULB in a planned way to enable sustainability of municipal operations.

1. City Corporate Plan-The Approach

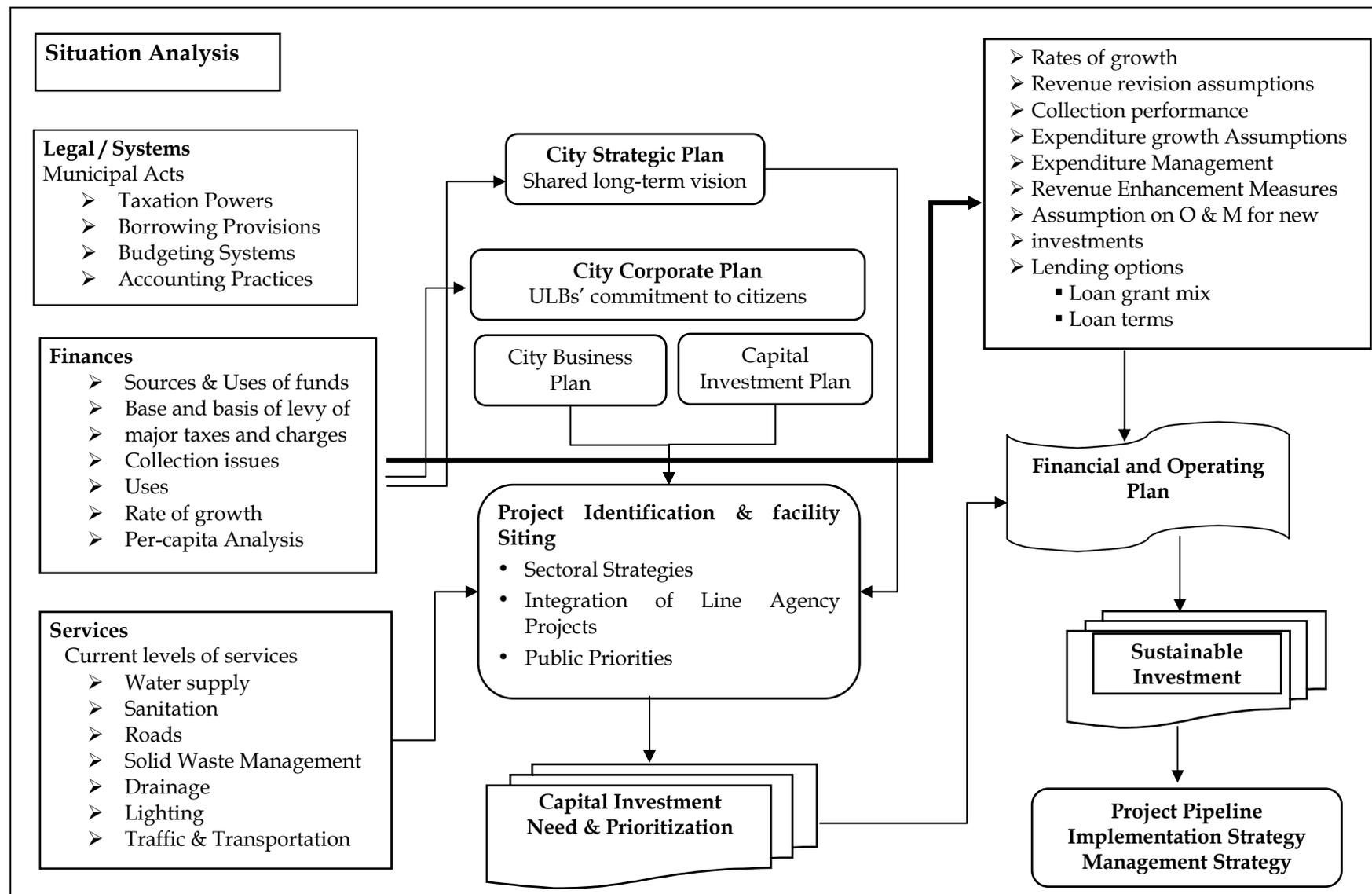
7. The approach of the City Development Plan is iterative in nature and is presented in **Figure 1.1**.
8. For the formulation of the City Corporate Plan¹, the future vision of the city is developed through a participatory approach and stakeholder consultations. Public consultations are conducted at the town level with the Municipal Councilors, officials, line agencies and identified stakeholders. The process of formulating a City Corporate Plan is provided in Figure 1.2. The process is iterative and would enable the Municipal Corporation of Coimbatore review its outcomes through a series of indicators so as to make the process dynamic and in tune with the felt needs and requirements. **Figure 1.2** shows the process involved in the City Corporate Plan

2. Source of Data

9. A varied list of organizations apart from the ULB are consulted for putting together the data presented in the report and used for analysis for the preparation of City Corporate cum Business Plan.
10. The census data for the town is made available by the directorate of Census operations Tamilnadu. Institutions and organizations like DTCP, DIC, TWAD board, IMA, Local NGOs, PSG college of Technology, Private organizations etc have provided the necessary data for the respective services.

¹ The City Development Plan is prepared by Wilbur Smith Associates Private Limited and is facilitated by Tamilnadu Urban Development Fund.

Figure 1.1: Approach to City Corporate cum Business Plan (CDP)



C. Vision for Coimbatore City

11. The vision for the city is “**to achieve improved service levels and better quality of life for the citizens of Coimbatore**”. Specific goals and service outcomes have been framed (presented in **Table 1.1** below), with this vision in mind.

Table 1.1: Goals and Service Outcomes

| Sr. No | Goal | 2011 | 2016 | 2026 |
|--|--|--------------|-------------|-------------|
| A. Water Supply | | | | |
| 1 | Network cover for general households | 90% | 100% | 100% |
| 2 | Network cover for Slum households | 90% | 95% | 100% |
| 3 | Per Capita Supply | 135 lpcd | 135 lpcd | |
| 4 | 24 / 7 Water Supply | | | 90% |
| 5 | Quality of Water | Safe & Good | Safe & Good | Safe & Good |
| 6 | Non Revenue Water | 20% | 15% | 15% |
| B. Sewerage | | | | |
| 1 | Network cover for general households | 90% | 100% | 100% |
| 2 | Network cover for Slum households | 60% | 100% | 100% |
| 3 | Treatment and Disposal | 90% | 100% | 100% |
| 4 | Recycling and Reuse | 20% | 40% | 50% |
| C. Storm Water Drain and Water Bodies | | | | |
| 1 | Storm Water Drain Coverage (% of road length) | 100% | 130% | 150% |
| 2 | Rehabilitation of Existing Nallah's and Water Bodies | 100% | 100% | 100% |
| 3 | Usage of water bodies as local source of water | 30% | 40% | 50% |
| D. Solid Waste Management | | | | |
| 1 | Door to Door Collection | 80% | 100% | 100% |
| 2 | Mechanized Handling of waste | 80% | 100% | 100% |
| 3 | Scientific Disposal | 80% | 100% | 100% |
| 4 | Waste to Energy Generation | 50% | 90% | 100% |
| E. Traffic and Transportation | | | | |
| 1 | Road length / Sq.Km | 8 km / sq.km | 10 km/sq.km | 15 km/sq.km |
| 2 | Average Travel Time (Km / Hour) | 35 | 45 | 45 |
| 3 | Park & Ride Facility | 40% | 60% | 60% |
| 4 | Parking Supply to Demand % | 40% | 70% | 100% |
| 5 | Usage of Alternate fuels | 25% | 40% | 60% |
| F. Street Lighting | | | | |
| 1 | Energy saving mechanisms | 80% | 100% | 100% |

| Sr. No | Goal | 2011 | 2016 | 2026 |
|-----------------------------------|--------------------------------------|------|------|------|
| 2 | Adequate lighting in Non-lit areas | 80% | 100% | 100% |
| G. Basic Services for Poor | | | | |
| 1 | Network Coverage for slum households | 90% | 95% | 100% |
| 2 | UGD coverage for slum households | 60% | 100% | 100% |
| 3 | Adequately lit slums | 100% | 100% | 100% |
| 4 | Adequate road link for the slums | 100% | 100% | 100% |
| 5 | Pucca houses for all slum households | 80% | 100% | 100% |
| 6 | Education for all in slums | 100% | 100% | 100% |

D Report Structure

12. The present report is the draft final report containing the following chapters.
13. Chapter 1 is an introduction to the City Corporate cum Business Planning Process and presents in brief the methodology and the background of the project in context of 74th Constitutional Amendment Act and the new powers assigned to Urban Local Bodies.
14. Chapter 2 gives the profile of the city in terms of its demographic characteristics, past trends and growth, population projections and future trends. It also describes the regional setting and economic developmental activities focusing on the economic base, road and rail linkages and the impact of economic activities in the development of the town. The chapter also includes the population projections for the town, which would be used for analyzing the future demand of the infrastructure.
15. Chapter 3 provides a review of the urban governance aspects of the corporation with a focus on the organizational responsibilities and emerging initiatives. It also features the innovative reforms than the corporation has taken up.
16. Chapter 4 describes the land use and spatial growth of the town, concentration of economic activities, review of the master plan and the future growth of the town, spatially.
17. Chapter 5 focuses on the urban infrastructure including water supply, sanitation, solid waste management, roads, storm water drainage and street lighting. The chapter presents the existing situation in terms of coverage, deficiencies and key issues in delivery, provision of urban services and analyses of the projects identified by the corporation.
18. Chapter 6 focuses on the finances of Coimbatore Corporation with emphasis on Corporation fund, financial status, revenue account, water supply & drainage account, capital account, assets and liabilities extracts the key financial indicators and issues.
19. Chapter 7 focuses on the urban basic services for poor and on water supply, sanitation, solid waste management, roads, storm water drainage ,street lighting and housing requirements for the slums. The chapter presents the existing situation in terms of

coverage, deficiencies and key issues in delivery, provision of urban services and analyses of the projects identified by the corporation.

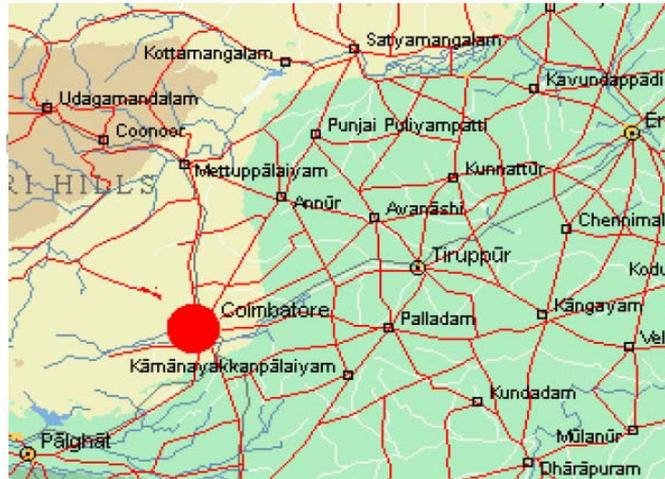
20. Chapter 8 discusses about the design criteria adopted to study the future demand for infrastructure development and service provisions. This chapter also identifies the projects required to be implemented to meet the future demand and briefs the project costing
21. Chapter 9 discusses about the resource mobilization initiatives with respect to water supply, solid waste management, street lighting etc, and explain where the corporation has to take measure to reduce the expenditure and increase the revenue generation with non traditional methods.
22. Chapter 9 focuses Capital Investment Plan and predicts the financial sustainability of the corporation.

II. CITY DEMOGRAPHY

A. Geography & Climate

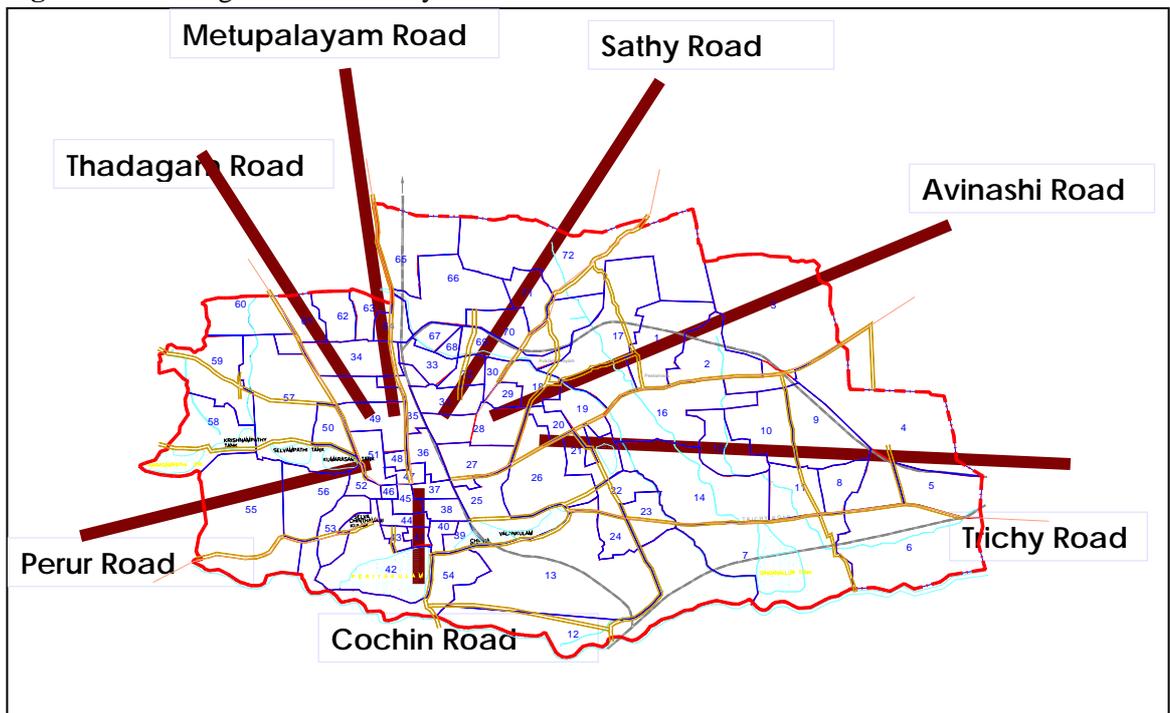
23. Coimbatore, known, as 'The Manchester of South India' is the district head- quarters of Coimbatore district. It is the third largest city in Tamil Nadu and houses numerous textile mills and small scale engineering units. Historical reference of Coimbatore city dates back to 1200 AD. Ruled by Cheran rulers, the city was developed as strategic town during the Nayakas rule of Madurai. Tippu Sultan conceded the town to British colonialists in 1799, who subsequently promoted Coimbatore as the military transit town between Palghat in the west and Gazal Hatty in the north. Beginning 1879, the city has started to emerge as an administrative and industrial town in its own merit.

Figure 2.1: Regional Setting - Coimbatore



24. In the year 1866, Coimbatore was constituted as a Municipal Town with an area of 10.88 sq. kms, and in the same year, the Madras- Podanur rail link passing through Erode was opened thus improving its connectivity to the region. The Coimbatore Corporation was upgraded from special grade Municipality to Corporation in the year 1981 and spreads over an area of 105.60 sq. kms. Coimbatore is located at a distance of 500 km. from Madras, in the district of Coimbatore.
25. *Physical and Geographical Characteristics:* The city is traversed, in the middle, by the river Noyyal rising from the Vellingiri hills on the West. It is surrounded by the Nilgiris, a rich tea producing hinterland in the North, Pollachi, and the receiving center for forest production in the South and the Cochin Harbor in the SouthWest. The Municipal towns of Mettupalayam, Pollachi and Tirupur are within a radius of 40 Km. from Coimbatore. The Regional setting of Coimbatore is explicated in **Figure 2.1**.
26. *Linkage and connectivity:* The city is well connected to its region by rail, road and air. It is a major junction on the Madras- Palghat Broad Gauge section and the NH 47 runs through the center of the city. A domestic airport in the city links it with all major cities of the country. The major link roads are depicted in **Figure 2.2**.
27. *Climate and Rainfall. :* The climatic condition is moderate and the weather is uniformly salubrious owing to its proximity to the continuous stretch of hills covered with thick forests and the cool breeze blowing through the Palghat gap during the monsoon. The average maximum and minimum temperatures are 39.6° C and 17.3°C, respectively. The average rainfall per annum is 495 mm.

Figure 2.2: Linkage & Connectivity - Coimbatore



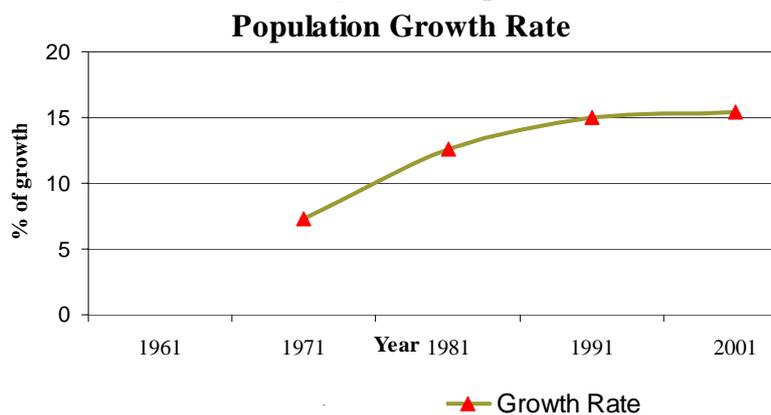
B. Population Trends and Urbanization

28. The population of Coimbatore City is 9.3 lakhs as per the 2001 census. The population has grown from 0.47 lakhs in 1911 to 9.3 lakhs by the year 2001 with an average annual growth rate of 2.7 % and an average decadal growth rate of 27.34%. The population of Coimbatore is more than a million (10.36 Lakhs) by the end of 2005. The population of the Local Planning Authority works out to be about 16.4 lakhs

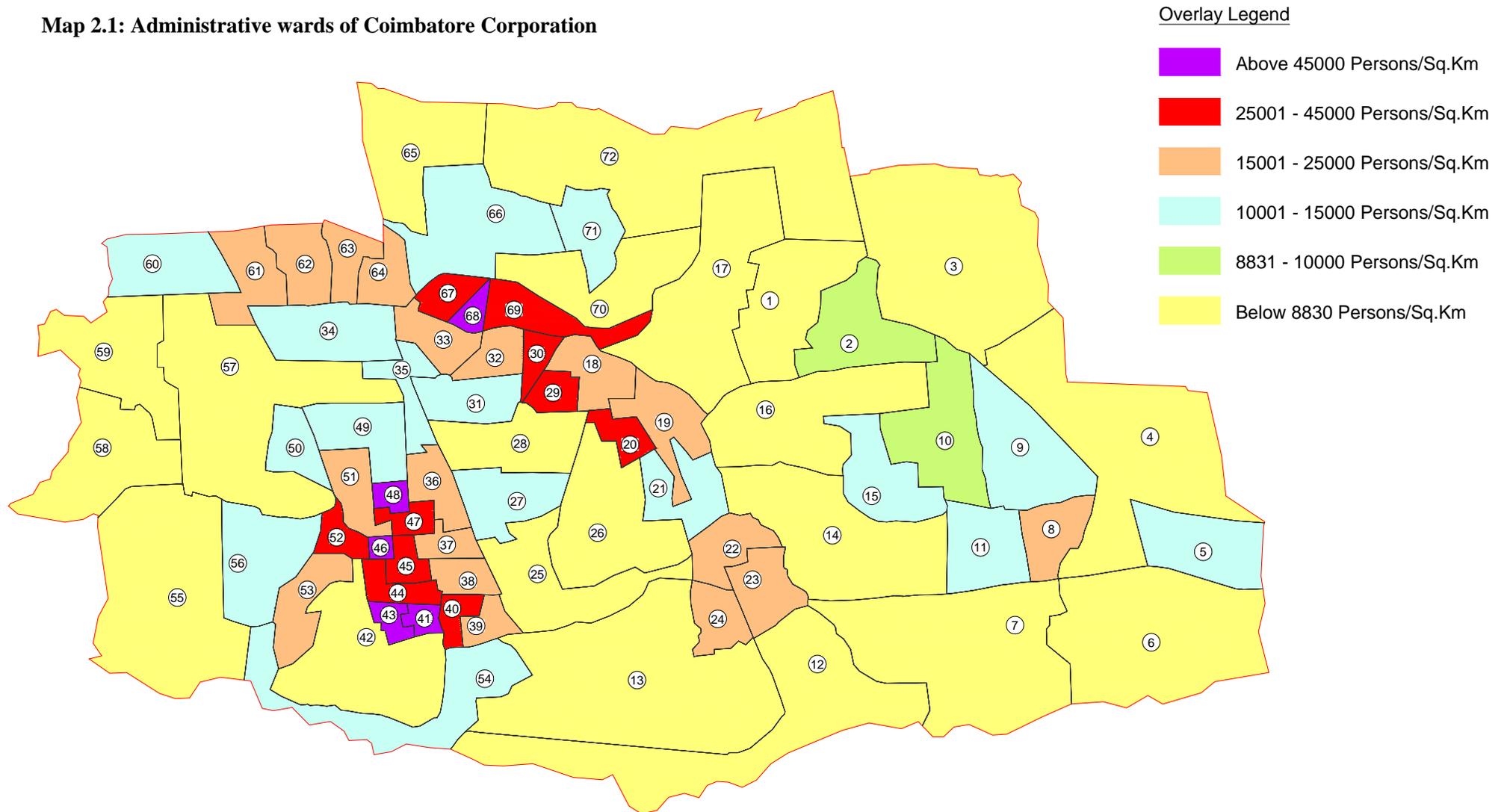
29. The availability of power, clubbed with raw material availability for textile processing, from 1935 has led to the establishment of many industries thereby resulting in a nearly 52% increase in population between 1941-1951.

30. The city has registered the highest decadal growth rate of 49.2 % between the period 1971-1981. This is attributed to the up gradation of Coimbatore Municipality to the status of Corporation, whereby additional areas were included in its jurisdiction. **Table 2.1** and **Figure 2.3** shows the population Growth Rate of Coimbatore Corporation. The administrative wards are furnished in **Map 2.1**.

Figure 2.3: Population Growth Rate



Map 2.1: Administrative wards of Coimbatore Corporation



Map 2.2: Coimbatore Local Planning Area Map

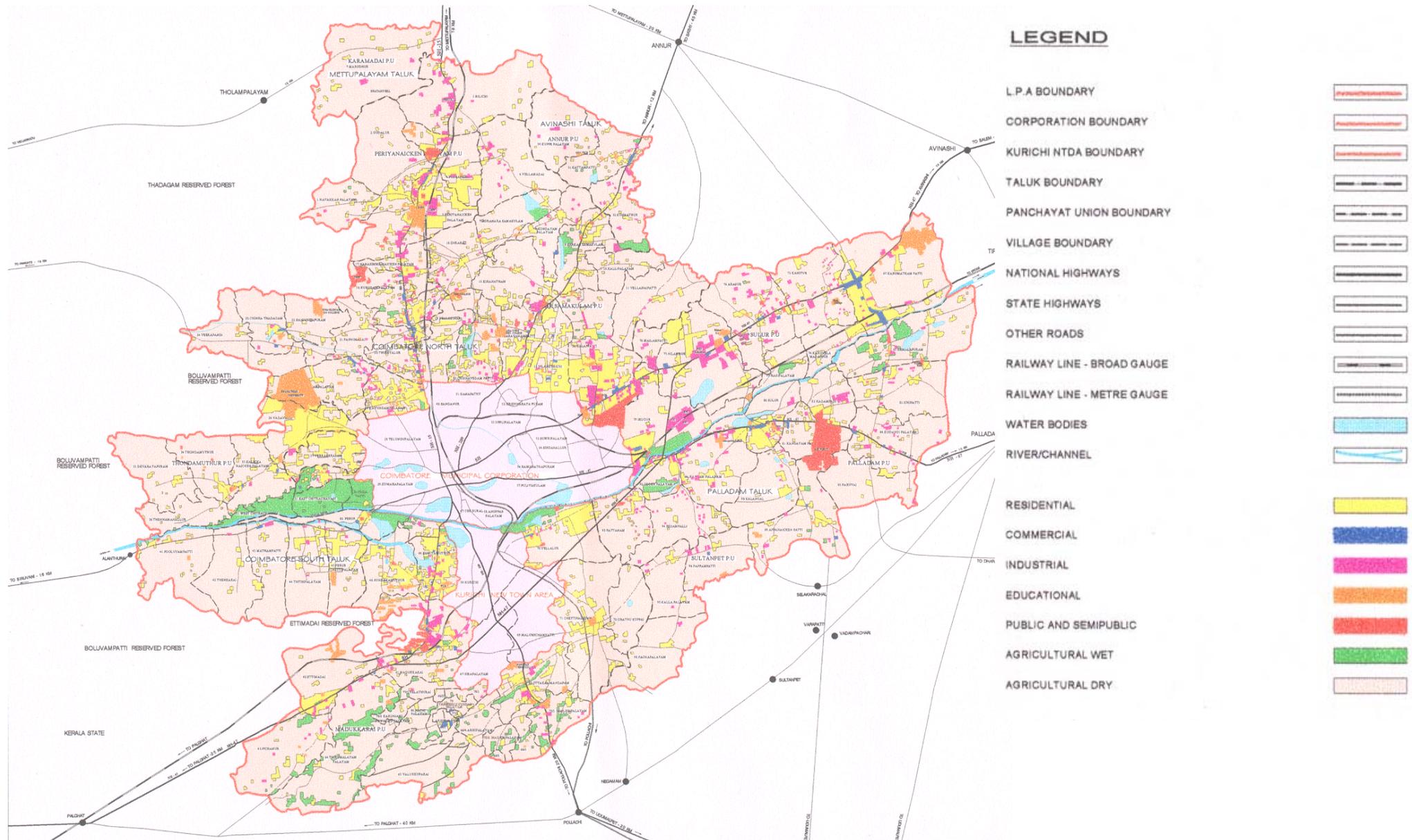


Table 2.1: Population Growth in Coimbatore

| Year | Actual Population | Decadal Growth | Population | Decadal Growth |
|--------|-------------------|----------------|------------|----------------|
| | Nos. | % | Nos. | % |
| 1961* | 286,305 | | 580,138 | |
| 1971* | 356,368 | 19.71 | 622,462 | 7.30 |
| 1981** | 700,923 | 49.20 | 700,923 | 12.60 |
| 1991 | 806,321 | 15.04 | 806,321 | 15.04 |
| 2001 | 930,882 | 15.45 | 930,882 | 15.45 |

Source: Census of India,

** Up gradation of Coimbatore Municipality to the status of Corporation

* Added corporation area population to the Coimbatore Municipal Population.

Coimbatore LPA Population: The Local Planning Area of Coimbatore comprises of two municipality and 12 Town Panchayats. The total LPA in 2001 is 1,287 sq. km. The population growth in the LPA is given in **Table 2.2**.

Table 2.2: LPA Population in Coimbatore

| Year | Population | Decadal Growth |
|-------|------------|----------------|
| | Lakhs | % |
| 1961 | 7.93 | |
| 1971 | 10.12 | 27.62 |
| 1981* | 12.40 | 22.53 |
| 1991 | 14.35 | 15.73 |
| 2001 | 16.95 | 18.12 |

Source: Census of India,

* Up gradation of Coimbatore Municipality to the status of Corporation

1. *Density Pattern*

31. The population in Coimbatore is spread over an area of 105.60 sq. kms with a density of 8,815 persons/ Sq.Km. The density has increased from 7,727 persons per Sq.Km in 1991 to 8,815 persons per Sq.Km in 2001 (increase of 12%). The population density is listed in **Table 2.3** Ward wise density pattern is illustrated in **Map 2.4**.

Table 2.3: Population Density

| Year | Density |
|------|-------------|
| | Per / Sq.Km |
| 1981 | 6,667 |
| 1991 | 7,727 |
| 2001 | 8,815 |

Source: Census of India, Analysis

32. The Municipal Corporation manages delivery of services in all 72 wards within corporation limits, covering an area of 105.6 sq. Km. The City is divided into four Zones namely, North Zone, South Zone, West Zone, and East Zone with 18 wards each and as tabulated below in **Table 2.4**.

Table 2.4: Zone wise Details of Municipal Corporation

| Zone | Area | Population | Density |
|-------------|--------------|-------------------|------------------------|
| | <i>Sq.Km</i> | <i>Nos</i> | <i>Persons / Sq.Km</i> |
| North Zone | 28.1 | 256,434 | 9,115 |
| East Zone | 33.0 | 261,889 | 7,945 |
| South Zone | 21.5 | 202,021 | 9,383 |
| West Zone | 22.8 | 210,538 | 9,235 |

Source: Analysis

33. It can be noted from **Table 2.4** that, North, South and West zones have equitable density of about 9,200 persons per sq.km, while the east zone has density of about 7,945 owing to larger area when compared to other zones.
34. *Saturated Wards:* Ward wise density analysis indicates that about 15 wards have very high or saturated densities (>25,000 persons per sq.km). Areas in and around Bazaar street, N.H. Road, Sukravarpet, Ponnaya Rajapuram, Gandhipuram bus stand, Papanaiickenpalayam, Sastry road are noted to have density that range from 47,500 to 125,000 persons per sq.km. Further development is not expected in these areas. Areas like P.N.Palayam and Ramanthapuram are noted to have densities between 14,000- 39,000- persons/ sq. km
35. *Constrain Wards:* About 50% of the wards (34 wards) are identified with density between 10,000 and 25,000. These wards are identified as the potential wards for development and high growth rate is attributed to these wards. It is observed that, most of the wards in this category are located around the wards with high and saturated densities, which clearly implies its positive growth trend.
36. *Potential Wards:* About 23 wards are observed with densities ranging up to 10,000 persons per sq.km. Low densities in these wards are attributed to the location along the corporation periphery, presence of water bodies, hillocks, industrial units or educational institutes.
37. The summary of density pattern is tabulated in **Table 2.5**.

Table 2.5: Summary of Density Pattern in Coimbatore

| Density Pattern | Range | Number of Wards |
|------------------------|----------------------------|------------------------|
| | <i>(Persons per Sq.Km)</i> | <i>Nos.</i> |
| Very Low | 0-8,830 | 20 |
| Low | 3,000 – 10,000 | 3 |
| Medium | 10,000-15,000 | 16 |
| High | 15,000-25,000 | 18 |
| Very High | 25,000-45,000 | 10 |
| Saturated | >45,000 | 5 |

Source: Analysis

C. Economic Development

1. Sectoral Growth

38. Coimbatore is the largest industrial center after Chennai, and is a part of the Coimbatore-Tiruppur– Erode Industrial corridor. Apart from the numerous large textile mills, a number of small scale engineering industries are also located in and around the city.
39. The dry belt of the Coimbatore region comprising of black cotton soil was suitable for cotton cultivation. The British exploited this feature and the first textile mill was started in the year 1888. The commercial potential of setting up textile mills led to the shift in most workers from the primary to the secondary sector, and included a substantial number of farmers. This resulted in the large-scale growth of textile mills ranging from small, medium to the large-scale sector, thus earning the name 'Manchester of South India'.
40. The omnipresent demand for cotton by the mills pressurized the farmers to improve their irrigation method in order to increase the production. This paved way for setting up of the pump industry, which brought along with it the foundries and electric motor manufacturing units. The servicing industry soon followed suit.
41. Commissioning of the Pykara Hydro Electric Project in 1929 gave impetus to the spinning mills and was also instrumental in the establishment of the pump industry. Currently, about 40 percent of the country's requirement of pump sets is catered to by the industries in Coimbatore. The foundries and machine shops have provided the necessary base for the light engineering entrepreneur of Coimbatore to venture into the textile machinery accessories and spares.
42. *Occupational Pattern:* The city has witnessed rapid growth over the past few decades with its economy revolving around production of textiles, engineering equipment and now, the IT sector boom. As per the 2001 census, 38.49 percent of the total populations of the city constitute the workforce, which has registered an increase of over 4 percent from the previous decade. 90 percent of the total workforce is in the tertiary sector followed by secondary sector contributing 5 percent. The occupational structure is presented in **Table: 2.6.**

Table 2.6: Workforce Participation

| | 1981 | 2001 |
|-------------------------------|-------------|-------------|
| Population | 806,321 | 930,882 |
| Primary Sector | 8962 | 6,507 |
| Secondary Sector | 11,220 | 15,340 |
| Tertiary Sector* | 210,348 | 336,407 |
| Non- Workers | | 572,628 |
| Work Force Participation Rate | 32.72% | 38.9% |

Source: Census of India

Note: * includes the figures of Livestock & Mining, HH & Industry and the tertiary sector.

43. *Major work force contribution:* The city has contributing three major industries like Textile industry, Foundries and Manufacturing of Motors and pumps. The number of

workers working under the industries as mentioned in the **Table: 2.7**:

Table 2.7: Workforce in Predominant Industries

| Type of Industries | No of Units | Approximate Number of workers |
|---|-------------|-------------------------------|
| Textile Industries | 4,642 | 232,110 |
| Foundry | 1,310 | 13,012 |
| Electrical Manufacturing units & Small Scale Industries | 680 | 6,332 |

Source: Corporation of Coimbatore

2. *Industrial Development*

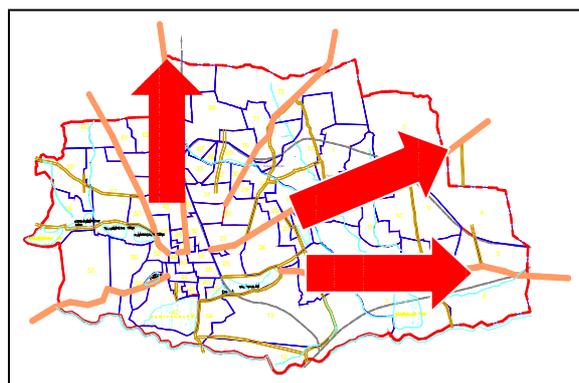
- 44. Apart from being named the Manchester of South, the city has the distinction of housing various types of industries like textile machinery, cement, rubber, transport equipment, foundry engineering and a variety of engineering industries. Two Industrial Estates, one at Peelamedu and the other at Kurichi, house a majority of the industries. The other major industrial areas are located at Singanallur and Uppilipalayam.
- 45. In addition, a substantial number of factories and textile mills are located along Trichy road and Avinashi road. Most of the engineering units, both light and heavy, are located along Mettupalayam and Avinashi road. Industries pertaining to food products are concentrated mainly along the Mettupalayam road. Discussion with the municipal officials has revealed that, IT biggies like Infosys and TCS are intending to put up their software development offices in Coimbatore and it proposed to come up along the Avinashi Road.

D Growth Trends and Projections

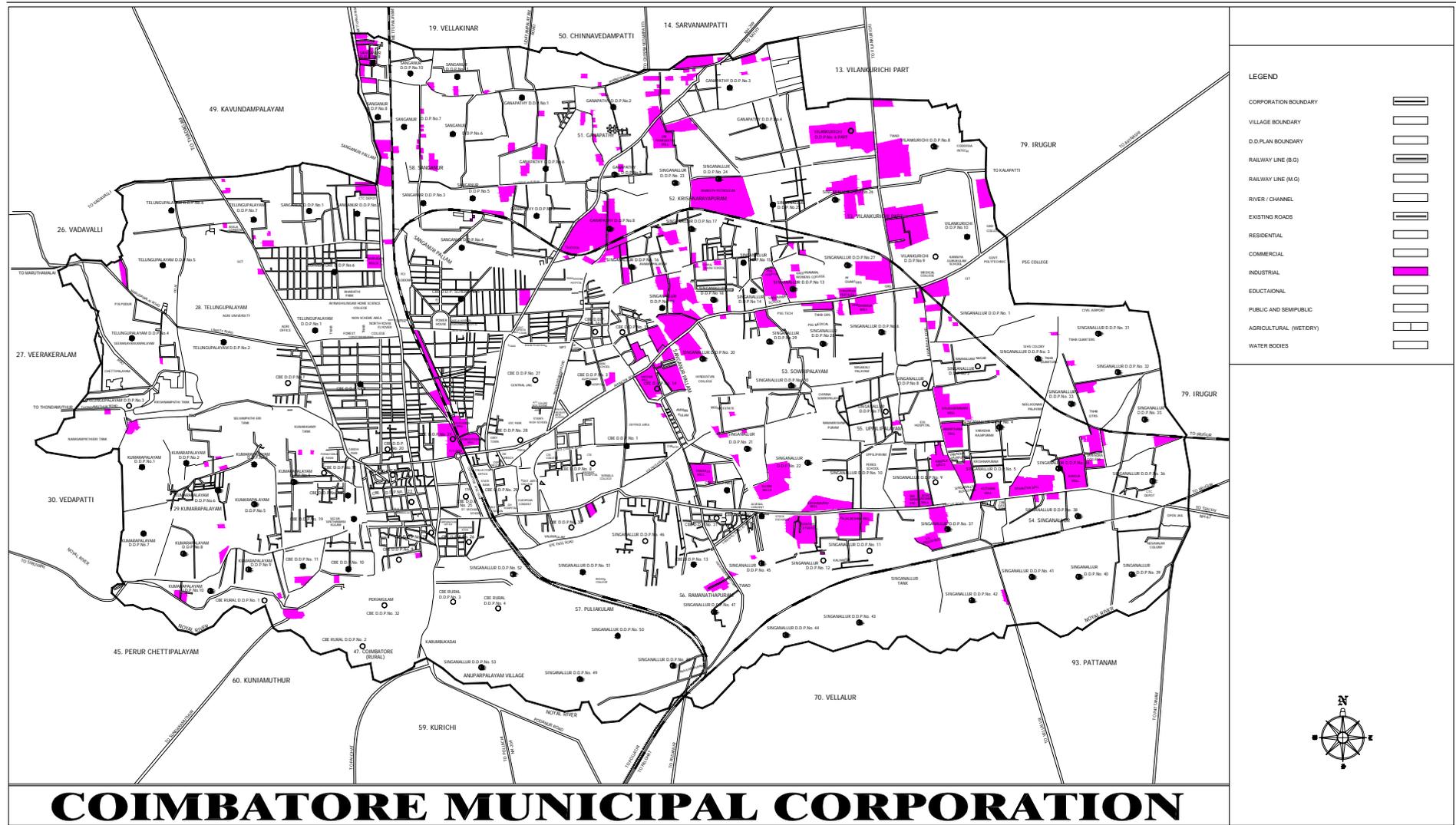
1. *Growth Trend*

- 46. *Growth Trend:* The main aim of understanding the determinants of spatial development is to assess the factors which make less land than ideally suited for urban development. The determinants are the influence factors of spatial growth and sprawl. Some of them will aid the growth; where as some of them will negate the growth. For example, the influence of green areas and water bodies are highly worth mentioning in the city’s growth in a sustainable manner. Decisions to conserve them will always find support in any City’s Development Agenda. The trends of growth pattern are illustrated in **Figure 2.5**.

Figure 2.4: Growth trend in Coimbatore



Map 2.3: Industrial location Map



47. Some of the major reasons in using these determinants as decision factors are to arrive at sustainable policies of conserving water and other natural resources, economically and financially viable infrastructure development, employment opportunities etc. Thus by taking key decisions factors or Determinants as a rule for programming spatial developments, a comprehensive, sustainable growth management policy can be formulated
48. The city is growing in the North, East and South directions along the major radial roads. In the past, the growth direction was towards the East along NH 47, however, with the establishment of technical and educational institutions and mills on Avinashi road areas along Trichy road and the roads leading to Martuhamalai hills towards the west are also developing.
49. *Urban Land and Urbanizable Land:* The wards on the periphery like 3,4,5,6,7,55,58,59 still have a lot of open lands and are only sparsely urbanized. Further developments are is likely to take place in these wards. These include areas along the Avinashi Road, Trichy Road, Cochin road, and peripheral areas like Singanallur, Ondipudur, Matuthamalai road (near Agriculture College), Seeranayakanpalayam, Kumarapalayam, Vilankurichi etc
50. At the regional level, it is evident that the major urban sprawl corridors are Avinashi Road, Trichy Road and Metupalayam road which are towards the north, north east and east of the city comprising of urban land for development. Considering the newer initiatives such as proposals for IT parks in Avinashi road, Maruthamalai road, a greater potential exists for the outer wards in proximity to the above. The urbanisable land is predominant outside the City limits in the form of plotted development/ layout development. In addition, a lot of open land is available in the peripheral municipalities around the city, which would become urbanisable in future.
51. *Population Projections:* The growth of population would accentuate the need for the provision of infrastructure and other services, which have to be planned and prioritised to meet the demand. Based on the past growth rates, it is difficult to forecast with accuracy the population of the city in future. Also it is not possible to estimate the migrate population, which is largely happening in the peripheral areas and beyond the Corporation's jurisdiction. It is important to review the projections from time to time and in this instance, the census of 2001 has been considered for future growth projections.
52. The population data for the Coimbatore is available from 1911. However, the area considered for population between the period 1901-1951 was far less than the present area of 105.6 sq.km. Therefore, population data between 1951-2001 has been selected for analysis and future projection.
53. Population for 2001, was projected using Arithmetic Increase method, Incremental Increase method and Geometrical Progression method, Line of best fit method, Semi Log method, Exponential growth method & Decadal growth method and the one which gave the nearest to the actual census figure has been adopted. Population projection by Geometric Increase Method gave the nearest figure to the census figure of 2001. Thus, this method was adopted for population projection for Coimbatore Corporation. It is also noted that, the Geometric Increase Method also closely matches with the projection that was done in the earlier City Corporate cum Business Plan. The population projection is listed in **Table 2.8.**

Table 2.8: Population projection for Coimbatore Corporation

| Name of Method | Projected Population | | | |
|-----------------------------|----------------------|-----------|-----------|-----------|
| | 2006 | 2011 | 2021 | 2031 |
| Arithmetic Increase Method | 1,001,392 | 1,023,970 | 1,212,924 | 1,424,455 |
| Incremental Increase Method | 990,068 | 1,032,587 | 1,122,328 | 1,186,640 |
| Geometric Increase Method | 1,009,677 | 1,258,975 | 1,288,387 | 1,644,032 |

Source: Analysis

54. Reasons for opting Geometric Increase Method:

- Discussions with the corporation authorities explicated that, about 11 lakh population was expected in 2005. Considering this as base population for projection, it is noted that, the Line of best fit method & Geometric Increase Method are close for the projection.
- It is observed from the ward analysis that, about 60 percent of the wards have densities lesser than the city's average density (8861 persons/sq.km). Assuming an ideal density of 17,500 persons/sq.km (as prescribed in UDPFI guidelines for metropolitan cities), population works out to be about 17.15 lakhs. (also assuming 20 percent of the area for agricultural or restricted use)
- Coimbatore has also been attracting investment in hi-tech industries in the recent years, especially in the field of solar energy and computer software, which would induce high growth. It is estimated that an additional 20,000 employment opportunities will be generated in Coimbatore by 2010. Due to this factor the additional one population is likely to be added.
- Presence of the best technical institutes in the state would easily induce software industries to start up their development offices, which might fuel the growth.
- Emergence of Tirupur as an export hub and the presence of airport in the Local Planning Area will surely contribute for a healthy growth trend
- Also considering the average of various projection methods used, it is observed that Geometric method is close to the average figure (analysis has excluded the Incremental increase method, which is very low when compared to other projections)
- Hence it is strongly felt that, Geometric Increase method will match with the city's growth trend and could be taken up for further designs. The population projected using the aforementioned method is listed in **Table 2.8**.

Table 2.9: Proposed Population Projection for Coimbatore

| Year | Projected Population |
|------|----------------------|
| 2001 | 930,882 |
| 2006 | 1,009,677 |
| 2011 | 1,091,759 |
| 2021 | 1,288,387 |
| 2031 | 1,644,032 |

Source: Analysis.

E. Socio-Economic Profile

1. Employment

55. Tertiary Sector mainly in industries and related ancillary activities provides major employment in the City. Approximately 89 percent of the workforce is employed in tertiary sector. It is also noted that, Coimbatore serves as a major commercial hub for its surrounding towns and villages with about 7 percent of the property tax assessments being commercial establishments. These commercial activities also generate significant employment opportunities.
56. Owing to the presence of numerous engineering colleges in and around Coimbatore and the proposals for emergence of IT industries, would also serve as a potential employment base and present a great opportunity for the development of Coimbatore.

2. Land and Housing

57. As per Census 2001, there are 251,266 census houses, out of which 235,828 are occupied and the remaining 15,438 are vacant. The residences form the major occupied houses in the town with 95.97 percent of total occupied census houses. The commercial and public institutions like shops and offices account for about 10.71 percent of the total occupied census houses. The details of occupied census houses are presented in **Table 2.10**

Table 2.10: Occupied Census Houses

| Occupied Census House | Number | Distribution |
|-----------------------------------|---------|--------------|
| | | Percent |
| Residence | 190,899 | 75.97 |
| Residence, cum-other , use | 3,202 | 1.27 |
| Shop, Office | 23,718 | 9.44 |
| School, College, etc. | 447 | 0.18 |
| Hotel, Lodge, Guesthouse, etc. | 1,171 | 0.47 |
| Hospital, Dispensary, etc. | 890 | 0.35 |
| Factory, Workshop, Work-shed etc. | 7,714 | 3.07 |
| Place of worship | 596 | 0.24 |
| Other non-residential use | 7,191 | 2.86 |

Source: Census of India, Analysis

58. *Average Household Size.* The total number of households in Coimbatore according to census 2001 is 224,687. Correspondingly, the household size is 4.14, which is lesser than

national average of 5.

59. Census of Tamil Nadu has classified houses based on the type of roof material, which is detailed out in **Table 2.11**. Like any other town or city in India, concrete roof and tiled roof is most predominant in Coimbatore.

Table 2.11: Distribution of Census Houses by Type of Roof

| Type of Roof | Numbers | Distribution |
|---------------------------------------|----------------|---------------|
| | Nos. | % |
| Grass, Thatch, Bamboo, Wood, Mud, etc | 1,880 | 0.75 |
| Plastic, Polythene | 525 | 0.21 |
| Tiles | 118,429 | 47.13 |
| Slate | 166 | 0.07 |
| GI, Metal, Asbestos Sheets | 14,020 | 5.58 |
| Brick | 1,816 | 0.72 |
| Stone | 243 | 0.10 |
| Concrete | 113,544 | 45.19 |
| Any Other Material | 643 | 0.26 |
| Total Census Houses | 251,266 | 100.00 |

Source: Census of India, Analysis

60. Based on the type of floor in occupied census houses, the census classification is given in the **Table 2.12**. The use of concrete floor is most preferred with 65 percent of the total occupied census houses followed by the usage of mosaic and other tiles.

Table 2.12: Distribution of Census Houses by Type of Floor

| Type of Floor | Number | Distribution |
|---------------------|----------------|---------------|
| | Nos. | % |
| Mud | 16,569 | 6.59 |
| Wood, Bamboo | 218 | 0.09 |
| Brick | 1,355 | 0.54 |
| Stone | 760 | 0.30 |
| Cement | 173,968 | 69.24 |
| Mosaic, Floor Tiles | 56,826 | 22.62 |
| Any Other Material | 1,570 | 0.62 |
| Total | 251,266 | 100.00 |

Source: Census of India

3. Health

61. The Corporation maintains 16 dispensaries (11 Allopathy, 2 Siddha and 3 Ayurvedha) and 2 maternity homes with 20 urban health posts. All the dispensaries and maternity homes are run by qualified doctors and other para- medical staff using modern equipments and diagnostic techniques. In addition to these corporation maintained hospitals, there are about 850 nos. of private hospitals, dispensaries, etc. in the city.

4. *Education*

62. Coimbatore houses government education institutions along with aided and private institutions. It also houses some of the best engineering colleges in Tamil Nadu like the Coimbatore Institute of Technology, P.S.G College, etc.
63. The literacy rate in the town is 80 percent marginally higher than the Coimbatore district figures. The main reason for higher literacy can be attributed to the presence of many engineering colleges and other technical institutes.
64. The Corporation maintains 98 schools with a total teaching strength of 1318 and student strength of 39,360. Of the 98 schools maintained by the Corporation, 60 are Elementary schools, 13 Higher Elementary or Middle schools, 11 Higher Secondary schools, and one special school for the deaf and dumb.

5. *Additional Facilities*

65. The Corporation maintains 4 career guidance clubs to provide career guidance to students. High ranked students in the higher secondary, the S.S.L.C examinations are given Gold Medals, and toppers in other examinations are awarded cash prizes.

III. URBAN GOVERNANCE

A. Institutions and Capacity

1. Institutional Arrangements and Policy Context

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

(i) Water Supply & Sewerage. The Tamil Nadu Water Supply and Drainage Board (TWAD), an apex body of the State, is responsible for creation of water and sewerage infrastructure in the state. However, in the case of Coimbatore, the system is being maintained by the Corporation.

(ii) Master Plan/Comprehensive Development Plan. The Town and Country Planning Department (TCPD) prepares the Master Plan for the town, and the mandate of implementing the Master Plan lies with the ULB – growth is generally haphazard and unplanned, the Master Plan is rarely referred to. However, with a vision to achieve planned growth, revision of Master Plan is in progress.

(iii) Roads and Highways. Highways and Rural Works maintain the National and State Highways that pass through the town/city. Municipal roads are however created and maintained by the ULB.

(iv) Environmental Protection. The Tamil Nadu Pollution Control Board (TNPCB) is responsible for environmental protection and enforcement of rulings related to the same, passed by competent authorities.

(v) Slum Upgradation. The Tamil Nadu Slum Clearance Board (TNSCB) develops improvement schemes for notified/regularized slum settlements in the city/town. Infrastructure provision is financed partly through loans from the Housing and Development Corporation (HUDCO) and partly through grants from GoTN and GoI. The corporation is responsible of the infrastructure in the slums once the slums are handed over by the TNSCB to the corporation.

B. Organization Structure of Urban Local Body

67. The structure of the Corporation consists of two Wings i.e., the Deliberative Wing and the Executive Wing.

1 Executive Wing

68. An elected council comprising of a directly elected Mayor and Ward councilors represents the Elected Wing. There are 72 divisions and one elected councilor represents each division. As per the 74th Constitutional Amendment Act (CAA), the entire city is divided into four ward committees and seven standing committees to assist the council in its

operations. A Deputy Mayor assists the Mayor and is elected from amongst the councilors. The term of both, the Mayor and his Deputy, is for a period of 5 years.

69. The entire city has been divided into four zones consisting of 18 wards each. The ward committee operating at the zonal level consists of elected councilors of the respective wards and is headed by a Chairperson. These committees are responsible for assisting the council in the planning and execution of development works at the zonal level. In addition, the council consists of seven standing committees headed by a Chairperson and comprising of elected members of the council.

2. *Administrative Wing*

70. The Commissioner, who is also the executive head of the Corporation, heads the administrative wing. Four zonal Assistant Commissioners and eight Heads of Department assist him. The Head of Departments include:

- Assistant Commissioner (Personnel)
- Assistant Commissioner (Revenue)
- Assistant Commissioner (Accounts)
- Accounts Officer (Water supply)
- City Engineer
- City Health Officer
- Executive Engineer (Planning)
- Chief Educational Officer

71. The functions of the Administrative wing are as follows

- All Executive Functions with the Administrative Head (Commissioner)
- Establishment matters such as appointment, transfers, pay and allowances, etc., correspondence with Government and other departments,
- public relations, redressal of public grievances, Legal matters etc.
- Sanctioning of estimates and approval of contracts, payments, etc.
- Others related to office administration.

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

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

(ii) General Administration Department. The department is headed by the Commissioner and assisted by Assistant Commissioner (Personnel), Administrative officers, Public relation officer, Superintendent and other officers. This department is responsible for establishment, other essential matters relating to office, officers, staff and

their welfare like preparation of staff pay bills, maintenance of registers for advances, GPF, pension, PF's etc.

(iii) Engineering and Water Supply Department. City Engineer heads the Engineering Section and is assisted by executive engineers, assistant executive engineers, assistant engineers, junior engineers and other staff. This department looks after all the works relating to execution and maintenance of basic amenities like Water Supply, Drainage, Sewerage, Storm water drains, Roads, Street lights, etc. The Engineering department is also responsible for ensuring the quality of works and their execution within the time frame.

(iv) Revenue and Accounts Department. The department is headed by the Commissioner and assisted by Deputy Commissioner, Assistant Commissioners (Accounts and Revenue), Accounts officers, Revenue Officers, Assistant officers and other officers. The Accounts Section is responsible for supervising all financial transactions related to the CMC, advising the Commissioner on all internal financial matters, updating financial receipts and expenditure details in accordance with the utilization of funds, reporting deviations in expenditure of funds in any of the allocated schemes, assisting preparation of the CMC budget, maintenance of accounts regarding stamp duty, SFC Grants, MP Grants, maintenance of petty cash book and general cash book and attending to audit requirements and other such accounts-related duties. Revenue Officer, heading the Revenue Section, is responsible for collecting taxes such as, trade tax, house tax, advertisement tax, and entertainment tax; development charges; transfer of properties (commonly called Khatha transfer); collection of duty; issuing notices for recovery of tax; and monitoring revenue collections of the ULB.

(v) Public Health Department. The department is headed by City Health Officer, and is responsible for ULB services such as Solid waste management, public health related works like malaria control, family planning, mother and child health care, birth and death registration etc, and other government assisted programs related to health and poverty reduction and awareness programs. The City Health Officer assisted by the Health Inspectors and Sanitary Inspectors, is responsible for services of Solid waste management and Malaria Control activities. Junior officers are in-charge of works execution at the field level, which includes monitoring and supervising the work of sanitary laborers in the wards under their charge and attending to specific local complaints. Besides, this department is responsible for the enforcement of the Public Health Act. The City Health Officer is assisted by the assistant health officer, assistant nurses, biologist and drivers etc. The department is also involved in promotion of health awareness programs and implements various State and Central assisted schemes like pulse polio project, SJSRY etc.

(vi) Town Planning Department. A chief town-planning officer heads this department, assisted by assistant town planning officers, building inspectors, surveyors and junior assistants and other staff. The major function of this department is issue of building license, preparation and implementation of development plans and eviction of encroachments, urban planning and building regulation.

73. The corporation maintains a Treasury Office, which is responsible for Pre-Audit of the work bills and pay bills, before sending them for auditing to the Directorate of Local fund Accounts as done in the Government treasury offices. Other wings, which are functioning in the corporation, are Council wing, Legal wing, Vigilance wing and Public relation wing.

74. Decentralized Administration: Zones and Wards: For administrative convenience, the Corporation has been divided into four zones- north, south, east and west, each headed by an Assistant Commissioner. The Assistant Commissioners have been delegated with adequate powers to enable them to discharge their functions effectively.
75. The zonal system came into existence from January 1997, and envisages decentralization of activities and a more responsive administration at the zone /ward level.
76. Each of the 4 zones consists of 18 wards, thereby totaling to 72 wards. A ward is the smallest territorial unit formed for administrative convenience. The Corporation personnel working at the ward level, e.g. Junior Engineers and Sanitary Inspectors have been delegated with adequate powers to discharge their duties effectively. From October 1998, the JEs have been provided with an advance of Rs. 500 per ward per month for meeting the contingent expenditure.

3 Institutional Strengthening and Capacity Building

77. The vacancy rate in Coimbatore is 29.64 percent. **Table 3.1** summarises the staff status in Coimbatore.

Table 3.1: City Corporation Staff Details.

| Item | Staff |
|----------------------|--------|
| Sanctioned Positions | 3,853 |
| Vacant Positions | 1,142 |
| Filled Positions | 2,711 |
| Vacancy Rate | 29.64% |

Source: Analysis

4 Institutions and Capacity of the Urban Local Body

78. The executive wing is responsible for day-to-day operations of the corporation, and is headed by the municipal commissioner. The commissioner is the administrative head of the corporation and is supported mainly by five departments in the operations. The organizational structure of the corporation comprises of five functional departments. Each department consists of a head that reports to the commissioner and functions as per the responsibilities prescribed in the Act and as delegated by the municipal commissioner. The details of municipal departments and functions are illustrated in **Table 3.2**.

Table 3.2: Municipal Departments and Functions

| Department | Functions |
|------------------------|--|
| General Administration | Establishment, Records, Accounts, Correspondence, Treasury |
| Engineering | Works, Water Supply and Operation and Maintenance |
| Public Health | Preventive Health Care, Conservancy, Vital Statistics |
| Revenue | Billing and Collection of Taxes, Charges and Fees |
| Town Planning | Administration of Master Plan |

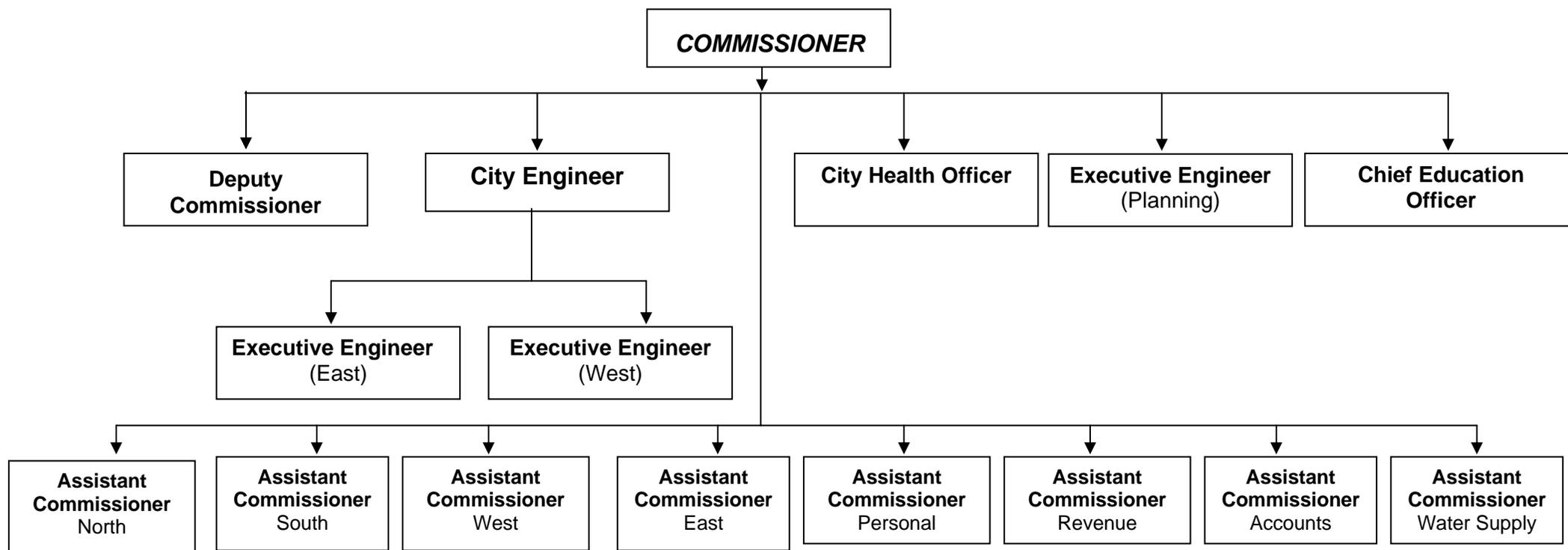
79. The governance of urban local bodies assumes importance with the adoption of 74th

Constitutional Amendment Act. The Act proposes mandatory elections and greater devolution of functions to the urban local bodies including City Corporations. In light of these developments, it is appropriate to review the system of governance of the Coimbatore Municipal Corporation as a part of the Corporate Plan. This element outlines the present structure of the elected and administration wings of the Corporation and deals with issues related to management functions, operations and reforms.

80. Implications of the 74th Constitutional Amendment (CA) and the Tamil Nadu Urban Local Bodies Bill the enactment of the 74th CA provides an entirely new framework for the governance of the Urban Local Body. The Act provides for mandatory elections and a substantially larger devolution of functions to the Urban Local Bodies, including several new areas hitherto not under their control.
81. The Tamil Nadu Urban Local Bodies Bill, 1997, proposes to bring into effect a common legislation governing all Urban Local Bodies in the State including Town Panchayat, Municipalities and City Corporations. This new bill provides for several changes when compared to the existing Act and devolves more powers and functions to the Urban Local Bodies.
82. The Tamil Nadu Urban Local Bodies Bill has particularly focused upon issues related to finances, taxation, levy of tolls, levy of fines, by- laws, service charges for solid waste removal, and specific provision for urban planning.

ORGANISATIONAL STRUCTURE OF COIMBATORE CORPORATION

Figure 3.1: Administrative Structure



5. *Service Delivery and Performance of Urban Local Body*

83. The Corporation consists of ten departments to discharge duties. Each of the departments functions in accordance with the guidelines of the Corporation Act. The functions and the duties of the departments are briefed below.
84. *Engineering Department:* The Engineering Department is primarily responsible for the planning, preparation and implementation of all developmental works of the Corporation. This department is headed by the City Engineer to assist the Commissioner. There are two Executive Engineers, E.E (west) for west and south zones and E.E (east) for east and north zones. There is one Assistant Executive Engineer for each of the four zones and a junior / Assistant Engineer for every two divisions. In addition to its own functions, since 1996, the department is also responsible for the town planning and solid waste management aspects.
85. The department in coordination with Tamil Nadu Water Supply and Drainage (TWAD) Board undertakes implementation of water supply and sewerage works (TWAD Board's role limited to capital works alone) within the jurisdiction of the Corporation. The department is also responsible for ensuring the quality of the works and their execution in a time bound manner.
86. Functions- Engineering Department
- Undertaking development works
 - Maintenance of roads, water supply, drainage, sewerage systems, street lights and buildings of the Corporation.
 - Preparation of estimates and quality control
87. *Public Health Department:* The Public Health Department handles solid waste management and public health related aspects such as epidemic control, malaria control program, immunization activities, etc. The department is also responsible for the enforcement of the Public Health Act.
88. The City Health Officer (CHO) who is assisted by an Assistant CHO, sanitary and medical officers, public health workers and conservancy staff heads the department. The department is also involved in the promotion of health awareness programs and implements various State/ Central assisted schemes like the India Population Project, Pulse Polio Project, etc.
89. Functions- Public Health Department
- Solid Waste Management
 - Maintenance of Maternity Homes and Dispensaries
 - Public Health
90. *Town Planning Department:* The major function of the Town Planning Department is issue of building licenses and implementation of detailed Development Plans and the Master Plan. The department is headed by an Executive Engineering (Planning) and is assisted by Junior Engineers and other staff.

91. After the amalgamation of town planning functions with the engineering section, the Junior Engineers have been given the responsibility to look after the town planning activities. However, the problem of co-ordination between the Local Planning Authority, Town and Country Planning Department persists, as the allocation of responsibilities is improper. A major issue confronting the department is the limited power in the issue of building licenses as well as in the preparation of Master Plan
92. Functions- Town Planning Department
 - Issue of building license
 - Detection and prosecution of unauthorized construction.
 - Approval of installation of machinery
 - Execution of District Development Plan and Master Plan Proposals
 - Removal of encroachments.
93. *Accounts Department:* The City Corporation maintains two separate accounts, one for the General Fund and the other for the Water Supply and Drainage Fund.
94. *General Fund Accounts:* This department monitors and supervises the work relating to finance, budget and accounts of the Corporation relating to all the areas except water supply and drainage, and is headed by the Assistant Commissioner (Accounts). Monitoring income and expenditure as per budgetary provisions also comes within the purview of this department. Other responsibilities include:
 - Scrutinizing of pay bills and disbursing salaries to employees,
 - Payment for all works and supply bills, and
 - Payment of all pensions benefits to teaching and non-teaching staff of Corporation schools and retired Corporation employees.
95. Functions- General Fund Accounts
 - Preparation and submission of Budget and Accounts except water supply and drainage
 - Payment of all bills including pensionary benefits.
 - Monitoring of income and expenditure of the corporation
96. *Water Supply and Drainage Accounts:* This section monitors and supervises the work relating to finance, budget and accounts of the water supply and drainage works of the Corporation. In addition, monitoring of income and expenditure as per budgetary provisions comes within its purview.
97. The section is headed by the Accounts Officer (water supply) who also prepares and submits the Budget and Accounts of water supply and drainage.
98. Functions- Water Supply & Drainage Accounts
 - Preparation and submission of Budget and Accounts with regards to water supply and drainage
 - Monitoring of income and expenditure of the corporation

99. *Revenue Department:* This department is headed by an Assistant Commissioner (Revenue) and assisted by four Assistant Revenue Officers and Bill Collectors Preparation of demand, collection and balance (DCB) statement for different tax items is one of the main activities of this department. The department also supervises the assessment of new buildings and revision of old assessments. It is responsible for the monitoring of revenue within the purview of the Corporation.
100. *Functions- Revenue Department*
- Preparation of Demand, Collection Balance Statements for tax items
 - Supervising assessments of new buildings
 - Revision of assessments of old buildings
 - Monitoring of revenue of the Corporation
101. *Education:* The education department supervises the schools and noon meal centers within the Corporation limits. The duties include maintenance, administration and inspection of schools and related activities. The officers of the department has to function in co-ordination with the officers of various other departments of the Corporation like the Engineering, Public Health, Accounts, etc. as well as the Government Departments like treasury for execution of their respective duties.
102. *Functions- Education Department*
- Supervises the schools and noon meal centers
 - Maintenance, administration and inspection of schools
103. *Public Relations Department:* As a part of re-organization, the Corporation has established a public relations department with Public Relations Officer as its head. The department handles the public relations work of Corporation and all public complaints and grievances are routed through this department. The department also attends to public petitions.
104. *Establishment & Personnel Department:* The Personnel Department caters to the establishment requirements and handles all matters related to recruitment and personnel relations. An Assistant Commissioner (Personnel) heads the department.
105. *Council Wing Department:* Officials of the Council Wing Department handle matters of the Council. Records are maintained on council and standing committee resolutions. A Council Secretary, appointed by the Council, heads the Department.
106. *Litigation Department:* The Litigation Department handles all Court and legal hearings related to the Corporation. A Law Officer heads this Department.

C. Reforms Initiated by the Municipal Corporation

1 Accrual Based Accounting System

107. In Coimbatore Corporation the old system of accounting in single entry cash basis was changed into Double Entry Accrual Basis Accounting from the year 2000-01 as ordered by the Government. Under the old system of accounting the receipts actually received and

payments actually made under various heads of accounts were reflected in the Annual account whereas under the new accrual system of accounting all income whether received or accrued and all expenses whether paid or outstanding in a financial year is accounted in the income and expenditure account and all assets and liabilities of the Corporation are reflected in the balance sheet. The income and expenditure account will reflect a real financial performance of the corporation in the year facilitating the Corporation administration to take corrective and remedial measures to improve the financial strength of the Corporation. Moreover the true financial status of the Corporation is reflected in the Balance Sheet from which the financial liquidity is ascertained.

- 108. All the assets such as land, buildings, etc. and all the liabilities such as outstanding loans, dues to other agencies as on 1.4.2000 are brought into the new Accrual Account and from the year 2000-01 the Accrual Accounting system is maintained.
- 109. The accounts are maintained in four Zones and main office to record the respective transactions and then consolidated in the main office at the end of the financial year and sent to Audit.

2 *E-Governance*

- 110. *Collection of Corporation Dues:* Cruising steadily in its path towards e-governance, Corporation collects its dues from the public through its six Corporation facilitation computerized centers. This sophisticated system eradicated all the drawbacks and shortcomings of the tiresome Manual System. The concept of “Anything Anywhere” was brought in to reality, taking general public convenience to great heights. Presently 17 banks are also involved in Corporation tax collections. This number is bound to grow with more banks showing interest in strengthening the Corporation’s hands towards revenue collection in the months to come. Revenue yielded by the way of collection and the number of transactions made through Facilitation Centers and Banks is as follows:

Table 3.3: Revenue and No. of Transactions made through Banks

| Month & Year | Facilitation Centre | | Bank | |
|--------------------------|-------------------------------|---------------------|-------------------------------|---------------------|
| | Amount Collected Rs. in lakhs | No. of Transactions | Amount Collected Rs. in lakhs | No. of Transactions |
| Jan,2005 | 470.31 | 44,933 | 47.92 | 6,322 |
| Feb,2005 | 642.96 | 68,273 | 67.48 | 8,458 |
| Mar,2005 | 1613.37 | 120,519 | 160.26 | 19,304 |
| Apr,2005 | 688.70 | 61,292 | 49.93 | 6,475 |
| May,2005 | 534.20 | 53,284 | 52.88 | 6,817 |
| Jun,2005 | 127.56 | 12,832 | 11.98 | 1,150 |
| Jul,2005 | 483.98 | 45,732 | 38.20 | 4,441 |
| Aug,2005 | 555.48 | 51,365 | 27.28 | 3,329 |
| Sep,2005 | 686.76 | 63,285 | 41.56 | 4,450 |
| Oct,2005 | 765.63 | 60,816 | 52.41 | 5,577 |
| Nov,2005 | 668.38 | 61,186 | 35.02 | 4,004 |
| Dec,2005 | 725.21 | 71,563 | 47.22 | 4,861 |
| 1/2005 to 12/2005 | 7962.54 | 715,080 | 632.14 | 75,188 |

111. *Civic Services to the Citizens:* True to the concept of “Anything Anywhere” the citizens received an acknowledgement with the unique reference number for any application submitted in the Corporation office. Later the public can track their application status either through the Corporation website or by visiting the Service Center in person. This system inheriting a dynamic workflow engine, lists the status of applications with the concerned official and also the pending stages involved in processing that application.
112. *Development Works:* Public have the facility to know the ongoing development works (including stages of work), completed works, tender results and award of contract through the corporation website. Thus the concept of “Right to Information” was guaranteed. Also contractors can download tender notice and tender schedule from the website without necessitating them to reach the Corporation office in person to collect the same. Contractors can also view the status of the completed works bill through the Portal. Commissioner and other officials have the facility to verify and review the various stages of each work, using the portal.
113. *Issue of Birth/Death Certificates:* With the implementation of collection/service module at the facilitation centers, Birth/Death certificates, Trade licenses are issued to the public across the table in the collection center on receipt of request from public. Birth/Death certificates are also sent to the requestor address by VPP with a service cost upon receiving request through its website.
114. *Grievance Redressal:* Grievances as and when received from public are posted in to the system and allotted to the concerned official through the workflow system. Public can also post grievances directly through the website and are informed of the status by e-mail whenever an action is taken on their grievance by the official. Grievances received through the phone are also entered in to the system enabling better tracking and monitoring. Thus this module now enables citizens to know the status of their grievance, the officer with whom it is pending, intermediate action taken and the final disposal of the grievance.
115. A separate telephone line is provided in the Corporation Main Office to register public grievance. The conducive and friendly environment prevailing now in the facilitation centers touches the hearts of the public thus making them feel the comforts of any Corporation office.
116. *Transparency in Administration:* Through this comprehensive E-Governance system, maximum transparency is infused in to the system. The citizens of Coimbatore, no matter where they live can now watch the activities of Corporation including,
 - Sanctioned/pending/applications on various civic services offered by the Corporation.
 - Defaulters list of Property tax and Water charges.
 - Real time Demand Collection Balance (DCB) of Property tax & Water charges
 - Details of Development works.
117. *Increase in Revenue:* Because of the modern techniques employed in the system of collection, the collection of Corporation dues have increased considerably. It is a general phenomenon that the “Willingness to Pay” will increase with the increase in Transparency in the system and the services. Since banks and computerized service centres access the

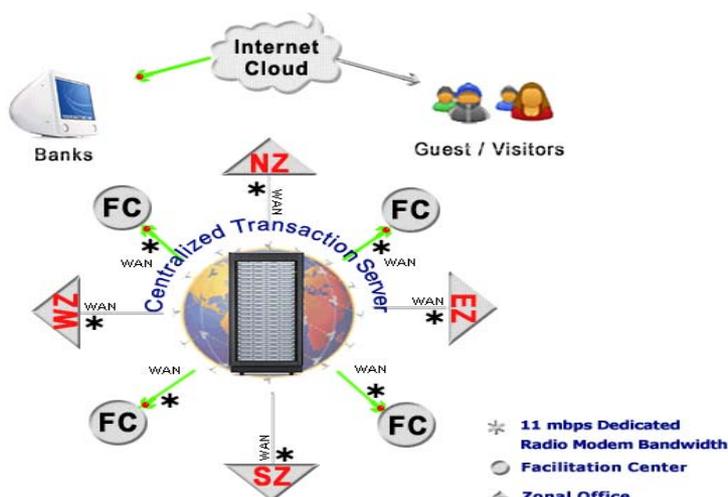
central Transaction Server and transparently collect the Corporation dues in lieu of the manual collection system, collection has increased considerably.

118. A comparative study of the month-wise collection of Property tax and Water Charges with previous year's collection given below will reveal the increase in collection

Table 3.4: Property Tax and Water tax collections

| Month-wise collection (Property tax, Water charges & Vacant land tax) | Rs. in Lakhs | Month-wise collection (Property tax, Water charges and Vacant land tax) | Rs. in Lakhs |
|--|----------------|--|----------------|
| 1/2004 | 257.80 | 1/2005 | 382.39 |
| 2/2004 | 464.34 | 2/2005 | 448.09 |
| 3/2004 | 988.03 | 3/2005 | 1247.56 |
| 4/2004 | 384.16 | 4/2005 | 464.41 |
| 5/2004 | 209.78 | 5/2005 | 415.37 |
| 6/2004 | 282.38 | 6/2005 | 328.07 |
| 7/2004 | 343.61 | 7/2005 | 367.88 |
| 8/2004 | 520.46 | 8/2005 | 384.50 |
| 9/2004 | 541.22 | 9/2005 | 470.00 |
| 10/2004 | 379.54 | 10/2005 | 567.67 |
| 11/2004 | 293.32 | 11/2005 | 543.17 |
| 12/2004 | 660.83 | 12/2005 | 589.62 |
| 1/2004 to 12/2004 | 5325.47 | 1/2005 to 12/2005 | 6208.73 |

119. It is pertinent to note that the percentage of increase in property tax, water charges and vacant land tax is 17 percent, when compared to the similar period of the previous year.
120. *Increased efficiency and productivity:* With this system in place there is a visible increase in the productivity of the corporation activities. The simplicity of the system has reduced drastically the transition period and also helped the staff to tune to the system with ease. Also the Turn Around Time (TAT) of the public coming to pay their dues in the collection centers has satisfactory reduced, saving much of their productive time.
121. *E-Governance Portal Design & Architecture:* Developed using latest in communication and software technologies, the Coimbatore Corporation E-Governance solution is one of the most advanced and unique E-Governance portals in India.
122. The Coimbatore Corporation Central Office is linked in a Wide-Area-Network (WAN) to its 4 Zonal offices, Zonal facilitation centers and 5 collection centers (ISDN) through a secure 11 Mbps Radio Frequency Network providing 24 hours for uninterrupted flow of information between these centers along with a 256 kbps Internet connectivity at each of



these centers.

3 Features of the E Governance System

123. General Features & Services: The system provides the following 'online' services and functionalities as an integral part of the Corporation Services to the citizens through the web portal, www.coimbatore-corporation.com .
124. Static Web Pages on
- Council
 - Administration
 - Citizens Charter
 - Engineering
 - Public Health
 - Revenue
 - Town Planning
 - Education
 - Accounts
 - General Info
 - Achievements
 - Electric Crematorium
 - Contacts
 - Rain Water Harvesting
 - Procedures, Guidelines, FAQ and Downloadable Application Forms
 - Links to TN Govt, Railways, Telephone, Weather, World time
125. Dynamic Web Pages on
- Online Auditorium Booking
 - Online Grievance Registration
 - Grievance Handling and Grievance Status view
 - Calculators and Self-Assessment for Property Tax and Water Charges
 - Event Calendar
 - News Publishing
 - Talk to Mayor, Commissioner, Councilors
 - Feedback/Suggestions
126. The system allows customizable workflow, status tracking, reporting, and analyses of the following:
- Applications – Engineering – New Water Supply Connection
 - Applications – Engineering – New Under Ground Drainage Connection
 - Applications – Engineering – Request for Transfer of New Water Supply Connection
 - Applications – Engineering – Request for Water Supply Lorry
 - Applications – Public Health – D&O and PFA Trade License
 - Applications – Public Health – Request for Sullage Lorry
 - Applications – Public Health – Request for Sanitation Certificate
 - Applications – Revenue – New Assessment of Property Tax
 - Applications – Revenue – Transfer of Assessment
 - Applications – Town Planning – Building License
 - Applications – Town Planning – Request for Survey
 - Applications – Town Planning – Request for Attested Copies
 - Applications – Town Planning – Request for Survey Extract
 - Applications – Town Planning – Layout Approval

- Applications – Town Planning – Renewal of Building License
- Applications – Town Planning – Reconstitution of Plots
- 127. Birth/Death Certificate
 - Online Birth/Death certificates issues
 - Request by VPP with an additional service charges of Rs. 50/-
- 128. *Property Tax*
 - Individual Property Tax Due
 - Individual Property Tax History
 - Property Tax Defaulters List
 - Property Tax ABC Analysis
 - Property Tax GroupWise Analysis
 - Property Tax DCB Report (Overall, Zone Wise, Ward wise, Individual)
 - Property Tax Assessee Details (Zone Wise, Ward wise, Individual)
- 129. *Water Charges*
 - Individual Water Charges Due
 - Individual Water Charges History
 - Water Charges Defaulters List
 - Water Charges ABC Analysis
 - Water Charges Group wise Analysis
 - Water Charges DCB Report (Overall, Zone Wise, Ward wise, Individual)
 - Water Charges Assessee Details (Zone Wise, Ward wise, Individual)
- 130. *Non Tax*
 - D&O Trade List
 - D&O Traders List
 - PFA Trade List
 - PFA Traders List
 - Lease Items
 - Lease Holders List (Zone Wise, Ward wise, Individual)
- 131. *Development Works*
 - Ongoing Works (Zone Wise, Ward wise, Individual)
 - Completed Works (Zone Wise, Ward wise, Individual)
 - General abstract View (Zone Wise, Category wise, Individual)
 - Work Bill Monitoring (Bill Pending Works, Bill Passed Works, Bill Rejected Works)
 - Tender Announcement
 - Tender Results
 - Plumbers List
- 132. *Payment Centers*
 - List of Banks
 - List of Facilitation Centers
- 133. *Collections*
 - Bank wise
 - Facilitation Center wise
 - Zone wise
 - Ward wise
 - Service wise
- 134. Corporation has also initiated reforms in
 - Property tax
 - Levy of user charger – Water Supply
 - Privatization of Street Lighting
 - Partial Privatization of Street Lighting

The details of the reforms are briefed in Appendix.

IV. PLANNING AND LAND USE MANAGEMENT

A. Planning Efforts in the Past

1. Master Plan Outline

- 135. Government of Tamil Nadu has notified a Local Planning Area for Coimbatore, extending over an area of 1,287 sq.km under the Town and Country Planning Act, 1971 with a population of 42.71 lakhs according to 2001 census.
- 136. Coimbatore municipality has been upgraded from Special grade municipality to Corporation with effect from 1-12-1978 as per G.O.Ms.No.1771, RD&LA dt.17.11.1978. The Corporation of Coimbatore covers an area of 105.60 sq. kms and includes the added areas of Singanallur Municipality, Kumarapalayam town panchayat, Sanganoor town panchayat, Telungupalayam town panchayat, Coimbatore rural, Ganapathy town panchayat, and portion of Vilankurichy town panchayat.
- 137. The city is divided into 4 zones namely north, south, east and west for administrative purposes. These zones are in turn divided into 72 wards, with 18 wards under the jurisdiction of each zone as presented in **Table 4.1**.

Table 4.1: City Zones

| Zone | Ward Numbers |
|------------|---|
| East Zone | 4,5,6,7,8,9,10,11,14,15,16,19,20,21,22,23,24,26 |
| North Zone | 1,2,3,17,18,29,30,31,32,33,65,66,67,68,69,70,71,72 |
| South Zone | 12,13,25,27,28,36,37,38,39,40,41,42,43,44,45,46,47,54 |
| West Zone | 34,35,48,49,50,51,52,53,55,56,57,58,59,60,61,62,63,64 |

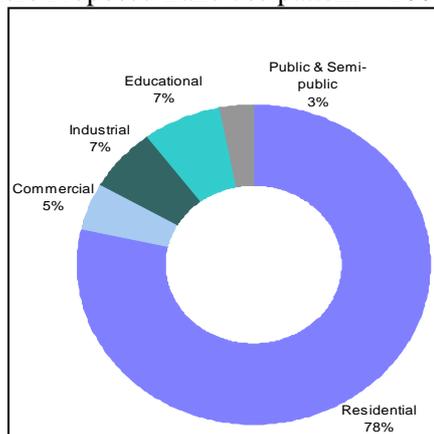
Source: Coimbatore Corporation

B. Land Use Management

1. Land Use Pattern – Current and Future

- 138. Review of the land use pattern of Coimbatore, for an area of 105.60 sq.km as indicated in Coimbatore Master Plan 1993, indicates that approximately 76 percent of land is put to development use, whereas approximately 23 percent of the land is still being put to agricultural use, water bodies, vacant areas and heritages sites. Almost 80 percent of the developed area is put to residential use. In the proposed land use plan for 2001, it is noted that the city is predominantly expected to develop in residential area and in industrial area. The existing

Figure. 4.1: Proposed Land use pattern – 2001



and proposed land use pattern for 1993 and 2001 respectively as indicated in Coimbatore Master Plan is presented in **Table 4.2**.

Table 4.2: Land use – Coimbatore Corporation

| Land use Category | Existing in 1993 | | Proposed for 2001 | |
|-----------------------|------------------|---------------------------|-------------------|---------------------------|
| | Area | % to Total Extent of Town | Area | % to Total Extent of Town |
| | <i>Sq.Km</i> | <i>%</i> | <i>Sq.Km</i> | <i>%</i> |
| Residential | 65.2736 | 61.81 | 70.7121 | 66.96 |
| Commercial | 2.3634 | 2.24 | 4.058 | 3.84 |
| Industrial | 4.4 | 4.17 | 5.8439 | 5.53 |
| Education | 6.6045 | 6.25 | 6.6045 | 6.25 |
| Public & Semi- public | 2.3735 | 2.25 | 2.6252 | 2.49 |
| Agriculture | 24.5191 | 23.22 | 15.6901 | 14.86 |
| Total | 105.6 | 100.00 | 105.6 | 100.00 |

Source: Master plan for Coimbatore

Map 4.1: Land use plan for Coimbatore - 1991

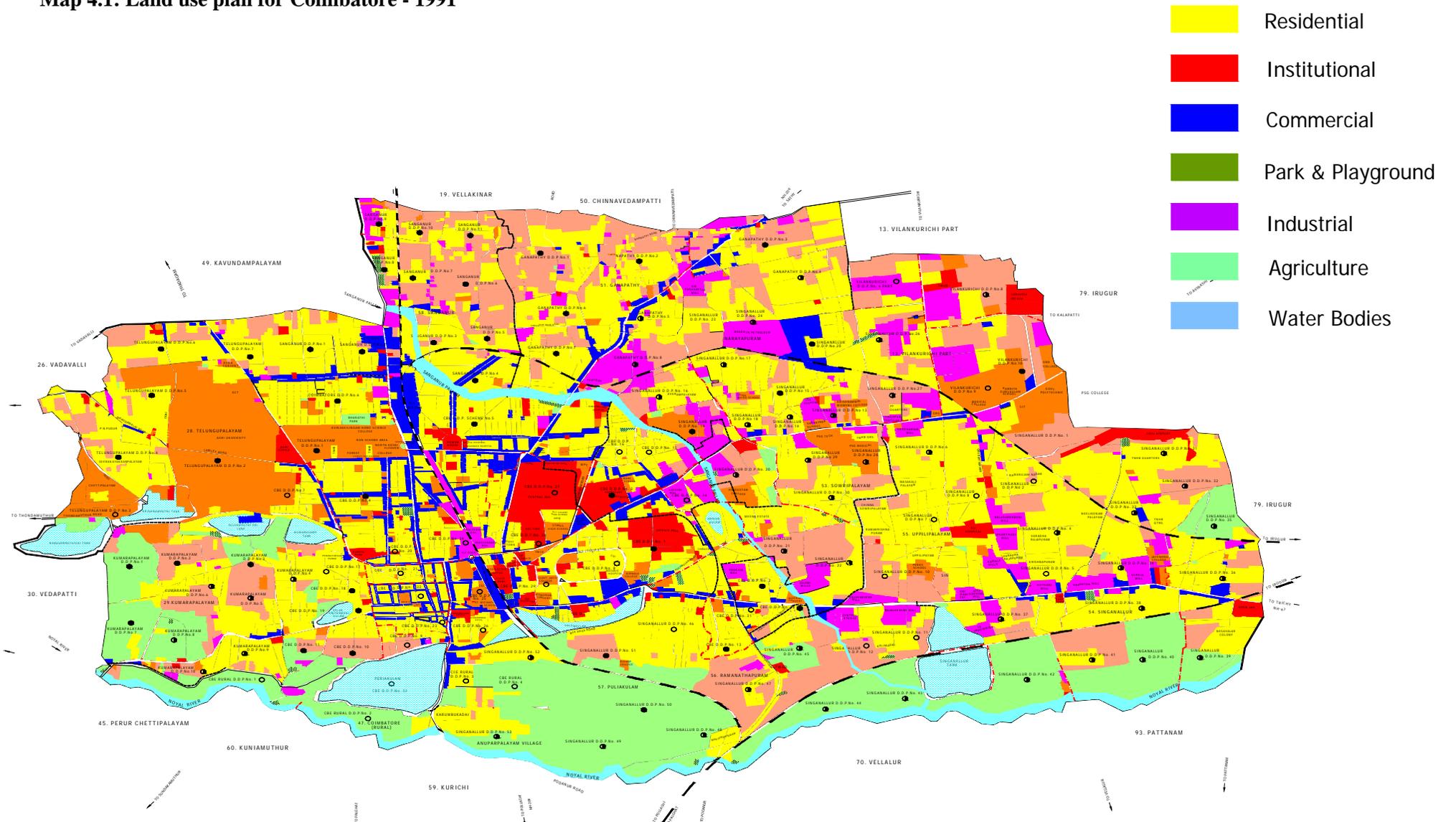
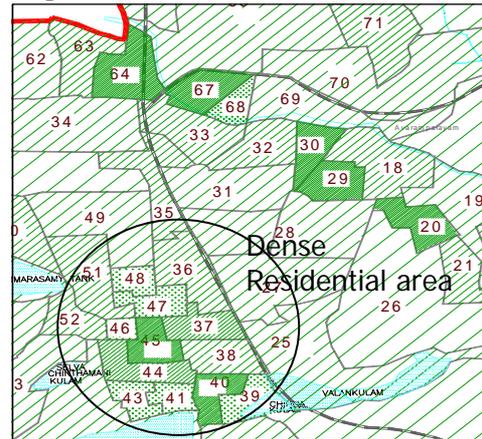


Figure. 4.2: Core Residential area



139. *Residential use:* The residential development is spread over 65 sq. kms. High density residential development is found in the old parts of the city especially in the areas around Rangai Gounder street, Edgar street, etc. While the newly developed residential areas are well planned with regular street pattern, well shaped plots and spaces for public use, the old areas are devoid of public spaces and a regular street pattern.
140. *Commercial Use:* The main commercial area in the old city is located at Oppankara street, Rangai Gounder street, Big Bazaar street and the adjacent areas. R.K.Puram, Gandipuram are other areas are coming up as commercial hubs of the city. The retail trade is concentrated along Dewan Bahadur road, Crosscut road, Avinashi road upto Race Course road, Jail road and N.S.R.road. Most of the wholesale business and warehousing activities take place in the old city. These activities demand substantial space in the prime areas and attract heavy vehicles thus adding to the problem of congestion.
141. *Industrial use:* The area under industrial use is 4.40 sq. km in 1993 and it expected to increase to 5.8 sq.km in 2001 as per the existing master plan. The major industrial areas are Peelamedu, which houses an Industrial Estate, Singanallur and Uppilipalayam. Most of the textile mills and engineering units in the city are located along Trichy road, Avinashi road and Mettupalayam road. Three textile mills are located near the over bridge at the heart of the city. Apart from these, number of printing presses and small automobile workshops are distributed all over the city along important roads. Thus, a pattern of mixed land use exists in the city.
142. Coimbatore has also attracted investment in hi-tech industries in the recent years, especially in the field of solar energy and computer software. There is a modern unit manufacturing solar energy equipment near Coimbatore and several major software companies have set up development centers in the City.
143. *Educational Use:* The total area under educational use is 6.6 sq. kms, which are nearly 8.15 percent of the total developed area of the city. Educational institutions are mainly concentrated towards the eastern part of the city, with most of the technical and higher educational institutes located along Avinashi road and Mettupalayam road. The location of educational institutions on these roads is one of the main reasons for the growth of the city along these major corridors.
144. *Public and Semi Public Use:* The main components under this use are the medical and recreational facilities. Parks, playgrounds and recreational clubs are the major recreation components under this use. The botanical garden adjoining the Agricultural University is spread over an extensive area and attracts large crowd. The other main parks in the city are the Bharati Park, Gandhi Park, Nehru Park and the VOC Park.
145. *Slums:* Coimbatore consists of 60 approved slums that are developed and maintained by the Tamil Nadu Slum Clearance Board (TNSCB) and the City Corporation. Works with regards

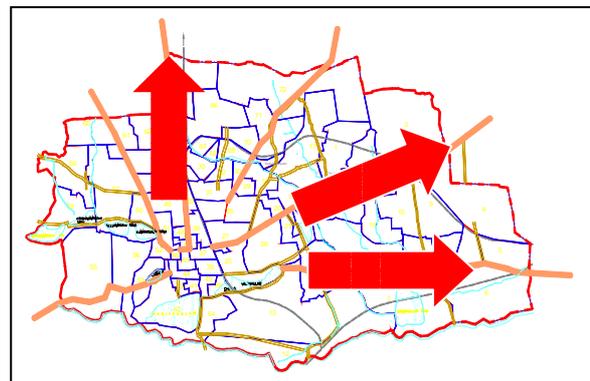
to water supply, public toilets, road improvement and drainage, street lighting, etc. are regularly taken up in these settlements. Further, under the National Slum Development Program about 102 works are proposed to be taken up to provide basic services to the slum dwellers.

146. The city being an industrial hub attracts migrants from rural areas thereby resulting in a proliferation of illegal slums and squatter settlements. These areas become unhealthy locations and are prone to a variety of health related hazards. In addition, high land prices with inappropriate and unclear land ownership, poor access to credit and inadequate provision of serviced land has further accentuated this growth in slums.

2 *Development Patterns – Growth Areas and Direction*

Figure. 4.3: Growth Direction - Coimbatore

147. The city is growing in the North, East and South directions along the major radial roads. In the past, the growth direction was towards the East along NH 47, however, with the establishment of technical and educational institutions and mills on Avinashi road Areas along Trichy road and the roads leading to Martuhamalai hills towards the west are developing.



148. It is understood from the discussion with the Corporation that, IT giant Infosys has acquired land along the Avinashi road for the development of its software park. It was also noted that, the land prices along that side has rose up and still expected to rise. The emergence of Tirupur as an export hub is also facilitating growth in those directions. Thus major growth is expected along the Avinashi Road in the future.

Table 4.3: Emerging growth centers in LPA

| Emerging Growth Centres in LPA | Road |
|---------------------------------------|--------------|
| Madukkarai & Kuniamuthur | Palghat Rd. |
| Sulur & Irugur | Pollachi Rd. |
| Palkalai Nagar | Marudamalai |
| Perur | Siruvani Rd. |
| Peelamedu & Chinnampalayam | Avinashi Rd. |
| Saravanampatty | Mysore Rd. |
| Thudiyalur & Perianaikenpalyam | Metupalyam. |

Source: Analysis

3 *Growth Constraints and Developmental Potentials*

149. The city being an industrial hub attracts migrants from rural areas thereby resulting in proliferation of illegal slums and squatter settlements. These areas become unhealthy locations and are prone to a variety of health related hazards. In addition, high land prices with inappropriate and unclear land ownership, poor access to credit and inadequate provision of serviced land has further accentuated this growth in slums.

C. Key Developmental Issues

150. The main issues that were identified during the site visit and observations area

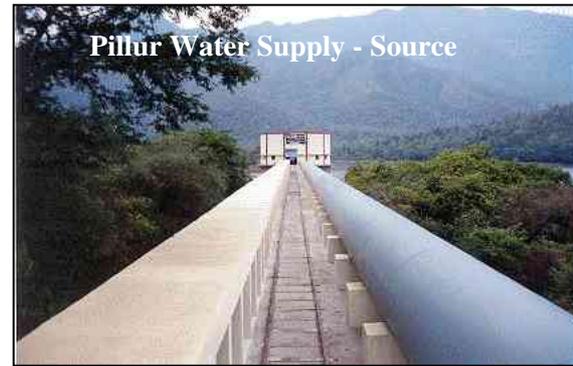
- The attraction of the Central Area is leading to the congestion of the C.B.D.
- Ribbon development along the transportation corridors is likely to create problems in future.
- Reclamation of water bodies for urban use is likely to take place due to the pressure on land.
- Inappropriate Land Regulation
- Insecure tenure & inadequate infrastructure capacity,
- Inappropriate pricing and taxation
- Poorly coordinated actors in the land market.

V. INFRASTRUCTURE SERVICES

A. Physical Infrastructure

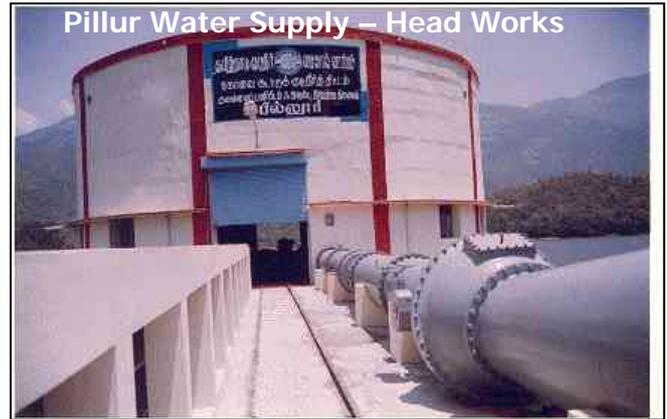
1. Water Supply

151. *Existing Situation:* The water supply system of Coimbatore currently serves the entire city with water being available to the citizens for about 4-6 hours a day in the Siruvani scheme and 4-6 hours every alternate days in Pillor scheme. The city is supplied with water from two sources, both on the river Bhavani, one at Siruvani and the other at Pilloor.



152. Construction of the entire system is carried out by the Tamil Nadu Water Supply and Drainage (TWAD) Board, while the operation and maintenance of the distribution system is carried out by the staff of the Corporation.
153. The Corporation covers its expenditure on operation and maintenance of the system by way of user charges, with about 15 percent of the charges recovered being directed towards O&M expenditure.
154. *Surface Sources:* The city of Coimbatore receives water from two sources, situated at Siruvani and Pilloor. The daily drawal from these sources amount to 152 MLD with 87 MLD being drawn from the source at Siruvani and 65 MLD being drawn from the source at Pilloor. The sources are maintained by the Tamil Nadu Water Supply and Drainage Board, and are located at a distance of 36 km and 95 km from the city, respectively.
155. *Siruvani Drinking Water Scheme:* The Coimbatore Water Supply augmentation Project envisaged construction of a dam and other connected works across the Siruvani River in the Kerala Territory through a tunnel of 1.6km long to let the water into the Anayar stream in Tamilnadu and was implemented in the year 1982 at an estimated cost of Rs. 1,616 lakhs. From there, the water is conveyed through the Head works to Adivaram for treatment. The treated water is conveyed through the 1000mm PSC conveying main and terminates in a Master of Service Reservoir at Bharathi Park in Coimbatore City. From the Master of Service Reservoir water is distributed to the zonal service reservoirs located at various places, added areas and surrounding areas of the Coimbatore City through the distribution mains and the conveying mains. From the conveying main, wayside villages of 7 rural village panchayats, 5 urban panchayats and 10 village panchayats are benefited by this scheme. The designed capacity of the scheme is 101 MLD of water with the current share of supply to the Coimbatore Corporation estimated at 87 MLD.
156. *Pillur Drinking Water Scheme:* The Pilloor water scheme, commissioned in 1995, has a dam across the river Bhavani in the Western Ghats and is designed to extract 131.25 MLD of water of which the Coimbatore Corporation share stands at 65 MLD of water. Raw water is

pumped in Nellimarathur by 4x400 H.P pump sets through a tunnel of 3.85 km length and the water is treated to a full scale water treatment plant at Valliangadu. A clear water is pumped by 4x400H.P pump sets through 1500 mm dia pipeline to a tunnel of 800m length across Kattan hills, from there the water is conveyed through the pipelines of diameter ranging from 500 mm to 1500 mm and 400 mm to the Coimbatore Corporation and Palladam and Provision have been made to distribute the water in various places.



157. The requirement of water to various areas covered under this scheme is conveyed through mains and sub mains and stored in 620 service reservoirs. Through distribution lines the water is supplied to Coimbatore Corporation, Town Panchayats and 523 rural habitations. The details of surface source of corporation are tabulated in **Table 5.1**.

Table 5.1: Surface Source Details

| Sources | Unit | Details |
|-------------------|------|---------|
| Siruvani River | | |
| Commissioned in | year | 1982 |
| Distance | Km | 36 |
| Designed Capacity | MLD | 101 |
| Daily Drawal | MLD | 87 |
| Transmission | | Gravity |
| Pilloor Dam | | |
| Commissioned in | year | 1995 |
| Distance | Km | 95 |
| Designed Capacity | MLD | 131.25 |
| Daily Drawal | MLD | 65 |
| Transmission | | Pumping |

Source: Coimbatore Corporation

158. *Underground Sources:* There are 436 open wells / bore wells in operation to supplement to the non-potable water requirement and 250 bore wells / open wells are maintained by private operation and the rest are being operated by the Engineering Department, Coimbatore Corporation. The details of the zone wise, existing bore wells / open wells is presented in **Table 5.2**.
159. *Rain Water Harvesting Program:* Corporation has made water harvesting compulsory for new developments irrespective of usage of the building. In addition to this, an NGO called Siruthuli in association with corporation developed more than 150 rain water harvesting structures, in road margin as well as in open spaces to infiltrate rain water in to the ground.

Table 5.2: Bore wells / Open wells

| Zone | Private operation | Departmental operation | Total Bore well / Open well |
|---------------|-------------------|------------------------|-----------------------------|
| | Nos. | Nos. | Nos. |
| North. | 75 | 51 | 126 |
| East. | 55 | 41 | 96 |
| West. | 55 | 42 | 97 |
| South. | 65 | 52 | 117 |
| Total. | 250 | 186 | 436 |

Source: Coimbatore Corporation

160. *Other Sources:* Water is also supplied to residents in unapproved layouts and new residential areas through 13 Corporation owned tankers while private tankers supply water to 350 locations once in 3 days during acute drought.

161. *Treatment Facility:* Primary level treatment of water is carried out at both Siruvani and Pilloor, with the plants being designed to treat 101.40 MLD and 125 MLD of water, respectively.



162. *Distribution System:* Distribution mains of 569.76 kms length supply water to the entire city which has about 13 kms of additional length from the year 2000. 44 elevated storage reservoirs cater to the storage requirements of the city of which 21 overhead tanks is used for Siruvani water scheme and 23 overhead tanks, as a part of the Pilloor infrastructure scheme, have been designed to augment the current capacity. The details of the reservoir, capacity and the distribution zones are presented in **Table 5.3.**

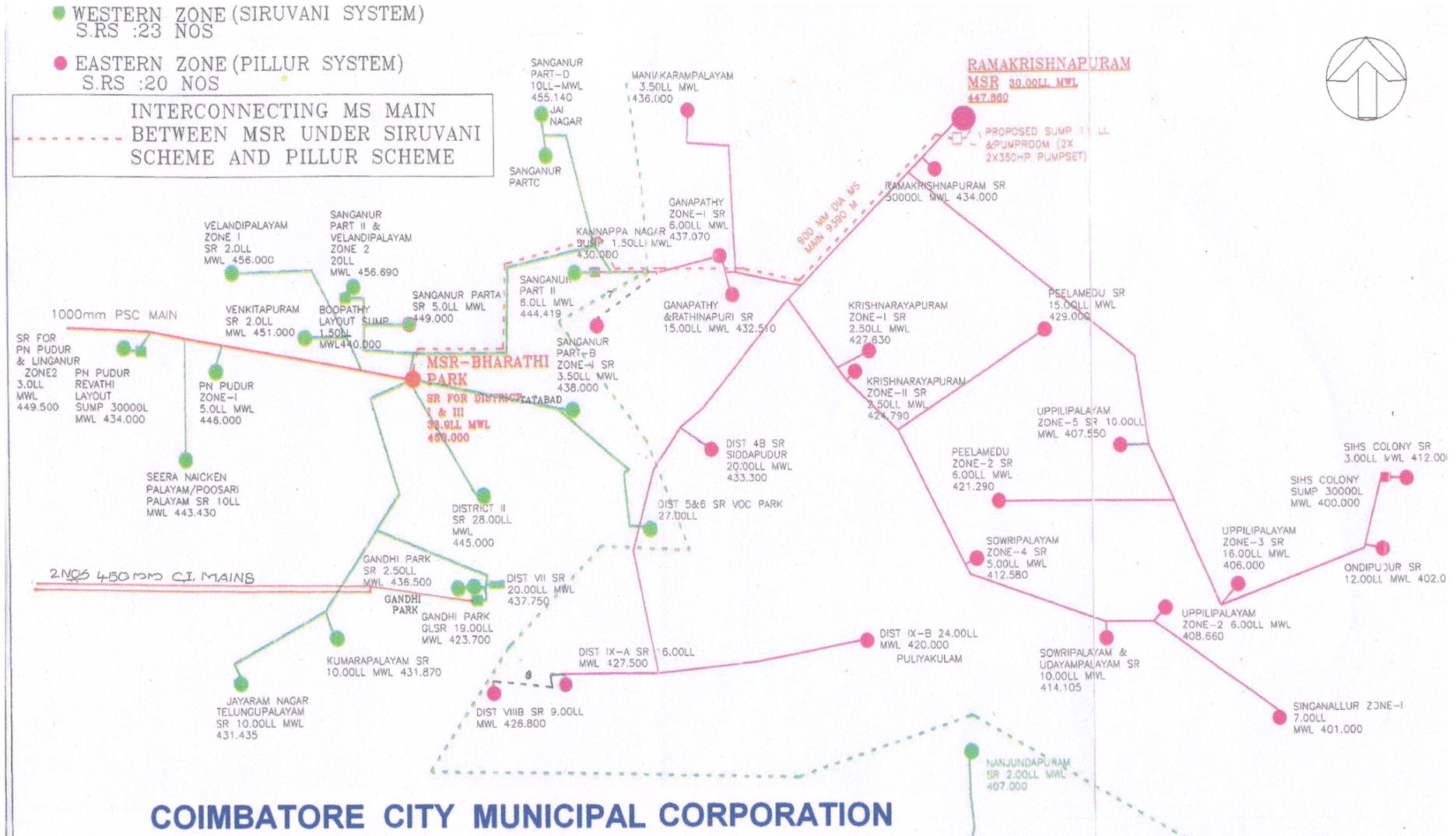
Table 5.3: Service Reservoirs

| SI No | Location of Reservoir | Capacity | Wards serving |
|------------------------|---|----------|---------------------------------|
| | | LL | |
| SIRUVANI SCHEME | | | |
| 1 | Devan Baghadur road | 28 | 48,49,50,51(part) |
| 2 | Gandhi Park Over Head Tank | 19 | 51,52,44,45,46,47,37,38, 41 |
| 3 | Gandhi Park | 22.7 | |
| 4 | D.B.Road road near 3 post | 19 | |
| 5 | Jeyaram Nagar | 10 | 55,54(part) |
| 6 | Madathur (P.V.Pudur) | 5 | 59(part), 7(part) |
| 7 | Iswariya Nagar (Seeranaiken palayam) | 10 | 58,57(part) |
| 8 | Revathi Nagar (Linganoor) | 3 | 59 (part) |
| 9 | Koilmedu | 2 | 60(part) |
| 10 | Natraj Layout (Boopathy layout) | 20 | 61,62,60(part) |
| 11 | Venkatapuram | 2 | 61(part) |
| 12 | Bharathi Park MSR | 38.87 | 34,35,36,33,32,63,64,65, ,66 |
| 13 | Chintamani Nagar (Sanganoor part A) | 5 | 62(part) |
| 14 | V.O.C park | 27 | 28,27,25 |

| Sl No | Location of Reservoir | Capacity | Wards serving |
|-----------------------|--|-----------|---------------------------------------|
| | | <i>LL</i> | |
| 15 | Vysil street | 9 | 43(part) |
| 16 | Tatabad | 11 | 30,31,32,33,18 (part) |
| 17 | Jai Nagar, Kavundampalayam | 10 | 5 |
| 18 | Cheran Nagar, Kavundampalayam | 10 | |
| 19 | R.G.Nagar (Kannapa Nagar) | 6 | 66,67,68 |
| 20 | Nanjundapuram | 2 | 12 |
| 21 | Kamaraja Puram | 6 | 66,71 |
| PILLOOR SCHEME | | | |
| 1 | Ramakrishnapuram (Ganapathy M.S.R) | 30 | 72 |
| 2 | Maniakarampalayam zone - I | 1 | 72 |
| 3 | Maniakarampalayam zone - II | 0.5 | 72 |
| 4 | Ganapathy zone II Rayappa Nagar | 15 | 70,69 |
| 5 | Ganapathy Manager | 3 | 72 |
| | Ganapathy Manager | 7 | 72 |
| 6 | V.V.Nagar | 0.5 | 72 |
| 7 | Police quarters | 1 | 72 |
| 8 | TNUDP colony Gandhi Manager | 6 | 72 |
| | TNUDP colony Gandhi Manager | 11 | 72 |
| 9 | Krishnarayapuram Zone I, Kamadenu Nagar | 2.5 | 17,72(part) |
| 10 | Krishnarayapuram Zone I, Avarampalayam | 3 | 17 |
| 11 | Peelamedu Zone 1 | 15 | 1,2 |
| 12 | Peelamedu Zone II, Upplipalayam Zone III, Port D.J Nagar | 10 | 9,10,16,2,3 |
| 13 | Karunanadhi Nagar | 12 | 15,16 |
| 14 | Sowripalayam Zone 1, Udayampalayam (Meena estate) | 5 | 14,7 |
| 15 | Sowripalayam Zone 1, G.V Residency | 10 | 10,7,11 |
| 16 | Uppilipalayam Zone I, VRP | 10 | 7,8,9,10 |
| 17 | Anna Nagar Neelikonampalayam | 16 | 6,7,8,9 |
| 18 | Singanallur | 7 | 6,7,8 |
| 19 | Nethajipuram | 12 | 4,5,6 |
| 20 | SIHS Colony | 3 | 4 |
| 21 | District IV B Sidhapur | 20 | 18,19,29,20 |
| 22 | District IX B Puliakulam | 24 | 21,22,23,24,25 (part),13 (part),12 |
| 23 | District IX A Town Hall | 16 | 38,39,40,25(part), 13(part) |
| GRAND TOTAL | | | 506.07 Lakh Liters |

Source: Coimbatore Corporation

Map 5.1: Existing water mains supply system - Coimbatore



163. *Water Supply Connections:* The water is supplied through the distribution lines to a length of 569.76 km. Also, in all the 4 zones there are about 96,543 nos. of Domestic connections, 2718 Nos. of Non Domestic connections, 354 Nos. of non - meter basis connections (Government buildings) and 2811 Nos. of Public fountains. The details of house service connections are tabulated in **Table 5.4**.

Table 5.4: Water Supply Connection

| Connections | Details |
|--------------------|---|
| | <i>Nos. of Water Supply Connections</i> |
| Domestic | 96,543 |
| Non- domestic | 2,718 |
| Unmetered | 354 |
| Public Fountains | 2,811 |

Source: Coimbatore Corporation

164. Of the total number of 224,687 households, 43.2 percent of the households have house service connections. The coverage with respect to the Property Tax Assessments is low at 50.5 percent. The water tariff structure practiced in Coimbatore is presented in **Table 5.5**.

Table 5.5: Water Tariff Structure

| Particulars | Quantity | Rate | Remarks |
|-----------------------------|--------------------|--------------------|---|
| | <i>Lakh Liters</i> | <i>Rs/1000 ltr</i> | |
| Domestic | 0 to 0.50 | 3.50 | Free allowance 100 lt per day |
| | 0.51 to 1.00 | 4.00 | |
| | 1.01 to 1.50 | 5.00 | |
| | above 1.51 | 6.50 | |
| Non-Domestic/ Industrial | 0 to 0.50 | 7.00 | No free allowance |
| | 0.51 to 1.00 | 9.00 | |
| | 1.01 to 1.50 | 12.00 | |
| | above 1.51 | 15.00 | |
| Bulk supply Domestic | - | - | Domestic rates but No Free allowances |
| Bulk supply Non-Domestic | - | - | Non-Domestic rates but No Free allowances |

Source: Coimbatore Corporation

165. *Service Adequacy and Key Issues:* Based on the available data, discussions with the officials, and field survey, the following key issues and performance indicators are arrived. The detail of performance indicators is furnished in **Table 5.6**.

Table 5.6: Water Supply Indicators

| Indicator | Unit | Current Situation | Benchmark ² |
|---|------|--------------------------------|------------------------|
| Per Capita Supply (Normal Season) | LPCD | 138 | 135 |
| Total Supply | MLD | 152.00 | |
| Supply Frequency | day | 4-6 hours, Alternative days | Daily |
| Distribution Network Reach (% of Road Length) | % | 83.3 | 85 |
| Designed capacity (101 + 131.25) | MLD | 232.25 | |
| Total Treated (87+ 65) | MLD | 152.00 | |
| Storage capacity | % | 33.29 | > 33 |
| % P.T. Assessments with House Service Connections | % | 50.50 | > 85 |
| No of Bore wells | Nos. | 436 | |
| Tariff rate | | Slab Rates | |

Source: Analysis.

166. *Private Participation in Water Supply Sector:* The Coimbatore Corporation has a spread out area of 105.60 sq. km. It has a population of 9.29 lakhs. For this vast population water supply is being provided by the two main sources i.e., Pilloor and Siruvani Dams. Also the water supply is maintained by 455 numbers of bore wells and open wells to manage the summer season inadequate water supply. For operation and maintenance of these 455 bore wells it is very difficult to manage the situation with insufficient bore well operators in this Corporation.
167. Hence the bore well maintenance was entrusted to NGOs from 15 April 2004. In the first stage 250 bore wells was entrusted to FOOD Chennai based NGO. They are responsible for appointing the bore well operator, supervisor and maintenance in charge personal. They are also responsible for conducting timely I.E.C activity on effective water management for general public. After involving FOOD the maintenance and operation for 250 bore wells is satisfactory by both public and administration. Presently the estimate has been prepared for zone wise. The operation and maintenance has made through contractor.
168. The key issues identified in water supply are
- *Source Shortage in summer:* Siruvani supply reduced to 10 MLD during the present summer. Though this monsoon has provided enough water in the source, drought summers are surely an issue.
 - *Old and Dilapidated Distribution Network:* Pipelines in the distribution system are more than 40 years old and needs replacement and repair works.
 - *Low pressure:* Complaints regarding Low pressure is being lodged from the high lying areas and in newly developed colonies.
 - *Contamination of water:* Frequent contamination occurs due to the close vicinity with sewage lines.

² As per the Second State Finance Commission norms of Tamilnadu

2. Sewerage and Sanitation

169. *Existing Situation:* The existing sewerage system in Coimbatore covers an area of 23.10 sq. km. The area covered by this underground sewerage system is divided into three zones. Zone I, commissioned in 1954, covers approximately 7.5 sq. kms, while the balance 15.6 sq. kms of area is covered by zones II and III.
170. The three zones collectively discharge 36.04 MLD of sewage, which is carried by 162 kms of sewer line. Individual sanitary facilities like septic tanks cater to the populace not served by the underground drainage system. About 200 public conveniences cater to population uncovered by either of the above systems. The sewage from Zone-I is collected by 5 main sewers, which run across Valankulam tank, and is discharged at the treatment plant at Ukkadam. The treatment facility at Ukkadam broadly consists of screen chamber, grit chamber, settling tank, sludge digestion tank and sludge drying bed.
171. The area that is required for treating the incoming sewage of 16 MLD is 178 acres (at a rate of 25,000 gallons per acre per day). Since the present area of the treatment plant is only 114 acres, the balance sewage is pumped to the sewage farm at Vellalore for treatment.
172. The sewage from zone -II is collected and pre-treated at the treatment plant at Ukkadam from where it is pumped to Vellalore for final treatment and disposal. The area located to the west of the Thadagam road in zone-II is presently not covered by the sewage system and it is proposed to collect the sewage from this area and discharge the same into existing trunk sewers of the zone. Another locality excluded is the Selvapuram area. It is proposed to locate a de-silting unit/pumping station at Selvapuram and pump the sewage to Ukkadam to cater to the sewage generated in this area. The zone wise details of sewerage are listed in **Table: 5.7.**

Table 5.7: Sewerage Zone

| Zone | Wards | Population (2001) |
|--------------|--|-------------------|
| Zone 1 | 25, 27, 28, 36, 37, 38, 39, 40, 44, 45, 46, 47, 48, 53 and part of 51, 52 | 249,349 |
| Zone 2 | 39, 49, 50, part of 51, 31 and 35 | 77,259 |
| Zone 3 | 18, 19, 20, 21, 22, 26, 29, 30, 32, 33, 68, 69 and part of 24, 23, 31 and 35 | 236,518 |
| Total | | 563,126 |

Source: Detailed project report for rehabilitation of existing Under Ground sewerage system in Zone I, II and III for Coimbatore Corporation

173. The sewerage system for zone-III has been completed having 16,791 house service connections. The sewage from this is collected at the pumping station at Nanjundapuram from where it is discharged to the sewage farm at Vellalore. The farm at Vellalore covers an area of 655 acres.
174. The existing sewerage system thereby covers three zones, with two disposal sites, one each at Ukkadam & Vellalore and 2 pumping stations one at Ukkadam and the other at Nanjundapuram. The detail of sewerage system is presented in **Table 5.8.**

Table 5.8: Overview of Existing Sewerage system in Zone I, II and III

| Zone | Ultimate Design Period | Sewer Length | Design Sewerage Flow | House Service Connections |
|------------------------|------------------------|---------------|----------------------|---------------------------|
| | <i>Year</i> | <i>Kms</i> | <i>MLD</i> | <i>Nos.</i> |
| Zone I | 1954 | 15 | 20.143 | 6,832 |
| Zone II | 1996 | 38 | 16.620 | 828 |
| Added areas Zone II IB | 2026 | 6.23 | | |
| Zone II – IA & 2A | 2026 | 19.94 | | |
| Zone II Selvapuram | 2026 | 13.06 | | |
| Zone III | | 70.00 | 23.625 | 16,791 |
| Total | | 162.23 | 60.388 | 29,017 |

Source: Detailed project report for rehabilitation of existing Under Ground sewerage system in Zone I, II and III for Coimbatore Corporation

175. *Existing Pump sets and Pump Houses:* Zone I and II – Pump House at Ukkadam: In Coimbatore city, the zone I, II and III have been sewerage and the sewage of zone I and II is brought to Ukkadam. The combined sewage has been let into equalization pond of 50m x 40m each with a capacity of 3000 m³ and detention time of 8 hours. The equalization pond equalized the hourly variation in the sewage flow. The number of centrifugal, horizontal split casing non-clogging pump sets of 75 HP is provided with duty of 6025 lpm against 31.5m total head. The capacity represents 0.5 DWF only with 3 pump sets of 0.5 DWF. Two pumps can work continuously pumping 1 DWF with third pump as stand by.
176. Of the three pumps, 2 pumps only are in normal working condition. The remaining stand by has not been maintained properly. During the construction of the proposed treatment plant at Ukkadam, the sewage from Zone I, II, added areas of Zone II i.e., IA, 2A, 2B and selvapuram area is to be pumped from Ukkadam to Vellalore treatment plant. The existing duty of the pump set is just sufficient to pump the entire the sewage from zone II and part of zone I.
177. *Zone III – Pump house at Nanjundapuram:* The sewage from zone III is collected through the main sewer into the equalization pond of 40m x 88m with detention time of 8 hours. The equalization tank enables constant rate of pumping from the pumping station. Three number of centrifugal horizontal split casting non clogging pump sets each of 150 H.P with duty 8288 lpm against 48m head representing 0.5 DWF each are provided to pump the sewage to Vellalore for treatment. Two pumps operate in parallel while the third pump is kept as standby. The pumping main is 600mm PSC pipe pf 5 kg/cm² test pressure. The pumping main is also designed to convey 1 DWF only to the treatment plan because of the equalization pond. The details of existing pumps and pumping mains are given below in the **Table 5.9.**

Table 5.9: Existing pumps and pumping main details

| Zones | Pump house | Pumps Capacity | Discharge & Head | Treatment plant | Pumping main |
|--|---------------|---|--|-----------------|---|
| Zone I & II | Ukkadam | 2 nos. 75 HP + 1 no 75 HP as stand by | 6025 lpm against 31.50 head | Vellalore | 700, 600, 500 mm length PSC piped 6.70 length |
| Zone III | Nanjundapuram | 2 nos. of 150 HP + 1 no 150 HP as standby | 8288 lpm against head of 48m | Vellalore | 600 mm PSC of 4.570 km. |
| Zone II added areas IA, 2B, IB Selvapuram area | Selvapuram | 1 no 35 HP + 2 nos. 18 HP | 2 nos. 4350 lpm against the head of 1.23m. 1 no. 8700 lpm against the head of 12.3 m | Ukkadam | 600 diameter PSC pipe length of 2.91 km. |

Source: Detailed project report for rehabilitation of existing Under Ground sewerage system in Zone I, II and III for Coimbatore Corporation

178. *Sewage Treatment Process:* The sewage from Zone I & II is collected in the equalization tank at Ukkadam for equalizing the daily variations of flow from time to time to obtain uniform flow continuously. There are 2 equalization tanks of 50m x 40m each with a total detention time of 8 hours. The corporation had acquired 114 acres of land at Ukkadam considering the future requirements.
179. The sewage is pumped from Ukkadam through 700, 600 and 500 mm pipes with 3 nos of 75 HP sets to Vellalore for treatment. The treatment work at Vellalore consists of an anaerobic lagoon of 5 to 6 day storage. Similarly, sewage from Zone III, which is not fully covered with sewer system, is collected at Nanjundapuram in equalization pond of 8 hour detention time (sine 40m x 88m). An area of 5.80 acres is available at Nanjundapuram to provide another pump house as per the ultimate proposals.
180. The sewage at Nanjundapuram from Zone III is pumped by three number of 150 HP pump sets though 600 mm force main to a total length of 4570m from Nanjundapuram to Vellalore. The treatment works available for Zone III at Vellalore provides an anaerobic lagoon with detention time of 5 to 6 days. The capacity of the lagoon is 44,700 m³. The two lagoons are not used fully since there is insufficient flow for treatment.
181. *Service Adequacy and Key Issues:* Based on the available data, discussions with the officials, and field survey, the following key issues and performance indicators are arrived. The detail of service adequacy is illustrated in **Table 5.10**.

Table 5.10: Sewerage – Service Indicators

| Indicator | Units | Current Situation | Norm |
|---|-------------|-------------------|-------|
| Population Coverage | Percent | 54 | 90 |
| Coverage | Sq.Km | 23.10 | 105.6 |
| Sewage Network reach (% Road length) | Percent | 25.70 | 100 |
| % P.T. Assessment provided with Sewage connection | Percent | 15.08 | - |
| Public Toilets | No of seats | 1,573 | - |

Source: Analysis

182. The Issues identified in Under Ground Drainage are,

- *Blockage and Overflow of Sewage:* Sprouting hotels, commercial complexes and residential areas in Zone I has led to huge quantity of sewage generation and it is noted that, the existing sewer system is not adequate to carry the existing flow resulting in leakages and over flow in many places. Locations around Gopalapuram, Arts college road from race course road, West club road, state bank road etc are identified to have sewage blockages and overflows. Areas in Zone II viz Syrian church road, Krishnasamy Mudailar road, Kamarajapuram area, head quarters hospital, near royal theatre, velangulam road etc are identified to have inadequate sewer sizes and overflowing manholes is commonly observed in these areas.
- *Corrosion of Sewers:* Corrosion failures of sewers are mainly observed along the Metupalayam road due to the decomposition of organic matter present in the sewage.
- *Deficient treatment unit at Ukkadam:* The structures in the existing treatment plant such as grit chamber, settling tank, sludge digestion tank and sludge drying beds are in dilapidated condition and on its last legs.
- *Heavy power charges:* Pumping of sewage from Nanjundapuram pre-treatment unit to Ukkadam and charges to pump the extra sewage from Ukkadam to Vellalore is involving high energy cost. To avoid the pumping charges, untreated sewage is being discharges into the Noyyal River without pumping the sewage to Vellalore treatment plant with bye-pass arrangements.
- *Low Population Coverage by existing sewerage system:* The existing drainage network covers 23 percent of the total area that houses about 60 percent of the total population.
- *Inadequate sewage farm at Ukkadam:* The total area required for treating the estimated quantity of sewage from Zone 1 (20.14 MLD) requires an area of about 178 acres but, only about 114 acres of land is available for treatment. Shortage of area had forced extra pumping of sewage to Vellalore treatment plant.

183. *Projects and Sub Projects:* It is proposed to refurbish the existing underground sewerage system in Zone I, II and III at an estimated cost of about Rs. 1,991 lakhs. It also proposed to have UGD network system in the unsewered areas (zone IV, V and VI) which covers an area of about 83 sq.km thus making the town 100 percent sewerage. **Table 5.11, 5.12 and 5.13** explicates the proposed projects for Under Ground Drainage system in Coimbatore. The proposed sewerage coverage is illustrated in **Map 5.2**.

Table 5.11: Overview of proposals in Under Ground Drainage

| Covering area | Entire Corporation area |
|----------------------|---|
| Containing Zones | I, II, III, IV, V, VI |
| Restorative Zones | I, II, III, (Area covered - 23.00 sq.km) |
| Newly Proposed Zones | IV, V, VI, (Area covered - 83.00 sq.km) |
| Estimate Amount | Rs. 168.28 lakhs |

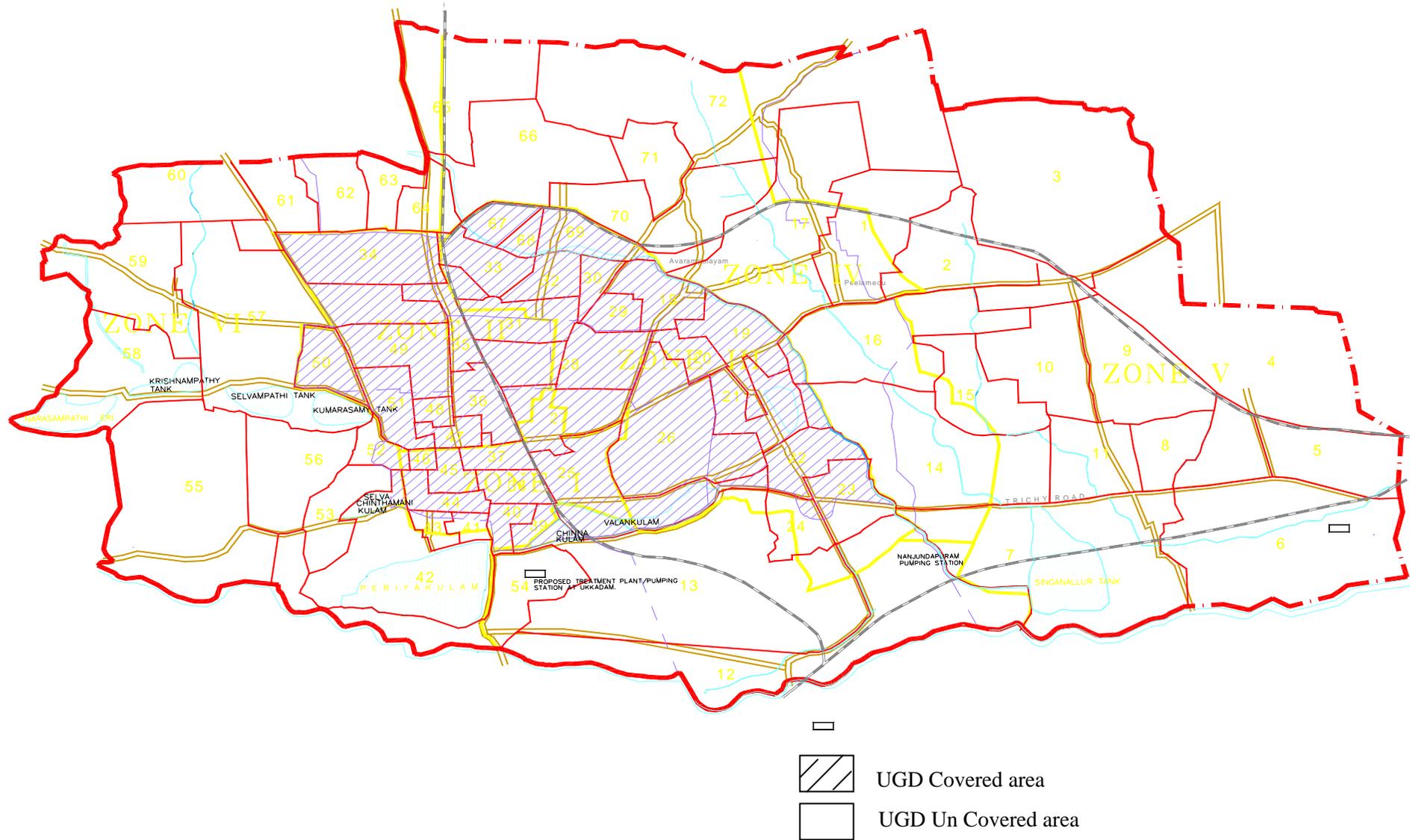
Table 5.12: Estimated cost for the proposals

| Zone | Estimate Cost |
|---------------|----------------------|
| | <i>Lakhs</i> |
| Zone I to III | 19.91 |
| Zone IV | 57.11 |
| Zone V | 63.47 |
| Zone VI | 27.80 |
| Total | 168.28 |

Table 5.13: Proposed project details for Under Ground Drainage

| Zone | Quantity of Sewage (MLD) | | | Existing arrangement /DPR proposals | | Proposed arrangement & new proposals | |
|------|--------------------------|-------------------|---------------|---|---|--|---|
| | Present 2007 | Intermediate 2022 | Ultimate 2037 | Collection pre treatment & pumping station | Treatment & disposal | Collection pre – treatment, pumping station | Treatment & disposal |
| I | 16.00 | 22.70 | 33.35 | Ukkadam | Part at Ukkadam sewage farm and part of Vellalore | Collection pre – treatment Ukkadam No need of pumping | Combined sewage treatment unit at Ukkadam |
| II | 4.90 | 7.00 | 10.33 | Ukkadam | Vellalore | Collection pre – treatment Ukkadam No need of pumping | Combined sewage treatment unit at Ukkadam |
| III | 15.00 | 21.50 | 31.63 | Nanjundapuram (By bye passing the raw sewage is directly) | Vellalore | Nanjundapuram (power charges will be reduced considerable due to reduction in pumping length & head) | Combined sewage treatment unit at Ukkadam |
| IV | 16.52 | 28.20 | 49.73 | Nanjundapuram | Vellalore | Nanjundapuram | Combined sewage treatment unit at Ukkadam |
| VI | 14.40 | 24.70 | 43.48 | Selvapuram | Ukkadam | Selvapuram | Combined sewage treatment unit at Ukkadam |
| V | 16.18 | 27.60 | 48.70 | Weavers colony | Weavers colony | Weavers colony | Vellalore |

Map 5.2: Sewerage coverage



3. Storm Water Drainage and Rejuvenation of Water Bodies

184. *Storm Water Drainage:* The Corporation maintains 585.22 kms of storm water drains in the city. 50 Kms of storm water drain have been constructed after 1999 and 45 km length of storm water drains have been constructed in flood prone areas. The drains are primarily open with concrete surfacing running along major roads. The existing details of storm water drains are tabulated in **Table 5.14**.

Table 5.14 Storm water drains in Coimbatore

| Type of Drain | Length Km |
|---------------------|---------------|
| Kutchra Drains | 10.70 |
| Pucca Drains | 561.22 |
| Pucca Closed Drains | 13.10 |
| Sub total | 585.22 |
| Natural Drains | 44.82 |
| Grand Total | 629.84 |

185. Among all the drains, the Sangapurpallam is the main drainage artery, which traverses from north to south with its outfall in Noyyal River. The drainage course is poorly maintained and it is encroached upon by number of hutments.
186. The Noyyal River forms the southern boundary of the Coimbatore Corporation and acts as a major drainage course carrying the storm water discharge. Most of the tanks are located in southern part of the city and finally drain into Noyyal River. However, these tanks have been encroached upon heavily and some cultivation is also being carried out in tank beds.
187. In addition to roadside drains the city is well served with a network of natural drainage channels. The city has a natural topography, sloping from North towards South and West towards East. The slope benefits storm water run-off and the path of natural drains facilitate draining of storm water. The existing main drains of the city are presented in **Table 5.15** and **Map: 5.3**.



Table 5.15: Natural Drains in Coimbatore

| Drains | Length Kms |
|----------------------------------|---------------|
| Sanganur Pallam | 9.70 |
| Velankurichi- Singanallur Drain | 10.80 |
| Ganapathy- Singanallur Drain | 13.90 |
| Karperayan Koil Drain | 1.92 |
| Koilmedu Drain | 3.30 |
| Railway Feeder Road side drain | 3.30 |
| Tiruchy- Singanallur Check Drain | 1.90 |
| Total | 44.82 |

188. There are 23 flood spots identified within the Coimbatore Corporation. Merely cleaning the drains could drain most of these flood spots. In certain cases however, strengthening of the drains and construction of leading drains would have to be carried out.
189. Almost all the drains are covered with weed growth and almost all the culverts are blocked with solid waste. While the existing capacities of drains are sufficient for the initial reaches, the available capacity gets constrained towards the outfall. Some of the natural drains have to be remodeled wherever necessary from outfall to origin.
190. In accordance with the above the Corporation and an active NGO ‘Siruthuli’ has commenced the desilting exercise and has taken up works on many lakes and natural drains in the corporation area.



191. *Water Bodies:* There are 8 major water bodies within the corporation limits. The total area of about 423 Ha with a storage capacity of about 16.07 Mcum. Most of the tanks are used for irrigation. Details of tanks are presented in **Table 5.16**

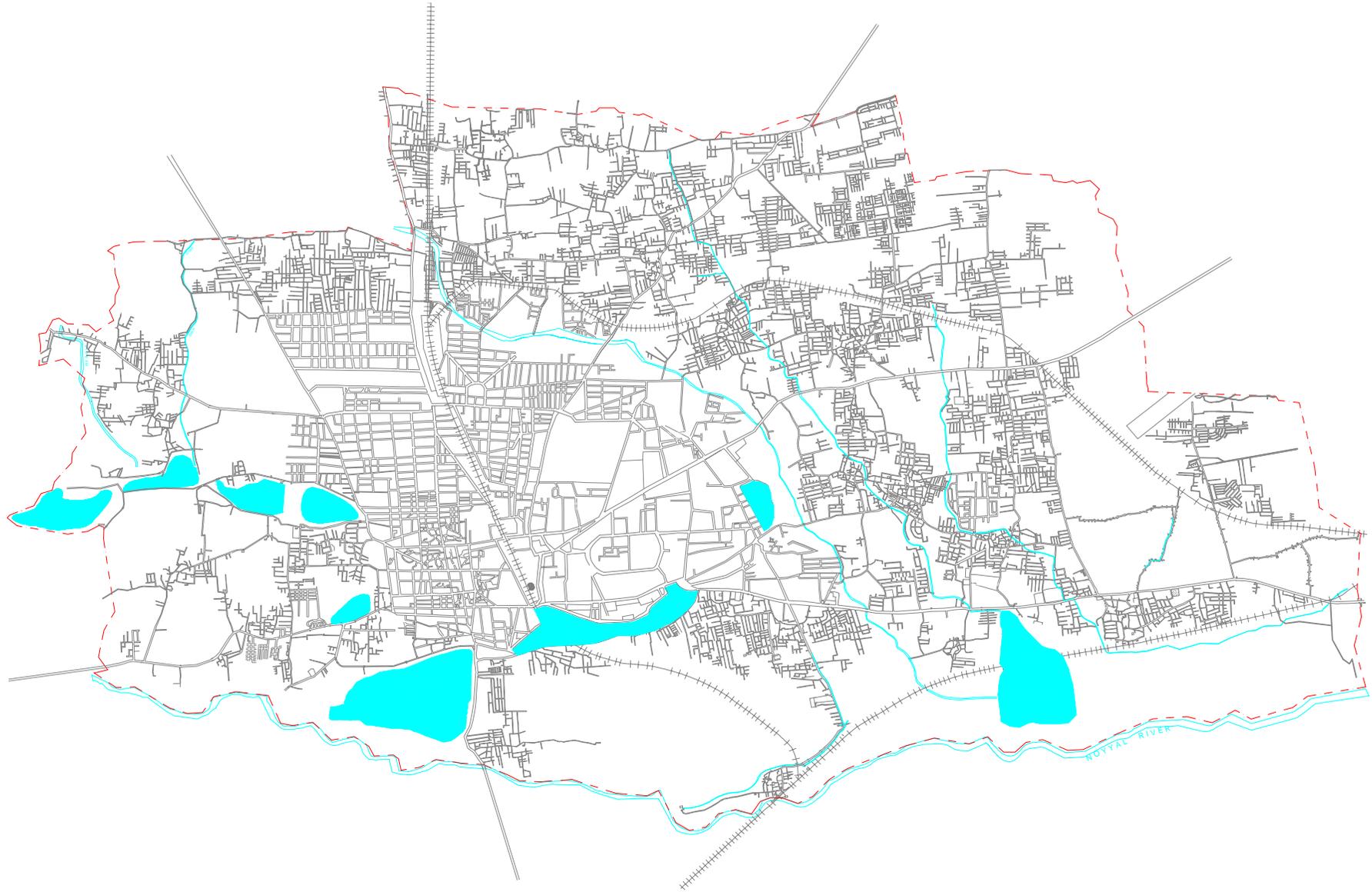
Table 5.16: Tanks in Coimbatore city

| Tanks | Current Usage | Area <i>Ha</i> | Storage Capacity <i>M cu.m</i> |
|------------------------|----------------------|--------------------------|--|
| Krishnampathi | Irrigation | 71.2 | 2.39 |
| Selvampathi | Irrigation | 28.2 | 0.94 |
| Kumarasamy Tank | Irrigation | 38 | 1.22 |
| Narasampathi Tank | Nil | 50.2 | 1.68 |
| Selvachinthamani Kulam | Irrigation | 14.9 | 0.27 |
| Valan Kulam | Irrigation | 64.8 | 2.91 |
| Singanallur | Irrigation | 115.3 | 4.9 |
| Muthannan Kulam | Nil | 41.3 | 1.76 |
| Total | | 423.9 | 16.07 |

Source: Siruthuli

192. These tanks could be used as potential recharge centers. However, it is noted that, most of the tanks are encroached along the bunds and weeding is observed in most of the tanks.

Map 5.3: Major water bodies and Primary Drains – Coimbatore



193. *Service Adequacy and Key Issues:* Based on the available data, discussions with the officials, and field survey, the following key issues and performance indicators are arrived. The comparative assessment of storm water drains are illustrated in **Table 5.17**.

Table 5.17: Storm Water Drain – Service Indicators

| Indicator | Unit | Existing Situation |
|---|---------|--------------------|
| Total length of existing storm water drains | Km | 629.84 |
| Road Coverage | Percent | 92.05 |
| Existing drain rehabilitation | | Proposed |
| Coverage in Flooded areas | | Adequate |

Source: Analysis

194. The issues identified in the storm water drainage are

- Silting and Constriction due to weeding of major canals: Silting and weeding of major canals such as the Sanganur Pallam and the Noyyal Water Course leads to flooding of residential areas located along the course.
- Flooding of residential areas located along the course.
- Encroachments along the major canals have led to the weakening of the bunds which has also been one of the prime causes for such severe flooding.
- Disposal of solid waste into drainage channels

4. Solid Waste Management

195. *Existing Situation:* Solid Waste Management in Coimbatore City is a function of the Health Department of Coimbatore Municipal Corporation. The waste generated per day within the city is of the order of 601 tons per day, and the major generation points are households, hotels, restaurants, industries, hospitals, market places, slums, bus-stands and community halls. This works out to 606 grams per capita per day. The salient feature is presented in **Table 5.18**.

Figure. 5.1: Contribution of Solid Waste

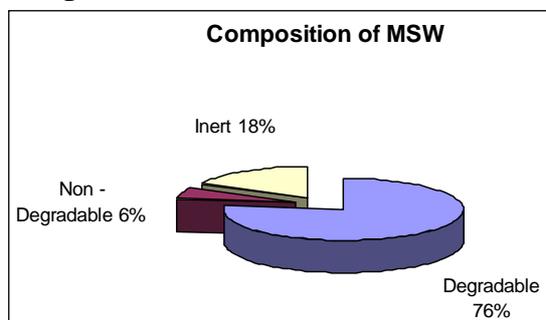


Table 5.18: Salient features of Solid Waste Management.

| | |
|--|------|
| Garbage collected per day (Mt.) | 564 |
| Garbage handled by Corporation (Primary Collections) | 100% |
| Generation per person (gm/ day) | 606 |
| Collection Efficiency (Urban Local Bodies Estimate) | 91% |

Source: Coimbatore Corporation

196. It can be read from the figure that, about 76 percent of the waste is Biodegradable, which primarily originates from the residential solid waste and from the markets. The industries and the commercial establishments contribute about 10 percent of the total waste. The salient features and details of the source of waste generation are presented in **Table 5.19**.

Table 5.19: Waste Generation

| Waste Generated | MT | % of total waste |
|------------------------------|--------|------------------|
| Domestic | 349.54 | 58.16 |
| Industries | 18.39 | 3.06 |
| Commercial and Others | 39.25 | 6.53 |
| Segregated waste from Market | 193.88 | 32.26 |
| Total | 601.00 | 100 |

Source: Coimbatore Corporation

197. *Primary Collection:* Door to Door, collection of segregated solid waste is practiced for primary collections with 287 nos. of pushcarts. Road sweeping and mopping is also carried out with 12 nos. of road sweeping flipper machines to clean the roads. It can be noted from the tables below that, 489 vehicles are used for primary collection, of which almost 57 percent being push carts and 27 percent being bullock carts. The usage of bullock carts is slowly being phased out. There are about 100 containers of 2 MT capacities, which are placed at important locations in the town. 36 private tractors are being used for collection of waste from the bins. About 288 MT of waste being collected and disposed at the secondary collection points by these tractors.



198. Vegetable markets waste is being collected in the night conservancy in South and West Zones. Mopping of bus stand floors are being done in the night on all Saturdays. 2137 sanitary workers are involved in the conservancy works, which works out to be about 275 m of road length per conservancy workers, which is low according to the norms. The infrastructure and indicators of primary collection is presented in **Table 5.20 and Table: 5.21**.



Table 5.20: Primary Collection – Infrastructure

| Type of Vehicle | Vehicles | Capacity | No of trips | Total |
|--------------------------------|----------|----------|-------------|-------|
| | Nos. | MT | Nos. | MT |
| Auto | 15 | 0.5 | 3.5 | 26.2 |
| Bullock Carts | 139 | 0.5 | 2.0 | 139.0 |
| Push carts | 287 | 0.2 | 2.0 | 114.8 |
| Mini Lorries | 9 | 2.0 | 2.0 | 36.0 |
| Lorries | 3 | 4.0 | 2.0 | 24.0 |
| Private Tractors | 36 | 2.0 | 4.0 | 288.0 |
| Total / Average | 489 | | 2.7* | 628.1 |
| Dumper placer | 17 | 2.0 | 3.0 | 102.0 |
| Containers | 100 | 2.0 | - | 200.0 |
| Road sweeping flipper machines | 12 | - | - | - |

Source: Analysis

* Average figure

Table 5.21: Primary Collection - Indicators

| Indicator | Unit | Nos |
|---|------|-------|
| Collection capacity of the containers & vehicles of corporation | MT | 340.1 |
| Collection capacity of the private vehicles* | MT | 288.0 |
| Total collection capacity# | MT | 628.1 |

Source: Analysis

* for primary collection with 4 trips daily, # with an average of 2.7 trip a day

199. *Secondary Collection:* There are 4 nos. of Transfer stations. Viz

- Peelaimedu,
- Ondipudur,
- Sathy Road,
- Ukkadam



200. The existing two prime movers with four trailers in Coimbatore City Municipal Corporation are used for secondary transportation from transfer station to the compost yard / landfill site. It can also be noted from the **Table 5.22** that 53 Lorries are hired to dispose waste from the transfer stations to the disposal yard.



201. *Private Participation in SWM Secondary Transport:* Private lorries are disposing about 50-70 percent of the total waste collected. The detail of the rents given to the hired vehicles is presented in **Table 5.22a**.

Table 5.22: Secondary Collection - Infrastructure

| Type of Vehicle | Vehicles | Avg. Capacity | Trips | Vehicle Capacity |
|----------------------|-------------|---------------|-------------|------------------|
| | <i>Nos.</i> | <i>MT</i> | <i>Nos.</i> | <i>MT</i> |
| Private Lorries | 53 | 3 | 4 | 636 |
| Bulk Refuse Carrier | 4 | 4 | 4 | 64 |
| Total | | | | 700 |
| Prime mover vehicles | 8 | 2 | 2 | 32.0 |
| JCB | 4 | - | - | - |

Source: Analysis

Table 5.22a: Rental Details of Hired Vehicles

| Type of Vehicles | Rentals | Maximum Trips |
|------------------|-----------------|---------------|
| | <i>Rs./Trip</i> | <i>Nos.</i> |
| Lorry | 608.32 | 4 |
| Tractor | 92 | 4 |

202. *Disposal Sites:* There are 4 disposal yards out of which only one is operational at Vellalore sewage farm. The landfill site at Vellalore has been operational for the last two years, subsequent to the



- closure of the city's earlier dumpsites. The corporation has obtained permission from the Tamil Nadu Pollution Control Board (TNPCB) to use this land for municipal solid waste disposal. The Vellalore compost yard has an extent of 604 acres of dry land acquired from farmers with one Weigh Bridge and 30 acres of greenery around it. The Coimbatore Corporation initially acquired this property for the sewage disposal.
203. It is noted that waste dumps are spread over an area of about 40 -50 percent of the property and different techniques of disposals are being applied in different areas and at different times. It appears that, at certain locations the wastes are dumped on the ground surface while at other locations waste is being dumped in parallel trenches or in large pits having varying depths. In certain location of the site, there seems to be area filling as well. Paved roads have been laid in the site for this purpose. In general, there appears to be no compaction of the waste. The other disposal sites Viz. at Ondipudur and Peelamedu is not in use and has a quantity of about 6300 MT and 4000 MT of waste which is yet to be disposed.
204. *Service Adequacy and Key Issues:* Based on the available data, discussions with the officials, and field survey, the following the key issues and the performance indicators are arrived. The comparative analysis for SWM is illustrated in **Table 5.23**.

Table 5.23: Solid Waste Management – Service Indicators

| Indicator | Unit | Existing Situation | Benchmark |
|---|-------------|--------------------|-----------|
| Source segregation | % | 10 | 100 |
| House to House Collection | % | 20 | 100 |
| Daily sweeping and mopping | % | 70 | 100 |
| Per Capita Generation | Gms/ Day | 606 | NA |
| Collection Performance (% Collected to Generated) | % | 91 | 100 |
| Total Vehicle Capacity / Waste Generated (with Corporation Vehicles) | % | 28 | NA |
| Total Vehicle Capacity / Waste Generated (with Total Fleet) | % | 120 | 100 |

Source: Analysis

The issues and deficiency in the present system is as follows

205. *Primary Collection*

- Source Segregation and house to house collection practiced in 10% area
- Uncontrolled littering along main roads, streets and Drains
- Present container capacity is enough only for 70% removal of the accumulated solid water
- Lack of adequate community participation in primary collection
- Mismanagement of the hired vehicles
- Lack of records to track hired and owned vehicles.

206. *Secondary Collection*

- Inefficient fleet management system
- Lack of workshop facilities
- No Synchronized system between primary and bulk wastage storage facility
- Higher expenditure on maintenance of vehicles used in secondary transportation

207. *Processing and Disposal of Waste*

- No scientific treatment and disposal of garbage
- Lack of adequate infrastructure in compost yard.

5. *Roads and Traffic Management*

208. The Corporation, State Highways & Rural Works, and the National Highways maintain roads in the city. However, the highways passing through the city account for about 48 kms alone. Road improvement works and planning in residential areas is the prerogative of the Corporation.

209. *Existing Situation:* The Corporation maintains a large road network of 635.52 kms. Of the total road length 83.6 percent are Black Topped roads, 10.4 percent are Concrete roads, and the balance 6 percent include Earthen and other roads. The road length does not

include State and National Highway roads, which pass through the city. The NH 47 passes through the city and connects it with Salem and Cochin. The total road length with the state highways is 707.24 Km. The existing corporation roads are listed in **Table 5.24**.

Table 5.24: Road Network- Details

| Roads | Length <i>Kms</i> | Percentage % |
|--------------------------------------|-----------------------------|------------------------|
| Black Top surface | 531.11 | 83.6 |
| Cement Concrete Surface | 66.01 | 10.4 |
| Metalled | 1.42 | 0.2 |
| Earthen road | 36.98 | 5.8 |
| Sub Total (Corporation Roads) | 635.52 | 100.0 |
| Highways | 71.72 | |
| GRAND TOTAL | 707.24 | |

210. *Service Adequacy and Key Issues:* The current network covers 6.01 km per 1 sq. km of the Corporation area accounting for a per capita road length of 1.5 m. However, on an average the area covered by the current network constitutes to only 6 percent of the total city area, which is substantially low given the fact that the area required for circulation ought to constitute at least 18 percent of the total area. The municipal road indicators are illustrated in **Table 5.25**.

Table 5.25: Corporation Roads - Service indicators.

| Indicator | Current Situation | Benchmark |
|-------------------------------------|--------------------------|-----------------------|
| Road Density | 6.01 Km/ Sq.km | 10.0 – 15.0 Km/ Sq.km |
| Per Capita Road Length | 1.5 m | 1.75 m |
| % CC Roads to Municipal Road Length | 10.4 % | 5.0 % |
| % Municipal Surfaced Roads | 94.2% | 100.0 % |

Source: Analysis

211. Based on the information collected and field visits, the key issues facing the roads and transport corridors of Coimbatore have been identified and presented in this section. Key indicators are used to assess service adequacy of Coimbatore Corporation.
- **Inadequate Coverage.** There is only 6.01 km/sq/km of road coverage as compared to a norm of 10-15 km/sq/km, attributed to the huge corporation extents. Inadequate coverage is noticed in the newly developed layouts and in the extended areas.
 - **High Density and Congested Lanes.** Roads in the old city areas are narrow and surrounded by heavily built-up areas. These roads also carry large volumes of traffic due to wholesale markets 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 city by illegal parking and other informal activities. With no margins left on the



roads, the effective carriageway of the road is reduced drastically leading to congestion and accidents.

- Absence of Street Furniture/ Signages. The roads lack signals, signages, and footpaths. Improper road sweeping results in most roads being covered with silty soil, which reduces the driving safety.

212. *Road Network:* The city and its environs are served by a radial road network comprising of three State Highways and one National Highway. Apart from the above roads, the other principal arterials that radiate from the centre are

- Perur road,
- Maruthamalai road and
- Thadagam road.

213. The absence of link roads connecting these radials results in the lack of route continuity and unnecessary straining of the main arterials.

214. *Pedestrian Traffic:* In the city, walk trips constitute nearly 29 percent of the total trips undertaken. Pedestrian volume is high in commercial areas, near the bus stand and railway station. The locations with heavy pedestrian movements are:

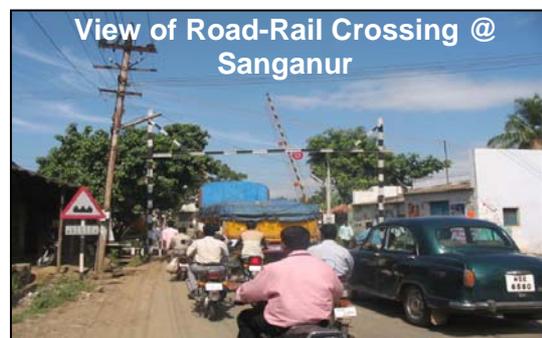
- Dr. Nanjappa road and Cross cut road near the Town Bus Stand
- The Big Bazaar street near Municipal Office
- CMC Hospital on Trichy road
- Coimbatore Railway Station



215. Considerable crossing movement is also observed at locations in the

- CBD,
- Avinashi road,
- Trichy road and
- Mettupalayam road.

216. *Road-Rail Crossings:* A network of railway lines exists in the city leading to Mettupalayam in the north, Erode in the east and Pollachi in the South. Apart from this, a link line exists in the city connecting Erode and Mettupalayam lines.



217. Though at present several grade-separated crossings exist, many grade railroad crossings are responsible for considerable traffic delay. The level crossings with heavy traffic flow demanding immediate attentions are at Ondipudur on Trichy road and the crossing at Rathinapur. Principal Level Crossings

- Sanganur (Mettupalayam-Sanganur Rd.)
- Rathnapuri (Gandhipuram-Rathnapuri Rd.)
- Ellaithotam Peelamedu-Vilankurichi Rd.
- Vilankurichi (Avinashi -Vilankurichi Rd.)
- SIHS Colony (Trichy-SIHS Rd.)
- Ondipudur (Trichy Rd.)
- Singanallur - Vellalore Rd.
- Nanjaundapuram (Ramanthapuram-Nanjundapuram Rd.)
- NH road to Oppankara st.
- Oppankara St. to K.G. st

218. *Intersections:* Intersections’ being accident-prone areas, its geometry assumes great significance. Few intersections with heavy traffic flow are:

- Sathyamangalam road and Crosscut road
- Puliakulam road and Avinashi road
- Sathyamangalam road and 100 ft. road
- Mettupalayam and Sivanand colony road
- Cross cut road and Dr. Nanjappa road.

219. The above mentioned intersections being located in the busy commercial areas cater to heavy vehicular and pedestrian traffic. Thus, it is imperative to improve the above junctions either by proposing flyovers and grade separators to ensure pedestrian safety and smooth traffic flow.

220. *Parking:* The growth in number of personalized vehicles has increased the demand for parking tremendously over the past years. Lack of parking space in the commercial areas has resulted in on street parking which consumes valuable road space, leading to congestion and reducing the carrying capacity of the roads.

221. Intense on - street parking activity is seen all along the major roads in the Central Business District (CBD). On other commercial roads like Dr. Nanjappa road and Cross- Cut road in Gandhipuram on street parking of taxis and tempos, apart from private vehicles is prevalent.

222. Few Stretches with intense street parking are:

- K.G. street to Oppankara street
- Dr. Nanjappa road to Power House road
- Edayar Street to Big Bazaar street
- NSR Road and Thadagam Road Junction



223. The need is felt to create off-street parking areas, especially in the CBD and regulate the on-street parking along the major commercial roads.

224. *Linkages:* The three intercity bus terminals are located along the main arterials, which also form the radial access routes to the city. Ukkadam is located in South Coimbatore along NH-209 which connects Coimbatore to Dindigul via Pollachi on one side and Bangalore via Sathyamanglam on the other side. Singanallur is located in Eastern Coimbatore along NH-67, the highway which links the city to Nagapatinam via Trichy. Gandhipuram is located in Central Coimbatore along NH-209.



225. *Existing Bus Terminals:* Coimbatore with its growing economy and rapid industrialization is a major trade and commercial center for the region. To cater to passenger and bus traffic, currently four bus terminals operate under CCMC. These terminals are the Town Bus Stand, Ukkadam Bus Stand, Singanallur Bus Stand and the Central Bus Stand at Gandhipuram. In addition, the State Express Transport Corporation (SETC) operates long distance buses from its exclusive terminal at Gandhipuram. Out of the four terminals mentioned above, Gandhipuram Central Bus Stand, Ukkadam and Singanallur terminals are mofussil bus terminals, which are located along different directions of the city.

226. The Town Bus Stand at Gandhipuram serves as the intra-city bus terminal for Coimbatore. The proximity of the Town Bus Stand, Central Bus Stand and the SETC bus terminal at Gandhipuram make it a high activity location with heavy concentrations of both vehicles and people.

227. *Central Bus Stand, Gandhipuram:* The Central Bus Stand located at Gandhipuram was established in the year 1974. It has an area of 3.25 acres with 51 bays serving the buses traveling towards Mettupalayam, Ooty, Kothagiri, Sathyamangalam (Sathy), Anaikatti, Erode, Pillur, Edakadu, Kilkunda, Manjor, Mettur, Krishnagiri, Bangalore, Mysore, Kollaikal, Gobi and Anthiyur, Namakkal, Pannari, Servoor, Sultan Batheri and Kudalore.

228. *Ukkadam Terminal:* The Ukkadam terminal was established in the year 1996 and is spread over an area of 3.0 acres. Ukkadam Terminal located on NH-209 serves the destinations to the south of the city such as Pollachi, Palghat, Kodaikanal, Palani, Munnar, Guruvayur and Koduvayur. Around 186 mofussil buses operate from this terminal. The terminal accommodates 53 bays of which 20 bays serve the town bus services and the remaining 33 serve the mofussil buses destined towards south.



229. *Singanallur Terminal:* The Singanallur terminal is a new terminal constructed in the year 2001 and has an area of 2.6 acres. Located on NH 67, this terminal has 51 bays serving the buses traveling towards the west of the city including Trichy, Madurai, Karur, Dharmapuram, Udumpet, Pulavadi, Sultanpeta, Pedappam Patti, Kangayam, Kodumudi, Pallapatti, Tanjavur, Jaya Kundam, Padullur, Tiruppur, Kampam, Siva Kasi and Deva Kottai. Around 189 buses operate from this terminal. The terminal is currently facing a demand crisis due to its location as most of the buses operating from here follow longer routes serving uninhabited areas. The problem is compounded because the same services are available from Gandhipuram Mofussil Terminal also.



230. *Function:* The main function of Gandhipuram bus terminal is to serve all buses bound to/from north and northeastern directions from Coimbatore. These buses ply along Mettupalayam Road, Sathy Road, Avinashi Road, Anaikatti and Trichy Road. The Ukkadam bus terminal serves buses destined towards south of Coimbatore. These buses ply on Pollachi Road, Palghat Road and Chettipalayam Road. The Singanallur bus terminal serves buses destined towards east of Coimbatore. These buses ply mainly on Trichy Road.
231. *Institutional Aspects:* The existing terminals are owned by CCMC, which provides terminal facilities to various operators. The main operators are Tamil Nadu State Transport Corporation, Coimbatore, Division-I (TNSTC-CBE, DIV-I) and the private operators. A few other State Transport Undertakings (STUs) like the KSRTC (Kerala State Road Transport Corporation) also use the terminal facilities for their interstate bus operations.
232. CCMC takes a daily fee of Rs.15 per bus from the bus operators for allowing them to utilize the infrastructure facilities at the terminal. TNSTC has been provided with office space for controlling their operations at the terminal. Office space has also been rented at Gandhipuram to the Department of Railways for their reservation counters and to the postal department. CCMC has handed over the parking facility at the terminal to a private contractor for operation and maintenance.
233. *Existing Bus Depots:* TNSTC owns eight of the bus depots located in Coimbatore. These depots are being used as night halt stops, repairs and maintenance workshops and for idling of buses when not in use. The location of the eight depots is presented in Figure 2.1.
234. The number of buses served by each depot is presented in **Table 5.26**. These depots not only serve the mofussil buses but also some town buses being operated by TNSTC. As presented, the locations of bus depots and terminals have been causing dead kilometerage for buses. The sector wise allocation of buses to depots does not fully take into account the location of corresponding terminal, from where the service operates.

Table 5.26: Bus Depots in Coimbatore

| Bus Depot Branch | Sectors Served | Total Buses |
|------------------|------------------------------|-------------|
| Ukkadam-1 | Mettupalayam, Kilkunda, Ooty | 93 |
| Uppilapalayam | Mettupalayam, Kilkunda | 34 |
| Sungam-1 | Sathy | 87 |
| H.O-Branch | Mettupalayam | 55 |
| Sungam-2 | Sathy | 96 |
| Maruthamalai | - | 35 |
| Ondipudur | Sathy | 90 |
| Ukkadam-2 | Mettupalayam, Ooty | 86 |
| Total | | 576 |

Source: Tamil Nadu State Transport Corporation, CBE-Division-I

235. Private buses operating from Central Bus Stand, Ukkadam and Singanallur terminals have no specific parking or repair facilities during non-operational hours in the terminal.
236. *Link Services:* Tamil Nadu State Transport Corporation Coimbatore, Division-I (TNSTC – CBE-I) operates around 10 link services providing inter terminal accessibility. There are 4 such services between Ukkadam and Gandhipuram and 6 services between Singanallur and Gandhipuram. The Ukkadam bus services are routed through the Coimbatore Railway Station to facilitate intermodal passengers. All these services are limited stop services and were reported to have an average occupancy ratio of 71 during a normal month. The fares are nominal (Gandhipuram-Railway Station: Rs 3; Gandhipuram-Ukkadam: Rs 3; Gandhipuram-Singanallur: Rs 4) making it feasible for bus interchange passengers to travel from one terminal to another. The earnings for TNSTC from these services are high and are in the range of 23-25 Rs./Km.
237. *Service Adequacy and Key Issues:* Increase in the number of vehicles and inadequate road networks are major causes for traffic congestion. Though the city consists of a few flyovers to relieve traffic congestion, they are not able to cope with the increasing demand. Inadequate traffic management measures and parking facilities are adding to the congestion problems. Presence of informal activities along the road margins, illegal encroachment of pedestrian areas and footpaths are the other causes for traffic congestion in the city. Some of the major roads and junctions that need immediate attention are
- Oppanakara Street
 - Rangai Gounder Street
 - Big Bazaar Street
 - Crosscut Road
 - DB Road
238. The other issues of concern include:
- Pedestrian facilities are lacking in the vicinity of the bus stand and the railway station, which are highly congested areas. Footpaths along the major commercial roads like the Big Bazaar street, etc. are not being used by the pedestrians due to large scale encroachments.
 - Parking areas are grossly inadequate near the bus stand and the railway station.

On-street parking, hampering the traffic flow is observed in the CBD area and along the major commercial roads like Gandhipuram, Cross cut road, R.S.Puram, etc.

- Lack of traffic segregation along major arterial roads like Avinashi road and Trichy road is hampering the smooth flow of vehicles and is one of the major causes for accidents.
- One of the main reasons for traffic congestion in the city is the lack of link roads/orbital roads connecting the principal arterial roads. More over the movement of heavy vehicles in the CBD is resulting in congestion and traffic problem.
- Heavy traffic at few railway crossings at Ondipudur, Rathinapuri, Eachanari, Avarmpalayam etc. is leading to traffic delays.

239. *Ongoing and Proposed Sub-Projects:* The proposals envisaged by the corporation for road development and traffic management is presented in **Table 5.27**.

Table 5.27: Proposals identified by the Corporation

| Projects | Cost |
|---|--------------|
| | <i>Lakhs</i> |
| Construction of Bus stand at Mettupalayam road | 558.53 |
| Sub way at Gandhipuram | 425.00 |
| Construction of Bridge at Thairitteri road across Sanganoor pallam. | 80.00 |
| <ul style="list-style-type: none"> • Conversion of Earthen roads to dustless surface • Formation of link roads with main roads for better connectivity • RWH proposed in major roads • Laying of plastic roads on trail basis | |

Source: Coimbatore Corporation

6. Street Lighting

240. *Existing Situation:* There are 30,030 streetlights existing in the town with an average spacing of 21.2 m making the town very adequately lit. 15 percent of total streetlights are tube lights and 85 percent are high power lamps (70W, 250W sodium vapor lamps and High mast lamps). 208 high mast lights are provided, mainly at the road junctions and busy areas. The number of street lights in each zone and is illustrated in **Table 5.28**.

Table 5.28: Street light details

| S.No | Item of works | West Zone | South Zone | East Zone | North Zone | Total |
|------|----------------------|-------------|-------------|-------------|-------------|-------------|
| | | <i>Nos.</i> | <i>Nos.</i> | <i>Nos.</i> | <i>Nos.</i> | <i>Nos.</i> |
| 1 | 40 Watts Tube lights | 297 | 585 | 1,737 | 1,983 | 4,602 |
| 2 | 70 Watts S.V.L | 2,748 | 1,850 | 4,203 | 4,001 | 12,802 |
| 3 | 250 Watts S.V.L. | 2,867 | 2,985 | 3,372 | 3,194 | 12,418 |
| 4 | High Mast light | 48 | 80 | 32 | 48 | 208 |

Source: Coimbatore Corporation

241. *Solar Lights:* 100 Solar lights are installed in wards 7, 22, 23 and 69 on trail basis at a capital cost of Rs. 22,000 per solar light which includes lamp, battery, post & erection charges. **Table 5.29** shows the location & number of solar lamp installation in Coimbatore

Table 5.29: Solar Light installation – Location and Number

| Ward No | Location | Number of Installations |
|---------|--|-------------------------|
| 7 | Singanallur – Thomaspuram Vinayakar Koil | 4 |
| | Asthandra Naicker street (west) | 1 |
| | Asthandra Naicker Street (East) | 4 |
| | SRP layout | 2 |
| | Lakshmanan nagar | 2 |
| | Upplipalayam CMC colony | 10 |
| | Kamala Mill Kuttai | 2 |
| | Upplipalayam Scavenger Colony | 1 |
| | Pallimadai Colony | 4 |
| 69 | LIC colony | 1 |
| | Ganesh Colony | 3 |
| | Ganesh Nagar | 6 |
| 22, 23 | Ramanathapuram – Thiruvalluvar Nagar | 60 |

Source: Coimbatore Corporation

242. *Non-Lit areas:* Unapproved areas in the north and the east zones are partially or not lit by corporation streetlight, mainly along the Coimbatore – Tripur High road
243. *Private Participation in Street Lighting:* The corporation introduced private participation in street lighting sector, the operation and maintenance of all the streetlight with in the city limits have been privatized. By this the efficiency and service levels has improved.
244. *ULB Initiatives for Power Saving.* Coimbatore is part of ‘Cities for Climate Protection’ Project sponsored by ICLEI and as per a study conducted in 2004 which recommended power saving through use of retrofit fixtures and power saving switches.
245. *Service Adequacy and Key Issues:* Based on the available data, discussions with the officials, and field survey, the following key issues and performance indicators are arrived. The comparative assessment for street lighting is furnished in **Table: 5.30**.

Table 5.30: Street Lighting – Comparative Assessment

| Indicator | Unit | Current Situation | Benchmark |
|----------------------------|------|-------------------|---------------|
| Spacing between Lamp Posts | m | 21 | < 30.0 m |
| % Tube Lights | % | 15.3 | 70.0 – 80.0 % |
| % of Sodium Vapour Lamps | % | 83.9 | 20.0 – 30.0 % |
| Total No of Street Lights | Nos. | 30030 | |
| Total no of Solar Light | Nos. | 100 | |

Source: Analysis

246. The issues identified in street lighting area
- High Energy cost of Rs. 5.4 crores/annum
 - Voltage drop in peripheral areas especially in wards 3, 4, 5,6,12, 55, 62 etc.

7. *Environmental Impacts in City:*

247. *Water Pollution.* The City lies within the watershed expanse of the Noyyal River Basin and consists of a network of tanks and canals. About 18 tanks in and around the city act as storage and percolation tanks and are major sources of ground water used for domestic and industrial activities. Canals that act as natural drainage courses, serves as storm water drains for the city.
248. An analysis of nine water bodies of city by a local NGO indicates that most of the water bodies are contaminated. The discharge of industrial and domestic effluents, encroachments of tank and canal beds, reclamation and exploitation of ground water are some of the important factors causing damage to these water bodies. A key factor responsible for polluting the water bodies is the discharge of untreated effluents from small- scale industrial units lacking in adequate individual treatment facilities. With major water bodies being polluted, an immediate effect is noticed on the health of the vulnerable communities residing on the banks of the canals and tanks.
249. Further, there is a risk of contamination to ground water, resulting from over exploitation of ground water by domestic and industrial users. (Water Test report enclosed).
250. *Air Pollution.* The principal sources of Air pollution in Coimbatore are from vehicular emissions, industrial emissions and construction related activities. Industrial emissions are mainly from the foundries and small scale industries located within the city. Most of the large industries have installed pollution control equipment like air filters, electrostatic precipitators, etc. whereas the small-scale ones lack these devices. In addition, the impact of emissions manifested from levels of Total Suspended Particles and Carbon Monoxide cannot be quantified due to the absence of data. The Tamil Nadu Pollution Control Board limits its monitoring to the individual industry level and is specific for large industries alone.
251. *Pollution from Solid and Hazard Wastes.* The main causes for pollution include increasing household and commercial wastes as well as hazardous wastes from the industrial activities. However, the Corporation is making efforts to ensure collection and disposal of the same, inadequacies in operations results in accumulation of wastes. Inability to dispose waste in a scientific manner has been a prime factor resulting in pollution. In addition, hazardous wastes and medical wastes are disposed along with the domestic wastes without any separation at the source posing a potential health hazard. The disposal facilities at Mettupalyam Road and Ukkadam are devoid of facilities and the wastes are disposed in an unscientific manner. The city does not have a sanitary landfill and the disposal points are close to the residential areas causing grave danger to the health of the nearby residents.

VI FINANCES OF COIMBATORE CORPORATION

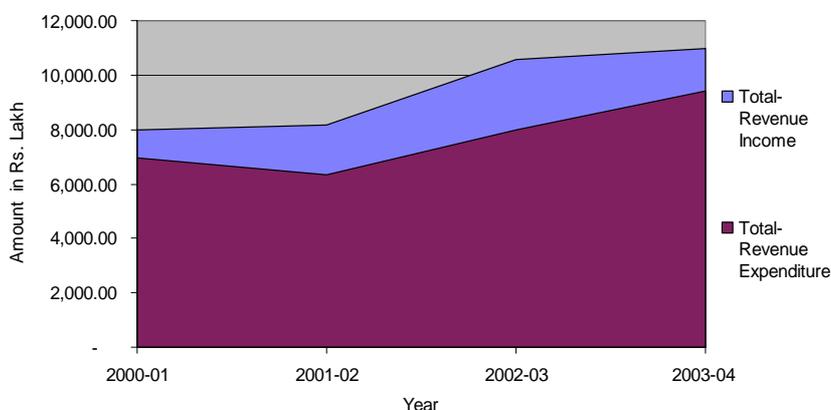
1. Corporation Fund

252. *Overview.* Coimbatore Corporation maintains a Corporation fund for managing the finances of the Corporation. The accounts of the Municipal/Corporation fund were maintained on a cash based single entry system till the FY 1999-2000. The financial status of the Corporation has been reviewed for the past four years, commencing from the financial year 2000-01. This section contains a description of the Corporation finances, the sources and uses of funds, and an assessment of Corporation finances based on important financial indicators. Currently the urban local bodies of Tamilnadu maintain three separate funds, namely General Fund (Revenue Fund), Water & Drainage Fund and Education Fund. For the purpose of this analysis, Education fund has clubbed in to General fund. For further analysis, the items of each fund are categorized under the following major heads.
253. *Revenue Account:* All recurring items of income and expenditure are included under this head. These include taxes, charges, salaries, maintenance expenditure, debt servicing etc.
254. *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 programs, revenue account transfer for capital works and income from sale of assets. Expenditure items include expenses booked under developmental works and purchase of capital assets.
255. *Deposits and Advances:* Under the Corporation accounting system, certain items are compiled under advances and deposits. These items are temporary in nature and are essentially adjustments for the purpose of recoveries and payments. Items under this head include library cess, income tax deductions, pension payments, provident fund, payment and recoveries of advances to employees and contractors, etc.

2. Financial Status

256. Revenue income of Corporation has grown to Rs. 10,991.08 Lakh in the FY 2003-04 from Rs. 7,962.88 Lakh in FY 2000-01, at a high annual growth of 11.34 percent. Revenue expenditure increased at an average annual rate of 10.60 percent from Rs. 6,949.66 Lakh to Rs. 9,401.66 Lakh during the assessment period. The revenue account maintains surplus during the entire assessment period from FY 01 to FY 04. The trends for the revenue fund are presented in **Table 6.1**.

Figure 6.1: Total Revenue Income and Expenditure Trend



The total revenue income and expenditure trends are presented in **Figure 6.1**

Table 6.1: Summary of Corporation Fund

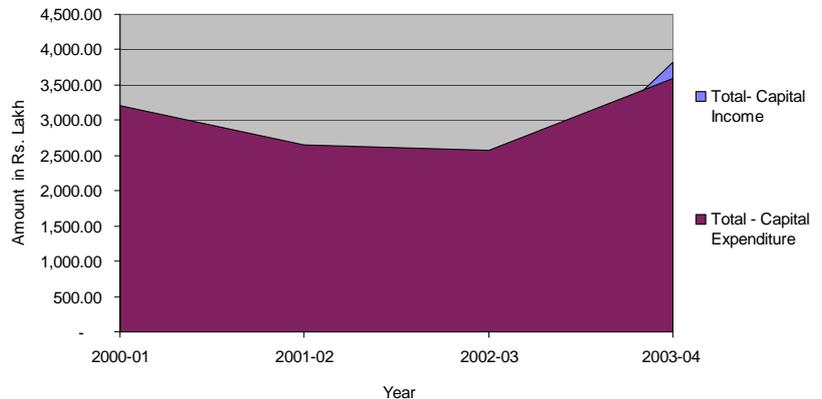
| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|--------------------------------|---------------------------|-------------------|-------------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Revenue Account | | | | |
| Revenue Income | 7,962.88 | 8,154.58 | 10,584.62 | 10,991.08 |
| Revenue Expenditure | 6,949.66 | 6,338.54 | 7,991.89 | 9,401.66 |
| <i>Surplus/Deficit</i> | <i>1,013.22</i> | <i>1,816.04</i> | <i>2,592.73</i> | <i>1,589.42</i> |
| Capital Account | | | | |
| Capital Income | 1,951.05 | 1,058.19 | 1,339.46 | 3,827.96 |
| Capital Expenditure | 3,205.85 | 2,647.53 | 2,571.32 | 3,586.23 |
| <i>Surplus/Deficit</i> | <i>(1,254.80)</i> | <i>(1,589.34)</i> | <i>(1,231.86)</i> | <i>241.73</i> |
| Fiscal Status | (241.58) | 226.70 | 1,360.87 | 1,831.15 |
| Advances & Deposits | | | | |
| Extraordinary Income | 875.83 | 178.30 | 763.08 | 660.73 |
| Extraordinary Expenditure | 649.63 | 507.43 | 345.66 | 351.13 |
| <i>Surplus/Deficit</i> | <i>226.20</i> | <i>(329.13)</i> | <i>417.42</i> | <i>309.60</i> |
| Overall Fiscal Status | (15.38) | (102.43) | 1,778.29 | 2,140.75 |

Source: Analysis.

Note: Figures in parentheses indicates a deficit. Capital Income includes revenue account transfer for capital works.

Figure 6.2: Total Capital Income and Expenditure Trend

257. Capital income comprises of loans, grants and contribution in the form of initial deposit for water supply connections, sewer connections, revenue account transfer for capital works and sale proceeds of assets. Majority of the capital income is in the form of grants and loans.



The capital account has witnessed deficit except during FY 03-04, implying revenue account is being utilized for capital works. Fiscal status of revenue account and capital account status witnessed surplus during the entire assessment period excluding FY 00-01. The graph shows the trends of total income and expenditure in **Figure: 6.2**.

258. The following sections present detailed review of revenue and capital accounts, primarily aimed at assessing the Corporation fiscal status and providing a base for determining the ability of Corporation to sustain the planned investments.

3. Revenue Account

259. The revenue account comprises of two components, revenue income and revenue expenditure. Revenue income comprises of internal resources in the form of tax and non-tax items and external resources in the form of shared taxes/ transfers and revenue grants

from the State Government. Revenue expenditure comprises of expenditure incurred on establishments, operation & maintenance and debt servicing.

Figure 6.3: Source of Income (2000 to 2004)

260. *Revenue Income.* The revenue sources of Corporation can be broadly categorized as own sources, assigned revenues and grants. The source-wise income generated during the review period is presented in **Table 6.2**. The base and basis of each income source has been further elaborated in the following section. The revenue income of Coimbatore Corporation has increased from Rs. 5,930.77 Lakh in 2000-01 to Rs. 8,436.04 Lakh in 2003-04 – a Compound Annual Growth Rate (CAGR) of about 12.46 percent. The source of income is presented in **Figure: 6.3**.

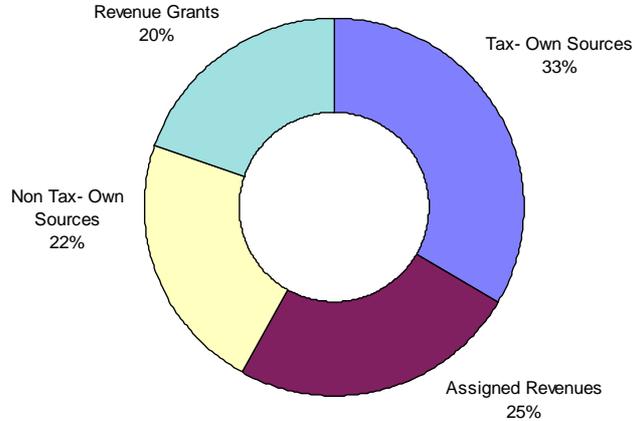


Table 6.2: Sources of Revenue Income

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|-----------------------|---------------------------|----------|----------|----------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Own Sources | | | | |
| Tax | 2,362.70 | 2,123.89 | 2,311.60 | 2,762.27 |
| Non Tax | 1,643.57 | 1,518.07 | 1,338.72 | 1,818.49 |
| Assigned Revenue | 1,205.23 | 1,476.39 | 2,472.77 | 2,214.17 |
| Revenue Grants | 719.27 | 1,184.16 | 2,408.01 | 1,641.11 |
| Total (excl. W&D A/C) | 5,930.77 | 6,302.51 | 8,531.10 | 8,436.04 |

Source: Analysis

261. Own-source income includes income from resource mobilization activities of Corporation in the form of taxes, income from Corporation properties and markets, building permit fee, trade licenses, income from fees and fines, etc. Own revenue sources are further classified as tax revenue and non-tax sources that are generated by various sections of the Corporation. The salient features of this revenue head are detailed below.

- (i) *Own Sources/Tax.* This item head comprises of income source primarily from property tax (General-purpose tax, Lighting tax, Scavenging tax and Education tax excluding Water and Drainage tax), professional tax and other taxes. The property tax is the largest revenue-generating item. Own sources of tax income are presented in **Table: 6.3**. Average income from own sources constituted 55.61 percent of the total revenue income during the review period and has increased at an average compounded annual growth rate of 4.57 percent. Tax sources contributed 33.34 percent of the revenue income and non-tax sources contribute 22.26 percent of the revenue income. Income from Corporation properties, markets and other remunerative assets witnessed inconsistent in collection performance during the assessment period.

Table 6.3: Own Sources of Revenue Income

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|----------------------------------|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Taxes | | | | |
| Property Tax (excl. W&D tax) | 2,146.83 | 1,962.21 | 2,087.81 | 2,510.66 |
| Profession Tax | 215.52 | 161.68 | 223.79 | 251.56 |
| Other Taxes | 0.35 | - | - | 0.05 |
| Non - Taxes | | | | |
| Income from ULB's. properties | 321.60 | 292.88 | 320.92 | 371.04 |
| License Income (Trade, etc.) | 77.58 | 112.34 | 112.02 | 154.14 |
| Income from Fees and Fines | 119.34 | 147.54 | 191.64 | 176.81 |
| Miscellaneous Income | 1,125.05 | 965.31 | 714.14 | 1,116.50 |
| Total (excl. W&D A/C) | 4,006.27 | 3,641.96 | 3,650.32 | 4,580.76 |

Source: Analysis

- *Property Tax:* This is the most important category of own source income to the Corporation. Coimbatore Corporation levies consolidated property tax as per **Table 6.4**, the tax varies from 7.50 percent of Annual Rental Value (ARV) to 18 percent of ARV. During the assessment period, the numbers of property tax assessments increased at an average growth rate of 4.41 percent per annum. Property tax income has increased at a CAGR of about 5.36 percent during the assessment period.

Table 6.4: Rate of Property Tax

| Area | ARV |
|-----------------------------|-------------------|
| | <i>Percentage</i> |
| Old Coimbatore | 18.00 |
| Old Singanallur | 15.00 |
| Old Ganapathy Panchayat | 8.50 |
| Old Telugupalayam Panchayat | 7.50 |
| Sanganoor Panchayat | 8.50 |
| Vilankurichi Panchayat | 8.50 |
| Coimbatore Rural | 8.50 |
| Kumarapalayam Panchayat | 10.50 |

Source: Analysis

- The property tax levied is 7.50 to 18.00 percent of the Annual Rental Value (ARV). The average property tax collection performance of the Corporation has increased during the assessment period. There are a total of 193,691 assessed properties in the Corporation (2004-05) and this has increased at an average growth rate of 4.41 during the review period. The average ARV per property during the FY 04 is Rs. 13,042 and the tax per property is Rs. 1,930.
 - *Professional Tax:* The Corporation also collects professional tax from all registered organizations, companies or firms, public or private, individuals and State & Central Government departments. Currently 25,101 assesses are registered with the Corporation. Based on the demand, the average tax per professional is about Rs. 1,153/- per annum.
- (ii) *Own Sources/Non Tax.* This item head comprises of income from Corporation properties, fees on Corporation services (building permission, etc.), income

from interest on investment and miscellaneous services. On an average, through the assessment period, own source/non tax income constitutes 22.26 percent of the total revenue income. Income from remunerative enterprises, income from fees and fines constitute the major revenue sources under this item head. Income through non-tax own sources of the Corporation has grown over the assessment period at a CAGR of about 3.43 percent.

- *Remunerative Enterprises:* Income from remunerative enterprises is the non-tax income in the form of rentals from assets like shopping complexes, market fee, parking fee and income from other real assets owned by the Corporation. Income from the remunerative assets of the Corporation contributed 4.56 percent of the revenue income during the assessment period and registered a CAGR of about 4.88 percent. The average revenue mobilized during the review period under this item head is Rs. 326.61 Lakh.
- (iii) Assigned Revenues. This item head comprises of income from Government of Tamil Nadu (GoTN)/State transfers of Corporation income collected by the state line department. Transfers are in the form of Corporation’s share of taxes levied and collected by GoTN from establishments/operations within the Corporation limits. Surcharge on transfer of immovable properties and entertainment tax, are the major items on which these revenues are realized by Corporation.

Table 6.5: Income from Assigned Revenue

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|--|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Entertainment Tax | 530.16 | 263.33 | 724.06 | 494.30 |
| Surcharge on Stamp Duty | 651.93 | 1,213.06 | 1,748.71 | 1,718.09 |
| Other Transfers | 23.14 | - | - | 1.78 |
| Total | 1,205.23 | 1,476.39 | 2,472.77 | 2,214.17 |
| <i>Share in total Revenue Income (%)</i> | <i>20.32</i> | <i>23.43</i> | <i>28.99</i> | <i>26.25</i> |
| <i>Growth (%)</i> | | <i>22.50</i> | <i>67.49</i> | <i>(10.46)</i> |

Income through assigned revenues contributes around 24.74 percent of revenue income and it is growing at an average compounded annual growth rate of 22.47 percent during the review period. It is observed (**Table 6.5**) that the inflow from this account head has been inconsistent due to delays in transfers and deductions at source towards Corporation debt repayment commitments and/ or other dues payable to GoTN.

- *Entertainment Tax:* The Commercial Tax (CT) Department collects entertainment tax from 38 cinema halls (with a total capacity of 35,754 seats) functioning within Corporation limit. The CT Department transfers 90 percent of the total tax collection to Corporation, and retains 10 percent towards management charges. Entertainment tax accounts for around 6.87 percent of total revenue income.
- *Stamp Duty:* Surcharge on stamp duty is another assigned revenue source, accounting for 17.78 percent of revenue income during the assessment period. It is levied in the form of a surcharge on stamp duty applicable on all properties registered or transferred within Corporation limits. The Registration Department collects and 90 percent of the collections are transferred to Corporation.

- (iv) Revenue Grants and Contribution. This item mainly comprises revenue grants and compensations from the State Government under various heads. The regular grants include the SFC grants and the others include aid grants, grants for services like roads, buildings, maternity and child welfare, public health, contributions for elementary and secondary schools and etc. Grants which are for specific purposes are ad-hoc in nature. In case of Coimbatore Corporation, revenue grants and contributions constitute about 19.65 percent of the total revenue income and have registered a high average annual growth rate of 31.65 percent. SFC Devolution is major item of grants, which is transferred as part SFC recommendation. The fluctuation in SFC grant is due to delay and deduction at source.

Table 6.6: Income from Revenue Grants

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|--|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| State Finance Commission Grant | 716.30 | 706.59 | 1,959.97 | 1,573.60 |
| Other Grants | 2.97 | 477.57 | 448.04 | 67.51 |
| Total | 719.27 | 1,184.16 | 2,408.01 | 1,641.11 |
| <i>Share in total Revenue Income (%)</i> | <i>12.13</i> | <i>18.79</i> | <i>28.23</i> | <i>19.45</i> |
| <i>Growth (%)</i> | | <i>64.63</i> | <i>103.35</i> | <i>(31.85)</i> |

Figure 6.4: Items of Revenue Expenditure (2000 to 2004)

262. Revenue Expenditure. Revenue expenditure of Corporation has been analyzed based on expenditure heads broadly classified under the following departments- General Administration and Tax collection, Public Works and Roads, Street Lighting, Public Health & Conservancy, Town Planning and Miscellaneous Items. Water supply and drainage revenue expenditure is analyzed separately and the same is presented in the following section. Revenue expenditure is further classified under Establishment, Operation & Maintenance and Debt Servicing.

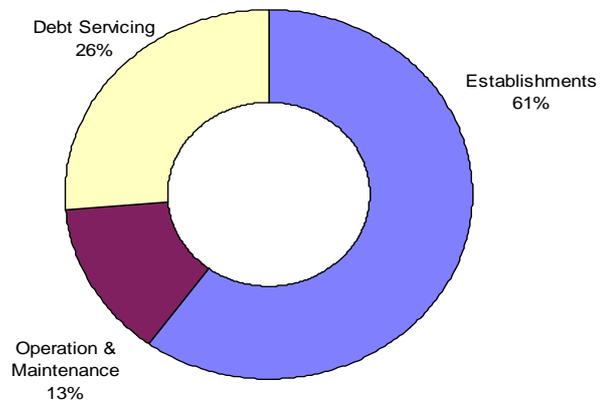


Table 6.7: Sector wise Revenue Expenditure

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|----------------------------------|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Establishment | 4,079.55 | 3,978.75 | 3,870.86 | 3,257.36 |
| Operation & Maintenance | 604.95 | 632.65 | 1,173.78 | 1,169.65 |
| Debt Servicing | 1,414.88 | 666.14 | 1,683.67 | 3,623.07 |
| Total (excl. W&D A/C) | 6,099.38 | 5,277.53 | 6,728.31 | 8,050.08 |
| <i>Growth (%)</i> | | <i>(13.47)</i> | <i>27.49</i> | <i>19.64</i> |

- (i) Establishment Expenditure. Establishment expenditure alone accounts for about 60 percent of revenue expenditure, excluding water supply and drainage account. About 54 percent of the total revenue income is utilized for establishments

excluding water supply and drainage staff salary and other related expenses. Around 26 percent of revenue expenditure was used for debt servicing. It includes water supply and drainage account debt servicing.

For the assessment period, revenue expenditure grew at an average rate of 9.69 percent; while growth in revenue income was 12.46 percent during the same period. This indicates that revenue and education fund of Corporation is in surplus

Further, while expenditure on establishment declined at annual average rate of 7.23 per cent, expenditure on O & M grew at an average rate of 24.58 percent per annum indicating that the Operations and maintenance expenditure need to be controlled. Public health, conservancy, and street lighting operation and maintenance have increased by 2.40 times during the financial year 2002-03 to 2003-04.

Figure 6.5: Sector Wise Salary Composition (2000 to 2004)

The following table presents sector /department wise salary expenditure during the assessment period. Since, the department wise establishment expenditure is not furnished in the account statement (consolidated figures only available in the 2000 series), we have referred the third SFC questionnaires for working out the department wise salary. Over 52 percent spent for conservancy staffs salary and around 11 percent for water supply. **Table: 6.8 & Figure: 6.5** shows the sector wise salary of 2000 - 2004

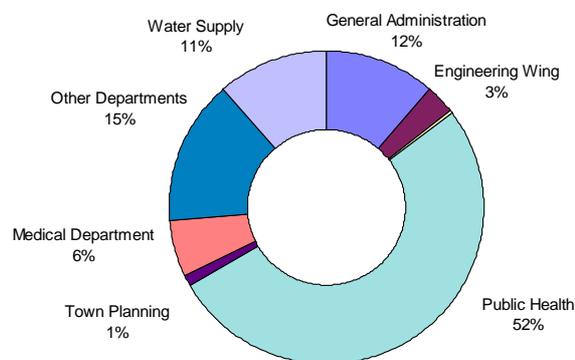


Table 6.8: Sector wise Salary

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|------------------------|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| General Administration | 164.64 | 197.71 | 196.95 | 172.48 |
| Accounts Department | 24.83 | 19.31 | 15.36 | 16.13 |
| Revenue Section | 135.56 | 94.00 | 157.91 | 41.36 |
| Engineering Wing | 41.38 | 90.06 | 86.90 | 84.54 |
| Street Lighting | 4.40 | 4.45 | 4.67 | 4.90 |
| Public Health | 1,450.22 | 1,423.04 | 1,438.58 | 1,383.68 |
| Town Planning | 21.05 | 35.33 | 26.86 | 29.82 |
| Medical Department | 127.44 | 120.98 | 167.08 | 170.43 |
| Other Departments | 323.17 | 341.87 | 427.24 | 397.82 |
| Water Supply | 297.39 | 293.59 | 294.63 | 300.68 |
| Total | 2,590.08 | 2,620.34 | 2,816.18 | 2,601.84 |
| <i>Growth (%)</i> | | <i>1.17%</i> | <i>7.47%</i> | <i>(7.61%)</i> |

Establishment expenditure of all sections (excluding water & drainage account) accounts for an average of 60 percent of revenue expenditure. Establishment expenditure of the Corporation has come down from 67 percent to 40 percent during

assessment period.

Though the growth rate of establishment expenses has fallen, the actual results of privatization efforts are yet to reflect on accounts. In the coming years, these expenses are expected to go down due to the reforms taken up by the Corporation. It is necessary that the Corporation goes ahead with such privatization initiatives so as to improve upon and allocate more amounts for the O & M and debt servicing.

- (ii) Operation & Maintenance. Operation and maintenance expenditure of all sections (excluding water supply and drainage O &M) together accounts for 13.47 percent of revenue expenditure and had increased at an average rate of 24.58 percent per annum.

Street lighting, public works and roads conservancy is the major expenditure items. O & M expenses are dominated by power charges for street lighting, while that for the upkeep of roads has been very minimal. Street lighting sector can be put for privatization and implement energy conservation measures to curtail the costs on repairs, replacements and power charges.

- (i) Debt Servicing. A review of the outstanding loan statement of Corporation, as on March 31, 2005, i.e., at the start of the FY 2004-05 reveals that the net outstanding debt liabilities of Corporation are at Rs. 6,588.81 Lakh. **Table 6.9** details out the agency wise outstanding loans.

Table 6.9: Out standing Loan Statement

| Item | Loan Amount | Outstanding |
|---------------------|---------------------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | |
| GoTN - Consolidated | 5,468.56 | 4,206.33 |
| TUFIDCO | 2,620.76 | 2,382.48 |
| Total | 8,089.32 | 6,588.81 |

The total amount of loans drawn by the Corporation till date is Rs. 8089.32 Lakh of which Rs. 5,468.56 Lakh from consolidated loan from Tamil Nadu government. Recently Coimbatore Corporation has taken 2,620.76 Lakh from TUFIDCO for strengthening of urban roads in the city. It needs mention that the ratio of outstanding loans to current demand of property tax is about 166 percent. Debt servicing accounted for around 22.62 percent of revenue expenditure (including all funds) during the review period and the DSR (as % of revenue income) is around 18.70 percent, which is well below the threshold level of 25 percent, as considered by financial institutions. The Corporation has to start to focus upon sustainable debt servicing after having cut down establishment costs to improve its credit rating and capability towards leveraging additional debts.

4. *Water Supply and Drainage Account*

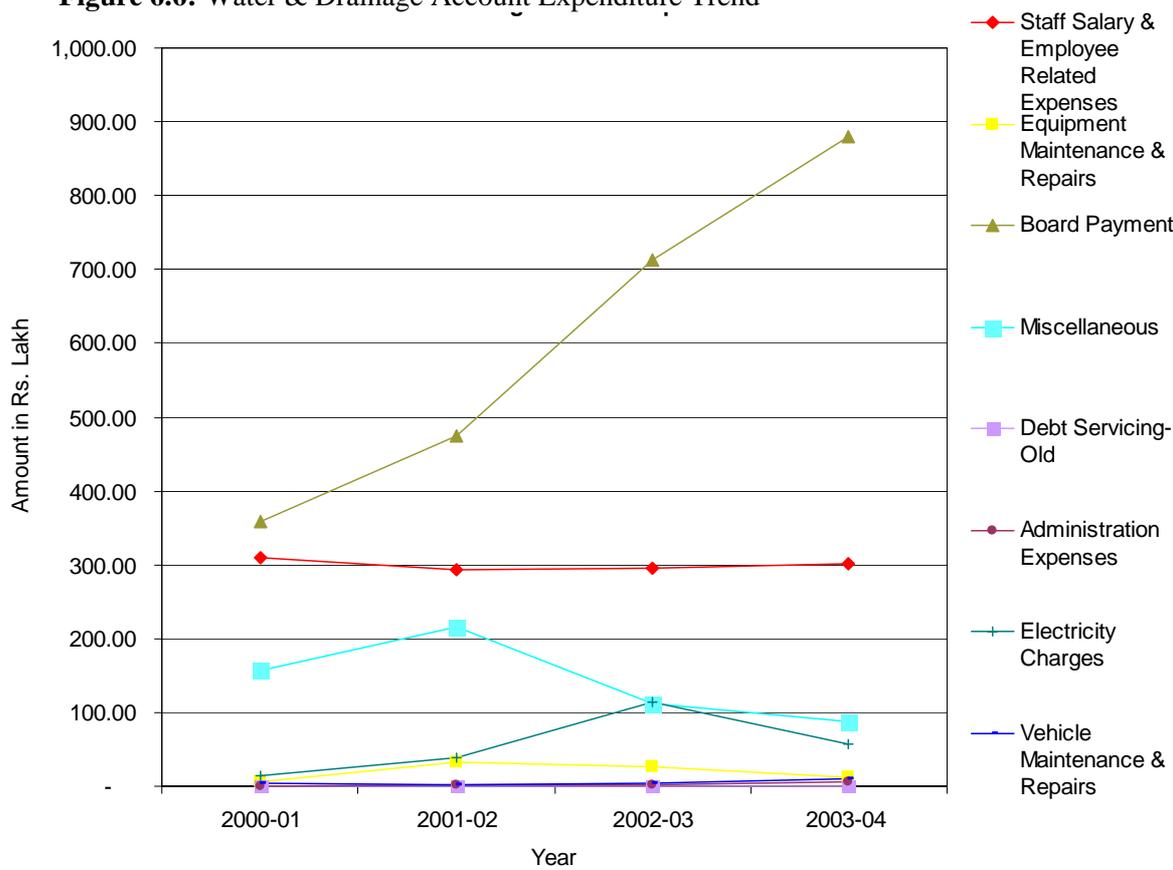
263. As mentioned earlier, local bodies in Tamilnadu maintain a separate water supply and drainage fund. Hence, to maintain the consistency and to assess the cost recovery aspect, the consultants have analyzed the water fund separately. The details are provided in the following table and the water supply and drainage revenue fund expenditure trend is plotted on a graph.

Table 6.10: Revenue Account Status of Water Supply and Drainage Fund

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|---------------------------------|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Revenue Income | | | | |
| Water & Drainage Tax | 1,297.29 | 1,185.72 | 1,261.61 | 1,517.14 |
| Water Charges | 700.02 | 622.46 | 756.92 | 944.23 |
| Water Supply & Sanitation Grant | - | - | - | - |
| Other Income | 34.80 | 43.89 | 34.99 | 93.67 |
| <i>Total</i> | <i>2,032.11</i> | <i>1,852.07</i> | <i>2,053.52</i> | <i>2,555.04</i> |
| Revenue Expenditure | | | | |
| Establishments | 310.19 | 294.64 | 295.82 | 306.16 |
| Electricity Charges | 15.02 | 39.37 | 114.62 | 56.57 |
| Board Payment | 358.29 | 475.00 | 711.88 | 879.11 |
| Vehicle Maintenance & Repairs | 5.01 | 2.89 | 3.34 | 9.51 |
| Equipment Maintenance & Repairs | 5.60 | 32.99 | 26.45 | 12.28 |
| Miscellaneous | 156.17 | 216.12 | 111.47 | 87.95 |
| <i>Total</i> | <i>850.28</i> | <i>1,061.01</i> | <i>1,263.58</i> | <i>1,351.58</i> |
| Surplus/Deficit | 1,181.83 | 791.06 | 789.94 | 1,203.46 |

264. Salaries of staff directly working in the water supply department are booked under this head, while salaries of other engineering staff performing administrative functions related to water supply are booked under the engineering section of general fund. Expenditures incurred under this account comprised of 52 percent for TWAD Board payment towards maintenance of water supply scheme, 28 percent for establishments. Since the bulk water supply is maintained by TWAD only internal, distribution system is being maintained by the corporation result in lesser amount (4.58 percent) spent for electricity charges.

Figure 6.6: Water & Drainage Account Expenditure Trend



- 265. Major share of water supply income is derived by way of water and drainage taxes, which account for about 62 percent of water supply & drainage income.
- 266. There are 93,718 water supply house service connections as of 2004-05 provided by the Corporation in the city.
- 267. The numbers of House Service Connections stand at just 48 percent of the PT assessments indicating the large numbers of unauthorized connections in the Corporation. The unauthorized connections and unassessed properties need to be brought under the user charges and Corporation tax gambit to effective cost recovery on the investments.

5. *Capital Account*

- 268. *Capital Income.* Capital income comprises of loans, grants and contributions. The detailed components of capital income are detailed in **Table 6.11**. An analysis of this account indicates that own sources and loans have contributed the maximum share of income under this account. While on an average 35 percent of the capital income is in the form of loans, around 37 percent of capital income from revenue account transfer to capital account and sale of scraps and products.

Table 6.11: Status of Capital Account - General

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|---|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Capital Income | | | | |
| Capital Loans | 1,075.00 | - | - | 2,620.76 |
| Capital Grants and Contribution | 147.01 | 487.41 | 292.59 | 390.82 |
| Own Sources | 419.67 | 343.58 | 673.77 | 418.65 |
| <i>Total (excl. W & D a/c)</i> | <i>1,641.68</i> | <i>830.99</i> | <i>966.36</i> | <i>3,430.23</i> |
| Capital Expenditure | | | | |
| General | 41.92 | 48.52 | 27.22 | 23.11 |
| Public Works and Roads | 1,651.49 | 1,449.26 | 1,004.64 | 1,395.53 |
| Street Lighting | 123.40 | 204.67 | 351.60 | 378.85 |
| Public Health & Conservancy | 4.75 | - | - | - |
| Education | 742.10 | 111.76 | 320.88 | - |
| Others | 8.96 | - | 221.15 | 506.72 |
| <i>Total</i> | <i>2,572.62</i> | <i>1,814.21</i> | <i>1,925.49</i> | <i>2,304.21</i> |
| Surplus/Deficits (excl. W & D a/c) | (930.94) | (983.22) | (959.13) | 1,126.02 |

269. *Capital Expenditure.* The majority of capital expenditure has been directed towards Public works, roads, and street lighting. This is due to fact TUFIDCO had funded most of the Corporations for roads during the assessment period. Hence, there is a sudden major jump in spending on roads.
270. Analysis of capital income and capital expenditure notes that the account was in deficit during the assessment period, indicating utilization of revenue fund for asset creation.
271. Water supply and drainage capital account status is detailed in **Table 6.12**. Capital income is mainly from water supply and sewerage connection charges, other than that capital grants were received. Capital account is deficit during entire review period, which indicates that revenue fund, is being utilized for asset creation.

Table 6.12: Status of Water Supply and Drainage Capital Account

| Item | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
|---------------------------------|---------------------------|-----------------|-----------------|-----------------|
| | <i>Amount in Rs. Lakh</i> | | | |
| Capital Income | | | | |
| Capital Loans | - | - | - | - |
| Capital Grants and Contribution | - | 36.14 | 114.14 | 123.69 |
| Own Sources | 309.37 | 191.06 | 258.96 | 274.04 |
| <i>Total</i> | <i>309.37</i> | <i>227.20</i> | <i>373.10</i> | <i>397.73</i> |
| Capital Expenditure | | | | |
| Water supply | 127.60 | 155.23 | 183.23 | 645.70 |
| Drainage & Sanitation | 505.63 | 678.09 | 462.60 | 636.32 |
| <i>Total</i> | <i>633.23</i> | <i>833.32</i> | <i>645.83</i> | <i>1,282.02</i> |
| Surplus/Deficits | (323.86) | (606.12) | (272.73) | (884.29) |

6. Key Financial Indicators and Issues

272. A set of key financial indicators has been derived using the financial data procured from the Corporation for the assessment period. **Table 6.13** present these indicators. These indicators are used to assess the Corporation performance with regards resource mobilization, fund utilization, financial performance and collection efficiencies.

Table 6.13: Key Financial Indicators

| | Indicators | Value | Unit |
|----------|--|--------|---------|
| A | <u>Resource Mobilization</u> | | |
| 1 | Per Capita Income | 993 | Rs. p.a |
| 2 | Sources of Funds | | |
| | a Share of Own Sources in Total Revenue Income (RI) | 65.50 | % |
| | b Share of Property Tax in Total Revenue Income | 37.54 | % |
| | c Share of Revenue Grants & Subsidies in Total RI | 15.31 | % |
| 3 | Growth in Revenue Income | 11.34 | % p.a |
| 4 | Growth in Own Sources of Revenue Income | 4.98 | % |
| 5 | Per Capita Own Income | 420 | Rs. P.a |
| B | <u>Fund Application</u> | | |
| 1 | Per Capita Expenditure | 809 | Rs. p.a |
| 2 | Uses of Funds | | |
| | a Share of Establishment Expenditure in Total RE | 55.16 | % |
| | b Share of O&M Expenditure in Total Revenue Expenditure | 22.23 | % |
| | c Share of Establishment Expenditure to Total RI | 43.49 | % |
| 3 | Growth in Establishment Expenditure | (4.91) | % |
| 4 | Growth in O&M Expenditure | 19.67 | % |
| 5 | Growth in Total Revenue Expenditure | 11.64 | % p.a |
| C | <u>Liability Management</u> | | |
| 1 | Per Capita Liability (2004-05 estimated) | | |
| | a Outstanding Debt per Capita | 647 | Rs. |
| | b Outstanding Non-Debt Liability per Capita | 186 | Rs. |
| | c Total Outstanding Liability per Capita | 833 | Rs. |
| 2 | As a Proportion of Property Tax Current Demand (2003-04 estimated) | | |
| | a Outstanding Debt as % of P.T Demand | 165.58 | % |
| | b Outstanding Non-Debt Liability as % of P.T Demand | 47.65 | % |
| | c Total Outstanding Liability as % of P.T Demand | 213.23 | % |
| 3 | As a Proportion of Property Tax Own Revenue Income (2003-04 estimated) | | |
| | a Outstanding Debt as % of Own Revenue Sources | 92.33 | % |
| | b O/s Non-Debt Liability as % of Own Revenue Sources | 26.57 | % |
| | c Total O/s Liability as % of Own Revenue Sources | 118.91 | % |
| 4 | Non-Debt Liability as % of Total Liability | 22.35 | % |

| | Indicators | Value | Unit |
|----------|---|--------------|--------------|
| 5 | Debt Servicing Ratio (D.S/ Revenue Income) | 18.70 | % |
| D | <u>Performance Indicators</u> | | |
| 1 | Operating Ratio | 0.82 | Ratio |
| 2 | Growth in Per Capita Own Income | 1.43 | % p.a |
| 3 | Growth in Per Capita Grant | 27.69 | % p.a |
| 4 | Growth in Per Capita Total Revenue Income | 8.00 | % p.a |
| 5 | Growth in Per Capita Establishment Expenditure | (9.52) | % p.a |
| 6 | Growth in Per Capita O&M Expenditure | 20.86 | % p.a |
| 7 | Growth in Per Capita Revenue Expenditure | 7.28 | % p.a |
| 8 | Capital Utilization Ratio | 4.45 | Ratio |
| E | <u>Efficiency Indicators</u> | | |
| 1 | Tax Collection Performance | | |
| | a Property Tax | 71 | % |
| | b Water Charges | 80 | % |
| | c Sewer Charges | 100 | % |
| | d Profession Tax | 47 | % |
| 2 | No. of P.T Assessments per Tax Collection Staff | 2018 | Nos. |
| 3 | Property Tax Demand per Assessment | 13042 | Rs. p.a |
| 4 | No. of Corporation Staff per 1000 Population | 2.66 | Nos. |
| 5 | Annual Revenue (Own Source) per Corporation Staff | 16.90 | Rs. Lakh p.a |
| 6 | Population per P.T Assessment | 5.55 | Persons |

Note: above given figures is average during the assessment period

273. *Resource Mobilization Indicators.* These indicators summarize the performance of the Corporation with regards sources of funds. Coimbatore Corporation derives about 65.50 percent of its revenue income from own sources, while grants account for just about 15.31 percent of the revenue income.
274. *Fund Application Indicators.* These indicators are a measure to ascertain the utilization from the Corporation fund. Around 55 percent of the revenue expenditure is spent on establishment heads, only about 22 percent for O & M of Corporation assets and services. Leaving 23 percent used for debt servicing. Establishment expenditure accounts for about 43 percent of the total revenue generated by the Corporation.
275. *Liability Management Indicators.* These indicators are a measure to ascertain the utilization from the Corporation fund regards to debt servicing. The ratio of debt servicing to revenue income is 18.70 percent during the assessment period. The per capita average outstanding debt works out to 647 rupees and per capita non-debt liability is only 186 rupees. Out standing debt to property, demand is around 166 percent and non-debt liability is 48 percent times the property tax demand for the current year.
276. *Overall Financial Performance Indicators.* These indicators are a measure to assess the overall financial performance of the Corporation with regards operational performance and effective growth in revenue income and expenditure. The average operating ratio during the assessment period was good at 0.82 and the capital utilization ratio was 4.45 indicating frequent utilization of revenue surplus for asset creation. The indicators of growth in per

capita income and expenditure item heads indicate the effective growth, giving a performance measure relative to the growing population. Coimbatore Corporation has demonstrated only 8.00 percent annual growth in per capita revenue income during the assessment period, while the per capita revenue expenditure has grown at 7.28 percent during the same period. This indicates that as population increase revenue fund will be in surplus, however there is a need for controlling operation and maintenance expenditure.

277. *Efficiency Indicators.* These indicators are essentially a measure to assess Corporation efficiency with regards revenue base coverage and realization. Coimbatore Corporation has maintained an average collection performance both with regards property tax and water charges (71 percent and 80 percent respectively). The average population per assessment at 5.55 indicates that still there is a scope for extending property tax coverage.
278. Key issues and conclusions are based on the review and assessment Corporation finances and discussions with relevant Corporation officials.
- (i) Maintenance and Reporting of Accounts. The State Government deducts debt due by the Urban Local Body and then transfers funds (SFC devolution) the Urban Local Body records do not capture such apportionment. Urban Local Bodies do not maintain department/sector wise salary expenditure as mentioned in the Urban Local Body Accounting Manual.
- (ii) Revenue Realization. Taxes and charges are major own sources of revenue income. Being more dynamic in nature and within the control of the Urban Local Body, these revenue incomes have potential to contribute more to the Corporation fund. Besides low tax rates and charges levied, the actual demand itself is not established. Key issues regarding the above comprise:
- Low water supply coverage witnessed there are chances of illegal or unauthorized connections in the city; and
 - High per capita Revenue expenditure observed during the FY 03-04. Financial transaction trends not commensurate with population growth trends.
- (iii) Fund Application. Key issues regarding application from the Corporation fund comprise:
- About 55 percent of the total expenditure is on establishment-related heads, leaving relatively lesser share for expenditure on operation and maintenance of services.

VII. URBAN BASIC SERVICES FOR POOR

279. Owing to rapid urbanization in and around the city, large influx of the migrants has been observed, which has resulted in formation of slums. The town presents a wide range of activities in various institutional and commercial sectors. Growth in such activities, possibilities of absorption in various service sectors, scope of employment in trade and business activities, hawking, retailing, carting etc. could have attracted rural poor to the town.
280. There are 195 slums in 23 major identified locations inside the corporation limits with a total population of around 352,219, which include BPL population as well. Around 33 percent of total population is residing in slums.

A. Infrastructure in Slums - Overview

281. The slum population in year 2003 was 342,694 which increased to 352,219 in the year 2006. The growth of slum population is low for the past three years which shows the annual decadal growth rate of 1 percent. The BPL and slums population is given in **Table 7.1**:

Table 7.1: Slum and BPL Population

| Year | Population (Nos) |
|------|-----------------------|
| | <i>Slum & BPL</i> |
| 2002 | 2,90,970 |
| 2003 | 3,42,694 |
| 2005 | 3,52,219 |

1. Water Supply

282. The approved slums are connected with water supply systems connected through public stand posts. There are about 392 public fountains spread across the slums, the maximum being at the East zone owing the higher slum population in the zone. It is noted that, one stand post serves almost 480 people. Localized bore wells serve as the major source of water supply for the slums. It is also noted during the discussion with the corporation officials that, about 5 percent of the existing water distribution network run across in the slums, however, evident records from the corporation is yet to be explored. The location of public fountains is presented in **Table 7.2**.

Table 7.2: Distribution of Public Fountains in Slums

| Zone | Public Fountains |
|--------------|------------------|
| | <i>Nos.</i> |
| South Zone | 128 |
| West Zone | 42 |
| East Zone | 188 |
| North Zone | 34 |
| Total | 392 |

2. *Sanitation*

283. There are about 1495 toilet seats in 147 toilet blocks spread across in the all the zones. About 212 male toilet seats and 194 female toilet seats in 46 toilet blocks are present in the east zone. It is noticed that, one toilet seat is shared among 125 persons, while the norm is only 50 persons. Open defecation is predominantly noticed along the tank bunds and the nallah's. It is also noted that, improper maintenance of the toilet blocks is a major cause of concern in most of the slums. The details of the number of toilet blocks, male and female toilet seats are presented in **Table 7.3**.

Table 7.3: Distribution of Toilets in Slums

| Zone | Toilets | Male seats | Female seats |
|--------------|----------------|-------------------|---------------------|
| | <i>Nos</i> | <i>Nos</i> | <i>Nos</i> |
| South Zone | 27 | 160 | 197 |
| West Zone | 21 | 141 | 162 |
| East Zone | 53 | 259 | 290 |
| North Zone | 46 | 212 | 194 |
| Total | 147 | 772 | 843 |

3. *Roads and Street lights*

284. The Corporation has laid Bituminous and Cement Concrete Roads in a majority of the slums. 34.3 km of road length is provided in slum localities, which work out to be about 0.18m per capita, which is very low when compared to the norms of 0.75 to 1.0m per capita. Discussion with the officials in the corporation explicated that, in the 34.3 km of road length, about 40 percent of the roads are cement concrete roads and 60 percent is bituminous surfaced road.
285. Almost all the roads are provided with street lights at 30m interval. However, it is noted that, there is still high incidence of non lit areas particularly in the North and East zones. Non working street lights are also a predominant issue.

4. *Storm Water Drains*

286. About 60 percent of the existing road length in the slums is covered with storm water drains. Stagnation of water during rains is very common in the low lying areas especially in the slums located in and around Ukkadam, Seeranayakan pallayam, etc. Disposal of waste in the drain is also a major reason for flooding. It can be noted from the Map 5.1 that, most of the slums are located along the natural drains and are potential blockages to existing natural cross drain network. Encroachments along the major channels and along the tank bunds is also a major issue of concern.

5. *Housing*

287. 80 percent of the houses in the slums are pucca in nature of which 60 percent houses have tiled roof and brick wall and 20 percent of the houses have concrete roof and brick wall. The location of the slum pockets are mapped and presented in **Map 7.1**.

288. Most of the slums are located in the government lands viz. Kuttai Itteri, Corporation, Poramboke, Natham lands. The location of the slums are mainly determined by the

- Proximity to the water bodies / natural drains / nallahs
- Nearness to work sites
- Adjacent to factory walls.

6 Primary Health

289. People’s health is a major determinant of their quality of life and ability to participate fully in the community. The Public Health department is headed by the City Health Officer to assist the Commissioner. The main activities of this department are Solid Waste Management, Maternity Homes and Dispensaries, and Public Health.

290. Maternity Homes and Dispensaries: The Corporation maintains 16 dispensaries (11 Allopathy, 2 Siddha and 3 Ayurvedha) and 2 maternity homes with 20 urban health posts. All the dispensaries and maternity homes are maintained by qualified doctors and other para- medical staff using modern equipment and diagnostic techniques.

291. In addition to these corporation maintained hospitals, there are about 78 private hospitals, details of which is presented in **Table 7.4**

Table 7.4: Public Health Facilities in Coimbatore

| Unit | No |
|---|----|
| Hospitals maintained by Corporation | 22 |
| Urban Health Post | 20 |
| Maternity (Bed strength below 25) | 2 |
| Private | 78 |
| Hospitals above 100 beds | 10 |
| Hospitals between 76-100 beds | 1 |
| Hospitals between 1-75 beds | 5 |
| Hospitals between 26 – 50 beds | 9 |
| Hospitals with below 25 beds above 100 beds | 53 |
| Corporation Dispensaries | 16 |
| Allopathy Dispensaries | 11 |
| Ayurvedic dispensaries | 3 |
| Siddha dispensaries | 2 |

7 Education

292. *Schools:* The Corporation maintains 98 schools with a total teaching strength of 1318 and student strength of 39360. Of the 98 schools run by the Corporation, 60 are Elementary schools, 13 Higher Elementary or Middle schools, 11 Higher Secondary schools, and one special school for the deaf and dumb. The education facilities is listed in **Table 7.5**

Table 7.5: Education - Facilities

| Type of Schools | No of Schools |
|----------------------------------|---------------|
| Elementary Schools | 60 |
| Higher Elementary/ Middle School | 13 |
| High Schools | 13 |
| Higher Secondary Schools | 11 |
| Special Schools for Deaf & Dumb | 1 |
| Total | 98 |

293. *Noon Meal Centers:* To each school in the Corporation, there is a Noon -Meal center attached. At present, there are 91 noon-meal centers. 20375 students are enrolled in these noon-meal centers. The entire staff in these centers comprises 91 organizers, cooks and assistants.
294. *Income Generation Training Centers:* The Corporation maintains 4 career guidance clubs to provide career guidance to students. High ranked students in the higher secondary, the SSLC examinations are given Gold Medals, and toppers in other examinations are awarded cash prizes. Select higher secondary and high schools offer students excellent co-curricular facilities such as the NCC, NSS, Scouts, Guides and Red-Cross societies. Coaching classes for entrance examination to professional courses are conducted every year. All higher secondary schools are provided with good infrastructure and lab facilities. Merit certificates are awarded to those teachers, who have served more than 30 years in corporation schools. The State Government, however, takes care of the pension compensation due to the teachers of the Corporation School.

8 Service Indicators and Issues

Table 7.6 Slums – Service Indicators

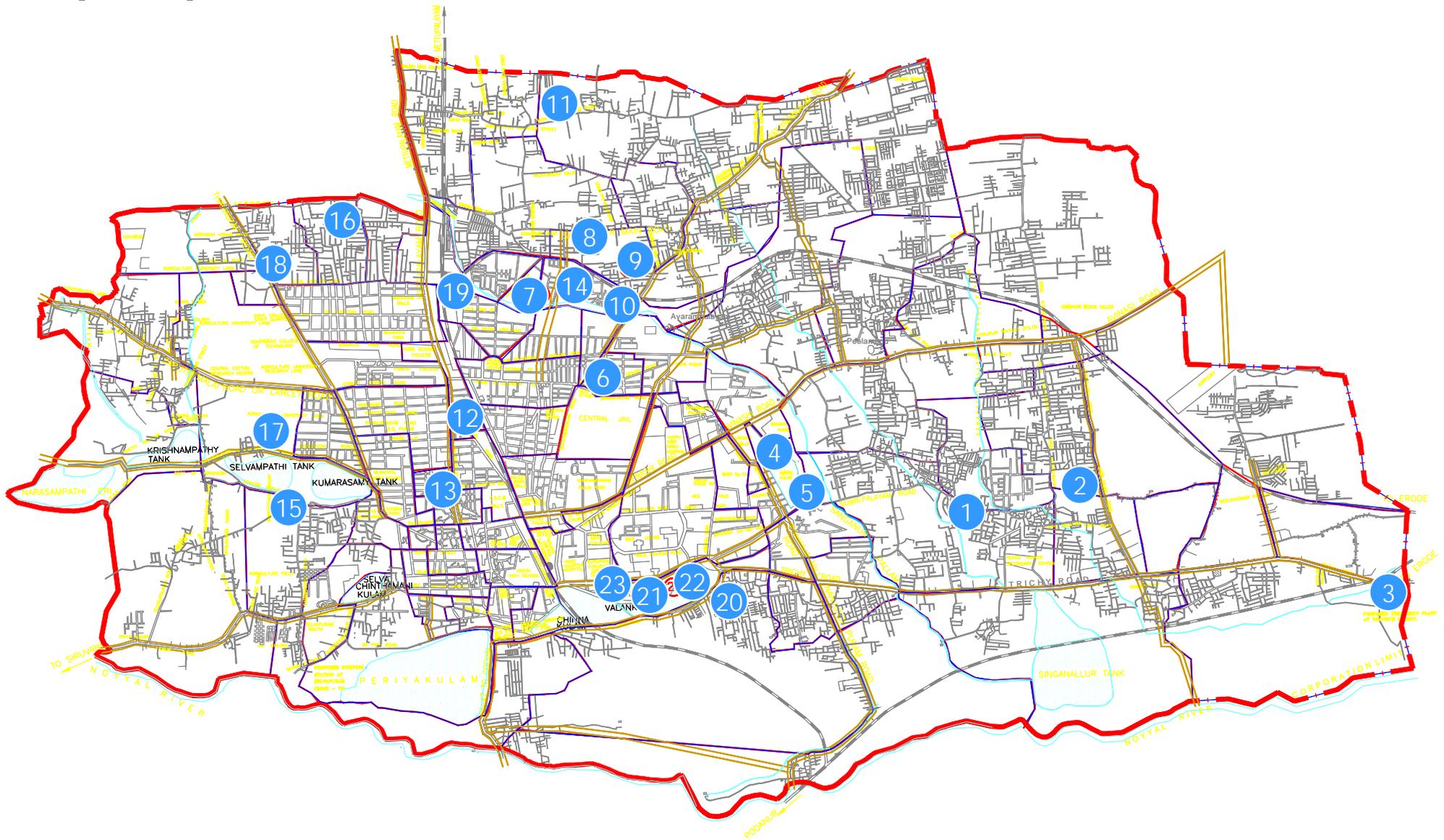
| Indicator | Current Situation | Benchmark |
|--|-------------------|-------------|
| Slum population as % to Total Town Population | 20% | < 10.0 % |
| Household size in Slums | 5 persons | 4 persons |
| Distribution Network Reach (against Road length in slums) in Slums | 5 % | 100.0 % |
| Slum Population per Public Stand Post | 480 Persons | 100 Persons |
| Slum Population per Seat of Public Convenience/ ISP Complex | 125 Persons | 60 Persons |

Source: Analysis

295. Issues.

- Less than 5% of the households have piped water supply
- Open defecation is common along the tank bunds and nallah's
- Improper maintenance of the existing toilet blocks
- Cross linking drains encroached in most of the slums
- Encroachments along the Major channels
- Disposal of waste into the drain
- Non lit / Low Lit areas mainly in the slums in North and East Zones
- High Incidence of Non Working Street Lights
- Lack of co-ordination among various programs aimed at the urban poor leads to inefficient use of resources. In the absence of a city-wide approach, each program pursues its own targets

Map 7.1: Slum pockets in Coimbatore



B. Poverty Alleviation and Community Development

1. Policies, Targets and Programs

296. Slum improvement programs indicate that by improving basic infrastructure and access to municipal services, there is a significant impact on the quality of life of slum residents, both poor and non-poor. To alleviate the problems of slum dwellers and to reduce urban poverty, a set of programs are initiated and are being implemented by the corporation with assistance from state and central government. Two major slum improvement programs are being implemented in Coimbatore viz., Swarna Jayanti Shehri Rojgar Yojna (SJSRY) and National Slum Development Program (NSDP) apart from the other programs like the Integrated Sanitation Program (ISP).
297. The SJSRY is planned to provide employment to the urban poor by helping to provide self-employment or provisions for wage employment. It is funded on a 75% and 25% basis between Central and State Governments. The Target groups will be a minimum of 30% women beneficiaries. The proportion of the SC and ST will be the same proportion as in total population of the town. 3 percent is reserved for handicaps.
298. A task force has been formed for the implementation of the Swarna Jayanti Shehri Rojgar Yojna in Coimbatore town. As part of this program, the following schemes are implemented for urban poverty alleviation over the past five years.
299. SJSRY program consists of: -
- Urban wage employment scheme
 - Urban self employment Programs
 - Urban Skill Training
 - Development of Women and Children in Urban Areas (DWCUA)
 - Thrift & Credit Societies (TCS)
300. *National Slum Development Program (NSDP)*: Under this program, the funding of the works is shared between the (Centre + State-50 percent, Corporation-50 percent). The works are finalized by the decision of the Council. They are inspected by the Regional Directorate of Municipal Administration (RDMA) through the Regional Engineer. This program is primarily aimed at improving or upgrading the existing slum environment. This is a central government sponsored slum development program and has three main components:
- Construction (Infrastructure);
 - Welfare (Immunization, education, etc.); and
 - Shelter Up-gradation (Toilets and individual water connections).
301. The slums given importance are of 2 types, permanent and non-permanent. In any case, they are designated as slums by the slum clearance board. For permanent slums, they are to be identified by the quality of roads and drainage. Special priority has to be given to the following works

- Improvement of drinking water Supply system
- Laying/Relaying of roads
- Provision of Street Lights
- Drainage facilities
- Improvement and new Public Conveniences with water Supply

302. *Urban Self-Employment Program (USEP)*: This is one of the main components of SJSRY. This program is decided by the selection of beneficiaries who are finalized by the Task force based on the recommendations of the Community Structures and the UPE Cell. In these programs, the Council is not involved because of the non-involvement of the Urban Local Body funds. The sharing pattern between Center and State governments is in the ratio of 75:25. This is only for the subsidy money, which will be 15 percent of the project cost. The beneficiary will spend 5 percent as margin money. The banks then contribute the rest of the project cost and thus have a strong say in the selection of beneficiaries.

303. To avoid clash with PMRY scheme of District Industries Center, the minimum eligibility for this scheme is confined to below Poverty Line beneficiaries who have got education up to 9th standard with emphasis given on the basis of non-economic criteria. The maximum unit cost will be Rs 50,000 and the maximum allowable subsidy will be 15 percent of the cost of the project, subject to a limit of Rs 7,500.

304. In most of the selected cases, the banks take an upper hand in the decisions, based on the viability of the project and the experience of the claimant. There seems to be no strict reservations as per the Program Target Groups. The bankers finalize most of the decisions after a visit to the site, based on the list forwarded by the rest of the Task Force. The Task Force of the Urban Poverty Eradication Cell consists of the

- Project Officer of the UPE- the Commissioner
- The Chairman of the Council
- Town Planning Officer-the Nodal Officer
- Community Organizer
- District Employment Officer
- Bank Representatives (usually remain absent during meeting proceedings. Final decision only after thorough investigation)

305. *Development of Women and Children in Urban Areas (DWCUA)*:- This program is basically aimed at supporting women and children through self-employment schemes on individual and group basis for activities like cottage industries, upgrading petty businesses etc. The funds for this project are shared between center and state governments in the ratio 75:25. This accounts for 45 percent of the total funds and the rest 5 percent comes from the beneficiary. There is no funding from corporation. The rest 50 percent is contributed by the bank and hence justifies their upper hand in taking the decisions. The beneficiaries are again selected by the task force of the urban poverty eradication (UPE) cell which comprises of commissioner-project officer, the municipal chairman, Town Planning Officer (TPO) - nodal officer, community organizer (CO), and bank representatives. The UPE cell receives inputs from the CDS, which in turn depends on the structures below. Special emphasis is to be given to areas for water supply and sanitation facilities including drainage facilities. The SJSRY community structures of Community Development Societies, Neighbourhood Committees, Neighbourhood Groups, etc need to forward the

final requirements to the Council for decision. The funds allocated have to be decided as per slum population. As on this date, 32 groups are formed through this scheme. Among this 16 groups were sanctioned a sum of Rs.13.62 as loan and 6.81 lakhs as subsidy. Total members of 170 Women have been benefited.

306. Indicators: - The 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 corporation to check its performance annually/ periodically and set targets for itself to be achieved in the next financial year. This will also aid in preparation of the Annual CDP Progress Reports by the corporation. The details of performance indicators are furnished in Table 5.21
307. *Integrated Sanitation Program (ISP)*: The Integrated Sanitary Program is a World Bank funded program under implementation through the Project Management Unit of Tamil Nadu Urban Development Project (TNUDP) and in coordination with the RDMA.
308. The program is based on demand driven community participation. Under this program, the recipient community is made aware of various environmental and sanitation aspects. For successful implementation, the program is coordinated at the local level through the community organizers (COs) of the SJSRY scheme. The program is generally funded by way of grants. Generally, of the identified amount 80% is provided by TNUDP-II as grant
309. Generally, of the identified amount 80% is provided by TNUDP-II as grant. However, in case of special and selection grade municipalities, while 50% of the amount is provided as grant by TNUDP-II, the remaining 50% is generated by the Urban Local Body through 32% fund allocation from Sanitation component of VAMBAY scheme and the remaining 18% from its own funds. In case of Grade I, II municipalities, and the entire 100% of the identified amount for the construction of these complexes is given as grant.
310. The whole program is planned towards community empowerment and sanitation at the Sanitation Complex itself. It is at this place where the community meets as a social group. The major components of the program include:
311. Identification of the recipient Community of BPL Population (mostly in slums). This process is usually decided by the municipal council and does not involve the Community Development Structures (CDS) of the Town.
312. Provision of an Integrated Complex with Toilet, Bathing, Washing and Meeting Room facilities with special provision of sanitation facilities for children. 16 toilets (10 major +6 minor) are provided for the community.
313. Separate facilities for bathing of 10 units are also provided. A separate platform is also provided for washing clothes as well. Each unit of ISP is constructed at a cost of about Rs. 10 lakhs.
314. Awareness programs consisting of information, education and communication activities are also conducted within the same complex to create a strong awareness on the related issues of health, sanitation and environment. These are conducted as discussions with the leaders of community organizations, specialists from the associated fields of health,

education in the form of camps etc. These activities are for information dissemination and education. The communication aspect consists of both formal as well as informal type, where formal events are organized by the communities themselves to propagate their experiences.

315. *Issues:* Very often the sanitation facilities in the slums are poor with lack of proper drainage and silt & garbage found choking in the drains wherever present. Such conditions can easily make many of these locations highly prone to water borne diseases like malaria, hepatitis B, typhoid, gastro enteritis etc. Some of the issues noted in the location of these complexes are the availability of open land near to these complexes. This open land option still paves way for the under use of these ISP complexes. Since the program is still in the inception stage in the corporation location of such complexes should be carefully judged. The performance indicators of slums are tabulated in **Table 7.5**.

VIII. INFRASTRUCTURE DEVELOPMENT AND SERVICE PROVISION

A. Rationale, Need and Demand

316. Considering the current deficits and the future requirements, the following strategies and action plan are suggested.
317. Infrastructure assessment of the town indicates inadequate service levels, for present scenario, which will further enhance given the future growth;
- Per Capita supply works out to be a low 80 lpcd, for summer season based on Population figures for 2004, which is not ensured on continual basis. Due to this, supply position within the Corporation is unpredictable and ranges from daily to once in three days, depending on the season; water connection coverage as a proportion of Property Tax Assessments is a low 51 percent;
 - Detailed Project Report for Under Ground Drainage coverage of unsewered and to refurbish the existing under ground drainage is complete, although severe capacity constraint in sewage treatment is noticed which need to be addressed on priority basis; sewer connection coverage as a proportion of Property Tax Assessment is a minimal 35 percent, although the sewage generation is very high thus indicating a possibility of high numbers of illegal connections;
 - Urban Local Body lacks scientific municipal solid waste treatment and disposal system catering to the waste collected, Inefficient fleet management is also a major cause of concern;
 - Surfaced roads within the Urban Local Body is approximately 94.2 percent; missing links, network deficiency and lack of traffic management systems causes congestion within the Urban Local Body area and reduces the Carrying Capacity of the roads; Low per capita road (1.5 m/capita) is also a major point of concern
 - Drainage network of the town covers 93 percent of the Road Length; non maintenance of the existing drains and silting in the water bodies have resulted as the major causes of flooding and water logging.

Approach and design criteria: -

- (i) Approach and Design Criteria. The Urban Local Body should increase the level of coverage of all facilities, to meet the service norms based on State Norms, CPHEEO Norms, UDPMI Norms or other applicable criteria. Based on this, considering the current deficits and the future requirements for the Urban Local Body, strategies and action plan are suggested.
- (ii) Component Selection Criteria. The total investment in the Urban Local Body depends on several parameters like, the level of current basic needs, the town's affordability, and the assessed implementation capacity of the town or its agencies. Overall, project component selection is majorly influenced by

affordability and implementation capacity. In the interest of integrated town development, another criterion considered in project component selection has been to ensure inter-sector linkages and optimization. For instance, water supply, sanitation and sewerage have been seen as a composite sector and not in isolation from each other.

- (iii) Least Cost Solutions and Component Selection. In formulating project components, the preferred option was developed based on least cost options, taking into account meeting service delivery targets, and whole-life costs, including considerations on achievable operation and maintenance arrangements, given available resources in terms of skills and facilities. Based on the considerations and screening referred to in the preceding section, priority components were selected and scrutinized and their financial, social and environmental impacts assessed to verify acceptability.

1. Water Supply

318. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.1.**

Table 8.1: Goals and Service Outcomes – Water Supply

| S.No | Goal | 2011 | 2016 | 2026 |
|------|---|-------------|-------------|-------------|
| 1 | Network coverage for general households | 90% | 100% | 100% |
| 2 | Network cover for Slum households | 90% | 95% | 100% |
| 3 | Per Capita Supply | 135 lpcd | 135 lpcd | |
| 4 | 24 / 7 Water Supply | | | Entire City |
| 5 | Quality of Water | Safe & Good | Safe & Good | Safe & Good |
| 6 | Non Revenue Water | 20% | 15% | 15% |

319. Considering the current deficits and the future requirements for water supply, the strategies and action plan are suggested. For the provision of water supply the Urban Local Body should facilitate creation of capital assets to meet the future requirements.
320. *Design Supply.* The rate of water supply of 110 lpcd at consumer end is assumed for working out the water demand of Coimbatore.
321. *System Losses.* The following system losses are considered for determining the capacity of the system. The losses in water supply system are listed in **Table 8.2.**

Table 8.2: Losses in Water Supply System

| Losses | Value |
|---|-------|
| Loss of water in the distribution system | 15 % |
| Loss of water in the clear water transmission | 2 % |
| Loss of water in the water treatment process | 4 % |
| Loss of water in the raw water transmission | 2 % |

322. *Service Storage.* Service reservoir provides a buffer between inflow from the source at fixed *pumping* rate and outflow to the distribution network of varying rate, depending on

the drawl by the consumers during the supply hours. Assuming that the supply to the consumers will be in two shifts (four hours in the morning and four hours in the evening) per day, the service storage required will be equal to one third of the daily demand.

323. *Water Demand.* The Corporation should increase the supply levels in terms of both coverage, to achieve an average gross supply of 110 lpcd and to cater to 100 percent population. Assuming that leak detection and mitigation are carried out as part of the plan, the unaccounted for water is expected to reduce to a maximum of 20 percent of the total supply. The average net supply available to the city population is expected to be 110 lpcd. The water demand and distribution requirement for the projected population is presented in the **Table 8.3**.

Table 8.3: Requirement until 2026 in Water Supply Sector

| Description | Unit | Gaps Up To 2026 |
|--|------|-----------------|
| Daily Per Capita Supply (Source development till 2026) | MLD | 52 |
| Feeder mains and Transmission Mains | Km | 40 |
| Roads Covered with New Distribution Network | Km | 373 |
| Rehabilitation for existing Network | Km | 171 |
| Treatment capacity (2026) | ML | 49 |

Source: Analysis

324. *Comparison.* The projected demand for 2026 is compared with the optimum supply available from the existing system, to verify the adequacy of the existing system and need to augment the capacity of certain components. The total demand at the source for a supply of 110 lpcd is about 150 MLD indicating a deficit of 22% for the projected population for 2011. Considering the increase in population, the total demand at source in 2011 and 2026 is estimated as 150 MLD and 190 MLD respectively. This is considered after assuming that the system losses would be reduced to 20 percent from the current 30 percent.
325. Considering the above requirements, capital investments in water supply have been planned focusing upon: Source at Pillur has been identified and has been proposed for development as Pillur Phase II to augment the extra requirement of the city
326. Increase in the source development, feeder main laying and rehabilitation of existing distribution network and laying of new distribution network facilities to meet growing demand.
327. *Sector Approach.* Considering the above requirements, capital investments in water supply have to be planned to address issues focusing upon:
- Increase in the storage and distribution of existing facilities to meet the growing demand;
 - Rehabilitation of existing facilities to avoid the higher costs of deferred maintenance;
328. *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).

329. *Asset Management Plan:* To address the condition assessment and the performance of the water supply assets, it is recommended that an asset management plan be prepared for the assets of water supply in Coimbatore city.
330. *Unaccounted for Water:* Coimbatore Corporation shall extend the current leak detection studies to ascertain the volume of unaccounted for water. This would help corporation realize more water which can be ploughed back into the system.
331. *Water Management Plan.* Adoption of comprehensive strategy for Water Management, through leak detection, checking of unaccounted-for water and strategy for use of recycled water for non-potable use, based on a pilot study for the ULB.
332. *Mapping & GIS:* To address the issue of system rehabilitation, mapping and establishing a GIS system is pertinent to detail out system location, characteristics, age & condition. This would enable identifying dilapidated sections of network and those require replacement.
333. *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.
334. *Performance Monitoring:* It is important to monitor certain key indicators to assess the performance of the system and also to ensure sustainability of the operations. Study on the feasibility of introducing water supply 24 / 7 can be conducted on a pilot basis.
335. *Institutional Strengthening and Capacity Building.* Recruitment of trained engineering personnel for management of waterworks is an important issue confronting the urban local body 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 Urban Local Body. Such training facilities are available along with training manuals at the TWAD Board. The availability of various technical institutes like Coimbatore Institute of Technology (CIT), Government College of Technology (GCT) etc within the vicinity should hence reduce the burden on the corporation which can be consulted for training sessions.
336. *Strategy and Time Frame:* The strategies to achieve the above mentioned goals and the proposed time frame are presented in **Table 8.4**.

Table 8.4: Strategies and Time Frame – Water Supply

| S.No | Strategy | 2006 | 2007 | 2008 | 2009 | 2010 | 2012 | 2013 |
|------|---|------|------|------|------|------|------|------|
| 1 | Asset Management Plan | █ | | | | | | |
| 2 | Rehabilitation of Old network system | █ | | | | | | |
| 3 | Leak detection plan | █ | | | | | | |
| 4 | Mapping & GIS | █ | | | | | | |
| 5 | Piloting 24/7 water supply | | █ | | | | | |
| 6 | Augmentation of Pillur II* | | █ | | | | | |
| 7 | Network coverage for general households | | | █ | | | | |
| 8 | Network Converge for Slum Households | | | █ | | | | |

* Detailed Project Report (DPR) already prepared

2. Sewerage and Sanitation

337. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.5**.

Table 8.5: Goals and Service Outcomes - Sewerage

| S.No | Goal | 2011 | 2016 | 2026 |
|------|--------------------------------------|------|------|------|
| 1 | Network cover for general households | 90% | 100% | 100% |
| 2 | Network cover for Slum households | 60% | 100% | 100% |
| 3 | Treatment and Disposal | 90% | 100% | 100% |
| 4 | Recycling and Reuse | 20% | 40% | 50% |

338. As mentioned in Chapter 5, only 54 percent of the population is covered with sewerage network. With treatment capacities comprising only 38 percent of the generated sewage of 380 MLD, the remaining sewage is discharged into River Noyyal and water bodies resulting in polluting the water bodies. The poor and slum dwellers lack safe sanitation facilities and hence are prone to health related diseases. An enormous shortfall is noticed in the treatment as well as the coverage of the network. To enhance the coverage of safe sanitation facilities, the following strategies are recommended.
339. The Urban Local Body should increase the Service levels in terms of coverage, to achieve gross population coverage of 100 percent through protected Sewerage and Sanitation System. Assuming that the Collection system is extended to more than 90 percent of the Road Length, it estimated that approximately 90 percent of the population will be covered under safe sewer system.
340. The total Sewage Generation in 2021 for a water supply of 110 lpcd is approximately 173 MLD indicating a Treatment Capacity Constraint of about 120 MLD for year 2021 population. Since, the Water Supply availability at source is ample, the sewage generation has been considered at 135 lpcd against the requirements and the demand for future is assessed. The total sewage generation for 2026 is estimated as 150 MLD. The present treatment arrangement is waste stabilization pond, given the availability of land and low operation and maintenance costs, however given the high amount of sewage generation further option for Activated Sludge Process can be explored. Environmental Screening and Social Assessment of the Project Components, in case of Sewage Capacity Augmentation, can be carried out as separate Sub-Project and a Pilot Study for the Urban Local Body. The details of sewage generation for future is presented in **Table 8.6**.

Table 8.6 Requirement until 2026 in Sewerage and Sanitation

| Year | Population | Sewerage Generation |
|------|------------|---------------------|
| | <i>No.</i> | <i>MLD</i> |
| 2001 | 930,882 | 100.54 |
| 2006 | 1,009,677 | 109.05 |
| 2011 | 1,091,759 | 117.91 |
| 2016 | 1,182,341 | 127.69 |
| 2021 | 1,288,387 | 139.15 |
| 2026 | 1,397,442 | 150.92 |

341. The sewage generation is calculated based on 135 lpcd water supply and wastewater generation at 80 per cent of total supply. Hence, for 2021 the sewage generation is 139.15 MLD and for 2026 the sewage generation is 150.92 MLD.
342. Coverage of Low Income Areas. Currently, a majority of the low income areas are devoid of safe sanitation facilities. Though the Slum Improvement Programs have created infrastructure in the form of public conveniences, the operation and maintenance of these facilities is not satisfactory and hence could not be sustainable. Hence, it is recommended that Low Cost Sanitation Projects be taken up under the ISP program for the poor and the slum dwellers. The O & M of the ISP units is to be given to the local communities to ensure their sustainability. Since new programs are all envisaged towards community participation in O & M, such measures will strengthen the institutional setup.
343. *Demand of Sewerage System.* The capacity of sewerage system required for the town is worked out in the following **Table 8.7**

Table 8.7: Requirement until 2026 in Sewerage and Sanitation

| Description | Unit | Gaps Up To 2026 |
|------------------------------|-------------|-----------------|
| Under Ground Drainage | | |
| STP Capacity | MLD | 175 |
| Design Flow | MLD | 102 |
| Public Conveniences | Units (ISP) | 1655 |

Source: Analysis

344. *Adequacy:* The proposed sewer network in the DPR (Detailed Project report for new sewerage system in the unsewered areas) can serve the town upto 2030 without any augmentation of the system components. However, there is a small deficit of sewer network of about 15 km for 2026. Hence, the investment is proposed for the additional sewer network required for the year 2026.
345. Considering the above requirements, capital investments in Underground Drainage System have to be planned to address issues focusing upon;
- Augmentation additional sewer network for 2026
 - Studying options of wastewater recycling and reuse and identifying market for the same
 - Enhancement of Revenue through maximization of Service Connections.
346. *Operation & Maintenance Plan:* The O & M Plan shall include both system maintenance, on a regular basis, and an emergency maintenance plan. System Maintenance shall include routine maintenance, corrective maintenance & preventive maintenance. In addition to preventive maintenance with the existing staff, unbundling of O&M operations shall be adopted to ensure private sector participation.
347. Corporation can privatize 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.

348. *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
349. *Asset Management Plan*. To address the condition assessment and the performance of the sewerage assets, it is recommended that an asset management plan, in future, be prepared for the assets of UGD assets in Coimbatore town.
350. *Tariff Revision*. The tariff structure shall be revised from time to time to enable cost recovery and to service the additional debt from the capital investments.
351. *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 shall be transferred to the ULB for maintenance of assets, and as well of more important is to keep them technically updated. It is necessary that periodic training be imparted to the operations staff of the ULB. Such training facilities are available along with training manuals at the TWAD Board.
352. Treatment capacity augmentation is proposed in the DPR, which is yet to be sanctioned and implemented. The present treatment arrangement is Waste Stabilization Pond, given the availability of land and low operation and maintenance costs, however given the high amount of sewage generation further option for Activated Sludge Process can be explored, as indicated in discussions with officials and Site Visit. Hence, it is proposed to use ASP Technology in place of Multi Waste Stabilization Pond technology, as proposed in NRCP. A comparison of various treatment technologies, their efficiencies with respect to cost is explained in **Table 8.8**. Environmental Screening and Social Assessment of the Project Components, in case of Sewage Capacity Augmentation, can be carried out as separate Sub-Project and a Pilot Study for the ULB.
353. *Strategy and Time Frame*: The strategies to achieve the abovementioned goals and the proposed time frame is presented in **Table 8.8**

Table 8.8: Strategies and Time Frame – Sewerage & Sanitation

| S.No | Strategy | 2006 | 2007 | 2008 | 2009 | 2010 | 2012 | 2013 |
|------|---------------------------------------|------|------|------|------|------|------|------|
| 1 | Asset Management Plan | ■ | | | | | | |
| 2 | Rehabilitation of Old network system* | ■ | | | | | | |
| 3 | UGD for the unsewered areas* | ■ | | | | | | |
| 4 | Mapping & GIS | | ■ | | | | | |
| 5 | Network Converge for Slum Households | | ■ | | | | | |
| 6 | Recycle & Reuse | | | ■ | | | | |

*Detailed Project Report already prepared

Table 8.9: Comparison of Various Sewage Treatment Technologies

| Parameter | Units | TF | ASP | AL+MP | OD | Single Cell WSP | Multiple Cell WSP | UASP+MP |
|-------------------------|--------------|-------------|------------|------------|------------|--------------------|--------------------|--------------|
| Detention Time | | 1 Day | 4 to 6 hr | 3 to 5 hr | 1 Day | 20 to 30 Days | 6 to 10 Days | 2 to 4 Days |
| Land Required | Ha/MLD | 0.3 | 0.25 | 0.5 | 0.3 | 2 to 3 | 1 to 2 | 0.6 to 1 |
| Method of Oxygen Supply | | Atmospheric | Mechanical | Mechanical | Mechanical | Biological (Algae) | Biological (Algae) | Not Required |
| Power Required | Kw/MLD | 180 | 250 | 300 | 400 | Nil | Nil | 120 |
| Ease of Operation | | Simple | Difficult | Simple | Simple | Very Simple | Very Simple | Simple |
| Skill for O&M | | High | High | Moderate | Moderate | Low | Low | Moderate |
| Capital Cost | Rs. Lakh/MLD | 30.0 | 35.0 | 20.0 | 20.0 | 6.0 | 8.0 | 20.0 |
| Annual O&M Cost | | Medium | High | High | Medium | Very Low | Very Low | Low |
| Reliability | | Good | Least | Good | Good | Very Good | Very Good | Good |
| FC Removal | % | 90-96% | 90-96% | 95-98% | 95-98% | 98-99% | 98-99% | 95-99% |

Note: TF – Trickling Filter, ASP – Activated Sludge Process, AL – Aerated Lagoon, OD – Oxidation Ditch, WSP – Waste Stabilization Pond, UASP – Upflow Anaerobic Sludge Blanket, MP – Maturation Pond

3. *Drainage, Ponds and Lake Development*

354. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.10**

Table 8.10: Goals and Service Outcomes – Storm Water Drain and Water Bodies

| S.No | Goal | 2011 | 2016 | 2026 |
|------|--|------|------|------|
| 1 | Storm Water Drain Coverage (% of road length) | 100% | 130% | 150% |
| 2 | Rehabilitation of Existing Nallah's and Water Bodies | 100% | 100% | 100% |
| 3 | Usage of water bodies as local source of water | 30% | 40% | 50% |

355. *Approach and Design Criteria:* The ULB should increase the service levels in terms of coverage, to achieve coverage of 150 percent of road length, through built drains. The ULB is recommended to adopt 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.

356. The Drainage demand for 2026, based on 150 percent road length is approximately 952 kms, as against a service level of 93 percent for 2005.

357. The storm water drainage network in Coimbatore primarily consists of primary drains comprising of nallahs and road side drains to discharge the storm water. About 6 primary drains with a length of 48.48Km. criss-cross the city. Majority of these drains discharge into the major water bodies and carry flood waters. However, the drains are encroached resulting in the reduction of the carriageway and the carrying capacity has greatly reduced due to siltation and dumping of debris and wastes. The management of drains came into focus due to inundation of large areas during the floods and accordingly measures have been contemplated to reduce the risks of flooding and improve the carrying capacities of the drains.

358. Strategies have been conceived on the fact that the primary drains have to be conserved and shall be used as effective carriers of storm water. The secondary and tertiary drains, mostly consisting of the road side drains ought to be provided for all the major arterials and lined not only to drain storm water but to also preserve the condition of the road surface. Accordingly, the following strategies have been formulated.

359. *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. A 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. The program shall aim at the following:

- (i) Improvement measures such as widening and deepening and construction of side walls
- (ii) Construction of side walls to conform to uniform cross-section in built up

- areas
- (iii) Diversion of drains at critical sections
- (iv) Construction of cross- drainage works.

360. *Drainage Rehabilitation Program:* The flood prone areas identified in Chapter 5, within the corporation area 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 encroachments and built up on nalah bunds have to be encouraged to effect a smooth and effective functioning of the drainage system.
361. In accordance with the above, Corporation shall de-silt the primary drains and tertiary drains on a regular basis before the onset of the monsoon. The construction of new drains and connecting links shall be taken up as a priority. The strengthening of the existing drains with lining and side walls are immediate measures to be executed.
362. *Improvement Works and Construction of Tertiary Drains:* Construction of tertiary drains must be taken up on a priority basis as the city comprises of 633 km. of tertiary drains covering 93 percent of the road length against a norm of 150 percent. It is proposed to construct tertiary drains to all the major arterials and important roads to increase the coverage and to convert the kutchra drains to Pucca drains to facilitate proper draining of storm water into natural drains. It is expected that flooding areas shall be adequately drained through these roadside drains. It is estimated that by 2011, the Corporation would lay additional 237 km of tertiary drains in the city at an estimated cost of Rs. 33 Crores. The future requirements of storm water drains is furnished in **Table 8.11**.

Table 8.11: Requirement until 2026 in Storm Water Drains

| Description | Unit | Gaps Up To 2026 |
|---|------|-----------------|
| Up gradation of Kutchra to Pucca | | |
| Kutchra to Pucca Open | km. | |
| Kutchra to Pucca Closed | km. | 10.7 |
| Pucca Open to Pucca Closed | km. | 17.6 |
| New Pucca Open Drains | km. | 94.8 |
| New Pucca Closed Drains | km. | 142.2 |
| Lakes conservation /Tanks regeneration and Nalla strengthening | | |
| Tanks/ Lakes conservation | Nos. | 8 |
| Desilting and Strengthening of Primary Drains | km. | 44.82 |

Source: Analysis

363. *Rejuvenation and Rehabilitation Works for Water Bodies:* An intricate network of canals connects the nallahs, water bodies in Coimbatore. However, over time some tanks have been encroached upon or filled with debris resulting in loss of connectivity and safe discharge of water.
364. The interrelation between water bodies shall be established, at least for the existing ones, so as to treat them as a whole system, which can be reconnected to the surface water drainage to form water chains for rainwater harvesting.

365. Hydraulic capacity of the nallahs and water bodies must be improved through widening and deepening and construction of side walls thereby limiting the risk of floods. Desilting shall be carried out to increase the water holding capacity and to remove the toxic and hazardous materials stored in the tank beds.
366. *Monitoring and Quality Control:* Monitoring of water quality parameters shall be conducted on a regular basis. Corporation shall take up the responsibility of monitoring the parameters in the water bodies within its jurisdiction and shall take preventive measures, if the results are above the permissible limits. The horticulture and urban forestry division of Corporation shall devise pro-active strategies to limit pollution to water bodies within its limits and shall co-ordinate with other agencies for monitoring the parameters in the other water bodies.
367. Efforts shall be directed at enforcing appropriate water pollution related laws, ordinances, regulations, and corresponding enforcement responsibilities and procedures at the local level. This shall be in accordance with the framework laid down by the 74th CAA.
368. *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).
369. *Strategy and Time Frame:* The strategies to achieve the abovementioned goals and the proposed time frame is presented in **Table 8.12**

Table 8.12: Strategies and Time Frame – Storm water Drain and Water Bodies

| S.No | Strategy | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|--|------|------|------|------|------|------|------|
| 1 | Primary Drain Rehabilitation and improvement program | █ | | | | | | |
| 2 | Improvement Works and Construction Of Tertiary Drains | | █ | | | | | |
| 3 | Rejuvenation and Rehabilitation works for Water Bodies | █ | | | █ | | | █ |
| 4 | Establishing cross drainage network | | █ | | | | | |
| 5 | Operation and Maintenance Schedule | | █ | | | | | |

4. Solid Waste Management

370. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.13**

Table 8.13: Goals and Service Outcomes – Solid Waste Management

| S.No | Goal | 2011 | 2016 | 2026 |
|------|------------------------------|------|------|------|
| 1 | Door to Door Collection | 80% | 100% | 100% |
| 2 | Mechanized Handling of waste | 80% | 100% | 100% |
| 3 | Scientific Disposal | 80% | 100% | 100% |
| 4 | Waste to Energy Generation | 50% | 90% | 100% |

371. *Approach and Design Criteria:* Chapter 5 has detailed out the existing solid waste management system in Coimbatore outlining the issues to be addressed. Accordingly, the following objectives are being formulated for a sustainable solid waste management system.

- (i) Devise a system of storage of food/bio-degradable waste, non-biodegradable waste and hazardous waste separately at source.
- (ii) Strengthen the current primary collection system with community involvement and with minimum multiple handling.
- (iii) Promote decentralized processing of waste as a source of income for the community so as to reduce the pressure on transport, centralized processing /land fill.
- (iv) Develop environmentally safe final disposal facility through landfill.
- (v) Strengthen the institutional capacity.
- (vi) Promote public/Private partnership and NGO support.
- (vii) Educate the public and create awareness on various issues of solid waste management.
- (viii) Support the informal recycling activities.
- (ix) Explore cost recovery options wherever feasible.

372. In order to achieve above objectives, issues and deficiencies in each of the solid waste management component have been identified and the strategies for improvement both in physical and financial terms are elaborated in the following sections.

373. The ULB should increase the Service levels to meet the Norms recommended by Solid Waste Handling Rules, 2000 and The State Finance Commission Norms. The ULB should achieve 100 percent coverage, through door-to-door collection and segregation of waste at source.

374. The total solid waste generation in 2026 for a per capita generation of approximately 631 grams/day is estimated at 875 MT, indicating a priority need for Scientific Disposal of Waste. Since, the population density of the ULB has been increasing, the waste generation has been considered at 631 grams/day, with a growth of 2 percent per year, against the generation and the demand for future is assessed. The total solid waste generation for 2026, is estimated at around 875MT/day. **Table 8.14** shows the projected solid waste.

Table 8.14: Projected Waste Generation

| Year | Population <i>Nos.</i> | Waste Generation | |
|------|---------------------------|------------------|-----------------|
| | | <i>Gms/Day</i> | <i>Tons/Day</i> |
| 2005 | 992,173 | 606 | 601 |
| 2011 | 1,091,759 | 612 | 668 |
| 2016 | 1,182,341 | 618 | 731 |
| 2021 | 1,280,439 | 624 | 799 |
| 2026 | 1,386,656 | 631 | 875 |

Source: Analysis

375. *Deficiencies:* Storage of waste at source is one of the important recommendations of MoEF. It is however, observed that storage and segregation at source is generally absent in Coimbatore, and people in general are not aware of the benefits of developing such a practice. However, only some households (say around 5 to 10%) store the un-segregated waste in open containers and dispose off the same at the community collection points. Recovery of waste that is saleable such as newspaper, glass bottles, and recyclable plastic is observed in the domestic sector. Similar to the domestic households, major hotels, restaurants, and kalyanamantapams store waste in open containers.
376. Waste generated from the major markets in the city lack adequate storage facilities. In case of hospitals and nursing homes (those are not the members of the bio-medical waste disposal facility), infectious waste is seen getting mixed up with general Municipal waste and other waste such as construction waste or other debris is thrown indiscriminately roads resulting in traffic hazards, drainage blockages etc.
377. 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.
378. In order to achieve the above objective, a '*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-bio degradable waste generated within their premises.
379. The bins can be of 10-15 liters capacity made of plastic / reinforced plastic / LDPE or metal bins of individual choice, but should be provided with lid. The segregated waste so stored in these bins will have to be placed in separate dustbins / community collection point or to the municipal vehicle that comes to each household at specified time. The specifications are presented in **Table 8.15**

Table 8.15: Specifications for Bin System of Waste Storage at Source

| Source | Storage of Segregated waste | |
|--------------------------------|--|---|
| | Bio-Degradable | Non-Bio-degradable |
| House Holds | 10-15 liters capacity plastic/reinforced plastic/LDPE/metal bin with lid | A bin or Bag of suitable size |
| Hotels, Restaurants | 60 liters capacity-LDPE/HDPE | A bin or Bag of suitable size |
| Shops, offices, institutions | Suitable container not exceeding 60 liters | A bin or Bag of suitable size |
| Market Stalls | 40-60 liters bin-LDPE/HDPE | A bin or Bag of suitable size |
| Kalyana mandapams | Bin / Skip matching to Municipal Collection system | A bin or Bag of suitable size |
| Hospitals, nursing homes | 60 liters capacity bin for non-infectious bio-degradable waste | Store waste as per Bio-medical Waste Mgmt Handling Rules 1998 |
| Construction/ Demolition waste | - | Store with in premises and deposit in the notified Site by the local body or to the municipal Vehicle |
| Garden Waste | Store with in premises | Deposit in large community bin or to the municipal vehicle |

Source: Norms

380. Construction waste has to be stored at the premises of the construction in either 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 bin /bins of max.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.
381. It is also being recommended that this system of source segregation and storage is encouraged through community education and awareness campaigns as elaborated in the section on environmental education. Hence no capital investments are envisaged for Coimbatore Corporation in this regard.
382. *Primary Collection Deficiencies:* Households generally deposit the waste at community facilities except in areas where community manages the primary collection of waste. The community storage facilities comprise all types of collection bins such as concrete, steel and masonry bins, including the garbage chowks. In some major roads of the city, the dumper bins also function as the primary collection bins.
383. *Strategies for Improvement:* The following measures have been recommended for improving the primary collection practices of Coimbatore
- Phased implementation of ‘Door to Door collection System’ through community organizations and corporation by mobilizing, facilitating, organizing and supporting community activities with the help of local NGOs.
 - Installation of ‘Community Storage Bins’ in areas where house-house collection

could not be implemented.

- Introduction of multi-bin carts containing six bins of capacity sixty liters made of fiber/plastic bins.
- Expanding the ‘Voluntary Garbage Disposal Scheme’ for more number of restaurants/hotels and commercial establishments and collecting user charges
- Placement of dumper containers of sufficient number in markets and ensuring that all the vendors place the waste in the containers.
- Persuading the hospitals to be part of the existing bio-medical waste management facility in the suburbs of the city.

384. It is recommended to collect Non-bio degradable waste separately from premises where door-to-door /kerb side collections are organized. Present system of primary collection should be phased out by introducing Multi-bin carts (Pushcarts / Tricycles), semi mechanized systems like refuse collectors. Separate collection vehicles should collect the non-biodegradable waste stored in separate bin. The detail of proposed primary collection system is summarized in **Table 8.16**

Table 8.16: Proposed Primary Collection System

| Mode of collection | Area of collection | Primary Collection Vehicle | Secondary storage |
|--|--|---|--|
| Door to Door | Residential colonies of High & middle income group | Multi-bin cart/Tricycle-with 6 of 40 lit capacity bins-4 for Biodegradable waste, 2 for recyclables | 1. Bio-degradable in Skips/wheel containers 2. Non-biodegradable-Sell or hand over to waste collector |
| | Hotels/restaurants | Closed vehicle to collect biodegradable | Direct transport to Disposal site |
| Combination of Kerb-side & bell system | Mixed Residential, Commercial Areas | Tri-cycle- with Six bins of 40 liter | Bins emptied to skips kept for the waste. |
| Large Community bin system | Fruit & Vegetable Market/ 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 |

Source: Norms

Collection & Transportation

385. *Deficiencies:* Around 50 percent of the waste transportation system in Coimbatore is mechanized. With 4 transfer stations and around 53 Lorries for collection and transportation from the transport station, around 75 percent of the waste is transported to the disposal site only thru the private hired Lorries.

386. Based on the analysis, it is inferred that the corporation has a vehicle capacity adequacy ratio of 120 percent against a norm of 100 percent which indicated the under utilization of the hired vehicles. However, in the absence of specific information on vehicles deployed for collection and transportation, the exact deficiency in terms of secondary collection and transportation could not be worked out.

387. *Strategies for Improvement:* Key information on vehicle movement and deployment is not clearly monitored by Corporation. In view of the criticality of this information 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. A summary of this information shall be prepared at the end of the day, to be verified by the health officer.
388. The present disposal system is waste dumping, which is creating potential health and environment hazard considering the quantity of waste generation, hence further option for scientific waste disposal and composting can be explored on priority basis. The details of Service Levels for future is presented in **Table 8.17**

Table 8.17: Design Criteria and Target Service Level

| Description | Unit | Based on CPHEEO Norms |
|-----------------------------|---------------------|--|
| | | 2026 |
| Population | In lakhs | 16.27 |
| Per capita Waste Generation | Grams/day | 631 |
| Collection Type | - | Door-to-Door Collection and Segregation of Waste at Source |
| Collection Demand | % of Generation | 100 |
| Vehicle Capacity Adequacy | % of Rated Capacity | 100 |
| Treatment Type | - | Composting of Waste & Sanitary Landfill |
| Treatment Demand | % of Generation | 100 |

Source: Norms

389. *Implementation Strategy.* The Solid Waste Action Plan, 2004, prepared by the ULB need to be updated and implemented on immediate basis. 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.
390. *Approach for Waste Collection and Transportation.* The following measures have been recommended for improving the primary collection practices of the Urban Local Body;
- Implementation of ‘Door-to-door collection’ through 100 percent privatization;
 - Street Sweeping and Moping on Daily Basis;
 - source Segregation and Collection of Commercial Waste, through privatization;
 - Source Segregation and Collection of Hotels and Market Waste
 - Introduction of Bin System at Household and Establishment Level for Storage and Segregation of Waste at Source.
 - Enforcement of By-laws and Waste Collection and Handling Rules.
391. It is envisaged that 100 percent area of the Urban Local Body be brought under door-to-door collection and hence, no additional dustbins 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 Urban Local Body shall be responsible for the collection. The existing dustbins shall be phased out in an organized manner according to the implementation of the system. This is proposed to be achieved by the year 2006-07. Based on these assumptions, the equipments for primary collection is estimated, to meet the future Waste Generation.

Processing & Disposal

392. *Approach for Disposal of Waste.* The characteristics and quantity of solid waste generated in the town primarily influence the disposal options. A review of the availability of solid waste sample indicates that nearly 70% of the waste generated in Coimbatore is organic nature. In terms of the quantity around 565 tons of waste is generated every day and is expected to go up 875 Tons by the year 2026. Considering these aspects, it is recommended to develop a landfill site and composting site for safe disposal of solid waste of Coimbatore. The disposal strategies for Coimbatore will be to:

- (i) Compost the organic fraction of the waste
- (ii) Sanitary land filling of inorganic fraction of waste and the compost rejects
- (iii) Encouraging local level aerobic vermi composting and
- (iv) Educating the community on 4R strategy (Reduce, Reuse, Recycle and Recover)

393. *Land fill Requirements:* - Area requirements for the land fill sites are worked out based on the generation trends and sustainable waste management practices. With a per capita generation rate of 606-gm/ capita, the city generates around 564 tons of waste. Following similar trends, Coimbatore shall be generating around 875 tons of solid waste at a rate of 630-gm/ cap/ day by 2026. The base year (2005) waste generations trends when projected to the design year 2026, Coimbatore shall be requiring a total of 8.46 acres of land fill area and 27.7 acre for composting.

394. The measures recommended as part of 4R strategies comprise reduction of waste generated by way of reducing use of plastics, composting the organic component, community participation in solid waste management, etc. The implementation of the above strategies will involve setting up a plant to handle around 666 tons of compost and recycling and 250 tons for landfill site.

395. The above analysis 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.

396. *Comparison of Technologies for Composting.* Aerobic Composting, Vermi Composting and Anaerobic Digestion are the three options of biological degradation of organic components in solid waste. Of the three, the simplest to develop and operate is Aerobic Composting. Manual Windrow Composting will be the most ideal and economical option. This kind of composting would require no major mechanization and the compost plant would be manually operated. This would, in turn, minimize the cost of waste disposal.

397. *Requirements:* 920 nos. of containerized tri cycles and 1160 nos. of 0.5 T polyethylene

bins are required to strengthen the primary collection and to achieve 100% door-to-door collection. For effective Secondary collection, 48 nos of vehicles are to be mounted with the hydraulic equipment on the LMV / MMV chasis to carry the projected 875 tons of waste that will be generated in Coimbatore by the year 2026. 4 nos of trailers are proposed to strengthen the transportation between the transfer stations and the disposal points. 45 nos of GPS equipments are also proposed to monitor the vehicles. The development of Compost yard and landfill site is also proposed and the maintenance is the same will be privatized. The requirements of solid waste for the year 2026 is tabulated in **Table 8.18**

Table 8.18: Requirement until 2026 in Solid Waste Management

| S. NO | DESCRIPTION | Unit | Quantity |
|----------|--|-------|----------|
| 1 | For Primary Collection | | |
| a | Purchase of Push Carts with Bins | Nos | 920 |
| b | Purchase of Polyethylene Bins | Nos | 1160 |
| 2 | For Secondary Collection | | |
| a | Modernization of Sathy Road Transfer Station | Nos | 01 |
| b | Construction of Transfer Station at Ukkadam area | Nos | 01 |
| c | Purchase of LMV/MMV Chassis | Nos | 33 |
| d | Mounting of Hydraulic Equipment on the LMV/MMV Chassis (33 New and 15 Old) | Nos | 48 |
| e | Purchase of Bulk Refuse Carriers with Trailers | Nos | 04 |
| f | Providing of GPS Box | Nos | 45 |
| 3 | Development of Compost Yard | | |
| a | Purchase of Wheel Loaders | Nos | 01 |
| b | Improvements to Compost Yard | Acres | 11.2 |
| c | Setting up of 100 TPD Composting Plant | Nos | 01 |
| d | Setting up of Vermi-Composting Plant | Nos | 01 |
| e | Setting up of Recycling Plant | Nos | 01 |
| f | Setting up of Land Fill Site | Nos | 01 |
| g | Purchase of Poclain Machine | Nos | 01 |
| h | Proving of IEC activities for the SWM scheme | Nos | 01 |
| i | Welfare to the workers | Nos | 01 |
| 4 | Development of Landfill Site | | |
| a | Landfill Base | | |
| b | Leachate Collection System | | |
| c | Landfill Gas Collection System | | |
| d | Top Cover system | | |
| e | Building | | |
| f | Storm Water Management System | | |

Source: Coimbatore Corporation, Draft Design Report, Consultancy services for design and supervision management for a sanitary landfill for Coimbatore Municipal Corporation.

398. *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 differ costs. A summary of this information shall be prepared at the end of the day, to be verified by the head of the Health

Department.

399. *Approach for Optimal Manpower Utilization.* Since the entire area of ULB is proposed for privatization, 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.
400. *Institutional Strengthening and Capacity Building.* Recruitment of trained engineering personnel for management of sewer works is an important issue confronting the Urban Local Body, 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 Urban Local Body.
401. *Strategy and Time Frame:* The strategies to achieve the abovementioned goals and the proposed time frame is presented in **Table 8.19**

Table 8.19: Strategies and Time Frame – Solid Waste Management

| S.No | Strategy | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | |
|------|--|--|------|------|------|------|------|------|--|
| 1 | Door to Door Collection | [Bar chart showing implementation from 2006 to 2011] | | | | | | | |
| 2 | Introduction of Twin Bin System at Storage | [Bar chart showing implementation from 2006 to 2009] | | | | | | | |
| 3 | Source Segregation | [Bar chart showing implementation from 2006 to 2011] | | | | | | | |
| 4 | Mechanization of Transportation | [Bar chart showing implementation from 2007 to 2010] | | | | | | | |
| 5 | Fleet Management System | [Bar chart showing implementation from 2006 to 2007] | | | | | | | |
| 6 | Development of Scientific Landfill Site | [Bar chart showing implementation from 2007 to 2008] | | | | | | | |
| 7 | Development of Scientific Landfill Site | [Bar chart showing implementation from 2007 to 2008] | | | | | | | |
| 8 | IEC Activities | [Bar chart showing implementation from 2006 to 2011] | | | | | | | |

5. *Roads and Traffic Management*

402. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.20**.

Table 8.20: Goals and Service Outcomes – Traffic and Transportation

| S.No | Goal | 2011 | 2016 | 2026 |
|------|----------------------------------|--------------|--------------|-------------|
| 1 | Road length / Sq.Km | 8 km / sq.km | 10 km/ sq.km | 15 km/sq.km |
| 2 | Average Travel Time (Km / Hour) | 35 | 45 | 45 |
| 3 | Park & Ride Facility | 40% | 60% | 60% |
| 4 | Parking Supply to Demand % | 40% | 70% | 100% |
| 5 | Usage of Alternate fuels | 25% | 40% | 60% |

403. *Objectives:* The strategic objectives of road network improvements are
- To improve the connectivity and accessibility within the town,
 - To improve the efficiency of road space, and
 - To reduce delays at the junctions and remove bottlenecks if any.
404. *Design Criteria:* Given the low coverage of the current roads, in terms of space available for circulation, the area under roads shall increase from the current 6 percent to a minimum of 10 percent though the norm can be in the range of 15-20 percent. The road widening projects can provide succour to a certain extent in increasing the area under roads, but is limited to certain commercial corridors only. Roads planning shall also ensure that road, parking and traffic infrastructure provision matches the city's existing and future needs for both private and public transport
405. Out of 100 percent of surfaced roads, 85 percent would have bitumen surface, 5 percent of cement concrete and the remaining 10 percent would be of WBM. The deficiencies in the Urban Local Body area with respect to the road infrastructure pertain mainly to the condition of the surface, width and density of the roads (presently, the roads density is 7.90 sq. km only). Formation of new roads based on the future requirement of the town is also envisaged under this project.
406. *Implementation strategy:* Strategy shall focus to have 100 percent coverage of surfaced roads including up-gradation of roads. The percentage of concrete roads in the town is at 5 percent and since these CC roads are provided with minimum widths in core areas, the overall system gets affected with load and pressure on the remaining roads resulting in frequent O & M costs and traffic congestion. The deficiencies in the Urban Local Body area with respect to the road infrastructure pertain mainly to the width of roads and density of roads.
407. *Roads Planning:* Six percent of the total area of the town is under roads with a total length of about 635 Km. 94.6 percent of the roads in the town are surfaced. Accordingly, strategies are formulated to have 100 percent coverage of surfaced roads including up-gradation of roads. The percentage of concrete roads in the town is at 8 percent and since these Cement Concrete roads are provided with minimum widths in core areas, the overall system gets affected with load and pressure on the remaining roads resulting in frequent O & M costs and traffic congestion. The deficiencies in Coimbatore with respect to the road infrastructure pertain mainly to the width of roads and density of roads. Given the low coverage of the current roads, in terms of space available for circulation, the Corporation initially plans to prepare an inventory of the city road network.
408. The current coverage is below average at 6 percent of town's area. Newly developing areas lack the facility and shall increase to a minimum of 10 percent though the norm can be in the range of 15-20 percent. The road widening projects can provide succor to a certain extent in increasing the area under roads, but is limited to certain commercial corridors only. Roads planning shall also ensure that road; parking and traffic infrastructure provision matches the city's present and future needs for both private and public transport. Road Planning:
409. *Asset Rehabilitation:* Upgrading shall be undertaken to extend, refurbish and enhance the roads. Plans would be phased so as to optimize 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.

410. *Requirement:* The newly developing areas lack the facility and shall increase to a minimum of 10 percent though the norm can be in the range of 15-20 percent. The road widening projects can provide succor to a certain extent in increasing the area under roads, but is limited to certain commercial corridors only. Roads planning shall also ensure that road. The details of future requirements of roads and traffic & transportation are summarized presented in **Table 8.21**

Table 8.21: Requirement until 2026 in Roads

| Si. No | Item | Unit | Value |
|----------|---|------|-------|
| A | Roads | | |
| 1 | Up gradation | km | |
| 2 | Up gradation of Earthen to Black Top | km | 37 |
| B | New Formation (Excludes the Bus Route and Major Links) | | |
| 1 | Concrete | km | 12 |
| 2 | Black Top | km | 201 |
| 3 | WBM | km | 23.7 |
| C | Strengthening of Internal Roads | km | 213 |

Source: Analysis

411. *Traffic Management Plan.* These shall focus of junction improvements, traffic management within core areas of the town, regional level proposals, parking and pedestrian facilities. It has been observed that, in most of the major roads in the town pedestrians are forced to use the carriageway due to the absence or poorly maintained footpaths. Footpaths of 1.5m wide are proposed along the major roads where heavy pedestrian movements are observed. For traffic safety and convenience, appropriate 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. The design of the road furniture and quality proposed are of international standards. It is proposed to provide the following road furniture for the roadway:
- (i) Kilometer stones on the major roads
 - (ii) 200 m Furlong stones
 - (iii) Road painting using reflectorised thermoplastic road painting
 - (iv) High intensity grade informatory, regulatory and cautionary sign boards
 - (v) Street lights on all major roads within the municipal limits, which have been considered for improvement
 - (vi) High mast lighting at all major junctions
 - (vii) Stop signs
 - (viii) Place identification signs
412. *Requirement:* It is proposed to strengthen and widen the major link roads, bus route roads. It is also proposed to construct 8 flyovers and 16 subways by 2026. A truck terminal in the by pass road and multi stored car parking at Gandhipuram and Big bazaar is proposed. 20 major junctions and 30 minor junctions may be taken up for improvements. The details of the proposals are listed in **Table 8.22**

Table 8.22: Requirement until 2026 Traffic & Transportation

| Project | Improvements | Length (Km) | Nos |
|---|----------------------------|-------------|-----|
| ROAD SECTOR | | | |
| Widening Radial Roads | | | |
| Trichy Road | 4 to 6 lane | 11 | |
| Avinasi Road | 4 to 6 lane | 26 | |
| Sathyamangalam Road | 2 to 4 lane | 5 | |
| Mettupalayam Road | 4 to 6 lane | 7 | |
| Thadagam Road | 2 to 4 lane | 10 | |
| Maruthamalai Road | 2 to 4 lane | 10 | |
| Narasipuram Road | 2 lane with paved shoulder | 4 | |
| Cochin Road | 4 to 6 lane | 5 | |
| Avaram palayam Road | 2 to 4 lane | 4 | |
| Mathampatti Road | | 16 | |
| NGM road - KNG Pudur Road | | 4 | |
| Chinna Thadagam - Thudiyalur road | | 10 | |
| Goundampalayam TVS nagar road | | 3 | |
| Perur road (Siruvani Road) | | 29 | |
| Widening Bus routes with signage and footpath | | | |
| to 2 lane | 2 laning | 100 | |
| To 4 lane | 4 laning | 50 | |
| Bypass Road - | 2 lane to 4 lane | 11 | |
| Widening Ring Roads | | | |
| Inner Ring Road | | | |
| Nanjundapuram Rd- Pankaja Mills Rd- Sanganut | 2 lane to 4 lane | 2.4 | |
| River Side Rd upto Mettupalayam Rd | 2 lane to 4 lane | 8 | |
| Middle Ring Road | | | |
| Vellalur Rd- (Singanalur)- Kamarajar Rd- Thannirpanthal Rd- Vilankurichi Rd- Kannasami Gowder St | 2 lane to 4 lane | 15 | |
| Outer Ring Road | | | |
| Sarmedu Rd-Ondipudur- Airport Rd- Ravindranath Takur Rd- Ganapathy Rd- Nillampalayam Rd | 2 lane to 4 lane | 19 | |
| New Link Road | | | |
| Neelambur to Metupalayam road (Km 0/0 - 20/0) | | 20 | |
| Flyovers | | | |
| Within City- Trichy road& Nunjagunda Puram Rd Jun, Singanallur Jun, Lakshmi Mills Jun, Gandhipuram -Bus stand Jun, GP hospital Jun, Sowripalayam Jun, Nirmala College Jun, Ukkadam Jun, Thadagam Rd &Maruthamalai Rd Jun, Mettupalayam Rd& Sanaganur River Side Rd Jun (2 juns), Dr Nanjappa Rd jun on Avinasi Rd, ORR- Sathy Rd, ORR-Mettupalayam Rd Jun, Bypass-Mettupalayam Road Jun | | | 16 |
| Outside City- ORR-Avinasi Road | | | 1 |
| Elevated Highway | | | |
| Lanka Corner – NGM Road | | | |
| Valankulam Bye Pass Road to Dr. Nanjappa road | | | |

| Project | Improvements | Length (Km) | Nos |
|---|------------------|-------------|-----|
| New RoBs/RuBs | | | |
| Within City- Podanur Rd, Vellalur Rd, Thannir Panthal Rd, Neelikonam Palayam Rd, Pioneer Mills Rd, Peelikode, Rathinapuri Rd | | | 7 |
| Outside City- Podanur Rd | | | 1 |
| Widening of RoB | | | |
| Improvement of RoBs/RuBs | | | |
| Within City - CMC, Avinasi Rd, Sathyamangalm Rd, Avaram palayam Rd, Sanganur River Rd | | | 5 |
| Outside City | | | |
| Integration & Upgradation of SH Network with NH | | | |
| Madukarai - Chettipalayam road (0/0 -12/6), Suler - Railway Feeder road (km 0/0 - 5/6), Thudiyalur - Kovilpalayam road (Km 0/0-15/4), Suler - Market road (Km 0/0-1/2), Ravathur - Chenniayampalayam road (0/0-9/8), Km 331/6 of NGM road to Pappampatty km 0/0-6/8, Podanur-Chettipalayam road (km 4/0-11/2), Kurichi-kannamanaickenur (Km 0/0-18/8) | | 77.4 | |
| Paedestrian Subways | | | |
| Within City- Gandhipuram Jun, Rly Stn, CMC hospital, Ukkadam Jun, Town Hall Jun, Oppanakkara & Big Bazaar St, Clock tower Jun, PSG Tech Jun, Ramanathpuram Jun, Singanallur Jun, Uppilipalayam Jun, GRD School, PSG Arts, Ramanathpuram (Woman Polytechnic), Lakshmi Mills, AAR VEE Hotel junction | | | 18 |
| OTHER FACILITIES | | | |
| Truck terminal | | | |
| On Bypass Rd | 200 truck spaces | | 200 |
| Multi storeyed Parking Lot | | | |
| Near Gandhipuram | 200 spaces | | 200 |
| On Big Bazaar | 100spaces | | 100 |
| Traffic management measures | | | |
| Major Junctions | | | 20 |
| Minor Junctions | | | 30 |
| Bus Bays & Lay byes | 100 | | 100 |

Source: Analysis, Proposals for Road Infrastructure Development works under NURM in Coimbatore city, Highway Department

- (i) *Other Traffic and Transport Facilities.* Citing the regional and industrial significance of Coimbatore, City and Regional level traffic and transport facilities, like Truck Terminals, Bus Depot Complex, Parking Facility, to be developed in the City.
- (a) *Truck Terminal Facility.* The construction of the Truck terminal is proposed in the Bye-pass road to address the major influx of goods and regional traffic. It is proposed to develop two facilities of 200 truck parking capacity each equipped with drivers rest shed, restaurants, dispensaries, workshop, petrol bunk, Weigh Bridge, fire station, police station and toilets in addition to the parking area for the trucks.

- (b) *Multi-Storied Parking Facility.* At present, there are no organized parking places in the City. In the absence of inadequate parking lots, haphazard parking of tourist and local vehicles causes traffic congestion. In addition to this the loading and unloading of goods by traders posing parking problems. Field Visits indicated that Places near Big Bazar and Gandhipuram bus stand, is proposed to be developed in a phased manner. As a part of the project, it is proposed to develop Multi-Storied Parking facility for approximately 300 Vehicles.
 - (c) City's roads system has as 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 City image and the carrying capacity of road junctions, it is proposed to provide grade separated pedestrian subways, Junction landscaping, and improvement at selected Intersections
 - (d) It is proposed to construct 18 Underground Pedestrian Subways. Landscaping and improvement works at 50 locations, at major Junction indicated in Annexure III. Works identified under the Sub-component is proposed to be undertaken by the ULB.
413. *Widening and Strengthening of road structures:* With due consideration to the growing traffic intensity it has been proposed to upgrade major roads with specific focus on the State and National Highways
414. *Strengthening and Widening of Major Roads.* Emphasize on strengthening and widening of bus route roads and other important arterial roads of the town, formation of link roads to the highways and other important roads, to address the issues of congestion and incomplete network. With due consideration to the growing traffic intensity it has been proposed to upgrade the major links and bus routes. The components of improvement proposals include:
- (i) Strengthening of existing two lane carriageway and widening to four lane with 50 mm BM and 25 mm SDBC with 1.5 m gravel shoulder
 - (ii) Strengthening of existing two lane carriageway with 50 mm BM and 25 mm SDBC with 1.5 m gravel shoulder
415. *Improvement of Pedestrian Facilities:* Improvements to movement of pedestrians is proposed in the form of footways, pedestrian cross walks and subways, and by discouraging extraneous traffic from busy commercial areas and banning vehicular traffic in certain stretches of the CBD having heavy pedestrian traffic.
416. *Streamline Traffic Flow at Intersections:* With a view to reduce accidents and in line with safety and mobility aspect of traffic flow a hierarchy of improvements have been investigated, and include channelisers, police control, signals and grade separators.
417. *Decongestion of CBD:* Off-street parking and regulation of on street parking at various locations has also been proposed as a mitigation measure.
418. *Reduction of traffic volume:* Link roads have been proposed to reduce traffic on congested roads.

Map 8.1: Traffic and Transportation - Proposals



6. *Street Lighting*

420. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.24**

Table 8.24: Goals and Service Outcomes – Basic Services for Poor

| S.No | Goal | 2011 | 2016 | 2026 |
|------|------------------------------------|------|------|------|
| 1 | Energy saving mechanisms | 80% | 100% | 100% |
| 2 | Adequate lighting in Non-lit areas | 80% | 100% | 100% |

421. The strategic intervention in this sector is in optimizing the number of lampposts in the wards identified to optimize the average spacing between lampposts in the town and to introduce lampposts in the non-lit areas and newly developing areas. Further, measures are also to minimize the power consumption charges, which are observed to be on the higher side from the statement of accounts. The future details are presented in **Table 8.25**.

Table 8.25: Requirement until 2026 in Street Lighting

| Description | Unit | Gaps Up To 2026 |
|------------------------|------|-----------------|
| Street Lighting | | |
| Tube Light | Nos. | 6350 |
| High Power | Nos. | 1509 |
| Power Saver Switches | Nos. | 1009 |
| High Mast Lamps | Nos. | 1608 |

Source: Analysis

422. Further, to improve upon the O & M of the street lighting it is recommended to mechanize the system and involve private sector in the same. To reduce the power consumption, new technology bulbs are proposed to be introduced by the private party operations. The mechanization would be towards introducing dimming systems (using power saver switches) during non-peak hours of operation to reduce the power consumption. The dimming system may follow the below mentioned timings.
- (i) 9 PM to 11 PM reduce to 20 % of LUX
 - (ii) 11 PM to 4 AM reduce to 50 % of LUX
 - (iii) 4 AM to 6 AM and 7 PM to 9 PM provide with 100 % LUX
423. It is introduced to replace the existing tube lights to retrofit tube lights subsequently, as about 10% of power can be saved using this mechanism.
424. *Strategy and Time Frame:* The strategies to achieve the abovementioned goals and the proposed time frame is presented in **Table 8.26**

Table 8.26: Strategies and Time Frame – Street Lighting

| S.No | Strategy | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|--|-------------------------|-------------------------|------|------|------|------|------|
| 1 | Conversion of Existing tube lights to Retro fits | [Bar from 2006 to 2009] | | | | | | |
| 2 | Power saver switches for SVL lamps and high power lamps | [Bar from 2006 to 2007] | | | | | | |
| 3 | Provision of New Lighting systems for the Non-lit areas and emerging areas | | [Bar from 2008 to 2012] | | | | | |

7. *Basic Services for Poor*

425. *Goals and Service Outcomes:* The goals and service outcomes based on the proposed strategy for the horizon period is presented in **Table 8.27**

Table 8.27: Goals and Service Outcomes – Basic Services for Poor

| S.No | Goal | 2011 | 2016 | 2026 |
|------|---|------|------|------|
| 1 | Water Supply Network Coverage for slum households | 90% | 95% | 100% |
| 2 | UGD coverage for slum households | 60% | 100% | 100% |
| 3 | Adequately lit slums | 100% | 100% | 100% |
| 4 | Adequate road link for the slums | 100% | 100% | 100% |
| 5 | Pucca houses for all slum households | 80% | 100% | 100% |
| 6 | Education for all in slums | 100% | 100% | 100% |

426. As a policy, notified/declared slums are considered for slum up gradation. The implementation of National Slum Development Program (NSDP) is in progress. The following types of infrastructure are provided: (a) roads and culverts, including concrete pavements for certain stretches; (b) surface/storm water drains; (c) water supply, with house service connections; (d) sewerage system with household latrines; and (e) external electrification.

427. Under this initiative, slum networking shall be taken up on the lines of Indore Slum Networking Program. Slum networking is an integrated up gradation of the entire city using slums, not as isolated islands but an urban net. The spatial spread of slums over a city together with contiguity between slum settlements gives an opportunity to strengthen the city level infrastructure networks. There is a close correlation between the slum locations and the natural drainage paths of a city, which shall be tapped and improved upon with the infrastructure services. This approach shall help in building low cost service trunks, particularly for gravity-based systems of sewerage and storm drainage, together with environmental improvements such as cleaning up of nallahs, development of green pedestrian spines and restoration of waterfront structures. The quality of life in slums would enhance, if integrated with the citywide support systems, from the improved city level support. For the city too, the slums offer opportunities of changes through this symbiotic process.

Lack of basic infrastructure facilities in most of the slums is a key issue.

428. *Beneficiary Selection:* Identify the target beneficiaries based on a Socio-economic survey and initiate efforts to form Community Development Societies (CDSs) covering the target population and implement guidelines on the lines of SJSRY in beneficiary selection. Encourage the community to avail the benefits under the various slum development programs by developing linkages with the lead bankers and ensure that the flow of communication between the various actors and the community structures through a proper reporting procedure. A town level training strategy will be formulated to focus upon the targeted beneficiaries. The strategy will aim at the people to be trained including the policy makers, town officials, community members as well as the beneficiaries.
429. *Programs' Monitoring:* While implementation of the programs is important the monitoring of the same is more important for continuing of the process. This ensures the success of the programs and hence further participation of the communities over the years, which will only lead to complete poverty alleviation.
430. *Social inclusion of Vulnerable Groups:* The vulnerable groups are the socially under privileged, women and aged who are generally restricted by the dominant groups in any community. A say for these vulnerable groups in the community development programs is necessary and 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 ensures the participation of the vulnerable groups. This initiative aims at a long-term goal and needs sustained longstanding efforts on part of the Community Development Societies. The activities of the Community Development Societies shall be monitored through an evaluation procedure on a periodic basis.
431. *Water Supply:* It is proposed add another 55 kms of water distribution network in the slums so that; all the houses have access to piped water supply. It is also proposed to construct 232 nos. of public stand posts; where there is piped water supply would not be accessible. However, the public stands have to continually phase out and it has to be ensured that, all the households are connected to service connections. The water supply for slums for year 2026 is listed in **Table 8.28**

Table 8.28: Requirement for slums – Water Supply

| Item (water supply) | Unit | Existing | Gap |
|----------------------|------|----------|-----|
| Distribution Network | km | 20 | 55 |
| Public Stand Posts | Nos. | 392 | 232 |

Source: Analysis

432. *Sanitation:* It is noticed from the analyses that, the number of toilet seats available are far below the prescribed norms. It is proposed to construct 2250 nos. of toilet seats (40:60, Male: Female) in the slums. It is also proposed to refurbish the existing toilets so that, it could made usable and put to use. The future details of sanitation for slums is illustrated in **Table 8.29**

Table 8.29: Requirement for slums – Sanitation

| Item (Sanitation) | Unit | Existing | Gap |
|----------------------------------|------|----------|------|
| Toilet Seats | Nos. | 1495 | 2250 |
| Refurbishment of Existing blocks | Nos. | 1495 | 700 |

Source: Analysis

433. *Roads:* It is inferred from the analysis that, the per capita road ratio is very low and has to be improved in the slums to ensure connectivity and better transportation. It is proposed to construct 14.4 kms of CC roads and 21.6 kms of BT roads in the slums and strengthen the existing roads. The requirement for roads is presented in **Table 8.30**

Table 8.30: Requirement slums – Roads

| Item (Roads) | Unit | Existing | Gap |
|------------------------------|------|----------|-----|
| Formation of CC roads | Kms | 14.4 | 94 |
| Formation of BT roads | Kms | 21.6 | 94 |
| Strengthening existing roads | Kms | 36.3 | 21 |

Source: Analysis

434. *Storm water drains:* It is proposed to construct 169 kms along the roads, so that the percent of storm water drains to road length would satisfy the norms (150% of the road length). It is also proposed to refurbish the existing storm water drain and ensure connectivity to the main channels.
435. *Solid Waste Management:* It is observed that, indiscriminate dumping along the roads and inadequate collection mechanism provides health threats to the slum dwellers. Door to door collection system proposed for the city has to be extended for the slums also and for the places where door to door collection is not possible, community bins are proposed. The requirement of solid waste management in the slums is presented in **Table 8.31**

Table 8.31: Requirement for slums - Solid Waste Management

| Item (SWM) | Unit | Existing | Gap |
|----------------|------|----------|-----|
| Community Bins | Nos. | 10 | 140 |
| Tricycles | Nos. | 20 | 230 |
| Dumper Placers | Nos. | 2 | 7 |

Source: Analysis

436. *Street Lighting:* It is proposed to add 921 nos. of tube lights and 162 nos. of sodium vapour lamps in the slums to make the place adequately lit.
437. *Housing:* It is proposed to rehabilitate the slum population in the unauthorized alum layouts and along the restricted land use areas like water bodies and Nallahs in a identified location with infrastructure provisions. 28,150 houses are proposed to be rehabilitated and repaired in the scheme.
438. *Strategy and Time Frame:* The strategies to achieve the abovementioned goals and the proposed time frame is presented in **Table 8.32**

of additional headwork to meet the demand gap of 51.80 MLD at the rate of 135 lpcd, is proposed. Under this component, rehabilitation of 30% of the existing distribution network, which are laid in the core city (CBD), is proposed for refurbishment, which accounts for about 171 km, provision of additional distribution network for a length of 373.5 km with road overlay, and a water treatment plant of 50 MLD (2026), is proposed under this project.

440. *Cost Estimates.* The capital investment is estimated at Rs. 7,637.06 lakhs. The projects costing for water supply is furnished in **Table 8.34**

Table 8.34: Projects Costing for Water Supply

| S. No | Item | Unit | Quantity | Cost |
|----------|--|------|----------|------------------|
| | | | | <i>Rs. Lakhs</i> |
| A | Pillure II scheme – For Coimbatore Corporation Contribution | | | |
| | Distribution Network, MSR & 8 Reservoirs | | | 6,782.46 |
| B | New Infrastructure | | | |
| | Additional Infrastructure & Providing main pipe for extended areas | | | 854.60 |
| | Total (A+B) | | | 7,637.06 |

Source: Analysis

2. Sewerage and Sanitation

441. *Sub-Project Components.* Under this component, it is proposed to provide refurbish the existing sewer network and add additional network of 25.80 km at an estimated cost of Rs.1,991 lakhs. It is also proposed to provide under ground drainage network in the unsewered areas with a total cost of Rs. 14,837.00 lakhs. Under the new Government Order, the Corporation is liable to include the new extended areas and hence it is proposed to lay distribution network in the emerging areas at a approximate cost of Rs.854.6 lakhs.
442. *Cost Estimates.* The capital investment is estimated at Rs. 19,370.00 lakhs. The projects costing for sewerage is identified in **Table 8.35**.

Table 8.35: Projects Costing for Sewerage System

| S. No | Item | Quantity | Unit | Cost |
|----------|---|----------|------|------------------|
| | | | | <i>Rs. Lakhs</i> |
| A | System Rehabilitation* | 25.80 | Km | 1,991.00 |
| | Sub-Total (A) | | | 1,991.00 |
| B | New Infrastructure | | | |
| 1 | UGD for unsewered areas* | | | 14,837.00 |
| | Sub-Total (B) | | | 14,837.00 |
| C | Sewer Network in the extended area | | | 2,542.00 |
| | TOTAL (A+B+C) | | | 19,370.00 |

* DPR already prepared

3. Drainage, Ponds and Lake Development

443. *Sub-Project Components: Drainage.* The components involved in this sector are up-gradation of the existing drains and new formations. The estimated cost for strengthen of all primary drains with in the city limits is about Rs 11,336.15 Lakhs. While Rs. 532.93 Lakhs is proposed for the rehabilitation of the existing full length of storm water drains. Up gradation of 11 kms of kutchra drains to pucca closed and 18 kms of pucca open to pucca closed is also proposed at an estimated cost of Rs. 150.98 lakhs
444. *Cost Estimates - Drainage.* The capital investment for the improvements and up gradation of storm water drains is estimated at Rs. 15,575.06 lakhs. The projects costing for drains is listed in **Table 8.36**

Table 8.36: Projects Costing for Drains

| S. No | Description | Value | Unit | Cost |
|----------|---|--------|------|------------------|
| | | Kms | | Rs. Lakh |
| A | Rehabilitation | | | |
| 1 | Rehabilitation of Existing Storm Water Drains | 532.33 | km | 532.93 |
| B | Up gradation of Kutchra to Pucca | | | |
| 1 | Kutchra to Pucca Open | | km | |
| 2 | Kutchra to Pucca Closed | 11.00 | km | 107.00 |
| 3 | Pucca Open to Pucca Closed | 18.00 | km | 43.98 |
| C | Formation of New Drains | | | |
| 1 | New Pucca Open Drains | 94.80 | km | 1,137.60 |
| 2 | New Pucca Closed Drains | 142.20 | km | 2,417.40 |
| D | Primary Drains | | | |
| | Sanganur Pallam | 9.7 | km | 2,717.15 |
| | Velankurichi- Singanallur Drain | 10.8 | km | 2,651.00 |
| | Ganapathi- Singanallur Drain | 13.9 | km | 3,411.00 |
| | Karperayan Koil Drain | 1.92 | km | 471.00 |
| | Koilmedu Drain | 3.3 | km | 810.00 |
| | Railway Feeder Road side drain | 3.3 | km | 810.00 |
| | Tiruchy- Singanallur Check Drain | 1.9 | km | 466.00 |
| | Total | | | 15,575.06 |

Source: Analysis

445. *Sub-Project Components – Water Bodies.* Under this component, it is proposed to improve the seven existing water bodies viz., Krishnampathi, Selvampathi, Kumarasamy Tank, Narasampathi Tank, Selvachinthamani Kulam, Valan Kulam, Singanallur and Muthannan Kulam. The improvements include the desilting, strengthening and beautification of the water bodies.
446. *Cost Estimates - Water Bodies.* The capital investment for the improvements includes the desilting, strengthening of primary drains with in the corporation limit are estimated at Rs. 874.24 lakh. The estimation cost for improvements of lakes are presented in **Table 8.37**

Table 8.37: Estimated Cost for Improvements to Lakes

| Tanks | Area | Cost |
|------------------------|--------------|---------------|
| | <i>Ha</i> | <i>Lakhs</i> |
| Krishnampathi | 71.2 | 146.85 |
| Selvampathi | 28.2 | 58.16 |
| Kumarasamy Tank | 38 | 78.38 |
| Narasampathi Tank | 50.2 | 103.54 |
| Selvachinthamani Kulam | 14.9 | 30.73 |
| Valan Kulam | 64.8 | 133.65 |
| Singanallur | 115.3 | 237.81 |
| Muthannan Kulam | 41.3 | 85.18 |
| Total | 423.9 | 874.29 |

Source: Analysis

4. Solid Waste Management

447. *Sub-Project Components.* Under this component, it is proposed to develop a comprehensive solid waste management system for the town. 100% House-to-house waste collection with emphasis on source segregation is proposed. The primary collection and storage system comprises tri- cycles and push carts. Improvement of transfer station and
448. Under this component, it is proposed to develop a comprehensive solid waste management system for the town. House-to-house waste collection is proposed. The primary collection and storage system comprises try cycles. The total requirement for primary collection including street sweeping and drain desilting has been estimated as 920 tricycles (with 6 bins each). The secondary collection and transportation system requires 1160 polyethylene bins of 0.5 capacity each. The primary, secondary collection and transportation equipment is estimated to cater the needs till 2026. To treatment and dispose the waste safely, it is proposed to develop an integrated compost and landfill facility for the town. The integrated plant has been designed to treat and dispose ultimate waste generation of about 887 tons by the year 2026.
449. *Cost Estimates.* The capital investment is estimated at Rs. 7,874.33 lakh. The projects investments for SWM is illustrated in **Table 8.38**

Table 8.38: Projects Costing for Solid Waste Management

| Sl.No | Description | Quantity | Cost |
|--------------|--|-----------------|------------------|
| | | <i>Nos</i> | <i>Rs. Lakhs</i> |
| A | For Primary Collection | | |
| a | Purchase of Push Carts with Bins | 920 | 94.93 |
| b | Purchase of Polyethylene Bins | 1160 | 255.15 |
| | <i>Sub Total (A)</i> | | <i>350.08</i> |
| B | For Secondary Collection# | | |
| a | Modernization of Sathy Road Transfer Station | 01 | 10.00 |
| b | Construction of Transfer Station at Ukkadam area | 01 | 40.00 |
| c | Purchase of LMV/MMV Chassis | 33 | 231.00 |
| a | Mounting of Hydraulic Equipment on the LMV/MMV Chassis (33 New and 15 Old) | 48 | 352.50 |

| | | | |
|----------|--|----|-----------------|
| b | Purchase of Bulk Refuse Carriers with Trailers | 04 | 68.00 |
| c | Providing of GPS Box | 45 | 6.75 |
| | <i>Sub Total (B)</i> | | 708.25 |
| C | Development of Compost Yard | | |
| a | Purchase of Wheel Loaders | 01 | 50.00 |
| b | Improvements to Compost Yard | 01 | 50.00 |
| c | Localized organic waste treatment yards | 04 | 1,000.00 |
| d | Setting up of 100 TPD Composting Plant | 01 | 240.60 |
| e | Setting up of Vermi-Composting Plant | 01 | 90.00 |
| f | Setting up of Recycling Plant | 01 | 53.00 |
| g | Setting up of Land Fill Site | 01 | 200.00 |
| h | Purchase of Poclain Machine | 01 | 40.00 |
| i | Proving of IEC activities for the SWM scheme | 01 | 29.06 |
| j | Welfare to the workers | 01 | 43.91 |
| | <i>Sub Total (C)</i> | | 1,796.57 |
| D | Development of Landfill site* | | |
| a | Landfill Base | | 2,487.17 |
| b | Leachate Collection System | | 946.18 |
| c | Landfill Gas Collection System | | 1,030.34 |
| d | Top Cover System | | 550.74 |
| e | Cost of Building | | 3.00 |
| f | Storm Water Management System | | 2.00 |
| | Sub Total (D) | | 5,019.42 |
| | GRAND TOTAL (A+B+C+D) | | 7,874.33 |

Source:*-Draft Design Report, Consultancy services for design and supervision management for sanitary landfill for Coimbatore Municipal Corporation, Burnside Consulting Private Limited

5. Roads and Traffic Management

450. *Sub-Project Components - Roads:* Rs. 12,111.9 lakhs is proposed for up-gradation of existing roads to either Bituminous or Cement Concrete surfacing, provision of duct facility width more than 60 feet, in majority being up gradation for new road formation. Rs. 7,335.2 lakhs is proposed for the new formation of roads. It is also proposed to upgrade the interior roads, about 37 kms of road is identified for upgradation to earthen to BT road. 213 kms of internal roads are proposed for strengthening with an estimated cost of Rs. 1,487 lakhs. The internal roads exclude bus route roads and major link roads which are included in the proposals mentioned in traffic and transportation presented in **Table 8.36**. The investments for roads is presented in **Table 8.39**

Table 8.39: Projects Costing for Road Enhancement

| Si. No | Item | Unit | Value | Cost |
|----------|--|------|-------|-----------------|
| | | | | <i>Rs. Lakh</i> |
| A | Roads | | | |
| 1 | Up gradation of Earthen to Black Top | | 37 | 739.6 |
| B | New Formation | | | |
| 1 | Concrete | km. | 12 | 557 |
| 2 | Black Top | km. | 201 | 6,446.4 |
| 3 | WBM | km. | 23.7 | 331.8 |
| | Sub-Total (I) | | | 7,335.2 |
| C | Strengthening of Internal Roads(Excludes the Bus Route and Major Links) | km | 213 | 1,487.0 |
| D | Provision of Duct facility more than 60 feet road | Km | 85 | 2,550.0 |
| | Total (A+B+C+D) | | | 12,111.9 |

Source: Analysis

451. *Sub-Project Components - Traffic Management:* Sub-Project Components (Excluding the Bus Routes and Major Links). Under this component, it is proposed to upgrade the existing roads to cement concrete and bitumen surfaces, formation of new roads (2011) based on the future growth of the town and widening and strengthening of the existing internal roads (excluding the bus routes and major links), is proposed. Widening and strengthening of bus routes and the major links is also proposed under this project. It is also proposed to construct flyovers at 8 locations and sub ways at 16 locations.
452. To ensure better traffic management, it is also proposed to construct a truck terminal at the bys pass road and Multi-storied parking lots near Gandhipuram bus stand and big bazaar. 20 Major junctions, 30 minor junctions and 100 bus-lays are also proposed for better traffic management. The proposed projects and the estimated cost is presented in **Table 8.40**. The total cost envisaged is Rs. 210,800 Lakhs of which the contribution by the highways / other agencies will be around Rs. 143,600 Lakhs and Rs. 67,400 lakhs by the corporation. In addition for better traffic management modernization of traffic police department also envisaged.

Table 8.40: Projects Costing for Traffic and Transportation Management

| Project | Improvements | Length | Nos | Total |
|------------------------------|----------------------------|-----------|-----|----------------|
| | | <i>Km</i> | | <i>Rs.lakh</i> |
| ROAD SECTOR | | | | |
| Widening Radial Roads | | | | |
| Trichy Road | 4 to 6 lane | 11 | | 3,300 |
| Avinasi Rd | 4 to 6 lane | 26 | | 7,600 |
| Sathyamangalam Rd | 2 to 4 lane | 5 | | 1,500 |
| Mettupalayam Rd | 4 to 6 lane | 7 | | 2,100 |
| Thadagam Rd | 2 to 4 lane | 10 | | 3,000 |
| Maruthamalai Rd | 2 to 4 lane | 10 | | 3,000 |
| Narasipuram Rd | 2 lane with paved shoulder | 4 | | 600 |
| Cochin Rd | 4 to 6 lane | 5 | | 1,500 |
| Avaram palayam Rd | 2 to 4 lane | 4 | | 1,200 |
| Mathampatti road | | 16 | | 4,920 |

| Project | Improvements | Length | Nos | Total |
|--|------------------|--------|-----|---------|
| | | Km | | Rs.lakh |
| NGM road - KNG pudur road | | 4 | | 1,140 |
| Chinna Thadagam - Thudiyalur road | | 10 | | 2,880 |
| Goundampalayam TVS nagar road | | 3 | | 780 |
| Perur road (Siruvani Road) | | 29 | | 8,580 |
| Widening Bus routes with signage and footpath | | | | |
| to 2 lane | 2 laning | 100 | | 2,000 |
| To 4 lane | 4 laning | 50 | | 15,000 |
| Bypass Road | 2 lane to 4 lane | 11 | | 3,300 |
| Widening Ring Roads | | | | |
| <i>Inner Ring Road</i> | | | | |
| Nanjundapuram Rd- Pankaja Mills Rd- Sanganur River Side Rd upto Mettupalayam Rd | 2 lane to 4 lane | 8 | | 2,400 |
| <i>Middle Ring Road</i> | | | | |
| Vellalur Rd- (Singanalur)- Kamarajar Rd- Thannirpanthal Rd- Vilankurichi Rd- Kannasami Gowder St | 2 lane to 4 lane | 15 | | 4,500 |
| <i>Outer Ring Road</i> | | | | |
| Samedu Rd-Ondipudur- Airport Rd- Ravindranath Takur Rd- Ganapathy Rd- Nillampalayam Rd | 2 lane to 4 lane | 19 | | 5,700 |
| New Link Road | | | | |
| Neelambur to Metupalayam road (Km 0/0 – 20/0) | | 20 | | 10,000 |
| Flyovers | | | | |
| Within City- Trichy road& Nunjagunda Puram Rd Jun, Singanallur Jun, Lakshmi Mills Jun, Gandhipuram -Bus stand Jun, GP hospital Jun, Sowri palayam Jun ,Nirmala College Jun, Ukkadam Jun, Thadagam Rd &Maruthamalai Rd Jun, Mettupalayam Rd& Sanaganur River Side Rd Jun (2 juns), Dr Nanjappa Rd jun on Avinasi Rd, ORR-Sathy Rd, ORR-Mettupalayam Rd Jun, Bypass-Mettupalayam RdJun | | | 16 | 48,000 |
| Outside City- ORR-Avinasi Rd | | | 1 | 2,000 |
| Elevated Highway | | | | |
| Lanka Corner - NGM road (344/2) | | | | 1,500 |
| Valankulam Bye Pass road to Nanjappa road | | | | 10,000 |
| New RoBs/RuBs | | | | |
| Within City- Podanur Rd, Vellalur Rd, Thannir Panthal Rd, Neelikonam Palayam Rd, Pioneer Mills Rd, Peelikode, Rathinapuri Rd | | | 7 | 10,500 |
| Outside City- Podanur Rd | | | 1 | 1,500 |
| Widening of RoB | | | | |
| Improvement of RoBs/RuBs | | | | |
| Within City - CMC, Avinasi Rd, Sathyamangalm Rd, Avaram palayam Rd, Sanganur River Rd | | | 5 | 500 |

| Project | Improvements | Length | Nos | Total |
|--|------------------|-----------|-----|----------------|
| | | <i>Km</i> | | <i>Rs.lakh</i> |
| Integration & Upgradation of SH Network with NH | | | | |
| Madukarai - Chettipalayam road (0/0 -12/6), Sular - Railway Feeder road (km 0/0 - 5/6), Thudiyalur - Kovilpalayam road (Km 0/0-15/4), Sular - Market road (Km 0/0-1/2), Ravathur - Chenniayampalayam road (0/0-9/8), Km 331/6 of NGM road to Pappampatty km 0/0-6/8, Podanur-Chettipalayam road (km 4/0-11/2), Kurichikannamanaickenur (Km 0/0-18/8) | | 77.4 | | 7,800 |
| Pedestrian Subways | | | | |
| Within City- Gandhipuram Jun, Rly Stn, CMC hospital, Ukkadam Jun, Town Hall Jun, Oppanakkara & Big Bazaar St, Clock tower Jun, PSG Tech Jun, Ramanathpuram Jun, Singanallur Jun, Uppilipalayam Jun, GRD School, PSG Arts, Ramanathpuram(Woman Polytechnic), Lakshmi Mills, AAR VEE Hotel junction | | | 18 | 4,500 |
| Other Facilities | | | | |
| Truck terminal | | | | |
| On Bypass Rd | 200 truck spaces | | 20 | 600 |
| Multi storeyed Parking Lot | | | | |
| In four location | | | 4 | 2400 |
| Modernization of Bus stands | | | 4 | 2500 |
| Traffic management measures | | | | |
| Major Junctions | | | 20 | 6,000 |
| Minor Junctions | | | 30 | 9,000 |
| Bus Bays & Lay byes | 100 | | 10 | 2,500 |
| Storm water drain and Utility Ducts | | 101.1 | | 12,500 |
| GRAND TOTAL | | | | 210,800 |
| Investment by Highways /other agencies | | | | 143,600 |
| Investment by Corporation | | | | 67,400 |

6. Street Lighting

453. Rs. 2230.02 lakhs is identified for the provision of additional streetlights and power savers in Coimbatore. It is proposed to convert the existing tube lights and the proposed tube lights to retrofits at an estimated cost of Rs. 41.4 lakhs. One Power saver is proposed for every 25 sodium lamps and the estimated cost is Rs. 70.6 lakhs. The details of the proposed works in street lighting is presented in **Table 8.41**

Table 8.41: Project Costing for Street Lighting

| Sr. No | Fixture | Value | Unit | Cost |
|----------|--|-------|------|-----------------|
| | | | | <i>Rs. Lakh</i> |
| A | Distribution by Type (For New Formation of Roads) | | | |
| 1 | Retrofit Tube Light | 6320 | Nos. | 1,580.0 |
| 2 | High Power | 1501 | Nos. | 435.3 |
| 3 | High Mast Lamps | 8 | Nos. | 102.7 |
| | <i>Sub Total (A)</i> | | | <i>2,118.0</i> |
| B | Power Saver Equipments | | | |
| 4 | Power Saver Switches | 1009 | Nos. | 70.6 |
| 5 | Replacement of existing tube lights with retrofits | 4602 | Nos. | 41.4 |
| | <i>Sub-Total (B)</i> | | | <i>112.0</i> |
| | Total (A+B) | | | 2,230.0 |

7. Basic Services for Poor

454. Rs. 40,336.5 lakhs is proposed for infrastructure development in the slums. To achieve the goal of piped water supply for all in the slums, 50 kms of distribution network is proposed and for the interior location public stand posts are proposed at a cost of Rs. 445.87.lakhs. Road improvement projects are proposed at a estimated cost of Rs. 6,992.83 lakhs. It is proposed to construct 2024 toilet seats at an estimated cost of Rs. 1,254.72 lakhs. The UGD will cover the rest of the areas. New formation of storm water drain is proposed for 158 kms and the exiting storm water drains need strengthening, which would require a cost of Rs. 1930.74 lakhs. Improvements in the solid waste management are proposed at an estimated cost of Rs.157.05 lakhs. Making the slums adequately lit will cost Rs. 1405.35 lakhs.

Of the 35,000 houses in slums, it is proposed that, the houses in areas of restricted land use like water body, nallahs and in the vulnerable locations may be rehabilitated and necessary housing be made for them. It is also proposed to repair and convert the existing kutcha houses to pucca structures. The total cost estimated for housing is around Rs. 28,149.92 lakhs. The investments in the slums is briefed in **Table 8.42**

Tamil Nadu Housing Board is the only organization, which has developed many Housing colonies comprising considerable dwelling units for LIG and EWS category people. In order to cater to the growing needs of housing stock in Coimbatore due to migration from near by towns and villages, Tamil Nadu Housing Board has proposed to develop 15,500 units for EWS and 6,494 units for LIG and Singanallur, Kalapathy, Vilankurichi, Pattinam in National Highways – 47. Bye-pass, Chettipalayam and Karumathampatty in Coimbatore East and South East with total extent of 787.65 acres at an estimated cost of 524.34 crores.

Table 8.42: Project Costing for Basic Services for Slums

| S.No | Proposals | Unit | Need | Total Cost Rs. Lakhs |
|----------|--|-------|--------|-------------------------|
| A | Water Supply | | | |
| 1 | Distribution pipeline network | kms | 50 | 377.81 |
| 2 | Public Stand Posts | nos | 194 | 68.06 |
| | <i>Sub Total (A)</i> | | | <i>445.87</i> |
| B | Road | | | |
| 1 | Road Improvement | kms | 22 | 43.32 |
| 2 | CC road | kms | 88 | 4,134.52 |
| 3 | BT road | kms | 88 | 2,814.99 |
| | <i>Sub Total (B)</i> | | | <i>6,992.83</i> |
| C | Sanitation | | | |
| 1 | Toilet seats | nos | 2024 | 1,254.72 |
| | <i>Sub Total (C)</i> | | | <i>1,254.72</i> |
| D | Storm Water Drains | | | |
| 1 | New formation | kms | 158 | 1,894.64 |
| 2 | Strengthening of existing | kms | 18 | 36.10 |
| | <i>Sub Total (D)</i> | | | <i>1,930.74</i> |
| E | Solid Waste Management | | | |
| 1 | Community Bins | nos | 131 | 71.91 |
| 2 | Tricycles | nos | 215 | 17.17 |
| 3 | Dumper Placer | | 7 | 68.0 |
| | <i>Sub Total (E)</i> | | | <i>157.05</i> |
| F | Street Lighting | | | |
| 1 | Poles | nos | 4,195 | |
| 2 | Tube lights | nos | 4,486 | 1,121.60 |
| 3 | Sodium Vapour lamp | nos | 792 | 229.60 |
| 4 | Retrofits in exiting tube lights | | 1,083 | 54.15 |
| | <i>Sub Total (F)</i> | | | <i>1,405.35</i> |
| G | Housing | | | |
| 1 | 80% of households for repairs/rehabilitation | H/H's | 28,150 | 28,149.92 |
| 2 | EWS and LIG Houses by TNHB | H/H's | | 524.34 |
| | <i>Sub Total (G)</i> | | | <i>28,674.26</i> |
| | TOTAL | | | 40,860.82 |

8 Other Investments

455. The corporation has also proposed to construct markets, shopping complex, indoor stadiums, bus stand, slaughter house, to develop GIS resource base and to strengthen its E-Governance initiatives. The cost involved is presented in **Table 8.43**

Table 8.43: Project Costing for other infrastructure facilities

| Sl. No | Component | Unit | Cost |
|--------|---|------|----------------|
| | | | Rs. Lakh |
| 1 | Construction of Bus stand at Metupalayam Road | 1 No | 558.5 |
| 2 | Construction of South Zone Office at New Bazaar road | 1 No | 90.0 |
| 3 | Construction of fish and Mutton market at Ukkadam bye Pass road | 1 No | 125.2 |
| 4 | Construction of Fruit and Vegetable Market at Ukkadam | 1 No | 118.7 |
| 5 | Construction of Flower Market at Mettupalayam road | 1 No | 80.2 |
| 6 | Construction of shopping complex at Srinivasapuram | 1 No | 295.0 |
| 7 | Construction of Indoor stadium at G.V.Residency, Peelamedu | 1 No | 240.0 |
| 8 | Race Course Beautification | 1 No | 50.0 |
| 9 | Park & Play Ground | 1 No | 242.0 |
| 10 | Burial Ground | 1 No | 180.0 |
| 11 | G.I.S | | 400.0 |
| 12 | E Governance | | 100.0 |
| 13 | Slaughter House | 1 No | 50.0 |
| | Total | | 2,529.6 |

C. Prioritization of Works

456. The initial building blocks of the Corporate Plan are the "elements" required to sustain the City's growth; public utility, urban environment, economic and social development, land use and transportation, municipal resources, urban governance and capital facilities. The ideas in the plan were developed through a consultative process carried out between the Local Body Officials, Council Staff and Elected Officials, Public Interest Groups, Project Stakeholders and the local citizens.

The projects were prioritized in the following order;

- a) Water Supply
- b) Sewerage and Sanitation
- c) Solid Waste Management
- d) Storm Water Drains
- e) Urban Service for Poor (Slum Upgradation)
- f) Roads, Traffic and Transportation
- g) Street Lighting

IX. RESOURCE MOBILISATION INITIATIVES

A. Scope in Savings and Revenue Generation

1. Infrastructure

457. The main objective of the Business plan is to generate revenue through the non traditional sources with minimum investments and adopting the policies and strategies. There is enormous scope to control expenditure in Solid Waste Management sector and Street Lighting sector etc. By introducing the private participation in all sectors will result expenditure reduction. Regarding street lighting, the analysis will be towards various options to maintain new technology of street lighting with the help of private participation.

2. Assets

458. The major assets for the municipalities are the immovable assets. This is one more potential area to develop the asset values and increase the municipal revenue. The analysis includes find out the various options to make use of vacant lands by BOT basis. Revising rents for the remunerative assets up to market values.

B. Sector Wise Savings

1. Water supply

459. *Energy Saving.* A significant number of municipalities in Tamil Nadu rely on motive power for conveying water, either through significantly long distances (typically source to distribution point) or to meet contour gradient requirements within the distribution system. Pump Stations or Booster Stations achieve this objective by providing the necessary motive power to increasing the energy of the fluid to ensure water supply and distribution at required pressure and quantity.

460. Smooth functioning of the pump stations is highly critical, since they operate on a 24 hour basis and virtually form the heart of a system. Such pump stations consume a significant amount of electricity and result in high O&M costs for the Corporation that owns and operates such pumping system. It is common that over time, pumps and motors undergo severe wear and tear resulting in reduced operating efficiencies. This directly translates into higher power consumption for the same amount of output or even reduced output, which further results in a tangible increase in spending.

461. Energy Audit is an effective management tool to combat and control spiraling O&M and Energy costs and to enable the corporation effectively utilizes the system at the optimum cost possible. There is enormous scope to control expenditure with effective energy management, leak detection and unauthorized tap connections.

462. Following criteria were adopted for replacing the inefficient existing pump.
- (i) Age of the pump is more than 15 years;
 - (ii) Efficiency of the pump is less than 50 percent; and
 - (iii) Net energy saving is more than 10 percent.
463. Since most of the pumps were aged less than 15 years, it was inferred that, not much of saving was possible by replacement of pumps.
464. Unaccounted for water (UFW) is the difference between the volume of water delivered into the distribution system and the water sold/ billed or accounted for by legitimate consumption. UFW includes losses, physical losses and non-physical or commercial losses.
465. Waste is that water which having been obtained from a source and put into a supply and distribution system and into consumers' installation leaks or is allowed to escape or is taken there from for no useful purpose. Leakage is that part of waste that leaks or escapes other than by deliberate or controllable action. Leakage from reservoir, mains, communication pipes and consumers' supply pipes are of major concern for water managers. The above waste results in the reduction in the revenue to the urban local body. Thus the UFW is also referred to as non-revenue water. In case of Coimbatore property tax assessment to water connection is very low coverage (58 %), consequently there are chances of revenue leakages through unauthorized /illegal connections in the town. Which needs to be regularized, this could generate significant revenue for the corporation. However, this cannot be quantified accurately in the absence of no of illegal connections in the town and hence corporation should take necessary action towards legalizing the illegal connections in the town.

2 *Solid Waste Management*

466. Compare to all sections public health division will maintain maximum number of workers and more number of vehicles. The vehicles will exhibit more operation and maintain cost. With respect to solid waste management, the analysis is focused on comparison of manpower with municipal staff to the private operator.
467. *Staff Reduction and Privatisation.* There is 2,137 permanent staff excluding consolidated pay members, working as sanitary workers. The average salary for each sanitary worker is around Rs. 5,500 per month. It is inferred from the pay roll that, about around 10 percent of workers are liable to retire by 2015. So, it would be a viable option that, the Corporation start privatisation efforts by 2007 and would completely privatise their collection, transportation and disposal operations by 2015. The remaining staffs could be trained for other jobs and transferred to the departments where there is a shortage of staffs. The savings for staff is listed in **Table 9.1.**

Table 9.1: Savings on Sanitary Staff Reduction

| | Unit | 2005 to 2010 | 2010 to 15 | 2015 to 20 |
|--|-----------|------------------|------------------|------------------|
| No of retirements | Nos. | 96 | 92 | 85 |
| Average Salary | Rs. | 5,500 | 6,325 | 7,274 |
| Total salary per annum | Rs. | 6,336,000 | 6,982,800 | 7,419,225 |
| Uniform and stitching allowances per head | Rs. | 927,360 | 64,400 | 59,500 |
| Amount for foot ware per head | Rs. | 185,472 | 14,812 | 13,685 |
| Amount for soap per head | Rs. | 79,488 | 6,348 | 5,865 |
| Total expenditure on Sanitary Workers per annum | Rs | 7,528,320 | 7,068,360 | 7,498,275 |
| <i>Cost saving in privatizing Primary Collection</i> | | | | |
| Salary after Staff Reduction per annum | Rs | 4,608,000 | 4,636,800 | 4,284,000 |
| Total SAVING per annum | Rs | 2,920,320 | 2,431,560 | 3,214,275 |

Source: Analysis

468. *Fleet Management:* It can be noted from **Chapter V** that, more than 75 percent of the waste is desired to be carried by private hired vehicles. On enquiry and analysis it is noted that, there is a need for improvement in the fleet management system and it also provides huge potential in cost saving measures. On analysis it can be inferred that, about Rs. 71 lakhs per year can be saved just by ensuring that, the hired vehicles ply for the prescribed trips. The details can be referred in **Appendix I**.

3. *Street lighting*

469. In street lighting sector, also there is scope to minimize the expenditure towards power consumption and operation & maintenance. Related to street lighting the data has been collected as follows:

- (i) Number and types of street lighting and its operation and maintenance
- (ii) Expenditure towards salaries and Power charges

470. *Energy Savings.* This section reviews the current level of energy consumption, maintenance and establishment charges incurred in street light maintenance. Coimbatore Corporation maintains 30030 light fixtures out of which around 84 percent fixtures are sodium vapor lamps, 15 percent tube lights and 1% high mast lamps. The energy charges presented in the table are actual payment made during that year, since the non availability of past years actual energy consumption current year (2005) energy consumption was adopted. As per the latest available data on energy consumption, the total cost of energy is Rs. 414.8 lakh per annum. The average cost of energy consumption per fixture is Rs. 1381.30 per annum. The average maintenance expenditure per light is works out to Rs. 280 per annum. The energy consumption for streetlights is listed in **Table 9.2**.

Table 9.2: Electric Consumption of Street Lights

| EB Division | 2000 - 01 | | 2001 - 02 | | 2002 - 03 | | 2003 - 04 | |
|-------------------------|------------------|--------------|------------------|--------------|-------------------|--------------|-------------------|--------------|
| | Units | Cost | Units | Cost | Units | Cost | Units | Cost |
| | <i>Kwh</i> | <i>Lakhs</i> | <i>Kwh</i> | <i>Lakhs</i> | <i>Kwh</i> | <i>Lakhs</i> | <i>Kwh</i> | <i>Lakhs</i> |
| Metro (Old Corporation) | 3,887,833 | 136.1 | 4,262,734 | 149.2 | 9241002 | 323.4 | 2,218,261 | 77.6 |
| Tatabad | 2,397,565 | 83.9 | 2,628,760 | 92.0 | 5698779 | 199.5 | 1,816,730 | 63.6 |
| Kuniamut hur | 301,421 | 10.5 | 330,487 | 11.6 | 716449 | 25.1 | 218,907 | 7.7 |
| Seernaike npalayam | 180,459 | 6.3 | 197,860 | 6.9 | 428932 | 15.0 | 146,042 | 5.1 |
| Ondipudur | 1,222,555 | 42.8 | 1,340,445 | 46.9 | 2905895 | 101.7 | 999,056 | 35.0 |
| Above all divisions | - | 0.0 | - | 0.0 | 0 | 0.0 | 6,452,574 | 225.8 |
| TOTAL | 7,989,833 | 279.6 | 8,760,286 | 306.6 | 18,991,057 | 664.7 | 11,851,570 | 414.8 |

Source: Electrical Section, Coimbatore Corporation

471. Energy savings in street lighting could be achieved through following ways one by replacing existing conventional tube lights with energy efficient retrofit tube lights, installing power saver devices and privatizing the operation and maintenance of street lighting. There are 4,602 florescent tube light fixtures installed in Coimbatore Corporation. These 40-Watt fluorescent tube lights with ballasts will consume an additional 10-13 watts. To reduce the energy consumption, 28 Watt T-five retrofit tube lights have to be introduced in place of existing conventional tube lights.
472. Based on the best practices followed in other parts of country, retrofit tube lights are proposed in Coimbatore. The new tube-lights have a higher luminary rating, longer life span, lower failure rate and perform better under the highly fluctuating voltage that plagues the town's electricity supply. The salient features of retrofit tube lights are presented in the following **Table 9.3**.

Table 9.3: Salient features of Retro fit tube lights

| Description | Value |
|---|---------------------|
| Tube type | E+28 W |
| Power consumption | 28 W |
| Power Factor | 0.95 |
| Rated life of tube (burning hours) | 18,000 |
| Rated life of electronics (burning hours) | 50,000 |
| Stroking Voltage | Less than 120 volts |

Source: - Analysis

473. The following **Table 9.4** presents the comparison of present conventional florescent tube lights with proposed Retrofit tube lights.

Table 9.4: Comparison of conventional tube lights with retrofit lights

| Description | 40 Watts Tube Light | Retrofit light |
|------------------------------------|---------------------|----------------|
| Connecting load* (W) | 52.5 | 30 |
| Light output (Lm) | 2,450 | 2,900 |
| Annual energy consumption ** (KWH) | 211 | 120 |
| Energy charges @Rs. 3.50/- | 738 | 422 |
| Life of lamp (Hours) | 4,000 | 18,000 |

Source: - Analysis

* Including ballast loss of 12.5 W for conventional 40 Watts Tube lights.

** Calculated for 11 hrs daily average burning.

474. The Present Street lighting system in Coimbatore is challenged with high power cost and it also warrants an effective management strategy which is resulting in the following issues.
- (i) Operator switching streetlights require 1 to 1.5 hrs to operate all the switches in an area, resulting in some places lights are switched on/off almost 1 to 15 hrs prior and after the required time;
 - (ii) Lighting levels are higher than required standards;
 - (iii) During off peak hours (after 11 pm in night) lighting levels increase further due to increase in voltage;
 - (iv) Lighting devises are not mounted properly, thus unnecessarily distributing light to surrounding areas and providing less light on roads and pathways; and
 - (v) Selection and mounting of lamps is not done in a scientific manner, considering parameters like land use, type of road and illumination required as per Indian Standard Codes.
475. In order to address some of the above issues in the town, power saver devises to be installed. This Power saver devises save energy, by regulating voltage after peak hours. The built in timer automatically reduces voltage from 240V to 180 V after 10 pm. It also can reduce voltage stepwise up to 110 V in different time slots. This action optimized the illumination level after peak hours. The programmable timer switch also controls street lighting operating hours as per desired timings. These power savers also act as protection devises, which increase the life of lamps and luminaries.
476. *Privatization Option.* Government of Tamil Nadu has initiated privatization of street lighting in most of the ULBs in Tamil Nadu. Private contractors have to replace all streetlights by energy efficient lights, installation of power saver devises at necessary location and maintains the same. The replacement of existing lights proposed to replace in a phased manner for next two years (2006 & 2007). Separate cash flow for street lighting was prepared to ascertain the savings due to the replacement of new energy efficient lights.
477. The basis for preparing cash flows are as follows, annual increment in energy cost at 3 percent, rate of interest at 8.5 percent and net energy savings share (profit share) between contractor and ULB with a mutually agreed percentage basis. In this case, it was assumed that the cost of savings in energy utilization was distributed between contractor and ULB at 80 percent and 20 percent. Through street lighting energy consumption ULB can save minimum of Rs.44.26 lakh in 2008, out of which Rs. 8.85 lakh is transferred to corporation as per the above mentioned profit sharing arrangement, rest with private

contractor. Further details are presented in the following table. Existing corporations killed staffs could be retained for overseeing the private contractors operation and maintenance work and hence no savings is envisaged from staff reduction during the project implementation period. Assumption for calculating energy savings are presented in **Table 9.5** and energy savings is tabulated in **Table 9.6**. The Internal Rate of Return (IRR) for 2012 is more than the discounted rate of 10 percent making the initiative viable.

Table 9.5: Assumption for calculating energy savings

| Description | Unit | Value |
|--|----------|-------|
| No. of Street Lights in the ULB | Nos. | 3,827 |
| Total Annual Energy Cost for Street Lighting | Rs. Lakh | 41.48 |
| Energy Cost per Street light/annum | Rs. | 1381 |
| Standard Cost as per Case Studies | Rs. | 679 |
| Annual Increment in Energy Cost | % | 3 |
| Transfer of Savings to ULB | % | 20 |
| Rate of Interest | % | 8.50% |

Source: - Analysis

Table 9.6: Energy savings in street lighting

| Year | Capital Cost | Actual Energy Cost | Normative Energy Cost | Net Savings | Transfer of Savings to Urban Local Body | Net Cash flow |
|------|-----------------|--------------------|-----------------------|-------------|---|----------------|
| | <i>Rs. Lakh</i> | <i>INR Lakh</i> | | | | |
| 2006 | 84.08 | 556.20 | 472.77 | | 0.00 | -84.08 |
| 2007 | 41.42 | 572.89 | 486.95 | | 0.00 | -41.42 |
| 2008 | | 590.07 | 501.56 | 44.26 | 8.85 | 44.26 |
| 2009 | | 607.77 | 516.61 | 91.17 | 18.23 | 91.17 |
| 2010 | | 626.01 | 532.11 | 93.90 | 18.78 | 93.90 |
| 2011 | | 644.79 | 548.07 | 96.72 | 19.34 | 96.72 |
| 2012 | 42.04 | 664.13 | 564.51 | 99.62 | 19.92 | 57.58 |
| 2013 | 47.63 | 684.06 | 581.45 | 102.61 | 20.52 | 54.98 |
| 2014 | | 704.58 | 598.89 | 105.69 | 21.14 | 105.69 |
| 2015 | | 725.71 | 616.86 | 108.86 | 21.77 | 108.86 |
| 2016 | | 747.49 | 635.36 | 112.12 | 22.42 | 112.12 |
| 2017 | | 769.91 | 654.42 | 115.49 | 23.10 | 115.49 |
| 2018 | | 793.01 | 674.06 | 118.95 | 23.79 | 118.95 |
| 2019 | | 816.80 | 694.28 | 122.52 | 24.50 | 122.52 |
| 2020 | | 841.30 | 715.11 | 126.20 | 25.24 | 126.20 |
| | | | | | Total | 1122.91 |
| | | | | | IRR 2012 | 37% |
| | | | | | IRR 2015 | 43% |
| | | | | | IRR 2020 | 46% |

Source: Analysis

4. Assets

478. Details of remunerative assets owned by Coimbatore Corporation were discussed in **Chapter VIII**. Current year demands of remunerative assets were collected from Corporation and the same were compared with the market rental value. From the following table it is apparent that the Corporation remunerative assets are under valued. There is a wide scope of revenue maximization through lease and rentals from remunerative assets of Coimbatore Corporation. The ULB should follow the market value as minimum for lease and rentals of remunerative assets. Through this process Corporation can fetch additional revenue of Rs. 10.60 Lakh per annum. The rentals and lease amounts have to be revised every 3 year once minimum of 15 percent from FY 2006-07. The collection performance of leases and rentals are inconsistent over the assessment period. Annual account statement reveals very low collection performance, which needs to be attended immediately by Corporation. The additional revenue estimation is tabulated in **Table 9.7**.

Table 9.7: Additional Revenue Estimation from Remunerative Assets

| Zone | Area | Rate per sq.ft | Accruing rentals | Average Market value | Market Value Rental | Additional Revenue |
|-------------|--------------|-----------------------|-------------------------|-----------------------------|----------------------------|---------------------------|
| | <i>Sq.ft</i> | <i>Rs / Sq.ft</i> | <i>Rs./Year</i> | <i>Rs / Sq.ft</i> | <i>Rs./Year</i> | <i>Rs./Year</i> |
| East | 10,110 | 12.8 | 129,862 | 13.5 | 136,485 | 6,623 |
| North | 37,091 | 11.1 | 412,636 | 15.2 | 563,000 | 150,364 |
| West | 44,948 | 8.6 | 387,606 | 11.9 | 534,143 | 146,538 |
| South | 113,212 | 31.8 | 3,601,252 | 38.5 | 4,358,680 | 757,427 |

Source: Coimbatore Corporation & Analysis

C. Additional Resource Mobilization

1. Parking Fees

479. Land-use and economic activity drives the parking demand in Coimbatore City attracts significant business and personal two-wheeler traffic which puts up specific parking requirement. Private vehicles can be seen parked haphazardly along the roadside. Based on the field visit following locations were identified for on street parking of two wheelers. For estimating the parking fee, it was assumed that 40 percent of the total vehicle will be parked less than or equal to one hour and 60 percent of the total vehicle will be parked more than one hour. Vehicles that are parked more than an hour can be charged four rupees per vehicle and for other vehicles two rupees can be charged. An annual vehicle increment of two percent has been assumed to calculate the future revenue generation. The estimated parking fee is presented in **Table 9.8**.

Table 9.8: Estimated Parking Fee

| Year | Total |
|----------------------------|-------|
| Approximate No of veh./day | 800 |
| 2007 | 12.26 |
| 2008 | 12.51 |
| 2009 | 12.76 |
| 2010 | 13.01 |
| 2011 | 13.27 |
| 2012 | 13.54 |
| 2013 | 13.81 |
| 2014 | 14.09 |
| 2015 | 14.37 |
| 2016 | 14.66 |
| 2017 | 14.95 |
| 2018 | 15.25 |
| 2019 | 15.55 |
| 2020 | 15.86 |

Source: Analysis

2. Advertisement Fee

480. Lease amount collected as fixed by the council for advertising on lampposts and hoardings erected within the Corporation limit are accounted in advertisement fee. In case of Coimbatore Corporation average revenue generated through the advertisement fee is very low (Rs. 6.24 lakh). Hence, there is a scope to increase the advertisement fee by extending tax /fee coverage net. Only 25 percent of the advertisement fee raised will be transferred to respective Urban Local Bodies balance transferred to the State government. The following **Table 9.9** presents detailed estimation of advertisement fee for Coimbatore Corporation. The total advertisement fee is Rs. 25.99 lakh per annum, with an annual increment of 2 percent on total advertise fee assumed, to accommodate increase in no of advertisement hoardings/ boards.

3. Conservancy Fee

481. Conservancy establishment cost is work out to 52 percent of total establishment cost of Coimbatore Corporation, to meet at least a part of collection expenses conservancy fee introduced. It is proposed to cover at least 50 percent of the residential properties and 100 percent of non domestic properties like hotels, lodges, commercial establishments and etc, For Residential properties Rs. 15 per month and non domestic properties Rs. 50 per month have to be charged. Upward revision of 15 percent every 3 years once from 2006-07 proposed. **Table 9.10** presents estimated additional revenue mobilized through conservancy fee for Coimbatore Corporation.

4. Summary

462. Summary of additional revenue mobilization through expenditure control measures and additional revenue generations are presented in **Table. 9.11**

Table 9.9: Estimation of Advertisement fee

| Description | Unit | Major Arterial Roads | Other Roads | Markets/ Bus stands | Street Light poles |
|------------------------------------|-----------------|----------------------|-------------|---------------------|--------------------|
| Average Size of Hoardings | Sq.m | 10.00 | 5.00 | 10.00 | |
| Average Rate/sq.m/half yearly | Rupees | 75.00 | 50.00 | 100.00 | 50.00 |
| Total Length of Road | Km | 635.52 | | | |
| Length of Road | % | 20% | 50% | - | - |
| Total Length of Road | Km | 127.10 | 317.76 | - | - |
| Spacing of Hoardings/Boards per km | Nos. | 5 | 5 | - | - |
| Total no of Hoardings/Boards | Nos. | 636 | 1,589 | 50.00 | 15,015 |
| Total Revenue per annum | Rs. Lakh | 9.54 | 7.95 | 1.00 | 7.51 |

Source: Analysis

Table 9.10: Estimation of Conservancy Fee

| Description | Coverage | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---------------------------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Domestic (No) | 70% | 129,457 | 133,341 | 137,341 | 141,461 | 145,705 | 149,348 | 153,082 | 156,909 | 160,832 | 164,853 | 168,150 |
| Non Domestic (No) | 100% | 16,439 | 16,932 | 17,440 | 17,963 | 18,502 | 18,965 | 19,439 | 19,925 | 20,423 | 20,934 | 21,352 |
| <i>Total Revenue (Rs. Lakh)</i> | | 265.32 | 306.45 | 332.23 | 435.63 | 463.49 | 482.86 | 590.96 | 619.20 | 641.41 | 770.08 | 801.45 |

Source: Analysis

Table 9.11: Estimated Additional Revenue from Expenditure Control and Resource Mobilization

| Description | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|--|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|--------------|
| | <i>Rs. Lakh</i> | | | | | | | | | | |
| Expenditure Control Measures | | | | | | | | | | | |
| Energy Saving – Street lights | - | - | 8.85 | 18.23 | 18.78 | 19.34 | 19.92 | 20.52 | 21.14 | 21.77 | 22.42 |
| SWM Privatization | - | - | 11.68 | 23.36 | 52.57 | 57.43 | 62.29 | 67.16 | 72.02 | 76.88 | 83.31 |
| Better fleet mngt. of Pvt. SWM Vehicles | - | 71.07 | 75.33 | 79.85 | 84.64 | 89.72 | 95.11 | 100.81 | 106.86 | 113.27 | 120.07 |
| <i>Sub Total – Exp control</i> | | 71 | 96 | 121 | 156 | 166 | 177 | 188 | 200 | 212 | 226 |
| Additional Resource Mobilization | | | | | | | | | | | |
| Leases/Rentals from Assets | - | 11 | 11 | 12 | 13 | 13 | 14 | 15 | 16 | 17 | 18 |
| Parking Fee | 12 | 13 | 13 | 13 | 13 | 14 | 14 | 14 | 14 | 15 | 15 |
| Advertisement Fee | 26 | 27 | 27 | 28 | 28 | 29 | 29 | 30 | 30 | 31 | 32 |
| Conservancy Fee | 265 | 306 | 332 | 436 | 463 | 483 | 591 | 619 | 641 | 770 | 801 |
| <i>Sub Total – Addl. Resource Mobilization</i> | 304 | 356 | 383 | 488 | 518 | 538 | 648 | 678 | 702 | 833 | 866 |
| Total Revenue | 304 | 427 | 479 | 610 | 674 | 705 | 826 | 867 | 902 | 1,045 | 1,092 |

Source: Analysis

X. CAPITAL INVESTMENT PLAN & FINANCIAL SUSTAINABILITY

A. Capital Investment Plan

1 Water Supply

482. Under this component, provision of source development, feeder main up to OHTs, distribution network, Rehabilitation to distribution network, treatment plants. The capital costs estimated for the proposed interventions are to the tune of Rs. 7,637.06 lakh. This is worked out based on the base costs estimated in 2005.
483. The CIP for the Water supply sector is based on the requirements and demand for the year 2026. It is proposed to rehabilitate the existing distribution network and start the new water supply scheme by 2008. The capital phasing is presented in **Table 10.1**.

Table 10.1: Investment Phasing for the Water Supply Sector

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---------------------|--------------|----------------|----------------|---------------|------|------|
| | <i>Rs. In Lakhs</i> | | | | | | |
| Source development | | | 1,631.7 | 1,631.7 | | | |
| Roads Covered with Distribution Network | | | 932.7 | 932.7 | 932.7 | | |
| Rehabilitation for existing Network | 284.9 | 284.9 | 284.9 | | | | |
| Treatment capacity (2026) | | | 360.6 | 360.6 | | | |
| TOTAL | 284.9 | 284.9 | 3,209.8 | 2,924.9 | 9,32.7 | | |

2 Sewerage and Sanitation

484. An investment of Rs. 19,370 lakh for provision of under ground drainage system and rehabilitation of the existing system is envisaged in lieu with the environmental aspects. The detailed project report is already prepared for the UGD. An additional costing for UGD network in the non-approved layout is also taken care in the CIP. The CIP is presented in **Table 10.2**.

Table 10.2: Investment Phasing for the Sewerage sector

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--------------------------------------|---------------------|----------------|----------------|--------------|--------------|------|------|
| | <i>Rs. In Lakhs</i> | | | | | | |
| Refurbishment of the Existing system | 995.5 | 995.5 | | | | | |
| UGD Sewer Network Coverage | 3,006.7 | 3,006.7 | 3,006.7 | | | | |
| Pumping Capacity Augmentation | | 1,325.0 | 1,325.0 | | | | |
| Treatment Augmentation | | 1,590.0 | 1,590.0 | | | | |
| UGD network in Unauthorized Layouts | | | 843.0 | 843.0 | 843.0 | | |
| TOTAL | 4,002.1 | 6,917.2 | 6,764.7 | 843.0 | 843.0 | | |

3 Roads & Traffic and Transportation

485. Rs. 9561.9 Lakhs is proposed for up-gradation of existing roads to either Bituminous or Cement Concrete surfacing, majority being up gradation for new road formation. Rs. 8074.75 lakhs is proposed for the new formation of roads. The upgradation of the earthen road to the black top road would start from 2006 and end by 2007. The strengthening of the existing internal roads may be taken up from 2006 and to be continually carried out in a phased manner till 2010. The new formation of roads also is scheduled to be taken up by 2008 and would be a continual process.

Components in the Traffic and Transportation sector are proposed to be taken up in a continual basis to ensure connectivity and mobility. Strengthening of the bus route roads is proposed, construction of flyovers, construction of pedestrian subways, Construction of ROB's/RUB's, Improvement of ROB's and RUB, Junction Improvements are to be taken up on priority basis and its work is proposed to start from 2006 and continual addition of components is sought. The details of investment phasing is summarised in **Table 10.3**.

Table 10.3: Investment Phasing for Road and Traffic & Transportation Sector

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|---------------------|---------|---------|---------|---------|---------|---------|
| | <i>Rs. in Lakhs</i> | | | | | | |
| Road Sector | | | | | | | |
| Up-gradation | | | | | | | |
| Earthen to Black Top | 369.8 | 369.8 | | | | | |
| Strengthening of existing roads (internal roads) | 371.8 | 371.8 | 371.8 | 371.8 | 371.8 | | |
| New Formation | | | | | | | |
| Concrete | | | 185.7 | 185.7 | 185.7 | | |
| Black Top | | 1289.3 | 1289.3 | 1289.3 | 1289.3 | 1289.3 | |
| WBM | 165.9 | 165.9 | | | | | |
| Traffic and Transportation | | | | | | | |
| Strengthening and Widening of Radial Corridors | | 14,100 | 14,100 | 14,100 | | | |
| Strengthening and Widening of Bus Route Roads | 5,666.7 | 5,666.7 | 5,666.7 | | | | |
| Strengthening and Widening of By Pass Road | | 1,650.0 | 1,650.0 | | | | |
| Strengthening and Widening of IRR | | 2,400.0 | | | | | |
| Strengthening and Widening of MRR | | 2,250.0 | 2,250.0 | | | | |
| Strengthening and Widening of ORR | | | 2,850.0 | 2,850.0 | | | |
| New Link Road | | | | 5,000.0 | 5,000.0 | | |
| Flyovers | 7,142.9 | 7,142.9 | 7,142.9 | 7,142.9 | 7,142.9 | 7,142.9 | 7,142.9 |

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| | <i>Rs. in Lakhs</i> | | | | | | |
| Elevated Highway | | | | | 5,750.0 | 5,750.0 | |
| New RoB's/RuB's | 2,400.0 | 2,400.0 | 2,400.0 | 2,400.0 | 2,400.0 | 2,400.0 | |
| Improvement of RoB's, RuB's | 1,500.0 | 1,500.0 | 1,500.0 | | | | |
| Integration & Upgradation of SH Network with NH | | | 3,900.0 | 3,900.0 | | | |
| Subways | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 |
| Multi Storied Parking Lots | 400.0 | 400.0 | 400.0 | 400.0 | 400.0 | 400.0 | |
| Truck Terminal | | | 600.0 | | | | |
| Junction Improvement – Major | 1,200.0 | 1,200.0 | 1,200.0 | 1,200.0 | 1,200.0 | | |
| Junction Improvement – Minor | 1,800.0 | 1,800.0 | 1,800.0 | 1,800.0 | 1,800.0 | | |
| Bus Shelters & Bus Lay byes | 500.0 | 500.0 | 500.0 | 500.0 | 500.0 | | |
| Utility Ducts and Storm water drains | 1,785.7 | 1,785.7 | 1,785.7 | 1,785.7 | 1,785.7 | 1,785.7 | |
| Provision of Ducts | 364.3 | 364.3 | 364.3 | 364.3 | 364.3 | 364.3 | |
| Modernization of Bus stands | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 | 375.0 | |
| TOTAL | 24,791.1 | 46,481.4 | 51,081.4 | 44,414.7 | 28,942.9 | 20,257.2 | 7,142.9 |

4 Storm Water Drainage & Lake Development

486. The investments are in line with up-gradation and new formation of drains. The components involved in this sector are up-gradation of the existing drains and new formations. The estimated cost for extension and augmentation of storm water drainage including the improvement measures to Natural drains (primary drains) is proposed to start from 2006. The desilting and rejuvenation of the water bodies are to be taken up on a priority basis and are proposed to be completed by 2007. The New formation of drain is scheduled to be started by 2007 and continually updated till 2010 to attain the required standards. The investment phasing for storm water drains and desilting and lake conservation is presented in **Table 10.4**.

Table 10.4: Investment Phasing for Storm Water Drains and Lake Development

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | <i>Cost in Lakhs</i> | | | | | | |
| Rehabilitation | | | | | | | |
| Rehabilitation of Existing Storm Water Drains | | 701.5 | 701.5 | 701.5 | | | |
| Up gradation of Kutcha to Pucca | | | | | | | |
| Kutcha to Pucca Closed | 107.0 | | | | | | |
| Pucca Open to Pucca Closed | | 44.0 | | | | | |
| Formation of New Drains | | | | | | | |
| New Pucca Open Drains | | | 568.8 | 568.8 | | | |
| New Pucca Closed Drains | | 604.4 | 604.4 | 604.4 | 604.4 | | |
| Primary Drains | | | | | | | |
| Strengthening of Primary drains | 1571.43 | 1571.43 | 1571.43 | 1571.43 | 1571.43 | 1571.43 | 1571.43 |
| Improvement of Lakes | | | | | | | |
| | 386.9 | 484.39 | | | | | |
| TOTAL | 2065.33 | 3405.72 | 3446.13 | 3446.13 | 2175.83 | 1571.43 | 1571.43 |

5 Solid Waste Management

487. The total investment identified for this sector is Rs. 7,945.3 lakhs. The requirements at the disposal site are planned for the horizon year 2026. In addition, the other components of primary and secondary collection are planned for the immediate requirements and demands. Rs. 1,058.33 lakh of this amount is proposed for augmentation of the primary and secondary collection system in the town. Purchasing of push carts and vehicles are identified from 2006 and continual addition of vehicles based on the need is proposed to be added to the fleet. The landfill site development and compost yard development is proposed to start by 2007 and expected to complete by 2008. The Capital Improvement Program for solid waste management sector is presented in **Table 10.5**.

Table 10.5: Investment Phasing for the Solid Waste Management Sector

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|----------------------------------|----------------------|--------|------|------|------|------|------|
| | <i>Cost in Lakhs</i> | | | | | | |
| For Primary Collection | | | | | | | |
| Purchase of Push Carts with Bins | 47.47 | 47.47 | | | | | |
| Purchase of Polyethylene Bins | 127.58 | 127.58 | | | | | |
| For Secondary Collection# | | | | | | | |

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|----------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|
| | <i>Cost in Lakhs</i> | | | | | | |
| Modernization of Sathy Road Transfer Station | | 10.00 | | | | | |
| Construction of Transfer Station at Ukkadam area | | 40.00 | | | | | |
| Purchase of LMV/MMV Chassis | 57.75 | 57.75 | 57.75 | 57.75 | | | |
| Mounting of Hydraulic Equipment on the LMV/MMV Chassis(33 New and 15 Old) | 88.13 | 88.13 | 88.13 | 88.13 | | | |
| Purchase of Bulk Refuse Carriers with Trailers | 34.00 | 34.00 | | | | | |
| Providing of GPS Box | 3.38 | 3.38 | | | | | |
| Development of Compost Yard | | | | | | | |
| Localized compost yards | 142.86 | 142.86 | 142.86 | 142.86 | 142.86 | 142.86 | 142.86 |
| Purchase of Wheel Loaders | | 50.00 | | | | | |
| Improvements to Compost Yard | | 50.00 | | | | | |
| Setting up of 100 TPD Composting Plant | | 120.30 | 120.30 | | | | |
| Setting up of Vermi-Composting Plant | | 90.00 | | | | | |
| Setting up of Recycling Plant | | 53.00 | | | | | |
| Setting up of Land Fill Site | | 200.00 | | | | | |
| Purchase of Poclain Machine | | - | 40.0 | | | | |
| Proving of IEC activities for the SWM scheme | | 30.00 | 30.0 | 30.0 | 10.0 | | |
| Welfare to the workers | | 43.9 | | | | | |
| Development of Landfill site* | | | | | | | |
| Landfill Base | | 2,487.2 | | | | | |
| Leachate Collection System | | 473.1 | 473.1 | | | | |
| Landfill Gas Collection System | | 515.2 | 515.2 | | | | |
| Top Cover System | | 110.1 | 110.1 | 110.1 | 110.1 | 110.1 | |
| Cost of Building | | 1.0 | 1.0 | 1.0 | | | |
| Storm Water Management System | | 0.7 | 0.7 | 0.7 | | | |
| Total | 501.16 | 4,775.56 | 1,579.06 | 430.56 | 262.96 | 252.96 | 142.86 |

6 Street Lighting

488. Rs 2230.0 lakhs is identified for the provision of additional streetlight and power saver equipments for Coimbatore. The conversion of the tube lights to retrofits and installation of power saver equipments for high power lamps (SVL, MVL, High mast lamps) is proposed on priority basis. Additional street lighting for the emerging area is proposed based on the need and to be added up on a continual basis from 2009 The Capital Improvement Program for Street lighting is presented in **Table 10.6**.

Table 10.6: Investment Phasing for the Street Lighting Sector

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|----------------------|-------------|-------------|--------------|--------------|--------------|------|
| | <i>Cost in Lakhs</i> | | | | | | |
| Distribution by Type (For New Formation of Roads) | | | | | | | |
| Retrofit Tube Light | | | | 526.7 | 526.7 | 526.7 | |
| High Power | | | | 145.1 | 145.1 | 145.1 | |
| High Mast Lamps | | | | | 51.4 | 51.4 | |
| Power Saver Equipments | | | | | | | |
| Power Saver Switches | 23.5 | 23.5 | 23.5 | | | | |
| Replacement of existing tube lights with retrofits | | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | |
| Grand Total | 23.5 | 31.8 | 31.8 | 680.0 | 731.4 | 731.4 | |

7 Urban Services for Poor

489. Rs. 40,336.8 lakhs is proposed for enhancing and ensuring slum infrastructure. The corporation liability will be Rs.12,186.6 lakhs and the housing component which works out to Rs. 28,149.0 lakhs will be the liability of the TNSCB or other line agency. **Table 10.7** depicts the investment phases for slum infrastructure and it can be noted that, the listed proposals is scheduled to start from the base year 2006 and by 2012, it is expected that the slum infrastructure will be adequate and will match the quality of life of the city.

Table 10.7: Investment Phasing for Slum Infrastructure

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---------------------------|----------------------|---------|---------|---------|---------|---------|---------|
| | <i>Cost in Lakhs</i> | | | | | | |
| Water Supply | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 |
| Road | 999.0 | 999.0 | 999.0 | 999.0 | 999.0 | 999.0 | 999.0 |
| Sanitation | 250.9 | 250.9 | 250.9 | 250.9 | 250.9 | - | - |
| Storm Water Drains | 275.8 | 275.8 | 275.8 | 275.8 | 275.8 | 275.8 | 275.8 |
| Solid Waste Management | 39.3 | 39.3 | 39.3 | 39.3 | - | - | - |
| Street Lighting | 200.8 | 200.8 | 200.8 | 200.8 | 200.8 | 200.8 | 200.8 |
| Housing – TNSCB | 4,021.4 | 4,021.4 | 4,021.4 | 4,021.4 | 4,021.4 | 4,021.4 | 4,021.4 |
| Housing – TNHB | 104.8 | 104.8 | 104.8 | 104.8 | 104.8 | 104.8 | 104.8 |

8 Other Identified Projects

490. A total investment of Rs. 2,529.6 lakhs is identified for funding various other projects as identified by the corporation to ensure and strengthen the social infrastructure of the city. This is towards construction of commercial complexes, construction of parks and plays grounds, indoor stadiums, bus stand, slaughter house, to develop GIS resource base and to strengthen its E-Governance initiatives. The phasing the identified project is presented in **Table 10.8**.

Table 10.8: Investment Phasing for Other Identified Projects

| Project | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|----------------------|-------|-------|------|------|------|------|
| | <i>Cost In Lakhs</i> | | | | | | |
| Construction of Bus stand at Metupalayam Road | 558.5 | | | | | | |
| Construction of South Zone Office at New Bazaar road | | 90.0 | | | | | |
| Construction of Fish and Mutton market at Ukkadam bye Pass road | 62.6 | 62.6 | | | | | |
| Construction of Fruit and Vegetable Market at Ukkadam | 118.7 | | | | | | |
| Construction of Flower Market at Mettupalayam road | 80.2 | | | | | | |
| Construction of Bridge cum shopping complex at Srinivasapuram | | 295.0 | | | | | |
| Construction of Indoor stadium at G.V.Residency, Peelamedu | | 240.0 | | | | | |
| Race Course Beautification | | 50.0 | | | | | |
| Park & Play Ground | | 80.7 | 80.7 | 80.7 | | | |
| Burial Ground | | | 180.0 | | | | |
| G.I.S | 133.3 | 133.3 | 133.3 | | | | |
| E Governance | | 50.0 | 50.0 | | | | |
| Slaughter House | | | 50.0 | | | | |

Summary

491. The total estimated base cost of projects for all the sector is Rs. 318,664.5 lakhs of which the corporation investment will be Rs. 146,914.59 Lakhs and the investment by other agencies will be Rs. 171,749.9 Lakhs. The summary of investments is in the following **Table 10.9**.

Table 10.9: Component wise Phasing

| Sector | Capital Expenditure |
|--|----------------------------|
| Corporation Investment | <i>Rs. Lakh</i> |
| Water Supply | 7,637.1 |
| Sewerage & Sanitation | 19,370.0 |
| Roads | 12,111.9 |
| Traffic and Transportation | 67,400.0 |
| Storm Water Drains, Desilting of Natural Drains & Water Body restoration | 15,575.1 |
| Solid Waste Management | 7,874.3 |
| Street Lighting | 2,230.0 |
| Slum Upgradation | 12,186.6 |
| Others | 2,529.6 |
| Sub-total (Corporation Investment) | 146,914.59 |
| Non-Municipal Infrastructure | |
| Traffic Management – National & State Highway | 143,600.0 |
| Housing – Tamil Nadu Slum Clearance Board | 28,149.9 |
| Housing – Tamil Nadu Slum Clearance Board | 524.3 |
| Sub Total (Other Agency Investment) | 172,274.2 |
| Grand Total | 319,188.8 |

B. Financial Sustainability

1. Financial Sustainability

492. *Sustainability Analysis.* The sustainability analysis assumes that the Corporation will carry out reforms indicated as assumptions for financial projections. A financial and operating plan (FOP) prepared for Coimbatore Corporation then evaluates the Corporation fund status for the following scenarios:

- (i) Base Case Scenario. In the base case scenario, the finances of the ULB are forecast in a “do nothing” or “without project” scenario. Additional resources mobilized through various initiatives like expenditure control through energy saving, privatization and etc and further resources mobilized through introducing conservancy fee, parking fee and extending advertisement fee coverage are loaded on to the FOP. The revenue surplus thus generated indicates the ULB’s capacity to service capital expenditure.
- (ii) Full Project Scenario. The Full project investment scenario is based on investments identified for Coimbatore Corporation and the requirement for upgrading the town’s infrastructure is estimated and phased based on the construction activity. Implications of this investment in terms of external
- (iii) Borrowings required, resultant debt service commitment, and additional operation and maintenance expenditure are worked out to ascertain sub-project cash flows. Revenue surpluses from the Base Case Scenario are applied to sub-project cash flows emerging from full project investments – the Corporation fund net surpluses indicates the ULB’s ability to sustain full investments. FY 2020 is assumed as the

reference year to determine the net surpluses and whether the Corporation maintains a debt/revenue surplus ratio as an indication of the ULB’s ability to sustain investments.

2 *Basic Assumptions for Projections*

493. The FOP is based on a whole range of assumptions related to income and expenditure. These are critical to ascertain the investment sustenance and would also provide a tool to test certain specific policy decisions regarding revenue and expenditure drivers on the overall Corporation fiscal situation. This section elucidates the key assumption adopted for the three FOP scenarios.
494. The FOP is a cash flow stream of the ULB based on the regular Corporation revenues, expenditures, and applicability of surplus funds to support project sustainability. The FOP horizon is determined to assess the impact of full debt servicing liability resulting from the borrowings to meet the identified interventions. The proposed capital investments are phased over seven years investment from FY 2006-07 to 2015-16 implying that the last loan draw down would occur in FY 2020-21. Considering a five-year moratorium period, the debt servicing commitment will commence in the FY 2011-12.
495. *Revenue Income.* The assumptions for forecasting revenue income comprise:
- (i) Taxes and charges. In cases like property related taxes, water charges and sewerage charges, where the base and basis of revenue realization are known and predictable, the likely revenue is forecast based on certain assumptions regarding growth in number of assessments, revision in ARV (in case of property-related taxes), revision in charges/tariffs and improvement in collection efficiencies. The assumptions with regards basis for forecasting revenue income of taxes and charges are the same for two scenarios. However, the tax base (number of connections) varies for the two scenarios, assuming that the new investments in water supply and sewerage schemes will result in increased coverage of the infrastructure systems. **Table 10.10, Table 10.11, Table 10.12 & Table 10.13** list the assumptions adopted with regards forecasting income from property tax, water charges and drainage charges respectively under the three FOP scenarios.

Table 10.10: Key Assumptions for Forecasting Income from Property Tax

| Description | Current Level | Base Case Scenario | Investment Scenario |
|--|---------------|--------------------|---------------------|
| Annual growth in number of assessments (%) | 3.00% | 3.00% | 3.00% |
| Average ARV per Property (Rs. Per Annum) | 13,881 | 13,881 | 13,881 |
| Tax Rate (% of ARV) | 15% | 15% | 15% |
| Periodic increase in ARV (%) | | | |
| 2006-07 | - | 30.00 | 30.00 |
| 2011-12 | - | 30.00 | 30.00 |
| 2016-17 | - | 30.00 | 30.00 |
| Collection Performance (% of Demand) | | | |
| Arrears | 37% | 50% | 50% |
| Current | 71% | 80% | 80% |

Source: Analysis

Table 10.11: Key Assumptions for Forecasting Income from Water Charges

| Description | Current Level | Base Case Scenario | Investment Scenario |
|---|---------------|--------------------|---------------------|
| % Water connections to property tax assessments | 48.39% | 48.39% | 80% |
| Monthly water charge per connection (Rs.) | | | |
| Domestic | 50.00 | 50.00 | 50.00 |
| Non Domestic | 100.00 | 100.00 | 100.00 |
| Industrial | 200.00 | 200.00 | 200.00 |
| Periodic revision in water charges | | | |
| 2006-07 | - | 15.00 | 15.00 |
| 2009-10 | - | 15.00 | 15.00 |
| 2011-12 | - | 15.00 | 15.00 |
| 2015-16 | - | 15.00 | 15.00 |
| 2018-19 | - | 15.00 | 15.00 |
| Collection Performance (% of Demand) | | | |
| Arrears | 73% | 70% | 70% |
| Current | 80% | 80% | 80% |
| One time connection fee (Rs.) | | | |
| Domestic | 3,000 | 3,000 | 3,000 |
| Non Domestic | 5,000 | 5,000 | 5,000 |
| Industrial | 9,000 | 9,000 | 9,000 |
| Periodic revision of one time connection fee | - | 20 % - 3 yrs once | 20 % - 3 yrs once |

Source: Analysis

Table 10.12: Key Assumptions for Forecasting Income from Sewerage Charges

| Description | Current Level | Base Case Scenario | Investment Scenario |
|--|---------------|--------------------|---------------------|
| % Sewerage connections to PT assessments | 31% | 31% | 80% |
| Monthly sewerage charge per connection (Rs.) | | | |
| Domestic | 100.00 | 100.00 | 100.00 |
| Non Domestic | 200.00 | 200.00 | 200.00 |
| Industrial | 200.00 | 200.00 | 200.00 |
| Periodic revision in sewerage charges | | | |
| 2006-07 | - | - | 15.00 |
| 2009-10 | - | - | 15.00 |
| 2011-12 | - | - | 15.00 |
| 2015-16 | - | - | 15.00 |
| 2018-19 | - | - | 15.00 |
| Collection Performance (% of Demand) | | | |
| Arrears | 0% | 0% | 50% |
| Current | 100% | 100% | 90% |
| One time connection fee (Rs.) | | | |
| Domestic | 6,000.00 | 6,000.00 | 7,250 |
| Non Domestic | 10,000.00 | 10,000.00 | 12,000 |
| Industrial | 15,000.00 | 15,000.00 | 18,000 |
| Periodic revision of one time connection fee | - | 20 % - 3 yrs once | 20 % - 3 yrs once |

Source: Analysis

496. The observed trend during assessment work is 100% collection of sewerage charges. Hence in the base case scenario (“do nothing” / no projects) the same has been presented. However in the investment scenario assuming a collection drive / implementation of the reform agenda combined with more realistic assumptions, collection efficiency of 90 % adopted.

Table: 10.13: Key Assumptions for Forecasting Income from SWM Fee

| Description | Investment Scenario |
|---|---------------------|
| % Coverage to PT assessments | |
| Domestic | 70.00 |
| Non Domestic | 100.00 |
| Monthly conservancy fee per PT assessment (Rs.) | |
| Domestic | 10.00 |
| Non Domestic | 15.00 |
| Periodic revision in conservancy fee | |
| 2006-07 | 15.00 |
| 2009-10 | 15.00 |
| 2011-12 | 15.00 |
| 2015-16 | 15.00 |
| 2018-19 | 15.00 |
| Collection Performance (% of Demand) | |
| Arrears | 50.00 |
| Current | 80.00 |

Source: Analysis

- Other revenue income from own sources. All revenue income from own sources other than property-related taxes, and water and sewerage charges, where the base and basis is not clearly defined, are forecast based on the observed trend during the assessment period (2000-01 to 2003-04), subject to minimum and maximum annual growth rates of 5 percent and 15 percent, respectively. The Growth Rate assumptions for income from other own sources is listed in **Table: 11.14**

Table 10.14: Growth Rate Assumptions for Income from Other Own Sources

| Description | Current Level | Assumption |
|--|---------------|------------|
| Profession Tax | 5.29 % | 5.00% |
| Other taxes & Charges | -- | 5.00% |
| Income from Corporation Properties and Markets | 4.88 % | 5.00% |
| License Income (Trade, etc.) | 25.72 % | 10.00% |
| Income from Special Services | 54.13 % | 10.00% |
| Income from Sale Proceeds | -- | 5.00% |
| Income from Fees and Fines | 14.00 % | 14.00% |
| Income from Interest on Deposits | 4.72 % | 5.00% |
| Income from Investments(Excl. Interest) | -- | 5.00 % |
| Miscellaneous Income | -- | 5.00 % |

Source: Analysis

- (ii) Assigned Revenue. Items of assigned revenue such as surcharge on stamp duty, entertainment tax share, etc. are forecast based on the observed trend during the assessment period (2001 to 2003-04), subject to minimum and maximum annual

growth rates of 5 percent and 15 percent, respectively. Entertainment tax observed trend during the assessment period was observed negative growth rate of 2.31 percent, which attributes to inconsistent transfer of ULB share during the review period. Hence, a nominal growth rate of 5 percent has been assumed to forecast the revenue. In case of surcharge on stamp duty witnessed a high growth rate of 38.13 percent during the review period and hence it is assumed that it is going to grow at 15 percent. The Key growth rate assumptions for income from assigned sources is presented in **Table 10.15**

Table 10.15: Key Growth Rate Assumptions for Income from Assigned Sources

| Description | Current Level | Assumption |
|-------------------------|---------------|------------|
| | % | % |
| Entertainment tax | (2.31) | 5.00 |
| Surcharge on Stamp Duty | 38.13 | 15.00 |

Source: Analysis

- (iii) Grants and Contributions. Revenue income in the form of grants and contributions are also forecast based on the observed trend during the review period (2000 - 01 to 2003-04), subject to minimum and maximum annual growth rates of 5 percent and 15 percent respectively. Although SFC devolution observed trend was very high, owing to the inconsistent in transfer of grant to ULB. Considering the states tax revenue growth trend forecast, population growth trend and reforms measures initiated by the Corporation will fetch more devolution fund. In this perspective, a maximum of 15 percent growth per annum adopted. **Table 10.16** shows the key growth rate assumptions for income from grants & contributions

Table 10.16: Key Growth Rate Assumptions for Income from Grants & Contributions

| Description | Current Level | Assumption |
|--------------------------------|---------------|------------|
| | % | % |
| State Finance Commission Grant | 30.00 | 15.00 |
| Other Grants | 183.27 | 10.00 |

Source: Analysis

- (iv) Additional Revenue Income due to Sub-Projects. The sub-projects – in case of water and sewerage projects – are expected to fetch additional revenue by way of increase in number of assessments and levy of user charges (in cases where a new sewerage system is proposed). The sewerage charge is adopted as per Table starting from 2007-08 and a revision of 15 percent is proposed every three years, beginning from 2007-08. The additional revenue income due to water supply and sewerage sub-projects is computed based on the proposed number of new connections, proposed tariffs and assumed collection performance. In addition solid waste conservancy fee also planned to levy on property assessments.

16. *Revenue Expenditure.* Key assumptions for forecasting revenue expenditure comprise:

- (i) Expenditure on Corporation Services. Expenditure on Corporation services including general administration, revenue collection and service delivery are forecast based on the observed trend during the assessment period (2000-01 to 2003-04), subject to minimum and maximum annual growth rates of 5 percent and

20 percent, respectively. The operation maintenance was grown at 24.58 percent during the assessment period; ULB should take essential action plan towards controlling the expenditure towards operation and maintenance of Corporation services. Since most of the item heads are growing at very fast rate, on a conservative side at a maximum of 20 percent has been adopted to forecast the future expenditure trend. However, this could be achieved only through expenditure reduction and privatization of Corporation services. Although the expenditure trend of staff salary was on the lower side during the assessment period, considering the periodic revision and other increase at a rate of 8 percent has been adopted for future. Key growth rate assumptions for forecasting revenue expenditure is illustrated in **Table 10.17** water supply revenue expenditure in **Table 10.18**

Table 10.17: Key Growth Rate Assumptions for Forecasting Revenue Expenditure

| Description | Current Level | Assumption |
|--|---------------|------------|
| | % | % |
| General Administration & Revenue Collection | | |
| Staff Salary and Employee Related Expenses | 0.50 | 8.00 |
| Allowances to Elected Representatives | 3.38 | 5.00 |
| General Expenses | 12.91 | 13.00 |
| Pensions and Gratuities | (21.77) | 5.00 |
| Education - Staff Salary | 8.02 | 8.00 |
| Miscellaneous | 22.51 | 15.00 |
| Corporation Services excl. W&D* | | |
| General Expenses | 108.37 | 20.00 |
| Public Works and Roads | 49.68 | 20.00 |
| Public Health and Conservancy | 41.29 | 20.00 |
| Street Lighting (including Electricity Charges) | 34.81 | 20.00 |
| Education | 289.62 | 20.00 |
| Vehicle and Equipment Maintenance | 112.48 | 20.00 |
| Miscellaneous | 307.99 | 5.00 |
| Total- Corporation Services excl. W&D | 24.58 | |

Note: * - Sectoral Annual Growth Rate (SAGR)

Table 10.18: Growth Rate Assumptions for Forecasting WS Revenue Expenditure

| Description | Current Level | Assumption |
|--|---------------|------------|
| | % | % |
| Staff Salary & Employee Related Expenses | (0.96) | 8.00 |
| Administration Expenses | 9.52 | 15.00 |
| Equipment Maintenance & Repairs | 29.92 | 20.00 |
| Board Payment | 34.88 | 20.00 |
| Electricity Charges | 55.59 | 20.00 |
| Vehicle Maintenance & Repairs | 23.82 | 20.00 |
| Miscellaneous | -- | 5.00 |

Source: Analysis

- (ii) Outstanding Non-debt liabilities. The outstanding non-debt liabilities like payments due to employees, TNEB, TWAD, State Government cess, etc. are assumed to be cleared in equal installments over a 5-year period from 2006-07 to 2010-11. Where data was provided by the ULB, it was considered for preparing the FOP.

- (iv) **Outstanding Debt Liabilities.** The outstanding debt liabilities are proposed for clearance over a 10-year period beginning 2006-07 to 2016-17 with the furnished interest rate adopted otherwise at a constant interest of 9.50 percent per annum was assumed.
- (v) **Additional O&M Expenditure due to Sub-Projects.** While each sector identifies the O&M costs applicable for asset maintenance (manpower, consumables, power charges, etc.), a proportion of the capital cost was derived for projections. **Table 10.19** presents the assumptions regarding O&M expenditure on new assets. The O& M Expenditure is presented in **Table 10.19**

Table 10.19: Assumptions for O & M Expenditure

| Sector | As % of Capital Cost |
|------------------------------|----------------------|
| Water Supply | 6.00 |
| Sewerage & Sanitation | 4.00 |
| Roads and Traffic Management | 3.00 |
| Storm Water Drainage | 2.00 |
| Solid Waste Management | 10.00 |
| Street Lighting | 10.00 |
| Slum Up gradation | 1.00 |
| Others | 2.00 |

Source: Analysis

17. *Capital Account.* In case of capital account, no capital transactions are considered in the base case scenario, as this scenario is aimed at ascertaining the ULB's capacity to generate internal resources that would be leveraged to undertake identified sub-projects. In the identified investment and sustainable investment scenarios, sub-project cash flows are loaded onto the FOP and their impact on Corporation finances in corresponding scenarios are tested. Key assumptions regarding capital account are investment phasing and project financing/funding structures.
497. *Capital Expenditure.* The estimated expenditure for implementing sub-projects is phased over a five-year period beginning 2006-07. Based on the above phasing the actual investment requirement over the five-year period is ascertained adopting a physical contingency of seven percent and a price contingency of six percent per annum. Following tables presents the base full project cost and implementation schedule.

Table 10.20: Summary of estimated investment requirement and phasing schedule

| Sector | Total Investment <i>Rs. Lakh</i> | Investment Phasing (%) | | | | | | |
|-----------------------------------|-------------------------------------|------------------------|---------|---------|---------|---------|---------|---------|
| | | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 |
| <u>Corporation Infrastructure</u> | | | | | | | | |
| Water Supply | 7,637.06 | 5% | 5% | 30% | 30% | 20% | 10% | 0% |
| Sewerage & Sanitation | 19,370.04 | 20% | 20% | 20% | 20% | 20% | 0% | 0% |
| Roads | 79,511.90 | 5% | 5% | 10% | 10% | 10% | 10% | 10% |
| Storm Water Drains | 15,575.06 | 5% | 5% | 10% | 10% | 10% | 10% | 10% |
| Solid Waste Mgmt | 7,874.33 | 5% | 25% | 30% | 30% | 10% | 0% | 0% |
| Street Lighting | 2,230.02 | 0% | 0% | 10% | 10% | 10% | 10% | 10% |
| Slum Up gradation | 12,186.56 | 10% | 10% | 10% | 10% | 10% | 10% | 10% |
| Others | 2,529.59 | 20% | 20% | 10% | 10% | 10% | 10% | 10% |
| Total – ULB Investment | 146,914.56 | | | | | | | |

Source: Analysis

Table 10.21: Summary of phased investment in full project investment scenario

| Sector | Total Investment <i>Rs. Lakh</i> | Investment Phasing – Rs. Lakh at Current Price | | | | | | |
|-----------------------------------|-------------------------------------|--|------------------|------------------|------------------|------------------|------------------|------------------|
| | | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 |
| <u>Corporation Infrastructure</u> | | | | | | | | |
| Water Supply | 7,637.06 | 381.85 | 381.85 | 2,291.12 | 2,291.12 | 1,527.41 | 763.71 | - |
| Sewerage & Sanitation | 19,370.04 | 3,874.01 | 3,874.01 | 3,874.01 | 3,874.01 | 3,874.01 | - | - |
| Roads | 79,511.90 | 3,975.60 | 3,975.60 | 7,951.19 | 7,951.19 | 7,951.19 | 7,951.19 | 7,951.19 |
| Storm Water Drains | 15,575.06 | 778.75 | 778.75 | 1,557.51 | 1,557.51 | 1,557.51 | 1,557.51 | 1,557.51 |
| Solid Waste Mgmt | 7,874.33 | 393.72 | 1,968.58 | 2,362.30 | 2,362.30 | 787.43 | - | - |
| Street Lighting | 2,230.02 | - | - | 223.00 | 223.00 | 223.00 | 223.00 | 223.00 |
| Slum Up gradation | 12,186.56 | 1,218.66 | 1,218.66 | 1,218.66 | 1,218.66 | 1,218.66 | 1,218.66 | 1,218.66 |
| Others | 2,529.59 | 505.92 | 505.92 | 252.96 | 252.96 | 252.96 | 252.96 | 252.96 |
| Total – ULB Investment | 146,914.56 | 11,128.50 | 12,703.37 | 19,730.74 | 19,730.74 | 17,392.17 | 11,967.02 | 11,203.31 |

Source: Analysis

19. *Capital Income.* As per the following financing plan ULB's investment share and other agencies investments would be proposed as per NURM guidelines.

Table 10.22: Proposed Financing Pattern

| Sector | Central Govt. Grant | State Govt. Grant | ULB/FIs/PPP/Beneficiaries |
|---|---------------------|-------------------|---------------------------|
| | <i>Percentage</i> | | |
| Water Supply | 50 | 20 | 30 |
| Sewerage & Sanitation | 50 | 20 | 30 |
| Roads and Traffic Management | 50 | 20 | 30 |
| Storm Water Drainage | 50 | 20 | 30 |
| Solid Waste Management | 50 | 20 | 30 |
| Street Lighting | 50 | 20 | 30 |
| Slum Upgradation | 50 | 25 | 25 |
| Others | 50 | 20 | 30 |
| Traffic & Transportation - Other Agency | 50 | 20 | 30 |
| Slum Housing - TNSCB | 50 | 25 | 25 |

Source: NURM Guidelines

Table 10.23: One-time charges for water & sewerage connections

| S.No | Description | Water Supply | Sewerage |
|------|--------------|--------------|----------|
| 1 | Domestic | 3,000 | 7,250 |
| 2 | Non Domestic | 5,000 | 12,000 |
| 3 | Industrial | 9,000 | 18,000 |

21. In summary, the following key assumptions were made while preparing the cash flows:
- (i) Revenue Income.
- Property Tax:* projected based on ARV per property; number of assessments to grow at a nominal 3 percent per annum; ARV for all properties revised once in 5 years beginning 2006-07 at 30 percent; and collection performance assumed at 50 percent against arrears demand and 80 percent against current demand.
 - Water Charges:* At a nominal 3 percent per annum (proportionate to property tax assessment growth rate) regular connections are envisaged in the base case scenario and increase in water connections is a result of the availability of additional water for distribution – it is assumed that 80 percent of the property tax connections would have water connections by FY 2013; the current rate of water charge is maintained till 2005-06, and from 2006-07 a 15 percent increase is assumed every 3 years; collection performance is assumed at 70 percent against arrears demand and 80 percent against current demand; and new (one-time) connection charges are collected as per the current rate till 2005-06, and from 2006-07 a 20 percent increase in every 3 years.
 - Sewerage Charges:* No new connections envisaged in base case scenario and sewer connections are provided under the Project – it is assumed that 80 percent of the property tax connections would have water connections by FY 2019; monthly flat rate of Rs. 100, Rs. 200 & Rs. 200 per connection for

domestic, non domestic and industrial connections respectively, it is assumed for sewerage charge starts from 2005-06, and from then on a 15 percent increase is assumed every 3 years; collection performance is assumed at 50 percent against arrears demand and 90 percent against current demand.

- d. *All other revenue income items.* (Including Corporation own sources, grants and assigned revenues): past trend is adopted, subject to minimum and maximum ceilings of 5 and 20 percent per annum, respectively.

(ii) Revenue Expenditure.

- a. Past trend is adopted, subject to minimum and maximum ceilings of 5 and 20 percent per annum, respectively.
- b. Additional O&M expenditure is estimated based on ascertained percentages of capital costs.
- c. All outstanding non-debt liabilities are to be cleared off in the next 5 years.
- d. All outstanding debt liabilities are to be cleared off in the next 10 years at an interest rate provided by the ULB, otherwise at an average interest rate of 9.50 percent.
- e. New loans are to be serviced over a 20-year tenor (including a five-year principal plus interest moratorium).

(iii) Capital Expenditure.

- a. Capital expenditure is forecast based on the identified investments.
- b. The base costs estimated are at 2005-06 prices, which are then indexed by 7 percent for physical contingencies, and 6 percent for price contingencies.

(iv) Capital Income.

- a. Capital Income is ascertained based on assumed project financing patterns as detailed in **Table 10.22**.

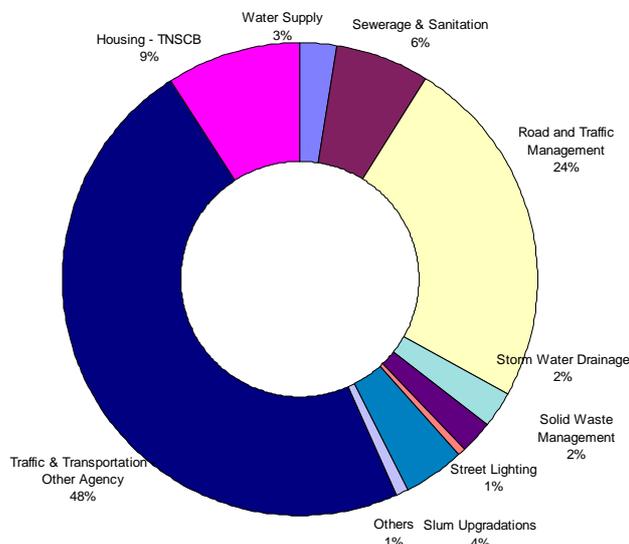
3. *Project Cash Flows and FOP Results*

- 498. The base case scenario is worked out considering only the revenue account transactions to assess the Corporation capacity to generate revenue surpluses that could be leveraged to undertake capital investments. Detailed cash flows are worked out for each of the sub-projects based on the assumptions with regards investment phasing, financing pattern, additional O&M expenditure and additional income due to proposed capital investments, for the Full Project scenarios and Sustainable investment scenarios. The net project cash flows are then loaded onto the base case scenario to test their impact on the overall Corporation fiscal situation.
- 499. *Base Case Scenario.* The base case scenario results indicate that under the past-trend based assumptions adopted, Coimbatore Corporation would end up with a positive cumulative surplus of Rs.52,406 lakh by the end of FY 2015. With reforms and additional resource mobilization initiatives like energy saving in water supply pumps at head works, energy savings in street lighting and privatization of solid waste management activity and parking

fee, levying of new charges like conservancy fee Corporation can reach above said cumulative surplus.

Figure 10.1: Sector wise Investment

500. *Full Project Sustenance Scenario.* **Table 10.20** presents a summary of total project cash flows due to the full project scenario. Coimbatore Corporation would accumulate a negative closing balance of Rs. 27,793 lakh by the end of FY 2015 due exclusively to the full project investment (excluding ULB equity). The total net project cash flows due to full project when loaded onto the base case Scenario FOP indicate that Coimbatore Corporation would sustain full project investment. **Table 10.21** presents a summary of the Corporation fiscal status in the Full Project scenario. The investment proposed for Coimbatore is to the tune of Rs. 302,931 lakh, details of sector wise financing pattern is presented in the following table.



501. Out of the total project costs, the share of ULB is Rs. 38,745 lakhs, which would finance through internal accruals, debt financing and private sector participation. ULB would mobilize the resources to the tune of 80% of their share with the remaining 20% coming from FIs and private sector participation.

Table 10.24: Summary of Financing Plan

| Sector | Central Govt. Grant | State Govt. Grant | ULB/FIs/PPP/Beneficiaries |
|---|---------------------|-------------------|---------------------------|
| | <i>Percentage</i> | | |
| Water Supply | 50 | 20 | 30 |
| Sewerage & Sanitation | 50 | 20 | 30 |
| Roads and Traffic Management | 50 | 20 | 30 |
| Storm Water Drainage | 50 | 20 | 30 |
| Solid Waste Management | 50 | 20 | 30 |
| Street Lighting | 50 | 20 | 30 |
| Slum Upgradation | 50 | 25 | 25 |
| Others | 50 | 20 | 30 |
| Traffic & Transportation - Other Agency | 50 | 20 | 30 |
| Slum Housing - TNSCB | 50 | 25 | 25 |
| Housing - TNHB | 50 | 25 | 25 |

Table 10.24a: Summary of Financing Plan

| Sectors | Central Govt. Grant | State Govt. Grant | ULB/FIs/PP P/Beneficiaries | Total |
|---|---------------------|-------------------|----------------------------|-------------------|
| | <i>Rs. Lakh</i> | | | |
| Corporation Investment Share | | | | |
| Water Supply | 3,818.53 | 1,527.41 | 2,291.12 | 7,637.06 |
| Sewerage & Sanitation | 9,685.02 | 3,874.01 | 5,811.01 | 19,370.04 |
| Road and Traffic Management | 39,755.95 | 15,902.38 | 23,853.57 | 79,511.90 |
| Storm Water Drainage | 7,787.53 | 3,115.01 | 4,672.52 | 15,575.06 |
| Solid Waste Management | 3,937.16 | 1,574.87 | 2,362.29 | 7,874.33 |
| Street Lighting | 1,115.01 | 446.00 | 669.01 | 2,230.02 |
| Slum Up gradations | 6,093.28 | 3,046.64 | 3,046.64 | 12,186.56 |
| Others | 1,264.795 | 505.92 | 758.88 | 2,529.59 |
| Sub Total- Corporation Share | 73,457.28 | 29,992.24 | 43,465.04 | 146,914.5 |
| Other agencies Investments Share | | | | |
| Traffic & Transportation – NH/SH Agency | 71,800.00 | 28,720.00 | 43,080.00 | 143,600.00 |
| Slum Housing - TNSCB | 14,074.96 | 9,852.47 | 4,222.49 | 28,149.92 |
| Slum Housing - TNHB | 262.17 | 131.085 | 131.085 | 524.34 |
| Sub Total - Other agencies Share | 86,137.13 | 38,703.555 | 47,433.575 | 172,274.26 |
| Grand Total | 159,594.41 | 68,695.80 | 90,898.62 | 319,188.76 |

Note: NH- National Highway, SH- State Highway and TNSCB – Tamil Nadu Slum Clearance Board

Table 10.25: Financial Operating Plan Results - Coimbatore Corporation.

| | Description | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------|-------------------------------------|-----------------|---------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|
| | | <i>Rs. Lakh</i> | | | | | | | | |
| | Full Sub Project Cash Flow | | | | | | | | | |
| 1 | Water Supply | (19) | (66) | (68) | 674 | 629 | (117) | 178 | (589) | (621) |
| 2 | Sewerage | (192) | 344 | 120 | 127 | 1,099 | 1,217 | 855 | 1,066 | 2,859 |
| 3 | Roads and Traffic Management | (36) | (94) | (197) | (331) | (477) | (616) | (731) | (869) | (1,055) |
| 4 | Storm Water Drainage | (32) | (80) | (167) | (274) | (390) | (503) | (615) | (751) | (933) |
| 5 | Solid Waste Management | 242 | 113 | (266) | (658) | (1,055) | (1,220) | (1,234) | (1,345) | (1,471) |
| 6 | Street Lighting | 0 | 0 | (5) | (25) | (47) | (65) | (68) | (73) | (79) |
| 7 | Slum Upgradations | (36) | (82) | (131) | (183) | (238) | (599) | (696) | (799) | (909) |
| | Total Sub Project Cash Flow | <i>(73.00)</i> | <i>135.23</i> | <i>(713.63)</i> | <i>(670.06)</i> | <i>(478.65)</i> | <i>(1,904.00)</i> | <i>(2,310.49)</i> | <i>(3,360.73)</i> | <i>(2,209.39)</i> |
| | Total Full Project Cash Flow | | | | | | | | | |
| | <i>Opening Balance</i> | | (95) | (11) | (690) | (1,343) | (1,825) | (3,749) | (6,121) | (9,582) |
| A | Sources of Fund | | | | | | | | | |
| 1 | Debt Drawdown | 4,236 | 5,659 | 8,379 | 8,882 | 7,459 | 2,508 | 2,026 | 2,148 | 2,651 |
| 2 | Equity Drawdown | 1,368 | 1,645 | 2,421 | 2,566 | 2,263 | 636 | 421 | 447 | 442 |
| 3 | Govt. Grant | 2,284 | 3,005 | 4,562 | 4,836 | 4,092 | 949 | 626 | 664 | 985 |
| 4 | User Charges | 265 | 442 | 748 | 1,252 | 1,854 | 2,427 | 3,281 | 3,659 | 4,230 |
| 5 | New Connection Fees | - | 785 | 963 | 2,087 | 3,235 | 2,815 | 2,262 | 1,563 | 2,992 |
| B | Disposition of Funds | | | | | | | | | |
| 1 | Project Capex | 7,887 | 10,310 | 15,362 | 16,284 | 13,813 | 4,379 | 3,377 | 3,579 | 4,418 |
| 2 | Operation & Maintenance | - | 303 | 837 | 1,683 | 2,629 | 3,384 | 3,720 | 4,007 | 4,307 |
| 3 | Debt Servicing- Repayment | - | - | - | - | - | 3,282 | 3,508 | 3,787 | 4,084 |
| 4 | Interest During Construction | 360 | 841 | 1,553 | 2,308 | 2,942 | 213 | 385 | 568 | 793 |
| | Total- Outflow | 8,247 | 11,454 | 17,752 | 20,275 | 19,384 | 11,258 | 10,989 | 11,941 | 13,602 |

Source: Analysis

| 17- Coimbatore Municipal Corporation - Abstract of Account | | 1- Income and Expenditure Statement | | | |
|---|-----------------|--|------------------|------------------|--|
| Head of Account | 2000-01 | 2001-02 | 2002-03 | 2003-04 | |
| | <i>Rs. Lakh</i> | | | | |
| Opening Balance | | | | | |
| REVENUE ACCOUNT | | | | | |
| I Revenue Income | | | | | |
| A Tax- Own Sources | | | | | |
| 1 Property Tax (General Purpose) - 38% of Total PT | 1,515.41 | 1,385.09 | 1,473.74 | 1,772.23 | |
| 2 Property Tax (Education Purpose) - 17% of Total PT | 631.42 | 577.12 | 614.06 | 738.43 | |
| 3 Profession Tax | 215.52 | 161.68 | 223.79 | 251.56 | |
| 4 Other Taxes & Charges | 0.35 | - | - | 0.05 | |
| <i>Tax- Own Sources</i> | <i>2,362.70</i> | <i>2,123.89</i> | <i>2,311.60</i> | <i>2,762.27</i> | |
| B Assigned Revenues | | | | | |
| 1 Entertainment Tax | 530.16 | 263.33 | 724.06 | 494.30 | |
| 2 Surcharge on Stamp Duty | 651.93 | 1,213.06 | 1,748.71 | 1,718.09 | |
| 3 Other Transfers | 23.14 | - | - | 1.78 | |
| <i>Assigned Revenues</i> | <i>1,205.23</i> | <i>1,476.39</i> | <i>2,472.77</i> | <i>2,214.17</i> | |
| C Non Tax- Own Sources | | | | | |
| 1 Income from Municipal Properties and Markets | 321.60 | 292.88 | 320.92 | 371.04 | |
| 2 License Income (Trade, etc.) | 77.58 | 112.34 | 112.02 | 154.14 | |
| 3 Income from Special Services | 2.04 | 1.33 | 2.98 | 7.47 | |
| 4 Income from Sale Proceeds | 0.29 | 0.02 | - | 0.08 | |
| 5 Income from Fees and Fines | 119.34 | 147.54 | 191.64 | 176.81 | |
| 6 Income from Interest on Deposits | 32.79 | 8.85 | 13.27 | 37.66 | |
| 7 Income from Investments(Excl. Interest) | - | - | - | - | |
| 8 Miscellaneous Income | 1,089.93 | 955.11 | 697.89 | 1,071.29 | |
| <i>Non Tax- Own Sources</i> | <i>1,643.57</i> | <i>1,518.07</i> | <i>1,338.72</i> | <i>1,818.49</i> | |
| D Revenue Grants | | | | | |
| 1 State Finance Commission Grant | 716.30 | 706.59 | 1,959.97 | 1,573.60 | |
| 2 Other Grants | 2.97 | 477.57 | 448.04 | 67.51 | |
| <i>Revenue Grants</i> | <i>719.27</i> | <i>1,184.16</i> | <i>2,408.01</i> | <i>1,641.11</i> | |
| Total- Revenue Income (Excl. W&D Fund) | 5,930.77 | 6,302.51 | 8,531.10 | 8,436.04 | |
| E Water and Drainage Fund | | | | | |
| 1 Water & Drainage Tax - 45% of Total PT | 1,297.29 | 1,185.72 | 1,261.61 | 1,517.14 | |
| 2 Water Charges | 700.02 | 622.46 | 756.92 | 944.23 | |
| 3 Drainage Charges | - | - | - | - | |
| 4 Income from Interest on Deposits | 34.80 | 43.89 | 34.99 | 93.67 | |
| 5 Water Supply & Sanitation Grant | - | - | - | - | |
| 6 Other Income | - | - | - | - | |
| Total- W&D Fund Revenue Income | 2,032.11 | 1,852.07 | 2,053.52 | 2,555.04 | |
| Total- Revenue Income | 7,962.88 | 8,154.58 | 10,584.62 | 10,991.08 | |

| 17- Coimbatore Municipal Corporation - Abstract of Account | | 1- Income and Expenditure Statement | | | |
|---|-----------------|--|-----------------|-----------------|--|
| Head of Account | 2000-01 | 2001-02 | 2002-03 | 2003-04 | |
| | | | <i>Rs. Lakh</i> | | |
| II Revenue Expenditure | | | | | |
| A General Administration | | | | | |
| 1 Staff Salary and Employee Related Expenses | 2,306.63 | 2,376.78 | 2,579.57 | 2,341.63 | |
| 2 Allowances to Elected Representatives | 4.58 | 6.21 | 5.49 | 5.06 | |
| 3 General Expenses | 38.11 | 55.81 | 21.83 | 54.86 | |
| 4 Pensions and Gratuities | 1,709.68 | 1,487.12 | 1,193.98 | 818.45 | |
| 5 Education - Staff Salary | 0.73 | 0.10 | - | 0.92 | |
| 6 Miscellaneous | 19.82 | 52.73 | 69.99 | 36.44 | |
| <i>Establishment</i> | <i>4,079.55</i> | <i>3,978.75</i> | <i>3,870.86</i> | <i>3,257.36</i> | |
| B Operation & Maintenance | | | | | |
| 1 General Expenses | 21.73 | 51.77 | 128.70 | 177.96 | |
| 2 Public Works and Roads | 36.38 | 116.27 | 115.37 | 34.86 | |
| 3 Public Health and Conservancy | 157.78 | 64.88 | 92.36 | 222.02 | |
| 4 Contractor Payment- Conservancy | - | - | - | - | |
| 5 Street Lighting (including Electricity Charges) | 347.79 | 317.03 | 750.83 | 574.06 | |
| 6 Education | 1.80 | 0.94 | 4.06 | 27.80 | |
| 7 Vehicle and Equipment Maintenance | 24.05 | 79.46 | 54.94 | 130.70 | |
| 8 Miscellaneous | 15.42 | 2.29 | 27.52 | 2.25 | |
| <i>Operation & Maintenance</i> | <i>604.95</i> | <i>632.65</i> | <i>1,173.78</i> | <i>1,169.65</i> | |
| C Debt Servicing | | | | | |
| 1 Public Works and Roads | - | - | - | - | |
| 2 Public Health and Conservancy | - | - | - | - | |
| 3 Others | 1,414.88 | 666.14 | 1,683.67 | 3,623.07 | |
| <i>Debt Servicing</i> | <i>1,414.88</i> | <i>666.14</i> | <i>1,683.67</i> | <i>3,623.07</i> | |
| Total- Revenue Expenditure (Excl. W&D Fund) | 6,099.38 | 5,277.53 | 6,728.31 | 8,050.08 | |
| D Water and Sanitation Fund | | | | | |
| 1 Staff Salary & Employee Related Expenses | 309.50 | 293.61 | 294.63 | 300.68 | |
| 2 Administration Expenses | 0.69 | 1.03 | 1.19 | 5.48 | |
| 3 Equipment Maintenance & Repairs | 5.60 | 32.99 | 26.45 | 12.28 | |
| 4 Board Payment | 358.29 | 475.00 | 711.88 | 879.11 | |
| 5 Electricity Charges | 15.02 | 39.37 | 114.62 | 56.57 | |
| 6 Vehicle Maintenance & Repairs | 5.01 | 2.89 | 3.34 | 9.51 | |
| 7 Miscellaneous | 156.17 | 216.12 | 111.47 | 87.95 | |
| 8 Debt Servicing- Old | - | - | - | - | |
| Total- W&D Fund Revenue Expenditure | 850.28 | 1,061.01 | 1,263.58 | 1,351.58 | |
| Total- Revenue Expenditure | 6,949.66 | 6,338.54 | 7,991.89 | 9,401.66 | |
| Operating Surplus (W&D Revenue Fund) | 1,181.83 | 791.06 | 789.94 | 1,203.46 | |
| Operating Surplus (Revenue Account) | 1,013.22 | 1,816.04 | 2,592.73 | 1,589.42 | |
| Closing Balance-(Revenue Account) | 1,013.22 | 2,829.26 | 5,421.99 | 7,011.41 | |

| 17- Coimbatore Municipal Corporation - Abstract of Account | | 1- Income and Expenditure Statement | | | |
|---|-----------------|--|-----------------|-----------------|--|
| Head of Account | 2000-01 | 2001-02 | 2002-03 | 2003-04 | |
| | <i>Rs. Lakh</i> | | | | |
| Transfer to Capital Account | 419.67 | 334.64 | 668.97 | 418.65 | |
| CAPITAL ACCOUNT | | | | | |
| III Capital Income | | | | | |
| A Capital Loans | | | | | |
| 1 Public Works and Roads | 675.00 | - | - | - | |
| 2 Street Lighting | - | - | - | - | |
| 3 Public Health & Conservancy | - | - | - | - | |
| 4 Education | - | - | - | - | |
| 5 Others | 400.00 | - | - | 2,620.76 | |
| <i>Capital Loans</i> | <i>1,075.00</i> | <i>-</i> | <i>-</i> | <i>2,620.76</i> | |
| B Capital Grants and Contribution | | | | | |
| 1 Public Works and Roads | - | - | - | - | |
| 2 Education | - | - | - | - | |
| 3 Others | 147.01 | 487.41 | 292.59 | 390.82 | |
| 4 Tenth/Eleventh Finance Commission Grants | - | - | - | - | |
| <i>Capital Grants and Contribution</i> | <i>147.01</i> | <i>487.41</i> | <i>292.59</i> | <i>390.82</i> | |
| C Own Sources | | | | | |
| 1 Transfer from Revenue Account | 419.67 | 334.64 | 668.97 | 418.65 | |
| 2 Sale of Municipal Property | - | 8.94 | 4.80 | - | |
| <i>Own Sources- Capital</i> | <i>419.67</i> | <i>343.58</i> | <i>673.77</i> | <i>418.65</i> | |
| Total- Capital Income | 1,641.68 | 830.99 | 966.36 | 3,430.23 | |
| Water and Drainage Fund | | | | | |
| D Capital Loans | | | | | |
| 1 Water Supply | - | - | - | - | |
| 2 Sewerage & Sanitation | - | - | - | - | |
| <i>Capital Loans W&D Fund</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> | |
| E Capital Grants and Contribution | | | | | |
| 1 Water Supply | - | 36.14 | 114.14 | 123.69 | |
| 2 Sewerage & Sanitation | - | - | - | - | |
| <i>W&D -Capital Grants and Contribution</i> | <i>-</i> | <i>36.14</i> | <i>114.14</i> | <i>123.69</i> | |
| F Own Sources | | | | | |
| 1 Water Connection Charge | 292.53 | 184.84 | 223.09 | 251.37 | |
| 2 Sewerage Connection Charge | 16.84 | 6.22 | 35.87 | 22.67 | |
| <i>W&D Own Sources- Capital</i> | <i>309.37</i> | <i>191.06</i> | <i>258.96</i> | <i>274.04</i> | |
| Total W&D Fund- Capital Income | 309.37 | 227.20 | 373.10 | 397.73 | |
| Total- Capital Income | 1,951.05 | 1,058.19 | 1,339.46 | 3,827.96 | |

| 17- Coimbatore Municipal Corporation - Abstract of Account | | 1- Income and Expenditure Statement | | | |
|---|-----------------|--|-----------------|-----------------|--|
| Head of Account | 2000-01 | 2001-02 | 2002-03 | 2003-04 | |
| | <i>Rs. Lakh</i> | | | | |
| IV Capital Expenditure | | | | | |
| 1 General | 41.92 | 48.52 | 27.22 | 23.11 | |
| 2 Remunerative Schemes | - | - | - | - | |
| 3 Public Works and Roads | 1,651.49 | 1,449.26 | 1,004.64 | 1,395.53 | |
| 4 Street Lighting | 123.40 | 204.67 | 351.60 | 378.85 | |
| 5 Public Health & Conservancy | 4.75 | - | - | - | |
| 6 Education | 742.10 | 111.76 | 320.88 | - | |
| 6 Others | 8.96 | - | 221.15 | 506.72 | |
| <i>Total - Capital Expenditure Excl W&D Fund</i> | 2,572.62 | 1,814.21 | 1,925.49 | 2,304.21 | |
| Water and Drainage Fund | | | | | |
| 8 Water Supply | 127.60 | 155.23 | 183.23 | 645.70 | |
| 9 Sewerage & Sanitation | 505.63 | 678.09 | 462.60 | 636.32 | |
| <i>Total W&D Fund- Capital Expenditure</i> | 633.23 | 833.32 | 645.83 | 1,282.02 | |
| Total - Capital Expenditure | 3,205.85 | 2,647.53 | 2,571.32 | 3,586.23 | |
| Operating Surplus (W&D Capital Account) | (323.86) | (606.12) | (272.73) | (884.29) | |
| Operating Surplus (Capital Account) | (1,254.80) | (1,589.34) | (1,231.86) | 241.73 | |
| Operating Surplus (Over all excl. rev. a/c transfers) | (661.25) | (107.94) | 691.90 | 1,412.50 | |
| EXTRAORDINARY ACCOUNT | | | | | |
| V EA Income | | | | | |
| 1 Cash at Bank/ in Hand | - | - | - | - | |
| 2 Tax & Royalty | | | | | |
| 3 Cess Income | 267.46 | 55.00 | 287.63 | 243.52 | |
| 4 Cash Deposit | 204.35 | 22.26 | 278.56 | 297.83 | |
| 5 Loans and Advances | | | | | |
| 5 Staff Advance | 52.33 | 35.25 | 36.85 | 33.25 | |
| 7 PF and Pension | | | | | |
| 6 Security Deposit | 351.69 | 65.79 | 160.04 | 86.13 | |
| 7 Miscellaneous | - | - | - | - | |
| Total- EA Income | 875.83 | 178.30 | 763.08 | 660.73 | |
| VI EA Expenditure | | | | | |
| 1 Recoveries Payable to Outsiders | | | | | |
| 2 Tax & Royalty Transfers | | | | | |
| 3 Legal Payments | | | | | |
| 4 Security Deposit Refunds | | | | | |
| 1 Cess Transfers | 120.00 | 251.22 | 160.00 | 230.00 | |
| 2 Other- Deposits | 242.99 | 83.40 | 16.14 | 32.11 | |
| 3 PF and Pension | 239.37 | 117.93 | 19.86 | 20.36 | |
| 4 Miscellaneous | 47.27 | 54.88 | 149.66 | 68.66 | |
| Total- EA Expenditure | 649.63 | 507.43 | 345.66 | 351.13 | |
| Operating Surplus (Extraordinary Account) | 875.83 | 178.30 | 763.08 | 660.73 | |

| 18- Coimbatore Municipal Corporation -Financial Operating Plan | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
|--|--|----------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| No. | Item Heads | Variable | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| as of March 31 (in INR Lakh) | | | | | | | | | | | | | | | | | | |
| | Opening Balance | | | 4,206.0 | 8,426.2 | 13,536.9 | 18,814.7 | 24,163.6 | 29,777.2 | 35,455.5 | 42,986.5 | 51,014.9 | 59,152.1 | 67,307.3 | 75,784.4 | 86,374.0 | 97,149.5 | 108,345.6 |
| | REVENUE ACCOUNT | | | | | | | | | | | | | | | | | |
| | 1 Revenue Income | | | | | | | | | | | | | | | | | |
| | A Tax- Own Sources | | | | | | | | | | | | | | | | | |
| 1 | Property Tax (General Purpose) - 44% of Total PT | | 1,913.2 | 1,921.3 | 2,351.4 | 2,441.0 | 2,523.7 | 2,604.2 | 2,684.7 | 3,424.2 | 3,595.3 | 3,727.9 | 3,842.4 | 3,949.2 | 5,015.9 | 5,243.0 | 5,411.3 | 5,551.3 |
| 2 | Property Tax (Education Purpose) - 16% of Total PT | | 797.2 | 800.6 | 979.7 | 1,017.1 | 1,051.6 | 1,085.1 | 1,118.6 | 1,426.7 | 1,498.0 | 1,553.3 | 1,601.0 | 1,645.5 | 2,089.9 | 2,184.6 | 2,254.7 | 2,313.0 |
| 3 | Profession Tax | 5% | 223.8 | 235.0 | 246.7 | 259.1 | 272.0 | 285.6 | 299.9 | 314.9 | 330.6 | 347.2 | 364.5 | 382.8 | 401.9 | 422.0 | 443.1 | 465.3 |
| 4 | Other Taxes & Charges | 5% | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | <i>Tax- Own Sources</i> | | 2,934.2 | 2,957.0 | 3,578.0 | 3,717.2 | 3,847.4 | 3,975.1 | 4,103.4 | 5,166.0 | 5,424.1 | 5,628.5 | 5,808.2 | 5,977.6 | 7,507.9 | 7,849.8 | 8,109.4 | 8,329.8 |
| | B Assigned Revenues | | | | | | | | | | | | | | | | | |
| 1 | Entertainment Tax | 5% | 528.1 | 554.5 | 582.2 | 611.4 | 641.9 | 674.0 | 707.7 | 743.1 | 780.3 | 819.3 | 860.2 | 903.2 | 948.4 | 995.8 | 1,045.6 | 1,097.9 |
| 2 | Surcharge on Stamp Duty | 10% | 1,466.2 | 1,612.9 | 1,774.2 | 1,951.6 | 2,146.7 | 2,361.4 | 2,597.5 | 2,857.3 | 3,143.0 | 3,457.3 | 3,803.1 | 4,183.4 | 4,601.7 | 5,061.9 | 5,568.1 | 6,124.9 |
| 3 | Other Transfers | 5% | 6.5 | 6.9 | 7.2 | 7.6 | 8.0 | 8.3 | 8.8 | 9.2 | 9.7 | 10.1 | 10.7 | 11.2 | 11.7 | 12.3 | 13.0 | 13.6 |
| | <i>Assigned Revenues</i> | | 2,000.9 | 2,174.3 | 2,363.6 | 2,570.5 | 2,796.6 | 3,043.8 | 3,314.0 | 3,609.6 | 3,932.9 | 4,286.7 | 4,673.9 | 5,097.8 | 5,561.9 | 6,070.0 | 6,626.6 | 7,236.4 |
| | C Non Tax- Own Sources | | | | | | | | | | | | | | | | | |
| 1 | Income from Municipal Properties and Markets | 5% | 342.9 | 360.1 | 378.1 | 397.0 | 416.8 | 437.7 | 459.6 | 482.6 | 506.7 | 532.0 | 558.6 | 586.5 | 615.9 | 646.7 | 679.0 | 712.9 |
| 2 | License Income (Trade, etc.) | 10% | 125.4 | 138.0 | 151.8 | 166.9 | 183.6 | 202.0 | 222.2 | 244.4 | 268.9 | 295.7 | 325.3 | 357.8 | 393.6 | 433.0 | 476.3 | 523.9 |
| 3 | Income from Special Services | 10% | 3.8 | 4.2 | 4.6 | 5.1 | 5.6 | 6.1 | 6.7 | 7.4 | 8.1 | 9.0 | 9.9 | 10.8 | 11.9 | 13.1 | 14.4 | 15.9 |
| 4 | Income from Sale Proceeds | 5% | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 5 | Income from Fees and Fines | 14% | 181.1 | 206.4 | 235.3 | 268.3 | 305.8 | 348.6 | 397.4 | 453.1 | 516.5 | 588.8 | 671.3 | 765.2 | 872.4 | 994.5 | 1,133.7 | 1,292.5 |
| 6 | Income from Interest on Deposits | 5% | 24.3 | 25.5 | 26.8 | 28.1 | 29.5 | 31.0 | 32.6 | 34.2 | 35.9 | 37.7 | 39.6 | 41.6 | 43.6 | 45.8 | 48.1 | 50.5 |
| 7 | Income from Investments(Excl. Interest) | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | Miscellaneous Income | 5% | 1,001.2 | 1,051.3 | 1,103.9 | 1,159.1 | 1,217.0 | 1,277.9 | 1,341.7 | 1,408.8 | 1,479.3 | 1,553.2 | 1,630.9 | 1,712.4 | 1,798.1 | 1,888.0 | 1,982.4 | 2,081.5 |
| | <i>Non Tax- Own Sources</i> | | 1,678.9 | 1,785.6 | 1,900.5 | 2,024.6 | 2,158.5 | 2,303.4 | 2,460.4 | 2,630.6 | 2,815.5 | 3,016.6 | 3,235.7 | 3,474.7 | 3,735.7 | 4,021.3 | 4,334.1 | 4,677.4 |
| | D Revenue Grants | | | | | | | | | | | | | | | | | |
| 1 | State Finance Commission Grant | 5% | 1,301.1 | 1,366.1 | 1,434.4 | 1,506.2 | 1,581.5 | 1,660.5 | 1,743.6 | 1,830.7 | 1,922.3 | 2,018.4 | 2,119.3 | 2,225.3 | 2,336.5 | 2,453.4 | 2,576.0 | 2,704.8 |
| 2 | Other Grants | 10% | 273.9 | 301.3 | 331.4 | 364.6 | 401.1 | 441.2 | 485.3 | 533.8 | 587.2 | 645.9 | 710.5 | 781.5 | 859.7 | 945.7 | 1,040.2 | 1,144.3 |
| | <i>Revenue Grants</i> | | 1,575.0 | 1,667.4 | 1,765.9 | 1,870.7 | 1,982.5 | 2,101.7 | 2,228.8 | 2,364.5 | 2,509.5 | 2,664.3 | 2,829.8 | 3,006.8 | 3,196.2 | 3,399.0 | 3,616.3 | 3,849.1 |
| | E Water and Sanitation Account | | | | | | | | | | | | | | | | | |
| 1 | Water & Drainage Tax - 26% of Total PT | | 1,637.8 | 1,644.8 | 2,012.9 | 2,089.6 | 2,160.5 | 2,229.4 | 2,298.3 | 2,931.3 | 3,077.8 | 3,191.3 | 3,289.4 | 3,380.7 | 4,293.9 | 4,488.4 | 4,632.4 | 4,752.2 |
| 2 | Water Charges -Existing | | 755.9 | 625.0 | 715.8 | 746.8 | 772.1 | 903.4 | 949.6 | 979.9 | 1,178.9 | 1,239.2 | 1,279.4 | 1,500.0 | 1,564.7 | 1,606.3 | 1,840.7 | 1,913.3 |
| 3 | Drainage Charges - Existing | | | 271.1 | 414.8 | 431.3 | 446.2 | 533.3 | 553.8 | 572.7 | 690.3 | 717.1 | 741.6 | 873.8 | 906.8 | 937.4 | 1,109.5 | 1,151.5 |
| 4 | Income from Interest on Deposits | 6% | 54.9 | 58.2 | 61.7 | 65.4 | 69.4 | 73.5 | 77.9 | 82.6 | 87.6 | 92.8 | 98.4 | 104.3 | 110.6 | 117.2 | 124.2 | 131.7 |
| 5 | Water Supply & Sanitation Grant | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | Other Income | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | <i>Water and Sanitation Account</i> | | 2,448.6 | 2,599.1 | 3,205.3 | 3,333.2 | 3,448.1 | 3,739.6 | 3,879.6 | 4,566.5 | 5,034.6 | 5,240.4 | 5,408.8 | 5,858.9 | 6,875.9 | 7,149.3 | 7,706.8 | 7,948.7 |
| | E BP Initiatives and Other Items | | | | | | | | | | | | | | | | | |
| | <i>Expenditure Reduction</i> | | | | | | | | | | | | | | | | | |
| | Savings in Pumping Cost | | | | | | | | | | | | | | | | | |
| | Savings in Street Lighting Energy Cost | | | | | | 8.85 | 18.23 | 18.78 | 19.34 | 19.92 | 20.52 | 21.14 | 21.77 | 22.42 | 23.10 | 23.79 | 24.50 |
| | Savings in SWM Operations Cost | | | | 71.1 | 87.0 | 103.2 | 137.2 | 147.2 | 157.4 | 168.0 | 178.9 | 190.2 | 203.4 | 217.0 | 231.1 | 252.0 | |
| | <i>Additional Resource Mobilization</i> | | | | | | | | | | | | | | | | | |
| | Parking fees | | | 12.3 | 12.5 | 12.8 | 13.0 | 13.3 | 13.5 | 13.8 | 14.1 | 14.4 | 14.7 | 14.9 | 15.2 | 15.6 | 15.9 | |
| | SWM Charges | | | | | | | | | | | | | | | | | |
| | Advertisement Fee | 2% | | 25.99 | 26.51 | 27.04 | 27.58 | 28.14 | 28.70 | 29.27 | 29.86 | 30.45 | 31.06 | 31.68 | 32.32 | 32.96 | 33.62 | |
| | Others Initiatives (Real Assets, BOT projects etc) | | | | 10.61 | 11.25 | 11.92 | 12.64 | 13.39 | 14.20 | 15.05 | 15.95 | 16.91 | 17.92 | 19.00 | 20.14 | 21.35 | |
| | <i>BP Initiatives and Other Items</i> | | - | - | 38.3 | 120.7 | 146.9 | 174.0 | 210.0 | 222.1 | 234.6 | 247.5 | 260.8 | 274.6 | 290.4 | 306.7 | 323.5 | 347.4 |

| 18- Coimbatore Municipal Corporation -Financial Operating Plan | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | |
|--|---|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| No. | Item Heads | Variable | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| as of March 31 (in INR Lakh) | | | | | | | | | | | | | | | | | | |
| | Total- Revenue Income | | 10,637.6 | 11,183.4 | 12,851.6 | 13,636.9 | 14,380.1 | 15,337.5 | 16,196.3 | 18,559.4 | 19,951.2 | 21,084.0 | 22,217.2 | 23,690.3 | 27,168.0 | 28,796.2 | 30,716.7 | 32,388.7 |
| | II Revenue Expenditure | | | | | | | | | | | | | | | | | |
| | A General Administration | | | | | | | | | | | | | | | | | |
| 1 | Staff Salary and Employee Related Expenses | 8% | 2,593.2 | 2,800.7 | 3,024.8 | 3,266.7 | 3,528.1 | 3,810.3 | 4,115.2 | 4,444.4 | 4,799.9 | 5,183.9 | 5,598.6 | 6,046.5 | 6,530.2 | 7,052.6 | 7,616.9 | 8,226.2 |
| 2 | Allowances to Elected Representatives | 5% | 5.6 | 5.9 | 6.2 | 6.5 | 6.8 | 7.1 | 7.5 | 7.9 | 8.3 | 8.7 | 9.1 | 9.6 | 10.1 | 10.6 | 11.1 | 11.6 |
| 3 | General Expenses | 10% | 46.9 | 51.6 | 56.8 | 62.4 | 68.7 | 75.6 | 83.1 | 91.4 | 100.6 | 110.6 | 121.7 | 133.9 | 147.2 | 162.0 | 178.2 | 196.0 |
| 4 | Pensions and Gratuities | 5% | 1,367.4 | 1,435.8 | 1,507.6 | 1,583.0 | 1,662.1 | 1,745.2 | 1,832.5 | 1,924.1 | 2,020.3 | 2,121.3 | 2,227.4 | 2,338.8 | 2,455.7 | 2,578.5 | 2,707.4 | 2,842.8 |
| 5 | Education - Staff Salary | 8% | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.9 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 |
| 5 | Miscellaneous | 15% | 51.5 | 59.2 | 68.1 | 78.3 | 90.0 | 103.5 | 119.0 | 136.9 | 157.4 | 181.0 | 208.2 | 239.4 | 275.3 | 316.6 | 364.1 | 418.7 |
| | <i>Establishment</i> | | <i>4,065.1</i> | <i>4,353.7</i> | <i>4,663.9</i> | <i>4,997.5</i> | <i>5,356.3</i> | <i>5,742.4</i> | <i>6,158.0</i> | <i>6,605.5</i> | <i>7,087.4</i> | <i>7,606.5</i> | <i>8,166.0</i> | <i>8,769.2</i> | <i>9,419.7</i> | <i>10,121.6</i> | <i>10,879.0</i> | <i>11,696.8</i> |
| | B Operation & Maintenance | | | | | | | | | | | | | | | | | |
| 1 | General Expenses | 10% | 104.5 | 115.0 | 126.5 | 139.1 | 153.1 | 168.4 | 185.2 | 203.7 | 224.1 | 246.5 | 271.2 | 298.3 | 328.1 | 360.9 | 397.0 | 436.7 |
| 2 | Public Works and Roads | 10% | 583.3 | 641.6 | 705.8 | 776.4 | 854.0 | 939.4 | 1,033.3 | 1,136.7 | 1,250.3 | 1,375.4 | 1,512.9 | 1,664.2 | 1,830.6 | 2,013.7 | 2,215.1 | 2,436.6 |
| 3 | Public Health and Conservancy | 10% | 147.7 | 162.5 | 178.7 | 196.6 | 216.2 | 237.8 | 261.6 | 287.8 | 316.6 | 348.2 | 383.1 | 421.4 | 463.5 | 509.9 | 560.8 | 616.9 |
| 4 | Contractor Payment- Conservancy | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | Street Lighting (including Electricity Charges) | 10% | 547.2 | 601.9 | 662.1 | 728.3 | 801.1 | 881.2 | 969.3 | 1,066.3 | 1,172.9 | 1,290.2 | 1,419.2 | 1,561.1 | 1,717.3 | 1,889.0 | 2,077.9 | 2,285.7 |
| 5 | Education | 10% | 9.5 | 10.5 | 11.5 | 12.7 | 13.9 | 15.3 | 16.9 | 18.5 | 20.4 | 22.4 | 24.7 | 27.1 | 29.9 | 32.8 | 36.1 | 39.7 |
| 6 | Vehicle and Equipment Maintenance | 10% | 79.5 | 87.5 | 96.2 | 105.8 | 116.4 | 128.1 | 140.9 | 155.0 | 170.5 | 187.5 | 206.2 | 226.9 | 249.6 | 274.5 | 302.0 | 332.2 |
| 7 | Miscellaneous | 5% | 12.5 | 13.1 | 13.7 | 14.4 | 15.1 | 15.9 | 16.7 | 17.5 | 18.4 | 19.3 | 20.3 | 21.3 | 22.4 | 23.5 | 24.7 | 25.9 |
| 8 | Non Debt Liabilities | | | | 379.3 | 379.3 | 379.3 | 379.3 | 379.3 | | | | | | | | | |
| 10 | Additional O&M | | | | | | | | | | | | | | | | | |
| | <i>Operation & Maintenance</i> | | <i>1,484.2</i> | <i>1,632.0</i> | <i>2,173.8</i> | <i>2,352.6</i> | <i>2,549.2</i> | <i>2,765.4</i> | <i>3,003.2</i> | <i>2,885.5</i> | <i>3,173.2</i> | <i>3,489.6</i> | <i>3,837.6</i> | <i>4,220.3</i> | <i>4,641.3</i> | <i>5,104.3</i> | <i>5,613.6</i> | <i>6,173.7</i> |
| | C Debt Servicing - Revenue Fund | | | | | | | | | | | | | | | | | |
| 1 | Debt Servicing- Old | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | Debt Servicing- New | | | | | | | | | | | | | | | | | |
| 3 | Interest During Construction | | | | | | | | | | | | | | | | | |
| | <i>Debt Servicing</i> | | <i>-</i> |
| | D Water and Sanitation Fund | | | | | | | | | | | | | | | | | |
| 1 | Staff Salary & Employee Related Expenses | 8% | 323.6 | 349.5 | 377.4 | 407.6 | 440.2 | 475.4 | 513.5 | 554.5 | 598.9 | 646.8 | 698.6 | 754.5 | 814.8 | 880.0 | 950.4 | 1,026.4 |
| 2 | Administration Expenses | 10% | 2.3 | 2.5 | 2.8 | 3.1 | 3.4 | 3.7 | 4.1 | 4.5 | 4.9 | 5.4 | 6.0 | 6.6 | 7.2 | 8.0 | 8.8 | 9.6 |
| 3 | Equipment Maintenance & Repairs | 10% | 21.3 | 23.4 | 25.7 | 28.3 | 31.1 | 34.2 | 37.7 | 41.4 | 45.6 | 50.1 | 55.2 | 60.7 | 66.7 | 73.4 | 80.7 | 88.8 |
| 4 | Board Payment | 10% | 666.7 | 733.3 | 806.7 | 887.3 | 976.1 | 1,073.7 | 1,181.1 | 1,299.2 | 1,429.1 | 1,572.0 | 1,729.2 | 1,902.1 | 2,092.3 | 2,301.5 | 2,531.7 | 2,784.9 |
| 5 | Electricity Charges | 10% | 62.0 | 68.2 | 75.1 | 82.6 | 90.8 | 99.9 | 109.9 | 120.9 | 133.0 | 146.3 | 160.9 | 177.0 | 194.7 | 214.2 | 235.6 | 259.1 |
| 6 | Vehicle Maintenance & Repairs | 10% | 5.7 | 6.3 | 6.9 | 7.6 | 8.4 | 9.2 | 10.1 | 11.1 | 12.2 | 13.5 | 14.8 | 16.3 | 17.9 | 19.7 | 21.7 | 23.8 |
| 7 | Miscellaneous | 5% | 150.1 | 157.6 | 165.5 | 173.7 | 182.4 | 191.5 | 201.1 | 211.2 | 221.7 | 232.8 | 244.5 | 256.7 | 269.5 | 283.0 | 297.1 | 312.0 |
| 8 | Additional O&M | | | | | | | | | | | | | | | | | |
| 8 | Debt Servicing- Old | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | Debt Servicing- New | | | | | | | | | | | | | | | | | |
| 11 | Interest During Construction | | | | | | | | | | | | | | | | | |
| | <i>Water and Sanitation Account</i> | | <i>1,231.6</i> | <i>1,340.8</i> | <i>1,460.0</i> | <i>1,590.2</i> | <i>1,732.4</i> | <i>1,887.7</i> | <i>2,057.4</i> | <i>2,242.8</i> | <i>2,445.5</i> | <i>2,666.9</i> | <i>2,909.1</i> | <i>3,173.8</i> | <i>3,463.2</i> | <i>3,779.8</i> | <i>4,126.0</i> | <i>4,504.7</i> |
| | Total- Revenue Expenditure | | 6,780.9 | 7,326.5 | 8,297.7 | 8,940.3 | 9,637.9 | 10,395.6 | 11,218.6 | 11,733.8 | 12,706.0 | 13,763.0 | 14,912.6 | 16,163.3 | 17,524.2 | 19,005.6 | 20,618.5 | 22,375.2 |
| | Operating Surplus (Water and Sanitation Fund) | | 1,217.0 | 1,258.3 | 1,745.3 | 1,742.9 | 1,715.7 | 1,851.9 | 1,822.2 | 2,323.7 | 2,589.1 | 2,573.5 | 2,499.8 | 2,685.1 | 3,412.7 | 3,369.6 | 3,580.8 | 3,444.0 |
| | Operating Surplus (Revenue Fund) | | 2,639.7 | 2,598.6 | 2,808.6 | 2,953.7 | 3,026.5 | 3,090.1 | 3,155.4 | 4,501.9 | 4,656.1 | 4,747.5 | 4,804.8 | 4,841.9 | 6,231.0 | 6,421.0 | 6,517.4 | 6,569.6 |
| | Operating Surplus (Overall) | | 3,856.7 | 3,856.9 | 4,553.8 | 4,696.6 | 4,742.2 | 4,941.9 | 4,977.6 | 6,825.6 | 7,245.2 | 7,321.0 | 7,304.6 | 7,527.0 | 9,643.7 | 9,790.6 | 10,098.2 | 10,013.5 |

| 18- Coimbatore Municipal Corporation -Financial Operating Plan | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
|--|---|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|
| No. | Item Heads | Variable | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| <i>as of March 31 (in INR Lakh)</i> | | | | | | | | | | | | | | | | | | |
| | Depreciation for New Projects/Sinking Fund | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Transfer to Capital Account | | | | 1,368.4 | 1,645.5 | 2,420.8 | 2,566.1 | 2,262.7 | 636.3 | 421.5 | 446.8 | 441.8 | 468.3 | | | | |
| CAPITAL ACCOUNT | | | | | | | | | | | | | | | | | | |
| III Capital Income | | | | | | | | | | | | | | | | | | |
| A Capital Loans | | | | | | | | | | | | | | | | | | |
| 1 | Water Supply | | | | | | | | | | | | | | | | | |
| 2 | Sewerage | | | | | | | | | | | | | | | | | |
| 3 | Road and Traffic Management | | | | | | | | | | | | | | | | | |
| 4 | Storm Water Drainage | | | | | | | | | | | | | | | | | |
| | Solid Waste Management | | | | | | | | | | | | | | | | | |
| 5 | Street Lighting | | | | | | | | | | | | | | | | | |
| 6 | Slum Upgradations | | | | | | | | | | | | | | | | | |
| 2 | Others | | | | | | | | | | | | | | | | | |
| | <i>Capital Loans</i> | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| A Capital Grants and Contribution | | | | | | | | | | | | | | | | | | |
| 1 | Public Works and Roads | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | Water Supply | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Sewerage & Sanitation | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | Education | 15% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Others | 5% | 345.9 | 363.2 | 381.4 | 400.5 | 420.5 | 441.5 | 463.6 | 486.8 | 511.1 | 536.7 | 563.5 | 591.7 | 621.2 | 652.3 | 684.9 | 719.2 |
| 5 | Tenth/Eleventh Finance Commission Grants | 5% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | <i>Capital Grants and Contribution</i> | | 345.9 | 363.2 | 381.4 | 400.5 | 420.5 | 441.5 | 463.6 | 486.8 | 511.1 | 536.7 | 563.5 | 591.7 | 621.2 | 652.3 | 684.9 | 719.2 |
| B Own Sources | | | | | | | | | | | | | | | | | | |
| 1 | Consumers Contribution Water & Sewerage Connection Charge | | | | | | | | | | | | | | | | | |
| 1 | Consumers Contribution WS/UGD Connection Charges - Existing | | | | 175.5 | 180.8 | 186.2 | 230.2 | 237.1 | 218.6 | 272.2 | 279.6 | 287.1 | 358.4 | 324.6 | 332.6 | 413.0 | 423.2 |
| 3 | ULB/Consumers Contribution Other Services | | | | | | | | | | | | | | | | | |
| 2 | Sale of Municipal Property | | 3.4 | | | | | | | | | | | | | | | |
| | <i>Own Sources- Capital</i> | | 3.4 | - | 175.5 | 180.8 | 186.2 | 230.2 | 237.1 | 218.6 | 272.2 | 279.6 | 287.1 | 358.4 | 324.6 | 332.6 | 413.0 | 423.2 |
| Total - Capital Income | | | 349.4 | 363.2 | 556.9 | 581.2 | 606.7 | 671.7 | 700.6 | 705.3 | 783.3 | 816.2 | 850.6 | 950.0 | 945.9 | 984.9 | 1,097.9 | 1,142.3 |
| IV Capital Expenditure | | | | | | | | | | | | | | | | | | |
| 1 | Existing | 5% | | - | | | | | | | | | | | | | | |
| 2 | Water Supply | | | | | | | | | | | | | | | | | |
| 3 | Sewerage | | | | | | | | | | | | | | | | | |
| 4 | Road and Traffic Management | | | | | | | | | | | | | | | | | |
| 5 | Storm Water Drainage | | | | | | | | | | | | | | | | | |
| 6 | Solid Waste Management | | | | | | | | | | | | | | | | | |
| 7 | Street Lighting | | | | | | | | | | | | | | | | | |
| 8 | Slum Upgradations | | | | | | | | | | | | | | | | | |
| 9 | Others | | | | | | | | | | | | | | | | | |
| Total - Capital Expenditure | | | - | - |
| Operating Surplus (WS Capital Account) | | | 0.0 | 0.0 | 175.5 | 180.8 | 186.2 | 230.2 | 237.1 | 218.6 | 272.2 | 279.6 | 287.1 | 358.4 | 324.6 | 332.6 | 413.0 | 423.2 |
| Operating Surplus (General Capital Account) | | | 349.4 | 363.2 | 381.4 | 400.5 | 420.5 | 441.5 | 463.6 | 486.8 | 511.1 | 536.7 | 563.5 | 591.7 | 621.2 | 652.3 | 684.9 | 719.2 |
| Operating Surplus (Overall Capital Account) | | | 349.4 | 363.2 | 556.9 | 581.2 | 606.7 | 671.7 | 700.6 | 705.3 | 783.3 | 816.2 | 850.6 | 950.0 | 945.9 | 984.9 | 1,097.9 | 1,142.3 |

| 18- Coimbatore Municipal Corporation -Financial Operating Plan | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | |
|--|--|----------|------------------|----------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| No. | Item Heads | Variable | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| as of March 31 (in INR Lakh) | | | | | | | | | | | | | | | | | | |
| | Closing Balance - Base Case | | 4,206.0 | 8,426.2 | 13,536.9 | 18,814.7 | 24,163.6 | 29,777.2 | 35,455.5 | 42,986.5 | 51,014.9 | 59,152.1 | 67,307.3 | 75,784.4 | 86,374.0 | 97,149.5 | 108,345.6 | 119,501.4 |
| GOVT. SUBSIDY SOUGHT | | | | | | | | | | | | | | | | | | |
| A Full Project Cash Flow | | | | | | | | | | | | | | | | | | |
| 1 | Water Supply | | | | 128.5 | 1,971.5 | 2,617.0 | 3,244.6 | 3,115.3 | 2,616.7 | 2,169.1 | 1,716.2 | 1,245.3 | 905.8 | 505.8 | 79.4 | (215.1) | (525.9) |
| 2 | Sewerage | | | | (192.3) | (3,517.0) | (5,022.9) | (117.9) | 954.4 | 2,157.9 | 3,006.1 | 4,068.9 | 6,925.8 | 9,469.7 | 12,280.0 | 13,446.6 | 15,283.9 | 16,597.4 |
| 3 | Roads and Traffic Management | | | | (236.8) | (863.8) | (2,178.8) | (4,388.5) | (7,565.4) | (12,519.6) | (19,379.0) | (28,391.1) | (40,463.5) | (56,026.8) | (73,050.6) | (90,916.6) | (109,675.3) | (129,694.8) |
| 4 | Storm Water Drainage | | | | (46.4) | (160.1) | (398.4) | (790.4) | (1,347.7) | (2,102.2) | (3,068.4) | (4,283.8) | (5,840.2) | (7,790.4) | (9,914.1) | (12,129.5) | (14,442.0) | (16,888.5) |
| 5 | Solid Waste Management | | | | 241.9 | 354.6 | 88.7 | (569.0) | (1,623.7) | (2,844.0) | (4,077.6) | (5,422.8) | (6,893.8) | (8,343.7) | (9,850.2) | (11,425.9) | (12,964.0) | (14,571.1) |
| 6 | Street Lighting | | | | 0.0 | 0.0 | (9.9) | (59.7) | (153.4) | (295.5) | (491.0) | (762.6) | (1,156.1) | (1,668.7) | (2,252.7) | (2,868.3) | (3,523.0) | (4,219.1) |
| 7 | Slum Upgradations | | | | (72.6) | (236.3) | (497.5) | (863.0) | (1,339.9) | (2,537.5) | (3,928.9) | (5,526.7) | (7,344.6) | (9,397.1) | (10,805.1) | (12,270.4) | (13,796.5) | (15,387.0) |
| 8 | Others | | | | (30.1) | (104.0) | (208.1) | (338.2) | (496.4) | (697.7) | (945.2) | (1,235.2) | (1,511.9) | (1,801.3) | (2,105.4) | (2,424.0) | (2,757.8) | (3,097.9) |
| | Total- Project Account | | | | (207.7) | (2,555.0) | (5,609.9) | (3,882.0) | (8,456.7) | (16,221.9) | (26,714.9) | (39,837.1) | (55,038.9) | (74,652.7) | (95,192.5) | (118,508.7) | (142,089.9) | (167,786.9) |
| | Less: ULB Equity | | | | 1,914.6 | 2,224.4 | 3,522.6 | 3,734.0 | 3,500.6 | 2,138.2 | 2,013.5 | 2,251.7 | 3,130.5 | 3,186.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Closing Balance | | | | (2,122.4) | (6,694.1) | (13,271.6) | (15,277.6) | (23,352.9) | (33,256.4) | (45,762.8) | (61,136.7) | (79,469.0) | (102,269.0) | (122,808.9) | (146,125.1) | (169,706.3) | (195,403.3) |
| | Govt. Subsidy Sought/ULB Overall Status | | 4,206.0 | 8,426.2 | 11,414.5 | 12,120.6 | 10,892.0 | 14,499.7 | 12,102.6 | 9,730.1 | 5,252.1 | (1,984.6) | (12,161.7) | (26,484.7) | (36,434.9) | (48,975.6) | (61,360.7) | (75,901.9) |
| | NPV of Subsidy Reqd. at 2005-06 Prices | | (242.676) | | | | | | | | | (1,984.6) | (14,146.3) | (40,630.9) | (77,065.8) | (126,041.4) | (187,402.1) | (263,304.0) |
| | | | | | | | | | | | | | | | | | | (263,304.0) |
| B Sustainable Project Cash Flow - Option 1 | | | | | | | | | | | | | | | | | | |
| 1 | Water Supply | | | | (19.0) | (84.7) | (153.1) | 521.0 | 1,149.5 | 1,032.7 | 1,210.3 | 621.4 | 0.2 | (552.4) | (1,156.4) | (1,808.4) | (2,402.1) | (3,036.3) |
| 2 | Sewerage | | | | (192.3) | 151.3 | 271.1 | 398.2 | 1,497.3 | 2,714.2 | 3,569.2 | 4,635.3 | 7,493.9 | 10,038.6 | 12,849.3 | 14,016.1 | 15,853.6 | 17,167.1 |
| 3 | Roads and Traffic Management | | | | (35.5) | (129.6) | (326.8) | (658.3) | (1,134.8) | (1,751.2) | (2,481.8) | (3,351.1) | (4,406.4) | (5,671.2) | (7,019.7) | (8,421.6) | (9,880.1) | (11,414.3) |
| 4 | Storm Water Drainage | | | | (32.5) | (112.1) | (278.9) | (553.3) | (943.4) | (1,446.7) | (2,062.2) | (2,813.3) | (3,746.5) | (4,889.1) | (6,212.2) | (7,402.1) | (8,734.7) | (10,137.6) |
| 5 | Solid Waste Management | | | | 241.9 | 354.6 | 88.7 | (569.0) | (1,623.7) | (2,844.0) | (4,077.6) | (5,422.8) | (6,893.8) | (8,343.7) | (9,850.2) | (11,425.9) | (12,964.0) | (14,571.1) |
| 6 | Street Lighting | | | | 0.0 | 0.0 | (5.0) | (29.9) | (76.7) | (141.8) | (210.0) | (283.3) | (362.1) | (446.8) | (535.2) | (627.6) | (724.2) | (825.2) |
| 7 | Slum Upgradations | | | | (36.3) | (118.2) | (248.8) | (431.5) | (670.0) | (1,268.8) | (1,964.4) | (2,763.4) | (3,672.3) | (4,698.6) | (5,402.6) | (6,135.2) | (6,898.3) | (7,693.5) |
| 8 | Others | | | | (21.1) | (72.8) | (37.6) | (20.7) | (23.4) | (43.2) | (104.4) | (205.0) | (296.8) | (372.1) | (460.8) | (562.8) | (678.9) | (769.0) |
| | Total- Project Account | | | | (94.7) | (11.4) | (690.5) | (1,343.4) | (1,825.1) | (3,748.7) | (6,120.9) | (9,582.1) | (11,883.8) | (14,935.3) | (17,696.8) | (22,367.5) | (26,428.7) | (31,280.0) |
| | Less: ULB Equity | | | | 1,368.4 | 1,645.5 | 2,420.8 | 2,566.1 | 2,262.7 | 636.3 | 421.5 | 446.8 | 441.8 | 468.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Closing Balance | | | | (1,463.1) | (3,025.3) | (6,125.2) | (9,344.2) | (12,088.6) | (14,648.5) | (17,442.2) | (21,350.2) | (24,093.6) | (27,613.5) | (30,375.0) | (35,045.6) | (39,106.9) | (43,958.1) |
| | ULB Overall Status - Option 1 | | 4,206.0 | 8,426.2 | 12,073.8 | 15,789.4 | 18,038.4 | 20,433.0 | 23,366.9 | 28,338.0 | 33,572.7 | 37,802.0 | 43,213.7 | 48,170.9 | 55,999.0 | 62,103.8 | 69,238.7 | 75,543.3 |
| | NPV of Subsidy Reqd. at 2005-06 Prices | | - | | | | | | | | | | | | | | | |
| C Sustainable Project Cash Flow - Option 2 | | | | | | | | | | | | | | | | | | |
| 1 | Water Supply | | | | 128.5 | 1,971.5 | 2,617.0 | 3,244.6 | 3,115.3 | 2,616.7 | 2,169.1 | 1,716.2 | 1,245.3 | 905.8 | 505.8 | 79.4 | (215.1) | (525.9) |
| 2 | Sewerage | | | | (192.3) | (3,517.0) | (5,022.9) | (117.9) | 954.4 | 2,157.9 | 3,006.1 | 4,068.9 | 6,925.8 | 9,469.7 | 12,280.0 | 13,446.6 | 15,283.9 | 16,597.4 |
| 3 | Roads and Traffic Management | | | | (236.8) | (863.8) | (2,178.8) | (4,388.5) | (7,565.4) | (12,519.6) | (19,379.0) | (28,391.1) | (40,463.5) | (56,026.8) | (73,050.6) | (90,916.6) | (109,675.3) | (129,694.8) |
| 4 | Storm Water Drainage | | | | (46.4) | (160.1) | (398.4) | (790.4) | (1,347.7) | (2,102.2) | (3,068.4) | (4,283.8) | (5,840.2) | (7,790.4) | (9,914.1) | (12,129.5) | (14,442.0) | (16,888.5) |
| 5 | Solid Waste Management | | | | 241.9 | 354.6 | 88.7 | (569.0) | (1,623.7) | (2,844.0) | (4,077.6) | (5,422.8) | (6,893.8) | (8,343.7) | (9,850.2) | (11,425.9) | (12,964.0) | (14,571.1) |
| 6 | Street Lighting | | | | 0.0 | 0.0 | (9.9) | (59.7) | (153.4) | (295.5) | (491.0) | (762.6) | (1,156.1) | (1,668.7) | (2,252.7) | (2,868.3) | (3,523.0) | (4,219.1) |
| 7 | Slum Upgradations | | | | (72.6) | (236.3) | (497.5) | (863.0) | (1,339.9) | (2,537.5) | (3,928.9) | (5,526.7) | (7,344.6) | (9,397.1) | (10,805.1) | (12,270.4) | (13,796.5) | (15,387.0) |
| 8 | Others | | | | (30.1) | (104.0) | (208.1) | (338.2) | (496.4) | (697.7) | (945.2) | (1,235.2) | (1,511.9) | (1,801.3) | (2,105.4) | (2,424.0) | (2,757.8) | (3,097.9) |
| | Total- Project Account | | | | (207.7) | (2,555.0) | (5,609.9) | (3,882.0) | (8,456.7) | (16,221.9) | (26,714.9) | (39,837.1) | (55,038.9) | (74,652.7) | (95,192.5) | (118,508.7) | (142,089.9) | (167,786.9) |
| | Less: ULB Equity | | | | 1,914.6 | 2,224.4 | 3,522.6 | 3,734.0 | 3,500.6 | 2,138.2 | 2,013.5 | 2,251.7 | 3,130.5 | 3,186.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Closing Balance | | | | (2,122.4) | (6,694.1) | (13,271.6) | (15,277.6) | (23,352.9) | (33,256.4) | (45,762.8) | (61,136.7) | (79,469.0) | (102,269.0) | (122,808.9) | (146,125.1) | (169,706.3) | (195,403.3) |
| | ULB Overall Status - Option 2 | | 4,206.0 | 8,426.2 | 11,414.5 | 12,120.6 | 10,892.0 | 14,499.7 | 12,102.6 | 9,730.1 | 5,252.1 | (1,984.6) | (12,161.7) | (26,484.7) | (36,434.9) | (48,975.6) | (61,360.7) | (75,901.9) |

| 18- Coimbatore Municipal Corporation -Financial Operating Plan | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | |
|--|---|----------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| No. | Item Heads | Variable | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| | | | | | | | | | | | | | | | | | | |
| | NPV of Subsidy Reqd. at 2005-06 Prices | - | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | FINANCIAL VIABILITY RATIOS | | | | | | | | | | | | | | | | | |
| | Sustainable Investment Scenario | | | | | | | | | | | | | | | | | |
| | Overall Status | | | | | | | | | | | | | | | | | |
| | Debt Equity Ratio- New Projects (Overall) | | | | 3.10 | 2.33 | 2.48 | 1.91 | 1.36 | 0.73 | 0.76 | 1.07 | 0.77 | - | - | - | - | - |
| | Interest Cover | | | | 6% | 8% | 12% | 14% | 16% | 13% | 13% | 13% | 13% | 13% | 11% | 11% | 9% | 9% |
| | Debt Service Coverage Ratio (DSCR) - Overall | 125% | | | 1339% | 668% | 362% | 286% | 253% | 248% | 233% | 196% | 210% | 190% | 225% | 192% | 206% | 189% |
| | Cumulative DSCR | | | | 1339% | 2007% | 2369% | 2654% | 2907% | 3156% | 3389% | 3585% | 3794% | 3984% | 4209% | 4400% | 4607% | 4796% |
| | Operating Ratio (Overall) | <1 | | | 0.74 | 0.80 | 0.87 | 0.94 | 0.98 | 0.91 | 0.93 | 0.96 | 0.99 | 1.02 | 0.94 | 0.95 | 0.95 | 0.96 |
| | Debt Servicing Ratio (Overall) | <=30% | | | 3% | 6% | 10% | 12% | 14% | 15% | 15% | 17% | 17% | 17% | 16% | 16% | 15% | 15% |
| | | | | | | | | | | | | | | | | | | |
| | Water Supply & Drainage a/c Status | | | | | | | | | | | | | | | | | |
| | Operating Ratio (WS&D) | | | | 0.33 | 0.50 | 0.48 | 0.63 | 0.80 | 0.82 | 0.82 | 0.77 | 0.97 | 0.93 | 0.89 | 0.76 | 0.81 | 0.79 |
| | Debt Service Coverage Ratio (DSCR) - WS&D | | | | 1339% | 668% | 362% | 286% | 253% | 248% | 233% | 196% | 210% | 190% | 225% | 192% | 206% | 189% |
| | Debt Servicing Ratio (WS&D) | | | | 7% | 10% | 17% | 17% | 18% | 19% | 19% | 20% | 17% | 17% | 16% | 17% | 16% | 16% |
| | | | | | | | | | | | | | | | | | | |
| | General (Rev.+ Edu. fund) a/c Status | | | | | | | | | | | | | | | | | |
| | Operating Ratio (General) | | | | 0.74 | 0.80 | 0.87 | 0.94 | 0.98 | 0.91 | 0.93 | 0.96 | 0.99 | 1.02 | 0.94 | 0.95 | 0.95 | 0.96 |
| | Debt Service Coverage Ratio (DSCR) - General | | | | 826% | 564% | 327% | 332% | 340% | 293% | 294% | 256% | 331% | 318% | 359% | 279% | 322% | 290% |
| | Debt Servicing Ratio (General) | | | | 2% | 4% | 7% | 10% | 11% | 12% | 13% | 14% | 16% | 17% | 16% | 15% | 15% | 14% |
| | | | | | | | | | | | | | | | | | | |
| | Full Project Investment Scenario | | | | | | | | | | | | | | | | | |
| | Overall Status | | | | | | | | | | | | | | | | | |
| | Debt Equity Ratio- New Projects (Overall) | | | | 3.58 | 5.94 | 3.74 | 1.52 | 2.53 | 2.49 | 3.06 | 3.03 | 2.83 | - | - | - | - | - |
| | Interest Cover | | | | 8% | 13% | 20% | 26% | 31% | 32% | 36% | 41% | 47% | 52% | 45% | 42% | 38% | 35% |
| | Debt Service Coverage Ratio (DSCR) - Overall | 125% | | | 800% | 271% | 164% | 269% | 108% | 95% | 71% | 54% | 50% | 35% | 40% | 29% | 31% | 24% |
| | Cumulative DSCR | | | | 800% | 1071% | 1235% | 1504% | 1612% | 1707% | 1778% | 1832% | 1882% | 1917% | 1958% | 1986% | 2018% | 2042% |
| | Operating Ratio (Overall) | <1 | | | 0.82 | 0.91 | 1.10 | 1.23 | 1.33 | 1.37 | 1.49 | 1.64 | 1.87 | 2.05 | 1.79 | 1.78 | 1.78 | 1.79 |
| | Debt Servicing Ratio (Overall) | 30% | | | 3% | 6% | 10% | 12% | 14% | 15% | 15% | 17% | 17% | 17% | 16% | 16% | 15% | 15% |
| | | | | | | | | | | | | | | | | | | |
| | Water Supply & Drainage a/c Status | | | | | | | | | | | | | | | | | |
| | Operating Ratio (WS&D) | | | | 0.36 | 0.15 | 0.33 | 1.26 | 0.70 | 0.78 | 0.75 | 0.79 | 0.99 | 0.95 | 0.91 | 0.78 | 0.84 | 0.81 |
| | Debt Service Coverage Ratio (DSCR) - WS&D | | | | 800% | 271% | 164% | 269% | 108% | 95% | 71% | 54% | 50% | 35% | 40% | 29% | 31% | 24% |
| | Debt Servicing Ratio (WS&D) | | | | 6% | 17% | 20% | 10% | 19% | 20% | 20% | 20% | 17% | 17% | 16% | 17% | 15% | 15% |
| | | | | | | | | | | | | | | | | | | |
| | General (Rev.+ Edu. fund) a/c Status | | | | | | | | | | | | | | | | | |
| | Operating Ratio (General) | | | | 0.82 | 0.91 | 1.10 | 1.23 | 1.33 | 1.37 | 1.49 | 1.64 | 1.87 | 2.05 | 1.79 | 1.78 | 1.78 | 1.79 |
| | Debt Service Coverage Ratio (DSCR) - General | | | | 896% | 160% | 210% | 746% | 287% | 270% | 260% | 263% | 338% | 327% | 368% | 289% | 336% | 305% |
| | Debt Servicing Ratio (General) | | | | 4% | 9% | 16% | 23% | 29% | 37% | 47% | 57% | 71% | 83% | 76% | 75% | 73% | 73% |
| | | | | | | | | | | | | | | | | | | |
| | ASSUMPTIONS | | | | | | | | | | | | | | | | | |
| | Wholesale Price Index | 6% | | | | | | | | | | | | | | | | |
| | Discount Rate | 8.50% | | | | | | | | | | | | | | | | |
| | Guarantee Utilization Fee | 1% | | | | | | | | | | | | | | | | |
| | Guarantee Origination Fee | 1% | | | | | | | | | | | | | | | | |
| | Guarantee Ceiling (INR lakh) | 1,000 | | | | | | | | | | | | | | | | |

| 27- Coimbatore Municipal Corporation -Project Cash Flow - S | | | | | | | | | | | | | | | | |
|---|------------------------------------|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| No. | Item Heads | Variable | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| as of March 31 | | | | | | | | | | | | | | | | |
| CASH FLOW STATEMENT -- WATER SUPPLY | | | | | | | | | | | | | | | | |
| | Opening Balance | | | (19) | (85) | (153) | 521 | 1150 | 1033 | 1210 | 621 | 0 | (552) | (1156) | (1808) | (2402) |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Water Tariff | | - | - | 21 | 184 | 378 | 506 | 740 | 785 | 798 | 915 | 936 | 942 | 1,058 | 1,078 |
| 2 | Debt Drawdown | | | | | | | | | | | | | | | |
| | FI | | 223 | 236 | 1,503 | 1,593 | 1,126 | 597 | - | - | - | - | | | | |
| 3 | Equity Drawdown | | | | | | | | | | | | | | | |
| | Equity by ULB | | 89 | 95 | 601 | 637 | 450 | 239 | - | - | - | - | | | | |
| | Equity by Customers | | - | - | 134 | 1,033 | 1,095 | 600 | 768 | - | - | - | - | - | - | - |
| 4 | Govt. Grant | | 134 | 142 | 902 | 956 | 676 | 358 | - | - | - | - | | | | |
| | Total- Source of Funds | | 446 | 473 | 3,161 | 4,403 | 3,724 | 2,299 | 1,508 | 785 | 798 | 915 | 936 | 942 | 1,058 | 1,078 |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 446 | 473 | 3,006 | 3,186 | 2,252 | 1,193 | - | - | - | - | | | | |
| 2 | Operation & Maintenance | | - | 27 | 57 | 240 | 446 | 608 | 716 | 759 | 805 | 853 | 904 | 958 | 1,016 | 1,077 |
| 3 | Repayments- FI | | - | - | - | - | - | 564 | 564 | 564 | 564 | 564 | 636 | 636 | 636 | 636 |
| 4 | Interest During Construction | | 19 | 39 | 167 | 302 | 398 | 51 | 51 | 51 | 51 | 51 | | | | |
| | Total- Disposition of Funds | | 465 | 538 | 3,230 | 3,729 | 3,096 | 2,416 | 1,331 | 1,373 | 1,419 | 1,467 | 1,540 | 1,594 | 1,651 | 1,712 |
| | Net Cashflow | | (19) | (66) | (68) | 674 | 629 | (117) | 178 | (589) | (621) | (553) | (604) | (652) | (594) | (634) |
| | Closing Balance | | (19) | (85) | (153) | 521 | 1150 | 1033 | 1210 | 621 | 0 | (552) | (1156) | (1808) | (2402) | (3036) |
| CASH FLOW STATEMENT -- SEWERAGE | | | | | | | | | | | | | | | | |
| | Opening Balance | | | (192) | 151 | 271 | 398 | 1497 | 2714 | 3569 | 4635 | 7494 | 10039 | 12849 | 14016 | 15854 |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Sewerage Tariff | | - | 136 | 287 | 525 | 905 | 1,309 | 1,821 | 2,125 | 2,661 | 3,431 | 3,824 | 3,936 | 4,619 | 4,669 |
| 2 | Debt Drawdown | | | | | | | | | | | | | | | |
| | FI | | 2,262 | 2,398 | 2,541 | 2,694 | 2,856 | - | - | - | - | - | | | | |
| 3 | Equity Drawdown | | | | | | | | | | | | | | | |
| | Equity by ULB | | 905 | 959 | 1,017 | 1,078 | 1,142 | - | - | - | - | - | | | | |
| | Equity by Customers | | - | 785 | 829 | 1,053 | 2,140 | 2,214 | 1,494 | 1,563 | 2,992 | 2,091 | 2,051 | 387 | 471 | - |
| 4 | Govt. Grant | | 1,357 | 1,439 | 1,525 | 1,616 | 1,713 | - | - | - | - | - | | | | |
| | Total- Source of Funds | | 4,524 | 5,716 | 6,198 | 6,966 | 8,756 | 3,523 | 3,315 | 3,688 | 5,653 | 5,522 | 5,875 | 4,323 | 5,090 | 4,669 |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 4,524 | 4,795 | 5,083 | 5,388 | 5,711 | - | - | - | - | - | | | | |
| 2 | Operation & Maintenance | | - | 181 | 384 | 610 | 862 | 1,142 | 1,211 | 1,283 | 1,360 | 1,442 | 1,529 | 1,620 | 1,718 | 1,821 |
| 3 | Repayments- FI | | - | - | - | - | - | 1,164 | 1,249 | 1,339 | 1,434 | 1,535 | 1,535 | 1,535 | 1,535 | 1,535 |
| 4 | Interest During Construction | | 192 | 396 | 612 | 841 | 1,084 | - | - | - | - | - | | | | |
| | Total- Disposition of Funds | | 4,716 | 5,372 | 6,079 | 6,839 | 7,657 | 2,306 | 2,460 | 2,622 | 2,795 | 2,977 | 3,064 | 3,156 | 3,253 | 3,356 |
| | Net Cashflow | 7951.91 | (192) | 344 | 120 | 127 | 1099 | 1217 | 855 | 1066 | 2859 | 2545 | 2811 | 1167 | 1837 | 1313 |
| | Closing Balance | | (192) | 151 | 271 | 398 | 1497 | 2714 | 3569 | 4635 | 7494 | 10039 | 12849 | 14016 | 15854 | 17167 |

| 27- Coimbatore Municipal Corporation -Project Cash Flow - S | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | |
|---|------------------------------------|----------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------|
| No. | Item Heads | Variable | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | |
| as of March 31 | | | | | | | | | | | | | | | | | |
| CASH FLOW STATEMENT -- ROADS AND TRAFFIC MANAGEMENT | | | | | | | | | | | | | | | | | |
| | Opening Balance | | | (36) | (130) | (327) | (658) | (1135) | (1751) | (2482) | (3351) | (4406) | (5671) | (7020) | (8422) | (9880) | |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | | |
| 1 | Debt Drawdown | | | | | | | | | | | | | | | | |
| | FI | | 418 | 443 | 939 | 995 | 1,055 | 373 | 395 | 419 | 666 | 706 | | | | | |
| 2 | Equity Drawdown | | | | | | | | | | | | | | | | |
| | Equity by ULB | | 70 | 74 | 156 | 166 | 176 | 62 | 66 | 70 | 111 | 118 | | | | | |
| | Equity by Customers | | | | | | | | | | | | | | | | |
| 3 | Govt. Grant | | 209 | 221 | 469 | 498 | 527 | 186 | 198 | 209 | 333 | 353 | | | | | |
| | Total- Source of Funds | | 696 | 738 | 1,565 | 1,659 | 1,758 | 621 | 659 | 698 | 1,110 | 1,176 | - | - | - | - | |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 696 | 738 | 1,565 | 1,659 | 1,758 | 621 | 659 | 698 | 1,110 | 1,176 | - | - | - | - | |
| 2 | Operation & Maintenance | | - | 21 | 44 | 94 | 149 | 211 | 242 | 277 | 314 | 366 | 424 | 449 | 476 | 504 | |
| 3 | Repayments- FI | | - | - | - | - | - | 374 | 423 | 492 | 584 | 681 | 925 | 953 | 983 | 1,030 | |
| 4 | Interest During Construction | | 36 | 73 | 153 | 238 | 327 | 32 | 65 | 101 | 157 | 217 | | | | | |
| | Total- Disposition of Funds | | 732 | 832 | 1,762 | 1,990 | 2,235 | 1,238 | 1,389 | 1,567 | 2,165 | 2,441 | 1,348 | 1,402 | 1,459 | 1,534 | |
| | Net Cashflow | | (5203.19) | (36) | (94) | (197) | (331) | (477) | (616) | (731) | (869) | (1055) | (1265) | (1348) | (1402) | (1459) | (1534) |
| | Closing Balance | | (36) | (130) | (327) | (658) | (1135) | (1751) | (2482) | (3351) | (4406) | (5671) | (7020) | (8422) | (9880) | (11414) | |
| CASH FLOW STATEMENT -- STORM WATER DRAINS | | | | | | | | | | | | | | | | | |
| | Opening Balance | | | (32) | (112) | (279) | (553) | (943) | (1447) | (2062) | (2813) | (3747) | (4889) | (6121) | (7402) | (8735) | |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | | |
| 1 | Debt Drawdown | | | | | | | | | | | | | | | | |
| | FI | | 382 | 405 | 858 | 910 | 964 | 730 | 774 | 820 | 1,304 | 1,383 | | | | | |
| 2 | Equity Drawdown | | | | | | | | | | | | | | | | |
| | Equity by ULB | | 64 | 67 | 143 | 152 | 161 | 122 | 129 | 137 | 217 | 230 | | | | | |
| | Equity by Customers | | | | | | | | | | | | | | | | |
| 3 | Govt. Grant | | 191 | 202 | 429 | 455 | 482 | 365 | 387 | 410 | 652 | 691 | | | | | |
| | Total- Source of Funds | | 637 | 675 | 1,430 | 1,516 | 1,607 | 1,217 | 1,290 | 1,367 | 2,174 | 2,305 | - | - | - | - | |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 637 | 675 | 1,430 | 1,516 | 1,607 | 1,217 | 1,290 | 1,367 | 2,174 | 2,305 | - | - | - | - | |
| 2 | Operation & Maintenance | | - | 13 | 27 | 57 | 91 | 129 | 161 | 196 | 235 | 293 | 356 | 378 | 400 | 425 | |
| 3 | Repayments- FI | | - | - | - | - | - | 313 | 327 | 357 | 390 | 424 | 876 | 903 | 932 | 978 | |
| 4 | Interest During Construction | | 32 | 67 | 140 | 217 | 299 | 62 | 128 | 198 | 308 | 426 | | | | | |
| | Total- Disposition of Funds | | 669 | 754 | 1,597 | 1,791 | 1,997 | 1,720 | 1,905 | 2,118 | 3,107 | 3,447 | 1,232 | 1,281 | 1,333 | 1,403 | |
| | Net Cashflow | | (4578.68) | (32) | (80) | (167) | (274) | (390) | (503) | (615) | (751) | (933) | (1143) | (1232) | (1281) | (1333) | (1403) |
| | Closing Balance | | (32) | (112) | (279) | (553) | (943) | (1447) | (2062) | (2813) | (3747) | (4889) | (6121) | (7402) | (8735) | (10138) | |

| 27- Coimbatore Municipal Corporation -Project Cash Flow - S | | | | | | | | | | | | | | | | |
|---|------------------------------------|-----------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| No. | Item Heads | Variable | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| as of March 31 | | | | | | | | | | | | | | | | |
| CASH FLOW STATEMENT -- SOLID WASTE MANAGEMENT | | | | | | | | | | | | | | | | |
| | Opening Balance | | | 242 | 355 | 89 | (569) | (1624) | (2844) | (4078) | (5423) | (6894) | (8344) | (9850) | (11426) | (12964) |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | User Fee | | 265 | 306 | 332 | 436 | 463 | 483 | 591 | 619 | 641 | 770 | 801 | 825 | 962 | 998 |
| 2 | Debt Drawdown | | | | | | | | | | | | | | | |
| | FI | | 276 | 1,462 | 1,860 | 1,971 | 697 | - | - | - | - | - | - | - | - | - |
| 3 | Equity Drawdown | | | | | | | | | | | | | | | |
| | Equity by ULB | | 46 | 244 | 310 | 329 | 116 | - | - | - | - | - | - | - | - | - |
| | Equity by Customers | | | | | | | | | | | | | | | |
| 4 | Govt. Grant | | 138 | 731 | 930 | 986 | 348 | - | - | - | - | - | - | - | - | - |
| | Total- Source of Funds | | 725 | 2,743 | 3,432 | 3,721 | 1,624 | 483 | 591 | 619 | 641 | 770 | 801 | 825 | 962 | 998 |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 460 | 2,437 | 3,099 | 3,285 | 1,161 | - | - | - | - | - | - | - | - | - |
| 2 | Operation & Maintenance | | - | 46 | 292 | 620 | 986 | 1,161 | 1,231 | 1,304 | 1,383 | 1,466 | 1,553 | 1,647 | 1,746 | 1,850 |
| 3 | Repayments- FI | | - | - | - | - | - | 542 | 594 | 660 | 730 | 754 | 754 | 754 | 754 | 754 |
| 4 | Interest During Construction | | 23 | 148 | 306 | 473 | 533 | - | - | - | - | - | - | - | - | - |
| | Total- Disposition of Funds | | 483 | 2,630 | 3,698 | 4,379 | 2,679 | 1,703 | 1,825 | 1,964 | 2,112 | 2,220 | 2,308 | 2,401 | 2,500 | 2,605 |
| | Net Cashflow | (6809.51) | 242 | 113 | (266) | (658) | (1055) | (1220) | (1234) | (1345) | (1471) | (1450) | (1507) | (1576) | (1538) | (1607) |
| | Closing Balance | | 242 | 355 | 89 | (569) | (1624) | (2844) | (4078) | (5423) | (6894) | (8344) | (9850) | (11426) | (12964) | (14571) |
| CASH FLOW STATEMENT -- STREET LIGHTING | | | | | | | | | | | | | | | | |
| | Opening Balance | | | 0 | 0 | (5) | (30) | (77) | (142) | (210) | (283) | (362) | (447) | (535) | (628) | (724) |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Debt Drawdown | | | | | | | | | | | | | | | |
| | FI | | - | - | 59 | 62 | 66 | - | - | - | - | - | - | - | - | - |
| | Govt./Donor | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Market | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | Equity Drawdown | | | | | | | | | | | | | | | |
| | Equity by ULB | | - | - | 44 | 47 | 49 | - | - | - | - | - | - | - | - | - |
| | Equity by Customers | | | | | | | | | | | | | | | |
| 3 | Govt. Grant | | - | - | 44 | 47 | 49 | - | - | - | - | - | - | - | - | - |
| | Total- Source of Funds | | - | - | 146 | 155 | 164 | - |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | - | - | 146 | 155 | 164 | - | - | - | - | - | - | - | - | - |
| 2 | Operation & Maintenance | | - | - | - | 15 | 31 | 49 | 52 | 55 | 59 | 62 | 66 | 70 | 74 | 79 |
| 3 | Repayments- FI | | - | - | - | - | - | 16 | 16 | 18 | 20 | 22 | 22 | 22 | 22 | 22 |
| 4 | Interest During Construction | | - | - | 5 | 10 | 16 | - | - | - | - | - | - | - | - | - |
| | Total- Disposition of Funds | | - | - | 151 | 180 | 211 | 65 | 68 | 73 | 79 | 85 | 88 | 92 | 97 | 101 |
| | Net Cashflow | (381.32) | 0 | 0 | (5) | (25) | (47) | (65) | (68) | (73) | (79) | (85) | (88) | (92) | (97) | (101) |
| | Closing Balance | | 0 | 0 | (5) | (30) | (77) | (142) | (210) | (283) | (362) | (447) | (535) | (628) | (724) | (825) |

| 27- Coimbatore Municipal Corporation -Project Cash Flow - S | | | | | | | | | | | | | | | | |
|---|------------------------------------|----------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|------------|
| No. | Item Heads | Variable | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| <i>as of March 31</i> | | | | | | | | | | | | | | | | |
| CASH FLOW STATEMENT -- SLUM UPGRADATIONS | | | | | | | | | | | | | | | | |
| | Opening Balance | | | (36) | (118) | (249) | (431) | (670) | (1269) | (1964) | (2763) | (3672) | (4699) | (5403) | (6135) | (6898) |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Debt Drawdown | | | | | | | | | | | | | | | |
| | FI | | 427 | 453 | 480 | 508 | 539 | 571 | 606 | 642 | 680 | 721 | | | | |
| | Govt./Donor | | - | - | - | - | - | - | - | - | - | - | | | | |
| | Market | | - | - | - | - | - | - | - | - | - | - | | | | |
| 2 | Equity Drawdown | | | | | | | | | | | | | | | |
| | Equity by ULB | | 71 | 75 | 80 | 85 | 90 | 95 | 101 | 107 | 113 | 120 | | | | |
| | Equity by Customers | | | | | | | | | | | | | | | |
| 3 | Govt. Grant | | 213 | 226 | 240 | 254 | 269 | | | | | | | | | |
| 4 | Interest Accrued on Bonds | | | | | | | | | | | | | | | |
| 5 | Add: Bank Loans | | | | | | | | | | | | | | | |
| | Total- Source of Funds | | 712 | 754 | 799 | 847 | 898 | 952 | 1,009 | 1,070 | 1,134 | 1,202 | - | - | - | - |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 712 | 754 | 799 | 847 | 898 | 952 | 1,009 | 1,070 | 1,134 | 1,202 | - | - | - | - |
| 2 | Operation & Maintenance | | - | 7 | 15 | 24 | 34 | 45 | 57 | 71 | 86 | 102 | 120 | 127 | 135 | 143 |
| 3 | Add: DBM Depreciation | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | User Contribution | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Repayments- FI | | - | - | - | - | - | 220 | 236 | 253 | 271 | 290 | 584 | 605 | 628 | 652 |
| 4 | Interest During Construction | | 36 | 75 | 116 | 159 | 205 | 49 | 100 | 155 | 212 | 274 | | | | |
| | Total- Disposition of Funds | | 748 | 836 | 930 | 1,030 | 1,137 | 1,265 | 1,402 | 1,548 | 1,703 | 1,868 | 704 | 733 | 763 | 795 |
| | Net Cashflow | | (36) | (82) | (131) | (183) | (238) | (599) | (696) | (799) | (909) | (1026) | (704) | (733) | (763) | (795) |
| | Closing Balance | | (36) | (118) | (249) | (431) | (670) | (1269) | (1964) | (2763) | (3672) | (4699) | (5403) | (6135) | (6898) | (7694) |
| CASH FLOW STATEMENT -- OTHERS | | | | | | | | | | | | | | | | |
| | Opening Balance | | | (21) | (73) | (38) | (21) | (23) | (43) | (104) | (205) | (297) | (372) | (461) | (563) | (679) |
| A Sources of Fund (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Debt Drawdown | | | | | | | | | | | | | | | |
| | FI | | 248 | 263 | 139 | 148 | 157 | 237 | 251 | 266 | - | - | | | | |
| 2 | Equity Drawdown | | | | | | | | | | | | | | | |
| | Equity by ULB | | 124 | 132 | 70 | 74 | 78 | 119 | 126 | 133 | - | - | | | | |
| | Equity by Customers | | | | | | | | | | | | | | | |
| 3 | Govt. Grant | | 41 | 44 | 23 | 25 | 26 | 40 | 42 | 44 | - | - | | | | |
| 4 | Rent | | - | - | 108 | 108 | 108 | 130 | 130 | 130 | 130 | 156 | 156 | 156 | 156 | 187 |
| | Total- Source of Funds | | 414 | 438 | 340 | 354 | 369 | 525 | 549 | 574 | 130 | 156 | 156 | 156 | 156 | 187 |
| B Disposition of Funds (INR Lakh) | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 414 | 438 | 232 | 246 | 261 | 395 | 419 | 444 | - | - | - | - | - | - |
| 2 | Operation & Maintenance | | - | 8 | 18 | 23 | 30 | 39 | 50 | 62 | 66 | 69 | 74 | 79 | 84 | 89 |
| 3 | Repayments- FI | | - | - | - | - | - | 90 | 99 | 104 | 92 | 97 | 170 | 179 | 188 | 188 |
| 4 | Interest During Construction | | 21 | 43 | 55 | 68 | 81 | 20 | 42 | 64 | 64 | 64 | | | | |
| | Total- Disposition of Funds | | 435 | 490 | 305 | 337 | 372 | 545 | 610 | 674 | 221 | 231 | 244 | 258 | 272 | 277 |
| | Net Cashflow | | (345.30) | (21) | (52) | 35 | 17 | (3) | (20) | (61) | (101) | (92) | (75) | (89) | (102) | (90) |
| | Closing Balance | | (21) | (73) | (38) | (21) | (23) | (43) | (104) | (205) | (297) | (372) | (461) | (563) | (679) | (769) |

| 27- Coimbatore Municipal Corporation -Project Cash Flow - S | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
|---|------------------------------|----------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| No. | Item Heads | Variable | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| <i>as of March 31</i> | | | | | | | | | | | | | | | | |
| Grand Total Sustainable Project Cash Flows | | | | | | | | | | | | | | | | |
| <i>Opening Balance</i> | | | | (95) | (11) | (690) | (1343) | (1825) | (3749) | (6121) | (9582) | (11884) | (14935) | (17697) | (22367) | (26429) |
| A Sources of Fund | | | | | | | | | | | | | | | | |
| 1 | Debt Drawdown | | 4,236 | 5,659 | 8,379 | 8,882 | 7,459 | 2,508 | 2,026 | 2,148 | 2,651 | 2,810 | - | - | - | - |
| 2 | Equity Drawdown | | 1,368 | 1,645 | 2,421 | 2,566 | 2,263 | 636 | 421 | 447 | 442 | 468 | - | - | - | - |
| 3 | Govt. Grant | | 2,284 | 3,005 | 4,562 | 4,836 | 4,092 | 949 | 626 | 664 | 985 | 1,044 | - | - | - | - |
| 4 | User Charges | | 265 | 442 | 748 | 1,252 | 1,854 | 2,427 | 3,281 | 3,659 | 4,230 | 5,271 | 5,716 | 5,859 | 6,794 | 6,932 |
| 5 | New Connection Fees | | - | 785 | 963 | 2,087 | 3,235 | 2,815 | 2,262 | 1,563 | 2,992 | 2,091 | 2,051 | 387 | 471 | - |
| Total- Inflow | | | 8,153 | 11,537 | 17,073 | 19,622 | 18,902 | 9,335 | 8,617 | 8,480 | 11,300 | 11,685 | 7,767 | 6,245 | 7,265 | 6,932 |
| B Disposition of Funds | | | | | | | | | | | | | | | | |
| 1 | Project Capex | | 7,887 | 10,310 | 15,362 | 16,284 | 13,813 | 4,379 | 3,377 | 3,579 | 4,418 | 4,683 | - | - | - | - |
| 2 | Operation & Maintenance | | - | 303 | 837 | 1,683 | 2,629 | 3,384 | 3,720 | 4,007 | 4,307 | 4,653 | 5,027 | 5,328 | 5,648 | 5,987 |
| 3 | Debt Servicing- Repayment | | - | - | - | - | - | 3,282 | 3,508 | 3,787 | 4,084 | 4,368 | 5,502 | 5,588 | 5,679 | 5,796 |
| 4 | Interest During Construction | | 360 | 841 | 1,553 | 2,308 | 2,942 | 213 | 385 | 568 | 793 | 1,032 | - | - | - | - |
| Total- Outflow | | | 8,247 | 11,454 | 17,752 | 20,275 | 19,384 | 11,258 | 10,989 | 11,941 | 13,602 | 14,737 | 10,529 | 10,916 | 11,327 | 11,783 |
| Net Cash Flow | | | (13950.15) | (95) | 83 | (679) | (653) | (482) | (1924) | (2372) | (3461) | (2302) | (3052) | (2762) | (4671) | (4851) |
| <i>Closing Balance</i> | | | (95) | (11) | (690) | (1343) | (1825) | (3749) | (6121) | (9582) | (11884) | (14935) | (17697) | (22367) | (26429) | (31280) |
| Overall | | | | | | | | | | | | | | | | |
| RI | | | 265 | 1,227 | 1,711 | 3,339 | 5,089 | 5,241 | 5,543 | 5,222 | 7,222 | 7,362 | 7,767 | 6,245 | 7,265 | 6,932 |
| RE | | | 1,728 | 2,789 | 4,811 | 6,558 | 7,833 | 7,515 | 8,034 | 8,809 | 9,625 | 10,522 | 10,529 | 10,916 | 11,327 | 11,783 |
| Status | | | (1,463) | (1,562) | (3,100) | (3,219) | (2,744) | (2,274) | (2,491) | (3,587) | (2,403) | (3,159) | (2,762) | (4,671) | (4,061) | (4,851) |
| WS&SS | | | | | | | | | | | | | | | | |
| RI | | | - | 921 | 1,271 | 2,795 | 4,518 | 4,629 | 4,823 | 4,473 | 6,451 | 6,437 | 6,810 | 5,264 | 6,148 | 5,748 |
| RE | | | 1,205 | 1,696 | 2,837 | 3,709 | 4,382 | 3,767 | 3,790 | 3,996 | 4,214 | 4,445 | 4,604 | 4,750 | 4,904 | 5,068 |
| Status | | | (1,205) | (776) | (1,566) | (914) | 135 | 861 | 1,032 | 477 | 2,238 | 1,992 | 2,207 | 515 | 1,244 | 679 |
| General Fund | | | | | | | | | | | | | | | | |
| RI | | | 265 | 306 | 440 | 544 | 571 | 612 | 721 | 749 | 771 | 926 | 957 | 981 | 1,117 | 1,184 |
| RE | | | 523 | 1,093 | 1,974 | 2,849 | 3,451 | 3,748 | 4,244 | 4,813 | 5,412 | 6,077 | 5,925 | 6,167 | 6,422 | 6,715 |
| Status | | | (258) | (786) | (1,533) | (2,305) | (2,879) | (3,136) | (3,523) | (4,064) | (4,641) | (5,151) | (4,968) | (5,186) | (5,305) | (5,530) |

APPENDIX I – Reform agenda of the ULB

Reform Agenda at the Level of Coimbatore Corporation

1.0 Accounting Reform

Coimbatore Municipal Corporation is one of the first municipal corporations in the country to introduce double entry accrual based accounting system. The accounting reforms were introduced in the year 2000 and are being implemented successfully since.

2.0 E-Governance Application (Using IT.GIS and MIS)

Has there been any initiative towards the use of E- Governance applications or setting up of an E-Governance cell within the ULB?

Yes No

If yes, for what services is the ULB using these application and in what way?

The Coimbatore Municipal Corporation is using E-Governance applications in a big way to provide efficient services to its citizens. The following applications are currently in operation

- Issue of on-line birth and death certificates
- Property tax collection
- Collection of water charges
- Collection of fee for non-tax services, D & O trades, etc.
- Tracking of capital works- physical and financial- ward wise and contractor wise
- On-line procurement of contractors
- E-payment gateway
- On-line grievance application and feedback

3.0 Property Tax Reform 2004/05

What are the total number of properties in the city ?

2,10,000

What are the number of properties assessed for purpose of taxation ?

1,89,732

What is the number of properties which paid taxes in the fiscal year 2003/2004?

1,24,151

What is the basis of taxation ?

The basis of taxation in Coimbatore Municipal Corporation is the unit area method to determine the Annual Rental Value.

Unit area values to determine ARV

What is the amount of tax demanded?

2003/04

| |
|---------------------|
| Rs. 33.52 Crores |
|---------------------|

2004/05

| |
|---------------------|
| Rs. 37.29 Crores |
|---------------------|

What is the amount of the collected?

2003/04

Amount Percentage

| | |
|---------------------|---------|
| Rs. 28.21 Crores | (84.15) |
|---------------------|---------|

2004/05

Amount Percentage

| | |
|---------------------|---------|
| Rs. 31.40 Crores | (84.20) |
|---------------------|---------|

Achieving the target of 85% tax collection to tax demanded

Year 1 Year 2 Year 3 Year 4 Year 5 Year 6 Year 7

4.0 Levy of User Charges

Water Supply

Percentage of households covered by Municipal Corporation water supply

| |
|-----|
| 90% |
|-----|

Per capital domestic water supply

| |
|----------|
| 135 Lpcd |
|----------|

Average number of hours of water supply

| |
|-------|
| 2 hrs |
|-------|

Percentage of non-revenue water to total water released

| |
|------|
| 30 % |
|------|

Percentage of water supplied free

| |
|------|
| 14 % |
|------|

Percentage of water lost dues to leakage's and thefts

| |
|-----|
| 16% |
|-----|

It may be mentioned that the percentage of non-revenue water is ascertained based on the condition assessment of the water supply system. It is proposed to carry out a detailed study to estimate the non-revenue losses to enhance efficiency. In addition, the Municipal Corporation has taken a series of initiatives to arrest illegal connections and enhance the coverage of House Service connections.

Total cost (Operation & Maintenance and debt repayment) incurred in delivering water

2003/04

| |
|---------------|
| Rs. 25.33 Cr. |
|---------------|

2004/05

| |
|---------------|
| Rs. 26.42 Cr. |
|---------------|

Total recoveries from the sale of water

2003-04 (Rs.in lakhs)

| User charges | Water tax | Total | % Recovery |
|--------------|-----------|-------|------------|
| 938 | 916 | 1854 | 73% |

2004-05 (Rs.in lakhs)

| User charges | Water tax | Total | % Recovery |
|--------------|-----------|-------|------------|
| 1047 | 1220 | 2267 | 86% |

The Corporation maintains a separate account for Water Supply and Sewerage comprising the income and expenditure details of the water supply and sewerage system only. The Corporation collects user charges for water supply and also collects water tax as part of the property tax.

Achieving cost recovery target (full O & M recovery)

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|--------|--------|--------|--------|--------|--------|--------|
| | | | | ✓ | | |

Other Services

| | O & M cost Rs. in Lakhs | User charges Rs. in Lakhs. | Percentage |
|---------------------------|----------------------------|-------------------------------|------------|
| a. Street lighting | 1056 | - | -- |
| b. Solid Waste Management | 1749 | 29 | 1.65% |
| c. Sewerage system | 137 | 457 * | 333% |

* Recovery is from Drainage Tax (component of Property Tax)

Coimbatore Municipal Corporation has taken measures to recover O&M cost on street lighting through innovative mechanisms. The Corporation has completely privatized the street lighting operations and expect savings in O &M costs in addition to increased efficiency.

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|--------|--------|--------|--------|--------|--------|--------|
| | | ✓ | | | | |

Services to the Urban Poor

Percentages of households living in unauthorized tenements / temporary structures 15%

Percentage of households living in unauthorized tenements/ temporary structures without access to

Municipal Water Supply 0 %

The municipal water supply is being provided to all the urban poor irrespective of the ownership and status of housing. Water supply is being provided through public fountains and water tankers. In addition, piped water supply is provided in some slums making the service available on par with the other parts of the city.

Sanitation 1 %

The urban poor are provided with public conveniences and facilities under the integrated sanitation program. Though all the slums are covered with safe sanitation facilities, a small slum population does not utilize sanitation facilities due to access and / or lack of awareness.

Primary education 0 %

Primary education s provided through municipal and government schools.

Primary Health 0%

The Corporation maintains health posts in all the slum pockets and hence all of them are covered with medical facilities.

Reaching the services to the urban poor

Coimbatore Municipal Corporation is reaching out its services to urban poor through a series of initiatives. Infrastructure services are being provided to slum areas on a regular basis with focus on water supply and sanitation, including solid waste management. The Corporation intends to carry out the work from the very first year and would formulate a mechanism for continuous upgradation and improvement of quality of life for urban poor.

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 |
|--------|--------|--------|--------|--------|--------|--------|
| | | ✓ | | | | |

Internal Earmarking of Budgets for the Urban Poor

Coimbatore Municipal Corporation is already earmarking provisions for infrastructure

development in slum areas and intends to continue the same.

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | |
|--------------------------|-------------------------------------|--------------------------|--------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

APPENDIX II – Reform agenda of the State Government

Reform Agenda at the level of the State Government

1. Implementation of the Constitution (Seventy-Fourth) Amendment Act, 1992

What is the status of implementation of the following as per the Act ? Specify:

(a) & (b) *Constitution and Composition of municipalities*

- In Tamil Nadu there are 102 Municipalities and 50 Third Grade Municipalities (erstwhile Town Panchayats have been renamed as Third Grade Municipalities)
- The norm for constitution of Third Grade Municipalities is minimum population of 30,000.
- Based on the minimum annual income, the Municipalities have been classified as follows:

| Grade | Minimum Annual Income (Rs. Lakhs) |
|-----------|-----------------------------------|
| Special | 500 |
| Selection | 200 |
| First | 100 |
| Second | 50 |

- As per section 7 of the Tamil Nadu District Municipalities Act, 1920, the Municipal Council shall consist of such number of councillors as may be determined by the State Government, by notification which shall not be more than fifty-two and shall not be less than twenty In G.O.(Ms).No.135, Municipal Administration and Water Supply Department, dated 11.6.1996, the Government have prescribed a population norm for determining the number of councillors (exclusive of Chairman) of a Municipal Council.
- In respect of the Municipal Corporations of Chennai, Madurai and Coimbatore, the strength of the Councillors to be elected has been prescribed in the respective Acts itself, as follows: Chennai Corporation – 155, Madurai Corporation – 72, Coimbatore Corporation – 72
- In G.O.(Ms).No. 134, Municipal Administration and Water Supply Department, dated 10.6.1996, the Government have fixed the strength of the Councillors to be elected in the other Corporations as follows: Tiruchirappalli Corporation – 60, Tirunelveli Corporation – 55, Salem Corporation – 60.
- Further the members of the House of the People and the members of the Legislative Assembly representing the constituency comprising the whole or any part of the municipality and the members of the council of States who are registered as electors within the area of the municipality shall also be represented in the council. Similar provisions are available in the Corporation Acts.

(c) *Reservation of seats for Women, Scheduled Castes and Scheduled Tribes*

- According to section 3-I and section 7 of the Tamil Nadu District Municipalities Act, 1920, certain offices of the Chairmen, Members / Councillors of the Third Grade Municipalities and Municipalities shall be reserved for Scheduled Castes and Scheduled Tribes.
- Among the offices reserved for Scheduled Castes or Scheduled Tribes, not less than one third of the Offices shall be reserved for women belonging to Scheduled Castes or Scheduled Tribes.
- Further, not less than one third of the total number of offices of Chairmen / Members / Councillors of Third Grade Municipalities and Municipalities in the State (including those reserved for S.C./S.T. women) shall be reserved for Women.
- The Offices of Chairmen and Councillors shall be reserved by rotation for future elections.
- Orders regarding reservation in the offices of Chairmen and Members/Councillors of Third Grade Municipalities, Municipalities have been issued in G.O.(Ms).No.196, Municipal Administration and Water Supply Department, dated 27.8.1996 and G.O.(Ms).No.189, Municipal Administration and Water Supply Department, dated 20.8.1996, respectively.
- Similar provisions for reservation in case of Councillors of Municipal Corporations are available in the Acts governing the Municipal Corporations.
- The Government have delegated the power of reservation to the Commissioners of respective Municipal Corporations.
- As regards reservation in the offices of Mayor, according to the Special provision made in the Tamil Nadu Municipal Corporation Laws (Amendment and Special Provision) Act, 1994, out of the total number of offices of Mayor in this State, one shall be reserved for the members belonging to the Scheduled Castes or Scheduled Tribes, as the case may be and two shall be reserved for women and reservation shall be allotted by rotation to different Municipal Corporations in the State in such manner as may be prescribed.
- Orders regarding reservation in offices of Mayor for the Scheduled Castes or Scheduled Tribes have been issued in G.O.(Ms).No.195, Municipal Administration and Water Supply Department, dated 27.8.1996.

(d) *Constitution of District Planning Committees (DPCs)*

District Planning Committees as per Article 243 ZD have been constituted in Tamil Nadu. The DPCs have been operationalised fully and made functional. The first meeting of the DPCs was held on 4.2.2002 and subsequent meetings have been held once in three months to discuss the developmental issues relating to the district.

(e) *Constitution of Metropolitan Planning Committees:*

It is proposed to amend the provisions of Chennai City Municipal Corporation Act, 1919 and Tamil Nadu Town and Country Planning Act, 1971 so as to set up the Metropolitan Planning Committee. The Draft Bill has been finalized. **The Metropolitan Planning Committee will be constituted in 2006-07.**

(f) *Incorporation of Schedule 12 into the State Municipal Act*

This Government have enacted the conformity legislations in keeping with the spirit of the Constitution (74th Amendment) Act. By the conformity legislations (Tamil Nadu Acts 25 and 26 of 1994) the functions which had been available in various sections in the enactments governing the Urban Local Bodies of this State, have been consolidated and incorporated in a separate Schedule in the Acts governing the Urban Local Bodies.

Which of the functions of Schedule 12 have been incorporated into the State Municipal Act and transferred to ULBs?

With the exception of Fire Services, other functions listed in Scheduled 12 are being performed by the Urban Local Bodies. The details of the powers and functions entrusted to the Urban Local Bodies are given below:-

i) Urban Planning including Town Planning (Function 1):-

Urban Planning including Town Planning is governed under the provisions of the Tamil Nadu Town and Country Planning Act, 1971. When the Local Planning Authorities are constituted under Section 11 of the Act in respect of a single Urban Local Body, the Local Body itself is declared as the Local Planning Authority. However, where there are two or more local bodies, four members of the Local Bodies are appointed as representatives in the Composite Local Planning Authority. According to Section 12 of the Act, the functions of the Local Planning Authority shall be, to carryout a survey of the local Planning area, to prepare a land use map, to prepare a Master Plan and Detailed Development Plan and to carryout work as contemplated in the Master Plan and Detailed Development Plan.

ii) Regulation of land use and construction of Building (Function-2):-

Regulation of land use is governed under the provisions of the Tamil Nadu Town and Country Planning Act, 1971. In G.O.Ms.No.134, Municipal Administration and Water Supply Department, dated 20.9.2002 orders have been issued for the approval of layouts by the Local Bodies. Construction of buildings in Urban Local Body Areas is regulated by the provisions in the Corporations and Municipal Acts and the Building Rules issued there under. The Commissioner of the Local Body has been empowered to grant or refuse permission. Provision to appeal to the Standing Committee (in the case of Corporation) or to Council (in the case of Municipalities / Town Panchayats) if the Commissioner fails to pass orders within the prescribed period, is also available in the Acts.

iii) Planning for Economic and Social Development (Function-3):-

For welfare schemes like widows rehabilitation scheme, Swarna Jayanthi Shahari Rozgar Yojana etc. the selection of beneficiaries under the programmes is done by the local body.

iv) Roads and Bridges (Function-4):-

Small roads within the Urban Local Bodies fall under the term “Public Streets” in the Corporation Acts and in the Municipal Act. All public streets, not reserved under the control of the Central and State Governments are vested in the Local body. The Local Bodies shall maintain and repair the public streets and make all improvements for the public safety or convenience.

v) Water Supply for Domestic, Industrial and Commercial purposes (Function-5):-

Provisions for water supply were earlier available in the Chennai City Municipal Corporation Act. These provisions were omitted when the Chennai Metropolitan water Supply and Sewerage Act, 1978, was enacted for the constitution of the Chennai Metropolitan Water Supply and Sewerage Board to perform the functions relating to water supply and sewerage in the Chennai Metropolitan Area. In the Acts applicable to other Municipal Corporations and in the Tamil Nadu District Municipalities Act, 1920, provisions are available for water supply for domestic consumption. The Commissioner is also empowered to supply water for non-domestic purposes.

vi) Public Health, Sanitation, Conservancy and Solid Waste Management (Function-6):-

According to the provisions in the Corporations Acts and in the District Municipalities Act, the Local Body shall provide and maintain a sufficient system of public drains. The Local Body shall also provide and maintain in proper and convenient places sufficient number of public latrines in clean and proper order. The Local Body shall make arrangements for regular cleaning of streets and dustbins. The Commissioner should make arrangements for the prevention and control of dangerous diseases and small pox.

vii) Urban Forestry, protection of the Environment and promotion of ecological aspects (Function-8):-

According to the Financial Rules contained in the Corporations Acts and in the District Municipalities Act, the object of expenditure connected with public convenience, amenities and education include the planting and preservation of trees in public streets and places. In the Urban Forestry Scheme implemented by the Environment & Forests Department, the Urban Local Bodies are also involved in protecting the saplings of trees in Urban areas.

viii) Safeguarding the interest of weaker sections of society including the handicapped and mentally retarded (Function-9):-

For Welfare Schemes like widows rehabilitation scheme, Swarna Jayanthi Shahari Rozgar Yojana etc., the selection of beneficiaries under the programs is done by the local body. According to the Financial Rules, the object of expenditure connected with the public convenience, amenities and education include the provision and maintenance of rescue homes.

ix) Slum Improvement and upgradation (Function-10):-

All Urban Local Bodies are implementing schemes and measures for slum improvement and upgradation.

x) Urban Poverty Alleviation (Function-11):-

No statutory provisions are available in the Urban Local Body Acts. However, Swarna Jayanthi Shahari Rozgar Yojana (SJSRY), an Urban Poverty Alleviation Program is being implemented through the Urban Local Bodies.

xi) Provision of Urban Amenities and facilities such as parks, gardens, playgrounds (Function-12):-

According to the provisions in the Corporations Acts and in the District Municipalities Act, the Council may make bye-laws to provide for the regulation of the use of parks, gardens and other public municipal places. Further according to the Financial Rules, the object of expenditure connected with public convenience, amenities and education include the construction and maintenance of recreation grounds, playing grounds and promenades.

xii) Promotion of cultural, educational and aesthetic aspects (Function-13):-

According to the Financial Rules, the object of expenditure connected with public convenience, amenities and education include construction of Public Halls, recreation grounds, playing grounds, Zoological and Horticultural Gardens, Public libraries, Reading rooms, Museum, Art Galleries, provision of music for the public, holding of exhibitions or fairs etc.

xiii) Burial and Burial grounds, cremation, cremation grounds and electric crematorium (Function 14):-

Provisions are available in the Corporations Acts and in the District Municipalities Act for registration and control of burial or burning grounds, proper burial or burning of the corpses and issue of grave diggers licence.

xiv) Cattle Pounds, Prevention of cruelty to animals (Function-15):-

According to the Financial Rules, the object of the expenditure connected with the public convenience, amenities and education include the provision of places for the treatment of sick animals and the prevention of cruelty to animals. Further in G.O.Ms.No.s. 13, 14 and 15, Municipal Administration and Water Supply Department, dated 3.2.1998, orders have been issued for the constitution of a Joint Committee in Corporations to prevent cruelty to animals with the Mayor as Chairman and Officers of the Corporation, Animal Husbandry Department, Animal Welfare Board and the Society for the Prevention of Cruelty to Animals, as members.

xv) Vital statistics including registration of births and deaths (Function 16):-

According to the provisions in the Corporation Acts and District Municipalities Act, the Council shall register all births and deaths occurring in its limits. Information of births and deaths shall be given and their registration shall be made and enforced in the prescribed manner.

xvi) Public amenities including street lights, parking lots, bus stops and other public convenience (Function 17):-

According to the provisions in the Corporations Acts and in the District Municipalities Act, Public Streets shall be provided with lights. Further, landing places, cart stands (including Bus stands) etc. shall be provided by the Local Bodies and licenses shall also be issued to the private cart stands.

xvii) Regulation of slaughter houses and tanneries (Function-18):-

According to the provisions in the Corporations Acts and Municipal Act, the local bodies shall provide slaughter houses and levy fees for their use. Licenses shall also be issued for slaughter houses.

Has the transfer of functions been accompanied by transfer of staff? If no, has the ULB been given the powers to recruit staff for managing the transferred functions?

The Urban Local bodies of this State have an adequate sanctioned strength of staff for effectively discharging their functions. This Government, adopting a cautious approach towards appointment of staff in Urban Local Bodies, has allowed the same wherever they are really needed. In transition towns, there was a problem of inadequate strength of technical functionaries and hence, a separate engineering wing was created with adequate number of engineering personnel separately for transition towns, reducing external clearance and ensuring speedy execution of development works. Further, in Municipalities where there are no planning staff, a policy decision was taken to create minimum strength, ensuring that all the Municipalities have in their rolls at least a basic level planning staff. As part of the computerization effort, qualified staff were recruited both on deputation and from the open market which has helped the successful implementation of computerization of Municipal functions.

2. Repealment of Urban Land (Ceiling and Regulation) Act, 1976

The Tamil Nadu Urban Land (Ceiling and Regulation) Act, 1978 has been repealed by the Tamil Nadu Urban Land (Ceiling and Regulation) Repeal Act, 1999 (Tamil Nadu Act 20 of 1999)

3. Rent Control Reforms, 2004/05

At present only 69 buildings are under the control of Accommodation Controller of Chennai and Coimbatore (52 and 17 respectively) for occupation by the Government servants. There are no such buildings in other districts. It is proposed to amend the Tamil Nadu Buildings (Lease and Rent Control) Act, 1960. The process of drafting the legislation has been commenced. It is expected to amend this Act by 2007-08.

4. Stamp Duty Rationalisation, 2005

- In 2004, orders have been issued by the Government of Tamil Nadu for reducing the stamp duty to 6% and transfer duty to 2% from the earlier levels of 8% and 5% respectively charged on the conveyance of properties in this State.
- (During 2004, the Stamp duty on settlement and release between family members and general partition between family members, and partition on the dissolution of partnership between family members has been reduced to 1% on the market value of the property subject to a ceiling of Rs.10,000/-. The registration fee is 1% with a ceiling of Rs.2,000/-. Orders have also been issued in February, 2004 to the following effect:
- Reduction of Stamp duty on simple mortgage without possession from 4% to 1%.
- Reduction of Stamp duty in the case of mortgage deed with possession from 6% on the loan amount to 3% on the loan amount. Reduction of transfer duty from 3% to 1% on the loan amount. The total rate will thus be 4% on the loan amount.
- In the case of deposit of title deeds, a ceiling of Rs. 5,000/- for stamp duty and Rs. 10,000/- for registration fee has been introduced.
- Stamp duty on powers of attorney has been reduced from the level of 6% to 4%.

Having already reduced the stamp duty from 8% to 6% in 2004, the Government of Tamil Nadu will make efforts to further reduce the stamp duty to 5% by 2012-13.

5. Public Disclosure Law

There are already various existing provisions under which ULBs in Tamil Nadu are required to make public disclosure of various types of information.

Section 33 of the Tamil Nadu District Municipal Act, 1920 provides that each local body shall publish an annual administration report in which various information pertaining to the activities of the local bodies is contained. This provision is also available in the relevant acts governing the Municipal Corporations.

Further, the budget document of the local bodies which contains all financial details pertaining to the receipts and expenditure of the local body are also made published by each local body.

The existing laws pertaining to ULBs also provide that before imposing or increasing any taxes, the local body is required to give advance notice of the same and invite the objections of the public.

In addition to the above, each local body in the State has published a Citizens Charter in which all relevant information pertaining to the local body is provided. The second edition of the Citizens Charter has been published by all local bodies in 2004.

Finally, under Section 4(1)(d) of the Right to Information Act, every local body is required to publish various particulars pertaining to its activities and expenses, which has been done by all local bodies in the State.

With regard to the proposed reform agenda pertaining to enactment of a public disclosure law, the State Government will take the following action:

- Identification of matters of public importance not covered under existing public disclosure provision;
- Consultation with urban local bodies and framing to provisions to incorporate necessary provisions in the existing municipal laws and rules;
- Passing of legislation and notification of rules

Action in this regard will be completed by 2008-09.

6. Community Participation Law

Is there any provision in the State Municipal Acts regarding the involvement of civil society, industry and business in municipal affairs – e.g., in setting priorities, budgeting provisions, etc.,

There is no such provision in the State Municipality Acts. The inclusion of suitable provision to this effect will be considered by year 2009-10, after following the required process of consulting the local bodies and other stake- holders.

7. City Planning Function

Who is responsible for city planning for the city?

Currently, the planning function of the ULBs falling in the composite Local Planning Area is under the jurisdiction of the Local Planning Authority – the local arm of Directorate of Town and Country Planning (DTCP). However, the approval of layouts, building plans and other clearances for developmental activities are vested in the ULB.

Which agency is responsible for provision of the following services

Water Supply & Sewerage

The Coimbatore Corporation is responsible for the provision of water supply and sewerage services within its area of jurisdiction.

Optional Reforms

During year I of the Mission, the following two optional reforms will be implemented:

(i) Introduction of computerization in the process of registration of land and property:

To facilitate faster processing of applications submitted by the public, the Registration Department has embarked upon the project STAR (Simplified and Transparent Administration of Registration) and I.T. enabled services. Under the project, so far, out of the 600 Sub-Registrar Offices and 50 District Offices, 300 Sub-Registrar Offices and all the 50 District Registrar Offices have been computerized. The process of computerization of remaining 300 Sub-Registrar Offices has been kept in abeyance in view of the reorganization of jurisdiction of remaining Sub-Registrars' Offices. It is proposed to merge the remaining offices with the existing ones. The computerization initiatives have enabled the following:

- Statewide Guideline values of properties available on the website (www.tnreginet.net)
- Issue of Encumbrance Certificates across the counter in 5 minutes
- Apply on line for Encumbrance Certificates – door delivery within 24 hours on payment of fees and courier charges.
- Online property valuation
- Apply online for host of other services, e.g.
 - Certified copies
 - Extract of Hindu Marriage Certificates
 - Bye-laws, etc. of Societies registered
 - Details of chit groups

The process of computerization in the registrars' offices will be further pursued during 2006- 07 and 2007- 08.

(ii) Revision of bye-laws to make rain water harvesting mandatory in all buildings to come up and for adoption of water conservation measures.

- 1) To make Rain Water Harvesting mandatory, the Tamil Nadu Government promulgated the Tamil Nadu Municipal Laws (Second Amendment) Ordinance in 2003. This was repealed by the Tamil Nadu Municipal Laws (Second Amendment) Act 2003, by which Chennai City Municipal Corporation Act 1919, the Tamil Nadu District Municipalities Act 1920, the Coimbatore City Municipal Corporation Act, 1971 and the Coimbatore City Municipal Corporation Act, 1981 were amended to include provisions making rainwater harvesting mandatory.

- 2) The relevant provision in the ULB Acts pertaining to Rain Water Harvesting reads as follows:
- In every building owned or occupied by the Government or a statutory body or company or an institution owned or controlled by the Government, rain water harvesting structure shall be provided by the Government or by such statutory body or company or other institution, as the case may be, in such manner and within such time as may be prescribed.
 - Subject to the provisions of sub-section (1), every owner or occupier of a building shall provide rain water harvesting structure in the building in such manner and within such period as may be prescribed.

Explanation:- Where a building is owned or occupied by more than one person, every such person shall be liable under this sub-section.

- Where the rain water harvesting structure is not provided as required under sub-section (2), the Commissioner or any person authorized by him in this behalf may, after giving notice to the owner or occupier of the building, cause rain water harvesting structure to be provided in such building and recover the cost of such provision along with the incidental expense thereof in the same manner as property tax.
- Notwithstanding any action taken under sub-section (3), where the owner or occupier of the building fails to provide the rain water harvesting structure in the building before the date as may be prescribed, the water supply connection provided to such building shall be disconnected till rain water harvesting structure is provided”.

The relevant building rules under the above said Acts have also been suitably amended making Rain Water Harvesting compulsory for approval of Building Plans.

APPENDIX III – Road Sector Projects

| UTILITY DUCT & STROM WATER DRAIN | | |
|---|---|---------------------|
| Sl.No | Name of work | Length in Km |
| 1 | Salem --Cochin road Km 148/0-157/6,161/2-164/0 | 12.400 |
| 2 | Coimbatore -- Siruvani road Km 0/0-5/0 & 6/0-7/0 | 6.100 |
| 3 | Valankulam -- Bypass road Km 0/0-0/8 | 0.800 |
| 4 | Coimbatore - Thadagam road Km 1/6-8/0 | 6.400 |
| 5 | Lawly road Km 0/0 -- 1/275 | 1.275 |
| 6 | Agri college --Maruthamalai road Km 1/275-5/0 | 3.725 |
| 7 | Coimbatore - Madampatty road Km 0/0-1/8 | 1.800 |
| 8 | Cowly Brown road Km 0/0-- 1/380 | 1.380 |
| 9 | North Coimbatore - Ramanathapuram (via) Lakshmi mills Km 0/0-- 5/510 | 5.510 |
| 10 | Km 350/4 of NGM road to Sivanandha colony road Km 0/0-0/8 | 0.800 |
| 11 | Ganapathy -- Avaramapalayam road Km 0/0-1/060 | 1.060 |
| 12 | Imperial Bank road Km 0/0-0/8 | 0.800 |
| 13 | Nanjundapuram road Km 0/0-0/8 | 0.800 |
| 14 | Ramanathapuram road -- Podanur road Km 2/2-5/6 | 3.400 |
| 15 | Podanur --Chettipalayam road to Nanjudapuram road Km 5/6-6/2 | 0.600 |
| 16 | Podanur --Chettipalayam road Km 2/6-5/0 | 2.400 |
| 17 | Sullivan Street Km 0/0-1/0 | 1.000 |
| 18 | Singanallur -- Peelamadu road Km 0/0-3/0 | 3.000 |
| 19 | Podanur Junction road Km 0/0-2/6 | 2.600 |
| 20 | Km 164/2 of Dindugal -- Bangalore road to Maniyakarampalayam road Km 0/0 -2/4 | 2.400 |
| 21 | Km 3/8 of Coimbatore -- Madampatty road to Km 4/2 of Agri college -- Maruthamalai road (via) Veerakaralam | 2.400 |
| 22 | Km 352/0 of NGM road to K.N.G pudur Km 0/0-2/0 | 2.000 |
| 23 | Kurichi -- podanur road Km 0/0-1/6 | 1.600 |
| 24 | Goundampalayam -- Onappalayam road Km 0/0-2/6 | 2.600 |
| 25 | Saradamill road Km 0/0-0/2 | 0.200 |
| 26 | Nagapattinam -- Gudalur -- Mysore road (NH 67) Km 332/8-355/8 | 23.000 |
| 27 | Dindugal -- Bangalore road (NH 209) Km 156/4 -- 166/5 | 10.100 |
| | TOTAL | 100.150 |

| CONCRETING OF MAJOR ROADS | |
|----------------------------------|--|
| Sl.No | Name of work |
| 1 | Narth Ciombatore - Ramanathapuram (via) Lakshmi |
| 2 | Mills Km. 0/0-5/510 |
| 3 | Nanjundapuram road Km. 0/0-0/8 |
| 4 | Ramanathapuram - Podanur road Km. 2/2-5/6 |
| 5 | Poodanur Chettipalayam road to Janjudapuram road |
| 6 | Km. 5/6-6/2 |
| 7 | Podanur Chettipalayam road Km. 2/6-4/0 |
| 8 | Sullivan Street road Km. 0/0-1/0 |
| 9 | Km. 349/4 of NGM road to sivanandha colony road |
| 10 | Imperial Bank road Km. 0/0-0/8 |

| | | | |
|-----------------------------|--|-----------------------------------|-----------------|
| 11 | Podanur - Junction road Km. 0/0-2/6 | | |
| 12 | Ganapathy - Avarampalayam road Km. 0/0-1/060 | | |
| JUNCTION IMPROVEMENT | | | |
| Sl. No. | Name of work | Junction Name | Location |
| 1 | Salem - Cochin Road | Air Port | Km. 148/6 |
| 2 | Salem - Cochin Road | Villankurichi Road Junction | Km. 151/2 |
| 3 | Salem - Cochin Road | Nava India Junction | Km. 153/10 |
| 4 | Salem - Cochin Road | Circuit House Junction | Km. 155/6 |
| 5 | Salem - Cochin Road | Anna Statue junction | Km. 156/6 |
| 6 | Salem - Cochin Road | L.I.C. junction | Km. 156/10 |
| 7 | Salem - Cochin Road | Uplipalayam | Km. 157/4 |
| 8 | Salem - Cochin Road | Kuniamuthur | Km. 164/0 |
| 9 | Salem - Cochin Road | Kovaiputhur | Km. 165/8 |
| 10 | Salem - Cochin Road | Mile Stone | Km. 166/4 |
| 11 | Valankulam Bye-pass Road | Ukkadam Bus stand | Km. 0/2 |
| 12 | Valankulam Bye-pass Road | Sungam | Km. 3/2 |
| 13 | Imperial Bank Road | Lanka Corner | Km. 0/2 |
| 14 | Imperial Bank Road | Collector Office Junction | Km. 0/6 |
| 15 | North Coimbatore to Ramanathapuram (via) Lakshmi mills | Power House Junction | Km. 0/2 |
| 16 | North Coimbatore to Ramanathapuram (via) Lakshmi mills | Women's Polytechnic junction | Km. 2/2 |
| 17 | North Coimbatore to Ramanathapuram (via) Lakshmi mills | Kuppusamy Naidu Hospital junction | Km. 2/8 |
| 18 | North Coimbatore to Ramanathapuram (via) Lakshmi mills | Puliyakulam | Km. 4/8 |
| 19 | Coimbatore - Thadagam Road | Madampatty Road junction | Km. 2/4 |
| 20 | Coimbatore - Thadagam Road | Milk Depot | Km. 2/8 |
| 21 | Coimbatore - Thadagam Road | Lawley Road | Km. 3/4 |
| 22 | Coimbatore - Thadagam Road | Venkitapuram | Km. 5/0 |
| 23 | Coimbatore - Thadagam Road | Idayarpalayam | Km. 6/6 |
| 24 | Coimbatore - Thadagam Road | T.V.S. Nagar | Km. 7/2 |
| 25 | Coimbatore - Siruvanai Road | B1 Police Station | Km. 0/2 |
| 26 | Coimbatore - Siruvanai Road | Telungupalayam | Km. 4/0 |
| 27 | Singanallur - Peelamedu Road | Singanallur | Km. 0/2 |
| 28 | Podanur Junction Road | Kurichi Pirivu | Km. 0/2 |
| 29 | Podanur Junction Road | Podanur Junction | Km. 2/6 |
| 30 | Nagapattinam - Gudalur - Mysore Road | Ramanathapuram | Km. 341/2 |
| 31 | Nagapattinam - Gudalur - Mysore Road | Sungam Junction | Km. 342/4 |
| 32 | Nagapattinam - Gudalur - Mysore Road | Cross cut Road junction | Km. 347/4 |
| 33 | Nagapattinam - Gudalur - Mysore Road | Chinnathamani | Km. 347/6 |
| 34 | Nagapattinam - Gudalur - Mysore Road | Home Science Collage Junction | Km. 348/4 |
| 35 | Nagapattinam - Gudalur - Mysore Road | Eru company | Km. 350/2 |
| 36 | Nagapattinam - Gudalur - Mysore Road | Goundampalayam | Km. 351/4 |
| 37 | Nagapattinam - Gudalur - Mysore Road | Gounder Mill | Km. 352/8 |
| 38 | Nagapattinam - Gudalur - Mysore Road | Thudiyalur | Km. 355/2 |
| 39 | Nagapattinam - Gudalur - Mysore Road | Vada Madurai | Km. 355/8 |
| 40 | Dindugal Bangalore Road | Sundarapuram | Km. 153/4 |

| | | | |
|----|---------------------------------|----------------------------|------------|
| 41 | Dindugal Bangalore Road | Ukkadam Bus stand | Km. 159/8 |
| 42 | Dindugal Bangalore Road | Tamilnadu Stop | Km. 163/2 |
| 43 | Dindugal Bangalore Road | Ganapathy Bus Stand | Km. 163/10 |
| 44 | Dindugal Bangalore Road | Saravanampatty | Km. 169/2 |
| 45 | Coimbatore - Madampatty Road | Veerakeralam Pirivu | Km. 3/8 |
| 46 | Lawleey Road | Sugercane institute Pirivu | Km. 1/2 |
| 47 | Agri Collage - Marudamalai Road | Onnapalayam | Km. 4/4 |
| 48 | Agri Collage - Marudamalai Road | Vadavalli | Km. 4/8 |
| 49 | Agri Collage - Marudamalai Road | Navavoor Pirivu | Km. 6/2 |
| 50 | Agri Collage - Marudamalai Road | Kalveerampalayam | Km. 6/8 |

| BUS LAY BUY WITH BUS SHELTER | | |
|-------------------------------------|--------------------------------------|-----------------|
| SL. No | Name of Work | Location |
| 1 | Nagapattinam - Gudalur - Mysore Road | Km. 337/2 |
| 2 | Nagapattinam - Gudalur - Mysore Road | Km. 341/2 |
| 3 | Nagapattinam - Gudalur - Mysore Road | Km. 343/6 |
| 4 | Nagapattinam - Gudalur - Mysore Road | Km. 344/0 |
| 5 | Nagapattinam - Gudalur - Mysore Road | Km. 346/8 |
| 6 | Nagapattinam - Gudalur - Mysore Road | Km. 348/10 |
| 7 | Nagapattinam - Gudalur - Mysore Road | Km. 350/4 |
| 8 | Nagapattinam - Gudalur - Mysore Road | Km. 350/8 |
| 9 | Nagapattinam - Gudalur - Mysore Road | Km. 351/2 |
| 10 | Nagapattinam - Gudalur - Mysore Road | Km. 351/8 |
| 11 | Nagapattinam - Gudalur - Mysore Road | Km. 352/4 |
| 12 | Nagapattinam - Gudalur - Mysore Road | Km. 352/8 |
| 13 | Nagapattinam - Gudalur - Mysore Road | Km. 354/10 |
| 14 | Nagapattinam - Gudalur - Mysore Road | Km. 355/8 |
| 15 | Salem - Cochin Road | Km. 149/0 |
| 16 | Salem - Cochin Road | Km. 153/10 |
| 17 | Salem - Cochin Road | Km. 162/8 |
| 18 | Salem - Cochin Road | Km. 165/0 |
| 19 | Salem - Cochin Road | Km. 165/8 |
| 20 | Coimbatore - Siruvani Road | Km. 1/2 |
| 21 | Coimbatore - Siruvani Road | Km. 1/8 |
| 22 | Coimbatore - Siruvani Road | Km. 2/6 |
| 23 | Coimbatore - Siruvani Road | Km. 4/0 |
| 24 | Coimbatore - Siruvani Road | Km. 5/0 |
| 25 | Coimbatore - Thadagam Road | Km. 1/6 |
| 26 | Coimbatore - Thadagam Road | Km. 2/0 |
| 27 | Coimbatore - Thadagam Road | Km. 2/8 |
| 28 | Coimbatore - Thadagam Road | Km. 3/2 |
| 29 | Coimbatore - Thadagam Road | Km. 3/6 |
| 30 | Coimbatore - Thadagam Road | Km. 4/2 |
| 31 | Coimbatore - Thadagam Road | Km. 6/8 |
| 32 | Coimbatore - Thadagam Road | Km. 10/2 |
| 33 | Lowley Road | Km. 0/6 |
| 34 | Lowley Road | Km. 1/2 |
| 35 | Agri Collage - Marudhamalai Road | Km. 1/8 |
| 36 | Agri Collage - Marudhamalai Road | Km. 2/2 |
| 37 | Agri Collage - Marudhamalai Road | Km. 3/6 |
| 38 | Agri Collage - Marudhamalai Road | Km. 4/8 |
| 39 | Agri Collage - Marudhamalai Road | Km. 6/8 |

| BUS LAY BUY WITH BUS SHELTER | | |
|-------------------------------------|--|-----------------|
| SL. No | Name of Work | Location |
| 40 | Agri Collage - Marudhamalai Road | Km. 7/8 |
| 41 | Agri Collage - Marudhamalai Road | Km. 9/6 |
| 42 | North Coimbatore - Ramanathapuram (via) Lakshmi Mills | Km. 2/2 |
| 43 | North Coimbatore - Ramanathapuram (via) Lakshmi Mills | Km. 4/2 |
| 44 | North Coimbatore - Ramanathapuram (via) Lakshmi Mills | Km. 5/4 |
| 45 | Singanallur - Peelamedu Road | Km. 1/0 |
| 46 | Singanallur - Peelamedu Road | Km. 2/2 |
| 47 | Dindugal - Bangalore Road | Km. 156/6 |
| 48 | Dindugal - Bangalore Road | Km. 160/4 |
| 49 | Dindugal - Bangalore Road | Km. 165/0 |
| 50 | Dindugal - Bangalore Road | Km. 165/8 |

APPENDIX IV –Draft Memorandum of Agreement

**DRAFT MEMORANDUM OF AGREEMENT BETWEEN URBAN LOCAL BODY AND
TAMILNADU URBAN INFRASTRUCTURE FINANCIAL SERVICES LIMITED**

Dated _____

THIS AGREEMENT is made on this _____ day of
_____, 2006 _____ between the Tamilnadu Urban
Infrastructure Financial Services Ltd., and Urban Local Body.

WHEREAS the projects identified in the City Corporate Cum Business Plan seeks financial assistance from the TNUIFSL under the World Bank AID.

WHEREAS the projects identified in the City Corporate Cum Business Plan, in pursuance of the requirements for Comprehensive City Development, fully detailed in the City Corporate Cum Business Plan:

AND WHEREAS the comprehensive infrastructure projects identified in the City Corporate Cum Business Plan has prepare feasibility and detailed project reports:

AND WHEREAS municipality has to implement the reform agenda, as per the timeline indicated in the reform agenda.

AND WHEREAS the projects identified in the City Corporate Cum Business Plan has

considered the City Corporate cum Business Plan Report and found them consistent with the goals and objectives of CCP-BP:

NOW THE PARTIES WITNESSED as follows:

1. That the sustainable prioritize infrastructure projects identified in the City Corporate cum Business Plan report will be taken up as given in the Memorandum of Agreement.

(a) _____

(b) _____

(c) _____

2. The TNUIFSL and the Local Body should engage Third party quality control agency to check quality and audit.

3. Local Body is the responsible agency to see the progress of the projects, progress of the ongoing projects and also the implementation of reforms agenda.

4. That the parties to the agreement further covenant that in case of a dispute between the parties the matter will be resolved to arbitration within the provisions of the arbitration and conciliation Act, 1996 and the rules framed there under and amended from time to time. The matter in dispute shall be referred to _____ (Insert a name of an arbitrator) as arbitrator, however, in case such person refuses to act as arbitrator, or is rendered, unable because of sickness or otherwise, or dies, _____ (name of the second person for arbitrator) shall act as arbitrator between the parties and the dispute shall be referred to such person and still in case this second person is not available for any reason to act as arbitrator between the parties, both parties shall name one person of their choice as arbitrator and decision such arbitration shall be final and binding on the parties.

IN WITNESS HEREOF all the parties have put their hands on these presents of Memorandum of Agreement in the presence of witnesses.

WITNESSES:

1. _____ TNUIFSL

2. _____ Or

Urban Local Body

(Government of Tamilnadu)

Appendix 5: Minutes of Stakeholders meeting held on 5.7.2006
at Annapoorna Kalaiarangam, R.S.Puram, Coimbatore,

The Worshipful Mayor (in charge) presided over the meeting in the presence of the District Collector and Corporation Commissioner.

The following persons participated in the workshop;

The MLAs of Coimbatore East and Singanallur, Ward committee Chairmen, Councillors, industrialists, officials of Confederation of Indian Industry (CII), Chamber of Commerce, Educationists, familiar NGOs. Their main suggestions are summarized below:

- The projected population for future development in the added areas has to be corrected.
- Multi-level parking facilities should be provided.
- Pedestrian foot paths to be provided on both sides of all arterial and major roads.
- Provision of Cable ducts along all arterial and major roads for electricity, telephone lines etc.
- Recreation facilities to be provided.
- Rejuvenation of major water bodies in the city.
- Pollution by open drains into Sanganur main disposal drain should be prevented by providing necessary retaining walls.
- Inner ring road and outer ring roads have to be identified to ease the traffic congestion inside the town.
- To avoid traffic congestion in the city adequate truck terminals may be constructed along the Avinashi Road and Palghat Road.
- Vellalore Compost Yard is polluted. The compost yard may be shifted or modernized.

The above suggestions were considered and the same is incorporated in the City Development Plan (C.D.P.).

Some of the individual stakeholder's suggestions are given below



District Collector, Member of Legislative Assembly, Mayor in charge and Commissioner hearing the views of the Stake holders.



Introductory address by the City Commissioner



Presentation by the Consultant.
The consultants explained the CDP to the stakeholders



Mrs. Vanitha Mohan, NGO, Siruthuli.

Suggestions

1. Provision of Infrastructure facilities in slums
2. Rejuvenation of water bodies
3. Provision of recreational facilities in the open spaces



Mr. Soundarajan, Secretary, RAAC

Suggestions

1. Creation of Multi level Parking Lots
2. Formation of New scheme roads and inner ring roads.



Mr. Jayakumar, Kovai Exnora

Suggestions

To provide facilities for street wise and area wise composting involving the citizens



Mr. Saminathan, CEO, PSG Tech.

Suggestions

1. Provision of adequate parks and play fields
2. Shifting the existing Central prison to the outskirts and use the space for creating parks.



Mr. Gobinath, Architect.

Suggestions

Creation of better infrastructure facilities like road, water supply and drainage taking into account the long term vision.



MLA, Singanallur Constituency.

Suggestions

Beautification and purification of Singanallur Kullam and resuming the boating facilities.



MLA, Coimbatore East Constituency.
Suggestions

1. The projected population for future development has to be corrected.
2. Cable duct for the power line to be provided along major roads
3. Provision of Multilevel parking Lots.
4. Pollution by open drains into Sanganur main disposal drain should be prevented



Mayor (in charge)
Suggestions

1. Top priority for Under ground drainage scheme.
2. Augmentation of Pillur Water Supply II Scheme
3. Improvement of Solid Waste Management system.



Coimbatore District Collector
Suggestions

1. Inner ring road and outer ring road have to be identified to ease the traffic congestion in the city.
2. At least two truck terminals may be constructed along the Avinashi road and Palghat Road
3. Upgrading Avinashi road to 6 lanes
4. Immediate improvement to Vellalur compost yard by providing scientific disposal facilities