



**COMMISSIONERATE OF MUNICIPAL ADMINISTRATION**

# **DPR for State Level Solution for eGovernance in all ULBs of Tamil Nadu**

**Under NMMP as part of JnNURM**

**March 2012**

**Submitted by**



**Wipro Consulting Services**

Version 1.3

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### Revision History

S.No	Date	Version	Description	Author	Reviewed
1	09-Feb-2012	1.0	DPR for State Level Solution for eGovernance in all ULBs in Tamil Nadu	Wipro	IT Officer, Coimbatore Corporation
2	10-Feb-2012	1.1	Incorporated changes in the DPR suggested during the presentation at CMA office Chennai by members from NIC, SeMT and CMA officials.	Wipro	Members from NIC, SeMT TN and CMA officials.
3	17-Feb-2012	1.2	Formatting of tables were done as suggested by SeMT and CMA officials	Wipro	Official of CMA, SeMT and Coimbatore Corporation
4	31-Mar-2012	1.3	Changes to Sections 2.4, 4.2.1, 5.3.2, 10.1, 10.2 & 10.3 after considering re-usability of Corporation of Chennai application components wherever feasible.	Wipro	Official of CMA, SeMT and Coimbatore Corporation

## Abbreviations & Acronyms

Abbreviations	Acronyms
ACA	Additional Central Assistance
ACL	Access Control Lists
ADD	Architecture Design Document
AE	Assistant Engineer
AERO	Assistant Election Registration Officers
AMC	Annual Maintenance Contract
BCG	BacilleCalmette Guerin
BLO	Booth Level Officers
BOM	Bill of Material
BPR	Business Process Reengineering
BSUP	Basic Service to Urban Poor
CAA	Constitutional Amendment Act
CBO	Community Based Organization
CCMC	Coimbatore City Municipal Corporation
CEO	Chief Executive Officer
CFC	Citizen Facilitation Centre
CHO	City Health Officer
CMA	Commissionerate of Municipal Administration
CSC	Citizen Service Centers
CSMC	Central Sanctioning Monitoring Committee
D & O	Dangerous & Offensive Trade
D2D	Department to Department
DC	Data Centre
DCB	Demand Collection Balance
DDD	Detailed Design Document
DMZ	De-Militarized Zone



<b>Abbreviations</b>	<b>Acronyms</b>
DPR	Detailed Project Report
DPT	Diphtheria Pertussis Tetanus
DR	Disaster Recovery
DRC	Disaster Recovery Centre
DSC	Digital Signature Certificate
DTCP	Directorate of Town & Country Planning
ECG	Electrocardiography
EE	Executive Engineer
EMI	Equated Monthly Installment
ERO	Election Registration Officers
FC	Fitness Certificate
FTP	File Transfer Protocol
G2B	Government to Business
G2C	Government to Citizen
G2G	Government to Government
GIS	Geographic Information Systems
GOI	Government Of India
GPF	General Provident Fund
GPS	Global Positioning System
HR	Human Resources
HTTP	Hypertext Transfer Protocol
ICT	Information and Communication Technology
IIS	Internet Information Services
IM	Instant Messaging
ISDN	Integrated Services Digital Network
IT	Information Technology
IVRS	Interactive Voice Response System
JE	Junior Engineer

<b>Abbreviations</b>	<b>Acronyms</b>
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
Kbps	Kilobit per second
LDAP	Lightweight Directory Access Protocol
M&E	Monitoring and Evaluation
MA&WS	Municipal Administration and Water Supply
Mbps	Megabits per second
MeDD	Municipal e-Governance Design Document
MIS	Management Information System
MMP	Mission Mode Projects
MoUD	Ministry of Urban Development
MZ	Militarized Zone
NAC	Non-Availability Certificate
NeGP	National e-Governance Plan
NGO	Non-Governmental Organizations
NIC	Network Interface Cards
NIT	Notice Inviting Tender
NMMP	National Mission Mode Project
NNTP	Network News Transfer Protocol
NOC	No Objection Certificate
OLAP	Online Analytical Processing
OLTP	Online Transaction Processing
OPV	Oral Polio Vaccine
OS	Operating System
PAN	Permanent Account Number
PDF	Portable Document Format
PF	Provident Fund
PFA	Prevention of Food Adulteration
PKI	Public Key Infrastructure

<b>Abbreviations</b>	<b>Acronyms</b>
PMC	Professional Management Consultant
POP	Post Office Protocol
PPP	Public Private Partnership
PR	Personal Register
PTA	Personal Technical Assistant
RAF	Risk Accounting Forms
RDBMS	Relational Database Management System
RFP	Request for proposal
RTO	Regional Transport Officer
RWA	Resident Welfare Association
SDC	State Data Centre
SeMT	State e-Governance Mission Team
SI	Sanitary Inspector
SIC	State Implementation Consultant
SJSRY	SwarnaJayantiShahariRozgarYojana
SLA	Service Level Agreements
SLNA	State Level Nodal Agency
SLSC	State Level Steering Committee
SMART	Specific, Measurable, Achievable, Realistic, Time bound
SMS	Short Message Services
SMTP	Simple Mail Transfer Protocol
SOAP	Simple Object Access Protocol
SOR	Schedule Of Rates
SRS	System Requirement Specification
SSL	Secure Socket Layer
STQC	Standardisation Testing and Quality Certification
SWAN	State Wide Area Network
SWM	Solid Waste Management

<b>Abbreviations</b>	<b>Acronyms</b>
TA	Traveling Allowance
TAT	Turn Around Time
TDS	Tax Deduction At Source
TT	Tetanus Toxoid
TWAD	Tamil Nadu Water Supply and Drainage
UAT	Unit Acceptance Testing
UGD	Under Ground Drainage
UI	User Interface
ULB	Urban Local Body
URL	Uniform Resource Locator
VLT	Vacant Land tax
WAN	Wide Area Network
WAP	Wireless Access Points
ZSO	Zonal Security Officer

## Introduction

The Government of India has formulated the National e Governance Plan (NeGP), part of which includes a National Mission Mode Programme (NMMP) for eGovernance in Municipalities. This NMMP intends to roll out e-Governance in Municipalities on a nationwide basis and has now been included as a part of the Jawaharlal Nehru Urban Renewal Mission (JNNURM). National Mission Mode Project (NMMP) on e-Governance in Municipalities envisages covering Urban Local Bodies (ULBs) in the mission cities identified.

e-Governance in Municipalities is expected to:

- Focus on clearly identified list of citizen services that would be covered with clearly laid down service levels and outcomes that would be achieved.
- Improve efficiency and effectiveness in interaction between local-government and its citizens and other stakeholders (i.e. Non-governmental organizations (NGOs), community based organizations (CBOs), residents welfare associations (RWAs), private sector, etc);
- Improve quality of internal local-government operations to support and stimulate good governance;
- Bring about transparency and accountability in the governance of urban local bodies;
- Enhance interface between urban local bodies and citizens; and
- Help improve delivery of services to citizens.

Thus for the ULBs/Corporation, the NMMP would:

- Bring about improvements in efficiency and effectiveness of business processes/functions of the ULBs/Corporation
- Institute a mechanism of result based monitoring and evaluation
- Ensure economy (cost efficiency) in the design and implementation of the project
- Improve the system for decision making with respect to planning and delivery of municipal services to the citizen and within.
- Ensure effective project management to track progress.

For the Citizens, the NMMP would:

- Significantly improve the Quality of Service provided by the Corporation
- Transparent, effective and efficient service delivery to the Citizen.
- Provide more service delivery channels for hassle free service for Citizen
- Define service level for timely delivery of services to the Citizen

Following are the services / management functions that will be covered in the first phase of the project, as provided in e-Governance guidelines of JNNURM;

**Table 1: List of identified eight services**

<b>S. No.</b>	<b>Services / Management Functions</b>
<b>1</b>	Registration and Issue of Births/ Deaths Certificate
<b>2</b>	Payment of Property Tax, Utilities Bills and Management of Utilities that come under the ULBs
<b>2.1</b>	Property Tax
<b>2.2</b>	Water Supply & Other Utilities
<b>3</b>	Grievances and Suggestions
<b>4</b>	Building Approvals
<b>5</b>	Procurement and Monitoring of Projects
<b>5.1</b>	e-Procurement
<b>5.2</b>	Project/ Ward works
<b>6</b>	Health Programs
<b>6.1</b>	Licenses
<b>6.2</b>	Solid Waste Management
<b>7</b>	Accounting System
<b>8</b>	Personnel Information System

This document has been prepared in reference to the guidelines for preparation of DPR by MoUD e-Governance guidelines under JNNURM etc.

## Executive Summary

With a view to leverage Information and Communication Technology (ICT) opportunities as part of its agenda for “Good Governance”, Government of India (GoI) has announced the National e-Governance Plan (NeGP). NeGP intends to institute and enable mechanisms for Government to deliver services using ICT. It is an ambitious program of the GoI aimed at improving the quality, accessibility and effectiveness of government services for citizens and businesses implemented with the help of ICT. This is proposed to be achieved by:

- Rapid deployment and scale-up of select "**Mission Mode Projects**" (MMPs) with significant citizen interface
- Creation of a national IT backbone for fast, reliable and efficient connectivity, data storage and access
- Integrated service centers for delivery of citizen services and
- Creation of web portals for 24x7 accesses to government information and services

NeGP has identified the formulation of various Mission Mode Projects in e-Governance, including one for municipalities under the responsibility of the Ministry of Urban Development, in collaboration with the Department of IT (DIT).

**National Mission Mode Project** for e-Governance in Municipalities (NMMP) is one of the Mission Mode projects that have significant citizen interactions as they provide a large number of basic civic services to millions of citizens living in urban areas. Introduction of e-Governance on a massive scale would hence, lead to better services. It is also envisaged that the Municipality Mission Mode Project would provide a major fillip to the urban reform program that has been initiated by Ministry of Urban Development, GoI.

The increase in the urban population and related economic activities accentuate the demand for urban infrastructure. The bridging of the gaps in various urban services is the top priority of the Government of Tamil Nadu, along with augmenting of resources, so that they can progressively become self sustaining entities. Government of Tamil Nadu is determined to increase the

transparency and efficiency of processes and enhance the level of service delivery to citizens. Government of Tamil Nadu is also committed to full scale implementation of e-governance as an enabler to help realize the vision of good governance. The following are the priorities identified:

- Transparency in administration and service delivery
- Increase process efficiency
- Clear-cut accountability
- Comprehensive reporting and MIS
- Prompt retrieval of information

The current scenario warrants comprehensive process re-engineering to demystify the existing processes to enhance citizen satisfaction and improving the efficiency and image of Corporations and Municipalities. E-Governance has evolved as a potential enabler to realize the development and governance vision. The Detailed Project Report under presentation, projects e-Governance as a potent means that will be effectively harnessed to achieve the aims and objectives set before itself by the department.

In view of the above, CMA and CCMC has taken up the preparation of Detailed Project Report based on the following parameters;

- Current level of computerization and IT infrastructure available in CCMC & CMA
- Processes to be computerized for the identified services
- Process re-engineering requirements
- Technology framework and specifications
- Project implementation plan
- Total project cost including funding options
- Capacity Building requirements
- Change management and Risk management.



CMA has entrusted **Wipro Consultancy Services**, the responsibility of preparing the Detailed Project Report that can be used to promote e-Governance across various functions & services, and departments of the corporation to provide better service delivery to the citizens and businesses in an efficient, convenient, transparent and effective manner.

After a series of deliberations and discussions with the stakeholders namely Coimbatore Corporation, Special Grade ULB Pollachi, First Grade ULB Arani, Belt Area Pallavapuram and RDMA office Tiruppur, it has been agreed that a State Level Solution would be developed to cater to the requirements of all the ULBs of Tamil Nadu. The application required for the purpose would be developed once and would be used subsequently by other ULBs. This application would be customized minimally to meet the granular requirements of each ULB. The overall design and requirements coverage of the software is intended to be comprehensive.

For this, a high level study of the process flows of the identified services that are already been implemented as well as those services that are yet to be initiated, has been conducted at Coimbatore. This analysis was intended towards the understanding of compliance of these automated services with that of the MoUD guidelines, the enhancements required in terms of functionality as well as technology aspects. These observations are documented and necessary changes to the process flows as well as the need for additional costing has been brought out clearly in this DPR. Even more granular requirements, if any would have to be taken care of at the level of implementation through customizations.

It has been decided that this DPR shall focus on a State Level Solution that would be developed/customized and would be part of the first DPR that would be submitted to MoUD from the state. This State Level Solution shall be initially implemented in the pilot ULB CCMC and then rolled-out to all other ULBs in the state. Hence, the cost of application development budgeted in this DPR and submitted to MoUD would be considered final. Subsequent DPRs from other ULBs of the state would focus only on other requirements specific to the ULBs like hardware, networking, data digitization, training and customization of the State Level Solution to suit the individual ULBs requirements etc.

## Summary / Snapshot of sections in DPR

Section	Sub-Section	Summary of the Sections
1: Background of the Project	1.1 Title of the project	Details of Project title, Location and Duration are provided.
	1.2 Mission Mode Project	Details of the identified pilot ULB city category are provided.
	1.3 Project Funding Criteria	Details on central, state and ULB share are provided.
	1.4 Permissible Components	Details of components that would be funded by MoUD under JnNURM are provided.
	1.5 Eligibility Tests	Details of e-Readiness of the state are provided.
	1.6 Project phases	Details of different phases of this project are provided.
	1.7 Details of Stakeholders	Details of key stakeholders such as Project initiation department, SLNA, SIC & are provided.
	1.8 Approval of Appraisal Report	Details of approval process of this DPR are provided.
2: Goals & Objectives	2.1 Goals	Details of the goals with respect to corporation and citizen are provided.
	2.2 Objectives	Details of S.M.A.R.T objectives with key measures are provided.
	2.3 Benefits	Details of benefits expected out of this project are provided.
	2.4 Summary of Project Cost	Summarized project cost is provided.
	2.5 Project Institutional Structure	Details of institutions involved in this project along with their roles are provided.
3: Urban Services & Service Levels	3.1 Overview	An overview of the urban services
	3.2 Services Proposed through State Level Solution	List of services proposed to be a part of the State Level Solution
	3.3 Organization Structure, Functions and Services of Departments	Present organization structure of Coimbatore Corporation.
	3.4 Study of Municipal Acts & Bye Laws	List of Municipal Acts and bye-laws in force.
	3.5 Study of other eGovernance initiatives	Details of other eGovernance initiatives (if any).
	3.6 Business Process Re-engineering (TO-BE Process)	Details of As-Is and To-Be service levels, functionalities and processes of all sections of the ULB are provided.
	3.7 Proposed Service Level	Services levels proposed for providing the

Section	Sub-Section	Summary of the Sections
	Benchmarks	identified services
	3.8 Perceived Benefits	Benefits envisaged.
4: Technology Infrastructure	4.1 As-Is IT Infrastructure	Details of existing IT infrastructure, Applications, Data migration and technology architecture are provided.
	4.2 TO-BE IT Landscape	Details of proposed IT infrastructure, Applications, Data migration and technology architecture, Multi-tenancy environment – State Level Software Solution (SLS), Customization & Fresh development of Existing Applications, security, scalability and integration aspects are provided.
	4.3 Conformance to Technology & Standards	Details of eGovernance standards to be adopted are provided.
	4.4 IT Change Management	Details of managing change with respect to requirement changes across ULBs are provided.
	4.5 Service Provision and Consumption by ULBs	Details of how ULBs would access the centralized SLS are provided.
	4.6 Continuity Measures	Details on proposed methods to ensure business continuity.
	4.7 Support / Help Desk	Details of support/help desk requirements are provided here.
	4.8 Rollout Strategy	Details of how rollout has to happen are provided.
	4.9 Option Analysis	Details on the technology platform to be used are provided.
5: Capacity Building & Change Management	5.1 Need for Change Management	The objective and need for change is detailed here.
	5.2 Identification of Stakeholders	Associated stakeholder details provided.
	5.3 Organization Structure	Details of existing and proposed organization structure, apex steering committee, corporation steering committee and implementation committee and SeMT are provided.
	5.4 Staffing & Deployment Strategy	Details of resource requirements and their deployment are provided.
	5.5 Training Strategy	Detailed strategy on trainings.
	5.6 Knowledge Management	Details of knowledge management as a part of exit management exercise are provided.
6: Monitoring & Evaluation	6.1 Monitoring and Evaluation (M&E)	Details of M & E framework to be adopted are provided.

Section	Sub-Section	Summary of the Sections
	Framework	
7: Assumptions & Risk Management	7.1 Process for Risk Management	Concepts related to risk management such as risk areas, risk impact and probability are provided.
8: Public Private Partnership	8.1 Need for PPP	Details on the need for PPP
	8.2 PPP for eGovernance	Usage of PPP in eGovernance projects
	8.3 Engagement Models for Service Provisioning & Service Delivery	Details of model to be selected for service provisioning and service delivery
	8.4 Revenue Model	Suggested revenue model.
	8.5 Key Considerations	Details of key factors to be considered.
9: Project Implementation Strategy & Sustainability Plan	9.1 Stakeholders involvement	Details of involvement of stakeholders
	9.2 Institutional Structure	Details of resource continuity are provided.
	9.3 Tendering & Bid Process Management	Details of various aspects with respect to technology requirements of SLS for its sustenance are provided.
	9.4 Project Implementation & Rollout	Details of how the project would sustain beyond the funding period are provided.
	9.5 Project Phasing Strategy	Details pertaining to contracts to be drawn are provided.
	9.6 Sustainability Plan	Measures to be taken for sustainability of the project beyond the funding period.
10: Project Costing	10.1 Detailed Bill of Material for State Level Solution	BoM of IT components which includes H/w, S/w, Middleware, SIC charges, Data digitization, Training and O & M etc. covered.
	10.2 Detailed Bill of Material for selected ULB "CCMC"	BoM of IT components which includes H/w are covered.
	10.3 Financing Plan	Details of Central / State / ULB share year-wise is shown here.

## **I. Background of the Project**

### **I.1. Title of the project**

The title of the project is Detailed Project Report (DPR) for State Level Solution for e-Governance in all ULBs in Tamil Nadu. The Coimbatore City Municipal Corporation is the selected ULB for the pilot implementation of the State Level Solution as per the JnNURM norms which is the identified city under the Category 'B' group of cities for the state of Tamil Nadu. This project comes under the National Mission Mode Project (NMMP) for e-Governance as part of Jawaharlal Nehru National Urban Renewal Mission (JnNURM).

CMA is taking up e-Governance initiative, as a major step to bring in more transparency, efficiency and effectiveness in the services rendered by its departments to the citizens. CCMC has proposed services / service areas which have to be taken under e-Governance initiative. The details of all the services are given in the subsequent section of the documents.

Major sections covered under these are Revenue, Health, Town Planning, Engineering, Accounts, Council and General Administration. Core services/activities that fall under the purview of each department has been analyzed and the most important, high volume and the most citizen centric services have been identified for implementation of e-governance which is also in line with the MoUD guidelines. In addition to the core services, CCMC has also proposed "Other Services" that needs to be a part of the State Level Solution.

The location of the implementation of these services/service areas is the CCMC head office and 5 zonal offices.

The duration of the project is as follows;

- State Level Solution design, development and implementation in the pilot ULB CCMC and further rollout to all ULBs in the state – 1 year.
- O & M support post "Go Live" – 2 years.

Proposed services to be provided under the State Level Solution are listed in the table below;

S. No.	Services / Management Functions
<b>Core Services</b>	
<b>1</b>	Registration and Issue of Births/ Deaths Certificate
<b>2</b>	Payment of Property Tax, Utilities Bills and Management of Utilities that come under the ULBs
<b>2.1</b>	Property Tax
<b>2.2</b>	Water Supply & Other Utilities
<b>3</b>	Grievances and Suggestions
<b>4</b>	Building Approvals
<b>5</b>	Procurement and Monitoring of Projects
<b>5.1</b>	e-Procurement
<b>5.2</b>	Project/ Ward works
<b>6</b>	Health Programs
<b>6.1</b>	Licenses
<b>6.2</b>	Solid Waste Management
<b>7</b>	Accounting System
<b>8</b>	Personnel Information System
<b>Other Modules</b>	
<b>1.</b>	Schools Management System
<b>2.</b>	Hospital Management System
<b>3.</b>	Council Management System
<b>4.</b>	File Tracking System
<b>5.</b>	Legal Issues Management
<b>6.</b>	Online Booking Management System
<b>7.</b>	Assets Management System
<b>8.</b>	Document Management System
<b>9.</b>	Electoral Management System

10.	Census Management System
11.	Fleet Management System
12.	Stores & Inventory System
13.	Online Portal

## 1.2. Mission Mode Project

National Mission Mode Project (NMMP) on e-Governance in Municipalities envisages covering all Urban Local Bodies (ULBs) in 63 cities categorized under various criteria. The categorization of cities is done under the three heads i.e. Mega Cities/ Urban Agglomerations (UA) and Million Plus Cities/UAs and Cities/ UAs with less than one million population.

The State of Tamil Nadu falls under the purview of JnNURM MMPs and the selected pilot ULB city of Coimbatore falls under Category B (Cities with 1-4 million population).

## 1.3. Funding Criteria Project

The NMMP on e-Governance in Municipalities would be implemented as part of the Jawaharlal Nehru Urban Renewal Mission (JNNURM) and the financing of this project would be as per the categorization of the city. Since Coimbatore falls under Category B the funding criteria will be as follows:

**Table 2: Project Funding Criteria**

Category of Cities	Grants		ULB or Parastatal share /loan from financial Institution
	Central	State	
Cities/UA with million plus but less than 4 million population	50%	20%	30%

#### **I.4. Permissible Components**

The permissible components that would be funded by MoUD under JnNURM are limited to the listed components only;

- Application software – State Level Software Solution
- Capital and Initial costs including hardware, infrastructure and system software
- Cost for GIS (Application, platform etc.)
- Data digitization
- Cost for STQC certification
- Cost for Monitoring Tool & Helpdesk
- Project Management / State Implementation Consultancy charges
- Cost for Change Management through Capacity building & Knowledge Management
- Annual expenditure cost (operation & maintenance cost / ongoing communication cost/ license fees etc.) for first two years after commissioning.

**Note:** The cost of land and building, site preparation, civil infrastructure, employees cost, electricity and communication costs, etc. is not included under permissible components; and shall be borne by State Government / ULB.

#### **I.5. Eligibility Tests**

##### **NeGP Alignment Test**

<b>NEGP Alignment Test</b>		
<b>S. No.</b>	<b>Particulars</b>	<b>Status</b>



<b>1</b>	The State e-Governance RoadMap (SeGRM) has been prepared and approved.	<ul style="list-style-type: none"> <li>The State e-Governance road map is already in place for Tamil Nadu.</li> </ul>
<b>2</b>	The project is consistent with the broad vision laid down in the e-Governance Road map of the state and with the relevant MMP Core Scope Guidance.	<ul style="list-style-type: none"> <li>e-Governance implementation at CMA project is adhering to the vision set up by the SeGRM and also with the MMP guidance.</li> <li>Project will leverage the 3 pillars under NeGP suggested for the state that is SWAN, SDC and CSCs.</li> <li>It will also focus on citizen services to provide ease, efficiency, effectiveness and transparency for service delivery.</li> <li>E-enablement of core process which are critical and crucial in terms of citizen and corporation are the primary focus of e-governance implementation for the state of Tamil Nadu.</li> </ul>
<b>3</b>	Necessary infrastructure of State Wide Area Network (SWAN), State Data Centers (SDCs) and citizen service centers (CSCs) are or will be in place.	<ul style="list-style-type: none"> <li>SWAN is already in place and operational.</li> <li>SDC is in place and Government bodies are already using this facility.</li> <li>Currently 2500 + CSCs are operational across the state.</li> </ul>
<b>4</b>	The project complies with all NeGP e-Governance standards.	<ul style="list-style-type: none"> <li>e-Governance implementation for the state of Tamil Nadu will comply with all the e-Governance standards of NeGP and fulfill its vision to make all Government Services accessible to the common man in his locality, through</li> </ul>

		common service centres and ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of citizens
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### **Best Practice Alignment Test**

<b>Best Practice Alignment Test</b>		
<b>S. No.</b>	<b>Task</b>	<b>Status</b>
<b>1</b>	Core needs and priorities of beneficiaries, as related to proposed project, have been directly and formally identified and documented.	To understand the needs and priorities of the beneficiaries of the project, a detailed stake holder analysis has been done and key requirements have been captured and documented in this DPR.
<b>2</b>	Accountability features have been designed into the proposed service delivery systems to allow target beneficiary identification, validation and feedback on satisfaction with services and to publicize compliance with pre-defined service levels.	The DPR clearly details about the various services being offered under this State Level Solution along with the stakeholders involved in processing and delivering the services. This enables in identifying the responsible stakeholders.
<b>3</b>	If the project will affect an entire state, relevant pilot implementation has been completed and documented or equivalent learning has been derived from another source.	The current focus of this project is to understand the requirements of the pilot ULB CCMC with respect to the services identified and implement a State Level Solution at the pilot location. Subsequently, the other ULBs of the state shall be included for implementation.

## **1.6. Project phases**

The project will be implemented in a span of two years. It will be carried out in two phases.

**Phase 1:** During this phase SIC would be identified which in turn shall prepare a detailed RFP based on this DPR for selection of SI for implementation of the proposed State Level Solution. The implementation shall be done in the selected pilot ULB CCMC including the 5 zonal offices.

**Phase 2:** This phase of the project would focus on stabilizing the State Level Solution and rolling out to all the ULBs of the state of Tamil Nadu.

There shall be O & M support for a period of 2 years post “Go Live”.

Details of implementation strategy are covered in subsequent sections.

## **1.7. Details of Stakeholders**

### **1.7.1. Project Initiating Department**

Commissionerate of Municipal Administration

#### **Contact Details**

Name: Mr. P. S Saravanan

Designation: IT Specialist

Address: 6<sup>th</sup> Floor, Ezhilagam,Annexe, Chepauk, Chennai - 600 005.

Mobile: 09894761380

Telephone: 044-28549960

Email: [isec.tncma@nic.in](mailto:isec.tncma@nic.in)

### **I.7.2. Implementing Agency/ Partner Details**

#### Coimbatore City Municipal Corporation

Name: Mrs. D. Sowdhamani

Designation: IT Officer

Address: Big Bazaar Street, Coimbatore City Municipal Corporation,  
Coimbatore – 641 001.

Fax : 91 - 422 – 2390167

Mobile: 09442501873

Landline : 91 - 422 - 2334477

Email : sowma\_46@yahoo.co.in

### **I.7.3. State Level Nodal Agency (SLNA)**

#### Tamil Nadu Urban Finance Infrastructure Development Corporation (TUFIDCO)

Name: Mrs. Malarvizhi

Designation: IT Specialist

Address: 490, Anna Salai, Nandanam, Chennai – 600035

Mobile No.: 09962540163

Fax: 91 – 44 – 24350814

Landline: (PBX Nos. 91 – 44 – 24329800 - 01 & 91 – 44 – 24329802)

Email: malarteja@gmail.com

### **I.7.4. State Implementation Consultant (SIC)**

Agency has to be selected by CMA, Government of Tamil Nadu.

### **I.7.5. State eGovernance Mission Team (SeMT)**

The SeMT team working with Government of Tamil Nadu.

Name: Mr. PandianRenganathan

Designation: Principal Consultant

Address: Tamil Nadu eGovernance Agency, 3<sup>rd</sup> Floor, TUFIDCO Powerfin Building, 490, Anna Salai, Nandanam, Chennai 600 035

Mobile No.: 09962092294

Fax: 91 – 44 – 24337381

Landline: 91 – 44 – 24336643

Email: pandian.r@semt.gov.in

### **I.7.6. Approval of Appraisal Report**

#### **State Overview**

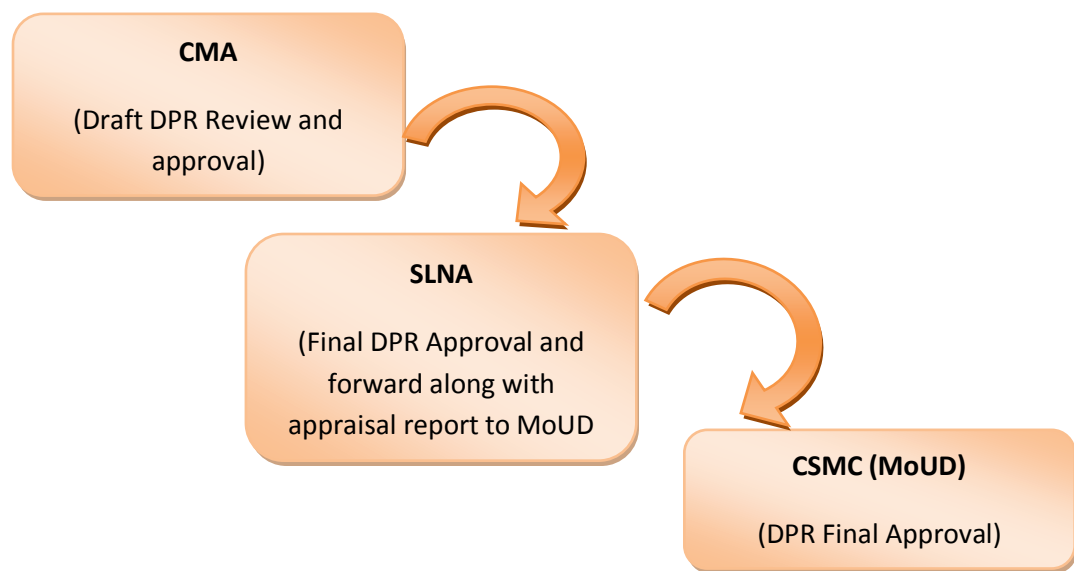
The 74th Constitutional amendment provided for a national framework for municipal governance in the country and Tamil Nadu is following that pattern. Consequent to this amendment, several changes have occurred in the functions, powers, and responsibilities of the municipalities and the states had to make necessary amendments to the legislation on the local governments in the respective states.

The distribution of Corporations and Municipalities (ULBs) in the state of Tamil Nadu is as shown in the table below;

<b>No. of Municipalities</b>	<b>No. of Corporations</b>	<b>No. of Regional Directorate of Municipal Administration (RDMA)</b>
125	9	7

Note: Chennai Corporation is not included in the above.

This Detailed Project Report for implementation of State Level Solution for eGovernance in Municipalities with CCMC as pilot will be put forward to the CMA for its review and consent. This will be followed by submission of this DPR to the State Level Nodal Agency by CMA for their approval. The details of these appraisals and approvals will be included in the DPR and then submitted through SLNA to MoUD for approval in CSMC meeting.



## 2. Project Overview

### 2.1. Goals

The goal of this project is in line with the goals of the NMMP which focusses on providing better quality services to the citizens with improved accessibility thus bringing in an overall effectiveness of government services to citizens and businesses. Further, this project focusses on improving the internal processes, bringing in transparency and accountability among the staff providing the government services to the stakeholders:

- **Corporation Centric**
  - Improve the efficiency of internal processes, increase transparency and accountability which in turn helps in providing better services to the stakeholders.
  - Bring in better intra-departmental interactions and information sharing.
  - Bring in a mechanism for better tracking of the progress of activities
  - Overall improvement in the work environment of the staff by improving the turnaround time of task execution and better adherence to SLAs.
- **Citizen Centric**
  - Bring in betterment of the Quality of Service delivered by the ULBs to citizens and businesses in terms of cost and time effectiveness
  - Reduce the number of visits to the department by the stakeholders to avail service
  - Provide Transparent, Effective and Efficient service delivery to the Citizen
  - Provide multiple delivery channels for service delivery to citizens

### 2.2. Objectives

The objectives of this project are inline with the objectives of the JnNURMeGovernance in Municipalities that focusses primarily on providing sustained better quality services to the stakeholders (citizens, businesses, NGOs etc.), improving efficiency and effectiveness of

interaction between related government departments, improve the quality of work execution within ULBs and bring transparency and accountability in the governance of ULBs.

In order to measure the project outcomes in terms of Specific, Measurable, Achievable, Realistic and Time bound (S.M.A.R.T) objectives the following key measures have been envisaged for the project.

Table below summarizes the proposed measurable outcomes against the key objectives of the project:

#### **SMART Objectives**

<b>Objectives</b>	<b>Key Measures</b>	<b>Illustrative Targets</b>
<b>Citizens (Quality of Service)</b>	<ul style="list-style-type: none"> <li>✓ Minimizing the number of customer visits to avail the service</li> <li>✓ Reducing the time required to avail the service</li> <li>✓ Enabling the customer to follow-up and track the progress of the requested service online</li> <li>✓ Enable convenient service delivery channels</li> </ul>	<ul style="list-style-type: none"> <li>✓ Citizen survey/ feedback on a yearly basis for a period of five years from the time of go-live with maximum satisfaction level with respect to meeting specified service levels</li> <li>✓ Resolution of grievances received through the Grievances Redressal system within the defined service level</li> </ul>
<b>ULB (Process efficiency and effectiveness)</b>	<ul style="list-style-type: none"> <li>✓ Improvement in processes for better service delivery</li> <li>✓ Improvement in time spent for work execution by staff</li> </ul>	<ul style="list-style-type: none"> <li>✓ %age increase in ULB's revenue year on year basis for first two years.</li> <li>✓ %age improvement in working time.</li> <li>✓ Integrated activities among departments.</li> </ul>



<b>Policy makers (Decision Support System)</b>	✓ Sharing the performance information with State and Central level. ✓ Periodical review about the policies	✓ Integrated Corporation Administration system
<b>Service providers/suppliers (Monitoring &amp; Evaluation of Quality of Service)</b>	✓ Service Level Agreements (Internal & External)	✓ Deployment of a system for meeting the requirements contained in the Right to Information Act with improved quality.

Additional objectives are listed below:

- Move towards betterment of Service delivery to stakeholders in terms of time, cost and accessibility
- Increase transparency of processes to all stakeholders
- Increase employee productivity
- Ensure seamless flow of information across all levels of offices of the ULBs

### 2.3. Benefits

The main objective of this project is to help ULBs in the state of Tamil Nadu in strengthening and managing good governance by leveraging ICT to improve its internal processes to serve the citizens in an effective and efficient manner. e-Governance is a further step in this evolution that results in making the citizens a part of the process of governance through a consultative and inclusive approach. The CCMC is selected as the pilot ULB for the state level solution.

The benefits expected out of this project are listed as follows:

- Instant accessibility of Information to the stakeholders like Citizens, Businesses, Councilors, Employees, Related Departments etc. thus supporting G2C, G2E, G2B and G2G services.
- Various citizen centric services such as;
  - Online issuance of Birth / Death certificate
  - Speedy redressal of Grievances
  - Simplified process for Payment of Property tax
  - Online request for Water supply connections and payment of monthly bills
  - Improved process for approvals of building plans
  - Improvised procurement process through e-Procurement
  - Efficient monitoring of Project/Ward works
  - Issuance of various licenses, etc.
- Efficiency in carrying out departmental activities by using;
  - Automated Accounting System for managing accounts related activities
  - Periodical monitoring of Project/Ward works through automated systems
  - Manage effectively the Solid Waste through improvised systems.
- Improvement in decision making, organizational planning, control and data analysis for simulation and future planning.

## 2.4. Summary of Project Cost

The table below gives a summary of the total Project cost;

Summary of Project cost for SLS and CCMC	
Item	Total cost (INR) in Lakhs
SLS Capital investment cost	
SLS Operational cost	
CCMC Investment cost	
CCMC Recurring cost	
<b>Grand Total</b>	

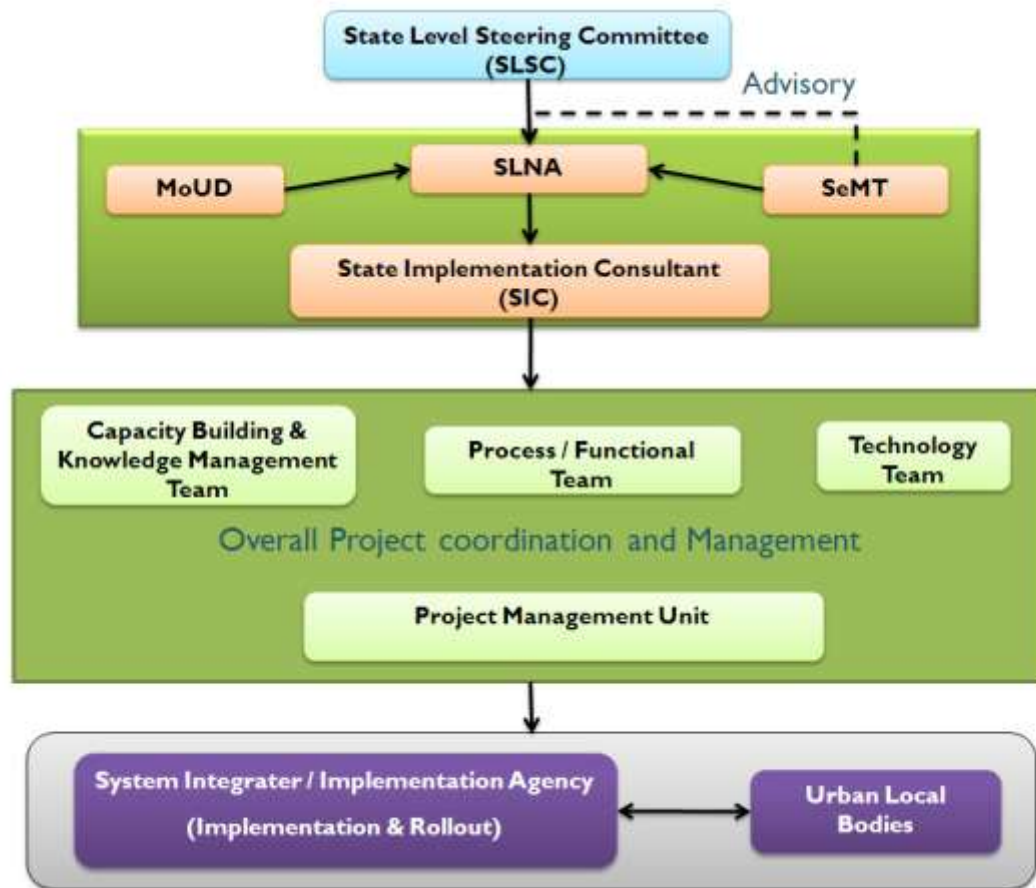
A detailed description of all components estimated project costs for the State Level Solution as well as at selected ULB CCMC are given under Section 10.

## 2.5. Project Institutional Structure

For smooth implementation of the State Level Solution of eGovernance in Municipalities for Tamil Nadu state it is necessary to have a well defined Institutional framework / structure with a clear understanding of the responsibilities of various entities involved in the project. This would drive the project in a proper direction and ensure successful completion. The table below gives the list of entities and their responsibilities;

S. No.	Institutions	Role
1.	Tamil Nadu Urban Finance Infrastructure Development Corporation (TUFIDCO)	State Level Nodal Agency (SLNA)
2.	CeG or Agency selected by State Government	State Implementation Consultant (SIC)
3.	Software Development Agency (SDA) / Application Service Provider (ASP)	System Integrator / Implementation Agency (IA)
4.	SeMT created as a part of NeGP	Advisory services

A pictorial representation of the institutional structure is as shown in the diagram below;



### 2.5.1. State Level Nodal Agency:

TUFIDCO will be the SLNA entrusted with the responsibility of seeing the entire implementation through to completion. The Project Steering Committee is the decision making body at the State level. It will comprise of executive members from the Corporation, Departments, State Implementation Consultant (SIC) and the Implementation Agency (IA). They would be the final authority for issue resolution and would be responsible for representing Government of Tamil Nadu in the program for state wide implementation.

The responsibilities of SLNA would be as follows but not limited to;

- Setting up of Project Steering committee and Project Management team with members from State, ULBs and SIC.
- Setting up of other teams and define roles, under its control for project

implementation and monitoring namely;

- **Process Management Team** – Domain experts covering all identified civic services from identified ULB for process standardization
- **Technology Management Team** – Experts from SLNA, SIC and SeMT to support all technological requirements for implementation of SLS in pilot ULB and rollout across the state.
- **Capacity Building Team** – Experts from the domain who have expertise in Training and Knowledge management for capacity building at SLNA and ULB levels in accordance to the defined MoUD framework.
- Identification of SIC for implementation of the SLS in the pilot ULB and rollout to remaining ULBs across the state within the stipulated duration.
- The SLNA along with the identified SIC shall be responsible for the following activities related to the implementation of the SLS in the pilot ULB and rollout to remaining ULBs across the state;
  - Appraisal of the project in terms of techno-economic aspect using their expertise in the ULB functional domain
  - Proper management of funds received from Central Government.
  - Fund disbursements to ULBs as per the guidelines of the scheme.
  - Preparation and implementation of terms and conditions of contract or agreements between SLNA, ULBs and with solution providers and vendors
  - Preparation of Utilization Certificates on a periodic basis after release of funds through different installments of central assistance
  - Timely submission of physical and financial progress reports to MoUD.
  - Maintain audited accounts of funds released to ULBs and Implementing Agencies

### **2.5.2. State Implementation Consultant (SIC)**

SLNA shall select an agency that shall be termed as the SIC. The SIC will assist SLNA (TUFIDCO) by providing consultancy services for the implementation of the SLS at the identified ULB and further rollout to all remaining ULBs across the state. They would work very closely with the SLNA during the entire duration of this project.

The responsibilities of SIC would be as follows but not limited to;

- Preparation of RFP based on the approved DPR for selection of appropriate System Integrator / Implementation Agency for the implementation of SLS.
- Provide end-to-end support to SLNA in the Bid Process Management for selection of System Integrator / Implementation Agency.
- Provide Process management support to SLNA.
- Provide Technology management support to SLNA.
- Provide Capacity Building, Change Management and Knowledge Management support to SLNA.
- Complete Project Management starting from Project inception to Implementation at pilot ULB and further Rollout of the SLS to remaining ULBs across the state.
- Periodically report to SLNA on the Physical and Financial progress of the project.
- Ensure proper Exit Management before completion of the tenure of System Integrator / Implementation Agency.
- Co-ordination with various stakeholders of this project.

### **2.5.3. System Integrator / Implementation Agency (IA)**

The System Integrator / Implementation Agency also termed as Software Development Agency / Application Services Provider has a major role of implementing the SLS as per the RFP prepared by SIC. SI / IA has to design/develop/customize and implement the SLS as per the technical and functional architecture and other specifications and details provided in the RFP. The pilot implementation has to be done at the selected ULB CCMC and then the SLS has to be rolled out to other ULBs in the state.

The responsibilities of SI / IA would be as follows but not limited to;

- Prepare a detailed Project Plan for the implementation of the SLS in the pilot ULB and further rollout to other ULBs across the state.

- Prepare detailed Gap Analysis report and SRS on the existing applications and applications to be developed including integration of the SLS with existing applications in the state.
- Design, Develop/Customize and Deploy the SLS in a centralized environment.
- Setup and Configure the necessary IT infrastructure for deployment of the SLS.
- Provide training to all stakeholders of the pilot ULB, CCMC.
- Provide support to SLNA & SIC during UAT.
- Implement SLS at the pilot ULB, CCMC.
- Identify the issues in the SLS and fix them and prepare for state-wide rollout.
- Rollout the SLS to all other ULBs across the state
- Provide necessary training, handhold support to the ULBs
- Prepare Exit Management plan and perform smooth transition before end of the tenure.

#### **2.5.4. Advisory body (SeMT created under NeGP)**

The State eGovernance Mission Team formed under the NeGP initiative comprises of a team of experts namely; Project management consultant, Technology management consultant, Finance management consultant and Capacity Building and Change management consultant who are entitled with the responsibility of supporting various IT initiatives of the State Government. For this project the SeMT created under NeGP would play the advisory role and support the SLNA as and when required.

The responsibility of SeMT would be as follows but not limited to;

- Provide Advisory services to SLNA in terms of Technology Management, Project implementation and rollout.

### 3. Urban Services and Service Levels

#### 3.1. Overview

**Table 4: Population Details of State and Coimbatore Corporation**

S. No.	Year	State Population (in Lakhs)	Average Annual Growth Rate (%)	Coimbatore Population (in Lakhs)	Average Annual Growth Rate (%)
1	1981	48,408,000	1.75%	704,000	9.78%
2	1991	55,859,000	1.54%	816,321	1.60%
3	2001	62,406,000	1.17%	930,882	1.40%
4	2011	72,138,958	1.56%	16,01,438	5.57%*

\* The sudden rise in population growth is due to the expansion of the corporation limit during 2011.

**Table 5: Municipal Revenue & Expenditure for Coimbatore Corporation**

S. No.	Year	Revenue (INR) In Lakhs			Expenditure (INR) In Lakhs
		Tax	Non-Tax	State Transfers / Grants	
1	2005-06	3861.32	1384.21	2355.81	11418.23
2	2006-07	4865.35	3683.83	1786.80	13205.18
3	2007-08	4817.91	2575.05	4556.41	20739.50
4	2008-09	6180.86	2369.65	4089.17	19199.25
5	2009-10	7468.72	2399.95	5014.54	21150.07

#### 3.2. Services Proposed through State Level Solution

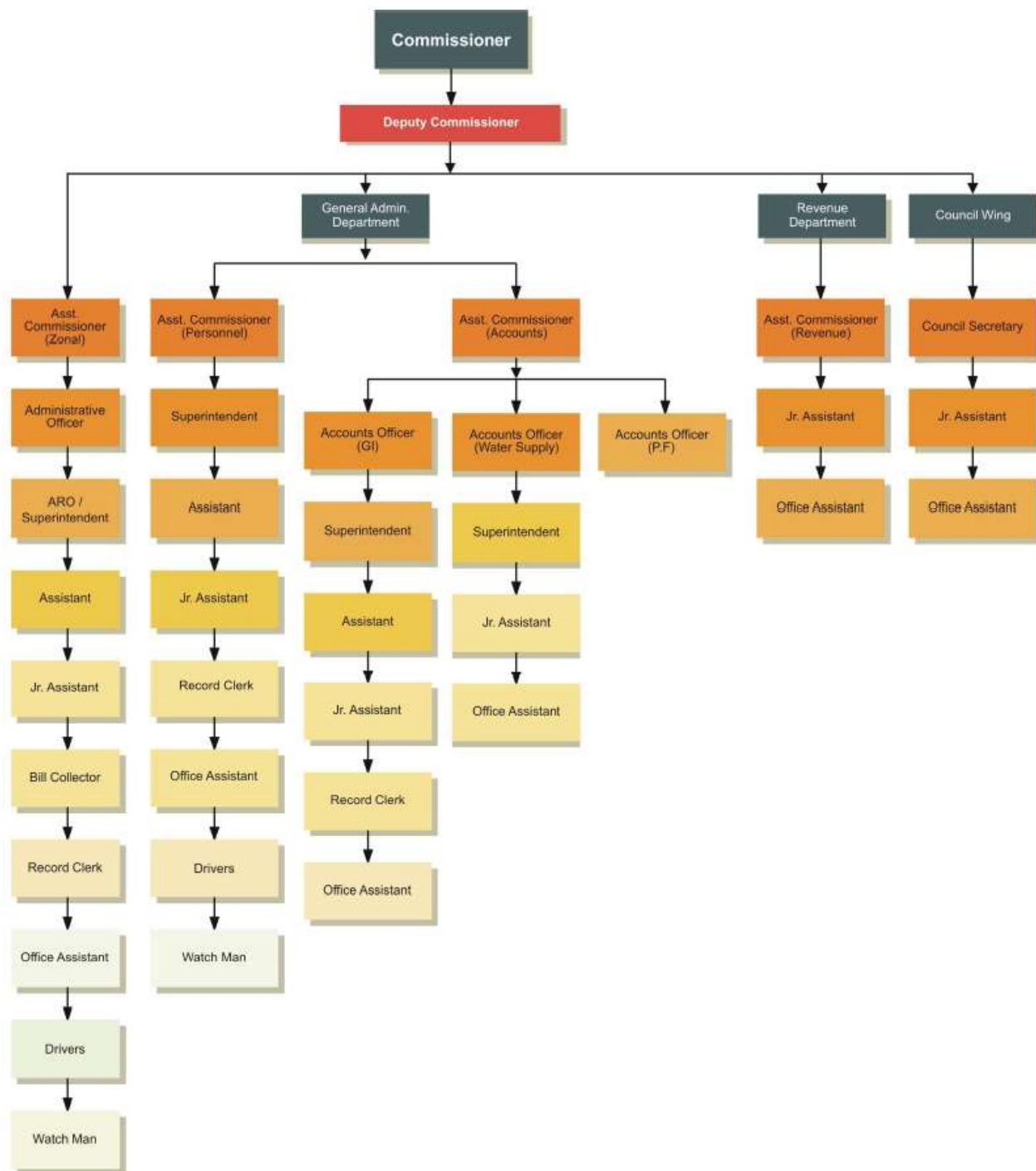
S. No.	Department	Services/ reform Areas	Service Interface	Service Category
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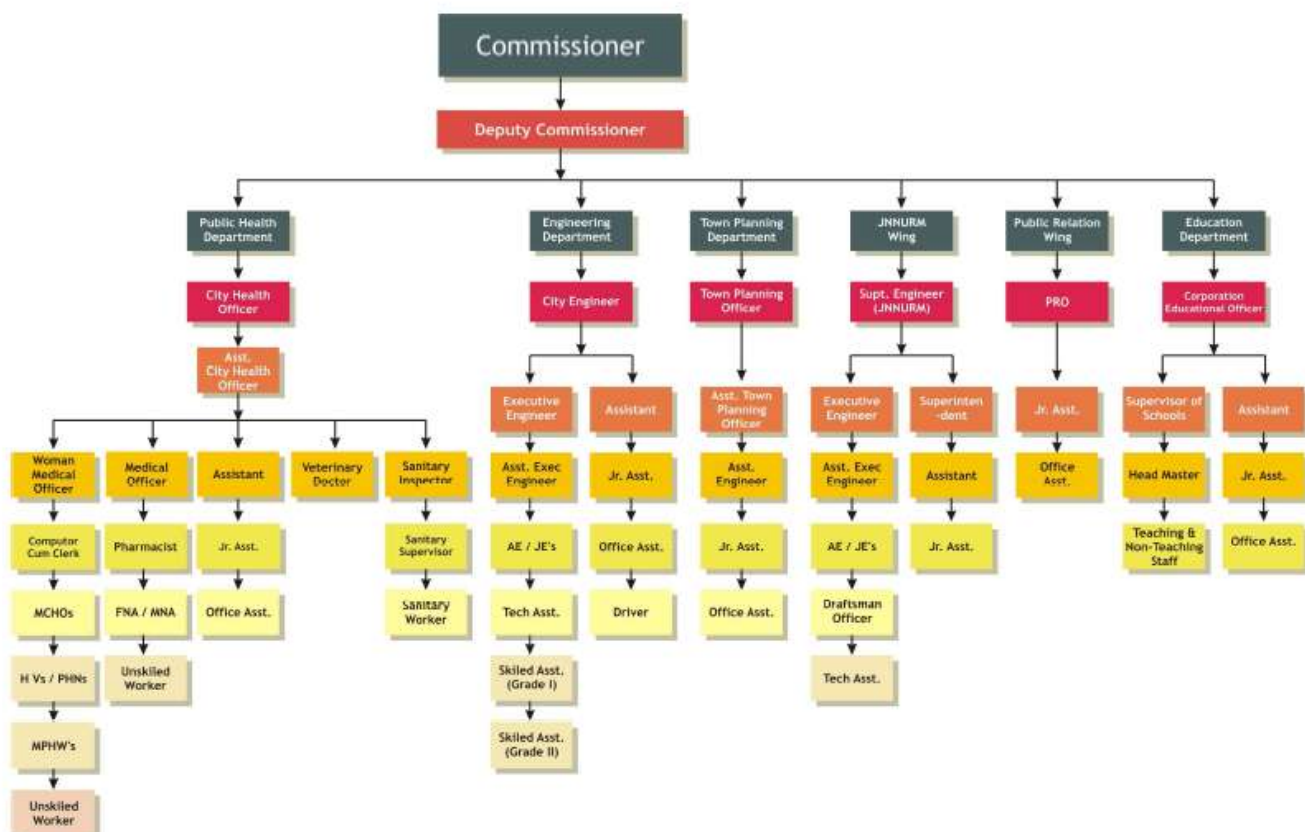


			Function	
<b>Core Services</b>				
<b>1.</b>	Health	• Registration of Birth	External	G2C
		• Registration of Death	External	G2C
		• Issuance of Birth Certificate	External	G2C
		• Issuance of Death Certificate	External	G2C
		• D & O Trade License	External	G2C
		• Solid Waste Management	Internal	G2B
<b>2.</b>	Revenue	• Property tax	External	G2C
		• Water Supply	External	G2C
		• Profession Tax	External	G2C
		• Non Tax	External	G2C
		• Miscellaneous	External	G2C
		• Under Ground Drainage	External	G2C
		• Other Utilities	External	G2C
<b>3.</b>	Engineering	• Project Ward Works	Internal	G2E
<b>4.</b>	Town Planning	• Building Plan Approval	External	G2C
		• Layout Plan Approval	External	G2C
<b>5.</b>	Grievance	• Public Grievance	External	G2C
<b>6.</b>	Procurement and Monitoring of Projects	• e-Procurement	Internal	D2D
<b>7.</b>	HR	• Personnel Information System	Internal	D2D
<b>8.</b>	Accounts	• Accounting System	Internal	
<b>Others</b>				
<b>9.</b>	Education	• School Management System	Internal/ External	G2C ; G2B
<b>10.</b>	Council	• Council Management System	Internal/ External	G2C; G2G; C2G
<b>11.</b>	All	• File Tracking System	Internal	D2D
<b>12.</b>	All	• Legal Issues Management	Internal	D2D

<b>13.</b>	All	<ul style="list-style-type: none"> <li>Online Booking Management System</li> </ul>	Internal / External	G2C; D2D
<b>14.</b>	Stores	<ul style="list-style-type: none"> <li>Asset Management System</li> </ul>	Internal	D2D
<b>15.</b>	All	<ul style="list-style-type: none"> <li>Document Management System</li> </ul>	Internal / External	G2C; D2D
<b>16.</b>	Election	<ul style="list-style-type: none"> <li>Electoral Management System</li> </ul>	Internal / External	G2C, G2G
<b>17.</b>	Health	<ul style="list-style-type: none"> <li>Census Management System</li> </ul>	Internal	G2G
<b>18.</b>	Health	<ul style="list-style-type: none"> <li>Fleet Management System</li> </ul>	Internal	D2D
<b>19.</b>	Health	<ul style="list-style-type: none"> <li>Hospital Management System</li> </ul>	Internal	D2D
<b>20.</b>	Stores	<ul style="list-style-type: none"> <li>Stores &amp; Inventory System</li> </ul>	Internal	D2D
<b>21.</b>	All	<ul style="list-style-type: none"> <li>Online Portal</li> </ul>	Internal / External	G2C, G2B, G2G

### 3.3. Organization Structure, Functions and Services of Departments





### 3.4. Study of Municipal Acts & Bye Laws

Act(s) of State	Bye-Laws	Prevailing in CCMC
Birth/ Death Registration Act 1939; Birth/ Death Registration Rules	Based on the respective bye-laws followed in the ULB.	Birth/ Death Registration Act 1939; Birth/ Death Registration Rules
Municipal Solid Waste Management & Handling Rules 2000		Municipal Solid Waste Management & Handling Rules 2000
		Schedule 2 of CCMC Act 1981
		CCMC Act 1981
		Coimbatore City Municipal Corporation Act 1981
		Coimbatore City Municipal Corporation Act 1981 (assessment of property tax)
		Schedule I of the CCMC Act 1981

S. No.	Details of the Services	Municipal Acts	Bye- laws
<b>JNNURM Core Modules</b>			
	Birth\ Death Registration	Birth/ Death Registration Act 1939; Birth/ Death Registration Rules	
	Solid waste Management	Municipal Solid Waste Management & Handling Rules 2000	
	Trade License	Coimbatore City Municipal Corporation Act 1981	
	Property Tax	Coimbatore City Municipal Corporation Act 1981 (assessment of property tax)	Schedule 2 of CCMC Act 1981
<b>Other Modules</b>			
	Council Management System	CCMC Act 1981	Schedule I of the CCMC of CCMC Act 1981

### 3.5. Study of other eGovernance initiatives

S. No.	Component	Status	Re-usability status (Y / N)
1.	SWAN	CCMC connectivity not available	N
2.	SDC	Operational	Y
3.	CSC	Operational	Y

### 3.6. Business Process Re-engineering (TO-BE Process)

#### 3.6.1. Health Department:

The main objective of the health department is to look after the administration of Dispensaries, Public Health, Sanitation, Prevention of Food adulteration, issue of Birth & Death Certificates and Sanitation Certificates. As cleaning drive is the regular basic work, this department launches a special drive for cleanliness in the city during festivals. This department also helps localities and non-Municipal localities during their cleaning drive by providing them labours, transport and machinery things.

#### **3.6.1.1. Registration of Birth/ Death and Issuance of Certificate**

Registration of births, deaths is compulsory under the Registration of Births and Deaths Act, 1969 and rules framed there under. The information regarding all births, deaths occurring within the jurisdiction of Municipality has to be given in the prescribed form to the birth and death section.

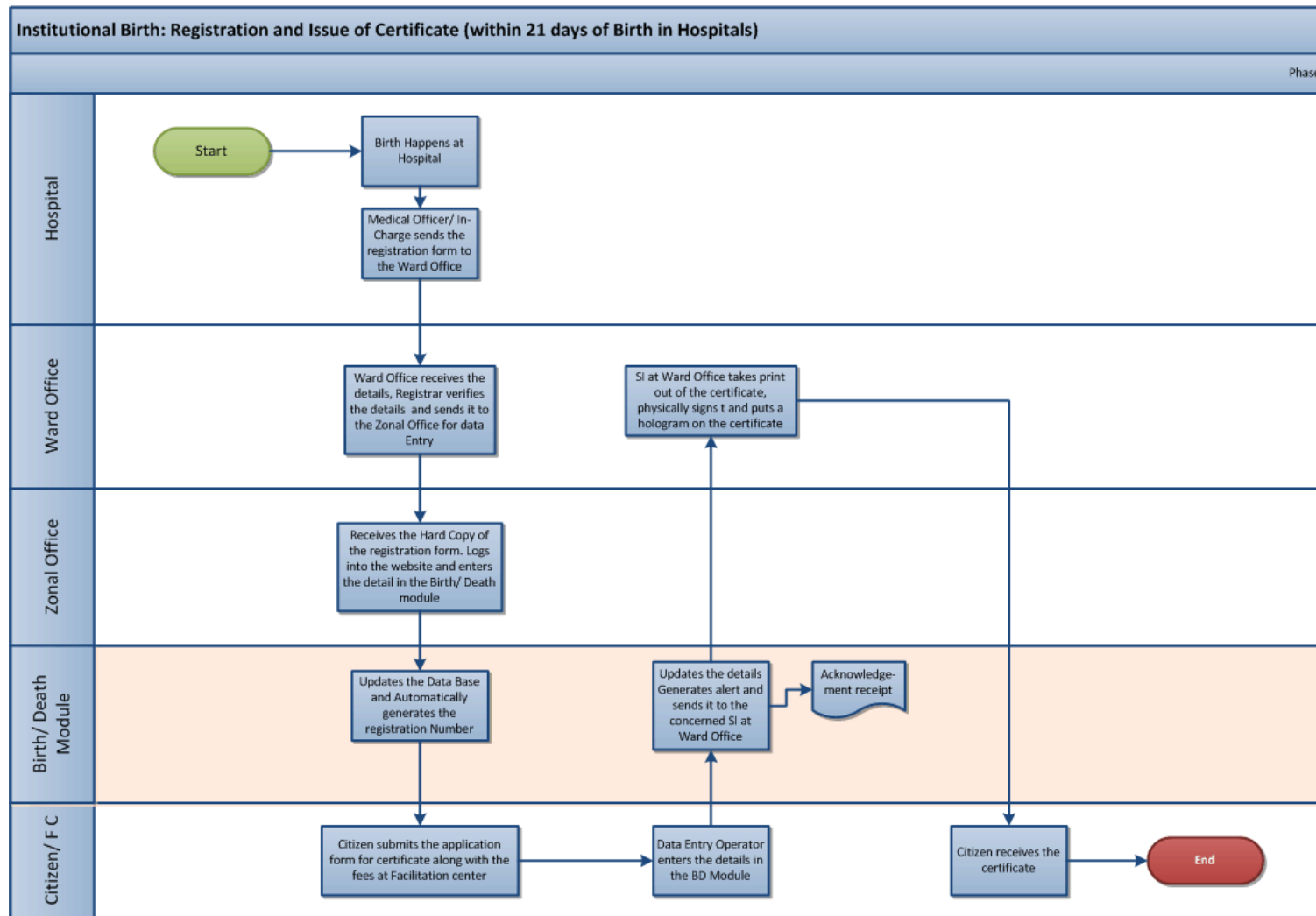
Registering of Birth & Death is a major service in Coimbatore City Municipal Corporation. In case of hospital events, the hospitals in the municipal territory are responsible for the registration of birth and death. In case of non-Institutional events the concerned parties shall make necessary applications to the Coimbatore City Municipal Corporation.

The responsibility of getting all the births and deaths occurring in the hospitals/nursing homes/maternity homes etc, registered lies with the heads of the institutions and registration of all such events is done directly in this section.

Responsibility for getting all the domiciliary births/deaths/still births registered lies with the parents/relations of the child/deceased as the case may be. Registration of name of child- Where the birth of any child has been registered without a name, the parent or guardian of such child shall within the prescribed period give information regarding the name of the child to the registrar either orally or in writing and there upon the Registrar shall enter such name in the register.

In case of unnatural, death the Sub Inspector of Police Station has to inform the CCM health authorities in the prescribed form.

## Process Map: Registration and Issuance of Birth Certificate (Institutional Birth)

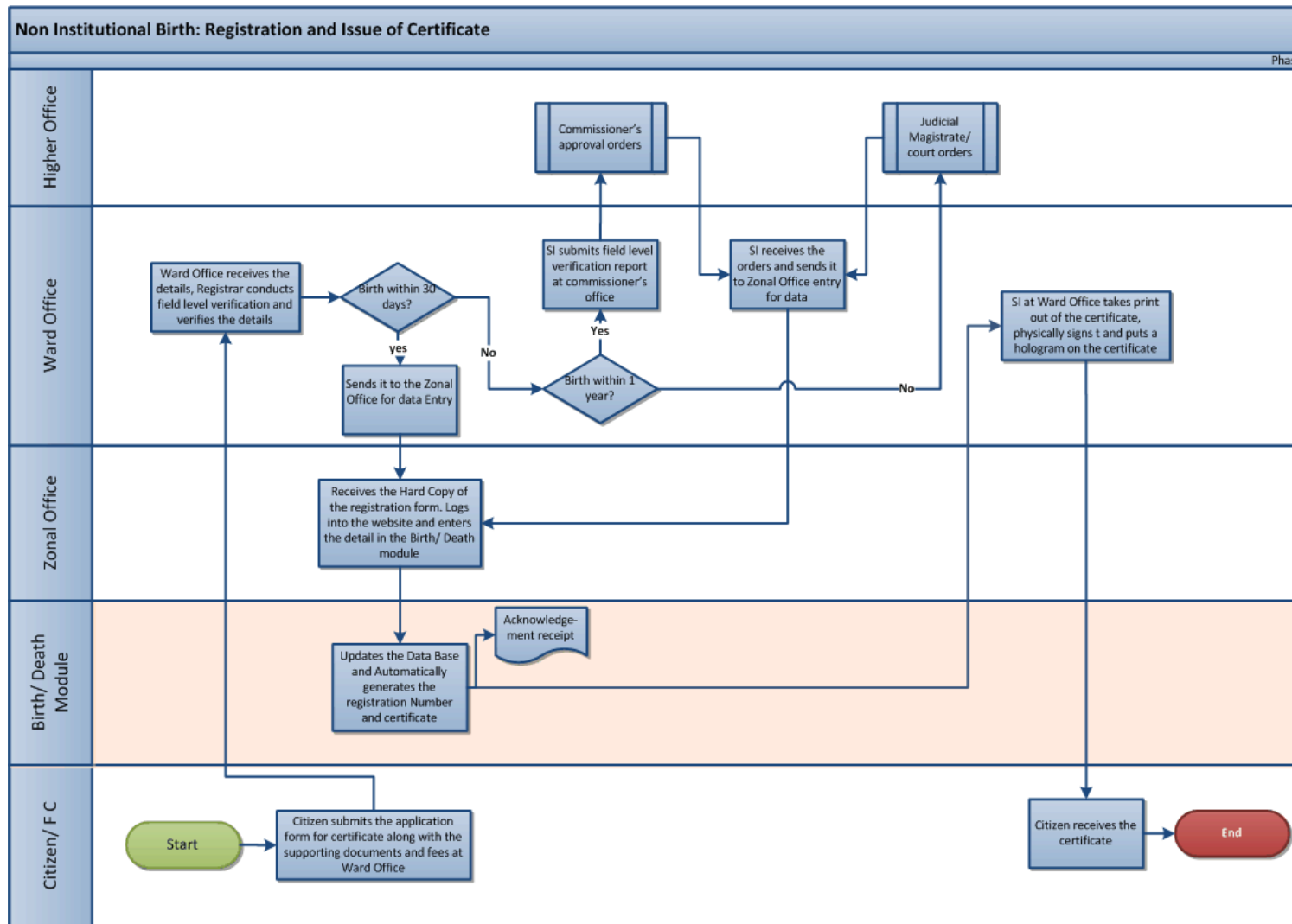


**Process description:**

<b>Service Name</b>	<b>Institutional Birth: Registration &amp; Issue of Certificate</b>		
<b>Service Objective</b>	To record and certify all new births at all the hospitals coming under the purview of Corporation of Coimbatore, within 21 days from the date of birth.		
<b>Service Function</b>	Registration of Births	<b>CCMC Department</b>	Health Department
<b>Process Owner</b>	Health Officer		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes, (Legal proof for Date of Birth)
<b>Process Input</b>	Registration Form	<b>Process Output</b>	Birth Certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Hospital In charge sends the registration form to the Ward Office		Medical Officer
Step 2	Ward Office receives the details, Registrar verifies the details and sends it to the Zonal Office for data Entry		Ward Office (Sanitary Inspector)
Step 3	Receives the Hard Copy of the registration form. Logs into the website and enters the detail in the Birth/ Death module		Data Entry Operator at Facilitation Center
Step 4	Citizen submits the application form for certificate along with the fees at Facilitation center		Citizen
Step 5	Data Entry Operator enters the details in the BD Module		Data Entry Operator at Facilitation Center
Step 6	SI at Ward Office takes print out of the certificate, physically signs it and puts a hologram on the certificate		Ward Office (Sanitary Inspector)
Step 7	Citizen receives the certificate		Citizen



## Process Map: Registration and Issuance of Birth Certificate (Non-Institutional Birth)

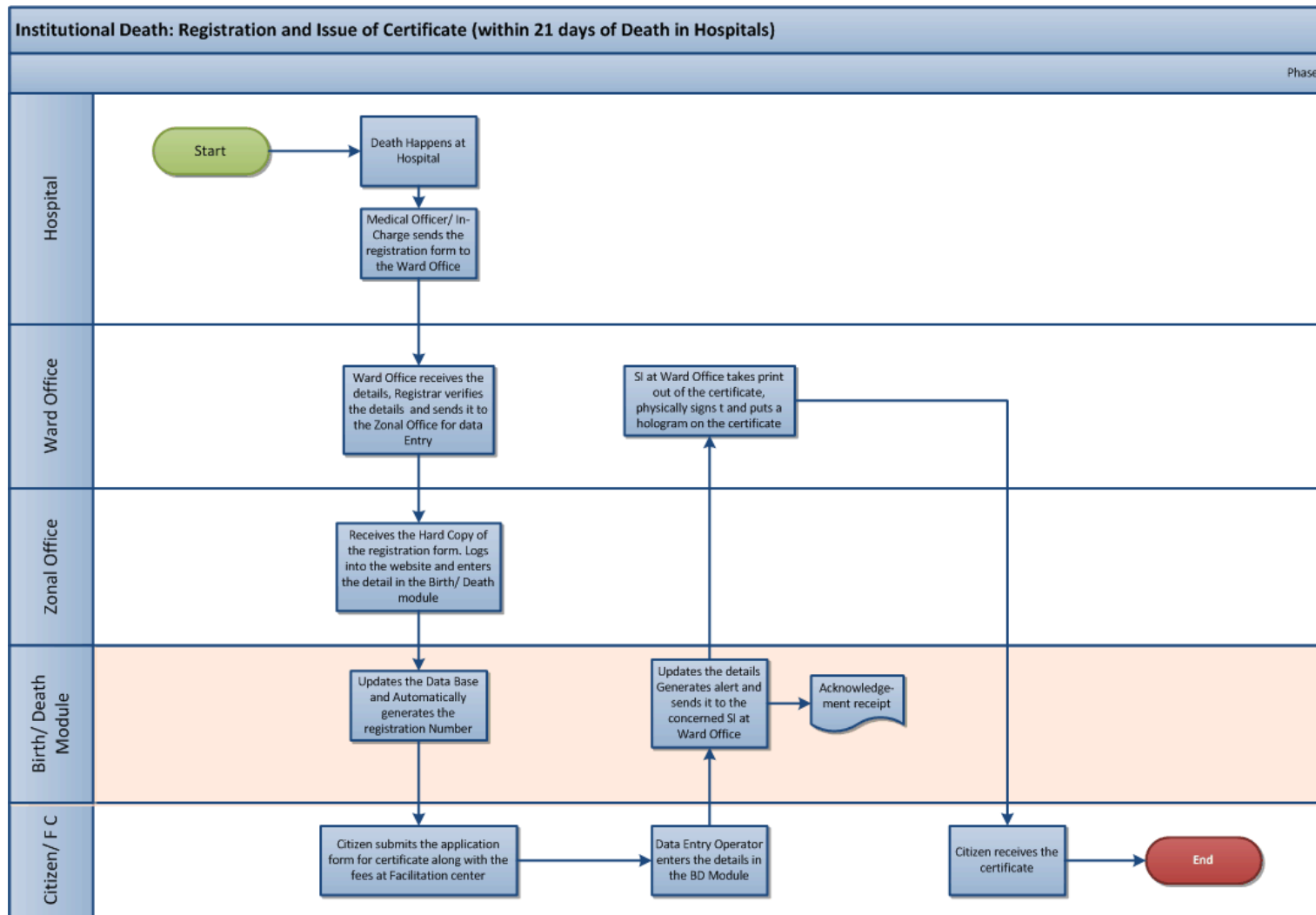


**Process description:**

<b>Service Name</b>	<b>Non Institutional Birth: Registration and issue of certificate</b>		
<b>Service Objective</b>	To record and certify all births happened outside hospitals/institutions, after 21 days, within 30 days to 1 year from Date of Birth, and after 1 year of Date of Birth.		
<b>Service Function</b>	Registration of Birth	<b>CCMC Department</b>	Health Department
<b>Process Owner</b>	Health Officer		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes (Legal Proof of Date of Birth)
<b>Process Input</b>	Registration Form	<b>Process Output</b>	Birth Certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Prepares the application and submits along with the application fee		Citizen
Step 2	Receives the application and conducts a field level verification to ascertain the birth was within 30 days		Registrar
Step 3	If the birth was not within 30 days, but within 1 year the verification report is sent for commissioner's approval. In case the birth was not within 1 year, the verification is sent to the magistrate for a court order		Higher office
Step 4	On receipt of approval from higher office, SI forwards the same to the zonal office for data entry		Ward office
Step 5	Receives hard copy of registration form and logs the details into the CCMC website		Zonal office
Step 6	Updates the database and automatically generates the registration number and certificate		Birth/ death module
Step 7	Prints certificate and signs it and holograms it and		Ward office

	forwards it to the application	
Step 8	Receives the birth certificate	Citizen

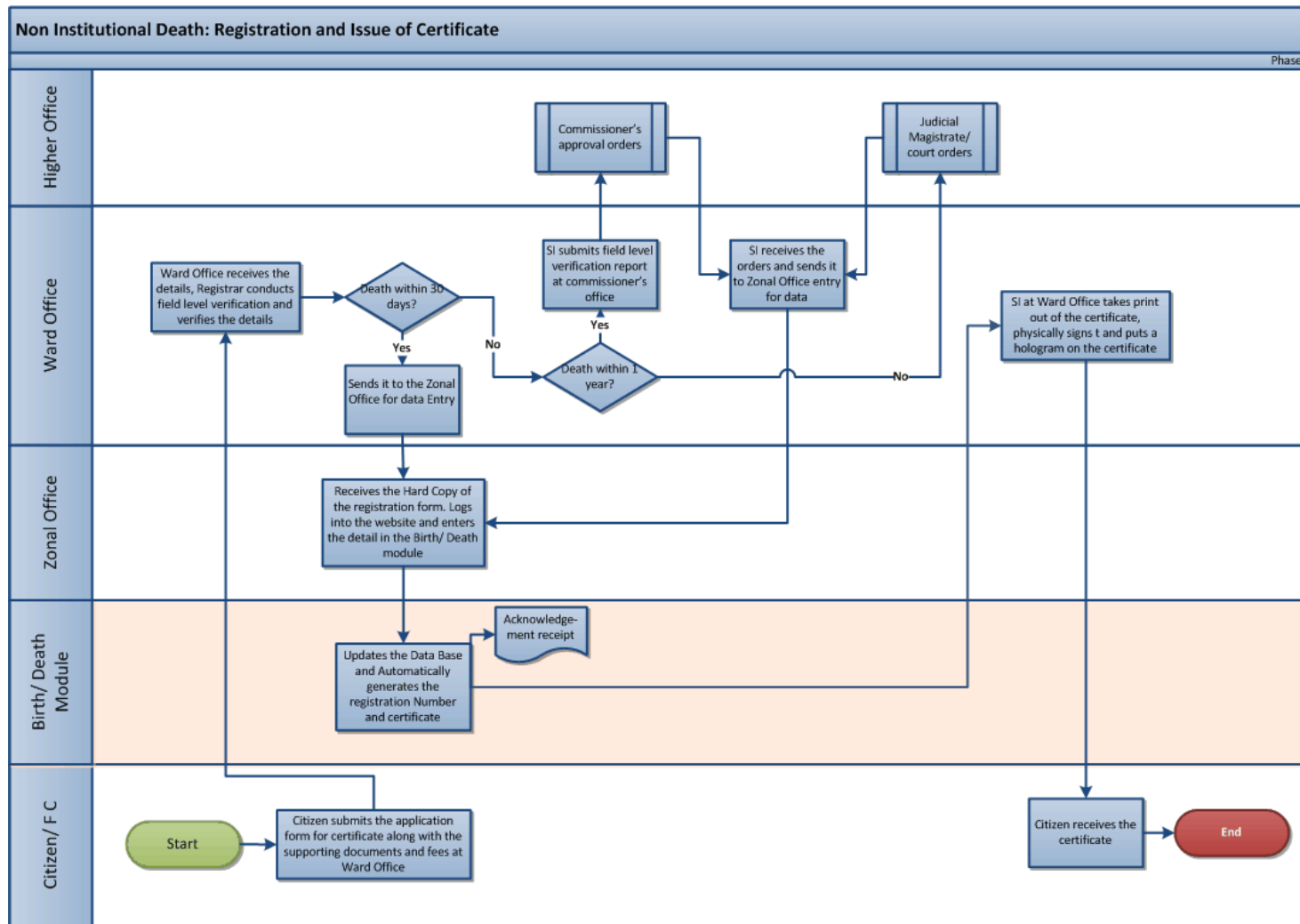
## Process Map: Registration and Issuance of Death Certificate (Institutional Death)



**Process description:**

<b>Service Name</b>	<b>Institutional Death: Registration &amp; Issue of Certificate</b>		
<b>Service Objective</b>	To record and certify all Deaths at all the hospitals coming under the purview of Corporation of Coimbatore, within 21 days from the date of death		
<b>Service Function</b>	Registration of Deaths	<b>CCMC Department</b>	Health Department
<b>Process Owner</b>	Health Officer		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes, (Legal proof for Death)
<b>Process Input</b>	Registration Form	<b>Process Output</b>	Death Certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Hospital In charge sends the registration form to the Ward Office		Medical Officer
Step 2	Ward Office receives the details, Registrar verifies the details and sends it to the Zonal Office for data Entry		Ward Office (Sanitary Inspector)
Step 3	Receives the Hard Copy of the registration form. Logs into the website and enters the detail in the Birth/ Death module		Data Entry Operator at Facilitation Center
Step 4	Citizen submits the application form for certificate along with the fees at Facilitation center		Citizen
Step 5	Data Entry Operator enters the details in the BD Module		Data Entry Operator at Facilitation Center
Step 6	SI at Ward Office takes print out of the certificate, physically signs it and puts a hologram on the certificate		Ward Office (Sanitary Inspector)
Step 7	Citizen receives the certificate		Citizen

## Process Map: Registration and Issuance of Death Certificate (Non-Institutional Death)



## Process Description:

<b>Service Name</b>	<b>Non Institutional Death: Registration and issue of certificate</b>		
<b>Service Objective</b>	To record and certify all deaths happened outside hospitals/institutions, after 21 days, within 30 days to 1 year from Date of Death, and after 1 year of Date of Death.		
<b>Service Function</b>	Registration of Death	<b>CCMC Department</b>	Health Department
<b>Process Owner</b>	Health Officer		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes (Legal Proof of Date of Death)
<b>Process Input</b>	Registration Form	<b>Process Output</b>	Death Certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Prepares the application and submits along with the application fee		Citizen
Step 2	Receives the application and conducts a field level verification to ascertain the birth was within 30 days		Registrar
Step 3	If the death was not within 30 days, but within 1 year the verification report is sent for commissioner's approval. In case the death was not within 1 year, the verification is sent to the magistrate for a court order		Higher office
Step 4	On receipt of approval from higher office, SI forwards the same to the zonal office for data entry		Ward office
Step 5	Receives hard copy of registration form and logs the details into the CCMC website		Zonal office
Step 6	Updates the database and automatically generates the registration number and certificate		Birth/ death module
Step 7	Prints certificate and signs it and holograms it and		Ward office

	forwards it to the application	
Step 8	Receives the death certificate	Citizen

### Process Analysis for Birth and Death registration and issuance of certificates:

Currently the birth and Death registration process is semi-automatic. There is no workflow which is defined as per the process. The facility for applying online is also not enabled. Digitally signed certificate could not be generated with the existing system although the certificate is generated online. Manually updates are fed in the website to enable the status tracking process. The detailed mappings of functionalities in terms of existing and proposed are mentioned in the following table:

S. No.	Requirement	Existing Module (Yes / No)	Proposed Module (Yes / No)
<b>User Authentication</b>			
1.	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user- ids and passwords.	Yes	
2.	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc for second level of authentication may be considered and justification is to be provided for the same		Yes
<b>Master Maintenance</b>			
3.	Details of Hospital details (Addition/Modification/Deletion/ Search).	Yes	
4.	Details of Registrar (Addition/Modification/Deletion/ Search).	Yes	
5.	Details of maintaining Fees for Birth and Death	Yes	



	(Addition/Modification/Deletion/ Search).		
6.	Details of Birth Delivery (Addition/Modification/Deletion/ Search).	Yes	
7.	Details of Birth application details (Addition/Modification/Deletion/ Search).	Yes	
8.	Details of Cause of Death (Addition/Modification/Deletion/Search).	Yes	
<b>Birth Registration</b>			
9.	Ability to add/modify/delete the Birth details	Yes	
10.	Ability to generate the Birth Registration Slip.		Yes
11.	Ability to facilitate the inclusion of the Child's Name, if not provided during registration.	Yes	
12.	Ability to cancel the Registration details.	Yes	
13.	Ability to facilitate the capture the request for Birth certificate and retrieve details of the applicant based on the Registration Number	Yes	
14.	Ability to generate online digitally signed certificate		Yes
<b>Death Registration</b>			
15.	Ability to add/modify/delete Death details.	Yes	
16.	Ability to generate the Death Registration Slip.		Yes
17.	Ability to cancel the Registration details. Remarks can be added with the cancelled record	Yes	
18.	Ability to facilitate the capture the request for Death certificate and retrieve details of the applicant based on the Registration Number	Yes	
19.	Ability to generate online digitally signed certificate		Yes
<b>MIS &amp; Reports</b>			

20.	Various reports information of Birth registrations based on Registration No, Registration Date, Date of Birth, Issues , Non-Issues Month & Year –Wise	Yes	
21.	MIS for Actual time taken for issuing a Birth/ Death		Yes
22.	MIS for total number of birth/ death certificates re-issued without service charge		Yes
23.	MIS for Accessibility/ Availability of facility centers		Yes
24.	Reports births Sex Wise in a particular year		Yes
25.	Reports on Father's Literacy wise in a particular year		Yes
26.	Reports on Father's Occupation wise in a particular year		Yes
27.	Reports on Mother's Literacy wise in a particular year		Yes
28.	Reports on Mother's Occupation wise in a particular year		Yes
29.	Reports on Year-Wise Issues		Yes
30.	Various reports can be generated Year of Death-wise based on Date and Cause of death		Yes
31.	Reports of Deaths based on Occupation-wise in particular year		Yes
32.	Reports of Deaths based on Sex-wise in particular year		Yes
33.	Reports of Deaths based on Cause of death-wise in particular year		Yes
34.	Reports of Deaths based on Issued and not issued between two specified applied dates		Yes

The following needs to be included;

- For issuing Non availability of Birth/Death certificates, all the registrations of Birth and Death records available in various Municipalities of Tamil Nadu should be verified.
- Birth/Death registration should be incorporated with Touch screen facility and Information Kiosk.
- Maximum facility should be given in the website for the Public to get the required reports to avoid their coming to the Municipal office.

- Before finalizing the RFP for selection of SI, consultation may be done with the employees those who are in touch with the corresponding modules (Managers, Revenue Officers, Accountants, Town Planning Officers, Sanitary Officers, etc.,)
- Discussion must be done with Local Fund Audit Department before finalizing the RFP for selection of SI.

### **3.6.1.2. Dangerous and Offensive Trade License**

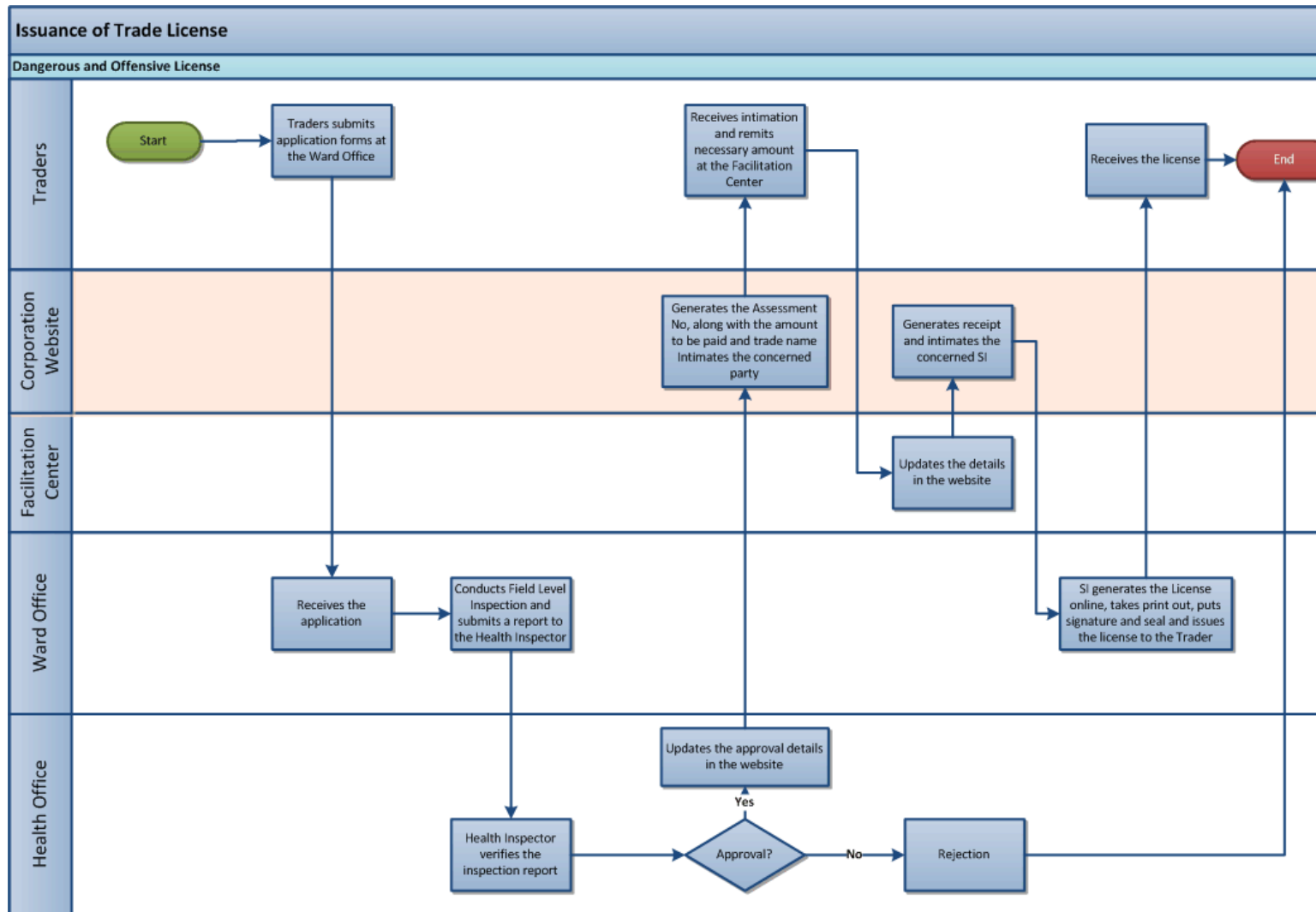
All the D&O Traders should obtain licenses from the CCMC on payment of prescribed fee before 45 days of the commencement of the trade. All the traders should renew the license every financial year. The defaulters should remit an extra payment as penalty of 25% of the license fee of the particular trade.

The applicant who applies for more than one trade in a single premise has to pay the highest fee among the trade fees collected in the premises. If electric motor is available in the same premises a separate fee shall be collected.

There is a printed application available in all the 4 Zonal Offices of the CCMC. The cost of each application is Rs.5/-. The filled in applications are received at the zonal offices for scrutiny.

The prescribed fee should be remitted for each trade on intimation to the applicant. The received applications are sent to concerned clerks in the zonal offices. The clerk forwards the applications to the concerned Sanitary Inspectors for remarks. The Sanitary Inspectors inspect and submit their remarks to the Assistant Commissioner through the concerned Zonal Sanitary Officers. The recommended trade licenses are issued to the applicants, in zonal offices.

*Process Map: Issuance of Dangerous and Offensive Licenses:*



## Process Description:

<b>Service Name</b>	<b>Non Institutional Death: Registration and issue of certificate</b>		
<b>Service Objective</b>	To verify and issue Trade License for Dangerous and offensive material		
<b>Service Function</b>	Issuance of Trade License	<b>CCMC Department</b>	Health Department
<b>Process Owner</b>	Health Officer		
<b>Service Category</b>	G2B	<b>Citizen Relevance</b>	Yes (License for Trade)
<b>Process Input</b>	Application Form	<b>Process Output</b>	Trade License Certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Applicant (Traders) submits application at Ward Office		Traders
Step 2	Ward Office receives the application		Concerned Clerk
Step 3	Sanitary Inspector conducts field level Inspection and submits the report to the Health Inspector		Sanitary Inspector
Step 4	Health Inspector receives the report and verifies the details. Incase all the findings are correct and as per the norms approves the application and updates the status in the website. <i>Incase of discrepancy, rejects the application applicant is intimated.</i>		Health Inspector
Step 5	System generates the Assessment No. and the amount details through the website and intimates the applicant		Trade License module
Step 6	Applicant receives the details and makes payment at		Trader

	the Facilitation Center	
Step 7	Data Entry Operator at the Facilitation Center updates the payment details in the website and generates receipt and hands it over to the applicant	Facilitation Center
Step 8	Applicant receives the receipt and visits the Ward office for license	Trader
Step 9	Sanitary Inspector verifies the receipt and hands over the license details to the applicant	Sanitary Inspector
Step 10	Applicant receives the license	Trader

### Process Analysis and Proposed To- Be Functionalities:

The overall process is semi-automatic and there is no backend existing. Only certain updates are entered manually in the website to enable status tracking of the applications. The necessary functionalities proposed for this module are mentioned in the following table:

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
1.	Facility for addition and updating of the ULBs information in the ULB Master	Yes	
2.	Facility for addition and updating the sanitary zone/division information in the Sanitary Zones/wards/Division Master	Yes	
3.	Facility for addition and updating of the following in the Revenue Wards Master: <ul style="list-style-type: none"> <li>i. Various revenue wards information under sanitary zones/wards/divisions.</li> <li>ii. Various revenue blocks under revenue wards information.</li> </ul>	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
4.	Facility for addition and updating the Election Wards Information	Yes	
5.	Facility for addition and updating the Locality categories		Yes
6.	Facility for addition and updating the sanitary ones/ward/division allocation to Sanitary Inspectors	Yes	
7.	Facility for addition and updating: iii. Trade categories iv. Sub-trade categories.	Yes	
8.	Facility for configurations of the following: v. Late fee details for the corresponding time periods in the penalty fee master vi. Trade rates vii. Revenue Block Categorizations.	Yes	
9.	Facilitate the recording of the details of an applicant for a new trade license.		Yes
10.	Facilitate the preparation of the inspection report for recording the findings of the field inspection of the applicant's premises. Facility for SI/HO to provide his comments.		Yes
11.	Facilitate recording the NOC/Installation Permission Details, which will be later used for checking while issuing the License to Industry/ Factory.		Yes
12.	Facility for Municipal Commissioner to view the recommendations of the SI/HO on a new license application. Facilitate the Commissioner to also enter his remarks in the system.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
13.	Facilitate the capturing of the license fee/late fee details (Cheque/ DD details, etc.)	Yes	
14.	Facilitate the generation of a new license after the information on supporting documents, fee details, and the necessary approvals are recorded in the system. Facility of printing of the license document from the system.		Yes
15.	Facilitate recording the application details from the application form submitted by the applicant.		Yes
16.	Facilitate recording of the trade License renewal details.	Yes	
17.	Facilitate recording of the Panchanama details collected from the sanitary inspectors report.		Yes
18.	Facilitate generation of the list of defaulters who haven't paid their renewal fee. Facilitate generation of the list of license holders who wish to close their trades on their own.	Yes	
19.	Updation of the status of a trade license as 'active' or 'closed', and the reasons for closure are entered.		Yes
20.	Facilitate recording of the details from the application submitted by the applicant for change of Title	Yes	
21.	Facilitate generation of license with changed title, after the necessary supporting documents, fee, and approvals are entered in the system.		Yes
22.	Facilitate capturing of details of the un-assessed trades, i.e., individuals performing trade without a proper trade license	Yes	
23.	Track the renewal notices sent to the license holders to renew their License. Further, track response dates, late fee		Yes



S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	applicability, etc.		
24.	Facilitate capturing of grievances against a license, or in general.		Yes
25.	Facilitate generation of demand collection and balances revenue ward-wise for the ULB.	Yes	
26.	Facilitate application tracking through sms		Yes
27.	Facilitate uploading of vital documents wherever applicable		Yes

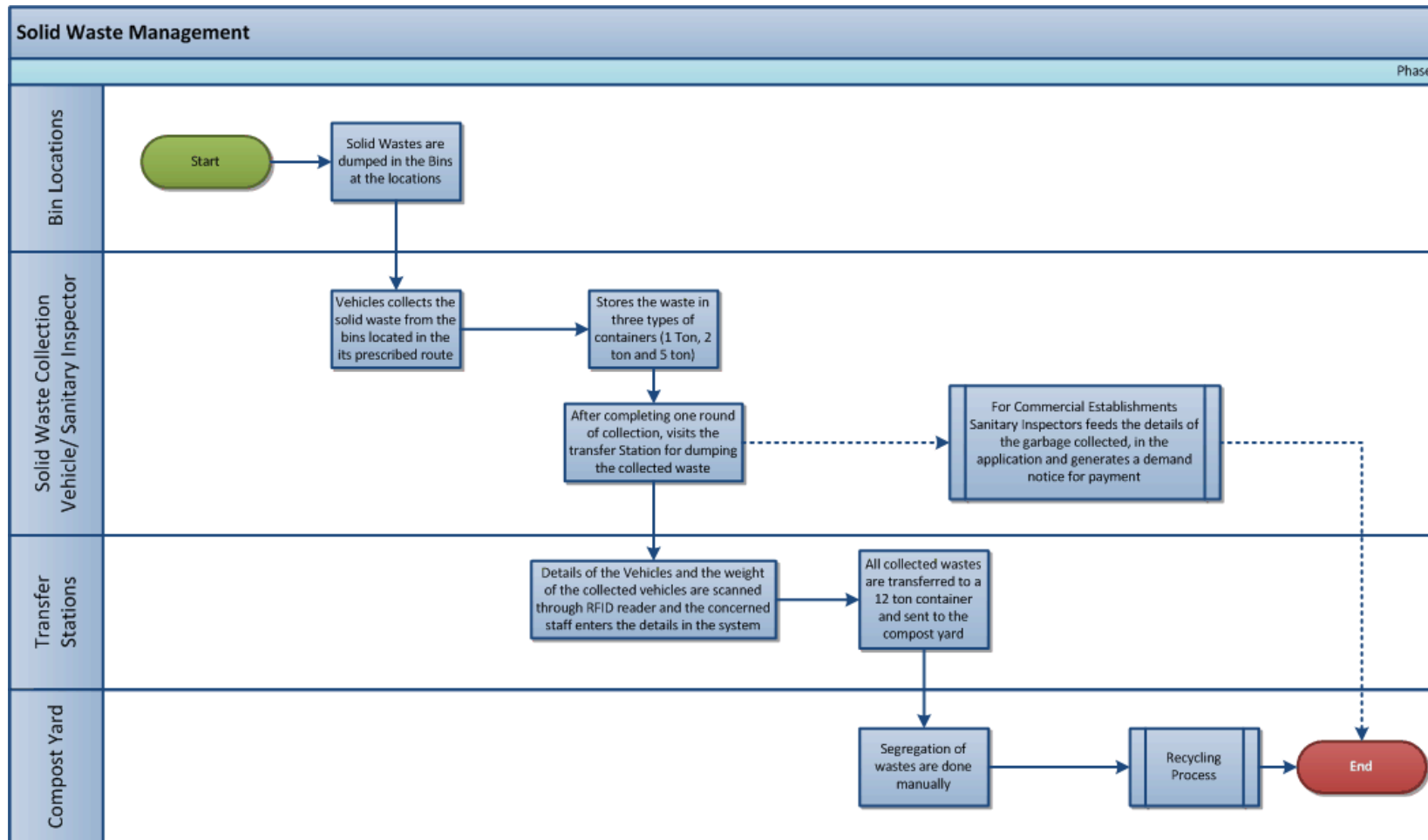
### 3.6.1.3. Solid Waste Management

Solid Waste Management is one of the primary responsibilities of the Municipal Authorities. The Solid Waste Management function involves monitoring and management of the activities of Door-to-Door Collection of Municipal Solid Waste, Street sweeping, Cleaning of open drains, Transporting of Waste, Scientific Treatment & Disposal of MSW, Maintenance of Waste Collection vehicles and other utilities such as Public toilets/complexes, etc. The process also involves keeping track of the amount of waste treated /disposed at the Processing/Disposal site as the case may be. The functions of the Solid Waste Management are sub categorized into the following Components:

- Segregation of waste at source
- Collection of waste at the Door-to-Door level including Street Cleansing, Collection of C&D
- Waste and Cleaning of Open Drains (Nalla de-silting).
- Secondary storage of waste
- Secondary Collection of waste

- Secondary Transportation of waste
- Treatment/processing of waste
- Disposal of waste
- Vehicle Movement.

## Process Map: Solid Waste Management:



**Process Description:**

<b>Service Name</b>	<b>Solid Waste Management</b>		
<b>Service Objective</b>	The Solid Waste Management process involves door to door collection of garbage and cleaning of drains, allocation of the vehicles for garbage transportation and disposal at the dumping ground, maintenance of the vehicles.		
<b>Service Function</b>	Solid Waste Management	<b>CCMC Department</b>	Health Department
<b>Process Owner</b>	Health Officer		
<b>Service Category</b>	G2C/ G2B	<b>Citizen Relevance</b>	Yes
<b>Process Input</b>	Solid Waste Bins	<b>Process Output</b>	Solid Waste disposal
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Solid Waste bins are placed at various location based on the garbage volume for different locations and generates the allocation schedule for the vehicles allocating them to different routes and locations for garbage collection		Health Officer
Step 2	The vehicle driver collects the garbage from the specified location locations, collects the Weigh bridge certificate, and dumps the garbage at the transfer station on completing one round.		Vehicle Driver
Step 3	Details of vehicles and weight of the vehicles are scanned through RFID reader and input into the system. Waste collected are transfer to a 12 ton container and sent to compost yard		Transfer station officer
Step 4	Segregation is done manually and recycling process in		Recycling Unit

	initiated	
Step 5	For commercial establishment the weight of the collected garbage is calculated and accordingly a demand notice is generated by the Sanitary Inspector. The demand notice is served to the concerned party. The concerned party makes payment as per the predefined process	Sanitary Inspector

### Process Analysis and Proposed To- Be Functionalities:

The overall process is manual with slight intervention of advanced technology like RFID tagging of vehicle and mechanically emptying of the bins are incorporates. There is no GPS and GIS for vehicle tracking system which would enhance the fuel management system for the vehicles and make the overall process more efficient. The existing and the proposed functionalities for this module are mentioned in the following table:

S. No.	Requirement	Existing Module (Yes / No)	Proposed Module (Yes / No)
1	Facility for addition of the new division details to the Division Master.	Yes	
2	Facility for entering location details under particular division of the Municipality.		Yes
3	Facility for entering various data on public toilets of the Municipality to be entered into the Public Toilets Master.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module ( Yes / No)</b>	<b>Proposed Module ( Yes / No)</b>
<b>4</b>	Facility for integration with the Personnel Management System to obtain information on the following types of staff under the sanitary wing of the Municipality: Route employees. Sanitary inspectors responsible for checking the sanitation activities, and the divisions allotted to them. Sanitary maistry / jawan responsible for checking the sanitation activities, and the divisions allotted to them.		Yes
<b>5</b>	Facility for entering details of the garbage-collection place such as the garbage collection place type, name, and fees collection location.		Yes
<b>6</b>	Facility for entering coordinates of dustbins located at various locations within the Municipality.		Yes
<b>7</b>	Facility for entering different types of vehicles available to be entered into Vehicle Type Master.	Yes	
<b>8</b>	Facility for entering details of the Hospitals/Hotels/Lodges located in the Municipality.	Yes	
<b>9</b>	Facility for entering the details of the transmission station.	Yes	
<b>10</b>	Facility for entering the details of the dumping ground to be entered in the system.	Yes	
<b>11</b>	Facility for the Sanitary Inspector to enter the attendance of the employees in the system.	Yes	
<b>12</b>	Facility for entering the details of the trip sheet, which includes the information about the vehicle used for transporting the garbage, and the number of trips it makes, to be entered into the Trip Sheet Table.	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module (Yes / No)</b>	<b>Proposed Module (Yes / No)</b>
<b>I3</b>	Generation of tentative allocation of workers to locations based on historical garbage collection patterns.		Yes
<b>I4</b>	Facility for recording of the garbage volumes from different locations dumped at the dumping grounds.	Yes	
<b>I5</b>	Generation of tentative allocation of vehicles to locations and routes based on historical garbage collection patterns and the optimal routing.		Yes
<b>Integration with External Databases and Platform</b>			
SSDG			Yes
GIS and GPS based tracking system			Yes
Geo-fencing for tracking the bin locations			Yes

### **3.6.2. Revenue Department:**

The main objective of the revenue department is to collect the tax and non-tax amount due to the Corporation for the civic amenities it provides to its citizens. The revenue department is assigned with task of collection of all such tax and non-tax amounts and hence is seen as a department which sources the finances for the Municipal Corporation. Under the e-governance programme where we are aiming the ULBs to be self-sufficient, the role of Revenue Department is seen crucial to improve the revenue realizations for the Municipal body and thereby embark upon the road to self-sustenance.

#### **3.6.2.1. Assessment and collection of Property tax**

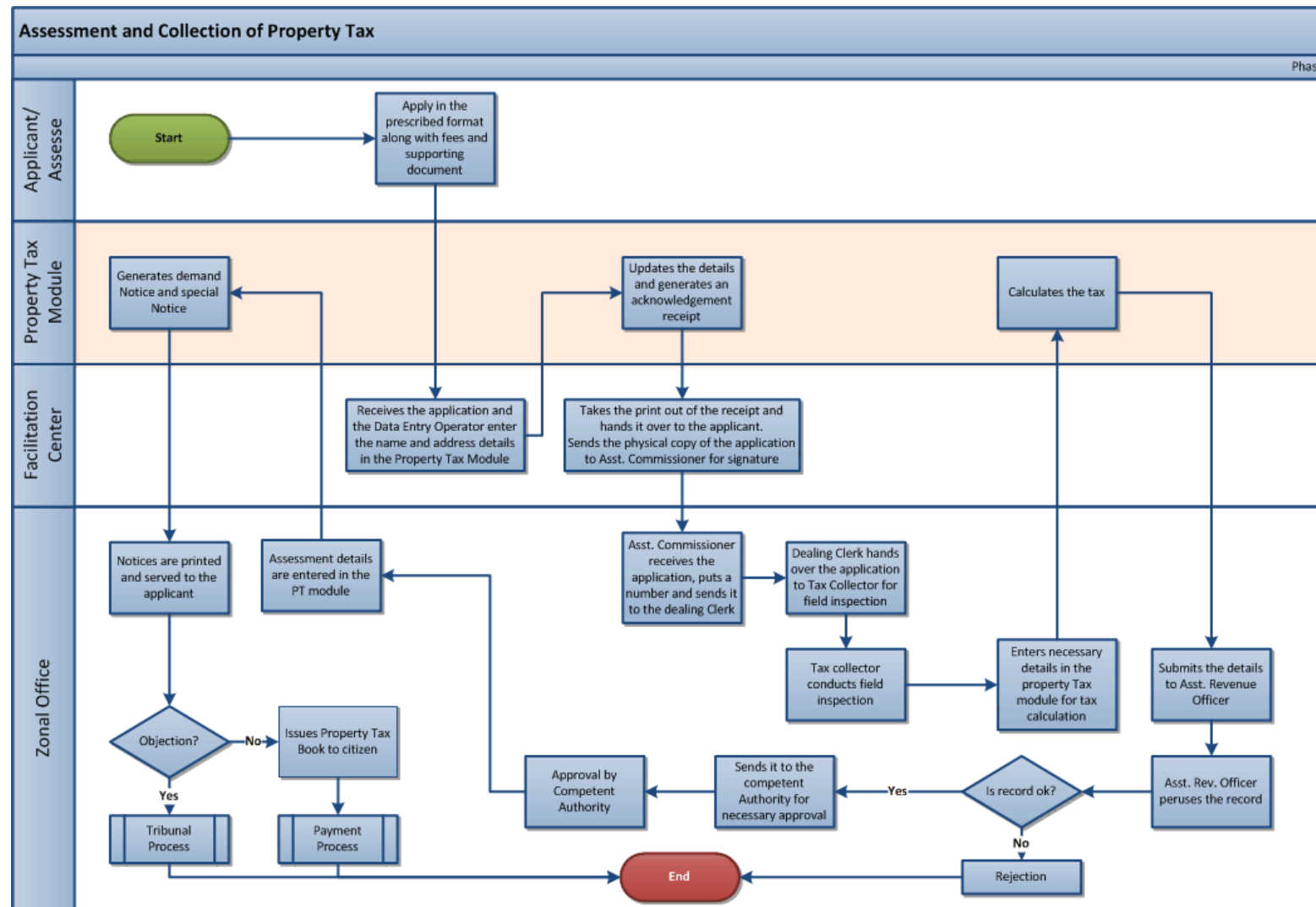
Residential and commercial properties, situated within the limits of Corporation, are assessed for tax. Property Tax is tax on immovable or tangible real property such as land, buildings and permanent improvements. Based on such assessments, all the

assesses are expected to pay the Property Tax. A municipal body can impose, suspend or abolish the tax or partly/wholly except person or class of persons. Of any such tax on any property or description of property by a resolution passed at a special meeting and confirmed by the state government

Property Tax is one of the main sources of income of the Corporation of Coimbatore



## Process Map: Assessment and Collection of Property Tax



## Process Description

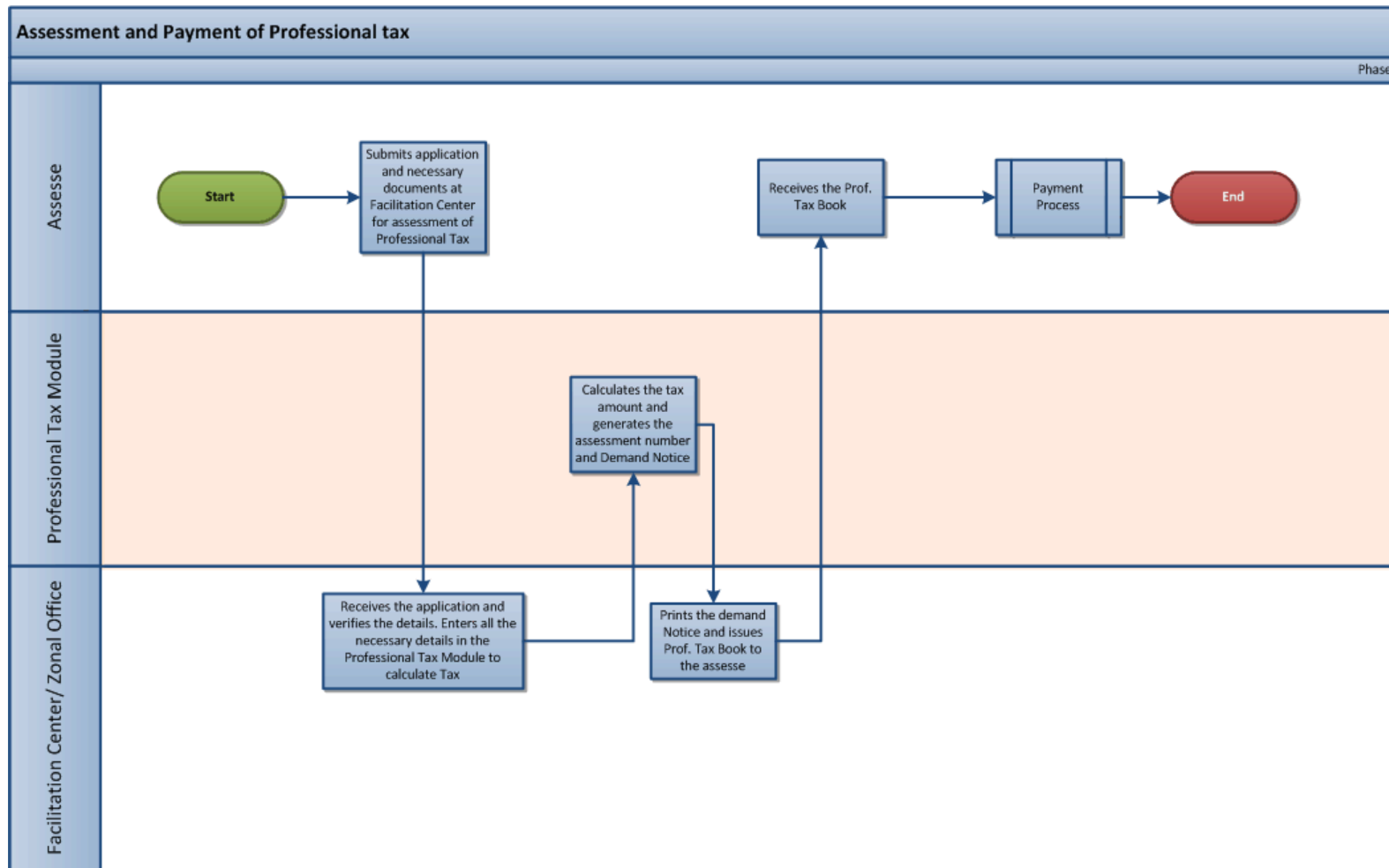
<b>Service Name</b>	<b>Assessment and Collection of Property Tax</b>		
<b>Service Objective</b>	Assessment and Collection of property tax		
<b>Service Function</b>	Property Tax assessment and collection	<b>CCMC Department</b>	Revenue Department
<b>Process Owner</b>	Revenue Officer		
<b>Service Category</b>	G2C/ G2B	<b>Citizen Relevance</b>	Yes
<b>Process Input</b>	Application	<b>Process Output</b>	Tax Receipts/ Tax Assessment
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Citizen applies in the prescribed format along with the fees and supporting documents like building plan, no objection certificate, completion certificate		Citizen/ Applicant
Step 2	Receives the application. Application details are input into the Property Tax module		Facilitation Centre Officer
Step 3	Acknowledges the application and generates the receipt		Property Tax Module
Step 4	Application acknowledgement receipt is handed over the application and physical application is forwarded to Assistant Commissioner for signature		Facilitation Centre Officer
Step 5	Assigns a number to the received application and forwards to the concerned clerk		Assistant Commissioner
Step 6	Hands over the application to the Tax collector for filed inspection		Clerk
Step 7	Conducts field inspection and enters the necessary details in the property tax module		Tax collector

Step 8	Calculate the tax assessment and Submits details to Assistant Revenue Officer for approval	Assistant Revenue Officer
Step 9	Approved records are sent to the competent authority for further approval	Approving authority
Step 10	Assessment details are input to the property tax module	Zonal Office
Step 11	Generates demand notice and special notice which are printed and served to the applicant	Property Tax module
Step 12	Citizens may object the assessment through the tribunal or else the property tax book is issued to the citizen to initiate tax payment process	Citizen

### 3.6.2.2. Assessment and Payment of Professional tax

Professional tax is also one source of the income for the corporation of Coimbatore. A person is liable to pay professional tax in case his/ her income is more than Rs. 21,000 per six months. Outdoor Staff conducts door-to-door survey and issue demand notice to companies or commercial establishments transacting business and to persons engaged in any profession, trade, or employment within the CCMC.

## Process Map: Assessment and Collection of Property Tax



## Process Description

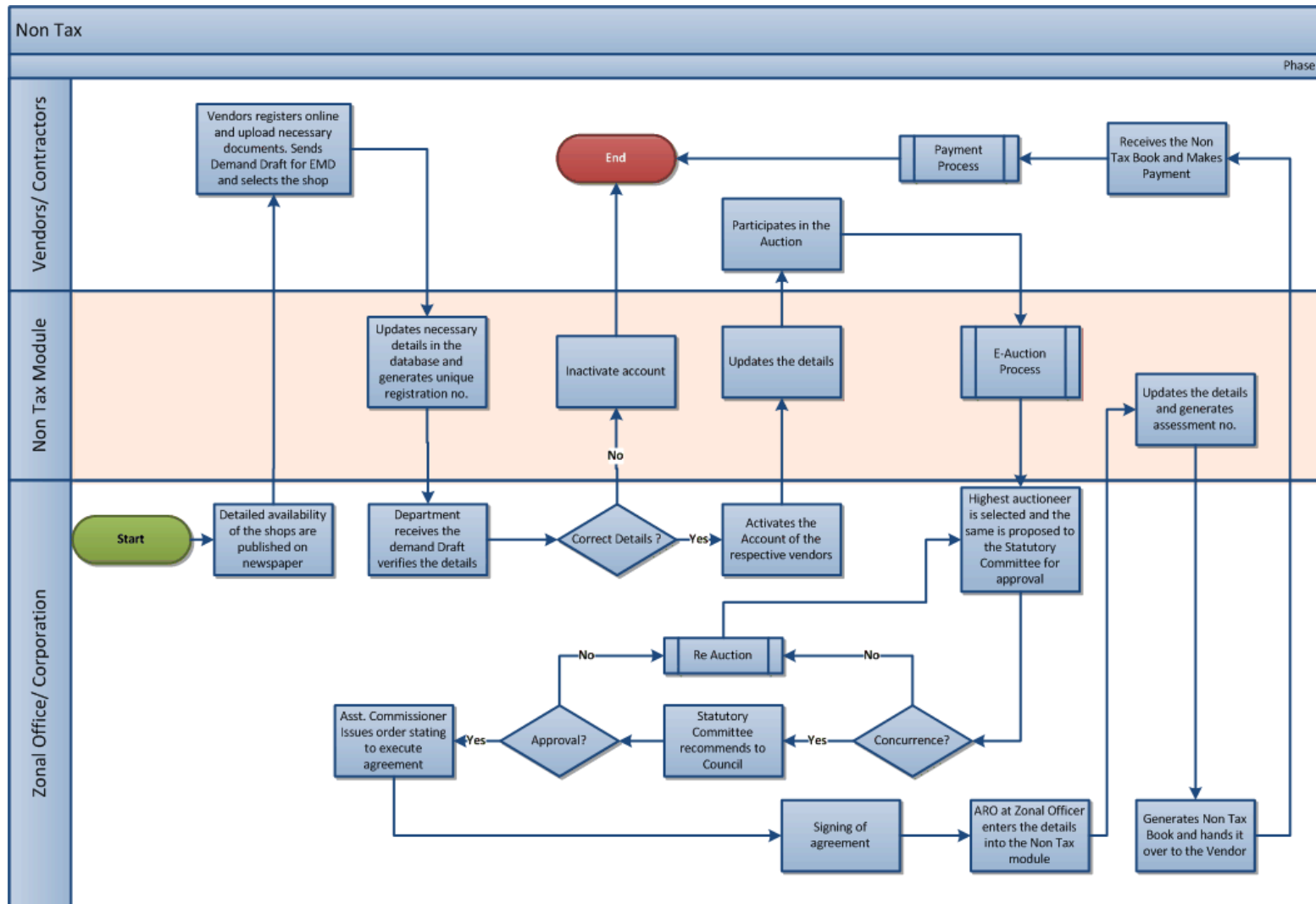
<b>Service Name</b>	<b>Assessment and Collection of Professional Tax</b>		
<b>Service Objective</b>	Assessment and Collection of Professional Tax		
<b>Service Function</b>	Professional Tax assessment and collection	<b>CCMC Department</b>	Revenue Department
<b>Process Owner</b>	Revenue Officer		
<b>Service Category</b>	G2C/ G2B	<b>Citizen Relevance</b>	Yes
<b>Process Input</b>	Application	<b>Process Output</b>	Tax Receipts/ Tax Assessment
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Citizen applies at the Facilitation Center along with the supporting documents		Citizen/ Applicant
Step 2	Receives the application. Application details are input into the Property Tax module		Data Entry Operator
Step 3	Acknowledges the application and generates the receipt		Professional Tax Module
Step 4	Application acknowledgement receipt is handed over the applicant		Data Entry Operator
Step 5	Data Entry Operator enters all the necessary details in the professional tax module and generates the demand notice. Takes print out of the notice		Data Entry Operator
Step 6	Prepares the Professional tax Book with necessary approval and hands over the same to the applicant		Data Entry Operator
Step 7	Applicant makes necessary payments		Applicant

### **3.6.2.3. Assessment and Payment of Non Tax**

Non tax items are also one of the sources of revenue generation for the Corporation of Coimbatore. Non tax revenue items are through lease income, rent, booking fees of Marriage Halls / Kalaiarangam / Grounds, License fees of Dangerous & Offensive Trade License, Prevention of Food Adulteration License, underground Sewerage charges, and garbage collection charges.

Currently there are 2569 numbers of shops which generates around Rs 4 Cr. of revenue per year for the corporation. 65 numbers of Annual Lease Items (such as Public Toilet, Parking area, market, shops etc.) are also there under the Corporation of Coimbatore which generates around Rs 8 Cr, of revenue per year.

## Process Map: Assessment and Collection of Non Tax



**Process Description:**

<b>Service Name</b>	<b>Collection of non-tax amount from vendors &amp; contractors</b>		
<b>Service Objective</b>	To record and collect the non-tax amount like the professional tax, property tax etc.		
<b>Service Function</b>	Non Tax	<b>CCMC Department</b>	Revenue Department
<b>Process Owner</b>	Revenue Officer/ Deputy Secretary		
<b>Service Category</b>	G2C, G2B (professional tax for business)	<b>Citizen Relevance</b>	Yes,
<b>Process Input</b>	Registration Form	<b>Process Output</b>	Non Tax paid receipt
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Publishes the detailed availability of shops in CCMC web site and newspaper		Corporation
Step 2	Register online & upload the necessary document. Selects the shop and sends DD for EMD		Vendor/Contractor
Step 3	Update necessary details in the database and generate unique registration no.		System
Step 4	Receive & Verify the DD details and activates/de-activates the a/c of respective vendor based on the correctness of DD		Corporation
Step 5	For the activates a/c's the details are updated		System
Step 6	Participate in the auction of the identified shop through "e-auction"		Vendor/Contractor
Step 7	Highest auctioneer is selected and proposed to Statutory Committee for approval		Corporation.



STEPS	PROCESS DESCRIPTIONS	RESPONSIBILITY
Step 8	Conducts meeting for arriving at concurrence on the selected auctioneer and recommends for Council approval	Statutory Committee
Step 9	Conducts meeting. Approval on the recommendations made by the Statutory Committee	Council
Step 10	Issues work order stating to execute agreement	Asst. Commissioner
Step 11	Whichever case concurrence/approval not obtained in selecting the highest auctioneer a re-auction process to be conducted	Corporation
Step 12	Signs the agreement	Vendor/Contractor & Corporation
Step 13	Enters the details into the Non Tax Module	ARO
Step 14	Updates details and generate assessment number	System
Step 15	Generates Non Tax Book and hands it over to Vendor/Contractor	Corporation
Step 16	Receives the Non Tax Book and makes the payment and receives the acknowledgement	Vendor/Contractor

#### 3.6.2.4. Assessment and Payment of Water Supply Charges

The Corporation provides a number of services to the residents of the City. The following services are rendered by the CCMC under water supply,

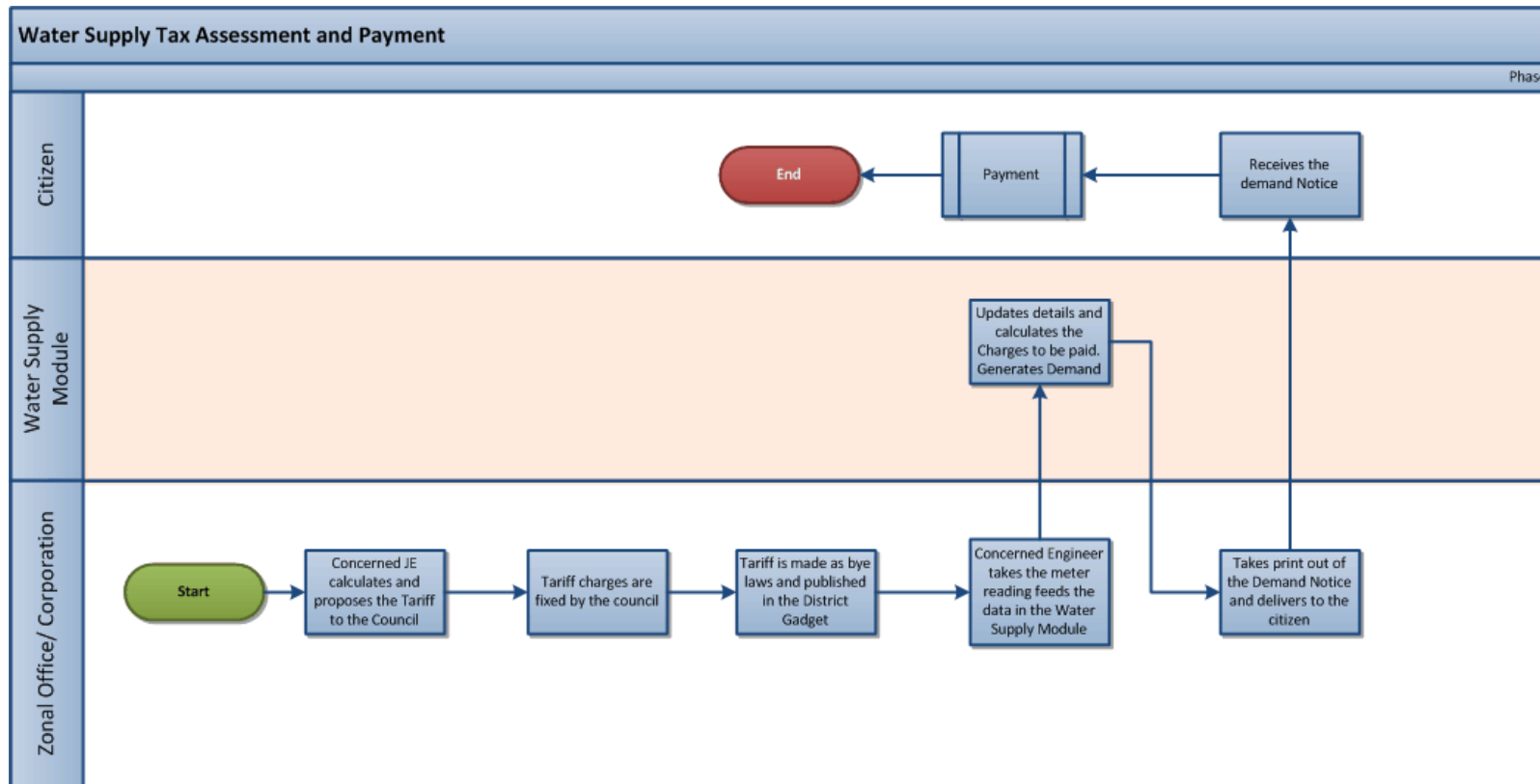
- New Water supply connection
- Request for Water supply Lorry
- Request for Type Transfer of Water supply Connection
- Request for Name Transfer of Water supply Connection

It has devised simple application forms for requesting water supply connections for the benefit of the people. These application forms have been grouped together under the following heads

- Water supply name transfer
- Water supply connection

The corporation updates the status of application related to the above process in the existing system. The Public can view the details of the submitted applications through the following links available.

## Process Map: Assessment and Collection of Water Supply Charges



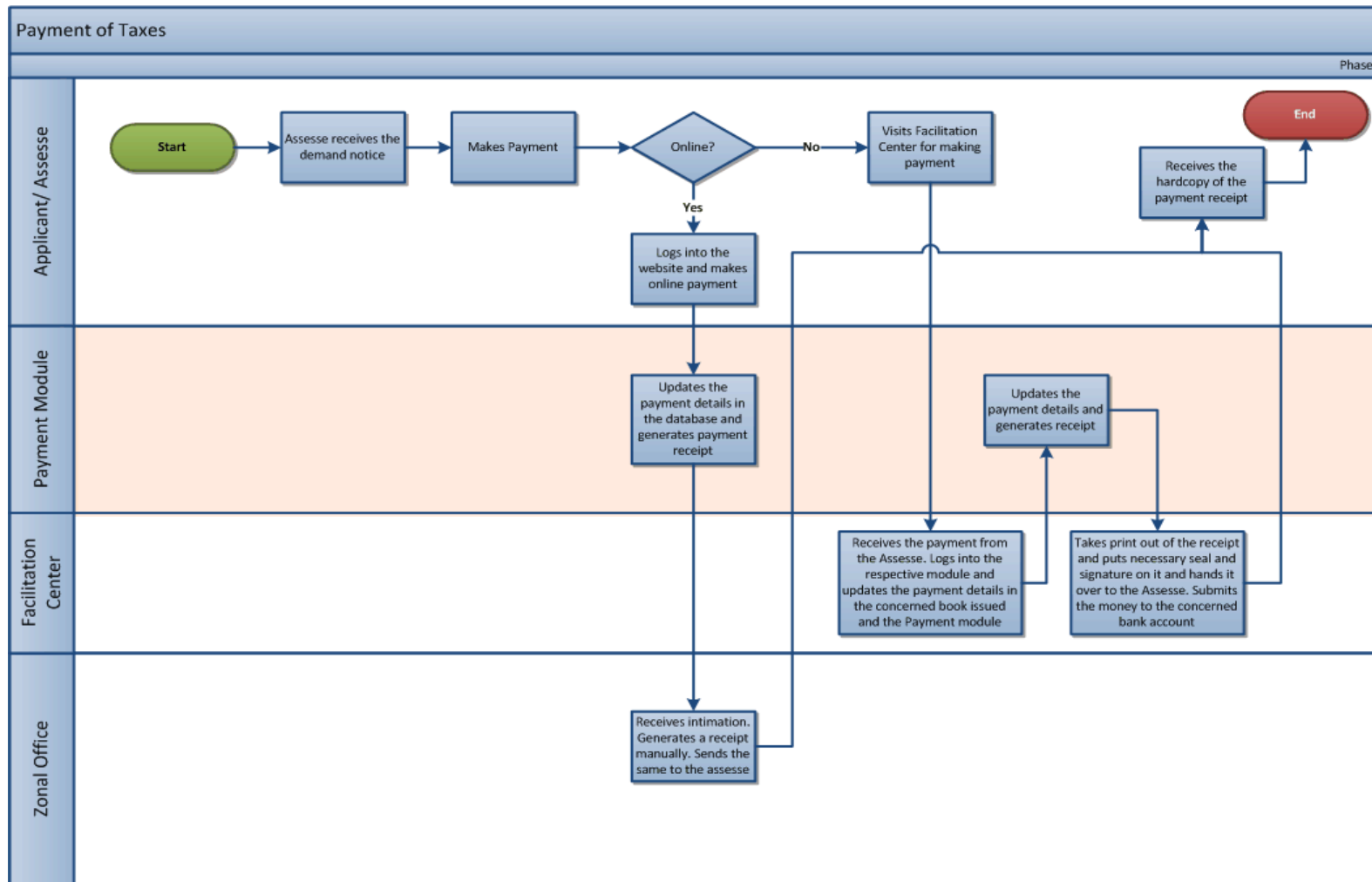
**Process Description:**

<b>Service Name</b>	<b>Assessment and Payment of Water Supply Charges</b>		
<b>Service Objective</b>	To collect payment for Water Supply Charges.		
<b>Service Function</b>	Payment Collection	<b>CCMC Department</b>	Revenue Department
<b>Process Owner</b>			
<b>Service Category</b>	G2C, G2B	<b>Citizen Relevance</b>	Yes,
<b>Process Input</b>	Payment	<b>Process Output</b>	Receipt for payment
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Concerned JE calculates and proposes the Tariffs to the government. Tariff details are sent to the council for approval		Junior Engineer (JE)
Step 2	Tariff is approved and the same is made a bye law.		Council
Step 3	Bye law is published in the District Gazette		JE
Step 4	Concerned JE takes the meter reading and enters the details in the water supply module		JE
Step 5	System updates the details and calculate the charges to be paid and generates the demand notice		Water Supply Module
Step 6	JE takes the print out of the receipt and the demand Notice		JE
Step 7	Receives the Demand Notice and makes the payment		Citizen

**3.6.2.5. Payment of Various Taxes and Utilities:**

Payments module is available for the payment of related taxes and various utilities like water supply, underground drainage system, solid waste management etc. Currently there are two modes of payment viz. online payment through the corporation website and cash/ demand draft payment at the Facilitation Centers. The online payment is done through the payment gateway of ICICI Bank.

## Process Map: Payment of Taxes and other utilities



## Process Description:

<b>Service Name</b>	<b>Payment of various taxes and utilities</b>		
<b>Service Objective</b>	To facilitate and collect payment of various taxes and utilities		
<b>Service Function</b>	Payment Collection	<b>CCMC Department</b>	Revenue Department
<b>Process Owner</b>			
<b>Service Category</b>	G2C, G2B	<b>Citizen Relevance</b>	Yes,
<b>Process Input</b>	Payment	<b>Process Output</b>	Receipt for payment
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Citizen receives the concerned Demand Notice		Concerned Officer
Step 2	Citizen makes payment either online or at the Facilitation Center		Citizen
Step 3	Logs into the website and makes payment through debit card or credit card		Citizen
Step 4	The collection module updates the database and generates receipt		Collection Module
Step 5	Citizen downloads the payment receipt		Citizen
Step 6	Concerned department receives the intimation of payment and sends the physical copy of the receipt to the citizen		Concerned department
Step 7	Citizen receives the hardcopy of the receipt		Citizen
Step 3	Citizen makes payment at the facilitation center		Facilitation Center

Step 4	Data entry Operator at eh facilitation center enters the details in the collection module and generates an acknowledge receipt	Data Entry Operator
Step 5	Takes print out of the receipt and puts seal and signature on it and gives the same to the citizen and updates the concerned tax book in case of tax payment by citizen	Data Entry Operator
Steps 6	Citizen receives the payment receipt.	Citizen

### Process Analysis and Proposed To- Be Functionalities:

All the modules in the Revenue department are working in silos. The process of assessing various taxes is semi-automatic. There is no facility to apply online for the citizen and even in the Facilitation centers all fields of the application forms are not entered. There is no integration with the available accounting systems for which the payments collected could not be linked with the accounting system automatically. Online payment facility is existing and payment gateway from ICICI is linked with the online payment facility. The details mapping of the existing and proposed functionalities are mentioned in the following table:

- **Property Tax**

S. No.	Requirement	Existing Module (Yes / No)	Proposed Module (Yes / No)
<b>User Authentication</b>			
1.	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes	



2.	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc for second level of authentication may be considered and justification is to be provided for the same		Yes
3.	Entry of new records, modify existing records, delete existing records.	Entry of new records only	
<b>Inclusion of New Assesse</b>			
4.	Entering/ adding the applicant details for new assessment.	Yes	
5.	Generation of a new assessment application acknowledgment receipt.		Yes
6.	Facility of modifying/ deleting an existing record.		Yes
7.	Generation of the special notice to the assessee indicating the amount of tax to be paid.		Yes
8.	Entering of the revision petition application into the system.		Yes
9.	Generation of the acknowledgement for the appeal petition application received.		Yes
10.	Facility of entering the appeal petition hearing date into the system.		Yes
<b>Change of Ownership</b>			
11.	Facility of entering/ adding the application details for title transfer of property.	Yes	
12.	Facility of issuing an acknowledgement.	Yes	
13.	Facility of modifying/ deleting an existing record.		Yes
14.	Facility of entering/ adding the field verification details for title transfer property.		Yes

15.	Enter/add the approval details for title transfer property		Yes
16.	Enter/add the fee payment details for title transfer property.	Yes	
17.	Facility of generating the endorsement for the title transfer property after the property is transferred and the fees is paid.		Yes
<b>Assessment &amp; Collection of Property Tax – By ULB and citizen interface</b>			
18.	Calculation of Property Tax to be levied based on the building type, area, usage details etc.	Yes	
19.	Change property tax computations and determine arrears/refunds etc. with proper controls/ authorization.		Yes
20.	Facility of modifying/ deleting an existing record.		Yes
21.	Enter/add the assessment details and property tax levied.	Yes	
22.	Enter/add the Arrear details and property tax levied for assessment.	Yes	
23.	Generation of the details of Property Tax paid for the assessment.	Yes	
24.	Generation of enter/ add the application details for exemption from property tax.		Yes
25.	Enter/add the application details for vacancy remission from property tax.		Yes
26.	Facility of entering/ adding the application details for write-off from property tax.		Yes
27.	Facility of issuing an acknowledgement.	Yes	
<b>General Revision of Assessment</b>			
28.	Accepting requests for Revision.		Yes
29.	Updation of the assessment database based on the field verification details.		Yes

30.	Entry of the property modification details.		Yes
31.	Entry of the penalties details.		Yes
32.	Capturing of the approval details.		Yes
<b>Master Maintenance</b>			
33.	Details of Revenue Zones (Addition/Modification/Search)	Yes	
34.	Details of Revenue Wards (Addition/Modification/Search)	Yes	
35.	Details of Revenue Blocks (Addition/Modification/Search)		
36.	Details of Locations (Addition/Modification/Search)	Yes	
37.	Details of Apartments/ Complexes (Addition/Modification/Search)	Yes	
38.	Details of Nature of Use of the Buildings (Addition/Modification/Search)	Yes	
39.	Details of Building Classification Type (Addition/Modification/Search)	Yes	
40.	Details of Roof Type Master (Addition/Modification/Search)	Yes	
41.	Details of Wall Type Master (Addition/Modification/Search)	Yes	
42.	Details of Floor Types (Addition/Modification/Search)	Yes	
43.	Details of Unit Rates (Addition/Modification/Search)	Yes	
44.	Details of Tax Rates (Addition/Modification/Search)	Yes	
45.	Details of Depreciation Rate (Addition/Modification/Search)	Yes	
46.	Details of Bill Collector Master (Addition/Modification/Search)	Yes	
47.	Details of Service Tax master (Addition/Modification/Search)	Yes	
48.	Exemption details master (Addition/Modification/Search)		Yes
49.	Occupier details (Addition/Modification/Search)		Yes

50.	Details of Bank Master (Addition/Modification/Search)	Yes	
51.	Integration with other tax components		Yes
<b>MIS &amp; Reports</b>			
52.	Field Verification Checklists		Yes
53.	Special Notices		Yes
54.	Demand Notices	Yes	
55.	Collections: <ul style="list-style-type: none"> <li>i. Bill Collectors Collection(Counter Collection, Direct bank remittance)</li> <li>ii. Election Ward wise Collection</li> <li>iii. Locality wise Collection</li> <li>iv. Penalty on Late Payment Collection</li> <li>v. Penalty on Unauthorized Construction-</li> <li>vi. Revenue Block wise Collection</li> <li>vii. Revenue Ward wise Collection</li> <li>viii. Revenue Zone wise Collection</li> <li>ix. Street wise Collection.</li> </ul>	Yes	Penalty on Late Payment Collection
56.	Registers <ul style="list-style-type: none"> <li>i. Arrears Register</li> <li>ii. Area Base Register</li> <li>iii. DCB Register</li> <li>iv. Exemption Details Register</li> <li>v. PT Register</li> <li>vi. Register of Appeals for the Year</li> <li>vii. Register of Districts</li> <li>viii. Register of Warrants</li> <li>ix. Remittance/Daily Col Register</li> <li>x. Receipts/Payments Register of PT for the Year</li> </ul>	Yes	Register of District  Register of Warrants  Vacancy Remission Register  Write Off Register

	xi. True Extract of PT Demand Register xii. Vacancy Remission Register xiii. Write Off Register.		
57.	Certificates Ownership Certificate Valuation Certificate.		Yes
58.	Other Notices Final Notice Warrant Notice		Yes
59.	Apartment Details, Complex Details, Group Housing Details, RowHousing Detail		Yes
60.	Building Age wise Assessment List-		Yes
61.	Monthly List of Buildings Requiring Levy of PT or Revision of PT		Yes
62.	Occupiers Notice Details		Yes
63.	Occupiers Other Than Owners		Yes
64.	Tax Section Circle No. (Property details by the owner)		Yes

### Water Supply and Other Utilities:

S. No.	Requirement	Existing Module (Yes / No)	Proposed Module (Yes / No)
<b>User Authentication</b>			
1	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords..	Yes	
2	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric		Yes

	Authentication Methods such as Finger Print Technology etc. for second level of authentication may be considered and justification is to be provided for the same		
<b>New Water tap Connection</b>			
<b>3</b>	Acceptance and maintenance of the application details (Addition/Modify/Search/Cancel).		Yes
<b>4</b>	Generation of an application acknowledgment receipt.		Yes
<b>5</b>	Generation of the field verification checklist.		Yes
<b>6</b>	Entry of the details regarding the field verifications.		Yes
<b>7</b>	Entry of the approval and remarks of the AE/ME.		Yes
<b>8</b>	Tracking the application/file status of the applicant.	Yes	
<b>9</b>	Order details for new connection.	Yes	
<b>10</b>	Capturing of the meter reading as on date for metered-connections.	Yes	
<b>Change of Use</b>			
<b>11</b>	Facility in entering/adding the application details for Change of use.		Yes
<b>12</b>	Facility of modifying/ deleting an existing record.		Yes
<b>13</b>	Generation of an application acknowledgment receipt.		Yes
<b>14</b>	Generation of the field verification checklist.		Yes
<b>15</b>	Entry of the details regarding the field verifications.		Yes
<b>16</b>	Entry of the approval and remarks of the AE/ME.		Yes
<b>17</b>	Tracking the application/file status of the applicant.	Yes	
<b>18</b>	Order details for change of usage.		Yes
<b>Assessment and Collection of Water Tax</b>			
<b>19</b>	Calculation of water charges.	Yes	

20	Maintenance of the details of arrears.	Yes	
21	Generation of demand notices.	Yes	
22	Details of the payment collected from the consumer.	Yes	
23	Maintenance of the advance charges		Yes
24	Facility of modifying/ deleting an existing record		Yes
25	Facilitates printing of demand notices.	Yes	
<b>Closing/Holding and Reconnection</b>			
26	Capturing of the details for Closing/Holding/Reconnection Applications.	Yes	
27	Generation of an application acknowledgment receipt.		Yes
28	Generation of the field verification checklist.		Yes
29	Entry of the approval and remarks of the AE/ME.		Yes
30	Tracking the application/file status of the applicant.	Yes	
31	Order details for Closing/Holding/Reconnection.		Yes
<b>Master Maintenance</b>			
32	Details of Revenue Zones( Addition/Modification/Search)	Yes	
33	Details of Revenue Wards( Addition/Modification/Search	Yes	
34	Details of Revenue Blocks ( Addition/Modification/Search)		
35	Details of Locations (Addition/Modification/Search).	Yes	
36	Details of Bill Collector (Addition/Modification/Search)	Yes	
37	Details of Application Type (Addition/Modification/Search)		Yes
38	Details of Connection Types (Addition/Modification/Search)	Yes	
39	Details of Water Sources Types (Addition/Modification/Search)		Yes
40	Details of Usage Type (Addition/Modification/Search)	Yes	
41	Details of Pipe Size Master(Addition/Modification/Search)		Yes

42	Details of Security Deposit Master (Addition/Modification/Search)	Yes	
43	Details of Meter Cost (Addition/Modification/Search).		Yes
44	Details of Charges (Addition/Modification/Search)	Yes	
45	Details of regularization penalty (Addition/Modification/Search)		Yes
46	Details of Enclosure document (Addition/Modification/Search)		Yes
47	Details of Demand and penalty period (Addition/Modification/Search)		Yes
48	Details of penalty (Addition/Modification/Search)		Yes
49	Details of slab rates for metered connection Master (Addition/Modification/Search)	Yes	
50	Details of slab rates for non-metered connection Master (Addition/Modification/Search)	Yes	
51	Details of bank master (Addition/Modification/Search)	Yes	
52	Details of bulk sanctions Master (Addition/Modification/Search)	Yes	
53	Details of probable days of Application processing Master(Addition/Modification/Search)		Yes
54	IDs such as Water Tax ID and Property Tax ID (Addition/Modification/Search) and mapping of these IDs	Yes (mapping is not present)	
55	Facility to maintain separate accounts for each of the deposit collected against request for connection and view the deposit details		Yes
<b>MIS &amp; Reports</b>			
55	Acknowledgment for application		Yes



<b>56</b>	Intimation letter or proceedings for tap connection		Yes
<b>57</b>	Work order		Yes
<b>58</b>	Consumer register (All Water Tap Connections Details)	Yes	
<b>59</b>	Disconnection Notice for unauthorized Connection		Yes
<b>60</b>	Disconnection Notice for existing Connection		Yes
<b>61</b>	List of Tap Connections Sanctioned in Specified Period	Yes	
<b>62</b>	Demand Register	Yes	
<b>63</b>	Arrear Demand Register (All Water Tap Connections Arrears list)	Yes	
<b>64</b>	Preprinted Demand Notice		Yes
<b>65</b>	Bill collector wise collected Water charges	Yes	
<b>66</b>	Location wise collected Water charges	Yes	
<b>67</b>	Zone wise collected Water charges	Yes	
<b>68</b>	Arrear Details individual list	Yes	
<b>69</b>	Report for all Water Tap connections DCB	Yes	
<b>70</b>	Block wise DCB report.		NA
<b>71</b>	Individual DCB report	Yes	
<b>72</b>	Modification /Reconnection Details report	Yes	
<b>73</b>	Assessment Register details	Yes	

The following TAX ITEMS (Property tax, Water charges, Non tax, Professional tax) have to be completed.

- Option may be given for Advance payment of Taxes.
- While entering records an alert menu should be provided to avoid repetition of door numbers.

- The Property tax module and Building plan module should be linked for the verification of Plan approval and the Area of the House.
- All mode of collections (Hand held devices, Mobile collections) may be given for the augmentation of collections.
- Option may be given in the website to download duplicate tax payment receipts.
- For administration purpose, provision must be given to download Demand register – Collection register of all taxes for previous years.
- Provision must be given to download misc. col. details for previous years head wise.
- BAR CODE PRINTOUT MAY BE PROVIDED IN THE DEMAND NOTICE TO FEED THE ASSESSMENT NUMBER BY USING BAR CODE READER IN THE COLLECTION SOFTWARE

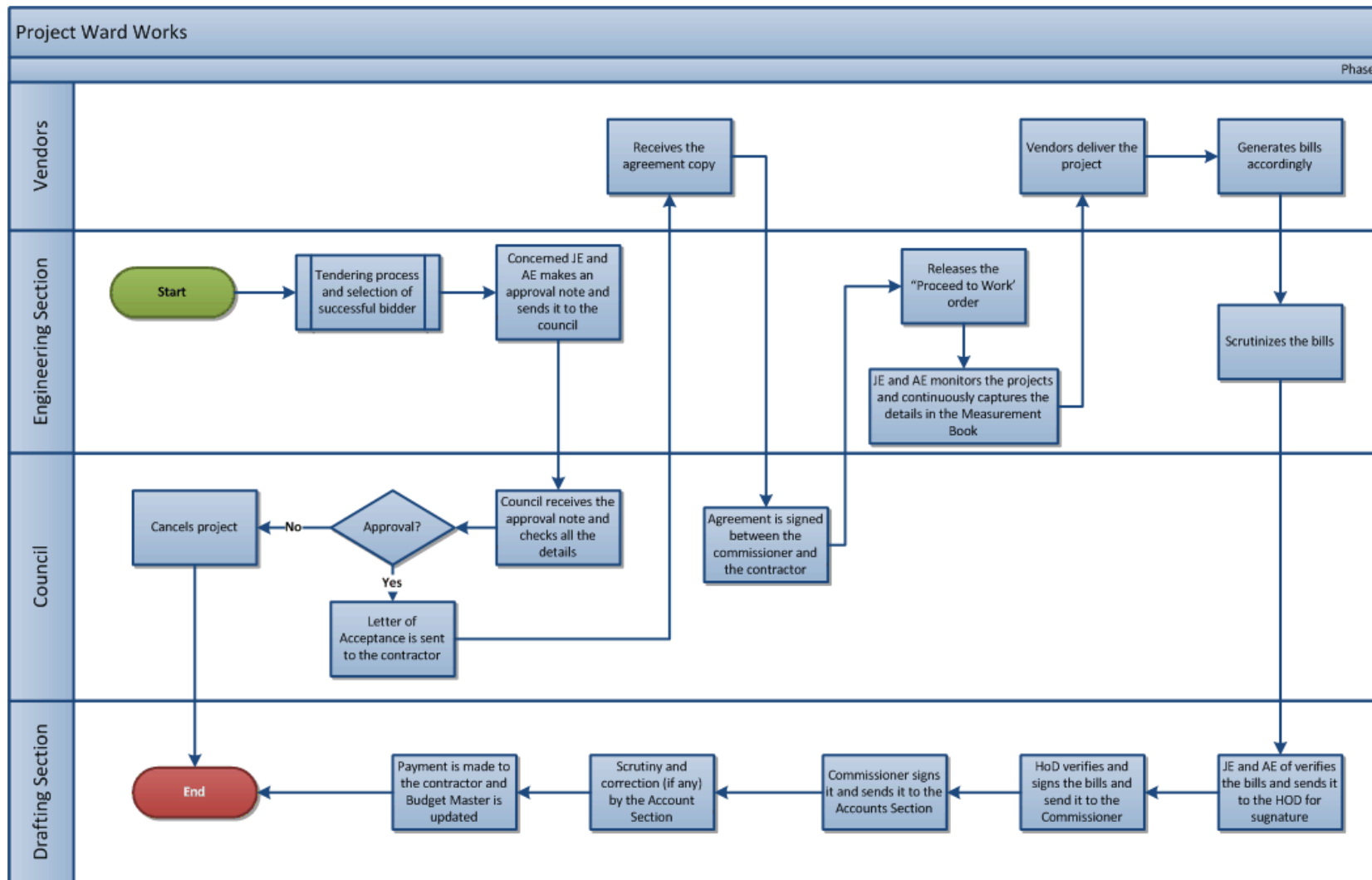
### **3.6.3. Engineering Department:**

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

#### **3.6.3.1. Project Ward Works:**

This is an internal departmental service which tracks a project through its inception till completion. All the necessary monitoring is done by the concerned JE and AE.

## Process Map: Project Ward Works:



## Process Description

<b>Service Name</b>	<b>Project Ward Works</b>		
<b>Service Objective</b>	Monitoring, tracking and issuing payments to contractors for works awarded		
<b>Service Function</b>	Project Monitoring	<b>CCMC Department</b>	Engineering Department
<b>Process Owner</b>	Corporation Engineer		
<b>Service Category</b>	G2B	<b>Citizen Relevance</b>	No
<b>Process Input</b>	Award of contract	<b>Process Output</b>	Payment Receipt
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Selection of shortlisted vendor from the tendering process		Engineering Section
Step 2	Concerned JE and AE makes an approval note to the council		JE/ AE
Step 3	Receives and verifies details and is made an agenda item for the council meeting.		Council
Step 4	If the agenda is approved by the council, the project is cancelled if not the letter to acceptance is sent to the contractor		Council
Step 5	Receives the agreement copy		Vendor
Step 6	Agreement is signed between the commissioner and contractor		Commissioner
Step 7	Releases proceed to work order to the contractor. JE and AE continuously monitors the project and captures the details in the measurement book.		Engineering Section
Step 8	Vendors deliver the project and raise bills accordingly		Vendor
Step 9	Scrutinizes the bills. JE and AE verifies the bills and		Engineering Section

	sends it to Head of Department for signature	
Step 10	Head of Department verifies and signs the bills, which are sent to the Commissioner	Head of Department
Step 11	Commissioner verifies and signs and sends it to the Accounts section	Commissioner
Step 12	Bills scrutinized and verified to make the payment to the vendor. The budget master is updated.	Accounts Section
Step 13	Payment is released to the vendor	Vendor

### Process Analysis and Proposed To-Be Functionalities:

The overall process is manual and there is no interface with the ICT in the overall workflow. The work flow for this process has to be developed with the following proposed functionalities as described in the following table:

S. No.	Requirement	Proposed Module (Yes / No)
1	Allow issue of Work Order to the selected contractor online. The system should verify receipt of digitally signed undertaking (in response to the Tender Acceptance Notice) from the contractor before allowing issue of Work Order	Yes
2	Allow integration of the Tendering and Project/Ward Works modules. Integration should facilitate instant availability of information on contract terms and conditions, payment conditions, delay clauses, etc. to the Project/Ward Works module.	Yes
3	Allow integration with the Project Accounting module in order to facilitate tracking previous payments/advances released to a contractor, cost overruns, etc.	Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Proposed Module (Yes / No)</b>
<b>4</b>	Allow initiation of online measurement book. Enable contractor's login to access and update completed work information in the online measurement book. Support uploading of measurements in the form of pre-specified excel spreadsheet, text, etc. formats.	Yes
<b>5</b>	Send alerts to contractors and departmental staff on critical dates for updating the online measurement book, verification of measurement book, generation of bill, bill approval, and release of payment, etc.	Yes
<b>6</b>	System should track a contract through various stages- Active, close, terminated. Pre contract stages such as under construction (contract document under construction) and under negotiation (negotiations underway between department and contractor) should also be supported.	Yes
<b>7</b>	Facilitate login of concerned departmental officials for the purpose of entering project related information and for providing approvals at various stages.	Yes
<b>8</b>	Sub Engineer/SDO should be able to upload inspection reports, photographs, etc. on the system for review of higher up authorities. Further, system should allow documents, as necessary, to be attached with the contract, such as the material consumption, notices issued to the contractor, etc.	Yes
<b>9</b>	Capture information on project analytics, such as percent of work completed against time elapsed, corresponding payments made, work extensions, delays, etc.	Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Proposed Module (Yes / No)</b>
<b>I0</b>	Track system entries and approvals on the system against the specified time durations. In case of delays, the system should escalate the matter to the next higher authority. The delaying authority shall be required to provide reasons for the delay in the system.	Yes
<b>I1</b>	Support automatic generation of the bill based on verified MBentries, and other contract agreement terms and conditions.	Yes
<b>I2</b>	Track project delays on the part of the contractor. Apply penalty clauses at the time of preparation of the bill.	Yes
<b>I3</b>	Maintain all reports/audit trails as required for the AG's audit purpose. Compliance with relevant provisions of the Works Manual, Account Code, Finance Code, and appropriate statute, etc.	Yes
<b>I4</b>	Allow entry of third party verification information on project progress, quality control in the system	Yes
<b>I5</b>	Maintain central repository of all contract information- Contract status, contracted parties, contract period, goods or services covered, and contact point(s). System should provide alerts on renewal date of a contract	Yes
<b>I6</b>	MIS: Support generation of reports on: Contractor performance by class, value, type of projects Projects on track, delayed, completed, abandoned Defaulting contractors (non-completion of projects, delayed projects, etc.)  Project accounting- % payments made vis-à-vis the %completion of project	Yes



<b>S. No.</b>	<b>Requirement</b>	<b>Proposed Module (Yes / No)</b>
	The MIS facility should have separate interfaces for different users (dept. level/ULB, etc.) Work wise Status Ward wise Status Contractor wise pending bills Ward wise pending details.	
<b>17</b>	Facility for updating the asset records once the project is completed (Integration with the Accounting Systems and Asset Management System)	Yes
<b>18</b>	Integration with GIS to update the master layout once any project is completed.	Yes
<b>19.</b>	Integration with the Accounting systems and Asset Management System	Yes

#### **3.6.4. Town Planning Department:**

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

The activities of Town Planning Section are Building Permission, Prevention of Unauthorized Construction, Appeals, Layouts, Plot Subdivision, Reconstitution of plots and Site Approvals, Prevention of Unauthorized Layouts, Permission to Installation of Electric Motor, Implementation of Master Plan, Enforcement of Detailed Development Plans, Regulation of Land use, Town Survey, Encroachment Eviction, Land Acquisition, Asset Management, Town Planning and Standing Committee, Places of Public Resorts Act, Tamil Nadu Parks, Playfields and Open Spaces Act, Licensed Building Surveyor, City

Beautification Projects Like Bus Shelter, Roadside Parks, Traffic Islands, Scheme of Regularization of Unapproved Layouts, Scheme of Regularization of Unauthorized Buildings, Geographical Information System (GIS), Automation of Town Planning Functions, etc.

### **Roles and Responsibilities of Town Planning Department**

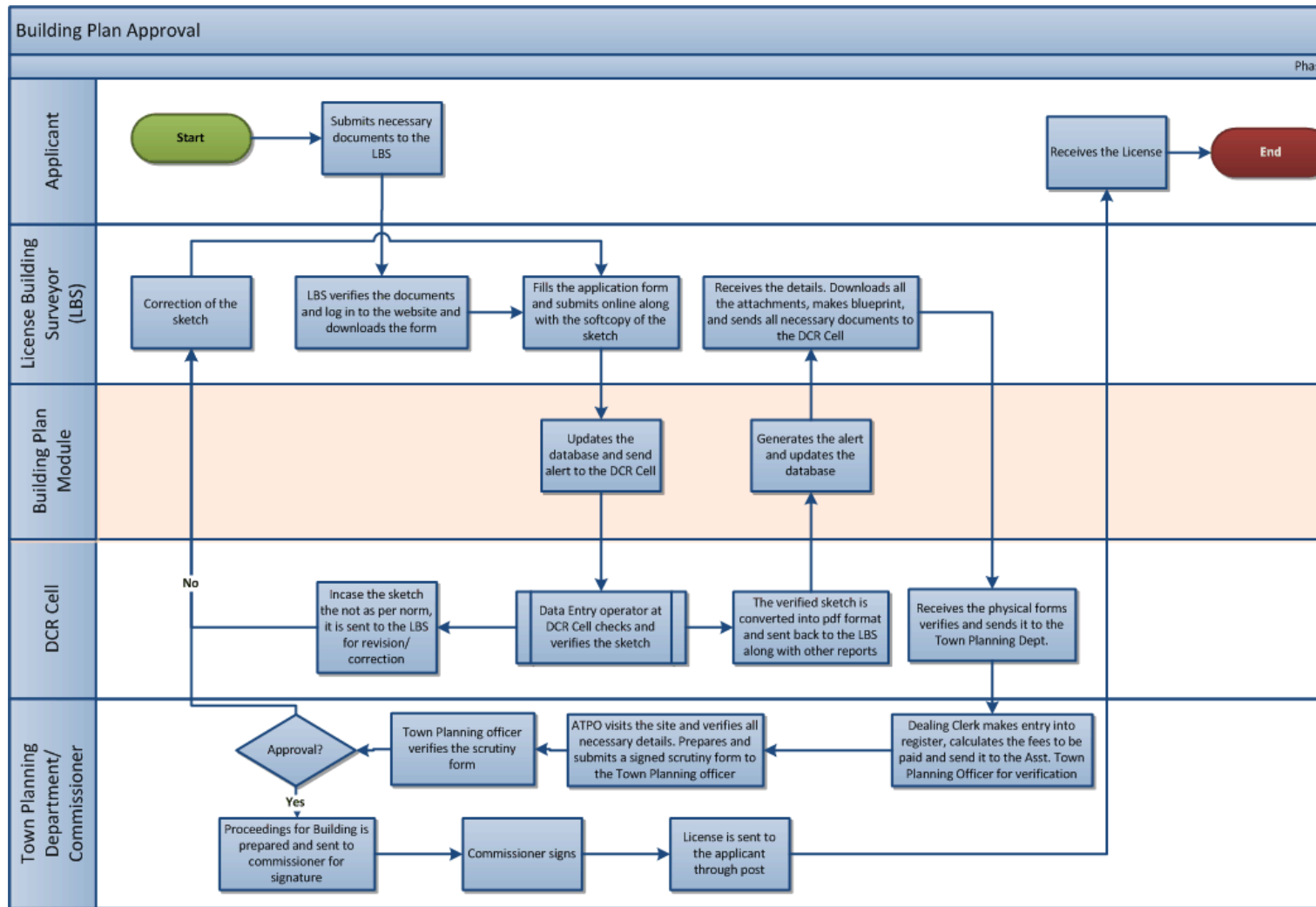
- To constitute Planning/Special Areas.
- To prepare existing land use and Development plan of planning Areas.
- To implement the approved/notified Development Plan.
- To prepare Sectoral Plans and Town Planning Schemes
- Carry such surveys and inspections and obtain such pertinent reports from Government Departments, local authorities and public institutions as may be necessary for the preparation of the plans.
- Perform such duties and functions as are supplemental, incidental and consequential to any of the foregoing functions or as may be assigned by the State Government for the purpose of carrying out the provisions of this Act.
- To prepare existing land use map and Development Plan.
- To implement the approved/notified Development Plans/ Interim Development Plans.
- For implementing the provision of approved Development Plans/ Interim
- Development Plans acquire, develop and dispose off the land.
- To do construction work and provide water, electricity, sewerage and drainage services.
- To do all such works which are given by the Government from time to time.

#### **3.6.4.1. Building Plan Approval**

For construction of any new building the citizen has to obtain necessary permission from the Town Planning Department through a License Building Surveyor. The plan and sketch are compared online by Data Entry Operator for meeting the norms laid by the

corporation. Once the plan meets the specifications and norms, the plan is passed by the competent authority.

## Process Map: Building Plan Approval:



**Process Description:**

<b>Service Name</b>	<b>Building Plan Approval</b>		
<b>Service Objective</b>	To ensure that the building to be newly constructed meets the required specifications as per the Corporation		
<b>Service Function</b>	Approval of Building Plan	<b>CCMC Department</b>	Town Planning Department
<b>Process Owner</b>	Commissioner		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes (Mandate for construction of new buildings)
<b>Process Input</b>	Application	<b>Process Output</b>	Permission certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Citizen submits necessary details to the License Building Surveyor		Citizen
Step 2	LBS verifies the documents and log in to the website and downloads the form. Fills the application form and submits online along with the softcopy of the sketch		License Building Surveyor (LBS)
Step 3	Updates the database and send alert to the DCR Cell		Building Plan Module
Step 4	Data Entry operator at DCR Cell checks and verifies the sketch. In case the sketch is not as per the specification, the application is sent back to the LBS for correction, In case the sketch is as per the specifications, The verified sketch is converted into “pdf” format and sent back to the LBS along with other reports.		Data Entry Operator

Step 5	Generates the alert and updates the database	Building Plan Module
Step 6	Receives the details. Downloads all the attachments, makes blueprint, and sends all necessary documents to the DCR Cell	LBS
Step 7	Receives the physical forms verifies and sends it to the Town Planning Dept.	Data Entry Operator
Step 8	Dealing Clerk makes entry into register, calculates the fees to be paid and send it to the Asst. Town Planning Officer for verification	Dealing Clerk
Step 9	ATPO visits the site and verifies all necessary details. Prepares and submits a signed scrutiny form to the Town Planning officer <i>In case of discrepancy in the scrutiny form, the application is rejected and sent back for correction.</i> <i>In case of approval, Proceedings for Building is prepared and sent to commissioner for signature</i>	Asst. Town Planning Officer
Step 10	Signature by Commissioner	Commissioner
Step 11	License is sent to the applicant through post	ATPO
Step 12	Receives the License	Citizen

### Process Analysis and proposed To- Be Functionalities:

The process is semi - automated wherein there is no backend workflow for the department. Automation is done only in terms of receiving online application from the License Building Surveyors (LBAs). The comparison of the sketch with the specified norms is done online using Autocad. Once the necessary verification is done the physical application forms along with the blue prints are received manually by post and it is subsequently sent to the town Planning department where the file processing is done manually. Respective actors have to enter the details of the processing in the website for status tracking purpose.

In order to make this process more effective, the analysis in terms of functionalities already available and to be proposed are mentioned in the following table:

S. No.	Requirement	Existing Module ( Yes / No)	Proposed Module ( Yes / No)
<b>User Authentication</b>			
1	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes	
2	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric Authentication methods such as Finger Print Technology etc for second level of authentication may be considered and justification is to be provided for the same		Yes
<b>Building Plan Approval</b>			

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module ( Yes / No)</b>	<b>Proposed Module ( Yes / No)</b>
<b>1</b>	Ability to add/update the following information in the system: Application type name Category name License category name Layout category name and category description Surveyor/licensed architect Revenue village name Circle Division Master Zone/Ward	Yes	
<b>2</b>	Enable applicants to fill and submit the building plan application online and to attach necessary drawings in the soft copy. Allow municipal officials to access/download the same for verification of particulars.	Yes	
<b>3</b>	Enable staff to enter required documents for building permission based on the height of the proposed structure. Various categories based on the height should be allowed to be entered.	Yes	
<b>4</b>	Facilitate entering of the building application details such as applicant information, building information, licensed architect information, and the technical and fee details	Yes	Fee Details
<b>5</b>	Facilitate checking of the physical documents submitted by the applicant for building plan approval. Based on these an acknowledgement should be generated and given to the applicant.		Yes
<b>6</b>	Facilitate checking and assessing the balance fee charges for an applicant and calculate the total amount to be paid.		Yes



<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module ( Yes / No)</b>	<b>Proposed Module ( Yes / No)</b>
<b>7</b>	Facilitate entering of the inspection and scrutiny details for the building plan permission such as the Site Inspection Report (fields such as application no., applied for, application date, applicant details, usage, building category, inspector details, date of inspection, etc.), Fee & Charges Calculations, and Certificate and Document Verification Report. Further system should facilitate generation of an endorsement or building permission order to the applicant, based on the scrutiny.		Yes
<b>8</b>	Generate application reference for Building Plan Application/ Layout Application for the applicant and facilitate online tracking of the status of the application.		Yes
<b>9</b>	Online help should be available to the user for each system function. Topics covered in the user manual shall also be available through the online help.		Yes
<b>10</b>	Enable integration of the module with the following module to facilitate exchange of data: Property Tax, Vacant Land Tax, Water Tax, File Movement, Grievance Redressal, Court Cases, Financial Accounting, Assets & Inventory, Advertisement Tax, Trade Licenses, Project/ward works, and schemes.		Yes
<b>11</b>	Track delays in approval steps and maintain an audit log of the approval process steps.		Yes
<b>12</b>	Ability to check for pending taxes if any – add as functionality –interface.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module ( Yes / No)</b>	<b>Proposed Module ( Yes / No)</b>
<b>13</b>	Ability to track arrears due to the ULB and the robustness of the system needs to be maintained		Yes
<b>14</b>	Facility for uploading the Master Plan of the City and integration with GIS and viewable to public		Yes

#### **3.6.4.2. Layout Plan Approval**

Layout Plans for vacant lands are made by the authorized architecture and submitted to the Local Planning Authority for perusal and further file processing.

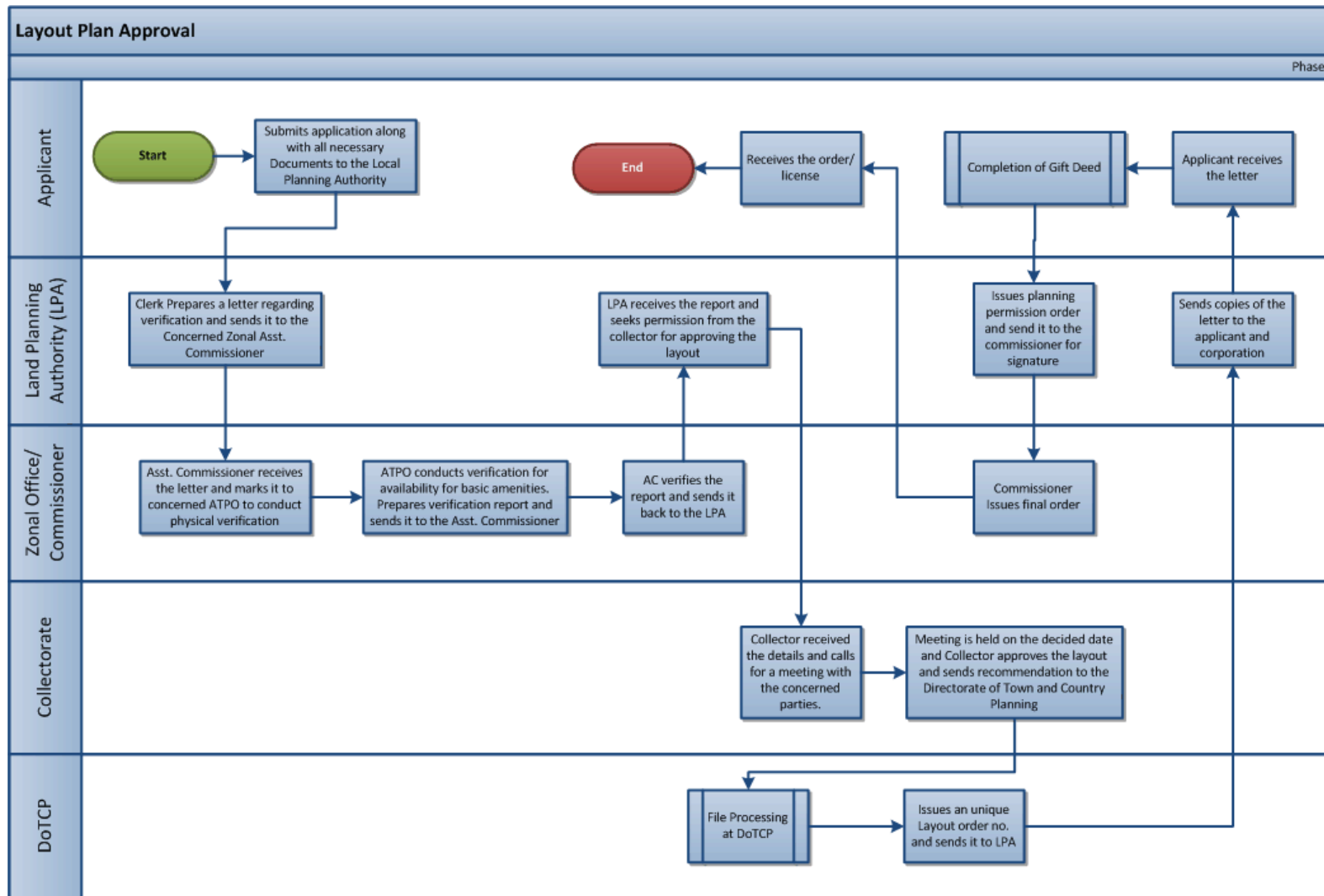
The Layout Application should be with the following documents

1. Legal Title of the site says sale deed, power document, settlement deed, will, etc.
2. Necessary Death Certificates, Legal heirs Certificates wherever necessary. Such documents are to be attested by the Notary Public.
3. FMB of the site obtained from the Municipality.
4. Survey Land Register copy obtained from the Municipality.
5. Encumbrance certificate for minimum of 13 years.
6. Layout plan showing be extent of site, reservation for parks and play field and road widths.
7. Detailed site plan.
8. Extract from Master plan / Detailed development plan for 500m radius from the proposed site

All necessary documents pertaining to the vacant land needs to be submitted along with the NOC from the Tahsildars. A field level inspection is conducted by the concerned engineer

to check whether the basic amenities are available in the vacant land. On successful field inspection and subsequent file processing the final order is issued to the concerned parties.

## Process Map: Building Plan Approval:



## Process Description:

<b>Service Name</b>	<b>Layout plan approval</b>		
<b>Service Objective</b>	To provide necessary sanction/approval for developing any site/land within the Municipal limit by providing the necessary layout plan approval.		
<b>Service Function</b>	Layout plan approval	<b>CCMC Department</b>	Town Planning Department
<b>Process Owner</b>	Land Planning Authority		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes
<b>Process Input</b>	Layout application form along with supporting documents as mentioned above	<b>Process Output</b>	Layout plan approval Certificate
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Submits the application form along with supporting documents.		Applicant
Step 2	Prepares letter for verification and sends it to concerned Zonal Asst. Commissioner.		LPA Clerk
Step 3	Receives the letter and marks it to ATPO for physical verification of the site		Zonal Asst. Commissioner
Step 4	Conducts verification of the site for availability of basic amenities and prepares verification report and sends it to Asst. Commissioner.		ATPO
Step 5	Verifies the report and send it back to LPA for necessary action		Asst. Commissioner
Step 6	Receives the report and sends it to collectorate for approval		LPA
Step 7	Receives the report. Calls in for a meeting with		Collector

	concerned parties	
STEPS	PROCESS DESCRIPTIONS	RESPONSIBILITY
Step 8	Post conducting the meeting, the plan is approved and the recommendation is sent to Directorate of Town and Country Planning	Collector
Step 9	File is received, processes and a unique layout order number is issued and sent to LPA	DoTCP
Step 10	Send the copies of the letter to applicant and Corporation	LPA
Step 11	Receives the copy and furnishes the Gift Deed	Applicant
Step 12	Issues planning permission order and sends it to commissioner for signature	LPA
Step 13	Appends the signature and issues the final order for carrying out the land layout	Commissioner
Step 14	Receives the order for carrying out the land layout	Applicant

### Process Analysis and the Proposed To-Be Functionalities:

The overall process for issuing the order for layout plan is manual and there is no backend for file processing. At certain junctions of the process flow the application details are entered manually by the data entry operator for enabling file tracking. This module has to be developed as a whole with the following functionalities.

S. No.	Requirement	Existing Module ( Yes / No)	Proposed Module ( Yes / No)
1	Enable to enter the required documents for layout permission.		Yes
2	Facilitate adding/updating the required mapping documents		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module ( Yes / No)</b>	<b>Proposed Module ( Yes / No)</b>
	for layout permission.		
<b>3</b>	Facilitate entering of the layout application details such as applicant information, physical layout details, licensed architect, and the technical data and fee details.		yes
<b>4</b>	Facilitate entering of the nature and details of unauthorized construction, if any, on the layout. Further, facilitate entry of the notice details in relation to the same.		Yes
<b>5</b>	Enable applicants to fill and submit the layout approval application online along with provision to attach necessary drawings in the soft copy. Facilitate online verification of the documents submitted for layout approval.		Yes
<b>6</b>	Facilitate checking and assessing the balance fee charges for an applicant and calculate the total amount to be paid.		Yes
<b>7</b>	Generate application number for the applicant to be used by him for online tracking of his application's status.		Yes
<b>8</b>	Facilitate entering of the inspection and scrutiny details for the layout permission. Name of Road Length of Road Existing Road Width Proposed Road Width Affected Road Width Municipality No. of Properties Affected No. of Consents Taken No. of Structural Compensation Paid No. of Structural covered by Court Order		Yes
<b>9</b>	Facilitate entry of and maintenance of following data, at a minimum, on Road Widening		Yes

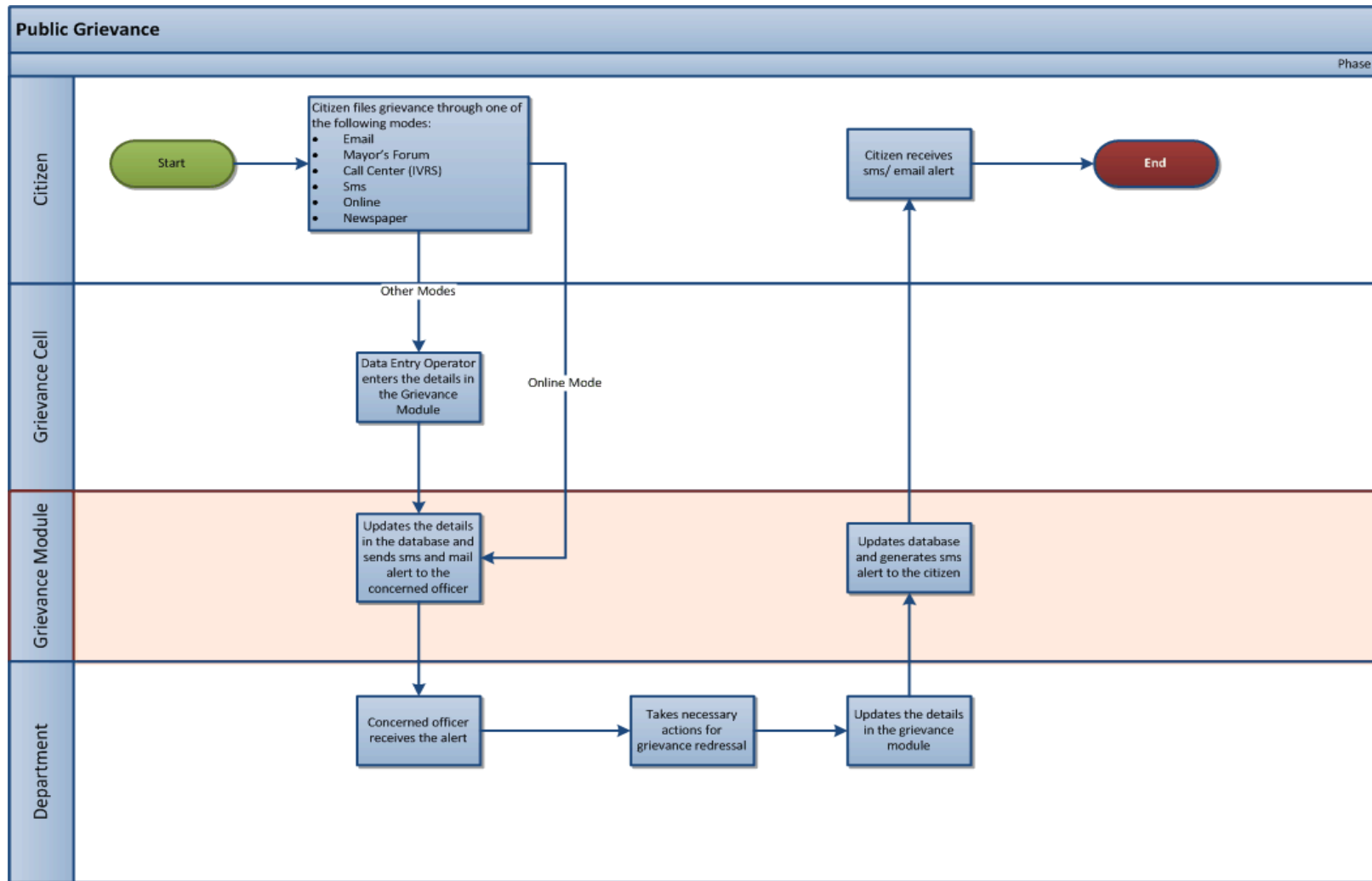
<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module ( Yes / No)</b>	<b>Proposed Module ( Yes / No)</b>
<b>10</b>	Facilitate entry and maintenance the following details by the system in relation to the approved layout: Reserved Open Spaces Bus Bays Parking Lots Play Grounds Junction Improvements Encroachments Drains Water Supply Sewerage Electricity Lines		Yes
<b>11</b>	Facility to upload details from the Land Acquisition of Revenue Department		Yes
<b>12</b>	Integration with GIS so that once the Layout is approved there shall be simultaneous update in the master plan		Yes

### **3.6.5. Public Grievance**

This module is one of the most important modules in terms of serving the citizen. The grievances received by the corporation are forwarded to the concerned departments, which are dealing with the substantive function linked with the grievance for redress underintimation to the complainant. The department will take upon the grievance for redressing. The HOD will follow them regularly till their final disposal. On the basis of the grievances received, the corporation identifies the problem areas, which are complaint-prone.



## Process Map: Public Grievance:



**Process Description:**

<b>Service Name</b>	<b>Public Grievance</b>		
<b>Service Objective</b>	To attain and resolve the public grievance.		
<b>Service Function</b>	Grievance Redressal	<b>CCMC Department</b>	All
<b>Process Owner</b>	HoDs		
<b>Service Category</b>	G2C	<b>Citizen Relevance</b>	Yes
<b>Process Input</b>	Application	<b>Process Output</b>	Necessary Actions for Grievance Redressal
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	<p>Citizen files grievance through one of the following modes:</p> <ul style="list-style-type: none"> <li>• Email</li> <li>• Mayor's Forum</li> <li>• Call Center (IVRS)</li> <li>• Sms</li> <li>• Online</li> <li>• Newspaper</li> </ul> <p>For Online Mode: the citizen directly enters the necessary data in to the website</p> <p>For other modes the data Entry Operators enters the necessary details into the website.</p>		Citizen/ Data Entry Operator
Step 2	Updates the details in the database and sends sms and mail alert to the concerned officer		Grievance Module

Step 3	Concerned officer receives the alert	Concerned Officer
Step 4	Takes necessary actions for grievance redressal and updates the details in the grievance module	Concerned Officer
Step 5	Updates database and generates sms alert to the citizen	Grievance Module
Step 6	Citizen receives sms/ email alert	Citizen

### Process Analysis and Proposed To- Be Functionalities:

Various modes of lodging the complaints / grievance are available in the current process. The process is semi-automated and there is no backend involved for the departmental workflow. The details at specific junctions of the process flow are entered manually in the system for status tracking purpose. There is no possibility for uploading the Action taken Report by the concerned officer. Satisfaction levels of citizen on the action taken report also could not be identified as there is no provision in the current system to capture the feedback. The analysis in terms of functionalities that are already present and that are to be proposed are mentioned in the following table;

S. No.	Requirement	Existing Module ( Yes / No)	Proposed Module ( Yes / No)
<b>User Authentication</b>			
<b>1</b>	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes	
<b>2</b>	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric		Yes

	Authentication Methods such as Finger Print Technology etc for second level of authentication may be considered and justification is to be provided for the same		
<b>Master maintenance</b>			
<b>3</b>	Ability to maintain different types of grievances caused to the citizens, department or section that needs to address the grievance, number of days within which the grievance needs to be addressed and nature of grievance whether it is financial or non-financial – this facilities are not present.	Yes	Nature of Grievance (financial/ non-financial)
<b>4</b>	Ability to maintain the statuses of the grievances registered in the Municipality (Add/Modify/ Search).	Yes	
<b>5</b>	Ability to maintain the details of work/application that has not been addressed within the prescribed time, number of days of delay and compensation paid per day in case of delay in SLA of the grievances registered in the Municipality (Add/Modify/ Search) (compensation category is not there in this Corporation)	Yes	
<b>6</b>	Ability to maintain the details of officers designated to redress grievances mapped to the department-section.	Yes	
<b>7</b>	Ability to maintain the compensation details from the Officer Responsible and payment details to the citizens if the applications are not processed within the prescribed time. (Breach of SLA).		Yes
<b>8</b>	Ability to maintain ULB wards details	Yes	
<b>9</b>	Ability to map each application is related to a particular department- section.	Yes	
<b>Grievance Registration</b>			
<b>10</b>	Ability to accept applications, generate unique grievance id and generate acknowledgement and verify status with the unique grievance id	Yes	

11	Ability to allow section heads to allot the grievance to the concerned officer responsible and update the status of the registered grievance	Yes	
12	Ability to update the status after each level of necessary action has been taken	Yes	
13	Ability to verify the specified time limit of grievance Re-dressal and calculation of compensation to be paid to citizen as per time limit		Yes
14	Ability to integrate with other modules such as Property Tax, Water Tax using the unique Grievance ID.		Yes
<b>MIS &amp; Reports</b>			
15	A section wise grievance register is printed for a given period with its status.	Yes	
16	Statistics Report on section-wise number of grievances received/ handled/ pending/ disposed (Type wise/Zone wise/ward wise) and the details of staff attending it.	Yes	
17	Grievance Disposal Register department wise	Yes	
18	Grievance Status Summary	Yes	
19	Action taken reports		Yes
20	Analytical reports for Performance evaluation as an ULB and department wise.		Yes
21	Department wise SLA Parameters.		Yes
22	Status by source of complaint.	Yes	
23	Department-wise compensation paid along with Response Time for Grievance Resolution.		Yes
24	Survey report for Awareness levels among Citizens about the Grievance cell.		Yes
25	Grievances raised to public disclosure.		Yes

### **3.6.6. Procurement and Monitoring of Projects:**

All the procurement for various requirements of engineering department in particular is happening through e-Procurement. An in house e-Procurement application already exists in the Corporation of Coimbatore having certain modules. The detailed functionality of the existing system is discussed in the subsequent sections.

#### **e-Procurement:**

Following modules are proposed in the e-Procurement application:

- Creation and Approval of Indent
- Notice Inviting Tenders (NIT)
- Receive Bids
- Evaluate Bids and Award Contracts
- Dynamic Pricing (Auction)
- Supplier Management
- Contractor Management
- e-Procurement (Goods) Contract Management
- Indent Management
- Order Management Inventory Management (Health Services)
- Create and Approve Requisition
- Purchase Orders to Payment
- Management Information System (MIS) & Miscellaneous
- Localization
- Workflow and Configurability
- Personalization

### Existing and Proposed To- Be Functionalities:

The detailed mapping of functionalities in the existing and proposed modules is mentioned in the following table:

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
<b>User Authentication</b>			
1.	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes	
2.	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc. for second level of authentication may be considered and justification is to be provided for the same		Yes
<b>Create Indent</b>			
1.	Facilitates online creation of the works indent.		Yes
2.	Facilitates hierarchy based workflow in the system for creation and approval of the indent.		Yes
3.	Allows linking of the indent with the overall project code.		Yes
4.	Provides online templates for the indents & estimate preparation.		Yes
5.	Facilitates upload of documents and plans.		Yes
6.	Facilitates storing of the Schedule Of Rates (SOR in the system).		Yes
7.	Integration with existing budgeting/project management module or back-office application.		Yes
<b>Approve Indent</b>			

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
1.	Facilitates online review of submitted indent by the relevant approver and capture comments of the approvers at each stage. Captures references of all indent actions (creation, approvals, rejections, etc.).		Yes
2.	Supports use of Digital Certificates for providing administrative approval and technical sanction online. Allows attaching of supporting documents with the online approval order.		Yes
3.	Allow tracking of the indent throughout the creation and approval cycle using the unique indent number.		Yes
4.	MIS: Support generation of reports on: Indents created, by type of work, value, region, etc. Indents approved, rejected, and reasons for the same.		Yes
<b>Prepare and Publish NIT</b>			
1.	Facilitates online creation of the NIT. The online template (form) should provide relevant fields to facilitate easy entry of information by the creator.		Yes
2.	Provides library of forms/templates for NIT, and tender forms.		Yes
3.	Able to able to upload a tender document to the system.	Yes	
4.	Ability to seamlessly integrate with the indenting module.		Yes
5.	Facility to select the type of tender (single, open, restricted) at the time of NIT creation.	Yes	
6.	Allow to specify the minimum requirements to be fulfilled by a bidder against each evaluation parameter.	Yes	
7.	Allows the bidder to bid against a parameter, if the bidder does not fulfill the minimum requirement specified against		Yes



S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	that parameter.		
8.	Allow selection of multiple bid evaluation stages.		Yes
9.	Facility to enter the tender schedule in the system.	Yes	
10.	System automatically disallows downloading of tender form beyond the last date of procurement of tender document, disallow viewing of a bid by the department staff before the bid opening date, etc.	Yes	
11.	Allow online submission of the draft NIT to the competent authority for approval.		Yes
12.	Facilitate time-tracking based escalation in case of delays at any stage of approval.		Yes
13.	Supports online review and approval of the draft NIT.		Yes
14.	Allows upcoming, open, and awarded tenders to be posted on the e-Procurement website	Yes	
15.	Viewing of the NIT requires the login information of the enlisted contractors.		Yes
16.	Facility to upload multiple corrigendum and addendum linked to the original NIT.	Yes	
17.	Allow tenders to be tracked throughout their lifecycle in terms of stage of processing, comments at various stages of evaluation, and the decisions made.	Yes	
18.	Online generation of reports regarding sale/download of tender docs and receipt of fees/EMD, list of bidders, etc.	Yes	
<b>Received Bids</b>			
1.	Allows intending bidders to download the tender document from the e-Procurement website without paying the tender document fee (or on payment as decided by the	Yes	

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	State).		
2.	Provides Integration with payment gateways for online payment of EMD, tender document fee, etc., as decided by the State.		Yes
3.	Allows registered contractors to upload and store the frequently required certificates, statements.	Yes	
4.	Allows registered contractors to log-on to the e-Procurement website for submission of bids.	Yes	
5.	Provides templates and support multiple contractors bidding as a consortium.		Yes
6.	Facilitates upload of drawings, technical specifications, contractor's terms & conditions (where requested in NIT), and other data on the project along with the bids.	Yes	
7.	Facilitates double authentication of the bidder using Digital Certificates: first at the time of login on system, then again at the time of submitting the price bid.	Yes	
8.	System does not allow a bidder to submit a bid or to edit an earlier submitted bid beyond the last date of bid submission.	Yes	
9.	Provides functionality for holding pre-bid meeting online.		Yes
10.	Allow contractors to track the status of their bids online using the bid submission number		Yes
11.	Audit trails for entire tender lifecycle, from NIT creation to bids received and selected.		Yes
<b>Evaluate Bids &amp; Award Contract</b>			
1.	Supports online access and viewing of bids by the Inviting Officer on the scheduled date & time of bid opening.	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
2.	Supports workflow for evaluation, and approvals (from competent authorities, tender committees, etc.).	Yes	
3.	Supports separate workflows for bid evaluation based on number and type of stages employed (Pre-Qualification, Technical, Commercial and Techno-commercial evaluation stages).	Yes	
4.	Facilitates system tracking of the evaluation process.		Yes
5.	Generate compliance matrices and comparative charts of received bids to aid in evaluation by the Inviting Officer, and tender committee.	Yes	
6.	System allows evaluation & compilation of the common set of terms & conditions.	Yes	
7.	Record comments from all approvers at different stages of evaluation.		Yes
8.	Support automatic evaluation of technical and price bids by the system using pre-specified criteria.	Yes	
9.	Support online viewing of tender opening event simultaneously by remote bidders (e.g. in the form of chat).		Yes
10.	Facilitate viewing/downloading of bid evaluation results and bids of other qualified bidders, depending on the evaluation stage.		Yes
11.	Supports automatic/manual revision of the list of eligible bidders for sending out alerts for online tender opening event, based on the result of the initial stages of evaluation.	Yes	
12.	System recommends LI for selection by default.	Yes	
13.	On rejection of a bid at any stage, system makes it mandatory for the competent authority to provide valid	Yes	

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	reason for the same.		
14.	Archiving of the entire tender proceedings as per the IT Act, 2000.	Yes	
15.	<b>MIS:</b> Support generation of reports on: Tenders floated by value, type of work, & region-wise, etc.	Yes	
<b>Dynamic Pricing (Auction)</b>			
1.	Provides simplified menu based workflow to create online auction by the Auction Administrator.	Yes	
2.	Allows users to be created and assigned different roles like that of Auction Administrator, Departmental Originator, Super-Originator, etc.	Yes	
3.	Facilitates specification of the following auction parameters at a minimum: <ul style="list-style-type: none"> <li>Item name and quantity</li> <li>Bid Decrement/Increment</li> <li>Auction period or end time</li> <li>Automatic extension time window</li> </ul>	Yes	
4.	Facilitates proxy bidding for contractors, if decided by the Department.		Yes
5.	Supports the following options: <ul style="list-style-type: none"> <li>Both Reverse and Forward auctions</li> <li>Auction types- English, Dynamic Sealed bid, etc.</li> <li>Auction rules- lowest/highest bid wins, highest/lowest quantity wins etc.</li> </ul>		Yes
6.	Supports multi variable bidding, assigning weights to different variables and use of formulae in an auction.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
7.	Supports dependent auctions i.e. it should open an auction only on the successful completion of the previous auction.	Yes	
8.	Allows department to assign weights to different contractors based on their past performance and quality in an auction.		Yes
9.	Allows viewing of the lowest going price in real time, by the bidders.		Yes
10.	Allows Inviting Officer to view history of items and price bids during the live auction and after with date and time stamp.	Yes	
11.	Disallows divulging the identity of the participating bidders on the system.	Yes	
12.	Supports display of images or multi-media content, URL, documents, and spreadsheets attachment with each auction item.		Yes
13.	Provide option to the departmental administrator to auto-approve or manually approve the winner in the auction.	Yes	
14.	Support for parcel auctions.		Yes
15.	Allow generation of MIS on types of auctions and results, contractor participation, %savings in price, etc.	Yes	
16.	Allow department to send notifications and pop-up messages to participating bidders during the auction.		Yes
17.	Show in real-time the time remaining for close of the auction up to the last second to both department administrator and participating bidders.	Yes	
18.	Provide a contractor administration module to add, delete,		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	enable or disable the contractors or contractor group.		
<b>Supplier Management</b>			
1.	Single site for Dept. /ULBs registration as well as for applying for a DSC.		Yes
2.	Allows contractors/suppliers to apply online for departmental registration as well as for procuring the necessary DSC.	Yes	
3.	Allows system to issue a unique application number to each applicant for departmental registration as well as for DSC.	Yes	
4.	Allows applicants to track the status of his application online using the application numbers provided to them.		Yes
5.	Maintains database of enlisted contractors, architects, suppliers with proper contact information to send out alerts on new tenders, corrigendum, GOs, etc.		Yes
6.	Tracks the validity period of departmental registration (and blacklisting period) and DSCs of contractors.	Yes	
7.	Facility to the contractor to upload required documents (certificates, statements, etc.) in his personal space available to him after registering online.	Yes	
8.	Facilitates applicants to save incomplete (partly filled) registration application online for a specific period of time (e.g. 90 days) before submitting for review.		Yes
9.	Provides single point login for submitting response to tenders of any department.	Yes	
10.	Single point login for submitting response to tenders of any department.	Yes	

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
11.	Facilitates registered contractors to update information on their business, address, etc. from time to time on the system.	Yes	
<b>Contract Management</b>			
1.	Provides template library for contracts with common set of terms and conditions.		Yes
2.	System tracks contract through various stages <ul style="list-style-type: none"> <li>• Active, close, terminated.</li> <li>• Pre contract stages such as under construction (contract document under construction)</li> <li>• Under negotiation (negotiations underway between department and supplier) should also be supported.</li> </ul>		Yes
3.	Facilitates digital signing of rate contract by the competent authority on the system, and issue of the same to the selected supplier.	Yes	
4.	Allows selected supplier to receive and acknowledge the electronic copy of RC on the system using his digital signature certificate.		Yes
5.	Allows integration of the Competitive Bidding and RC Catalogue Management modules to facilitate instant availability of information on contract terms and conditions, payment conditions, delay clauses, etc. to the RC Catalogue Management module.		Yes
6.	System alerts the Stores in-charge and the contracted suppliers when the contract is approaching its renewal date.		Yes
7.	Allow extension of contract allowed under special		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	conditions. System should request specification of appropriate reasons for the extension.		
<b>e-Procurement (Goods) Contract Management</b>			
1.	Template library for contracts with common set of terms and conditions. Further, user should be able to define the contract on the selected vendor.		Yes
2.	Systems tracks contract through various stages.		Yes
3.	Facilitate digital signing of rate contract by the competent authority on the system, and issue of the same to the selected supplier.  Allow selected supplier to receive and acknowledge the electronic copy of RC on the system using his digital signature certificate.	Yes	
4.	Allows integration of the Competitive Bidding and RC Catalogue Management modules to facilitate instant availability of information on contract terms and conditions, payment conditions, delay clauses, etc. to the RC Catalogue Management module.		Yes
5.	System alerts the Stores in-charge and the contracted suppliers when the contract is approaching its renewal date.		Yes
6.	Allows extension of contract allowed under special conditions.		Yes
<b>Indent Management</b>			
1.	Rate contract catalog contains the item name, item code (system generated or manual, as decided), a description of the item, unit of measurement, supplier name, supplier part		Yes



S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	number (if any), rate contract unit price, etc.		
2.	Allows products to be identified (searched) by more than one specific identifier such as description, item code, etc.		Yes
3.	Allows the maintenance and hosting of individual catalogues to be controlled according to the terms of an individual agreement between the department and its particular suppliers.		Yes
4.	Allow catalogues in a compliant format, to be transacted through the system for the following options: <ul style="list-style-type: none"> <li>• Supplier maintains and hosts the catalogues</li> <li>• Department maintains and hosts the catalogues</li> <li>• Suppliers' and/or department maintain catalogues that are hosted by the vendor.</li> </ul>		Yes
5.	Support steps for updating catalogues such as editing, reviewing, and releasing catalogues for publishing. Any supplier updated catalogue must be approved by the department before publishing.		Yes
6.	Allows the department to construct and maintain menus (directory) for the catalogues/items on the system.		Yes
7.	Allows flexible pricing on the system for an item.		Yes
8.	Facilitate assignment of unique code to items and sub items.		Yes
9.	Facility to control viewing of selected item catalogues based on the permission level of the user.		Yes
10.	Support multiple currency and language for catalogues.		Yes
<b>Order Management Inventory Management (Health Services)</b>			
1.	Facilitates tracking of inventory position of items using		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	unique item identifier.		
2.	Facilitates update of items receipts by departmental users.		Yes
3.	Facilitates specification of reorder points in the system.		Yes
4.	Allows configuration of order size based on the consumption of the user.		Yes
5.	Allows configuration of order size based on the consumption of the user.		Yes
6.	Tracks inventory levels and consumption information at the consumer entities and stores to generate inventory reports, track stock outs, etc.		Yes
<b>Create and Approve Requisition</b>			
1.	Facility for raising an online requisition by different users (Purchasers).		Yes
2.	Automatically generate a unique requisition number to each new requisition allowing it to be tracked on the system.		Yes
3.	Allow each participating purchasing department to define workflow, privileges, and set parameters that govern the approval processes required for requisitions.		Yes
4.	Provide the following requisition related features: <ul style="list-style-type: none"> <li>• Allow attaching of files along with the requisitions.</li> <li>• Create part requisition that can be completed at a later time</li> <li>• Save requisitions for multiple use</li> <li>• Cancel/modify requisition</li> <li>• Support multiple delivery addresses</li> </ul>		Yes
5.	Support requisitions for listed goods and services in various		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	categories such as hardware, software, office equipment, drugs and pharmaceuticals, motor vehicles, maintenance services, etc.		
6.	Support electronic shopping basket functionality when procuring using online catalogues.		Yes
7.	Allow setting of requisition consolidation period.		Yes
8.	In case of editing/rejection of requisition by the approver, the approver should be able to provide reasons for the same in the system.		Yes
9.	Integration with existing budgeting module (of purchasing Departments) or back-office application to facilitate validation of order cost with available departmental budget, to avoid cost overruns.		Yes
<b>Purchase Orders to Payment</b>			
1.	Automatic creation of PO, once the requisition has been approved by the appropriate authority.		Yes
2.	System should consolidate POs based on the parameters specified by a department.		Yes
3.	<p>In relation to POs, the following should be supported:</p> <ul style="list-style-type: none"> <li>• Create &amp; release of PO to the selected single supplier.</li> <li>• Create &amp; release of split PO to the selected suppliers.</li> <li>• Create &amp; release of POs in one lot or multiple need based orders.</li> <li>• Creation of balance between easy and difficult delivery destinations or policy as defined by the</li> </ul>		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	department.		
4.	Allow editing/cancellation by the purchaser/purchasing department of the system generated PO before release.		Yes
5.	System should provide for entering comments/reasons.		Yes
6.	The purchaser/purchasing department should be able to selectively release POs. Automatic release of PO to the supplier only when such configuration is provided by the purchasing department.		Yes
7.	Allow the following modes of release of PO to the suppliers: <ul style="list-style-type: none"> <li>• Directly update the suppliers' operational systems, if available</li> <li>• Email with attachments</li> <li>• Fax</li> <li>• Printed output</li> </ul>		Yes
8.	Support electronic confirmation from the supplier upon receipt of the online PO, using his DSC.		Yes
9.	Automated email alerts to facilitate the creation and approval workflow in the organization.		Yes
10.	Allow suppliers to maintain user accounts on the portal. All alerts, documents etc. are posted and/or mailed to these accounts.		Yes
11.	Maintain record of all POs released supplier wise for the generation of the draw reports to be used for demand estimation for future procurement.		Yes
12.	Allow entering of QA request for the third part QA agency.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
13.	Allow the QA agency to post the QA inspection results on the system. System should alert the supplier, PO owner of the posting.		Yes
14.	Support updating of receipt information on the system as follows: <ul style="list-style-type: none"> <li>• Receipt of quantities more or less than the PO quantity, but within specified tolerances.</li> <li>• Return part orders by line items, providing reason for return.</li> <li>• Cancel if supplier short delivers, or of unacceptable quality.</li> </ul>		Yes
15.	Allow purchaser to issue and update the GRN on the system.		Yes
16.	Allow supplier to raise a bill request on the system for the delivered goods, for the subsequent release of the payment. System should automatically generate bill on the basis of PO, GRN, and QA report entered into the system.		Yes
17.	Allow settlement of payment after three way matching (Bill, PO, goods receipt note) either on the system or on the department's internal financial system.		Yes
18.	Allow integration with payment gateways.		Yes
19.	Support Purchasing Card (P-Card) functionality.		Yes
20.	Allow maintenance of QA inspection records, and GRNs (or rejection notices) issued by the purchaser against each PO, for existing suppliers.		Yes
21.	Allow configuration of the workflow for bill verification and		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
	release by the purchasing department.		
22.	Maintain auditable record of all requisitions, POs, approvals, rejections, deliveries, and cycle times for these processes.		Yes
<b>Management Information System (MIS) &amp; Miscellaneous</b>			
1.	Facilitates Department to configure/develop reports on different parameters for trend analysis, reports on contractor participation etc.		Yes
2.	Provides the option for reports to be saved and printed in different formats e.g. excel, word etc.		Yes
3.	Common instrument numbering system for the State (Unique procurement instrument identifier), if decided.		Yes
4.	Facility to conduct opinion polls from contractors/suppliers, departmental users, in order to improve the functionality/services of the e-Procurement solution.		Yes
5.	Help section for the contractors/suppliers and departmental users. FAQ section to be built and continually updated with recent learning's.		Yes
6.	Sections providing policy documents of department, terms of use, rules of tendering, feedback, queries, etc. should be provided on the site.	Yes	
7.	System validations at the time of data entry, and issue of system generated numbers (e.g. tender submission, contractor registration numbers, etc.) so that incorrect entries and duplications are avoided.		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
8.	Auto population of form fields with previously entered data, as applicable. Facilitate users to modify the auto-populated fields, as applicable.		Yes
<b>Localization</b>			
9.	<p>In respect of local settings:</p> <ul style="list-style-type: none"> <li>The base currency of the System must be Indian Rupees.</li> <li>However, system should support other currencies, such as required in case of global tenders.</li> <li>The System must be compliant with Indian tax regulations and other relevant legislation.</li> <li>The System should be compliant with Indian IT act 2000 and other relevant legislation.</li> </ul>	Yes	
<b>Workflow and Configurability</b>			
1.	Application workflow and privileges should be capable of being configured based on the organization structure of the department.		Yes
2.	Each department level configuration should be able to support multiple sub-departments to take care of the multiple locations and divisions within the department.		Yes
3.	<p>The work flows should be flexible and configurable based on:</p> <ul style="list-style-type: none"> <li>The product category</li> <li>Spending limits</li> <li>Approval limits</li> <li>Intra department relationships</li> <li>Inter department relationships</li> </ul>		Yes

S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
4.	Supports transaction level assignment of responsibilities. The authorized user should be able to assign different users for: <ul style="list-style-type: none"> <li>Accepting tender fee</li> <li>Tender opening at all the stages</li> <li>Issuing corrigendum's</li> </ul>		Yes
5.	Dynamic workflows should be facilitated where the creator/approver can select the next approver/reviewer.		Yes
6.	Supports event based alerts to the authorities during the creation and approval process.		Yes
7.	Supports configuration of roles such as the system administrator, super user for the departments.		Yes
8.	Supports the diverse requirements of multiple departments.		Yes
9.	Supports time stamping of all workflow steps such as creation, submission, approval, rejections, etc.		Yes
10.	Supports integration of the e-Procurement solution with existing legacy systems or enterprise resource planning (ERP) modules to facilitate seamless data flow between the applications.		Yes
<b>Personalization</b>			
I.	Supports user specific portals (entry points). The user portals can be differentiated based on the type and level of the user, such as different views for departmental users, contractors, the Governmental users (Secretary, Minister, CM, etc.). The views will contain content that is relevant to the type of user.	Yes	



S. No.	Requirement	Existing Module (Yes/ No)	Proposed Module (Yes/ No)
2.	Simple graphical user interface (GUI) providing ease in navigation and use. Provision of clear display of server date and time, user details, etc. on all pages.	Yes	

### 3.6.7. Personnel Information System

There is an existing in house personnel Information system in Corporation of Coimbatore. The following modules would be provided as a part of the proposed Personnel Information System:

- Manpower Planning
- Position Management
- Promotions
- Employee Separation
- Relevance & Timeliness of Accessing Information
- Reporting
- Integration and Interface
- Workflow Recruitment
- Interviewing
- Online Forms
- Contractual terms
- Reporting
- Performance Management
- Training Development
- Self Service
- Compensation Management - Benefit Plans

- Managing Benefits
- Managing General Provident Fund
- Travel Management
- Payroll Processing - Payment and allowance & Deduction Processing
- Bonus Triggering
- Payment / Deduction Types
- Fixed Payments/ Deductions
- Variable Payments/ Deductions
- Suspensions Functions
- Advance Payments
- Statutory Contribution Administration
- Payroll Master Record
- Cost Tracking
- Pay Slip Presentation
- Reporting
- Integration and Interface
- Workforce Administration - Maintain Basic Data
- Employee History
- Employee History
- Job Information
- Employment Contracts
- Contract Tracking
- Security Levels
- Prior Work Experience
- Checklists
- Templates
- Dependents/Beneficiaries
- Leave Management - Absence Data
- Annual Leave
- Self Service

- Leave Schedule
- Employee Relationship Management - Disciplinary Actions
- Employee Grievances
- Reporting
- Loan and Advance Management - Loan Management
- Management of Employees Qualifications - Qualifications Management

### Existing and Proposed To- Be Functionalities:

The detailed mappings of the existing and proposed functionalities are mentioned in the following table:

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
<b>User Authentication</b>			
1.	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords..	Yes	
2.	Second level of security The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc. for second level of authentication may be considered and justification is to be provided for the same		Yes
<b>Manpower Planning</b>			
1.	Enable users to maintain a head-count budget of the		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	ideal workforce, which will be used to look at the variances based on the actual staff strength.		
2.	Ability to identify gaps of required competencies and available competencies.		Yes
3.	Define budgets against Departments, jobs, grades, positions or any combination of these.		Yes
4.	Ability to review budgets over a period of time. This review should be able to be made by Department, division, unit etc. Also by job/position or combination.		Yes
5.	Ability to view the status of budgets and actual and also variances of budgets over time.		Yes
<b>Position Management</b>			
6.	Ability to “encumber” (reserve) a position that is not currently filled		Yes
7.	Ability to track the history of the position (e.g. former employee(s) in position) and also maintain position and pay history of current employees.	Yes	
8.	Ability to update salary amounts for each classification and scale/bracket.	Yes	
9.	Ability to automatically calculate and transfer salary when an employee transfers to a different Department/division, as authorized, even mid-pay period.	Yes	
10.	Ability to assign multiple employees to a single position (job sharing).		Yes
11.	Ability to assign a single employee to multiple		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	positions.		
12.	Ability to track filled and vacant positions by position number.		Yes
13.	Ability to plan Shifts and Schedule manpower accordingly.		Yes
14.	Ability to administer multiple shift schedules.		Yes
15.	Ability to identify shift plans for Departments and work crews based on actual or forecasted workload.		Yes
16.	Ability to identify requirements by type of job or specific qualifications		Yes
17.	Ability to administer shift plans considering defined requirements along with employee preferences, qualifications, and availability.		Yes
18.	Ability to process day-to-day changes in the shift schedule based on transactions that affect requirements or availability of staff.		Yes
19.	Ability to identify and utilize on-call staff.		Yes
20.	Ability to administer various workweeks and part-time arrangements.		Yes
<b>Promotions</b>			
21.	Ability to capture data regarding proposals for promotions for both gazetted and non gazetted employees from different Departments/ULBs	Yes	
22.	Ability to link promotions to a variety of employee related issues.	Yes	
<b>Employee Separation</b>			

S. No.	Requirement	Existing Modules (Yes/No)	Proposed Module (Yes/No)
23.	Ability to capture data regarding proposals for resignations for allemployees from different Departments	Yes	
24.	Ability to reject resignation proposal of employees placed undersuspension for disciplinary reasons		Yes
<b>Relevance &amp; Timeliness of Accessing Information</b>			
25.	Ability to maintain employee records and data tables on an effectivedate basis, allowing inquiry and reporting for effective manpowerplanning and budgeting.	Yes	
26.	Ability to/raveling/flexible security to provide access to informationon a “need to know” basis.	Yes	
<b>Reporting</b>			
27.	MIS can be for a particular date or date range, in different fields likeDepartment, section, name and designation of the employee etc. Thesystem should be able to generate, but should not be limited to, thefollowing reports: <ul style="list-style-type: none"> <li>i. Staff turnover</li> <li>ii. Staff movement</li> <li>iii. Vacancy requisitions</li> <li>iv. Promotions</li> <li>v. Resignations</li> <li>vi. Employee Cost</li> </ul>		Yes
<b>Integration and Interface</b>			
28.	Ability to export information to spreadsheets (e.g.	Yes	

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	Microsoft Excel)for year-end review.		
29.	Ability to interface with knowledge database to access informationrelating to Government Orders and checklists for the processing ofInformation.		Yes
<b>Workflow Recruitment</b>			
30.	<p>Ability to maintain application information in the fields of (indicative):</p> <ul style="list-style-type: none"> <li>i. Name,</li> <li>ii. Gender,</li> <li>iii. Address,</li> <li>iv. Telephone number,</li> <li>v. Business number,</li> <li>vi. Preferred method of contact (e.g. phone, mail, etc.)</li> <li>vii. Date of application,</li> <li>viii. E-mail address,</li> <li>ix. Source of application,</li> <li>x. Date of Birth,</li> <li>xi. Ethnicity,</li> <li>xii. Status (e.g. applied, declined, recruited etc.)</li> <li>xiii. Type of application (e.g., temporary, permanent etc.)</li> <li>xiv. Salary history,</li> <li>xv. Employment history,</li> <li>xvi. Language proficiency</li> </ul>	Yes	ix, xii, xiii, xviii, xx, xxii

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
	xvii. Education, xviii. Disability (Y/N) xix. Position(s) applied for (multiple) xx. Exams (e.g., psychical/medical) xxi. Work Restrictions, xxii. Licenses/certifications/registrations, xxiii. Caste category xxiv. Passport number xxv. Martial status xxvi. PAN number.		
31.	The system shall be able to maintain job information in the fields of but is not limited to: <ul style="list-style-type: none"> <li>i. Number of job openings</li> <li>ii. Employee number of person requesting, authorizing, and initiating requisition</li> <li>iii. Job descriptions</li> <li>iv. Position number/job code</li> <li>v. Salary Plan</li> <li>vi. Scale of salary grades</li> <li>vii. Job location</li> <li>viii. Working hours</li> <li>ix. Start date</li> <li>x. Full-time/part-time</li> <li>xi. Necessary educational level, work experience.</li> </ul>	iii, iv, vi, vii, xi	i, ii, v, viii, ix, x
32.	Ability to provide a summary of the applicants that have been hired against the job requisition.		Yes



<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
33.	System acceptance of electronic applications (e-mail, Intranet,Internet, electronic forms) including optical scanning to enter resumes and convert into data for further references.		Yes
34.	Ability to enable applicants to learn about and apply for multiple jobs.		Yes
35.	Ability to track the number and types of positions for which an applicant applies.		Yes
36.	Ability to compare requirements of a vacant position with an applicant's existing skills to determine necessary training and overall fit.		Yes
37.	Maintenance of different types of tests and associated questionnaire.		Yes
38.	Ability to generate questionnaire based on competencies defined for a job.		Yes
39.	Ability to record and maintain proper information for cases of applications on compassionate grounds.		Yes
40.	Ability to maintain complete employee information, historical and current. Especially in the area of maintaining images (photos, CV's, appraisals, etc.).		Yes
41.	Ability to resurrect an expired employment list if required.		Yes
42.	Ability to notify applicant that additional documentation is needed or put an eligible applicant on hold till the Department gets all needed information for hiring.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
43.	Ability to track progress of a candidate in any step of the recruitment process.		Yes
44.	Ability to maintain history of interviewed but not selected candidates.		Yes
<b>Interviewing</b>			
45.	System possesses efficient tools like a Scheduler/ Calendar		Yes
46.	Ability to view a list of applicants invited for an interview at theState.		Yes
47.	Allow users to enter interview results and select successful applicants.		Yes
48.	Allow users to view a listing of successful applicants and theirrelevant details.		Yes
<b>Online Forms</b>			
49.	Ability to provide for online forms where Human Resource systemsdo not provide self-service or when self-service is available as abackup.		Yes
50.	Availability of a repository for online forms.		Yes
51.	Ability to submit forms electronically to processing center.		Yes
52.	Ability to index forms to allow easy user access.		Yes
<b>Contractual terms</b>			
53.	Ability to record the following basic information about the contractbetween the State and the candidate: i. Contract duration		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
	ii. Contract type iii. Contract information.		
<b>Reporting</b>			
54.	Ability to generate, but is not limited to, the following reports: i. Applicant selection ii. Applicant statistics iii. Applicants by Name iv. Applicants by education and qualifications v. Vacancies vi. Applications made on compassionate grounds vii. Promoted applicants viii. Transferred applicants ix. Direct recruitments		Yes
<b>Performance Management</b>			
55.	Ability to position specific KRAs and targets		Yes
56.	Ability to use a variety of appraisal models as templates to support appraisal process.		Yes
57.	Enable users to define rating codes to assist in rating an employee's performance. These codes may be alphanumeric.		Yes
58.	Facility to allow users defines a rating model and the associated rating scales and weights of relevant employee skills or competencies.		Yes
59.	Ability to define an unlimited number of criteria, criteria groups and evaluation scales to meet the		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	needs of your department needs.		
60.	Ability to maintain appraisal model in a catalogue.		Yes
61.	Ability to create anonymous appraisals in the system.		Yes
62.	Ability to deliver just-in-time training to fill performance gaps.		Yes
63.	Ability to include qualifications as an appraisal element.		Yes
64.	Ability to send reminders to respective employees to submit/ review appraisals.		Yes
<b>Training Development</b>			
65.	System should provide every course with a unique code, specific topics and objectives.		Yes
66.	Ability to use planning tools to determine course demand for a period based on pre-bookings and/or actual attendance from the previous year.		Yes
<b>Self Service</b>			
67.	Enablement of application of training for approval by the appropriate supervisors via self-service functionality.		Yes
68.	Ability to allow employees to search for classes based on topic, text, language and location, etc. using a full-text search engine.		Yes
69.	Ability to allow employees to view training calendar and details.		Yes
70.	Ability to allow employees to enroll in classes or cancel participation in classes.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
71.	Ability to allow employees to pre-book classes that are not yet scheduled.		Yes
72.	Ability to view date, time and content on courses and events that have been booked.		Yes
<b>Compensation Management - Benefit Plans</b>			
73.	Allow enrolment of employees in benefits programs and plans. Employees will be enrolled according to the following criteria: i. Base ii. Grade iii. Years of service		Yes
74.	Allow setting up the following types of benefits plans for employees over a specified number of years old (in order of priority): i. Health benefits ii. Insurance benefits for employees, spouses, and children iii. Investment (unit trust) iv. Leave benefits v. Pensions		Yes
75.	Ability to define a benefit plan as required.		Yes
76.	Ability to assign benefit plan codes by employee based on their classification (to identify level of benefits for which each employee qualifies)		Yes
77.	System to allow the entry of pre requisites needed.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
78.	System to have the ability to define plan status.		Yes
79.	Ability to track employee's coverage and coverage level based on their position.		Yes
<b>Managing Benefits</b>			
80.	<p>The system shall allow for the maintenance of the following benefits costs and employee deductions information:</p> <ul style="list-style-type: none"> <li>i. Age-graded rate tables</li> <li>ii. Salary rate tables</li> <li>iii. Service rate tables</li> <li>iv. Flat rate tables</li> <li>v. Calculation rules tables <ul style="list-style-type: none"> <li>a. Premium</li> <li>b. Coverage</li> <li>c. Age</li> <li>d. Service dates</li> <li>e. Rounding rules</li> <li>f. Min/max coverage</li> </ul> </li> <li>vi. Benefits deduction from payroll (e.g. insurance premiums).</li> </ul>		Yes
<b>Managing General Provident Fund</b>			
81.	Allow the CMA/ULBs to define eligibility rules for admission to GPF for employees.		Yes
82.	<p>Allow the CMA/ULBs to:</p> <ul style="list-style-type: none"> <li>i. Process GPF balance</li> <li>ii. Process GPF temporary advance</li> </ul>		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	iii. Modifying GPF subscription.		
<b>Travel Management</b>			
83.	Ability to interface with knowledge database to access information relating to Government Orders and checklists for the processing of leave travel concessions (LTC's) for employees.		Yes
84.	Ability to enter travel data by respective employee with prior approval by respective approver, either before or after the trip.		Yes
85.	Ability to facilitate application of travel or tour advances and send trip requests automatically to the appropriate approver via workflow.		Yes
<b>Payroll Processing - Payment and allowance &amp; Deduction Processing</b>			
86.	Ability to calculate payments based on employee compensation rules, and employment contract.	Yes	
87.	Ability to calculate different type of pays. For example basic, allowances, bonus etc.	Yes	
88.	Ability to define pay type. For example hourly/daily/weekly/monthly etc.	monthly	hourly/daily/weekly
89.	Ability to define different pay elements. Pay elements could be fixed value or calculation based on other pay elements	Yes	
90.	Ability to group employees by Department in any manner without having to set up multiple employee records for each Department.	Yes	
91.	Ability to maintain an integrated security design to	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
	ensure that employees don't get paid twice in one payroll period without authorization.		
92.	Ability to make automatic calculations for flexible benefits.	Yes	
93.	Ability to view Employee costs per Department/division and costs per job, position.	Yes	
94.	Ability to give employees the option of 'prepaying' some of their deductions when they go on leave. The system should automatically deduct funds from an employee's prepaid deduction balance if the employee's normal pay is not sufficient to cover the deduction	Yes	
95.	Ability to make automatic calculation of mid-pay period changes to pay, benefits, deductions, and taxes.	Yes	
96.	Ability to generate monthly pay-slips for the employees, for at least last 6 months.	Yes	
97.	Ability to pay an employee from more than one Department and split salary and benefits among Departments, including retirement benefits.	Split salary	Rest
98.	Ability to process payroll on the following frequencies: i. Biweekly, ii. Monthly iii. Semi-monthly, iv. Bi-monthly, v. On-demand (i.e., terminations, vacation	Monthly	Rest



S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	advance, court order,ratification.).		
99.	<p>Allow maintenance of salary code tables and code descriptions. It should also have the ability to formulate multiple user-defined codes including, but not limited to:</p> <ul style="list-style-type: none"> <li>i. Salary,</li> <li>ii. Hourly rate,</li> <li>iii. Vacation,</li> <li>iv. Daily Allowance</li> <li>v. HRA</li> <li>vi. Deputation Allowance</li> <li>vii. Sick,</li> <li>viii. Overtime,</li> <li>ix. Meals and lodging,</li> <li>x. Expense reimbursement,</li> <li>xi. Various overtime reason codes,</li> <li>xii. Uniform allowance,</li> <li>xiii. Bonus and Premium pay,</li> <li>xiv. Taxable non-cash benefits,</li> <li>xv. Administrative Leave,</li> <li>xvi. Travel Allowances,</li> <li>xvii. Disability Pay,</li> <li>xviii. Holidays,</li> <li>xix. Others (user defined).</li> </ul>	Salary, HRA and Bonus	Rest all has to be ensured
100.	Allow different account codes and cost centers for different employee types can be defined for the same		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	salary code.		
101.	Ability to allow use of an earning or deduction code to calculate another earning or deduction code as part of formula calculations.		Yes
102.	Payroll database should be automatically updated when changes are made to the employee record database	Yes	
103.	Time sheet information could include, but not be limited to: <ul style="list-style-type: none"> <li>i. Employee name,</li> <li>ii. Employee number,</li> <li>iii. Department name &amp; number,</li> <li>iv. Work function number/description,</li> <li>v. Class number/title,</li> <li>vi. Regular pay hours,</li> <li>vii. Overtime hours and reason,</li> <li>viii. Leave information,</li> <li>ix. Multiple pay rate,</li> <li>x. Leave balances,</li> <li>xi. Sick balances,</li> <li>xii. Other balances (set by any user defined criteria).</li> </ul>		Yes
104.	Ability to enter and monitor attendance details of all the employees. Attendance details can be entered in the fields of: <ul style="list-style-type: none"> <li>i. Time spent in office,</li> </ul>	iii	i.& ii.

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
	ii. Overtime hours and reasons, iii. Type of leave if not attended work.		
105.	Ability to enter attendance information: i. Online, interactive by employee, ii. Batch, iii. Multiple data entry capability including card readers, barcoding, etc.	iii	i.& ii.
106.	Ability to account for time based on type of absence or attendance.		Yes
107.	Ability to submit corrections	Yes	
108.	Ability to request cancels or modifies requests time off, and receive approval or denial from immediate supervisor.		Yes
109.	Ability to monitor attendance records on a daily, weekly, and biweekly basis.		Yes
110.	Ability to pay all types of reimbursements through payroll. (Medical etc.)		Yes
111.	Ability to track and maintain work schedules by position, classification, and/or employee.		Yes
112.	Ability to track actual hours worked by work schedule by position, classification, and/or employee.		Yes
113.	Pay check procedure should incorporate but not be limited to the following fields: Personal account number i. Department number	Yes	iii, v, vi, vii, x, xvi, xvii, xviii, xix, xxi, xxii

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
	<ul style="list-style-type: none"> <li>ii. Employee name</li> <li>iii. Period ending</li> <li>iv. Issue date,</li> <li>v. Class number</li> <li>vi. Pay rate</li> <li>vii. All types of payment and reimbursements (e.g., regular, overtime, paid leave, etc.)</li> <li>viii. Gross pay</li> <li>ix. All earning and deduction types adequately itemized and defined by taxability status</li> <li>x. Cumulative hours for time-limited employees,</li> <li>xi. Current and Year to Date Totals:</li> <li>xii. Employee pension</li> <li>xiii. Income tax</li> <li>xiv. Insurance</li> <li>xv. All other deductions</li> <li>xvi. Medical compensation</li> <li>xvii. Vacation hours balance</li> <li>xviii. Sick leave hours balance</li> <li>xix. Other leave hours balances (multiple categories)</li> <li>xx. Gross earnings</li> <li>xxi. Taxable/non-taxable earnings</li> <li>xxii. Workers' comp (injury leave)</li> <li>xxiii. Other deductions and amounts</li> <li>xxiv. Total deductions</li> </ul>		

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	xxv. Net pay.		
114.	Ability to automatically update payroll database when Finance Department makes pay rate changes.		Yes
115.	Ability to handle salary advances & facilitate recovery of salary advances on the payday.		Yes
116.	Ability to make back dated calculations. For example if staff received promotion letter in June, effective April 17th, the system should be able to pay off difference for 15 days of April and month of May.	Yes	
117.	Ability to get reports on payroll for comparisons. For example Year-to-date and Last year-to-date, this month and last year-same month etc.	Yes	
118.	Ability to update master salary scales during wage/ salary revisions.		Yes
119.	Ability to pay a rate greater than a specific rate based on a percentage entered as a bonus rate in the employee's database.		Yes
120.	Ability to calculate bonuses and premiums based on fixed rupee amounts, percentages of base pay, pro-rated on hours of paid service or paid with minimum paid service and to designate which bases are subject to mandatory payroll deductions.		Yes
121.	Ability to cash out accumulated leave balances by user defined formulas and criteria.		Yes
122.	Ability to have payroll adjustments reflected in correct pay period.		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
I23.	Ability to have an established base pay regardless of hours worked.		Yes
I24.	Ability to have different hourly rates for an employee for different days within the same payroll period		Yes
I25.	Ability to allow for pre-calculation of payroll outside of the normal payroll system.		Yes
I26.	Ability to re-calculate payroll for changed hours, etc.	Yes	
I27.	Ability to make one time payment. For example for people working on a specialized program, Employee of the month/ year reward etc.		Yes
I28.	Ability to provide for online ad-hoc calculation of employees paycheck amount.		Yes
I29.	Ability to support separate tax tables for special pay calculations (flat tax).		Yes
I30.	Ability to perform online calculation of pay and benefits for terminated employee based upon termination date.		Yes
I31.	Ability to report all changes to employee's pay, deductions, taxes, etc.	Yes	
I32.	Ability to report tax payments by employee.	Yes	
I33.	Ability to change tax filing status and number of exemptions of a particular employee.		Yes
I34.	Ability to report retirement deductions by employee.	Yes	
I35.	Ability to transfer salary and benefit costs electronically to the budget application from payroll and human resource modules for position budgeting		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	and personnel salary and benefit projections.		
136.	Ability to calculate different types of bonus. E.g. performance bonus etc.	Yes	
137.	Ability to calculate bonus outside the system.		Yes
138.	Facility to import and update as pay element for employees	Yes	
139.	Ability to add or update bank information for direct deposit and expense reimbursement.		Yes
140.	Ability of system to calculate bonus based on appraisals, grades and days on work in a year.		Yes
141.	Any updation of records, pay elements should be with a reason code.		Yes
142.	Ability to produce benefit eligibility lists upon request for employees.		Yes
143.	Ability to request downloads of payroll information to begin budget preparation by Finance Department.		Yes
144.	Ability to provide for payroll reconciliation facilities. For example provide reconciliation between the following: <ul style="list-style-type: none"> <li>i. Differences in salaries of existing employees from previous years</li> <li>ii. Differences in Salaries between new and resigned employees</li> </ul>		Yes
<b>Bonus Triggering</b>			
145.	Ability to calculate bonuses, based on the following information:		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	<ul style="list-style-type: none"> <li>i. Employee type</li> <li>ii. Employment term</li> <li>iii. Bonus details</li> <li>iv. Bonus calculation base</li> <li>v. Reason code</li> <li>vi. Date joined</li> <li>vii. Last pay date</li> <li>viii. In service date</li> </ul>		
146.	Ability to accept user-defined formulas for calculating bonuses.	Yes	
147.	Ability to make fixed payments to employees, by effective dates.  The system shall also be able to trigger backdate adjustments and to pro-rata bonuses.	Yes	Yes
148.	Ability of system to generate bonus letters, increment letters.		Yes
<b>Payment / Deduction Types</b>			
149.	Allow for, but is not limited to, the following deductions and advancement: <ul style="list-style-type: none"> <li>i. Medical benefit deductions</li> <li>ii. Special retirement scheme deduction</li> <li>iii. Ad hoc and regular deductions and payments</li> <li>iv. Loans and advancements</li> <li>v. Housing Loans</li> <li>vi. Vehicle</li> <li>vii. Educational</li> </ul>	Yes	



S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	viii. Festival advances ix. Court order deductions x. Fixed and variable payments and deductions.		
<b>Fixed Payments/ Deductions</b>			
I50.	Ability to calculate fixed monthly payments/deductions (FPD). FPD's may be amount or formula		Yes
I51.	Amount-based FPD is paid/ deducted directly from employee payrolls.		Yes
I52.	Allow FPD deductions to be pro-rated according to the effective date and expiry date of the FPD.		Yes
<b>Variable Payments/ Deductions</b>			
I53.	Ability to calculate variable payments/deductions (VPD). VPD's may be amount or formula-based.		Yes
I54.	Amount-based VPD is paid/ deducted directly from employee payrolls.		Yes
I55.	VPD input and approval workflow can be decentralized to branch departments.		Yes
<b>Suspensions Functions</b>			
I56.	Ability to provide suspension functions in the Payroll system.		Yes
I57.	Ability to handle different types of suspension, including all payroll exceptions.		Yes
I58.	Allow suspension functions to be used for the suspension of payments, or processing of specific payment types/for specific periods.		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
<b>Advance Payments</b>			
159.	Ability to perform advance payments (e.g. exit staff, hardship reasons).		Yes
160.	Allow a staff's final payment to be made on a "last working date", instead of the "last pay date".		Yes
<b>Statutory Contribution Administration</b>			
161.	Ability to define all rules and criteria, calculate record, withdraw, and/or deduct contributions, at the minimum, of statutory contributions according to the respective Statutory Acts. The statutory returns should be captured by the system.		Yes
162.	Ability to incorporate all types of statutory reports and have the ability to meet new laws and requirements as they develop.		Yes
<b>Payroll Master Record</b>			
163.	Display the status of each of the following payroll transactions: i. Incur-Month ii. Payroll Audit Trail Code iii. Trans-Status iv. Ledger-Posting-Status v. Settlement Means.	i, iv, v	ii, iii
<b>Cost Tracking</b>			
164.	Allow users to track, at the minimum, the following cost: i. Project payroll cost.		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
<b>Pay Slip Presentation</b>			
165.	Ability to generate employee pay slips on-line for printing by employees through Employee Self-Service.		Yes
166.	Group items on pay slips by salary code and by incur-month.	Yes	
167.	Capability to handle different pay slip designs	Yes	
<b>Reporting</b>			
168.	Ability to maintain an unlimited earnings history and should have the capability of generating different payroll related reports. For example <ul style="list-style-type: none"> <li>i. Payroll register</li> <li>ii. Deductions register</li> <li>iii. Tax register.</li> </ul>	i, ii	iii
169.	Ability to maintain an efficient archiving program to manage the generation, administration and evaluation of archived payroll files.		Yes
170.	Provision for the following user friendly reporting capabilities: <ul style="list-style-type: none"> <li>i. Easy data management and information retrieval</li> <li>ii. Data mining and analysis</li> <li>iii. Flexible reporting</li> <li>iv. Annual package tracking.</li> </ul>	i, iii	ii, iv
<b>Integration and Interface</b>			
171.	Integrated to the following systems of the finance department:		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	i. General Ledger ii. Accounts Payable.		
172.	Ability to integrate with travel expenses and benefits in order to trigger automatic payments/deductions in employee payroll records.		Yes
<b>Workforce Administration - Maintain Basic Data</b>			
173.	Ability to automatically generate the Employee ID, personal data in a sequentially order.	Yes	
174.	Ability to build model for <u>Department</u> /division etc. The Departmental Chart can be viewed from different angles like positions held, <u>vacant</u> , <u>vacant budgeted</u> , <u>vacant not budgeted</u> , <u>temporary responsibility etc.</u>	Yes	Yes (underlined section)
175.	Ability to change users' indicative data such as name, address, contact information, beneficiaries, etc	Yes	
176.	Ability to track and maintain personnel action changes for each employee.	Yes	
177.	Ability to track employee language abilities by language, level of proficiency.		Yes
178.	Ability to track transactions based on the transaction date	Yes	
179.	Ability to notify via e-mail when action is required regarding employees (e.g., personnel changes, evaluation dates, etc.)		Yes
180.	Ability to transfer an employee to a different Department or payroll unit without reentering the	Yes	

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	entire employee file.		
181.	Ability to automatic monitor dates for Human Resource processes, allowing officials to specify date-driven reminders to initiate followup activities (for example, expiration of probationary period, payincreases, return to work, performance review)		Yes
<b>Employee History</b>			
182.	Maintenance the employee history, including tracking employeeevents in chronological order (e.g. hire, rehire, transfer dates)	Yes	
183.	Ability to track at all procedural levels by type, dates and employee: <ul style="list-style-type: none"> <li>i. Salary Change</li> <li>ii. Performance Report Appeals</li> <li>iii. Grievances (status, date of event and final ruling)</li> <li>iv. Workers compensation status</li> <li>v. Disciplinary actions (paid/unpaid etc.)</li> <li>vi. Future leave approval (e.g., approved, deferred, rejected)</li> <li>vii. Status changes</li> <li>viii. Leave status (vacation, sick, injury or any other user definable field)</li> <li>ix. Work Restrictions (e.g. no lifting)</li> <li>x. Modified Duty (e.g. night duty hours)</li> </ul>	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
184.	Ability to maintain employee personnel history online beyond the life of the employee		Yes
185.	Ability to record exit interview information (e.g. interviewer name)		Yes
186.	Ability to maintain employee turnover data (e.g. termination/resignation reasons)	Yes	
<b>Job Information</b>			
187.	Ability to maintain, but is not limited to, the following information: <ul style="list-style-type: none"> <li>i. Employee employment designation</li> <li>ii. Employee grade level</li> <li>iii. Employee job level</li> <li>iv. Employee designation</li> <li>v. Employee probation dates</li> <li>vi. Employee compensation rate &amp; frequency</li> <li>vii. Employee annual benefits base rate</li> <li>viii. Employee pay scales.</li> </ul>	ii, iii, iv, viii	i, v. vi, vii
<b>Employment Contracts</b>			
188.	Allow users to set up standard employment contracts with the following information: <ul style="list-style-type: none"> <li>i. Contract types (standard, bonding, overseas posting)</li> <li>ii. Contract duration</li> <li>iii. Contract clauses (effective dates, status, description, comment)</li> <li>iv. Contract templates for different employee</li> </ul>		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	types.		
189.	Enable users to generate and print out employment contracts.		Yes
<b>Contract Tracking</b>			
190.	The system shall maintain the following contract information: <ul style="list-style-type: none"> <li>i. Duration</li> <li>ii. Start date</li> <li>iii. Expected end date</li> <li>iv. End date</li> <li>v. Minimum &amp; maximum length of service</li> <li>vi. Employee-specific clauses</li> <li>vii. Probation dates &amp; reasons.</li> </ul>		Yes
<b>Security Levels</b>			
191.	Tracking the system security level and the security key card(s) issued to employees.		Yes
192.	Ability to maintain the following security information: <ul style="list-style-type: none"> <li>i. Effective dates</li> <li>ii. Status</li> <li>iii. Card number</li> <li>iv. Comments</li> <li>v. Employee ID.</li> </ul>	i, v	ii, iii, iv
193.	Provision for information confidentiality and allow for different user access level.	Yes	
194.	Allow users to audit, track, add, amend and delete information based on user security access level.	Yes	

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
<b>Prior Work Experience</b>			
195.	Maintain the following prior work experience of employees: <ul style="list-style-type: none"> <li>i. Employment tenure (start and end dates)</li> <li>ii. Names of previous employers</li> <li>iii. Relevant work experience</li> <li>iv. Location</li> <li>v. Job titles</li> <li>vi. Pay rates.</li> </ul>	i, iii, iv, v, vi	ii.
<b>Checklists</b>			
196.	Ability to create checklists for users to ensure performance of established procedures.		Yes
197.	Ability to assign checklists to users and monitor the status of tasks in assigned checklists.		Yes
<b>Templates</b>			
198.	Ability to maintain templates for report and standard letters. Once a report template is generated it should be available to all authorized users to avoid duplication		Yes
<b>Dependents/Beneficiaries</b>			
199.	Allow users to record the following information on dependents and/or beneficiaries: <ul style="list-style-type: none"> <li>i. Names</li> <li>ii. Relationship to employee</li> <li>iii. Type of relationship</li> <li>iv. Addresses/contacts</li> <li>v. DOB</li> </ul>	Yes	



S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	vi. Place of birth vii. Location viii. Gender ix. Marital status x. Occupation		
<b>Leave Management - Absence Data</b>			
200.	Allow users to define absence data such as: i. Absence types ii. Codes.		Yes
<b>Annual Leave</b>			
201.	Ability to track leave by type, (e.g. maternity, casual, sports, optional, commuted, half pay, study, hospital, earned, disability, compensatory etc.), reason, hours accrued, accrual frequency (e.g., monthly, pay period, etc.), automatic adjustments based on length of employee service, carryover balances and accrual limits.		Yes
202.	Ability to keep track of holidays and to define weekly holidays and other holidays.		Yes
203.	Ability to send e-mail to supervisor to withdraw/disable facilities of an employee when he/she is going on leave. For example NT password etc.		Yes
204.	Ability to track leave used “in lieu” of sick leave.		Yes
205.	Ability to set a trigger files for notification for expiration of a type of leave status (e.g. expiration of a temporary position, etc.).		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
206.	Ability to trigger required supporting documentation based on use of leave (e.g. doctor's notes, etc.).		Yes
207.	Ability to track concurrent leave status (e.g. maternity leave with sick leave).		Yes
208.	Number of days of a leave to be rule based.		Yes
209.	System not to force above or similar calculations or adjustments unless confirmed as the Department may want to adjust sick leave against available annual leave.		Yes
210.	Ability to track leave taken by employee, type of leave, hours taken, and balance.		Yes
211.	Ability to alter criteria as per the changes in the policy.		Yes
212.	Ability to suspend and restart accruals.		Yes
213.	Ability to track eligibility and qualifications for family medical leave, sick subjective/other leave.		Yes
214.	Ability to compute termination pay-offs.		Yes
215.	Ability to track annual physical exams as well as other physical tests (e.g., Fitness test, etc.).		Yes
216.	Ability to track professional license renewals required for position (e.g., medical positions) and to track reimbursement of renewal costs.		Yes
217.	Ability to track safety-sensitive position employees for drug/alcohol testing and maintain separate confidentiality for record.		Yes
218.	Provision for leave accruals earned during paid absence should be accumulated but not credited for		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	use until employee returns to duty.		
219.	Ability to assign leave benefits based upon level and classification of employee.		Yes
220.	Facility for leave encashment.		Yes
221.	Provide a detailed order stating the approval/rejection of leave request.		Yes
<b>Self Service</b>			
222.	Enable on-line application of leave for approval by the appropriate supervisors via self-service functionality. Users shall also be able to view their leave entitlements and balance on-line.		Yes
223.	The system: <ul style="list-style-type: none"> <li>i. Check for approval from supervisors</li> <li>ii. Check for a substitute appointment for the person taking leave.</li> </ul>		Yes
<b>Leave Schedule</b>			
224.	Allow for supervisor to view employee's leave schedule and allow for tracking of staff working on shifts. The system shall also allow for the creation of leave charts.		Yes
225.	Integrated to on-line Employee Attendance System		Yes
<b>Employee Relationship Management - Disciplinary Actions</b>			
226.	Allow users to maintain information on the following employee disciplinary activities: <ul style="list-style-type: none"> <li>i. Violations requiring disciplinary action</li> <li>ii. Disciplinary actions processes and activities</li> </ul>		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	iii. Types of disciplinary action iv. Details of disciplinary incidents and resolutions v. Tracking of disciplinary cases		
<b>Employee Grievances</b>			
227.	Allow users to maintain information on the following employee grievances: i. Types of workplace grievances ii. Grievance actions processes and activities iii. Types of grievances iv. Details of grievances and resolutions		Yes
<b>Reporting</b>			
228.	Ability to generate, but is not limited to, the following reports: i. Employee disciplinary history ii. Employee disciplinary letters iii. Employee grievances history		Yes
229.	Ability to provide for Employee movement tracking. It should be able to provide detailed MIS reports on employees. For example employee information in respect to hiring, job assignment, transfers, salary revision, awards, recognition, promotion, demotions, and warnings till the employee leaves the Department.		Yes
230.	Ability to link to the Confidential reports (CR)		Yes
<b>Loan and Advance Management - Loan Management</b>			
231.	Ability to accrue or charge interest either through a		Yes

S. No.	Requirement	Existing Modules (Yes/ No)	Proposed Module (Yes/ No)
	loan account orthrough a designated account.		
232.	Facility of e-mailing respective Departmental Branch (e.g. Treasuries & Accounts) to credit account of an employee and alsoe-mail an employee on approval or rejection of loan.		Yes
233.	Ability to recover loans on the salary day.		Yes
234.	System to provide for tiered interest rate facility.		Yes
235.	Ability to defer installment and recalculate installment values afterdeferment		Yes
236.	Ability to project loan commitment of a Department.		Yes
237.	Facilitate holding of different types of loans by a single employee.		Yes
<b>Management of Employees Qualifications - Qualifications Management</b>			
238.	Ability to define profiles for employees, applicants, work centers,tasks, jobs and positions, specifying the type of information to bestored in each profile such as qualifications, requirements,preferences, dislikes, and potential.		Yes
239.	Ability to identify specific requirements of a job or task as essential,allowing the comparison of individual candidates based on only themost important attributes.		Yes
240.	Ability to record the qualifications required while performing specific jobs or tasks, including work-related skills and specificcertifications or licenses in		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Modules (Yes/ No)</b>	<b>Proposed Module (Yes/ No)</b>
	the qualifications catalogue.		
241.	Ability to identify qualifications such as memberships/licenses that may expire and require renewal, and track expiration dates.		Yes
242.	Ability to link qualifications that are similar and define them as alternatives, meaning that one qualification can be used in place of another to fulfill all or some of another requirement; for example, several years of education may be an alternative to a year of experience		Yes
243.	Ability to match an individual's skills or qualifications to those required for a position to identify any gaps and then propose training and development plans to acquire the necessary skills		Yes
244.	Ability to track job classification in fields of: <ul style="list-style-type: none"> <li>i. Record of job classification code(s)</li> <li>ii. Licenses, Certificates and Registration requirements</li> <li>iii. Degree Requirement</li> <li>iv. Minimum Requirements</li> <li>v. Salary scale</li> <li>vi. Workers Compensation code</li> <li>vii. Employee type (part time or full time),</li> <li>viii. All other user defined information.</li> </ul>		Yes

### 3.6.8. Accounting System

The Accounts section of Corporation has accrual based double entry accounting system by adopting “Fund Based Double Entry Accrual Accounting System” (DEAAS). Currently software catering to some of the basic requirement of the Accounting system is being utilized and enhanced in the Corporation of Coimbatore.

Some of the modules of the proposed integrated Accounting system are discussed below:



Fig. Integrated Account System

### Existing and Proposed To-Be Functionalities:

The detailed mappings of the functionalities of the existing software and the enhancement requirements are mentioned in the following table:

S. No.	Requirement	Existing Module(Yes / No)	Proposed Module(Yes / No)
<b>User Authentication</b>			
1	<i>First level of security</i> The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes	
2	<i>Second level of security</i> The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc for second level of authentication may be considered and justification is to be provided for the same		Yes
<b>Accounting System</b>			
3	Facility for incorporating all formats for reporting and books of accounts as prescribed in the National Municipal Accounts Manual and Budget Manual.	Yes	
4	Facility for incorporating of existing formats of registers in specific ULB's.		Yes
5	<b>Some of the Reports required are</b> i. Accounts analysis reports (Revenue, Expenditure, fixed assets etc) ii. Charts of accounts listing report iii. Inactive accounts listing report	i, ii, v, viii-xiv	iii, iv, vi, vii,



<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module(Yes / No)</b>	<b>Proposed Module(Yes / No)</b>
	iv. Suspense accounts report v. Consolidation report vi. Inter department transaction details report vii. Unapproved inter-department transaction details report viii. General Ledger report ix. Journals Report x. Journals – Day book report xi. Journals- Vouchers report xii. Trial balance report xiii. Cash book reports xiv. Bank Reconciliation Statement		
<b>Payments</b>			
<b>6</b>	Facility for maintenance of master database of all suppliers, contractors and vendors.	Yes	
<b>7</b>	Facility for calculation of Sales Tax, Tax Deducted at Source etc.	Yes	
<b>8</b>	Accounting system should book the liability on entry of these amounts and an appropriate entry should be made based on double entry accrual based accounting principles.	Yes	
<b>9</b>	Allow add and modify invoices, credit and debit memos, pre- payments, holds, invoice notices etc.		Yes
<b>10</b>	Allow disbursement of payments(salary, contractors/suppliers, administrative expenses, PF, profession tax, etc)		Yes
<b>11</b>	Employee database and calculation of salary and		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module(Yes / No)</b>	<b>Proposed Module(Yes / No)</b>
	statutory (PF, PT, etc) payments for each employee		
<b>I2</b>	Entry of the consolidated salary and Statutory (PF, PT etc.) payment amounts for each department in the accounting		Yes
<b>I3</b>	Some of the Reports required are i. Final payment register - Yes ii. Payment exception report - No iii. Stopped payment report - No iv. Invoice register - No v. Invoice aging report - No vi. Invoice approval status report - Yes vii. Accounts payables trial balance report - Yes viii. Period close exception report - No ix. Posted invoice register - Yes x. Posted payment register - Yes xi. Unaccounted transaction report - No	i, vi, vii, ix, x	ii, iii, iv, v, viii, xi
<b>Receipts</b>			
<b>I4</b>	Receipts of collections (Property Tax, Water Tax, rent, Grants, Security Money and Earnest Money, etc.)	Yes	
<b>I5</b>	Enter and update citizens identification number, name and address		Yes
<b>I6</b>	Allow enter/ modify discounts or waivers		Yes
<b>I7</b>	Record/ Modify a bill raised as an asset	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module(Yes / No)</b>	<b>Proposed Module(Yes / No)</b>
<b>18</b>	<b>Some of the Reports required are</b> <ul style="list-style-type: none"> <li>i. Final receivable register- No</li> <li>ii. Revenue trend analysis statement- No</li> <li>iii. Ageing Reports for both debtor and creditor, (Ageing report should be user defined) - Yes</li> </ul>		
<b>Fixed Assets</b>			
<b>19</b>	Accounting System should be able to maintain the FixedAsset Register.	Yes	
<b>20</b>	Allow query asset based on asset number.		Yes
<b>21</b>	Allow add/update certain details like description or category, change an asset's location, responsible employee, Manufacturer, Model, Warranty details.		Yes
<b>22</b>	Facility to calculate the Depreciation of Assets, based on different formulae for example straight line method etc.		Yes
<b>23</b>	Allow mass addition transfer, mass depreciation, revaluation, retirement of assets		Yes
<b>24</b>	Update information from fixed asset module to general ledger Module		Yes
<b>25</b>	Some of the Reports required are Financial reports regarding assets Asset depreciation report Quarterly statement of departmental assets Transaction history report (Addition, transfer, Retirement etc) Asset register report Asset retirement report Asset by category report Cost detail report		Yes

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module(Yes / No)</b>	<b>Proposed Module(Yes / No)</b>
<b>Budget</b>			
<b>26</b>	Provision for budgeting	Yes	
<b>27</b>	Facility for display warning messages in case the budgetary limits are exceeded		Yes
<b>28</b>	Support analysis	Yes	
<b>29</b>	<b>Some of the Reports required are Budget approved report Budget trend analysis</b> Variance Analysis of Budget Vs Actual	Yes	
<b>Financial Statements</b>			
<b>30</b>	Balance sheet <ul style="list-style-type: none"> <li>i. Income and Expenditure account</li> <li>ii. Receipts and Payment Account – Showing the receipts and payments of cash major head wise along with schedules</li> <li>iii. Cash Flow – Showing the receipts and payments of cash bifurcated into operating, investing and financing activities</li> </ul>	Yes	
<b>31</b>	<b>Regular Registers:</b> <ul style="list-style-type: none"> <li>i. Abstract Register of Receipts and Payments</li> <li>ii. Register of Investments</li> <li>iii. Register of Adjustment</li> <li>iv. Advance Ledger</li> <li>v. Deposit Ledger</li> <li>vi. Loan Register</li> <li>vii. Fixed Assets Register</li> <li>viii. Appropriation Register</li> </ul>	Yes	

<b>S. No.</b>	<b>Requirement</b>	<b>Existing Module(Yes / No)</b>	<b>Proposed Module(Yes / No)</b>
	ix. Register of unpaid bills		
	x. Register of dishonored cheques		
	xi. Borough/ Zone/ Ward wise Accounts		

### **3.7. Additional Services**

#### **3.7.1. School Management System:**

School management system will provide any time; anywhere access which eases paper work and reduces the complexity and increase the efficiency and effectiveness. It aims to achieve the target which minimizes the manual work and enhances the whole working experience.

The Coimbatore Corporation is maintaining the administration of various Corporation schools.

Some of the proposed Modules of the School Management System will:

- School Information System
- Staff management
- Student Management
- Attendance Management System
- Exam Management System
- Health Management
- Free Distribution of Items
- Small Saving Scheme
- Fee Management System
- Inventory Management System

### Proposed To-Be Functionalities:

Currently all the processes are done manually. Some of the proposed functionality for the To-Be processes for the above mentioned sub modules are discussed below:

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	<b>School Information System:</b> <ul style="list-style-type: none"><li>• System should allow the capture all the necessary details of the school.</li><li>• The module should be able to maintain the Master details of school.</li><li>• This details should be integrated with the Master Plan</li></ul>	Yes
2.	<b>Student Management System:</b> <p>Should facilitate to capture the following details of the students during the time of admission:</p> <ul style="list-style-type: none"><li>• Name</li><li>• Parent's/Guardian's details</li><li>• Date of Birth</li><li>• Age</li><li>• Caste</li><li>• Community</li><li>• Religion</li><li>• Nationality</li><li>• Mother tongue</li><li>• Language studied</li><li>• Last school information (if applicable)</li></ul>	Yes
3.	<b>Staff Management System:</b>	Yes

S. No.	Functionality	Proposed in To-Be (Yes/ No)
	<p>Should capture the following details of the teacher/ staff during the time of recruitment</p> <ul style="list-style-type: none"> <li>• Name</li> <li>• Parent's/Guardian's details</li> <li>• Date of Birth</li> <li>• Age</li> <li>• Caste</li> <li>• Community</li> <li>• Religion</li> <li>• Nationality</li> <li>• Mother tongue</li> <li>• Qualifications</li> <li>• Previous work experience (if applicable)</li> </ul>	
4.	System should facilitate subject wise and class wise allotment of teachers to respective classes	Yes
5.	System should generate sms/ mail alert once the allotment of teacher is complete	Yes
6.	<p><b>Attendance Management System:</b></p> <ul style="list-style-type: none"> <li>• System should allow capturing of the attendance details of student and staff</li> <li>• System should generate sms alert regarding the attendance of students and send the same to the parents.</li> </ul>	Yes
7.	<p><b>Exam Management System:</b></p> <p>System should allow the CEO to prepare and populate the exam schedule</p>	Yes
8.	<p><b>Event Management System:</b></p> <p>System should capture all the events (sports event and</p>	Yes

S. No.	Functionality	Proposed in To-Be (Yes/ No)
	non-sport events) the extracurricular activities conducted by the school	
9.	<b>Free Distribution of Items:</b> <ul style="list-style-type: none"> <li>The system should allow to update the details of distribution of all the items (textbook, uniform, noon meal, notebook, bicycle etc.)</li> <li>This module should be liked with the inventory management of the school management system.</li> </ul>	Yes
10.	<b>Fees Management:</b> <ul style="list-style-type: none"> <li>System should allow the user to capture and update the fees payment details, dues list and generate the necessary reports.</li> <li>Should be able to populate the fee settings</li> </ul>	Yes
11.	<b>Health Management System:</b> <ul style="list-style-type: none"> <li>System should be able to capture the details of the medical camp details.</li> <li>System should be able to capture the details of the students (health reports, disease etc.)</li> </ul>	Yes
12.	System should able to generate customized reports as per the requirement of the higher authority	Yes
13.	<b>Examination Management:</b> <ul style="list-style-type: none"> <li>System should allow the CEO to schedule various examinations.</li> <li>System should be able to capture the details such as (Marks list/ grading, subject setting etc.)</li> </ul>	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	<ul style="list-style-type: none"> <li>System should be able to generate trend analysis regarding the student performance (subject wise, year wise etc.)</li> </ul>	
<b>14.</b>	<b>Inventory Management System:</b> <ul style="list-style-type: none"> <li>System should maintain accounts and inventory maintenance details</li> <li>Should allow the user to update the details of purchase, issue, stock etc.</li> <li>Should be linked to the Asset Management Module</li> </ul>	Yes
<b>15.</b>	<b>Small Saving Scheme:</b> <ul style="list-style-type: none"> <li>System should able the capture the details of the various schemes.</li> <li>System should be able to capture the details fo student registration, bank etc.</li> <li>System should be able to generate various reports as per the requirement of the authority (e.g. collection report/ deposit report/ withdraw report/ balance sheet etc.)</li> </ul>	Yes
<b>16.</b>	System should allow the circulars to be sent though alerts and mails to the recipient.	Yes
<b>17.</b>	System should allow online submission of admission form	Yes

### **3.7.2. Council Management System:**

The council is responsible for collectively developing policies through the adoption of bylaws and passing of resolutions. It is important to note that individual members of Council cannot make a decision on behalf of Council nor, individually, or they are able to give direction to staff. To do either, they must give a collective direction as a group at a properly convened meeting.

Council may not grant special privileges or immunities to individuals or corporations unless the Municipal Act specifically allows them to do so.

The Municipal Act requires that Council exercise its powers at regular or special meetings when a quorum is present. The Act allows each municipality to establish the size of its Council by bylaw.

The Coimbatore Corporation Council is constituted with an elected Mayor and Ward councilors. There are six standing committees dealing with different subjects as listed below to assist the council.

- Accounts Committee.
- Education, Park and Playfields Committee.
- Health Committee.
- Taxation and Finance Committee.
- Town Planning Committee.
- Works Committee.

#### **Accounts Committee**

- To review the Income and Expenditure of the Corporation.
- To review and approve of the action taken reports on the Audit Reports.
- To approve the lease and annual auction of revenue items up to Rs.7.5 Lakhs.
- To sanction administrative approval between 20 Lakhs and 30 Lakhs.

### **Education, Park and Playfields Committee**

- To review and approve the action taken against Education, Park and Playfields related issues.
- To sanction administrative approval between 20 Lakhs and 30 Lakhs.

### **Health Committee**

- To review and approve of the action taken on Health related issues.
- To sanction administrative approval between 20 Lakhs and 30 Lakhs.

### **Finance and Taxation Committee**

- The Committee will accord Administrative sanction of the estimates exceeding 30 Lakhs up to 50 Lakhs.
- It will fix the rate for the levy of Property Tax, Profession Tax and Non Tax, Lease Items and control the financial commitments.
- The Committee will review the Budget estimates of the Corporation and recommend to the Council for approval

### **Town Planning Committee**

- Any proposal will be submitted to the Council for decisions through the Committee with the views of the Committee.
- All machinery installation applications will be placed before the Committee for its approval for issue of installation license.
- The requests relating to the variations in the Master plan, detailed development plan such as change of land use, of roads, reservation on certain uses etc., will be placed before the Town Planning Committee for its views before placing these requests to the Council.
- The Committee can recommend any other technical works relating to Town Planning to the Council for its decision.
- To sanction administrative approval between 20 Lakhs and 30 Lakhs.

## Works Committee

- The Committee will review the works relating to Roads and drains, street lights, purchase of vehicles including maintenance etc.,
- To accord administrative approval between 20 Lakhs and 30 Lakhs.

### Proposed To-Be Functionalities:

Currently all the processes are done manually. Some of the proposed functionality for the To-Be processes for the above mentioned sub modules are discussed below:

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	System should save the master data in terms of the council members, roles and responsibilities of each committee etc.	Yes
2.	System should send sms alert to all the members of the respective committee before predefined period prior to meetings schedule.	Yes
3.	System should allow the concerned officer to upload the agenda, minutes of the meeting	Yes
4.	System should generate reports in terms of meeting held and the subject related to the meeting.	Yes
5.	System should allow the concerned officer to upload the decision taken in the meeting	Yes
6.	All concerned members should receive sms alert once any new upload or status change has happened into the system	Yes
7.	System should be able to generate reports which would reflect the impact of any decision taken.	Yes
8.	Concerned officer should be able to place the subject	Yes

<b>S. No.</b>	<b>Functionality</b>	<b>Proposed in To-Be (Yes/ No)</b>
	to the council prior to the meeting.	
9.	System should allow role bases access to the user	Yes
10.	Concerned members should be able to track the follow up activities once any decision is taken by the council	Yes
11.	System should facilitate integration with the Accounting system and Project Ward Works module of the application.	Yes

### **3.7.3. File Tracking System**

The File tracking process is carried out in the Coimbatore City Municipal Corporation wherein the details of the movement of the files among various departments of the corporation are recorded manually.

When a file received by a department official, the relevant department official checks and forwards it to next level officer with a note specifying their work along with an acknowledgement that they have completed their work. The file moves to each level officer until it gets solved. A Document Movement Register is used to track the path of the document manually. The record clerk who is in- charges for the particular department stores these documents.

#### **File Tracking Activities**

The following details are maintained manually by the CCMC

- List of available file details.
- Location of the file where it is kept.
- Workflow history.
- File status.

An automated file tracking system helps in systematically managing the movement of files within the department and outside the department. When a file is created a unique number should be generated, the number will help in tracking the status of the file. The brief details of the file and the concerned officials with whom the file is pending should also be displayed by the system. Reminder should also be processed for pending files. Proper tracking of any document which comes to the corporation can be tracked at any point which would enhance the transparency in the system. Since the application is web-enabled the citizen can real time access the status of his application given to the corporation and also know which official the file is holding.

**Modules to be included:**

- Creation of file and inclusion of letters
- File movement and acknowledgement
- Hold a file
- Track file on different parameters (generic search facility)
- File pendency section/ department wise
- Closing of file and moving to record room
- Reports
  - File Accessed History Reports
  - File Current Status Report
  - Staff Wise File Details Report
  - Department Wise File Details Report
  - Batch Wise File Report

### **3.7.4. Legal Issues Management**

The details of the legal issues relating to the Coimbatore Corporation in various courts like Supreme Court, High Court, District Court and other Courts are currently maintained manually.

The legal issues may be relating to the various departments of the Coimbatore City Municipal Corporation, which are as follows

- Revenue Department (Example: Taxation Related. Others include rent and lease)
- Town Planning Department (Example: Building construction violations related)
- Engineering Department (Example: Drainage systems, water pipe connections related)
- Public Health Department (Example: Public Health related)
- Establishment Department (Example: Admin related to Entire Corporation)
- Education (Example: Admin related to education)

The CCMC maintains the details of the cases classifying them into the following two categories

- Taxation Appeal Tribunal Case (TAT) Details.
- Other Case Details.

#### **TAT Case Details**

There is one Taxation Appeal Tribunal headed by an Honorable Sub Judge to hear appeals regarding property tax assessment cases. The following details are recorded manually by the CCMC:

- Property Reference Number.
- TAT Number.
- Details of the Property.
- Details of the person who filed the case.



### Other Case Details:

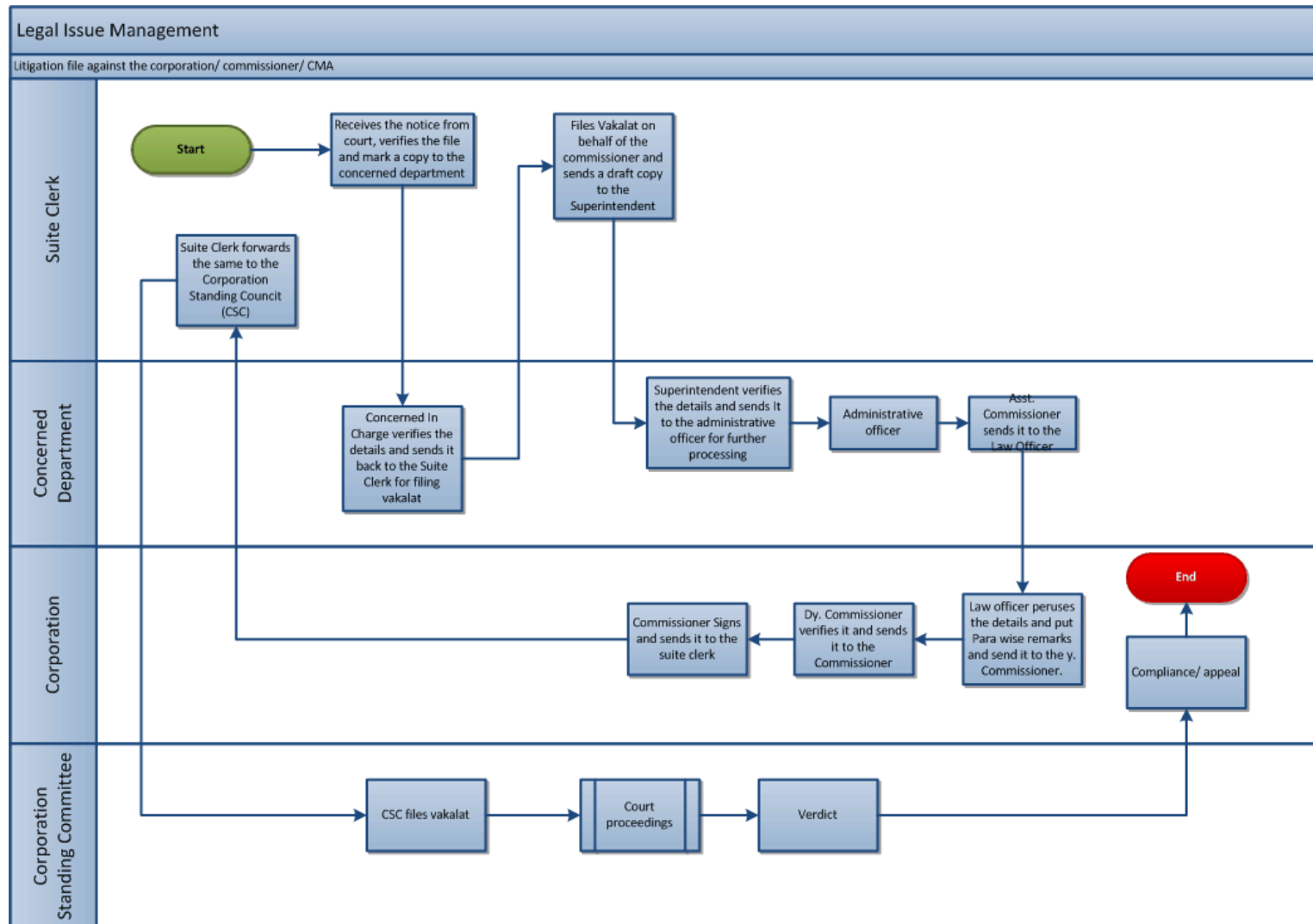
The following details are recorded manually relating to a case:

- Nature of the legal issue.
- Court details of the particular case.
- Case number and the details relating to the person who has filed the case.
- Advocate and the Respondents names.
- Details of the Department and Zone pertaining to the case.
- Subject and Interim Order of the case.

The following levels are maintained with respect to the legal issues. Different levels denote the public appeal order.

S. No.	Level	Name of the Court
1.	Level I	Taxation Appellate Tribunal, Labour Court, Consumer Court and other lowercourts.
2.	Level II	District Court
3.	Level III	High Court
4.	Level IV	Supreme Court

## Process Map: Litigation against the Commissioner/ Corporation/ CMA:

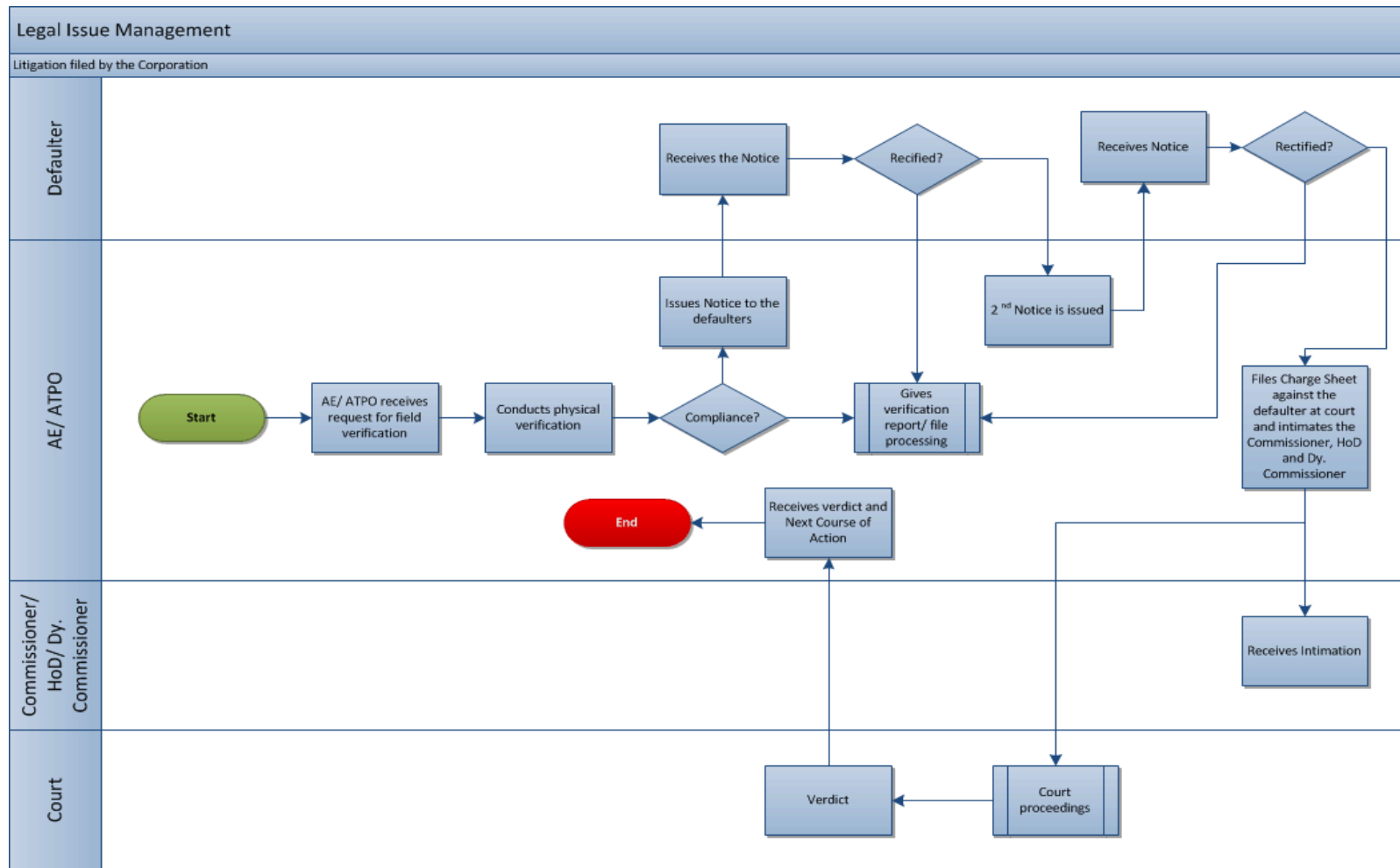


## Process Description

<b>Service Name</b>	<b>Legal Issue Management</b>		
<b>Service Objective</b>	Monitoring, track legal issue filed against the corporation		
<b>Service Function</b>	Law	<b>CCMC Department</b>	Legal Department
<b>Process Owner</b>	Commissioner		
<b>Service Category</b>	G2C, G2B, G2G	<b>Citizen Relevance</b>	Yes
<b>Process Input</b>	Court Notice	<b>Process Output</b>	Verdict
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	Receives and verifies the notice from court, marks a copy to the concerned department		Suite Clerk
Step 2	Concerned clerk verifies and sends to Suite Clerk to file vakalat		Concerned department
Step 3	Files vakalat on behalf of the Commissioner and sends a draft copy to the Superintendent		Suite Clerk
Step 4	Verifies details and sends to the administrative officer for further processing		Superintendent Concerned department
Step 5	Verifies and forwards		Administrative Officer
Step 6	Peruses details with para wise remarks and forwards to deputy Commissioner		Law Commissioner
Step 7	Verifies and sends to Commissioner		Deputy Commissioner
Step 8	Signs and forwards to Suite Clerk		Commissioner
Step 9	Forwards to Corporation Standing Committee		Suite Clerk

Step 10	Files vakalat	Standing Committee
Step 11	Court proceeding and verdict is awarded	Court
Step 12	Compliance/ appeal is initiated on the verdict	Corporation

## Process Map: Litigation by the Corporation:



## Process Description

<b>Service Name</b>	<b>Litigation Issue Management</b>		
Service Objective	To record, monitor and track litigations filed by the Corporation		
Service Function	Compliance	CCMC Department	Legal Department
Process Owner	Commissioner / Head of Department		
Service Category	G2C/ G2G/ G2B	Citizen Relevance	Yes
Process Input	Physical verification	Process Output	Verdict
<b>STEPS</b>	<b>PROCESS DESCRIPTIONS</b>		<b>RESPONSIBILITY</b>
Step 1	AE/ ATPO receives request for field verification and conducts physical verification with respect to compliance to norms		AE/ ATPO
Step 2	If norms are complied to, the verification report is processed, if not notice is issued to the defaulter		AE/ ATPO
Step 3	Receives the notice and rectifies the deviation/ violation and informs AE/ ATPO		Defaulter
Step 4	If rectification is not informed/ satisfactory 2 <sup>nd</sup> notice is issued		AE/ ATPO
Step 5	Receives notice and rectifies and informs AE/ ATPO		Defaulter
Step 6	If no intimation of rectification is received charge sheet is filed at court. Intimation is given to head of department, Commissioner and Deputy Commissioner		AE/ ATPO



Step 7	Court proceedings and verdict is awarded	Court
Step 8	Receives verdict and next course of action	AE/ ATPO

### Proposed To-Be Functionalities:

Currently all the processes are done manually and there is no backend. Some of the proposed functionality for the To-Be processes for the above mentioned sub modules are discussed below:

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	System should allow the suite clerk to upload the scanned copy of the received Notice	Yes
2.	System Should send alert to the concerned officers regarding the receipt of notice.	Yes
3.	System should allow the file processing as per the defined process flow.	Yes
4.	System should allow role based access.	Yes
5.	System should facilitate the status tracking of the file processing.	Yes
6.	System should auto escalate to the immediate higher authority if the work is not completed within the stipulated time.	Yes
7.	Should allow the concerned Law Officer to enter Para wise remarks	Yes
8.	System should allow the auto generation of the notices against the defaulters	Yes
9.	System should allow auto generation of charge sheet after feeding necessary data by the concerned officer	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
10.	System should automatically intimate the higher authority regarding the charge sheet generated	Yes
11.	System should remind the field level officer regarding the re inspection of the cases for which notices has already been served.	Yes
12.	Integration with Building plan/ layout plan/ revenue	Yes
13.	Should allow the uploading of interim and final orders received from the courts.	Yes
14.	System should generate reports: <ul style="list-style-type: none"><li>• Pending Cases Report with Government and CMA as respondent</li><li>• Pending Cases Court wise report submitted to the commissioner</li><li>• Pending Cases before TAT</li><li>• Judgement Delivered Cases which are allowed by the TAT</li><li>• Pending Cases Related to Labour Court</li><li>• Action taken report Related to Labour Court</li><li>• Time Bound Cases</li><li>• Pending Court cases related to the Revenue</li><li>• Level wise Pending/Completed/Ongoing Case Details</li><li>• Case Details by Department Wise</li></ul>	Yes





### 3.7.5. Online Booking Management System

Through this service citizen can book Marriage Hall / Community Hall, Auditorium, Grounds etc. Currently citizen can login the corporation website and check the availability of Auditorium and do advance booking of the Auditoriums. They can only check the status online and within 24 hour of booking online a citizen has to submit the registration from at zonal offices and after approval makes necessary payments to the zonal office after which the booking is confirmed.

#### Proposed To-Be Functionalities:

Currently all the processes are done manually and there is no backend. Some of the proposed functionality for the To-Be processes for the above mentioned sub modules are discussed below:

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	System should provide a detail Entry Screen for booking a new Marriage Hall / Auditorium /Ground / Community Hall.	Yes
2.	System should provide a Detail Report screen to check the availability of Marriage Hall /Auditorium / Ground / Community Hall location wise	Yes
3.	System should allow the capturing the details of the applicant for registration process	Yes
4.	System should allow the file processing as per the workflow	Yes
5.	System shall allow the competent authority to approve/ reject the application, online	Yes
6.	System should be integrated with online payment	yes



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
	gateway	
7.	System should issue the approval order online	Yes
8.	System should allow the applicant to cancel the booking order within a pre-defined time	Yes
9.	System should generate various report: <ul style="list-style-type: none"><li>• Date Wise Booking Details</li><li>• Ward Wise Report</li><li>• Zone Wise Report</li><li>• Category(Halls/ Auditorium/Grounds/Community Halls) wise Details</li></ul>	Yes
<b>Integration</b>		
10.	This module should be integrated with the following modules: <ul style="list-style-type: none"><li>• Accounting System</li><li>• Revenue Module</li></ul>	Yes



### **3.7.6. Asset Management System:**

Currently the Asset registers are maintained manually for which the tracking of the Assets and maintenance of the manual data is challenging. An automated Asset management module is proposed to enable efficient retrieval and maintenance of important data.

For enhanced efficiency and management of various assets of the corporation following sub module may be considered.

#### **Proposed To-Be Functionalities:**

The proposed Asset Management Module should consist of the following sub-modules:

- Asset Purchase
- Transfer IN
- Details of Movable and Immovable assets
- WIP / In house Capitalization
- Transfer Out
- Revaluation
- Reclassification
- Depreciation Rate Change
- Asset Disposal
- Asset Internal Transfer
- Warranty Replacement
- AMC Updation
- Insurance Updation
- Physical Verification and Reconciliation
- Reports



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	Yes
<b>Asset Classification &amp; Coding</b>		
3.	Coding for each fixed asset	Yes
4.	Coding based on Primary Group, secondary group, Territory group, Ward location and Serial number.	Yes
5.	The classification of assets for depreciation should follow the accounting codification structure.	Yes
<b>Asset Valuation</b>		
6.	Obtaining the Value of the assets with in a group	Yes
7.	Classification of high value and low value assets	Yes
8.	Fixed asset acquired at FOC or in respect of which no payment has been made to be valued at Re.I,	Yes
9.	Valuation of the Fixed assets at Historical cost for initial acquisition.	Yes
<b>Write-off</b>		
10.	Provision to write off the assets acquired during the	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	year having a value of less than 5000/- and to charge it to Income and expenditure account.	
<b>Capitalization</b>		
11.	Interest on borrowings shall be included in the cost of capitalization.	yes
12.	Provision to consider the self-constructed assets before capitalization.	Yes
13.	Provision to Capitalize the interest cost on new assets being developed / constructed by a ULB.	Yes
14.	Availability of rehabilitation expenditures on a asset and capitalization thereof.	Yes
15.	Provision for making addition to or improvement to the fixed asset that results in increasing the utility or useful life of the asset shall be capitalized and included in the cost of fixed asset.	Yes
<b>Revaluation of an Asset</b>		
16.	Provision for Revaluation of an Asset.	Yes
<b>Depreciation of an Asset</b>		
17.	Provision to charge depreciation on the following basis: Monthly Quarterly Yearly	Yes
18.	Posting of the depreciation in the financial accounting software.	Yes
19.	Auto Calculation of depreciation for assets purchased	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	before October 1st at full rate and after September 30th at 50% rate.	
20.	Provision for calculation of depreciation on Straight Line Method (SLM) and Written Down Value (WDV)	Yes
21.	The system should not calculate the depreciation after the disposal / retirement.	Yes
22.	Depreciation rate change with effective dates.	Yes
<b>Details of an Asset</b>		
23.	Provision to enter the residual value of an asset	Yes
24.	Provision to enter the useful life of an asset.	Yes
25.	Provision for accounting Intangible assets and amortize it across years.	Yes
26.	Provision to expense out the intangible assets below Rs.25000/-	Yes
27.	Automatic updating when an asset is disposed or sold in the Fixed asset register.	Yes
28.	System generated Fixed Asset Register.	Yes
29.	Provision to deduct the government grants related to specific fixed assets should be presented in the balance sheet by showing the grant as a deduction from the gross value of the assets concerned in arriving at their book value.	Yes
30.	Disclosing of Heritage assets under other assets.	Yes
31.	Capitalization and provision for assets under Hire	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	purchase and Finance lease.	
32.	Possibility of asset split.	Yes
<b>Work In Progress</b>		
33.	Assets under erection/installation on existing projects and capitalexpenditures on new projects (including advances for capital works and project stores) shall be shown as "Capital Work in Progress"	Yes
<b>Movable &amp; Immovable assets</b>		
34.	Automatic generation of Assets from each payment (BPV) from the Accountant (FAS module) may be included. Depreciation of assets also to be included. (Roads , Drains and movable like purchase of computers , Street light materials, etc) . Material code should be automatically created . If payment is given for the repair work of the Road already exist , then the corresponding Item code should be selected and this value should be added with the previous value.	Yes
<b>Registers and Reports</b>		
35.	Fixed Asset Register.	Yes
36.	Register for the assets, which are out of service.	Yes
37.	Annual Procurement Plan;	Yes
38.	Short term and medium term capital budgets showing construction and acquisition Of fixed assets;	Yes
39.	Annual Procurement Plans with respect to targets and	Yes



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
	achievements quarterly / half yearly / yearly.	
40.	Annual Disposal and Salvage Plans and review of progress quarterly and half yearly;	Yes
41.	Planned Maintenance Schedule	Yes
42.	Depreciation Schedules;	Yes
43.	Purchase Asset Report	Yes
44.	Asset Possession Report	Yes
45.	Book Depreciation Report	Yes
46.	AMC, Insurance and Warranty Details	Yes
47.	Report on movable and immovable assets	Yes
<b>Asset Transfer Details</b>		
48.	Transfer of Asset from one location to the other	Yes
<b>Disposal</b>		
49.	Asset disposal – Sale, Scrap / write off.	Yes
50.	Exclude/ include the date of sale for Asset.	Yes
<b>Integration</b>		
	<ul style="list-style-type: none"><li>Accounting System</li><li>Project Ward Works</li></ul>	Yes



### **3.7.7. Document Management System:**

The Coimbatore Corporation presently maintains the documents as Records. The 'Record

Clerk' is the person who keeps track of all document information in a manual register.

Following categories of documents are recorded:

- Circular/ Government Orders
- Statistical Data: Government/Corporation periodically conduct various surveys like census, BPL, voter list, ration card etc., and send reports manually to the concerned departments after verifying.
- Documents: Various detailed Project reports like City development Plan, DPR's of various Special schemes are being maintained without any version control and also not available from a Single location

### **Proposed To-Be Functionalities:**

This module shall consist of the below sub-modules

- Document Capturing
- Hierarchical Storage management
- Versioning
- Metadata
- Security
- Indexing
- Searching
- Retrieval
- Publishing
- Distribution

The following indicative functionalities are proposed for the Document Management System to be developed.



S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	Yes
<b>Other Functionalities</b>		
3.	Provision for handling document creation with version controlling	Yes
4.	Provision for managing physical document, e-files and online document	Yes
5.	Provision for handling unlimited documents	Yes
6.	Provision for browser based search and retrieval of document	Yes
7.	Provision for managing document with integrated scanning, imaging, Optical Character Recognition (OCR) and Intelligence Character Recognition (ICR)	Yes
8.	Provision for flexible and powerful document access control management	Yes
9.	Provision for categorizing document for public view,	Yes



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
	departmentview and specified user.	
10.	Support better error control mechanism to ensure data integrity	Yes
11.	Provision for view modification history of document	Yes
12.	Provision for controlling concurrency during document updating.	Yes
13.	Provision for authorized access to document for creation, reading, modifying and deletion of e-files.	Yes
14.	Provision for disaster recovery management for documents.	Yes
15.	Provision for defining retention period for document(s).	Yes
16.	Provision for defining rules for transferring documents from one person to another.	Yes
17.	Provision for tracing documents: when, where and by whom documents are created, modified, published and stored.	Yes
18.	Provision for searching documents based on document content and various attributes.	Yes
19.	Provision for categorizing and indexing document.	Yes
20.	Provision for handling document by adhering to compliance.	Yes
21.	Provision for archiving documents for future readability.	Yes
22.	Provision for handling document workflow process.	Yes
23.	Provision for following standardized working method	Yes



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
	for document management.	
24.	Provision for integrated interface	Yes
25.	Provision for streamlined process & simplification.	Yes
26.	Provision for automated timeline monitoring of documents	Yes
27.	Provision for accountability and transparent workflow.	Yes
28.	Provision for avoiding duplication.	Yes
29.	Supports single click facility to send documents including files and correspondences to multiple users.	Yes
30.	Provision for easy traceability of various documents within and across departments.	Yes
31.	Provision for backing up document at regular intervals	Yes
32.	Provision for integrating various editors for managing documents.	Yes
<b>Reports</b>		
33.	Ability to generate pending report for documents / modified document/ history report for document etc.	Yes



### 3.7.8. Electoral Management System

The Deputy Commissioner of Coimbatore City Municipal Corporation heads Election section.

The Deputy Commissioner is assisted by Assistant Commissioners who are the Assistant Electoral Registration Officers, Deputy Tahsildar, Council Secretary and other staff. These Sections are responsible for the enrolment of electors, preparation of electoral rolls and issue of Electoral Photo Identify Cards to the voters in respect of the above two Assembly Constituencies comprising of wards of Coimbatore City Municipal Corporation, under the guidance of Election Commission of India.

**Local Body Election:** The State Election Commission of Tamil Nadu conducts the election for all the local bodies in the State. The Electoral Roll, for the wards in the Coimbatore Corporation, is prepared by the Corporation at the time of Local Body Election.

#### Proposed To-Be Functionalities:

Currently the process is manual and the following indicative functionalities are proposed for the enhancing the efficiency of the service delivery process..

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	
<b>Other Functionalities</b>		
3.	Ability to add/update Voters Detail	Yes
4.	Provide acknowledgement on the receipt of the application for <ul style="list-style-type: none"><li>• Adding new Voter Information</li><li>• Change of Address</li><li>• Spell Correction</li><li>• Issue Duplicate Card</li></ul>	Yes
5.	Ability to check duplicate voter information	Yes
6.	Provision for objection to inclusion of name in voter list	Yes
7.	Ability to Remove Voter Information from master database	Yes
8.	Generate MIS Reports for <ul style="list-style-type: none"><li>• Overall area</li><li>• Zone wise</li><li>• Ward wise</li><li>• Newly Added Voter List</li><li>• Address Change List</li><li>• Duplicate Card List</li></ul>	Yes
<b>Integration</b>		



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
9.	UID	Yes
10.	SSDG	Yes

### **3.7.9. Census Management System:**

The details of the census planning and census process are currently maintained manually by the Coimbatore Corporation.

The CCMC has entered into the following kinds of services regarding Census Management System (CMS)

- Below Poverty Line (BPL) Survey
- Other Family / Health related Survey

From the Family health related survey the following statistics are maintained manually

- Total Population (M / F)
- Total Slum Population (M / F)
- Total eligible couple
- Total Slum eligible couple
- Age 0-1 Population
- Age 0-5 Population
- Birth - Male : Female ratio
- Death
  - Still Birth
  - Infant Death
  - Under 5 years Death
  - Maternal Death

Urban Health Nurses are involved in collecting various details about the family and their health related surveys to address health issues of the urban poor.

### **Proposed To-Be Functionalities:**

Currently the process is manual and the following indicative functionalities are proposed for the enhancing the efficiency of the service delivery process..





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S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	Yes
<b>Other Functionalities</b>		
3.	Provision to respond accurately and timely to requests of the information related to census	Yes
4.	Easy method to avoid duplication of the census data collected by the enumerators	Yes
5.	provision to easily track/monitor the percentage of work completed, pending work and non-allocated work	Yes
6.	provision to compare the previous census budget and the current census budget accurately and timely upon request	Yes
7.	provision to track easily the fund allocation for the census work	Yes
8.	Provision to easily get a ward wise/zone wise census details(Enumeration, enumerator details, percentage	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	completed, etc.)	
9.	Provision to compare the current census data with the previous year census data within minutes	Yes
10.	Provision to get print outs of the reports related to census data ready in hand whenever needed	Yes
11.	Provision to secure the census data from third party and to prevent tampering/theft of the census related documents	Yes
12.	Provision to maintain all the documents, data of a census (current year data/previous year data, etc.,) at one place and view immediately whenever required	Yes
<b>Family Enumeration</b>		
13.	Capture details pertaining to families such as but not limited to the following; <ul style="list-style-type: none"><li>• family member details</li><li>• Location details</li><li>• children details</li><li>• education details</li><li>• income details</li><li>• ancestor details</li><li>• creation of family tree</li><li>• earning member details</li><li>• family health details etc.</li></ul>	Yes
<b>Reports</b>		
14.	Report on current census data zone wise/ward wise	Yes
15.	Report on comparison of current census data with the	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
	previous census data	
16.	Report on census budget.	Yes
17.	Report on partial/pending allocation of the budget funds.	Yes
18.	Report on staff details and their allocation based on zone wise/ward wise for conducting census	Yes
19.	Report on completed or pending census details zone wise/ward wise	Yes
20.	Report on the area or boundaries covered under the census zonewise/ward wise	Yes
21.	Reports pertaining to Family Enumeration	Yes
<b>Integration</b>		
22.	UID	Yes
23.	Birth/ Death Module	Yes

### 3.7.10. Fleet Management System

The Coimbatore City Municipal Corporation has been using various vehicles for performing the day-to-day works such as Solid Waste Management, Water Supply Distribution, Sanitation works, Town Planning works, Maintenance of under Ground Drainage Lines, officer's inspection works, etc.,



The maintenance of the vehicles are carried out by the Engineering Department of the Corporation. Since the Corporation do not have a Workshop facility in its own, the maintenance of the vehicles have been out sourced by entrusting the vehicles to private workshops approved by the Motor Vehicles Maintenance Department (MVMD) of Government of Tamil Nadu. The maintenance of vehicles is being dealt by Two Technical Assistants, One Assistant Engineer and One Assistant Executive Engineer (Main office). Sealed competitive quotations are invited from MVMD approved private workshops and the repair works are entrusted to the firms concerned.

History registers of all the motor vehicles are maintained manually. The details of all the Maintenance repairs and renewals carried out and the expenditure incurred towards the repairs are recorded in the register. The

As a part of e-Governance, the CCMC has recently introduced the Online Waste Truck Monitoring System using Radio Frequency Identification (RFID). This RFID arrangement has been linked with the Weigh Bridge installed at the Vellalore dumpsite and the system has connectivity with the CCMC's official website. All the trucks deployed for SWM activities have been fixed with Transponders (RF tags) which are electronically programmed. When the waste laden truck fitted with the Transponders passes through the electromagnetic zone at the Weigh Bridge, it detects the reader's activation signal. The reader in turn decodes the data encoded in the tag's integrated circuit (silicon chip) and the data is passed to the host computer coupled with the Weigh Bridge for processing. It has been so programmed that as soon as the truck halts at the Weigh Bridge it automatically records the truck number, the wards from which the waste have been collected, name of the driver, the time of entry of the vehicle, weight of the waste, etc., By this system the CCMC is in a position to monitor the exact number of trips made by the trucks and the quantity of the waste dumped at the dumpsite at any time.

### **Proposed To-Be Functionalities:**



GPRS system for vehicle tracking of all the vehicles pertaining to Solid Waste Management and also for tracking of all the Community bins placed along the road sides. By this system the vehicle movement and the lifting of the loaded bins will be monitored online.

This module shall consist of the below sub-modules

- Vehicle History Note
- Vehicle Purchase Process
- Vehicle Maintenance
- Logbook Maintenance
- Vehicles Fueling Process
- Vehicle Insurance
- Tax Payments

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	Yes
Other Functionalities		



S. No.	Functionality	Proposed in To-Be (Yes/ No)
3.	Provision for creation of History note for vehicles.	Yes
4.	Provision for handling purchase of vehicles	Yes
5.	Provision for approval and sanction of proposal for purchasing vehicles	Yes
6.	Provision for handling supplier payments	Yes
7.	Provision for handling new vehicles allotment to the corporation	Yes
8.	Provision for vehicle body construction management	Yes
9.	Provision for preparing proposal for vehicle body construction	Yes
10.	Provision for contractor selection management	Yes
11.	Provision for maintaining work details for vehicle body construction	Yes
12.	Provision for maintaining asset register	Yes
13.	Provision for vehicle registration with RTO	Yes
14.	Provision for allotment of vehicles to zone/officers	Yes
15.	Provision for handling vehicle repairing process	Yes
16.	Provision for maintaining details about identification and confirmation of vehicle faults	Yes
17.	Provision for handling quotation calling from government approved workshop.	Yes
18.	Provision for selecting contractor for repairing vehicles	Yes
19.	Provision for collection of old spare from repaired vehicles	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
20.	Provision for confirming vehicle repairing completion process	Yes
21.	Provision for settling payments to the contractor for repairing vehicles	Yes
22.	Provision for maintaining fuel book	Yes
23.	Provision for maintaining vehicle traveling details	Yes
24.	Provision for store driver details	Yes
25.	Provision for maintaining vehicle insurance details	Yes
26.	Provision for maintaining vehicle renewal insurance details	Yes
27.	Provision for handling insurance premium payment.	Yes
28.	Provision for handling vehicle FC process	Yes
29.	Provision for maintaining TAX details.	Yes
30.	Provision for defining usage of vehicles	Yes
31.	Provision for vehicle disposal management	Yes
32.	Provision for recording & viewing inappropriate use of vehicle	Yes
33.	Provision for defining vehicle operation policies	Yes
34.	Provision for handling preventative maintenance for vehicle	Yes
35.	Provision for warranty tracking for vehicles	Yes
36.	Provision for handling traffic violations	Yes
37.	Provision for vehicle replacement	Yes
38.	Provision for setting guidelines of vehicle transfer	Yes
39.	Provision for GPS based vehicle tracking management	Yes

S. No.	Functionality	Proposed in To-Be (Yes/ No)
40.	Provision for stolen vehicle searching	Yes
<b>Reports</b>		
41.	Ability to generate Purchase report date wise	Yes
42.	Ability to generate purchase report category wise	Yes
43.	Ability to generate month wise expense report	Yes
44.	Ability to generate insurance details report etc.	Yes
<b>Integration</b>		
45.	This module should be integrated with the following modules: <ul style="list-style-type: none"> <li>Solid Waste Management System</li> <li>Asset Management System</li> </ul>	Yes

### 3.7.1.1. Hospital Management System:

Depending upon the functionality and purpose, health units of the corporation are categorized as follows:

- Urban Health Post (UHP)
- Dispensary

Dispensaries are of 3 types. The following table provides the information about the Health Units of the Corporation.

S. No.	Type of Health Unit	Number
I.	Urban Health Post	20



2.	Dispensary	Allopathic	11
		Ayurvedic	2
		Siddha	2

Health Management Information System (HMIS) is conceptualized by the Coimbatore Municipal Corporation's department of health & family welfare to ensure the quality health care by IT application in such a manner so as to provide standard clinical & diagnostic services, hospital management tools and integration of management information at the corporation level so as to ensure online review & monitoring. This is aimed at management of vital patient records, analysis of the critical health related data so as to provide an updated planning & policy tool towards provision of quality health services.

### **Proposed To-Be Functionalities for the Hospital Management System**

Currently all the necessary details are maintained manually due to which the report generation process becomes very challenging. The following high level sub modules are proposed for the Hospital management system:

- Patient Master
- Staff master
- Daily Activity Log
- Indoor / Outdoor Activities
- Antenatal and Post Natal Care
- Population Particular
- Birth details of the new Born
- Immunization
- National Health Program
- Stock registers

System should be able to generate the following reports:



- Patient Visit Info
- Ailment records
- Order of birth
- Total Birth
- Birth Rate
- Total Death
- Death Rate
- Total Infant Death
- Infant Mortality Rate (IMR)
- Total Maternal Deaths
- Maternal Mortality Rate (MMR)
- Couple Protection Rate (CPR)
- Still Birth
- Adapting family Welfare Plan
- Sex Ratio
- Weekly Review Report
- Medicine and Inventory Register etc.

### **3.7.12. Stores and Inventory System:**

The yearly requisitions of all the five zones are received from the Dy. Commissioner by the record room. Record room consolidates all the item wise requirements and compares with the existing stock. In case the stocks of items are available the respective items are issued to the respective zones. In case the stocks are not available, items are issued after requisition of the same. Currently all the stores and inventory related data are stored manually.



### Proposed To-Be Functionalities:

In order to avoid the challenges of cumbersome manual data management process, an automated process is being proposed consisting the following sub modules:

- General Stores
- Categories of Items
- Record Stores
- Public Health Stores
- Reports

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	Yes
<b>Requisition</b>		
3.	Option to make requisition for purchase	Yes
4.	Approval of a requisition	Yes
<b>Purchase Order</b>		



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S. No.	Functionality	Proposed in To-Be (Yes/ No)
5.	Option to make single purchase order based on the requisition	Yes
6.	Purchase order placement to an approved vendor	Yes
7.	Partial placement of order to the vendors approved	Yes
8.	Delivery date and time in the purchase order	Yes
9.	Purchase replacements	Yes
10.	Purchases for General stores, Record stores and Health store	Yes
11.	Ability to track the pending purchase order placed.	Yes
12.	Purchases for General stores, Record stores and Health store	Yes
<b>Debit Notes</b>		
13.	Provision to raise Debit note raising in case of inferior material supplied and used.	Yes
<b>Receipt and Material</b>		
14.	Receipt of Material with reference to a Purchase order / Requisition	Yes
15.	Partial Receipt against a Purchase Order/ Requisition	Yes
<b>Issue of Material</b>		
16.	Issue of material based on the availability. Provision for Partial issue as against the approved requisition.	Yes
17.	Restriction of material issue before the received quantity is updated. Inventory should not be issued with Negative balance.	Yes
18.	Return of material after usage	Yes
<b>Reports</b>		



S. No.	Functionality	Proposed in To-Be (Yes/ No)
19.	Availability of reports as per the user requirements.	Yes
20.	Item wise inventory balance verification.	Yes
21.	Availability of report on Stock – Date wise/period wise	Yes
<b>Quotes</b>		
22.	Mapping the approved quote to an item	Yes
23.	Tracking of quotes for an inventory	Yes
<b>Inventory</b>		
24.	Purchase history trace ability of an item.	Yes
25.	Maintenance of Indent book	Yes
26.	Issue of automated requisition from various departments or the department concerned.	Yes
27.	Fixing of Minimum ordering quantity of an item	Yes
28.	Maximum ordering quantity of an item at a point of time	Yes
29.	Automated purchase order generation based on the minimum ordering quantity.	Yes
30.	Override the option of automated generation from the system.	Yes
31.	System should trigger the information when an item is nearing the minimum order level or on reaching the minimum order level	Yes
32.	Re order level of an item with or without the purchase requisition.	Yes
33.	Mapping the supplier with multiple items supplied by him.	Yes



S. No.	Functionality	Proposed in To-Be (Yes/ No)
34.	Defining yearly order placing items.	Yes
35.	Defining the payment terms for a supplier	Yes
36.	Item cannot be entered without mentioning the purchase order / Requisition	Yes
37.	Multiple times delivery of items for a single purchase order by a supplier until the quantity is arrived.	Yes
38.	Multiple times issue of items for a requisition until the quantity is arrived.	Yes
39.	Provision to mark the location of the inventory	Yes
40.	Allocation of barcode for individual item.	Yes
41.	Provision of shelf life of an inventory / useful life.	Yes
<b>Vendors for an Item</b>		
42.	Mapping multiple vendors for an item.	Yes
43.	Ability to maintain Vendor information in the fields of (indicative): <ul style="list-style-type: none"><li>• Name,</li><li>• Address,</li><li>• Telephone number,</li><li>• Business number,</li><li>• Preferred method of contact (e.g. phone, mail, etc.,)</li><li>• E-mail address,</li><li>• PAN No.</li><li>• VAT Registration No. etc.,</li></ul>	Yes

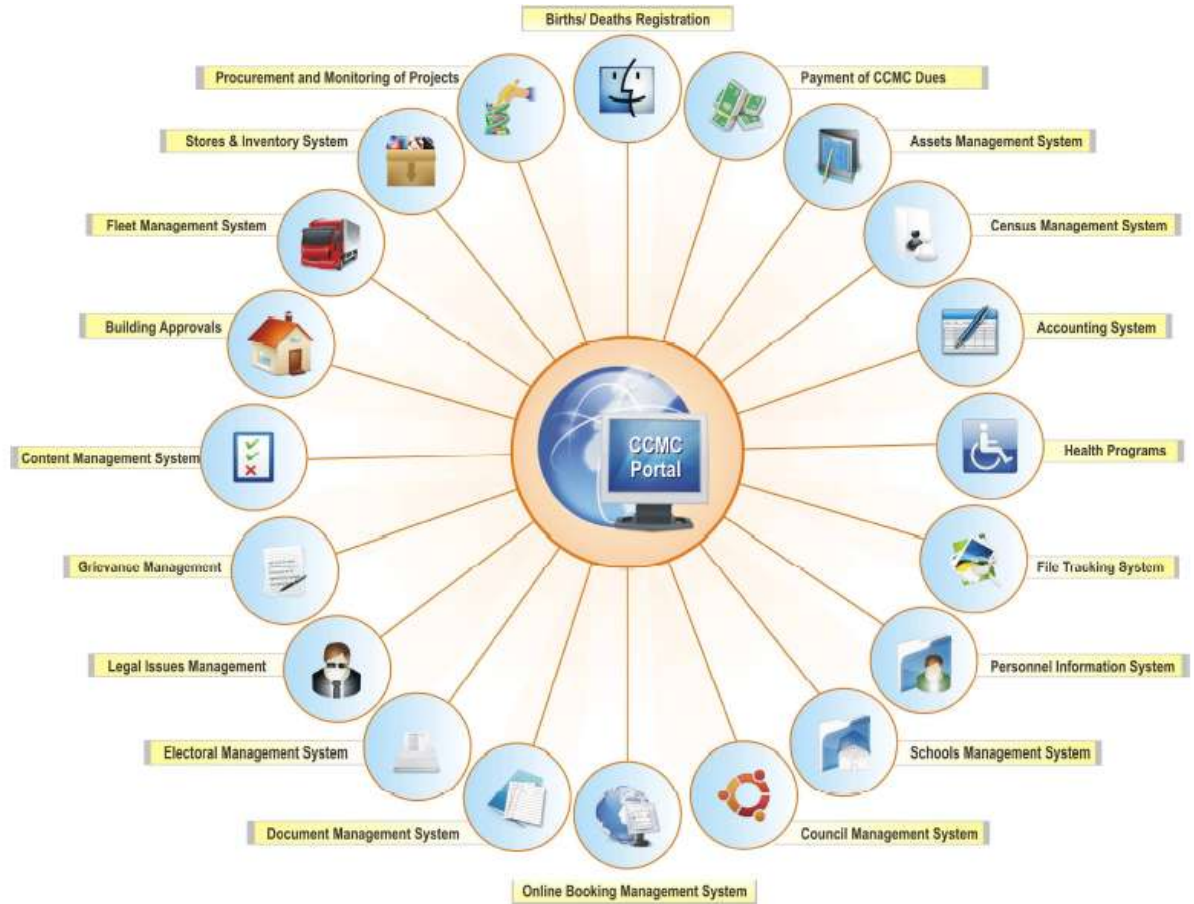


S. No.	Functionality	Proposed in To-Be (Yes/ No)
<b>Integration</b>		
44.	This module should be integrated with the following modules: <ul style="list-style-type: none"><li>Accounting System</li><li>Project Ward Works</li><li>Online payment Gateway</li><li>Asset Management</li></ul>	

### 3.7.13. OnlinePortal

Currently the CCMC do not have any portal to converge all the services. All the applications are working in silos and there is no integration of the existing applications. In the scenario wherein all the citizen centric services are planned to be delivered using ICT infrastructure, the need for an online portal is mandatory which will act as one stop shop for all the corporation related services.

A portal for the CCMC may be proposed wherein link of the entire citizen centric and the department centric services should be integrated.



### Proposed To-Be Functionalities:

S. No.	Functionality	Proposed in To-Be (Yes/ No)
1.	First Level of security The municipal corporation users to have access to various databases and to query on the different master maintenance tables based on the user-ids and passwords.	Yes
2.	Second level of security	Yes





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S. No.	Functionality	Proposed in To-Be (Yes/ No)
	The usage of pin codes, Token and key, Biometric Authentication Methods such as Finger Print Technology etc., for second level of authentication may be considered and justification is to be provided for the same	
<b>Others</b>		
3.	The portal should have provision for Personalization User Management Self Service Workflow Service Search Notifications	Yes

**Please note:**

1. All the functionalities listed for all the services mentioned above are indicative and minimum. The Selected System Integrator shall be responsible for conducting detailed process study for identifying actual enhancement requirements for all the identified services.
2. All the above mentioned Citizen Centric Services should be integrated with the online portal, UID, SSDG, MSDG, eBiz and Online Payment Gateway.
3. The detailed aspects of integration between different modules has to be studied by the SI and ensure appropriated exchange of data between applications / modules seamlessly using open standards namely XML based data exchange.

**3.8. Proposed Service Levels Benchmarks**

S. No.	Service Modules	Service Level Benchmarks	Timelines to achieve the final Service Level Benchmarks
<b>JNNURM Core Services</b>			
I.	<b>Health</b>		
	Registration of Birth ( within 30 days)	At Once	At Once
	Registration of Birth ( from 30 days upto 1 year)	7 days	5 days



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	Registration of Birth (More than 1 year)	7 days	7 days
	Registration of Death (upto 30 days)	At Once	At once
	Registration of Death ( from30 days to 1 year)	7 days	5 days
	Registration of Death (More than 1 year)	7 days	7 days
	D&O Licenses	45 days	45 days
	SolidWaste Management	Daily	Daily
<b>2.</b>	<b>Revenue</b>		
	Assessment of Property Tax Professional Tax etc. , Utility Bills and Management of Utilities that come under the ULBs e.g. Water Supply	30 Days	30 Days
	Online Payment of utility bills and taxes and acknowledgement receipt (after physically signing the receipt)	Payment – At Once Physical receipt: 2 weeks	Payment – At Once Physical receipt: 1 week
<b>3.</b>	<b>Town Planning</b>		
	Building Approvals	45 Days	45 Days
	Layout Approval	45 Days	45 Days
<b>4.</b>	Grievances and Suggestions	45 days	45 days
<b>5.</b>	Procurement and Monitoring of Projects	NA	NA
<b>6.</b>	Project Ward Works	NA	NA
<b>7.</b>	Accounting System	NA	NA
<b>8.</b>	Personnel Information System	NA	NA



Please note that the above service levels are indicative and these are subjected to change based on the approval of the competent Authority.

### 3.9. Perceived Benefits

S. No.	Services/ reform Areas	Perceived Benefits
I.	<ul style="list-style-type: none"><li>Registration of Birth</li></ul>	<ul style="list-style-type: none"><li>More Efficient way of process delivery</li><li>Citizen can avoid travelling to the facilitation Centers and be in queue for a long time.</li><li>Work Load of the Sanitary Inspector also would reduce as they don't have to issue the physical Certificates for Birth and Death</li><li>Birth data could be immediately shared from the hospital if they would be provided with the username and password for the Birth/ Death module.</li></ul>
	<ul style="list-style-type: none"><li>Registration of Death</li></ul>	
	<ul style="list-style-type: none"><li>Issuance of Birth Certificate</li></ul>	
	<ul style="list-style-type: none"><li>Issuance of Death Certificate</li></ul>	
	<ul style="list-style-type: none"><li>D &amp; O Trade License</li></ul>	<ul style="list-style-type: none"><li>Provision of online submission of application</li><li>Reduced Workload for government staff.</li><li>Convenient mode of online payment.</li><li>Easy tracking of status of application</li><li>Enablement of license issuance</li></ul>



		through the website eliminates the chances of delays in physical delivery of licenses
	<ul style="list-style-type: none"><li>• Solid Waste Management</li></ul>	<ul style="list-style-type: none"><li>• Real Time monitoring of the Vehicles through the GPS tracking System</li><li>• Efficient Fuel Management due to the route optimization</li><li>• Enhances monitoring tool</li><li>• Route optimization-Shortest path from the collection point to the dumping yard</li></ul>
2.	<ul style="list-style-type: none"><li>• Property tax</li></ul>	<ul style="list-style-type: none"><li>• More ease in applying online.</li><li>• Better queue management at facilitation center</li><li>• Real time status trickling of application with the provision of Work Flow.</li><li>• Integrated collection details</li><li>• Better MIS to be generated for the department</li></ul>
	<ul style="list-style-type: none"><li>• Water Supply</li></ul>	<ul style="list-style-type: none"><li>• Provision for Online calculation of Water bill.</li><li>• Better queue management at facilitation center</li><li>• Real time status trickling of application with the provision of Work Flow.</li></ul>



		<ul style="list-style-type: none"> <li>Integrated collection details</li> <li>Better MIS to be generated for the department</li> </ul>
	<ul style="list-style-type: none"> <li>Profession Tax</li> </ul>	<ul style="list-style-type: none"> <li>Provision for convenient online submission for assessing the professional tax.</li> <li>Sms bases status tracking.</li> <li>Sms alert to the applicant on the completion of the application approval process.</li> <li>Eradication of redundant activities</li> </ul>
	<ul style="list-style-type: none"> <li>Non Tax</li> </ul>	<ul style="list-style-type: none"> <li>Ease in application process.</li> <li>More efficient online payment process.</li> <li>Department can have better reports which would act as Decision Support System</li> </ul>
	<ul style="list-style-type: none"> <li>Miscellaneous</li> </ul>	<ul style="list-style-type: none"> <li>Benefits in terms of more efficient and ease of payment and tracking system.</li> </ul>
3.	<ul style="list-style-type: none"> <li>Project Ward Works</li> </ul>	<ul style="list-style-type: none"> <li>Better monitoring of ongoing projects</li> <li>Integration with the accounting system would ensure process of duplication of data doesn't occur.</li> <li>Status tracking of all the projects on a single dash board.</li> </ul>
4.	<ul style="list-style-type: none"> <li>Building Plan Approval</li> </ul>	<ul style="list-style-type: none"> <li>Ease of online application submission</li> </ul>



		<p>for the citizen</p> <ul style="list-style-type: none"><li>• Sms based application tracking system</li><li>• Provision of work flow to the department for which redundant data entry processes will be eradicated.</li><li>• Integration with m-Governance platform would ensure application submission through Mobile phones.</li></ul>
	<ul style="list-style-type: none"><li>• Layout Plan Approval</li></ul>	<ul style="list-style-type: none"><li>• Provision of a backend for the department which will reduce the physical file movement process</li><li>• More relevant data for generating customized reports.</li><li>• Online application process for citizen</li><li>• Sms based real time status tracking.</li><li>• Online payment process</li></ul>
5.	<ul style="list-style-type: none"><li>• Public Grievance</li></ul>	<ul style="list-style-type: none"><li>• Provision for submission of application online.</li><li>• Sms based tracking of application.</li><li>• Provision of workflow to the department which will ensure that the real time status could also be viewed by the Department Heads.</li><li>• Provision for uploading Action taken report by the concerned officer</li><li>• Provision for providing feedback by the citizen on the his / her satisfaction level.</li></ul>



6.	<ul style="list-style-type: none"><li>e-Procurement</li></ul>	<ul style="list-style-type: none"><li>Enhanced modules which are not present in the existing application.</li><li>More transparency and ease in the bid management process</li></ul>
7.	<ul style="list-style-type: none"><li>Personnel Information System</li></ul>	<ul style="list-style-type: none"><li>More policy oriented rules.</li><li>Ease in application of leave for the staffs</li><li>A complete HR solution for the Department staff.</li><li>Automatic generation of customized report about attendance, leave availed and balance etc.</li></ul>
8.	<ul style="list-style-type: none"><li>Accounting System</li></ul>	<ul style="list-style-type: none"><li>An integrated accounting system would ensure proper functioning of the system.</li><li>Ease in generation of various MIS reports.</li><li>Transparency and accountability in management of funds.</li><li>Efficient utilization of funds for various projects.</li><li>System Generated Financial System</li></ul>
9.	<ul style="list-style-type: none"><li>School Management System</li></ul>	<ul style="list-style-type: none"><li>Maintenance of master data.</li><li>Automatic trend analysis</li><li>Provision for online application submission process which will reduce</li></ul>





		<p>time</p> <ul style="list-style-type: none"><li>• Generation of various customized reports for supporting decision making.</li></ul>
10.	<ul style="list-style-type: none"><li>• Council Management System</li></ul>	<ul style="list-style-type: none"><li>• Council will always be updated regarding the updated meeting, its agenda and the exact subject.</li><li>• Provision for evaluation of impact analysis for a particular decision taken.</li><li>• Receiving periodic alert by the members so that they can prepare and plan for the meeting accordingly.</li></ul>
11.	<ul style="list-style-type: none"><li>• File Tracking System</li></ul>	<ul style="list-style-type: none"><li>• With proper backend, this facility would ensure real time status tracking of a file.</li></ul>
12.	<ul style="list-style-type: none"><li>• Legal Issues Management</li></ul>	<ul style="list-style-type: none"><li>• With provision of workflow the concerned officer can receive an intimation regarding the receipt of Notice</li></ul>
13.	<ul style="list-style-type: none"><li>• Online Booking Management System</li></ul>	<ul style="list-style-type: none"><li>• Automated system.</li><li>• Easy traceability.</li><li>• Information accuracy (MIS reports).</li><li>• Instant alerts.</li><li>• Easy payment process.</li></ul>
14.	<ul style="list-style-type: none"><li>• Asset Management System</li></ul>	<ul style="list-style-type: none"><li>• Proper tracking of the Assets.</li><li>• Ease of planning for necessary stock and inventory.</li><li>• Efficient management and allocation of</li></ul>



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		<p>assets.</p> <ul style="list-style-type: none"><li>• Net worth can be calculated at any point of time</li></ul>
15.	<ul style="list-style-type: none"><li>• Document Management System</li></ul>	<ul style="list-style-type: none"><li>• Document repository.</li><li>• Paperless administration.</li></ul>
16.	<ul style="list-style-type: none"><li>• Electoral Management System</li></ul>	<ul style="list-style-type: none"><li>• Improved elector/ voter data.</li><li>• Transparency in the system.</li><li>• Information accuracy.</li></ul>
17.	<ul style="list-style-type: none"><li>• Census Management System</li></ul>	<ul style="list-style-type: none"><li>• Ease in generation of necessary and customized reports.</li><li>• Information Accuracy</li><li>• More transparency</li></ul>
18.	<ul style="list-style-type: none"><li>• Fleet Management System</li></ul>	<ul style="list-style-type: none"><li>• Fuel efficiency due to route optimization by GIS technology.</li><li>• Maximizing man power utilization.</li><li>• Easy maintenance, allocation and tracking of vehicles</li></ul>
19.	<ul style="list-style-type: none"><li>• Hospital Management System</li></ul>	<ul style="list-style-type: none"><li>• Easy generation of various MIS reports.</li><li>• Tracking inventory status of the medical stock</li><li>• Maintenance of master data which could be utilized for various other studies.</li></ul>
20.	<ul style="list-style-type: none"><li>• Stores &amp; Inventory System</li></ul>	<ul style="list-style-type: none"><li>• Automated system</li></ul>



		<p>formaintaininginventory items.</p> <ul style="list-style-type: none"><li>• Re order levels ofitems will be defined.</li><li>• Department levelissuance andutilization of itemsmonitored.</li><li>• Maintenanceprocedures and checklists will be established.</li></ul>
21.	<ul style="list-style-type: none"><li>• Online Portal</li></ul>	<ul style="list-style-type: none"><li>• Web based interface.</li><li>• Support to multiple access devices such as desktop computer, IVRS, mobiles etc.,</li><li>• Allows citizens to access information and to enjoy onestopgovernmentservices.</li><li>• Provides secure and individualized view of multipleonline resources andinteractive services.</li><li>• Interface between government and citizens.</li><li>• Transparency inAdministration.</li><li>• Increase inefficiency andproduction.</li><li>• Increase inrevenue.</li><li>• Bettercommunication andend user experience.</li><li>• Provides 24 hoursa day, 7 days a weekcustomer service.</li><li>• AnythingAnywhere.</li></ul>



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## 4. Solution and Technology

The State Level Solution which caters to the identified core civic services as well as the other modules required for the ULBs to provide better services to the stakeholders that would be used by all ULBs of the state has to be on Multi-tenancy environment and has to be deployed on centralized architecture. This section gives details pertaining to the following;

- Existing IT infrastructure
- Upgradation/additional IT infrastructure required
- Applications already available and their technology stack
- Applications that need to be freshly developed and the proposed technology stack
- Deployment architecture
- Network bandwidth available and additionally required etc.

Further, in this section there shall be details on Multi-tenancy environment as the proposed State Level Solution has to be deployed for usage by multiple ULBs across the state.

In a nutshell this section gives details on existing IT infrastructure and the to-be IT infrastructure. Also a detailed unpriced Bill of Materials (BoM) is included in this section.

### 4.1. AS-IS IT Landscape

A detailed description of the existing IT landscape available at the CCMC computer centre is described in this section. The objective of this section is to give the reader a clear picture of the elements that constitute the present infrastructure, network bandwidth and applications. The major heads that are covered as part of the appreciation of the existing scenario are:

- Details of applications currently deployed in CCMC computer centre
- List of hardware and network components available in CCMC computer centre

- Information security measures adopted

#### 4.1.1. IT Application Details

This section gives description on the details of applications that are presently in use at the Coimbatore Corporation and the services that are being provided using these applications to the stakeholders.

**Table 13: Details of existing IT Applications**

S. No.	Application Suites / Modules	Services Performed by Application Suite	Year of Implementation	Technology Platform (Complete technology stack including front end, back end, middle ware etc.)	Application Architecture	Approx . No. of concurrent users during peak hours	Total No. of Users for the application	Service Category (G2C, G2G, G2B, G2E)
	<b>Core Civic Services</b>							
1.	Registration and Issue of Births / Deaths Certificate	Birth & Death records entry	2003	ASP, Oracle 10g	Client - Server / Web Enabled	50	160	G2G,G2C
2.	Property	Option to	2003	Visual	Client -	20	77	G2C,



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	Tax	compute Property Tax and payment of Property Tax dues Payment of Non-Tax items dues		Basic 6.0 SOAP, Oracle 10g	Server / Web Enabled			G2G
3.	Grievances and other Suggestions	Grievance registration and redressal	2011	PHP, MySQL	Web Enabled	30	100	G2G G2C
4.	Accounting System	Financial accounting management	2011	ASP.Net 2.0, Oracle 10g	Client - Server	6	20	G2G
5.	eProcurement	Tendering Process	2011	Java	Web application	60	150	G2B
6.	Personnel Information System	Payroll processing	2003	MS Visual Basic 6.0	Client-Server	6	20	G2E
7.	Water Supply and other Utilities (Under development stage)	Payment of Water Charges dues	2003	Visual Basic 6.0 SOAP, Oracle 10g	Client - Server / Web Enabled	50	100	G2G, G2C
8.	Building Plan Approvals	Verification and approval of building plans	2003	.Net 2.0, Javascript, HTML, Oracle 10g	Client - Server / Web Enabled	6	10	G2B, G2C
9.	Project /	Monitor	2003	ASP,	Web	5	10	G2E



	Ward Works	progress of works		Oracle 10g	Enabled			
10.	Trade Licenses	Payment of D&O Trade licence dues	2003	Visual Basic 6.0 SOAP, Oracle 10g	Client - Server / Web Enabled	5	20	G2B
11.	Solid Waste Management	SWM Monitoring and Vehicle tracking	2009	.Net 3.5, Oracle 9i	Web Application	20	50	G2E

#### 4.1.2. Hardware, Network Infrastructure Components

The CCMC has been into computerization activities since long and has been implementing eGovernance applications. The CCMC has set up a data centre at Coimbatore and is equipped with few servers and network components with bandwidth connectivity. These servers and network components are procured on need basis.

#### 4.1.3. Network / Server Architecture (Existing):

The existing IT infrastructure available centrally at SDC which on upgradation can be made use of for deployment of the centralized State Level Solution. Further this can be accessed by all the ULBs in the state through the TNSWAN already available.

CCMC has Desktops, UPS, Printer and Scanners for their operations.

The server and network equipment details presently existing in the CCMC data centre and the sections of the CCMC are as below;

**Table 14: Details of Hardware, Network & Infrastructure (Existing)**

S. No.	Description	Quantity	Make / Model and Technical Specifications	Age of the hardware	No. of concurrent	High Availability (Y/N)	Needs Upgr
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				re compo nent (In Years)	users during peak hours		adatio n / Repla ceme nt? (U/R)
<b>Servers</b>							
1.	Application Server	1	HP Proliant DL 360G	4 Years		N	R
2.	Database Server	1	HP Proliant DL 180	1 Year		N	NA
3.	Web / Portal Server	1	HP Proliant DL 360G	4 Years		N	R
4.	File Server		NA				
5.	Document Management Server		NA				
6.	GIS Application Server		NA				
7.	GIS Database Server		NA				
<b>Network Components</b>							
8.	Core Router		NA				
9.	Core Switch		NA				
10.	L2 Switches	3	HP 2015	2 Years	NA	NA	NA
11.	IPS/IDS		NA				
12.	Firewall	1	Fortigate 310B	1 Year			U
<b>Network Bandwidth</b>							
13.	SWAN connectivity		Not Provided				
14.	WAN connectivity	1	4 Mbps	NA	NA	NA	U
<b>Middleware Components</b>							
15.	Directory Services Server		NA				
16.	Mail Messaging Server	1	HP Proliant DL 180	1 Year		N	NA
17.	EMS Server		NA				



18.	NMS Server		NA				
19.	Backup Server		NA				
20.	DC-DR Replication Server		NA				
21.	Others Please specify. At Information Centre	I	HP Proliant DL 180	I Year	NA	N	NA

### Existing Network Architecture:

The existing Network Architecture is as follows;

CCMC data centre is already equipped with the following;

The Coimbatore Corporation Central Office is linked in a Wide-Area-Network (WAN) to its 5 facilitation centers and 9 collection centers (ISDN) through a secure 4 Mbps Radio Frequency Network providing 24 hours for uninterrupted flow of information between these centers along with a 128 kbps Internet connectivity at each of these centers.

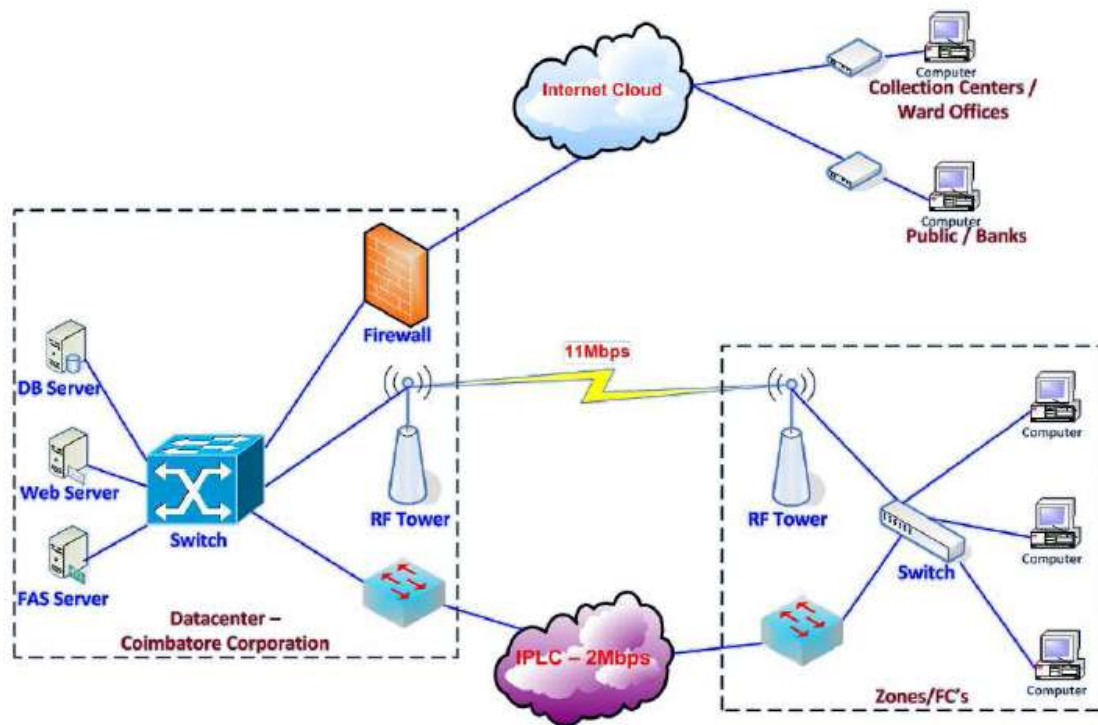
The system runs on a unique Centralized Transaction Server that incorporates the latest in Web and Application Server technologies providing secure and reliable transaction processing capabilities.

All the zones are connected to the CCMC data centre and have access to the implemented eGovernance applications.

**Table 15: Present Status of SWAN, SDC, CSCs etc.**

S.	Component	Status	Re-usability
----	-----------	--------	--------------

No.			status (Y / N)
4.	<b>TNSWAN</b>	<b>CCMC connectivity not available</b>	<b>N</b>
5.	<b>SDC</b>	<b>Operational</b>	<b>Y</b>
6.	<b>CSC</b>	<b>Operational</b>	<b>Y</b>



**Coimbatore Corporation IPLC / WAN Connectivity  
(Existing)**

The Coimbatore Corporation e-Governance system is India's first e-Governance portal to leverage the dynamic advantages of SOAP based architecture to provide highly secure, reliable, and multi-application friendly system.



#### **4.1.4. Information Security Measures (Existing):**

Information Security Measures includes the following;

- External Network Filtering with Firewall
- Intrusion Prevention using Anti-virus
- User Authentication

##### **External Network Filtering with Firewall**

Presently the Fortigate 310B firewall is configured ACL filters excludes all unauthorized users to the network.

##### **Intrusion Prevention using Anti-virus**

Anti-virus installation on both network and host systems will prevent intrusions, stop propagation and virus attacks to the system.

##### **User Authentication**

For Intranet users System will check the Login username and Password for valid login.

#### **4.2. TO-BE IT Landscape**

Before we discuss on the To-Be requirements related to the IT infrastructure and SLS requirements we shall provide the details on the following;

- Need for Customization / Enhancement of existing applications that provide core civic services
- Need for upgradation / procurement of IT infrastructure
- Need for Other modules

## Need for Customization / Enhancement of existing applications that provide core civic services:

In order to assess the true performance of existing applications, certain critical non-functional requirements also have to be analyzed. The following table captures how each of these applications fare on six non-functional parameters namely security, scalability, maintainability, extensibility, accessibility and stability. A qualitative scale has been used for this assessment. The details included are based on the study conducted by us and the analysis we have done based on the inputs received from the stakeholders.

Non-functional Requirements	Registration and Issue of Births / Deaths Certificate	Property Tax	Grievances and other Suggestions	Accounting System	Water Supply and other Utilities (Under development stage)	Project / Ward Works	Score
Security	3	3	3	3	3	3	18
Scalability	3	3	3	3	3	3	18
Maintainability	2	2	2	2	2	2	12
Extensibility	2	2	2	2	2	2	12
Accessibility	3	3	3	3	3	3	18
Stability	3	3	3	3	3	3	18
<b>Total Score</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>96</b>

Score	Meaning
3	High
2	Medium
1	Low

A simple scoring mechanism as shown above is used to quantify this information. Out of potential maximum score of 108 (18x6), the total score of all applications put together is



96, which is 88.8%. For each individual application, out of a potential maximum score of 18 (6x3), the average score is 16 which is 88.8%. This highlights the striking capability of the present applications on these very critical parameters.

All the listed applications are developed on multiple technologies such as Microsoft and open source. As they are not developed on 3-tier architecture, there is a need for enhancing them to 3-tier architecture using SOA concepts. The back-end RDBMS used is Oracle 10g which is one of the robust RDBMS available. These applications are developed and deployed on centralized servers at a central location at CCMC data centre. The CCMC data centre is equipped with 4 Mbps network bandwidth connectivity. This data centre and the applications hosted are maintained jointly by CCMC staff.

In conclusion, it is strikingly notable that all the above listed applications are adequate (functionality-wise) to be used as State Level Solution. Hence there is no need for fresh development of these applications. However, they have to be customized / enhanced to meet the additional functional requirements, moved on to 3-tier architecture as well as integration of them with other NeGP initiatives such as; UID, SMS alerts, Mobile Service Delivery Gateway (MSDG), Online Payment Gateway and SSDG in order to fulfill the grand vision of complete e-governance at CCMC.

There is a pressing need for these existing applications to be enhanced to the level of incorporating Mobile computing for eGovernance applications thus supporting m-Governance in future. This would enable access to the public services rolled out by the ULBs through mobile devices. Mobile phones hold tremendous potential to expand the access and reach of public services throughout the state. Using m-Governance wide variety of electronic services can be accessed to apply and track status of applications filed.

#### **Need for upgradation / procurement of IT infrastructure:**

From the details provided under the existing IT infrastructure at CCMC data centre, it is evident that most of the components are above 4 years old and some of them are above 1 year. On analysis it is evident that those components such as servers and network



components that are above 4 years of age have to be replaced and those which are in the age group of 1 to 2 years may be used for some non critical servers like Anti-virus Server, File Server etc. There is no GIS application server available.

One more key observation is that there is only one Database server and is serving all the presently implemented applications. There is no separate GIS Database server available.

Another important factor to be noted is that none of the above listed vital components of the entire solution are on “High Availability Mode” which indicates that there is no backup mechanism in case there is any hardware failure. This is a critical aspect as this would disrupt the service delivery to a great extent.

Also under the Middleware components except Mail messaging server / software other servers / softwares are not available. There are no servers / softwares available for Directory services, Backup, EMS, NMS & DC-DR replication activities.

From the above it is very clear that there exist few system softwares that can be used but the listed items that are not available have to be included in the required IT infrastructure in order to bring in completeness to the solution.

### **Need for Other modules:**

It has been observed during our study that there are few additional services apart from the core civic services, identified by CCMC that needs to be freshly developed and deployed to enable and empower CCMC to provide better services to the citizens. We have discussed with various stakeholders and understood that these services would pave way for providing seamless G2C, G2B, G2G and G2E services thus bringing in transparency in administration, better service delivery, process efficiency, accountability and better decision making. We would propose the inclusion of these services as a part of the SLS and suggest fresh development of the same which would help the ULBs to meet their objectives and goals.

The table below gives the details of the identified “Other modules”;



S. No.	Other Modules required	Need for automation and inclusion of the modules in SLS
1.	Schools Management System	To manage Student and Teacher profiles efficiently, generate and exchange data across different levels of administration seamlessly on 84 schools namely; Elementary (45), Middle (12), High (10), Higher Secondary (16) and Special school for deaf & dumb (1).
2.	Council Management	To manage the activities of the six standing committees on different subject matters that assists the council in performing various functionalities more efficiently and transparently.
3.	File Tracking System	For online tracking of files and speedy clearance of the files thus reducing pendency and providing better services.
4.	Legal Issues Management	To manage various legal issues related to various departments of CCMC by storing the case details and progress of the cases for speedy retrieval and better handling of cases.
5.	On Line Booking Management System	Better management of booking and revenue of several non-tax items covering rent from Marriage halls, Community Hall, Auditorium, Grounds etc., thus providing better services to the stakeholders.
6.	Assets Management System	For better maintenance of asset registers and management of assets associated with CCMC.
7.	Document Management System	For better knowledge management by providing instant access to Circulars, Government Orders, Notifications, Addendum & Corrigendum.
8.	Electoral Management System	For better management of Electoral Rolls of the existing 100 wards spread across the 5 zones of CCMC.
9.	Census Management System	For better management of census planning and census process thus providing proper information in a timely manner





10.	Fleet Management System	For efficient management of various vehicles for performing the day-to-day works such as Solid Waste Management, Water Supply Distribution, Sanitation works, Town Planning works, Maintenance of under Ground Drainage Lines, officer's inspection works, etc.,
11.	Stores & Inventory System	For efficient management of activities related to process of Stock and Inventory maintenance.
12.	Online Portal	For providing a common accessible delivery channel to the stakeholders for access of civic and other services.

#### 4.2.1. Solution Architecture

This section gives a detailed description of the proposed solution architecture that the State Level Solution has to be built upon. This is of utmost importance as the State Level Solution has to be robust and capable enough that can take up the load of usage by all the ULBs in the state.

##### **Multi-tenant environment – State Level Solution (SLS)**

The proposed SLS has to be on centralized n-tier architecture. This SLS shall be used by users within CCMC as well as users from other ULBs of the Tamil Nadu state as and when the ULBs decide to make use of the SLS. We propose to consider the different Corporations and ULBs as “**tenants**” of the solution. The SLS has to be architected in such a way that each tenant has;

- Access to the centralized SLS in an independent manner
- Authorized to view and use only those functionalities that are meant for every individual corporation / ULB.



In order to achieve this, the state level solution is suggested to have appropriate multi-level access facilities to be built-in so that it promotes the usage of the same enterprise solution by different levels of organizations (Corporations, ULBs).

The proposed state level solution has to have a robust design at the application level which should ideally include a separate module at the application level that handles effectively the end-to-end management of multi-level access from different levels of organizations such as; corporations and other ULBs. This module has to support configuring the access privileges at the organization level (Corporations, ULBs) and further down to user level privileges. A strong integration with the LDAP services is mandatory to achieve appropriate multi-tenancy support required.

In addition to the general architecture design aspects specific focus has to be brought in to support the following;

- Exclusive Administration/Management Module to track transactions, accounting and management of tenants (ULBs)
- Completely separated Business Logic
- Maintain tenant-wise meta-data
- Segregated data storage (tenant-wise)
- Data aggregation for state level reporting from different tenant databases
- Appropriate data access protection
- Flexibility in architecture for accommodating growth in tenant business model
- Application level security aspects

In order to achieve proper multi-tenancy support in the SLS it is vital to have the application design to support two-levels during the authentication / authorization of users.

- The first level would be to identify the organization (i.e. from which corporation / ULB) the incoming request is.



- The second level is the identity of the user along with password verification.

Every corporation and ULB has to be identified uniquely on the system for which appropriate codification has to be done for the corporations / ULBs. Necessary rules for codification have to be defined and executed. Every user under the corporation along with the hierarchy of the user has to be documented and this entire hierarchy structure of each corporation / ULB has to be created on the LDAP service. A separate module in the state level solution has to integrate with the LDAP service to query the LDAP service during the authentication process for every incoming connection, authenticate it and then expose only the relevant modules of the state level solution meant for the incoming request from the corporation/ULB. This module has to be used for configuration purposes whenever a new ULB needs to get access to the SLS i.e whenever a new ULB wants to become a “tenant” of the state level solution.

The following shall be the approach that needs to be adopted when architecting / designing the application module;

- Plan and configure the LDAP services in such a way that every corporation / ULB is created as a separate Organizational Unit (OU). This enables handling of users/groups within the corporation / ULB as well as manages the deployment of appropriate version of the solution.
- Organization structure of every corporation as well as the ULB has to be created separately, on the LDAP server and necessary access rights have to be provided.
- The SLS module responsible for providing the necessary authentication/authorization has to be tightly inter-linked with the LDAP services for seamless exchange of credential data.
- Whenever an ULB proposes to get connected with this SLS there should be provision to configure through the application module to add the ULB as a part of the system and provide necessary authentication/authorization facility.



- Ensure appropriate synchronization between the SLS and the LDAP services at any given point of time.

### **Enabling ULB to get connected to the SLS:**

- The complete organization structure of the ULB with names, designations and hierarchy of officials has to be created and handed over to the Server administrator for creating the necessary Organization Unit (OU) and the users/groups on the LDAP Server.
- Necessary inputs of the Corporation / ULB, required for accessing the state level solution has to be provided through the module responsible for the authentication / authorization.
- Based on the need of each corporation / ULB the access privileges to different modules of the state level solution along with the user privileges have to be defined.

### **Customization of Existing Applications**

The applications existing with Corporation of Chennai (Refer Sec. 10.1 for more details), CCMC and other ULBs that are being used currently can be considered for the SLS and have to be customized / enhanced to incorporate the To-Be processes, scalability, security and future integration aspects so as to meet the requirements of the ULBs.

The existing applications at CCMC are developed on different technologies such as ASP, VB 6.0, ASP.Net 2.0, Javascript, HTML, .Net 3.5, Oracle 9i and Oracle 10g but are not developed on tiered architecture in order to meet the technological challenges of a SLS. These applications have to be customized / enhanced and should be designed on n-tier architecture namely; Presentation tier, Service tier, Business tier, Database tier etc. The SLS has to be designed on Service Oriented Architecture (SOA) on a common platform.

The proposed technology for development of new applications is as follows;



- J2EE, JSP& PHP
- Open Source database such as; PostGre SQL 9.0 etc.
- Open Source GIS tools
- Framework such as Struts / Spring
- Localization & Unicode support
- Operating System: Linux
- Browsers: SLS shall be accessible through minimum two standard browsers

Note: Middleware components available on open source technology and that follow open standards are to be included in the complete solution.

The strategy for the customization and operation support is to understand the gaps, new requirements and enhance the applications. This task is under the responsibility of the SI who will be selected to implement this SLS. The activities would be;

- Scale up these applications to the SLS level.
- Perform a thorough testing.
- Do a pilot implementation at CCMC.
- Strategise and rollout to other ULBs.

The indicative man month effort for customization / enhancements of each of the applications is as shown below;



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Name of the Module	Effort in Person Months								
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
<b>Customization effort for Applications Developed and Implemented</b>									
Registration and Issue of Births & Deaths certificates	2.10	3.00	1.25	3.00	0.90	1.80	1.50	1.50	15.05
Property Tax	2.60	4.20	1.25	6.30	0.90	1.80	2.10	2.10	21.25
Grievances and other Suggestions	2.20	2.40	1.25	2.40	0.90	1.80	1.20	1.20	13.35
Accounting System	6.30	7.20	1.25	9.60	0.90	1.80	2.40	2.40	31.85
Water Supply & Other Utilities	2.60	4.20	1.25	4.20	0.90	1.80	1.20	2.10	18.25
Solid Waste Management	1.80	3.60	1.25	3.60	0.90	1.80	1.20	1.80	15.95
Building Plan Approval	2.40	3.60	1.25	2.40	0.90	1.80	1.20	2.40	15.95
Trade Licenses	1.50	3.00	1.25	3.00	0.90	1.80	1.20	1.50	14.15



## Detailed Project Report for State Level Solution for eGovernance in all ULBs in Tamil Nadu



Project Ward Works	1.50	3.00	1.25	3.00	0.90	1.80	1.20	1.50	14.15
Personnel Information System	6.30	7.20	1.25	9.60	0.90	1.80	2.40	2.40	31.85
eProcurement	2.60	4.20	1.25	4.20	0.90	1.80	1.20	2.10	18.25
Implementation of SLS									16.00
<b>Total customization effort</b>									<b>226.05</b>

### Fresh Development of Other Modules

In addition to the core civic services few of the applications that are needed to provide additional civic services have to be developed freshly. The SI has to gather all the requirements, build, test and deploy the applications. The indicative effort is shown in the table below;

<b>Name of the Module</b>	<b>Effort in Person Months</b>								<b>Total</b>
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to 3-tier architecture	Coding & Testing of new Modules	Integration with SMS, UID, SSDG, MSDG and Payment Gateway	STQC Certification	Documentation	UAT & Installation	
<b>Schools Management System</b>	1	0.5	0	3	1.80	1.80	1.20	3.00	12.30
<b>Council Manage</b>	1	0.5	0	1	1.80	1.80	1.20	3.00	10.30



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ment									
<b>File Trackin g System</b>	1	0.5	0	1	1.80	1.80	1.20	3.00	10.30
<b>Legal Issues Manage ment</b>	1	0.25	0	0.75	1.80	1.80	1.20	3.00	9.80
<b>On Line Booking Manage ment System</b>	1	0.25	0	0.5	1.80	1.80	1.20	3.00	9.55
<b>Assets Manage ment System</b>	2	0.75	0	6.25	1.80	1.80	1.20	3.00	16.80
<b>Docume nt Manage ment System</b>	1	0.5	0	3.75	1.80	1.80	1.20	3.00	13.05
<b>Electora l Manage ment System</b>	1	0.5	0	0.75	1.80	1.80	1.20	3.00	10.05





<b>Census Management System</b>	1	0.5	0	1	1.80	1.80	1.20	3.00	10.30
<b>Fleet Management System</b>	1	0.5	0	12.5	1.80	1.80	1.20	3.00	21.80
<b>Stores &amp; Inventory System</b>	1	0.25	0	7.5	1.80	1.80	1.20	3.00	16.55
<b>Online Portal</b>	1	0.5	0	6.25	1.80	1.80	1.20	3.00	15.55
<b>Total development and implementation effort</b>									<b>156.35</b>

**Note:** For customization / enhancement as well as fresh development of applications we propose to make use of the existing technology stack for development as well as deployment.

#### **Plug & Play facility:**

The SLS would have multi-tenancy support which would provide independency to the ULBs in availing only the required services from the gamut of services being provided through the SLS thus supporting Plug & Play facility.

#### **Scalability, Security& Sizing of the proposed architecture**

The above sections have clearly indicated the necessary architecture for SLS in terms of network, server, security & solution. These have been proposed in order to make



the SLSS a robust system as it would cater to the requirements of the entire state. The following are the key indicators;

- Ensured seamless service delivery through multiple channels and provision to add additional channels whenever required as the SLS would be on Service Oriented Architecture (SOA).
- The SLS would have multi-tenancy support which would provide independency to the ULBs in availing only the required services from the gamut of services being provided through the SLS thus supporting Plug & Play facility.
- In order to meet the future requirements the SLS architecture proposed in the above sections is robust enough to accommodate additional modules, applications, external interfaces, load requirements, database growth etc. Separate layers are proposed to provide services to external agencies and to include additional interfaces.
- The sizing of servers and their deployment on centralized architecture has been proposed to meet the future needs. Advanced technological concepts such as Virtualization using Linux, multi-tenancy support which is one of the feature of cloud computing (SaaS, Paas&laas) etc. takes care of future needs not only confined to CCMC but also for the other ULBs.
- The proposed security architecture with 2 levels of firewall to build DMZ and MZ ensures security at the network, server infrastructure, operating system and database level. The SOA that is proposed to build the applications ensures application and user level security. The proposed Oracle 11g provides a wide gamut of security features that has to be used by SI during the SLSS building phase.
- The proposed multi-tenancy support suggests having an Exclusive Administration/Management Module to track transactions, accounting and management of tenants (ULBs). This can be enhanced to incorporate cost-sharing between the centralized infrastructure provider and ULBs.



- The proposed IT infrastructure would be sized based on the current load on the servers and the future load that would be expected at the state level.
- The SLS shall have audit trails for logging critical transactions of critical users to ensure fool proof transactions and accountability.
- The proposed solution architecture factors the need having an integration layer which would take care of seamless interaction with external interfaces namely; biometric devices, GIS, payment gateways, UID systems, SSDG etc.
- The proposed DRC for business continuity ensures full time availability of all the identified core civic services and other modules. This eradicates the need for offline working of the applications at the ULB level.

#### **4.2.2. Application Architecture**

##### **Architecture option analysis**

The two options that could be considered are:

- Centralized Architecture
- Decentralized Architecture

Centralized architecture is best suited for an organizational system which has control centered at one location with minimal management control in distributed locations. Service consumption and delivery of services through different delivery channels would take place at the distributed locations, but the ultimate control of the IT infrastructure that hosts the SLS is located at a centralized location. Even day-to-day control of activities and decision making is vested on the centralized control centre. It works best in a set-up where there is a need for geographically distributed locations have to make use of an enterprise level software solution that is uniform across all locations and these



geographically distributed locations do not have sufficient bandwidth and skill set to operate and maintain the IT infrastructure.

A decentralized system works best in a structure which has considerable control at remote locations and there is availability of all the required skill set. Most activities would be undertaken at remote locations and the central controlling centre will most likely only be a go-to centre for policy level issue resolution and to set the overall strategy and direction of the organization. Each individual centre would have considerable management control and issue resolution and decision making happens locally on a day-to-day basis.

#### **Strengths & Weaknesses:**

<b>Centralized Architecture</b>	
<b>Strength</b>	<b>Weakness</b>
Efficient Access to Information.	Increase in Implementation duration
Independence from Integrated Systems.	Increased Maintenance
Ability to Capture Additional Meta Data	
Superior Performance	
Improved Information Security	
Efficient Operations and Management	
Reduced downtime and increased availability of services	

<b>Distributed Architecture</b>	
<b>Strength</b>	<b>Weakness</b>
Efficient Access to Information	Dependent on Integrated Systems
Expedited Implementation	Inability to Capture additional Meta Data
	Difficulty in maintaining uniform versions of



	the enterprise level solutions across all locations
	Less efficient System Maintenance
	Non-availability of Consolidated data leading to poor decision making
	Increased cost of Maintenance and delay in system restoration in case of failure
	Non-availability of skilled resources
	Additional cost and time to be spent for data consolidation at central level from all distributed locations

From the above factors discussed with respect to the strengths and weakness of Centralized as well as De-centralized architecture and the status of the IT progress in the state of Tamil Nadu and the penetration of eGovernance across the ULBs in the state drives the point that the SLS has to be deployed on centralized architecture.

For centralized architecture based deployment of the SLS and taking up the load of providing un-disrupted IT infrastructure services to the ULBs, there is a need for robust solution architecture.

The proposed illustrative solution architecture gives an overview of system users, technology components, service delivery channels and application modules for front end as well as back-end operations.

The entire architecture has been divided into following 4 components:

1. Users/Stakeholders
2. Delivery Channels

### 3. Services

### 4. Resources

A diagrammatic representation of the 4 components of the illustrative solution architecture is shown in the fig. below;



The Proposed solution has to be designed using the industry's best practices as well as using the experiences from similar initiatives executed successfully within the country by MoUD. Highlights of the illustrative solution architecture are;

- Browser based application based on Service Oriented Architecture.



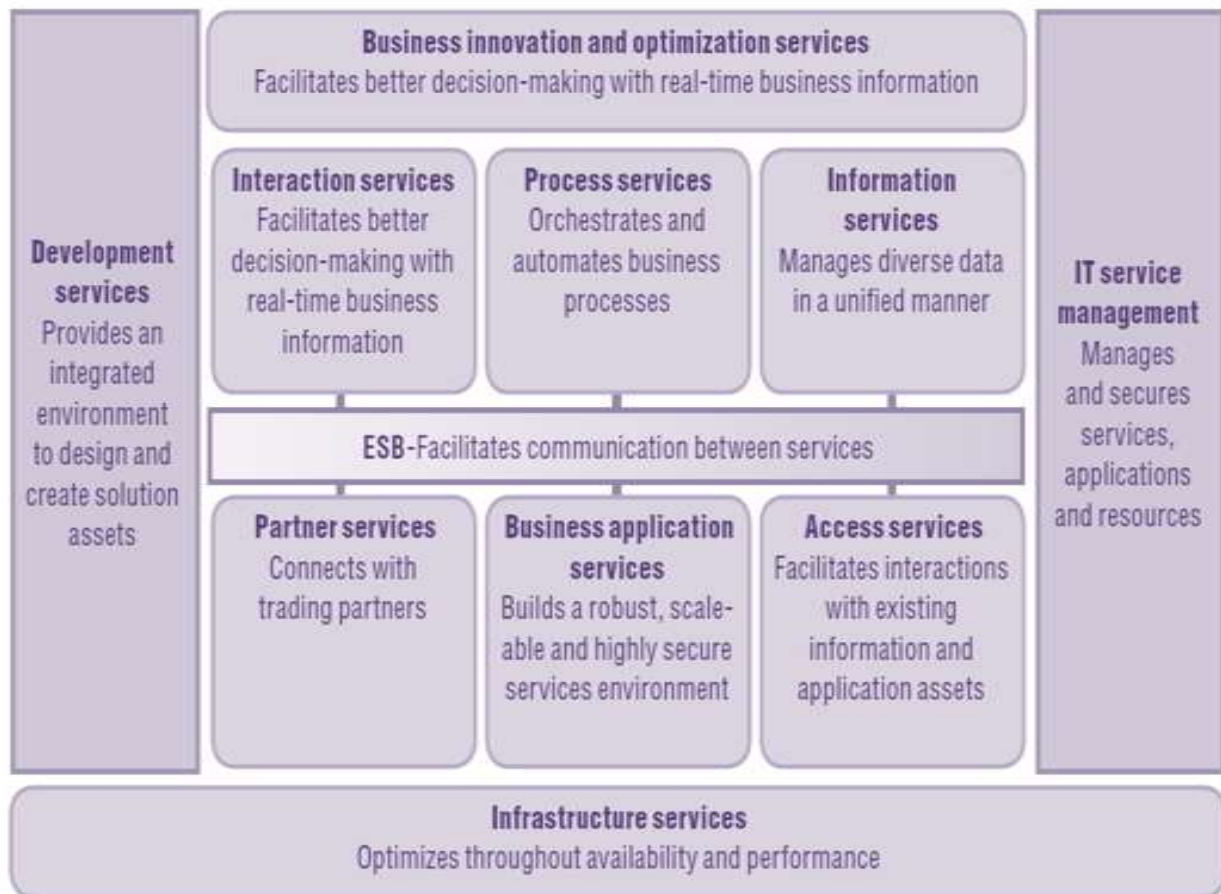
- The users should get authenticated before the access to the application is made available. The users are to post the request for service and deliver services interfacing with the applications hosted or connected through the deployment environment.
- Application is built under the Centralized Architecture specification with Multi-tenancy support and High Availability solution at the web server, application server and database server levels to avoid complete failure of services. High- Availability solution works under Active-Active mode.
- In Active-Active Configuration, both the nodes configured in a cluster provide the services to users on a continuous basis, hence both the nodes are utilized in online and load sharing basis for enquiries, transactions, etc. while running the same application. When one node goes down, the entire load of the application switches over to the node that is up and running.
- The solution architecture has to ensure that Data abstraction layer is defined and used.
- Intranets/secured Internet to provide secure access to ULB users.
- Internet / Intranet facility to provide access to other ULBs and service providers to enable G2G and G2C transactions.

### **SOA Architecture**

SOA is essential about bridging the technological gap between Business and IT through well defined, business aligned services developed by subscribing to established design principal, patterns, framework and methods.

SOA is a framework that enables;

1. Business flexibility – to keep up with fast changing requirement of customers and partners
2. Easy integration of applications
3. Better business process separated from the remaining part of the application
4. Reuse of assets – turnout time is reduced
5. Reduction of risks – as with SOA, simplicity & flexibility mitigate risk



## Application Architecture

The proposed SLS has to be on 3-tier architecture namely;



- Presentation tier – The front-end user interface lies here.
- Business tier – The entire business logic pertaining to various modules of the SLS lies here.
- Data tier – The data lying in the databases has to be accessed only through the components / methods defined in this layer.

Incase the modules need to interact with external entities the Service tier has to be introduced based on WSDL so that web services can be consumed by the external entities.

The architecture should be inclusive to accommodate compatibility with external devices such as; tablets, mobiles other handheld devices wherever necessary.

### Web Architecture

Web Server is key to an SOA approach because it provides a common framework and interface to integrate information, people and business processes.



In addition to the common interface and application and content integration framework provided by the website, it also supports;

- Different access modes to applications and services



- Roles and processes based access which can be used to vary what applications and services a user can see / use.
- The ability for business users to create and extend web applications with ease.
- Application templates that allow business users to easily assemble and customize linked applications and processes into composite applications.

#### **4.2.3. Information / Data Architecture**

It is necessary to understand the data accumulated due to the use of existing applications and factor for the migration of the data from the legacy databases to the proposed new database servers. Care has to be taken to build the meta data as per the eGovernance standards specified in <http://egovstandards.gov.in>.

This section shall give details of the data that is required to be digitized for the purpose of usage by the existing and new applications. This includes the following type of data;

- Data that has to be migrated from legacy applications (Data existing in legacy databases)
- Data that has to be entered (eg. Filled application forms, ASCII text files)
- Data that has to be scanned from the hard copies available (eg. Govt. orders, Notifications, Certificates etc.)

#### **Migration of Existing Data from legacy database server to new database server:**

Migration of the data of existing applications to the new database servers from the existing database server as well as the legacy data needed as pre-requisite for the implementation of the newly developed applications which may either be in the form of hard copy or soft copy has to be taken into consideration.



These applications are being used by the pilot ULB and these applications have lakhs of transactional records that are available on legacy database server with Oracle 10g. This database server would be phased out and this data has to be migrated to the newly proposed database servers.

The volume of transactional data of these existing applications that needs to be migrated from legacy database server to the new database server is shown in the table below;

<b>Area</b>	<b>Number of Records (Lakhs)</b>
Birth and Death Records (Data Migration)	10.00
Property tax records digitization	9.00
Grievances Complaints records (Data Migration)	0.25
Accounting System (Data Migration)	3.00
Water supply and other utilities (Data Migration)	10.00
Building Permit records (Data scanning & entry)	3.00
Trade Licenses (Data Migration)	2.00
Solid Waste Management (Data digitization - Complete Coimbatore city map divided into zones and wards; layers include Roads, Garbage bins & collection points, Dumping yards etc.)	5 Zones 100 Wards
eProcurement (Data Migration)	10.00
Personnel Information System (Data Entry)	800 employees data

#### **Data entry of Master Data:**

In order to provide better services and also provide better integration of applications it is necessary to enter the Master Data for each of the core civic service applications as well as for the proposed “Other modules”. These applications would be deployed in the SDC to be used by all the ULBs and they would have centralized databases.

#### **Digitization of data:**



There is a need for data digitization for the effective implementation and better decision making for Solid Waste Management application. The volume of data to be digitized is as shown below;

Entire Coimbatore City map with boundaries and also layers of road, garbage bins, garbage dump yards etc. has to be digitized.

All the three types of Data Migration activity shall be done initially on a Test Database server and on confirming the integrity of the data, it shall be moved on to the Production Database Server (Active). The methodology adopted is as follows;

#### **Analyze existing system**

- i) Business Scope
- ii) Technical Scope

#### **Analyze Problem Area of the System**

- i) Business issue: Extended or unexpected down time, Data loss recovery cost
- ii) Technical issue: Application Performance & Compatibility issue
- iii) Database issue: Data Corruption, missing, or data loss

#### **Identify the scope of the Migration**

To mitigate above problem areas we need to improve the performance and check the compatibility of the following:

- i) Technology Area
  - a. Operating System
  - b. System s/w
  - c. Front-end tool
  - d. Application Server
  - e. Web server



f. Database Server

ii) Application Area

a. Presentation Layer

b. Service Layer

c. Business Layer

d. Database Layer

e. Reports

### **Set up Migration strategy**

Entire Application & database need to be divided into logical segmentations

Set up Exit criteria for Migration

#### **Case-I:**

- Tally the result of “Pre-migration data validation” and “Post-migration data validation”

- If data is same state after migration as it was before

**And**

- Output of the system will serve the business requirement

- All Testing related feedback is closed

**Then**

- Migration status is completed successfully

#### **Case-II:**

- If data is not same state after migration as it was before

**Or**

- System Crash during post-data validation

**Then**



- Migration status is not completed successfully

### **Pilot Plan on one of the logical segmentation of the system**

- Study business areas
- Study Technical areas
- Impact Analysis of System requirement Specification as per intended functionality & technology
- Baseline System Requirement Specification (SRS)
- Impact analysis of existing Architectural Design as per revised SRS
- Baseline Architectural Design
- Impact Analysis of existing code & Database
- Introduce the relevant patches
- Introduce environment for target database
- Put the migrated data into target database (using tools)
- Test the patches
- Unit Testing for each logical batch files
- Bug fixing
- System testing & Bug fixing

### **D. Live Project Plan for entire Application & Database**

- Study business areas
- Study Technical areas
- Impact Analysis of System requirement Specification as per intended functionality & technology
- Baseline System Requirement Specification (SRS)
- Impact analysis of existing Architectural Design as per revised SRS
- Baseline Architectural Design
- Impact Analysis of existing code & Database

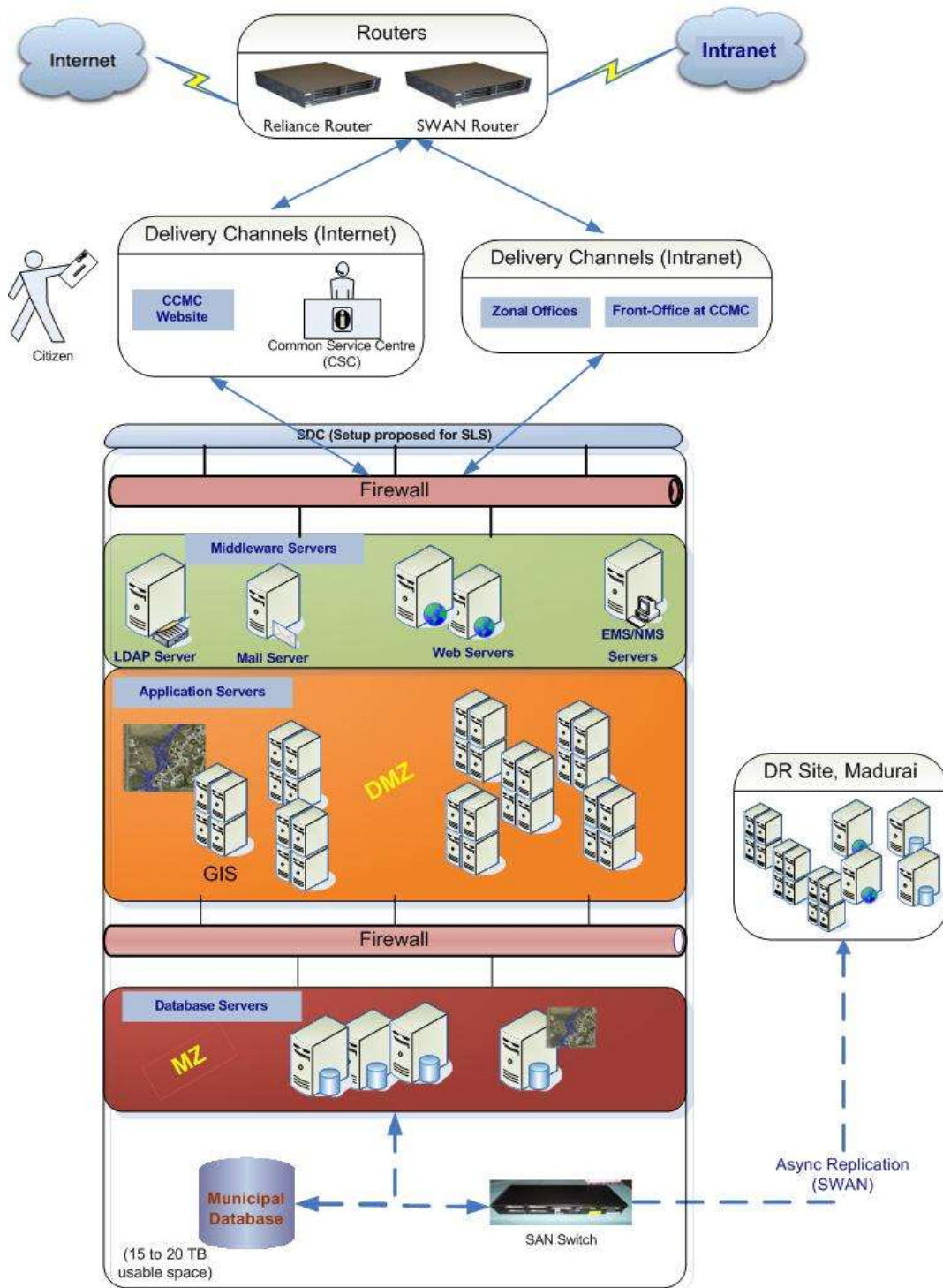


- Introduce the relevant patches
- Introduce environment for target database
- Put the migrated data into target database (using tools)
- Test the patches
- Unit Testing for each logical batch files
- Bug fixing
- System testing & Bug fixing
- Integration Testing
- Load Testing

#### **4.2.4. Illustrative Technology / Deployment Architecture**

The proposed technology / deployment architecture shown below gives clear indication of the zones and the indicative list of servers that has to be placed within each of these zones thus ensuring a secured environment.

### Illustrative Technology / Deployment Architecture







The above diagram gives illustrative deployment architecture of the SLS at State Data centre. The architecture clearly demarcates the zones that are required and the category of servers that need to be placed inside each zone in order to give a fool-proof security to the SLS.

The state wide system would leverage the existing applications and provide a common service interface to the citizens and various other stakeholders. There would be service level interactions between end users, existing applications and external systems. Citizens and Business Users would interact with the SLS via standard service interface.

The users should get authenticated before the access to the application is made available. The users are to post the request for service and deliver services interfacing with the applications hosted or connected through the website.

As SLS is built under the Centralized Architecture specification, on High Availability at the web server, application server and database server and Core Switch level to avoid complete failures of services, which are delivered through SLS. Deployment architecture depends on number of factors including response time, availability, SLS Technology Standards etc. Improving system availability and the ability to accommodate increased workload are the main objectives of server or process clustering.

#### **4.2.5. User Interface**

All users (Internal / External) shall have to pass through the firewall to access the applications. The user interfaces shall be CCMC website, CSCs, CCMC front offices and zonal offices. The external users accessing the applications through internet have to pass through the first level of firewall and through the web server will be directed to the respective application servers. None of the users will have direct access to the database



servers. The database servers shall be accessed only by the application servers through the database layer of the application.

The internal users shall access the applications through TNSWAN.

#### **4.2.6. Overall Network & Server Architecture**

This section gives a detailed description of the proposed network and server architecture that would be setup, configured and maintained at the SDC to host the SLS in a centralized manner on a multi-tenancy environment.

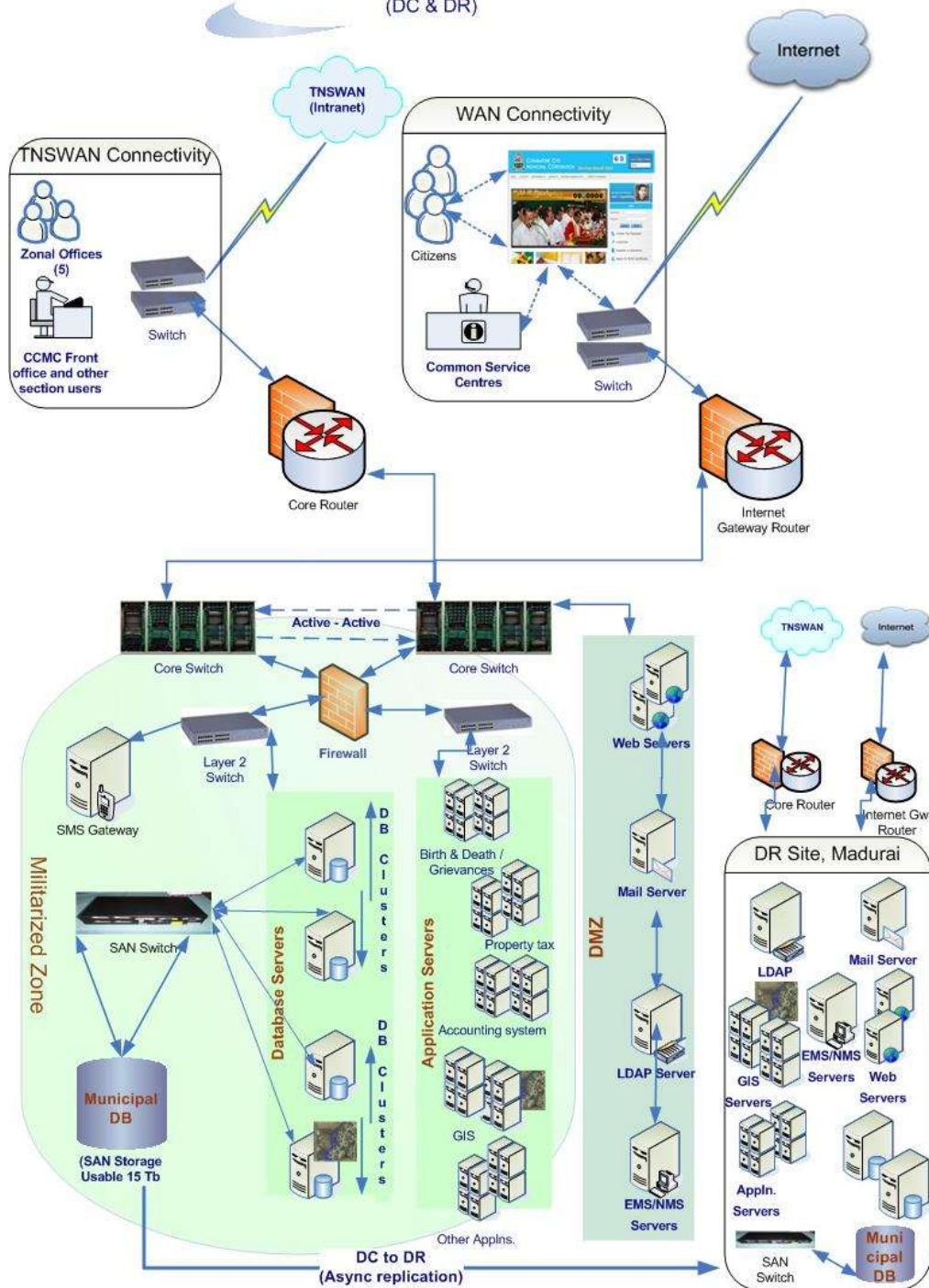
##### **To-Be Network & Server Architecture**

It is evident from the above that the existing setup consists of servers connected through WAN connectivity that are being used by the ULB to access few of the implemented eGovernance applications. In order to deploy the SLS on a centralized architecture with multi-tenancy support the existing SDC has to be equipped with state-of-art technology and with latest configurations of the servers and network equipments. Also there needs to be a clear demarcation of zones and each zone has to host group of servers to ensure proper security. It is also proposed to have a DRC site to ensure business continuity.

It is mandatory that care has to be taken to adhere to the DIT Guidelines wherever applicable during the building of the SLS.

The diagram below gives an illustrative Network & Server Architecture proposed for the centralized deployment of the SLS;

Illustrative Network & Server Architecture (DC & DR)





The above diagram gives an illustrative representation of the network and server architecture that needs to be a part of the SDC in order to host the SLS on centralized architecture to provide the envisaged civic services. The SDC has to be equipped with the following;

- Application Servers
- Database Servers
- Web Servers
- Middleware Servers (Mail Messaging, EMS / NMS, Directory services, SMS Gateway, Backup server, DC-DR replication etc.)
- Network components (Core Router, Core Switch, L2 Switches & Firewall)
- SAN storage with 15TB of usable storage space scalable upto 20 TB

The overall arrangement of these servers as depicted in the diagram above indicates that there needs to be two zones namely; De-Militarized and Militarized zone. There is network connectivity provided with 4 Mbps bandwidth at CCMC data centre. The external stakeholders namely; citizens, CSCs etc. access the SLS over the internet whereas the internal stakeholders namely ULB users, Front-office of CCMC etc. access the SSS over the intranet. The 5 zonal offices shall access the SLS via CCMC over SWAN.

The Core Routers shall route the network packets through a 1<sup>st</sup> level Firewall which creates a “De-Militarized zone and provides access to the Core Switches at CCMC. These Core switches shall be configured in Active-Active mode to provide high availability with load balancing. All the Middleware servers and Web servers shall be in this zone. There shall be a 2<sup>nd</sup> level of Firewall which creates the “Militarized zone which shall host the Application servers and Database servers along with the SAN storage.



The Application, Database and Web servers shall be configured in High Availability mode to ensure that there is no disruption of services to the stakeholders due to hardware failure. Also the core switches shall be configured in Active-Active mode to provide load balancing in addition to the High Availability. Also wherever applicable the servers have to be in clustered mode.

### **Business Continuity:**

The DR site at Madurai or suitable place has been proposed in order to provide Business Continuity. The DR site shall have a similar setup as the proposed infrastructure for SLS at SDC, but can manage with 50% of the capacity. This can be scaled up at a later stage, if necessary. There shall be a DC-DR replication at the SAN storage level on asynchronous mode to ensure that in case the setup at SDC goes down due to some reason beyond control then the DR centre at shall take up the load and continue to provide the services through SLS without any disruption or loss of data, thus ensuring Business Continuity.

The Bill of Material proposed for the Primary site (Data Centre) is as shown below;

Description	Qty
<b>Hardware</b>	
Servers	
Application Server (Blade Servers)	11
Database Server (Rack Mountable)	5
Web Server	2
GIS Application Server	1
GIS Database Server	1
Directory Services Server	1
EMS Server	2



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DC-DR Replication Server	1
SMS Gateway Server	1
SAN Storage and Tape Library	
SAN Storage (20 TB Usable scalable to 30 TB)	1
SAN Switch	2
Tape Media (Lot)	1
Network Components	
L2 Switches (24 port)	5
Firewall (Unified Threat Management - UTM)	2
Router	1
System Software	
Linux (Licenses)	25
RDBMS Support	1
Linux Virtualization Licenses	50
Antivirus Licenses	50

The GIS and Middleware components required are;

GIS & Middleware components	Quantity
GIS Application Software	1
Directory Services Software	500
EMS Software (Additional licenses)	1
NMS Software (50 nodes)	1
Backup Software	1
DC-DR Replication Software	1



The Bill of Material proposed for the Disaster Recovery Centre is as shown below;

<b>Disaster Recovery Centre Site</b>	<b>Qty</b>
<b>Servers</b>	
ApplicationServer (Blade Servers)	6
Database Server (Rack Mountable)	3
Web Server	1
GIS Application Server	1
GIS Database Server	1
Directory Services Server	1
DC-DR Replication Server	1
<b>SAN Storage and Tape Library</b>	
SAN Storage (20 TB Usable scalable to 30 TB)	1
SAN Switch	2
Tape Media (Lot)	1
<b>Network Components</b>	
L2 Switches (24 port)	2
Firewall (Unified Threat Management - UTM)	2
Router	1
<b>System Software</b>	
Linux Licenses	16
RDBMSsupport	1
Linux Virtulization Licenses	50
Antivirus Licenses	50

Note: All hardware should be technology neutral.

The Bill of Material proposed for CCMC is as below;



# Detailed Project Report for State Level Solution for eGovernance in all ULBs in Tamil Nadu



Item Name	Desktop with Win 7 preloaded	Multi-Function Printer	Standalone Laser Printer (A4)	Dot-matrix Printer	High End Scanner (A3 size)	Plotter (A0 size)	Wall Mount Racks
<b>CCMC Data Centre</b>	0	0	0	0	0	0	0
Revenue	21	1	1	30	0	0	0
General Administration	19	1	1	0	0	0	0
Council	0	1	1	0	0	0	0
Health	21	1	1	0	0	0	0
Town Planning	5	1	1	0	1	1	0
Accounts	4	1	1	0	0	0	0
Added Areas	61	0	1	0	0	0	0
Zonal Offices	100	5	10	10	5	0	5
GIS	5	0	1	0	1	1	0
Engineering	6	1	1	0	0	0	0
Stores	2	0	1	0	0	0	0
CCMC Computer Centre	5	1	1	0	1	1	5
<b>Total</b>	<b>249</b>	<b>13</b>	<b>21</b>	<b>40</b>	<b>8</b>	<b>3</b>	<b>10</b>

This proposed Network and Server Architecture would have the following benefits;

- enable better and centralized management of the entire IT infrastructure
- ensure enhanced security





- ensure continuous availability of the civic services
- ensure better performance and continuity
- ensure seamless exchange of information across applications reduce total cost of ownership as well as operational cost as compared to distributed architecture

#### **4.2.7. Security Architecture**

Information Security is the process of protecting data from unauthorized access, use, disclosure, destruction, modification, or disruption. The terms information security, computer security and information assurance are frequently used interchangeably. These fields are interrelated and share the common goals of protecting the confidentiality, integrity and availability of information; however there are some subtle differences between them. These differences lie primarily in the approach to the subject, the methodologies used, and the areas of concentration. Information security is concerned with the confidentiality, integrity and availability of data regardless of the form the data may take: electronic, print, or other forms.

Application security initiatives shall include, DMZ Policy, encryption, authentication, authorization and digital signature. It shall take the appropriate measures for the data privacy, confidentiality and access control.

SLSS's complete security is assured by implementing the security at the following levels,

- Application level (Basic application for access control, authentication and audit trail etc.)
- Database level security by deployment of the database servers in Militarized zone and access to data is only through the application modules. Database roles, users and audit logs ensure additional security to the data.



- System level (Physical security, communication and operation management, business continuity management etc.) security (ISO 27001)

SLNA and CCMC are committed to securing its own information and information of citizens using a sophisticated information security system which has been taken care of in the proposed architecture of the CCMC data centre. Zones are created appropriately like De-Militarized and Militarized zones using 2 levels of Firewall. The different category of servers is grouped logically and placed in the appropriate zone in such a way that the security of data is ensured.

The various stakeholders accessing the SLS have to pass through the 1<sup>st</sup> level of Firewall where necessary filtering of packets happen and access is provided to the Middleware servers namely; Web server, Directory server etc. Based on the service request the appropriate application server is contacted and the user interface of the application is provided to the stakeholders. Whenever there is a need to access the database the user request through the application has to pass through another set of 2<sup>nd</sup> level Firewall where the related database server is accessed and the data is fetched / updated in the SAN storage. Also care is taken in such a way that the applications meant for internal departmental staff usage such as “Accounting System” is protected from external access.

Role based access is built within the application systems and the SLS is architected in such a way to work in a multi-tenancy environment. Every ULB is treated as a tenant of the SLS and the role based access along with the hierarchical structure of the ULB is built-in the database which enables to provide authorized access to the SLS within every ULB. Also care is taken to expose only relevant modules to the respective ULB.

The following security aspects are to be taken care of;

- Antispam
- Web filtering
- Antivirus/Anti spyware



- Intrusion Detection and Prevention System
- Firewall
- IP security

The firewall is meant to block unauthorized access while permitting authorized communications only. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

Antivirus and anti-spyware software will ensure that the LAN is protected from malicious software.

It is mandatory to ensure that the System and Audit logging are enabled and accesses to the logs are available

#### **4.2.8. Integration with SWAN and SDC**

##### **SWAN**

State Wide Area Network (SWAN) is functioning as the core common network infrastructure for e-Governance, over which Government applications would run.

CCMC is well equipped with 4 Mbps WAN connectivity through which all ULBs can connect to the centrally hosted applications and use the same.

At present 5 zonal offices are connected to the main office through WAN connectivity. The Corporation has planned to provide connectivity from the 5 zonal offices to the CCMC network through SWAN.

##### **SDC**



State Data Centre can also be used to host the proposed eGovernance applications after completing the required formalities between the SDC administration and Corporations.

#### **4.2.9. Service Level Agreements (SLA) & Monitoring Tool**

The proposed service level agreements for providing services through the SLS are shown below;

**Percentage of availability of network** – Server & Network availability has to be not less than 99.5% at DC and 99% at DRC.

**Timeframe to respond to outages to revive critical business processes** – Revival within 4 hours at DC or DRC.

**Remedies on outage of a problem** – Remedies within 2 hours at DC or DRC

**Escalation procedures to the next level in case of breach of SLAs** – 1<sup>st</sup> level escalation to Commissioner, CCMC and 2<sup>nd</sup> level escalation to Commissioner CMA in case of breach of SLS.

Note: The contract agreement between SI and CMA has to clearly define the penalty clauses for breach of SLAs.

**Any 24 x 7 x 365 monitoring of the entire solution** – As the DC and DRC have to be operational round the clock, there needs to be staff to monitor the setup as well as help desk support.

#### **4.3. Conformance to Standards**

The system would conform to the requirements laid down by JnNURM and will be monitored closely during implementation to ensure tight conformance. On a broad level, the following technology standards would be kept in mind. However, this does not limit the extent to which technology standards will be followed.



- Should be highly scalable
- Should support any combination of user interfaces (e.g. graphical, web browser, and telephone interfaces)
- Should be extendable to incorporate modifications to process flows
- Should be customizable to a fair extent to accommodate minor changes in operations and process flows and hierarchies of the different Corporations of Tamil Nadu

### **eGovernance Standards**

It is also proposed to follow the standards specified in the eGovernance Standards portal of NeGP which defines “Standards & Architecture for eGovernance applications. The standards defined are for creation of right environments to implement G2G, G2B, G2E and G2C services. To ensure standards among e-Governance applications, Government of India has setup an Institutional mechanism for formulation of Standards through collaborative efforts of stakeholders like Department of Information Technology(DIT), National Informatics Centre (NIC), Standardization Testing and Quality Certification( STQC), other Government departments, Academia, Technology Experts, Domain Experts, Industry, BIS, NGOs etc. In this process there is a provision of formal Public review also.

As per the guidelines it is necessary that the vital aspects such as Interoperability, Data & Meta data, Security and Localization of SLS are built based on the guidelines provided in the DIT website and the eGovernance Standards portal. It is further stated that the Digital Signature Certification has to be certified as per guidelines in <http://cca.gov.in>.

Note: It is to be noted that the IPR of the source code of the SLS developed by System Integrator lies with CMA / SLNA.

Conformance to the standards shall ensure the following;



### **Interoperability Standards:**

This ensures the following;

- Open connections to external products – Use of open Protocols & APIs in the relevant modules of SLS that need to interact with external interfaces.

### **Data Standards:**

This ensures the following;

- Use of industry standard formats for data exchange and portability for key data sets and meta data of the SLS.

### **Security Standards:**

This ensures the following;

- Follow industry good practices in setting up the security of SLS at different levels namely; network, server, application, database, data exchange etc.
- Adoption and use of defined Bio-metric and Digital Signature standards in the DIT website

### **Localization Standards:**

This ensures the following;

- Uniform look and feel across all the modules of SLS
- Ease of navigation from one feature to another thus enhance user experience

It is necessary that SI provides proper detailed documentation on the standards used in building the SLS.



It is mandatory that the SLS should be built upon the eGovernance Standards and DIT guidelines as specified in <http://egovstandards.gov.in> and <http://mit.gov.in> portals.

#### **4.4. IT Change Management**

The SLS would be deployed on a centralized architecture with multi-tenancy support. The SLSS would be used by different ULBs across the state and this leads to the challenge of having different requirements at different ULBs. This scenario is one of the mandatory requirements as there may be slight difference in the process flows, delivery channels, exchange of data with external entities etc., with respect to the services being provided by the individual ULBs. All this leads to have an effective Change Management strategy as stated below;

- Ensure appropriate version of the applications are deployed and used by the ULBs using the features such as Organization Units (OUs) available in the LDAP services.
- Configuration Manager to ensure proper versioning at application level for different flavours of the application to different ULBs.
- Whenever new versions of the applications are tested and are ready for release it has to be done through the LDAP services features of application deployment in appropriate OUs.

#### **4.5. Service Provision and Consumption by ULBs**

The SLS would be deployed on a centralized architecture at the SDC and this would be connected over the TNSWAN or WAN network by the ULBs which prefer to access it.

- Plan and configure the LDAP services in such a way that every corporation / ULB is created as a separate Organizational Unit (OU). This enables handling of



users/groups within the corporation / ULB as well as manages the deployment of appropriate version of the solution.

- Organization structure of every corporation as well as the ULB has to be created separately, on the LDAP server and necessary access rights have to be provided.
- The SLS module responsible for providing the necessary authentication/authorization has to be tightly inter-linked with the LDAP services for seamless exchange of credential data.
- Whenever an ULB proposes to get connected with this SLS there should be provision to configure through the application module to add the ULB as a part of the system and provide necessary authentication/authorization facility.
- Ensure appropriate synchronization between the SLS and the LDAP services at any given point of time.

#### **For ULBs to get connected to the SLS:**

- The complete organization structure of the ULB with names, designations and hierarchy of officials has to be created and handed over to the Server administrator for creating the necessary Organization Unit (OU) and the users/groups on the LDAP Server.
- Necessary inputs of the Corporation / ULB, required for accessing the state level solution has to be provided through the module responsible for the authentication / authorization.
- Based on the need of each corporation / ULB the access privileges to different modules of the state level solution along with the user privileges have to be defined.

#### **4.6. Continuity Measures**





The DR site at has been proposed in order to provide Business Continuity. The DR site shall have a similar setup as that proposed for the SLS inSDC, but can manage with 50% of the capacity. This can be scaled up at a later stage, if necessary. There shall be a DC-DR replication at the SAN storage level on asynchronous mode to ensure that in case it goes down due to some reason beyond control then the DR centre at shall take up the load and continue to provide the services through SLS without any disruption or loss of data, thus ensuring Business Continuity.

There shall be a properly defined data backup plan on a daily/weekly/monthly/yearly basis with the help of Tape Library proposed as a part of the SLS IT infrastructure.

It is further proposed that the SLS infrastructure has to follow the guidelines given by DIT on business continuity and disaster recovery.

#### **4.7. Support / Help Desk**

There is a need to setup support / help desk at the ULB level to provide seamless support to the users in the day-to-day usage and operations of the SLS. The selected ULB CCMC has this support facility in the form of a call centre setup which has operators catering to the needs of the users. As this setup is sufficient with IVRS facility too we feel that this meets the support requirements at CCMC we do not propose any additional requirements. Care to be taken to equip this with proper support staff to man the operations.

We recommend the same setup to be followed by other ULBs.

#### **4.8. Rollout Strategy**

The rollout strategy would be as follows;

- After Go Live of the SLS check for the stability of the solution
- Gather the following from the ULBs that are ready to be a part of the SLS



- The complete organization structure of the ULB with names, designations and hierarchy of officials has to be created and handed over to the Server administrator for creating the necessary Organization Unit (OU) and the users/groups on the LDAP Server.
  - Necessary inputs of the Corporation / ULB, required for accessing the state level solution has to be provided through the module responsible for the authentication / authorization.
  - Based on the need of each corporation / ULB the access privileges to different modules of the state level solution along with the user privileges have to be defined.
- Duration of this rollout would be for 6 months starting Month-13 till Month-18  
In future there is a need to extend the SLS to Town Panchayat level.

#### **4.9. Option Analysis**

Though the architecture followed is not 3-tier (Presentation, Business & Data) it has been suggested in the To-Be proposed that the applications have to be customized / enhanced to 3-tier architecture. Further it is suggested to build the new applications for “Other Modules” on Open source platform. Please refer section IT Infrastructure components (Proposed) that gives details on the proposed IT infrastructure along with the system software and application development requirements.

The proposed application has to be developed using the following;

- J2EE, JSP & PHP
- Open Source database such as; PostGreSQL 9.0 etc.
- Open Source GIS tools
- Framework such as Struts / Spring
- Localization & Unicode support



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- Operating System: Linux
- Browsers: SLS shall be accessible through minimum two standard browsers



## 5. Capacity Building & Change Management

The Government of India has planned a national level initiative - National e-Governance Plan, NeGP for increased transparency, efficiency and effectiveness for delivery of citizen services. e-Governance is also a part of the Government's agenda of governance as mentioned in its National Common Minimum Program. An important component of the NeGP is projects, which fall essentially within the domain of the State Governments. The State Governments naturally will prioritize/choose amongst these projects.

The nature and scale of e-governance initiatives planned within the domain of the State Governments, present a considerable enhancement in the aspiration level of government. Major managerial and technological challenges are one consequence of this, particularly in the context of the need for implementation of these projects in a "mission mode", (with clearly defined goals, timelines and responsibilities) by concerned departments of the State Governments. There is also a need to manage the entire program at the state level in a coherent manner with consistent strategies for cost optimization and integration. For achieving this, the State Governments need to provide for overall direction, standardization and consistency across initiatives and at the same time, have the resources and flexibility to drive this plan.

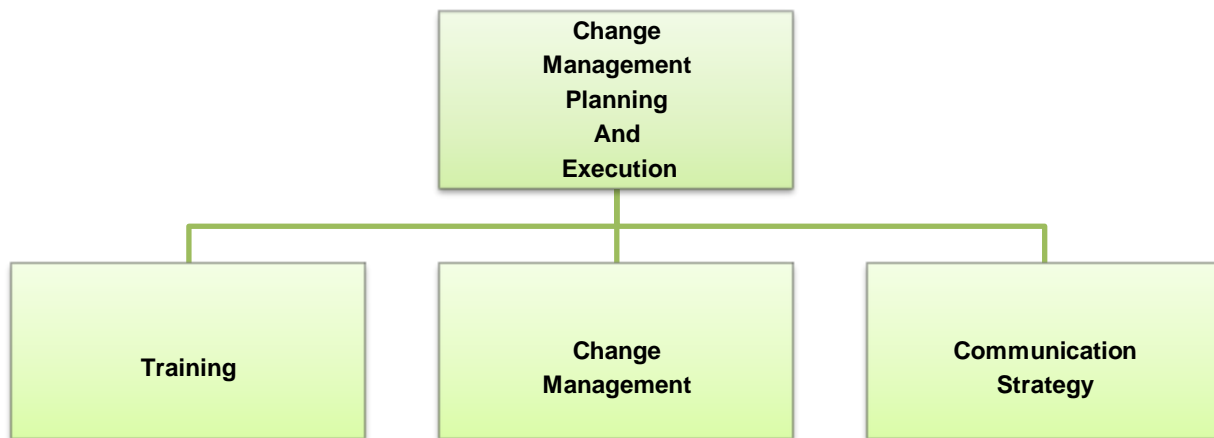
Keeping in view the enormous task of driving NeGP in line with the overall spirit of service orientation most states are inadequately equipped in terms of personnel and the skill-sets needed to handle the host of issues involved. For NeGP to achieve its goals, this is the first gap that needs to be addressed.

Government of Tamil Nadu is fully convinced with the need to bring about complete transparency in its operations to citizens of Tamil Nadu. We are also committed to enhancing the efficiency of our processes and mechanism of our service delivery to bring about considerable cost savings and to greatly enhance the value delivered to our citizens. This could be achieved by capacity building and change management exercises to the staff of ULBs for better sustenance of the project.

## 5.1. Need for Change Management

Change management is the process of transitioning the individuals (employees), teams (different sections) and various departments of CCMC, from the current state to the desired future state.

### Key Components of Change Management



The objective of Change Management is to generate zeal to learn and accept the change environment thereby motivating the other peers to adopt the same. A simplistic approach is being proposed to develop the Change Management strategy and action plan as per the requirement of project. The change management will entail developing appropriate strategy for awareness and communication of all change aspects, getting department personnel motivated, trained and capacitated Further, provide adequate support and reinforcement for implementation and sustenance of change would be the key thrust area. The way forward will entail developing work culture and environment among the project participants.

The Change Management Life Cycle proposed for the ULB CCMC will consist mainly of three phases:



- a. Preparing for Change
- b. Managing Change
- c. Reinforcing Change

**Preparing for Change:** Success of the e-Governance project depends on successful implementation of a comprehensive and well thought out change management plan. This needs to be supplemented with initiatives to enhance the awareness levels among the personnel of the ULB about the project by conducting a workshop on e-Governance in the ULB at each zone and by displaying the benefits of the program in the notice boards. The following sections define and describe select key steps in progression which needs to be followed for developing an effective Change management plan.

- i. **Defining Change Management Strategy:** The planning phase for change management for CCMC has been divided into the following – identification of changes where detailed enlisting of dimension of change would be done, its scope and coverage, implications and management, etc. will be detailed. Further to this, basis the understanding of need and requirement for change, a detailed road map for execution would be developed covering all aspect of change pertaining to the Project. Lastly, a monitoring and control plan with integrated risk management strategies would be developed.
- ii. **Set up of Change Management Team:** After developing change management strategy for CCMC, the next critical activity will be setting up of Change Management Team headed by the nodal officer for CCMC. The approach will entail creating a powerful team to drive change management successfully across the hierarchy. This team will include both internal as well as external stakeholders who will be forerunners for implementing e-Governance in CCMC.
- iii. **Communication of Change to Stakeholders:** The next critical requirement for Change Management is effective communication of change – its dimension and scope to all



the concerned stakeholders. It is of key importance to state the outcome of change and further more define the goals and objective of project clearly to all the stakeholders at all levels. The Proposed changes and the benefits therein need to be actively and continuously communicated to each and every stakeholders involved. All the possible communication mechanisms would be considered and integrated as per the change management strategy – small group discussions, presentations, operational unit monitoring meetings. Stakeholders buy-in is very important for effecting the changes and for successful change management. Once the changes have been communicated clearly to the stakeholders, inputs received from various stakeholders, if any, would be reviewed by Change Management Team and may also be incorporated in Change Management Plan as per the requirement.

**Managing Change:** The key to the success of managing the change would be to involve the stakeholders and understand their expectations and giving the required training to make them shed off their inner fears about implementing the e-Governance in CCMC.

- i. **Develop Change Management Plan:** Change Management Plan contains the execution strategies, methodologies and time lines for change implementation. Change Management Plan shall be approved by the nodal officer and form the blue print for effecting changes and implementation of the same in field offices.
- ii. **Implementation of Change Management Plan:** Once the Change Management Plan has been approved and has been formalized the same needs to be implemented as per the time lines indicated in the Change Management Plan. Change Management Team shall be responsible for implementation of the changes and shall be responsible for scope definition of each activity to be carried out. Change Management Team will also carry out the additional activities that will be identified as essential for effective implementation of the changes. Implementation of change will also involve monitoring of



the implementation by Change Management Team and periodic review of the same. Any issues faced during implementation shall be immediately highlighted to Change Management Team and the team will take immediate remedial action so that slippage in implementation is avoided.

**Reinforcing Change:** The last and very important stage in the change management process is reinforcement of changes which are to be implemented as per approved change management plan. Under this phase the effectiveness of changes being implemented is evaluated regularly and corrective actions would be taken.

The activities that will be carried out while reinforcing the changes has been detailed in following sections:

- i. **Collection and Analysis of Feedback:** During implementation of changes it is very important to periodically collect the data in terms of implementation status of various changes. Change Management Team shall collect the data about implementation of changes from various stakeholders regularly. Change Management Team shall also conduct quarterly, yearly survey at all zones where the changes are being implemented and during that survey officials will be asked questions about their opinion regarding success of the implementation of e-Governance and feedback will be collected. Feedback and data regarding changes being implemented will be analyzed by the Change Management Team and will be benchmarked against the implementation plan.
- ii. **Diagnosis of Gaps and Remedial Measures:** After collection of data and analysis of the feedback periodically, change management teams shall analyze the gaps, if any. Gaps identified vis-a-vis planned activities shall be analyzed in detail to find out the reasons and to fix the responsibilities. Based on gaps identified corrective and remedial actions will be planned by change management team. Identification of gaps and immediate



corrective actions will be very important phase of successful change management and will be very important activity of change management team.

- iii. **Implement Corrective Action & Celebrate Success:**After identification of corrective actions, Change Management Team shall implement the corrective and remedial measures. Change management team shall monitor the implementation and will also analyse the results of corrective actions taken.

## 5.2. Identification of Stakeholders

**Table: 22 Stakeholder Identification**

<b>Stakeholder</b>	<b>Training and Communication Needs</b>	<b>Communication Strategy</b>	<b>Training Strategy</b>
<b>SLNA &amp; Corporation</b>	Change Management Impact	Communicate the policy changes, to enable the working group to define and frame work plan	Wear the hat of both Training Partner and Audience
	Shift in Decision Making		Long Term Training
	Response Time		Behavioural and attitude building training to receive more attention
	Citizen Orientation		
<b>Employees</b>	Responsiveness	Phase wise communication strategy in keeping with the progress of implementation	Segregation of employees based on training needs and capability



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	Customer Centricity	Fliers and notices to be circulated on achievement of each milestone	Administration of various types of trainings according to requirement through identified professionals
	System and Data Operations	Senior Executives should involve themselves in each employee communication regarding adoption of e-governance	Regular progress inspection by senior functionaries
	Overall appreciation of the benefits of e-governance implementation	Newsletters could be circulated among employees apprising them of the progress of implementation	Heads of Departments to be ultimate owner of e-governance implementation in the respective departments
<b>Citizens</b>	Training on new e-enabled workflows and processes	Awareness creation through campaigns and neighborhood groups	
		Regular updates through newspapers and media on progress of e-governance implementation	
		Frequent features in media on importance of the new system as well as the changed and simplified e-governance-enabled work flows;	



		workshops to be conducted if required	
		A helpline could be created dedicated to addressing queries and receiving suggestions	
<b>Businesses</b>	Training on new e-enabled workflows and processes	Awareness creation through notification and circular to registered contractors	Identification of training needs and administration of training through qualified professionals
		Workshops could be conducted on the new e-enabled workflows	Trainings to be administered according to requirements of each type of business stake holder
		Separate helpdesks dedicated to businesses could be created to cater to their queries and suggestions	

### Change Agents

These agents will be the ambassadors of change:

- Disseminate and initiate activities for change in commensurate with the citizen service delivery and better governance.



- Serve as catalysts to propagate the need for better citizen orientation, sensitize the civil servants to be empathetic to citizen needs.
- Act as key resisting factors towards change at the top change management team so that the corrective steps can be taken.
- Awareness creation initiatives to empower the citizens

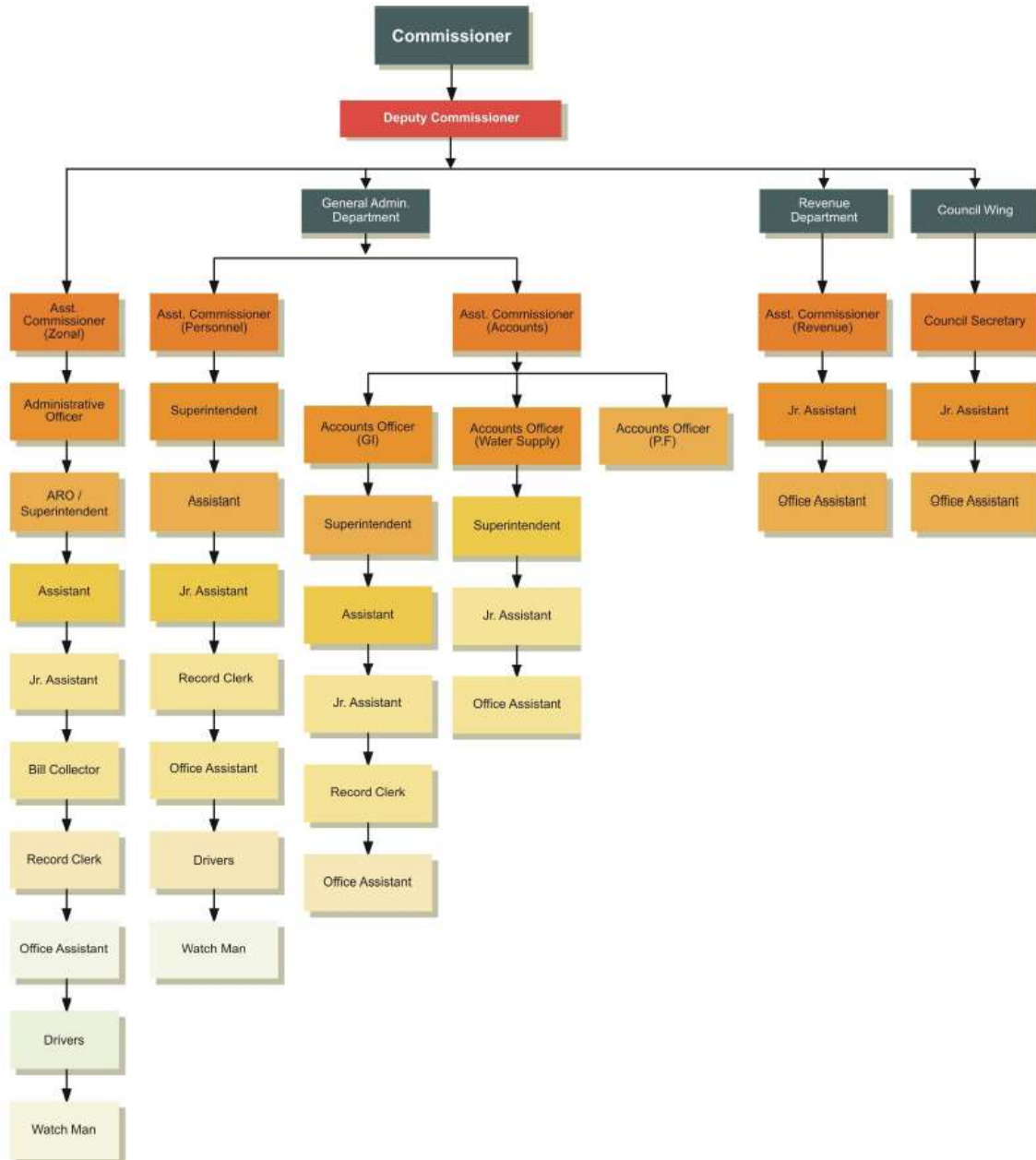
### **Equipping to cope with change**

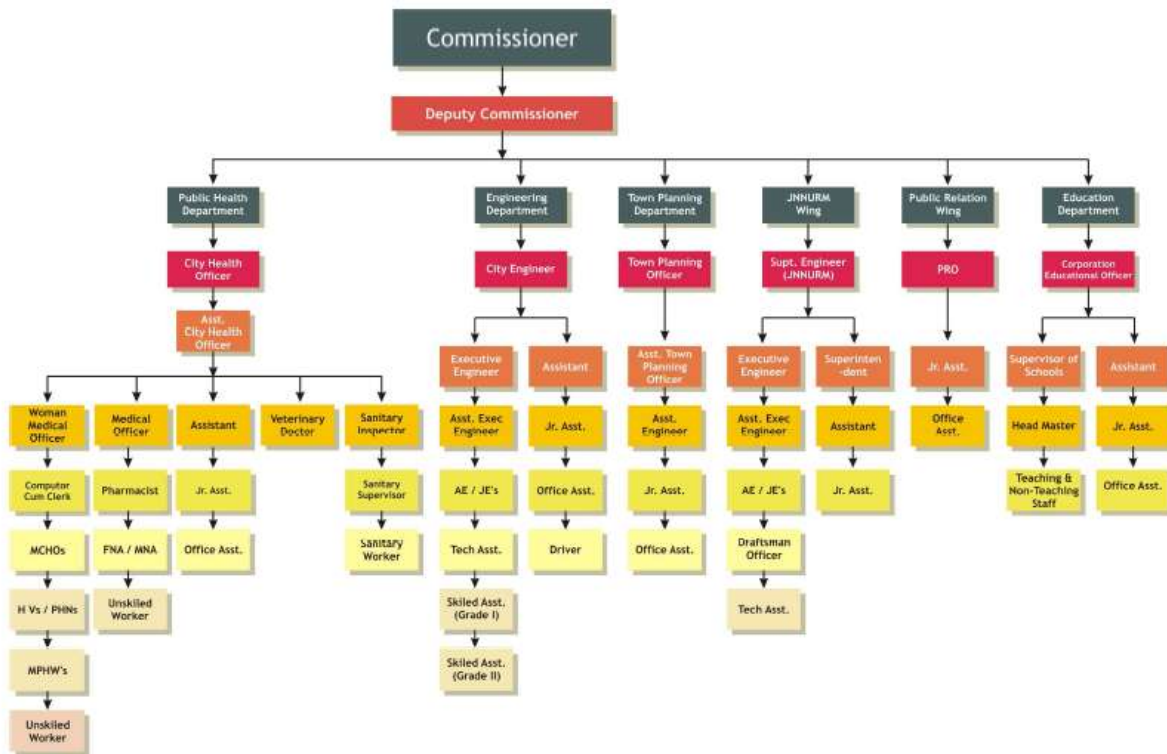
CCMC will be strengthened with change management programmes to address the psychological and logistical needs of employees specifically to unearth anxieties at operating level staff and addressing them squarely.

CCMC will also address the changes in people roles and responsibilities on introduction of e-interventions and programmes to re-tool and re-skill people if required and also impart e-training hands-on and hands-off. There will be scope for continuous e-training through web instances and internal training infrastructure. CCMC will also build consensus amongst the employees and try to position right people at the right slots.

## **5.3. Organization Structure**

### **5.3.1. Current Organization**





### 5.3.2. Proposed Organization

#### Apex Steering Committee

An Apex Steering Committee is to be set up ideally under the Chairmanship of the Minister and Commissionerate of Municipal Administration to provide overall vision, broad policy direction and guidance. A suggested composition is as follows:

S.No.	Designation	Role
1.	Minister, Urban Development	Chairman
2.	Principal Secretary, UD	Member
3.	Secretary, UD	Member
4.	Commissioner, CMA	Member



5.	MD, TUFIDCO	Member
6.	Commissioner, CCMC	Member
7.	IT Specialist, CMA	Member
8.	IT Officer, CCMC	Member

### Corporation Steering Committee

Government of Tamil Nadu shall have a Steering Committee at the Corporation level. The Committee is the absolute decision making body in the field of ICT initiatives of the department, policy matters, vendor evaluation and selection and project review. The Committee also plays a major role in drawing out the IT requirement of the ULBs in Tamil Nadu and evaluating funding opportunities for the same. A suggested composition is as follows:

S. No.	Designation	Role
1.	Commissioner, CMA	Chairman
2.	MD, TUFIDCO	Member
3.	Commissioner, CCMC	Member
4.	IT Specialist/ System Analyst, CMA	Member
5.	IT Officer, CCMC	Member
6.	Representative of State Implementation Consultant (SIC)	Member
7.	Representative of Implementation Agency / System Integrator	Member

### State e-Governance Mission Team (SeMT)

The State e-Governance Mission Team (SeMT) may be involved in providing advisory services to SLNA for this project. They would report into the Corporation Steering Committee.



### Project Operation Team

The CCMC should have an in house strength of Key Resource Persons (KRPs) who look into the day to day operational and technical issues in different offices. These KRPs will be utilized for Project implementation, operation and management in all the field offices. The proposed project envisages greater roles and responsibilities of the KRPs in the Operations and Management, Trouble Shooting, Database Management and Server Management front. For discharging these roles and responsibilities the KRPs will be given extensive training in the concerned Technology Areas. The KRPs will have a dedicated focus on the day to day technical issues of the corporation & will respond to technical problems in the field offices of their respective department and initiate necessary interventions. They would augment the staff from the Implementation Agency / System Integrator. The activities will be monitored and overseen by the State Implementation Consultant (SIC).

### 5.4. Staffing and Deployment Strategy

The staffing and deployment requirements for the implementation of State Level Solution per the table below;

Stakeholder	Resource	Min. no. of resources	Roles	Duration	Mechanism for staffing
SLNA	Project Manager	1	Manage the entire project to ensure timely delivery and coordinate with internal and external stakeholders	4 years	Deputation of existing official at TUFIDCO





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	Technical Manager (Projects)	I	Look into the end-to-end technological aspects of State Level Solution.	4 years	Leverage the expertise available with CCMC
	Technical Manager (IT Infrastructure)	I	Look into the end-to-end technological aspects of State Level SolutionIT infrastructure at SDC.	4 years	Leverage the expertise available with CCMC
	Business Analysts (Functional experts)	II	Provide functional expertise along with process workflows and related activities to the teams involved.	2 years	Leverage the expertise available with CCMC
<b>SIC</b>	Project Management Consultant	I	Provide consultancy support related to overall program management of the implementation of State Level Solution	2 years	Hire resources from the market
	Solution Architect/ Technology Expert	I	Provide the entire solutioning of State Level Solution	1 year	
	Network Security	I	Provide the requirements of N/w	6 months	



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	expert		security for the SDC		
	Capacity Building Consultant	2	Provide support in capacity building activities preparing training need analysis, providing training on GPR and Change management	12 months each	
	BPR & Urban Reforms Process Consultant	2	Provide consultancy support for Process reengineering and support during change management	12 months each	
	Procurement Consultant	1	Provide consultancy support during the procurement process	6 months	
SI	End-to-End team for the complete SDLC of SLS	Team size to be decided by the SI		2 years	SI to hire resources from the market
	O & M team	Team size to be decided by the SI		2 years (Post Go Live)	SI to hire resources from the market

Note: Top officials from the Corporation & CMA need to engage themselves with this project and conduct periodic reviews to monitor the progress of the project and ensure its completion within the stipulated timeframe.



## 5.5. Training Strategy

Six genres of Training have been identified for the Department. They are listed as follows:

1. **Technical Training:** From the end users perspective, training on e-Governance must begin with basic computer awareness. So without preliminary operational knowledge of computers, end users cannot be expected to work in an automated environment. The basic training requirement which is indispensable in nature for all its employees is Basic Computer Awareness Training. It basically includes extensive hand-on training on Computer awareness, basics of hardware, basics of networking, and basics of trouble shooting, internet, e-mail and Office applications. The later part of the training would involve hands on training on the applications each employee is assigned to interface with on a day to day basis. It would be very extensive and cover each and every aspect of the application. This would help in reducing process delays which might occur later on.
2. **Project Management Training:** This training is suggested for all senior functionaries of the department who have a major role to play in the effective management of e-Governance initiatives.
3. **Leadership Training:** This training is suggested for all senior functionaries and policy makers of the department who have a major role to play in the effective management of e-Governance initiatives.
4. **Technology Training:** This training is targeted to build in capacities of internal resources in specific areas of technologies such as database management, security administration etc
5. **GPR Training:** This training is targeted at those key functionaries of the department who are actively associated with the e-Governance initiatives of the department. This training aims at enlightening the target audience on Government Process Re-engineering (GPR) principles, objectives, benefits, techniques on business transformation etc. This would enable them to think about and evaluate the processes they carry out daily critically and enhance them in a scientific way to achieve greater efficiencies.



**6. E-Governance Awareness:** This training is intended at spreading awareness about and highlighting the benefits of e-governance implementation. This would help employees appreciate the importance of the program that is being rolled out in the Corporation and better co-operate with it. All employees of the ULBs, except class 4 employees, would be brought under the purview of this training.

The other related activities would be as follows;

- Perform Training Need Analysis (TNA) to identify the type and depth of training needed for the staff of CCMC.
- Prepare content based on the TNA.
- Identify the training locations that are convenient for the staff of CCMC.
- Prepare a detailed training plan and get the same approved.
- Assessments of the training provided and conduct Refresher courses.

### **Illustrative training coverage for the pilot implementation at CCMC**

<b>Training Category</b>	<b>Number</b>	<b>Duration</b>	<b>Illustrative Coverage</b>
<b>Technical Training</b>			
Computer Fundamentals	200	2 days per batch of 20 staff	Basic understanding and uses of computers Basic operations of computers Elementary word processing and spreadsheet (eg. Using MS Word and Excel) Basic web browsing and emailing
Application Training	847	3 days per batch of 20 staff	Usage of applications specific to functional area Extensive and in-depth coverage of all features
<b>Project Management</b>			



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Technical	30	2 days per batch of 10 staff	Technical concepts in Project Management like CPM, PERT Usage of Project Management tools (Eg. MS Project)
Non-Technical	10	2 days per batch of 10 staff	Basics of Project Management Overview of managing large projects
<b>Leadership Training</b>			
Commissioner, Joint Commissioner	2	1 day	Managing large programmes Managing large scale changes in an organization (Eg. E-governance)
<b>HoDs</b>			Handling a large workforce
Technical	30	1 day	
Non Technical	10	1 day	
Superintendents	20	1 day per batch of 20 staff	
<b>GPR Training</b>			
Commissioner, Joint Commissioner	2	1 day	Importance of process monitoring and evaluation Overall process monitoring and improvement techniques
Technical Staff	10	1 day per batch of 20 staff	Scientific evaluation of process efficiency
Superintendents	20	1 day per batch of 20 staff	
<b>Technology Training</b>			



Database administration	4	1 day	Elements of database administration Elements of SQL
Server and N/w administration	4	1 day	Elements of network administration and trouble shooting
<b>E-Governance Awareness Training</b>			
All Staff	847	1 day per batch of 30 staff	Importance and benefits of implementation of e-governance Overview of e-governance e-governance success stories

## 5.6. Knowledge Management

It is to be emphasized the Knowledge Management would be a critical activity that needs to be well conceptualized and executed by the SI team. One of the activities of the Exit Management would be to ensure that Knowledge management has been adhered to. The following needs to be ensured as a part of the Knowledge management exercise;

- To ensure that knowledge artifacts are well structured, stored, indexed and easily accessible.
- Setup a knowledge repository and store all knowledge artifacts with easy mechanism to search.
- A structured taxonomy, content classification, indexing through key words and storage rules would be vital for effective KM.
- Identify key stakeholders from the client and expose them to the knowledge repository and its usage

We suggest having a File Server at the SDC dedicated for storing the knowledge artifacts in a central manner and this repository can be accessed by all stakeholders within the

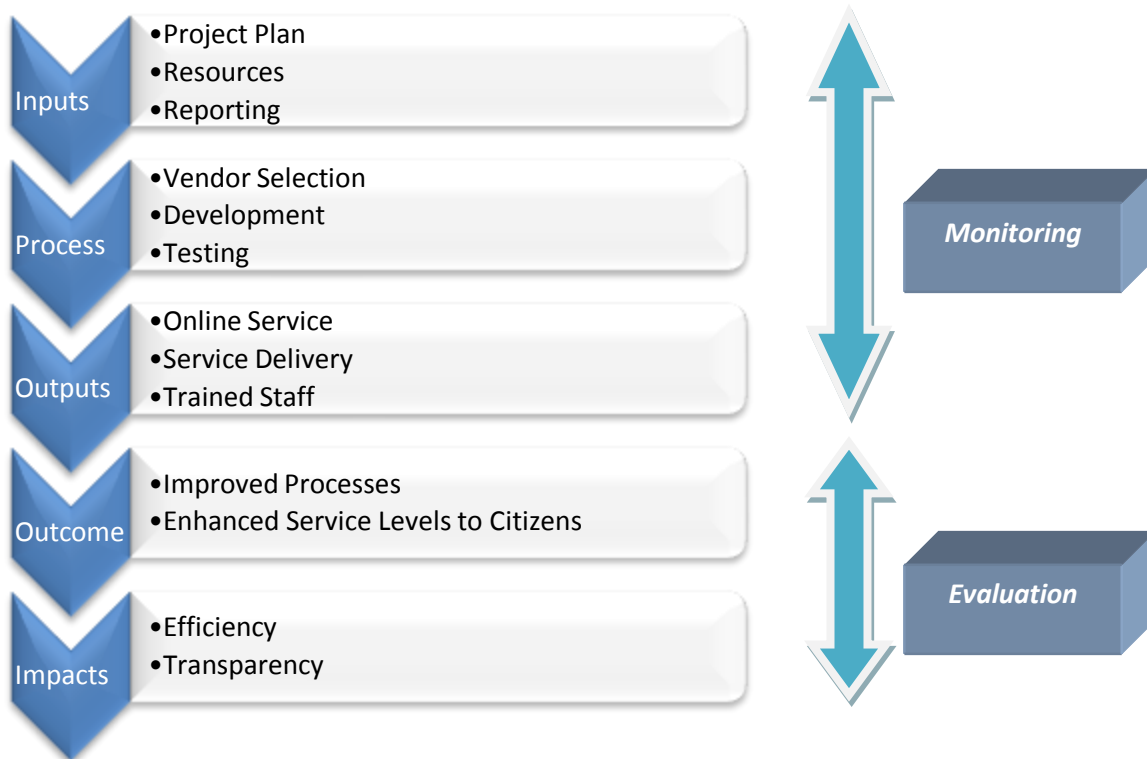


departments across all ULBs. Any open source tool for document management can be deployed for providing proper storage and search to this knowledge repository.

## 6. Monitoring & Evaluation

Monitoring and Evaluation (M&E) will help in the process of measuring, recording, collecting, processing and communicating information and assist in project management decisions making. Hence, a well-designed, properly functioning project M&E system should be in place to provide updated information and right time and right frequency in order to envisage that work is progressing in right direction as per plan and with time limit and budget. The main feature of monitoring and evaluation is measurement and verification of variables/ indicators for input, process, output and outcomes/ impact.

Monitoring and Evaluation are two distinct functions complementary to each other performed sequentially in a program. Monitoring is majorly performed at the Program implementation Phase whereas Evaluation is performed at the inception phases and post implementation in an on-going manner.



## 6.1. Monitoring and Evaluation (M&E) Framework

A detailed M&E framework is developed in this section. It follows six detailed activities. They are

- Clearly defined objectives
- Define & Identify roles and responsibilities
- Approach for M&E process

### 6.1.1. Clearly define Objectives

Objectives have to be defined at two levels: State level software development and the CMA level project implementation and at the Corporation level at CCMC. The responsibility for the state level implementation is with the Apex Steering Committee and at the CCMC is with the Corporation Steering Committee.





### **State Level**

The following are the key objectives for the M&E process at the state level. These are the activities that will be taken up by the State Level co-ordinating body which would oversee the implementation across the state.

- Chart the implementation roadmap for the entire state
- Co-ordinate among various ULBs in the state and individual Apex Committees to engineer a consistent if not common implementation program
- Create M&E plan and oversee its roll out (Physical and Financial progress) at State and CCMC
- Design standard reporting templates for Monitoring for ULBs for capturing data for State and CCMC
- Co-ordinate with MoUD and provide reports at regular intervals without fail
- Provide guidance to involved stakeholders as and when required

### **ULB Level**

The following are the M&E objectives of the Corporation Apex Committee which oversees the project at the Corporation level. This committee will monitor the progress of the project and evaluate its outcomes at the CCMC.

- Chart the overall implementation objective and roadmap
- Co-ordinate among all other stakeholders including SIC, IA and the State Level body to ensure an uneventful implementation of the project
- Collect information (progress report) at specific interval
- Analyse and monitor the overall growth of project
- Identify and address challenges, deviations and risks
- Make interventions as and when required and make policy level decisions



### **6.1.2. Define & Identify roles and responsibilities**

The roles and responsibilities of the key players in the implementation program are captured below:

#### **Apex Steering Committee**

- To provide overall vision, broad policy direction and guidance of the state wide program implementation
- Oversee the overall progress in terms of physical and financial progress
- Co-ordinate among various ULBs in the state and individual Apex Committees

#### **TUFIDCO (SLNA)**

- Circulation of regular progress reports to MoUD
- Take policy level decisions and prepare guidelines and formats
- Monitor overall implementation at state and rollout in ULBs

#### **Corporation Steering Committee**

- Absolute decision making body in the implementation of the program at CCMC
- Formulates project implementation plan, oversees and guides the overall implementation of the project at CCMC
- Interaction with TUFIDCO, State level steering committee as well as other statutory bodies at a policy level

#### **State Implementation Consultant (SIC)**

- Vendor selection to carry out implementation
- Interaction with Implementation Agency and monitoring the progress on a regular basis



- Conduct reviews of team
- Report status in a timely manner to SLNA
- Report issues and deviations in timely manner

### 6.1.3. Define approach for M&E process

Monitoring and evaluation happens in three distinct stages:

- Pre-Implementation
- Implementation
- Post-Implementation

During the monitoring process, the milestones for the various indicators would be monitored at regular intervals to determine the status. If any deviations are found, control mechanism would be put into place to take corrective actions at the minimal required period to achieve the desired output. In case of any change in the project plan the same would be communicated with the output.

Evaluation would be carried out at Pre and Post implementation Stage of the program. Evaluation performed at the Pre-implementation stage is 'Base-Line' Survey and one performed Post implementation is 'End-Line' Survey. Evaluation would also be carried on continuous basis after program implementation for continuous improvements till achievement of desired goals.

The following table articulates clearly the monitoring and evaluation strategy. It answers the following questions:

- *What needs to be monitored and evaluated?*
- *How would it be done?*



- When would it be done?

<b>Program Stage</b>	<b>What is being measured?</b>	<b>Monitoring Criteria</b>	<b>Mode of data collection</b>	<b>Frequency of data collection</b>
<b>Pre Implementation Phase</b>	Objective clarity and outcome definition	Well laid out documentation and responsibility matrices	Interaction with Project Manager	At the beginning of the project and validation before Implementation
	Establishment of performance indicators	Detailed documentation on Key Performance Indicators and responsibilities	Interaction with Project Manager	At the beginning of the project and validation before Implementation
	Data collection status	Coverage of data collection department-wise	Team meetings	Weekly
	Implementation Plan	Detailed project plan validated by CCMC	Interaction with Project Manager	At the beginning of the project and validation before Implementation
	Various frameworks for critical activities like risk management,, project communication etc	Detailed project plan validated by CCMC	Interaction with Project Manager	At the beginning of the project and validation before Implementation
<b>Implementation Phase</b>	Timelines	Number of modules completed/volume of hardware deployed against plan	Team meetings	Weekly, Monthly
	Effort expenditure	Actual number of man-hours spent	Team meetings	Weekly, Monthly



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	Rollout across departments and locations	Progress of coverage according to schedule	Data from the field	Weekly
	Capacity building	Progress of coverage according to schedule		Weekly
	Risk Management	During the occurrence of a risk event		Weekly
<b>Post Implementation Phase</b>	Effectiveness of solution implemented	Performance against KPIs identified during the pre-implementation phase	On-field survey and data gathering	Weekly, Monthly
	Results dissemination and communication to stakeholders	Level of awareness and buy-in of key stake holders in the project	Field survey, questionnaires and interviews	Monthly
	Number of personnel trained	Performance against targetted roll out time	Weekly reports	Weekly
	Number of delivery channels activated etc.	Performance against targeted roll out time	Weekly reports	Weekly
	Turnaround time of services and processes	Performance against KPIs identified during the pre-implementation phase	Observation at service desk	Monthly
	Number of visits to office for a service	Performance against KPIs identified during the pre-implementation phase	Interaction with citizens and observations	Monthly



	Time taken to provide service	Performance against KPIs identified during the pre-implementation phase	Observation at service desk	Daily
	Number of people availing services through website	Actual number of service requests and improvement over existing levels	Monitoring of website	Daily
	Citizen satisfaction level	Based on the turnaround time and number of personal visits required	Field survey, questionnaires and interviews	Monthly
	Citizen awareness of the e-governance initiative	Usage and awareness of new systems	Field survey, questionnaires and interviews	Monthly

## 7. Assumptions & Risk Management

This section details the risk management strategy for CCMC while adopting National Mission Mode Project of e-Governance in ULBs under JnNURM. It outlines the definitions of risk management related terms, the proposed organization structure for risk management, a preliminary analysis of the risks, key assumptions made in risk management and a broad strategy for monitoring & control of risks in implementation of the MMP.

### 7.1. Risk Management Concepts used in this DPR

**Risk** refers to an uncertain event that can potentially impact an expected outcome. In a project context, the **five project dimensions** that could be impacted owing to risks are scope, cost, quality, time and project outputs / outcomes / benefits. Risks could be

**threats or opportunities** based on the kind of impact they have on the project dimensions. If the uncertain event could cause negative impact, it is classified as a threat and if it could have a positive impact, it is classified as an opportunity. This nomenclature is based on the widely accepted standards articulated by the Office of Government Commerce (UK) through the Management of Risks (MoR) guidelines<sup>1</sup>.

The **primary objective of managing risks** is to reduce / eliminate the impact on project dimensions due to the threats. At the same time, managing risks is also important to leverage the opportunities that certain uncertainties may provide during the course of project life cycle. Thus, managing risks proactively assures an acceptable level of predictability of the project w.r.t the project dimensions.

Key **risk areas** that are to be proactively managed correspond to the following.

#	Risk Area	Description
1	Political	Risks arising due to: <ul style="list-style-type: none"> <li>Changes in political scenario in the Corporation</li> <li>Internal politics &amp; politics across Corporation &amp; other Govt. / Semi-Govt. agencies</li> </ul>
2	Financial or Commercial	Risks arising due to: <ul style="list-style-type: none"> <li>Changes in assumptions pertaining to costs &amp; cash flows</li> <li>Cost implications owing to changes in taxes, etc</li> </ul>
3	Social	Risks arising due to: <ul style="list-style-type: none"> <li>Cultural resistance amongst citizens and Government functionaries</li> <li>Learning curve effects &amp; stakeholder management</li> <li>Changes within &amp; across organization structures /</li> </ul>

<sup>1</sup> The section on Risk Management leverages OGC recommended Risk Management concepts as outlined in PRINCE2 & Managing Successful Programmes (MSP). These two guidelines borrow it from OGC's M\_o\_R.

		relationships
4	Technological	<p>Risks arising due to:</p> <ul style="list-style-type: none"> <li>• Changes in technology platforms &amp; versions</li> <li>• Changes in vendor landscape (mergers &amp; acquisitions)</li> <li>• Technology solution design, architecture, solution stability and other functional / non-functional aspects</li> </ul>
5	Legal or Contractual	<p>Risks arising due to:</p> <ul style="list-style-type: none"> <li>• Solvency issues pertaining to Programme partners</li> <li>• Changes in legislations by Centre, State &amp; Local bodies</li> <li>• Public / media scrutiny and legal challenges thereof</li> <li>• Nature of contract terms and conditions</li> </ul>
6	Environmental	<p>Risks arising due to:</p> <ul style="list-style-type: none"> <li>• Computerization and its impact on environment (power requirements, office space requirements, etc)</li> </ul>
7	Operational or Execution related	<p>Risks arising due to:</p> <ul style="list-style-type: none"> <li>• Operational / execution related aspects such as project teams, suppliers, project estimations, execution tools / methodologies / processes / standards, etc</li> </ul>

The project team and concerned stakeholders identify Risks in the above key risk areas as an ongoing activity. They are logged into a **Risk Register** which is reviewed and updated on an ongoing basis.



Once risks are identified, they are analyzed using a **risk analysis method**. The two key attributes that are used to assess risks are the **probability** of occurrence of the risk and the likely **impact** on the project dimensions. It is common to use a high, medium and low scale for rating risks against these two parameters. Numerical scores are given to the rating to help in prioritizing risks. A standard reference score card for risks follows in the table below. Risks that fall towards the bottom right corner are high priority risks.

Impact Probability	Low 1	Medium 3	High 5
Low 1	(Score 1) LOW	(Score 3) LOW	(Score 5) MEDIUM
Medium 3	(Score 3) LOW	(Score 9) MEDIUM	(Score 15) HIGH
High 5	(Score 5) MEDIUM	(Score 15) HIGH	(Score 25) HIGH

In large programmes, since the number of risks is high and this level of categorization may still yield many risks to handle, it is common to use **proximity** of the risk as an additional parameter to rate risks. Proximity refers to the likely time / phase of the project in which the risk would occur. This parameter helps in narrowing down the number of risks the team needs to effectively monitor and manage in a given phase of the project. In this report, since we have developed Risk registers by the three broad phases of Pre-

Implementation, Implementation & Post-Implementation, the proximity parameter has not been leveraged.

Based on the Risk analysis, as a next step of **Risk response planning**, certain standard response categories are used by the project teams.

Standard **response categories for Threats** are:

#	<b>Threat Response Category</b>	<b>Description of the Response category</b>
1	Reduce	Response reduces the threat to acceptable levels
2	Remove or Avoid	Response changes some aspect of the project such that the risk is eliminated completely (example: avoiding the use of a new, but unproven technology)
3	Share	Response shares the threat with a partner in gain-share models
4	Transfer	Response transfers the threat to a partner who is willing to insure you against it (example: insurance)
5	Retain	Response is to retain the risk without any actions, but monitor it closely to ensure that is acceptable to live with the threat (cases where it is costly to address the risk or probability is very low)

Standard **response categories for Opportunities** are:

#	<b>Opportunity Response Category</b>	<b>Description of the Response category</b>
1	Encash	Response encashes on the opportunity when it arises
2	Exploit	Response is in such a way that the opportunity is exploited



		multiple times
3	Enhance	Response is such that the opportunity is nurtured so that benefits are enhanced to encash in future

Risks need to be responded with an appropriate **contingency / mitigation / action plan**. Contingency plans are defined for the threat response category of 'retain' while mitigation plans are defined for the other four response categories. For opportunities, there are defined action plans.

It is to be noted that responding to a risk does not always completely eliminate it. There is a strong possibility that a risk response could introduce new risks. Such risks are termed as **Secondary risks**. There is also likelihood that risk responses may not completely eliminate / address the risk. Such residues that remain after a risk response are termed as **Residual risks**.

For effective risk management, assigning **Risk Responsibilities & Accountabilities** play a key role. In this regard, **risk actionee** and **risk owner** are identified for each risk in the risk register. Risk actionee is responsible for monitoring the risk as well as acting on addressing the risk (i.e., risk response). Risk Owner is accountable for effective management of the assigned risk (monitoring & acting). For effective management of risks, it is a good practice to identify certain **early warning indicators**.

Once identified and tracked in the Risk Register, risks would be given a **Risk Status** and updated regularly. Risk status indicates the stage in the risk management life cycle at which the risk currently exists. Typical statuses could be Identified, Evaluated, Updated and Resolved. It is important to track the actual resolution strategy that helped resolve the risk so that a body of knowledge for Risk management can be generated.

The above concepts have been leveraged in defining the risk management strategy in this DPR.

## 7.2. Organization structure for Risk management

The following organization structure has been defined for Risk management of the MMP. In general, it also holds good for as the proposed organization structure for implementation of the MMP.



The MMP is likely to have a large number of programme tracks / projects defined. Hence, at the bottom of the pyramid, we have **Project Teams & Project Managers**.

The project managers will report to the Programme Manager who is responsible for the overall Programme of successfully implementing the MMP. Suppliers' point of contacts will also report to the **Programme Manager**.

The Programme Manager will report to a **Corporation Steering Committee**.

A support organization for the Programme (**Programme Support Office**) or a dedicated **Risk Manager** could also be a part of the structure.

### Rationale for the risk management organization structure

In order to understand rationale for the organization structure for Risk management, it is important to understand the concept of **tolerances**. For each tier in the organization



structure, tolerances are defined on the key dimensions of scope, cost, quality, time and outputs / outcomes / benefits. Tolerance ranges are wider at the top of the pyramid and narrows down towards the base.

Whenever a risk threatens to violate any of the tolerances, it needs to be brought to the notice of the higher tier(s) based on the degree of impact. A risk that materializes becomes an **issue**. Issues are entered into **Issue logs** and like risks, are also escalated to the higher tier(s). This concept is articulated in the following paragraphs in detail.

Each track lead / project lead will be given a tolerance range for the relevant work packages they are handling. When a risk becomes an issue or an imminent issue, the project lead is supposed to escalate it to the Programme Manager immediately through standard issue management procedures. If the Programme Manager is in a position to resolve the issue, he / she provide resolution to the concerned team and appraises the Steering Committee at a subsequent meeting. If the ProgrammeManager too is unable to resolve the issue and it needs the intervention of the Steering Committee, then it gets escalated to them for their direction. Likewise, issues can get escalated till the Sponsors of the MMP at the State / National level.

In order to support the MMP's Risk Management processes during implementation, we recommend the use of a dedicated **Programme Support Office or a designated Risk Manager** as a part of the Programme Management Unit. The primary responsibility of this person is to provide standard policies, guidelines, templates and processes for Risk Management. The Risk Manager can also be made responsible for monitoring Programme Risks along with the concerned teams. The Risk Manager thus is an assurance agency for the Programme Manager and Steering Committee that standard risk management practices are being followed by the teams and risks are under control.

### 7.3. Risk monitoring & control strategy

The following diagram depicts the Risk Management Lifecycle defined for the MMP.



**a. Identify Risks**

Project teams and Project Managers have access to the Risk register. They are responsible for ongoing identification of the risks for their work packages / projects. The Programme Support Office and the Programme Manager will also have access to the Risk register and can enter / update risks they have identified.

**b. Evaluate Risks**

Once the risks are identified, the team evaluates the risks based on the probability, impact and proximity parameters. An appropriate response category is taken into consideration. This activity can be undertaken by the individual who identified the risk or by the entire team in a formal meeting based on the nature of risk and its likely impact.



**c. Define Plan of Action**

The next step is to define an action plan which will mitigate the risk. If the risk has occurred, then a contingency plan is chalked out. For opportunities too, the action plan is defined by the team.

**d. Implement Plan of Action**

In the event of the risk occurring, then the team would validate the action plan previously defined to ensure its relevance and implement it if found appropriate. Else, the action plan is refined and implemented. The primary assumption here is that the tolerances are within limits and hence the project team does not have to consult the higher tiers of the Risk Management Organization Structure.

**e. Assess Effectiveness**

Once the action plan is implemented, its effectiveness is evaluated and any residual or secondary risks arising due to the implementation of action plan is assessed. This feeds back into the first step of the process of identifying the Risks.

**f. Monitoring & Control**

Risks need to be actively monitored since their probability and impact are likely to change over the course of the project and programme. Hence risk monitoring and control is an ongoing activity with a shared responsibility of the project teams and programme manager. Risks need to be entered and updated in the Risk Registers. Risks are monitored by project / programme managers and the steering committee during the periodic status reviews (weekly, monthly, etc) and at pre-defined check points / milestones.

Key risks should be escalated to higher tiers in the programme organization structure through the use of Highlight reports that are shared with the Steering committee and Sponsors. When a risk has materialized (i.e., it is an issue) and it



threatens the programme then exception reports are generated and shared immediately with the Steering committee and / or Sponsors to call their attention and seek guidance.

#### **7.4. Risk identification and assessment for the MMP**

This section identifies and assesses the key risks that are likely to be faced by this MMP while it is being implemented by the CCMC. Risk registers have been defined for the three distinct phases of the Programme, namely, Pre-Implementation, Implementation & Post Implementation.

Pre-Implementation phase spans the time between the allocations of funds by the Ministry of Urban Development till the time the Corporation is ready to implement a single State-level solution. It includes the following key steps:

- Preparations by the Government functionaries for the adoption of the MMP
- Identifying the Programme Management consultant
- Identifying the Implementation partners and suppliers
- Procurement of hardware
- Development / customization of software(s) and user acceptance testing
- Site preparation
- Capacity building
- Pre-implementation audit of readiness to go-live

Implementation phase spans the time between the readiness to go-live till the time the implementation and rollout is done in the identified sites of the Corporation. It includes the following key steps:

- Implementation of the solution & migrating the data (Pilot & Rollout)
- Initial Support to concerned stakeholders such as Citizens and Government
- Ensuring steady state (i.e., first 60 days to 90 days of warranty support)
- Auditing the implementation and certifying the solution





Post Implementation phase spans the time between the steady state to the time the Warranty support ceases. This is typically three years post go-live. It includes the following key steps:

- Ongoing support to the stakeholders
- Ongoing capacity building
- Ongoing maintenance and support for the solution (minor enhancements, bug fixes, etc)
- Transition to the Corporation or identified maintenance service provider after the end of the contract

Risks have been classified for each of these three phases in the form of Risk Registers. It is to be noted that all these three are prepared at programme inception and reviewed and refined over the programme life cycle. Further, many of the risks that materialize in future phases could be avoided if adequate pre-cautionary measures are adopted in early phases. This is evident from the Risk Register for Post-Implementation phase wherein the action plans are to be done in Pre-Implementation phase.

The Risk register has been broken down into two tables. While the first one deals with risk identification and assessment, the second table deals with risk response strategy and fixes responsibilities & accountabilities. In this document, opportunities have been left out and only threats have been listed.

## 7.5. Pre-Implementation Risk Register

### Risk Identification & Assessment Table

#	Risk Area	Risk	Probabil ity	Impa ct	Risk Priori ty	Project Dimension Impacted				
						Sco pe	Co st	Tim e	Quali ty	Output s /



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					<b>Numb er</b>					<b>Outco mes / Benefit s</b>
<b>1</b>	Political	Political pressure against adoption of ICT in Corporation	1	3	<b>3</b>	No	No	Yes	No	Yes
		Political lobbying for awarding contracts to Govt., Semi-Govt, Private agencies	3	3	<b>9</b>	No	Yes	No	Yes	Yes
<b>2</b>	Financial / Commercial	Cost escalations between budget approval and bid management process	5	3	<b>15</b>	No	Yes	No	No	No



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3	Social	Cultural resistance amongst Citizens & Government functionaries to initiate the MMP	5	5	25	No	Yes	Yes	Yes	Yes
		Inadequate capacity building leading to poor readiness	1	5	5	No	No	Yes	Yes	Yes
4	Technological	Advancement of technology leading to changes in Solution design / architecture / adoption	1	5	5	Yes	Yes	Yes	No	Yes
5	Legal or Contractual	Poor contractual	3	5	15	Yes	Yes	Yes	Yes	Yes



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	al	terms with Implementa tion partner, hardware & software suppliers and Programme managemen t consultant								
6	Environme ntal	Concerns raised by NGOs in Site preparation for ICT adoption in various offices (laying of cables, expanding offices, acquiring land, etc)	1	3	3	Yes	Yes	Yes	Yes	Yes
7	Operation al	Delays in mobilizatio	3	5	15	No	Yes	Yes	No	No



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	n team members for Programme Management or Implementation	1	5	5	No	No	Yes	Yes	Yes
	Poor composition of Corporation's Programme team and partners' teams	3	3	9	No	Yes	Yes	No	No
	Delays in development / customization of the software	3	3	9	No	Yes	Yes	No	No
	Delays in procureme	3	5	15	Yes	Yes	Yes	Yes	Yes
		3	5	15	No	Yes	Yes	Yes	Yes
		3	5	15	Yes	No	No	Yes	Yes



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		nt of hardware / site preparation								
		Poor choice of standards, tools, execution methodolo gies and assurance processes								
		Poor estimations of the effort required for programme								
		Ambiguous scope definition/ poor requiremen								



		ts managemen t							
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## Risk Response Table

#	Risk	Risk Respo nse Categ ory	Early Warning Indicators	Mitigatio n / Continge ncy Plan	Residual Risk	Second ary Risk	Risk Owner	Risk Actionee
I	Political pressure against adoption of ICT in Corporation	Reduce	Demonstrations against initiative	Awareness creation amongst elected reps	Dissent in some quarters  None	Awareness leading to political pressure	Sponsor	Steering Committee
	Political lobbying for awarding contracts to Govt., Semi-Govt,	Remove	Politicians seeking privy info on the initiative	Transparent bid-management process		New Political adversaries against the initiative	Sponsor	Steering Committee



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	Private agencies							
2	Cost escalation s between budget approval and bid management process	Retain	Increased market prices of ICT infrastructure & manpower	Bids to do bundling / unbundling of services & products so that blended rates offset cost inflations if initial ballpark estimates indicates so	Costs may still not be contained per budget	Blended rates may hinder transparency in pricing & hence less control	Steering Committee	Pgm Manager
3	Cultural resistance amongst Citizens & Government functionaries	Reduce	Demonstrations by Citizens / Staff unions	Strong communication & capacity building strategy & plan	Resistance may not be completely eliminated	None	Steering Committee	Pgm Manager
		Reduce	Misleading information being circulated	Strong communication	Complete readiness may still	None	Steering Committee	Pgm Manager





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	Inadequate capacity building leading to poor readiness		by stakeholders	ation & capacity building strategy & plan	not be achieved by implementation phase		tee	
4	Advancement of technology leading to changes in Solution design / architecture / adoption	Reduce	News items on chosen technology indicating imminent changes in next 6-12 months	Rigorous technology evaluation exercise with system integrators & vendors prior to committing to platforms / stacks	Some technology changes may have to be accommodated in future date	If chosen technology has new versions, their stability could be in doubt	Steering Committee	Implementation Agency
5	Poor contractual terms with Implementation partner,	Reduce	Poor quality of resources, poor programme / project management	Hiring auditors / experts while framing the contractual	Some risks may still remain unaddressed since there	None	Steering Committee	Pgm Manager



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	hardware & software suppliers and Programme management consultant		nt, etc	al terms and validating with procurement experts	could be new variables introduced during the life of the programme			
6	Concerns raised by NGOs in Site preparation for ICT adoption in various offices	Reduce	Demonstrations / complaints coming to Corporation regarding the initiative	Press releases and meetings with media and NGOs to assuage any fears	Some dissidence may still exists	None	Sponsors	Steering Committee
7	Delays in mobilizing team members for Programme Management or	Share  Share	Non-committal attitude of agencies  Delays in pre-	Defining clear SLAs in contracts to bind providers to time lines with penalties /	Programme may become unviable to vendors owing to penalties	If SLAs are violated, may have to relook at contract / re-	Steering Committee	Pgm Manager, Implementation agency  Same as above



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Implement ation		implement ation phase tasks	black listing	Same as above	tender	Same as above	
Poor compositi on of Corporati on's Programm e team and partners' teams	Share	Delays in meeting milestones	Same as above	Same as above	Same as above	Pgm Manage r	Implement ation agency  Suppliers
	Share	Same as above	Defining periodic reviews & check points to track progress & SLAs	Same as above	Same as above	Pgm Manage r	Pgm Support Office
Delays in developm ent / customiza tion of the software	Reduc e	Issues with quality, execution & other pgm dimension s	Same as above	None	None	Pgm Manage r	Implement ation Agency & Suppliers
Delays in procurem		Implement ation agency & Suppliers expressing concerns on ability	Assurance service by a Pgm Support Office /	Risk will remain if there are many ambiguous elements	None	Pgm Manage r	Implement



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ent of hardware / site preparation	Reduc e	to deliver on time	external auditor to ensure predictabil ity	Same as above	None	Pgm Manage r	ation Agency
Poor choice of standards, tools, execution methodol ogies and assurance processes		Delays & poor clarity on FRS & SRS in early stage reviews	Validating efforts with internal sources, other States & Nodal agencies if feasible. Reducing ambiguity to the extent possible				
Poor estimation s of the effort required for programm e			Ensuring scope clarity prior to kickoff and				



Ambiguous scope definition / poor requirements management			monitoring on an ongoing basis for stated & unstated / emerging requirements				
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## 7.6. Implementation Risk Register

### Risk Identification & Assessment Table

#	Risk Area	Risk	Probability	Impact	Risk Priority Number	Project Dimension Impacted				
						Scope	Cost	Time	Quality	Outputs / Outcomes / Benefits
I	Political	Inter & Intra departmental dissonance regarding	5	5	25	No	No	Yes	Yes	Yes



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		the initiative leading to political activism within the Corporation that could compromise the initiative								
2	Financial / Commercial	Cost escalations due to increase in manpower & material costs owing to inflation or introduction of new tax regimes / policies at State & Centre	3	3	9	No	Yes	No	No	No
		Poor	3	3	9	No	Yes	No	Yes	Yes



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		service charge structures leading to insufficient revenue collection from Citizen Services								
3	Social	Lack of willingness by Functionaries to give up old ways of doing things despite rollout of new solution	3	5	15	No	Yes	Yes	Yes	Yes
		Changes in roles & responsibilities leading to	1	3	3	No	No	No	Yes	Yes
			3	5	15	No	No	No	Yes	Yes
			1	5	5	No	No	Yes	Yes	Yes



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		resistance to adopt the initiative								
		Citizens not being aware of service delivery changes								
		Poor support during initial days of the implementation								
4	Technological	Challenges in integrating disparate applications (existing & new applications)	3	5	15	No	Yes	Yes	Yes	Yes
			3	3	9	No	Yes	No	Yes	Yes
		)	3	5	15	Yes	Yes	Yes	Yes	Yes





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		Poor functional & non functional performance of the technology solution	3	3	9	Yes	Yes	Yes	Yes	Yes
		Inadequate degree of data digitization / migrations crippling operations								
		Inadequate site preparation and provisionin g of infrastru ctu re (physical & ICT)								
5	Legal or	Process	3	5	15	Yes	No	Yes	Yes	Yes



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	Contractual	reengineering changes and / or IT adoption related policies not enacted as Govt. Orders or laws in time for implementation  The solution may not comply with the security standards and hence may not be fit for implementation	I	5	5	No	No	No	Yes	Yes
6	Environmental	Increased power	I	I	I	No	Yes	Yes	Yes	Yes



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		consumption owing to new ICT & physical infrastructure leading to larger carbon footprint which could be opposed by public & NGOs								
7	Operational	Poor cut-over planning leading to service disruption during pilot implementation	1	5	5	No	Yes	Yes	Yes	Yes
		Poor assessment of alignment with NeGP/	3	3	9	Yes	Yes	Yes	Yes	Yes
			3	3	9	No	Yes	Yes	Yes	Yes
			1	5	5	No	Yes	Yes	Yes	Yes



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		State level initiatives leading to duplications or delays owing to dependencies with those initiatives								
		Improper communication across stakeholder groups leading to conflicts during implementation								
		Poor failover / roll back plan in case implementation does								



		not succeed							
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### Risk Response Table

#	Risk	Risk Respo nse Categ ory	Early Warning Indicator s	Mitigatio n / Continge ncy Plan	Residu al Risk	Secondar y Risk	Risk Owner	Risk Actionee
I	Inter & Intra departmental dissonance regarding the initiative leading to political activism within the Corporation that could compromise the initiative	Reduce	Non-cooperation in requirement gathering, etc in workflows comprising inter / intra dept. staff	Deploying a robust communication & capacity building plan to address fears, provide clarity on roles & responsibilities & benefits. Bring about culture	Some dissonance may remain despite the mitigation plan	None	Sponsors	Steering Committee



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				change				
2	Cost escalations due to increase in manpower & material costs owing to inflation or introduction of new tax regimes / policies at State & Centre	Reduce	Pre-budget disclosures and news articles	Plan for a buffer in the budget and include inflation rates for estimation	Since market forces are at work, this risk will remain	None	Steering Committee	Pgm Manager
	Poor service charge structures leading to insufficient revenue collection from Citizen Services	Remove	Cash flow estimates showing deficits & lack of sustainability	Ensuring Corporation reviews service charge structures & revises it prior to the solution implemen	None	Citizens may resist increase / levy of service charges	Sponsors	Steering Committee



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				tation				
3	Lack of willingness by Functionaries to give up old ways of doing things despite rollout of new solution	Reduce	Finding causes to downplay the new solution	Ensuring that older systems are rendered inaccessible by pronouncing legislation in favor of new solution	Some resistance may still exist	Ensuring rollback option to be available in case implementation fails	Steering Committee	Pgm Manager
	Changes in roles & responsibilities leading to resistance to adopt the initiative	Reduce	Non-cooperation within & across Depts.		Some resistance may still exist	None	Steering Committee	Pgm Manager
	Citizens not being aware of service delivery changes	Reduce	Citizen readiness surveys & adoption of changes being slow	Clear communication strategy & Govt. orders regarding changes	None	Expectations of changes & benefits not being pragmatic	Steering Committee	Pgm Manager
		Share	Many complaints from	Robust awareness campaigns	Risk cannot be	It may become unviable for vendors if	PgmManager	Implementation Agency



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	Poor support to stakeholders during initial days of the implementation		multiple stakeholders	using multiple media channels & highlighting benefits	eliminated completely	penalties are too stringent		
				Reviewing support readiness and planning for the worst case scenario. Binding vendor with SLAs & penalties				
4	Challenges in integrating disparate applications (existing	Reduce	Solution design indicates complexity	Focus on data dependencies & integration	Risk tends to remain to	None	Pgm Manager	Implementation Agency





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&new applications)  Poor functional &non functional performance of the technology solution  Inadequate degree of data digitization / migrations crippling operations  Inadequate site	Reduce	Poor clarity of SRS & FRS	n touch points during solution design	some extent	Domain expert may cause scope creep OR be an impedime nt in GPR	Pgm Manager	Implemen tation Agency
	Reduce	Dry-runs & sand box testing indicating issues	Ensure complete ness & clarity of SRS & FRS. Include domain expert in the Pgm Team	Risk cannot be compl etely remov ed	None	Pgm Manager	Implemen tation Agency
	Reduce	Same as above. Readiness audit reveals gaps	Ensure that data digitizatio n & migrations complete atleast 2	Risk can be	None	Pgm Manager	Implemen tation Agency



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	preparations and provisioning of infrastructure (physical & ICT)			months before solution implementation  Conduct readiness audits regularly and fix gaps early	minimized but cannot be eliminated			
5	Process reengineering changes and / or IT adoption related policies not enacted as Govt. Orders or laws in time for implementation  The solution	Remove  Share	Initiate this process once DPR is approved & monitor progress  Security audit of Solution design or solution	Fix timelines for Policy enactment & mandate it as a pre-requisite for implementation phase	None  None	None  Implementation agency may run into issues owing to penalties	Sponsors  Pgm Manager	Steering Committee  Implementation Agency



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	may not comply with the security standards and hence may not be fit for implementation		audit prior to implementation reveals gaps	Ensure that the Implementation agency agrees to adopt security features in solution design & implementation and audit the solution against standards. Have a penalty clause in place in case of shortfalls		& it may become unviable for them to continue		
6	Increased power consumption owing to	Remove	Assessment of power requirement	Ensure that wherever feasible,	None	None	Steering Committee	Pgm Manager



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	new ICT & physical infrastructure leading to larger carbon footprint which could be opposed by public & NGOs		ent & hence carbon footprint indicates cause for concerns	thin clients & power efficient solutions are adopted (ICT & physical infra). Use renewable energy & plant trees to reduce carbon footprint				
7	Poor cut-over planning leading to service disruption during pilot implementation  Poor	Reduce  Reduce	Cut-over plan audit reveals gaps  Early review of alignment with	Audit the cut-over plan from various viewpoints & ensure completeness & clarity	Risk will remain to some extent  Risk will	None  None	Pgm Manager  Steering Committee	Implementation Agency  Pgm Manager



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assessment of alignment with NeGP / State level initiatives leading to duplications or delays owing dependencies with those initiatives	Reduce	other initiatives, their objectives & dependencies reveals gaps	Ensure dependencies are tracked regularly and issues are raised with Nodal agencies well in time to resolve any delays	remain to some extent	None	Steering Committee	Pgm Manager
Improper communication across stakeholder groups leading to conflicts during implementation	Reduce	Misleading information doing rounds	Ensure communication messages are aligned across stakeholder groups	Risk will remain to some extent	None	Pgm Manager	Implementation Agency
Poor failover / roll back plan to address		Review of rollback plan prior to implementation reveals gaps	Review				



implementati on failure			rollback plans from multiple perspectiv es & fix issues prior to implemen tation				
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## 7.7. Post-Implementation Risk Register

### Risk Identification & Assessment Table

#	Risk Area	Risk	Probabil ity	Impa ct	Risk Priori ty Numb er	Project Dimension Impacted				
						Sco pe	Co st	Tim e	Quali ty	Output s / Outco mes / Benefit s
I	Political	Political pressure to withdraw solution or lobbying with staff unions	3	3	9	No	Yes	Yes	Yes	Yes



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		against solution								
<b>2</b>	Financial / Commercial	Higher post-warranty costs may make the initiative unsustainable beyond the 3 years	3	5	<b>15</b>	No	No	No	No	Yes
<b>3</b>	Social	Inadequate ongoing capacity building & support to all stakeholders leading to poor adoption of the solution / renewal of old ways of working	3	5	<b>15</b>	No	Yes	Yes	Yes	Yes
<b>4</b>	Technological	Poor visualization of future	3	5	<b>15</b>	Yes	Yes	Yes	Yes	Yes



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	requirements and future integration points leading to sub-optimal solution	1	5	5	Yes	Yes	Yes	Yes	Yes
	Technology obsolescence within 3-4 years of solution adoption owing to poorly chosen technology stack (need for solution migrations, etc)	3	5	15	Yes	Yes	Yes	Yes	Yes
	Poor estimation of infrastructure								





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		re requiremen ts leading to performanc e issues within 2-3 years								
5	Legal or Contractual	Poorly written contract leading to issues in extending existing one or termination of existing and transitionin g to the new one	3	3	9	Yes	Yes	Yes	Yes	Yes
		Intellectual property rights related issues on	3	5	15	No	Yes	No	Yes	Yes



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		the solution, tools, techniques, methodologies, source code, privacy information, etc owing to poor exit clauses defined while defining the contracts in Pre-Implementation phase								
6	Environmental	Damages induced during transitioning of vendors (moving infrastructure, etc) leading to	I	I	I	No	Yes	No	No	No



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		environmen tal issues								
7	Operation al	Inadequate Knowledge transfer post- implementa tion to Govt. / appointed service provider leading to issues in ongoing support beyond 3 years	3	5	15	Yes	Yes	Yes	Yes	Yes

**Risk Response Table**

#	Risk	Risk Respo nse Categ ory	Early Warning Indicators	Mitigatio n / Contingen cy Plan	Residu al Risk	Second ary Risk	Risk Owner	Risk Actionee
I	Political pressure	Reduc e	Brewing discontent	Capacity building &	Risk cannot	None	Sponsor s	Steering Committe



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	to withdraw solution or lobbying with staff unions against solution		amongst staff	citizen momentum behind the initiative to be strong to negate this	be eliminated			e
2	Higher post-warranty costs may make the initiative unsustainable beyond the 3 years	Reduce	Bids by vendors shows high costs	Working out alternate sources of revenues & trying a PPP / Gain-share model may help	Risk cannot be eliminated	Such models may not be sustainable	Sponsors	Steering Committee
3	Inadequate ongoing capacity building & support to all stakeholders leading to poor adoption	Share	Volume of transactions in the system reducing over a time period	Defining a gain-share model with Implementation agency will help mitigate this risk	Risk cannot be eliminated	May be unviable for vendor if penalties are levied for breache	Steering Committee	Pgm Manager



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	of the solution / renewal of old ways of working					s		
4	<p>Poor visualization of future requirements and future integration points leading to sub-optimal solution</p> <p>Technology obsolescence within 3-4 years of solution adoption owing to poorly</p>	<p>Reduce</p> <p>Reduce</p> <p>Reduce</p>	<p>Steering Committee / Sponsors are not able to articulate a roadmap</p> <p>Evaluations of technology chosen pre-implementation phase reveals this issue</p> <p>Impact assessment taking into</p>	<p>In pre-implementation phase, create a 7 year roadmap for the Corporation</p> <p>Ensure there is strong justification for choice of technology &amp; this is documented in the detail for</p>	<p>Risk can be largely reduced but cannot be eliminated</p> <p>Risk cannot be completely eliminated</p> <p>Risk</p>	<p>None</p> <p>None</p> <p>None</p>	<p>Sponsors</p> <p>Steering Committee</p> <p>Steering Committee</p>	<p>Steering Committee</p> <p>Pgm Manager</p> <p>Pgm Manager</p>



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	chosen technology stack (need for solution migrations, etc)		consideration on estimated growth rates	posterity. Adopt Open Source Ensure that during sizing & procurement, these requirements are factored in	cannot be completely eliminated			
	Poor estimation of infrastructure requirements leading to performance issues within 2-3 years							
5	Poorly written contract leading to issues in extending existing one or	Remove	Early signs of non-cooperation of vendor to plan transition	Contract terms needs to be reviewed by internal & external agencies to	None  None	None  None	Steering Committee	Pgm Manager  Pgm



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<p>termination of existing and transitioning to the new one</p> <p>Intellectual property rights related issues on the solution, tools, techniques, methodologies, source code, privacy information, etc owing to poor exit clauses defined while</p>	<p>Remove</p>	<p>Same as above</p>	<p>ensure completeness</p> <p>Same as above</p>			<p>Steering Committee</p>	<p>Manager</p>
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	defining the contracts in Pre-Implementation phase							
6	Damages induced during transition of vendors (moving infrastructure, etc) leading to environmental issues	Remove	Review of Transition plan indicates that it has not addressed these concerns	Ensure that the transition plan covers such aspects and there are penalty clauses in place for non-compliance	None	None	Pgm Manager	Implementation Agency
7	Inadequate Knowledge transfer post-implementation to Govt. / appointed service provider	Share	Review of KT Plan reveals lots of gaps	Ensure that the KT plan is complete and clear and define a penalty model for poor transition	Risk cannot be completely eliminated	Vendor may not fulfill clauses. Hence, advisable to withhold 5% retention	Pgm Manager	Implementation Agency





leading to issues in ongoing support beyond 3 years			of operations		n fee		
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### 7.8. Key Assumptions made in Risk Management

The following key assumptions have been made in managing risks for this programme.

1. The Programme Manager will be supported by a dedicated Risk Manager or will have a Programme Support Office that will assist in actively managing Risks throughout the Programme lifecycle. Hence, budgeting for this in the DPR is essential.
2. In order to assure quality and predictability, OGC's PRINCE2, MSP & M\_o\_R guidelines will be used as good practices where essential & feasible. Other standard tools & techniques will be defined by the team during the Preparation phase and adopted during execution
3. Risk Manager will ensure adoption of standard practices, processes, tools & techniques of Risk Management in the Programme and will create awareness amongst the vendors, suppliers and user community as needed
4. The Programme Manager will create awareness about the importance of Risk management amongst the Programme Sponsors & Steering Committee to get their buy-in
5. The Risk registers defined in this document would be used as the starting point for the Programme
6. A common risk register will be used by all stakeholders with different access rights based on their role in the Programme.



7. Risks will be identified across all the Programme phases upfront and will be closely monitored based on their proximity. The Risk Manager is responsible for the same. At any given point, the Risk register will be maintained up to date
8. Risk tolerances levels will be defined at each tier in the hierarchy and beyond this, clear escalation mechanisms and processes will be defined as a part of the preparation phase
9. A dedicated Risk Budget will be earmarked by the Programme for undertaking Risk Management activities (can be carved out of the Contingency budget in the DPR)
10. Best practices and lessons learnt from Risk Management will be tracked by the Risk Manager and the teams. A compilation of the planned mitigation strategy and the actual mitigation strategy will be created to refine the Risk Management during the Programme and for posterity



## 8. Public Private Partnership

It is proposed to use PPP as a sourcing framework wherein the private sector providers are engaged to provide those services that the private sector can provide more efficiently and effectively. PPP offers a win-win-win solution for the members of the public, the public sector and the private sector.

### 8.1. Need for PPP

The funding of this project under JnNURM by MoUD would be for a total period of 3 years (1 year of SLS implementation and 2 years of O & M post Go Live). For the sustainability of the project as well as to provide better services to the citizens and bring in transparency in the overall governance process it is necessary to outsource some of the activities.

The needs can be classified as;

- Reduced investment in capital expenses
- Better maintenance of IT infrastructure
- Seamless usage of state-of-art technology
- Bring in industry best knowledge / resources

### 8.2. PPP for e-Governance

Based on the above needs, DPR shall detail out the PPP arrangements that can be implemented either in part or as full service component. PPP can be envisaged in:

- Service Provisioning



- Service Delivery

**Service Provisioning:** Service provisioning is the process of preparing and equipping a system to allow it to provide services to its users. For e-Governance in Municipalities program, development, deployment, maintenance & operations of the SLS in terms of application/ hardware/ network/ other infrastructure etc., shall form the service provisioning.

**Service Delivery:** Service delivery refers to making sure that the implemented solutions reach the stakeholders, people and places effectively and in agreed time-frame. For e-Governance in Municipalities program, delivery channels that will be utilized by ULBs to access SLS for delivering the services to citizens shall form the service delivery.

### 8.3. Engagement Models for Service Provisioning & Service Delivery

- **BOO (Build Own Operate):** In this model, the preferred partner designs, develops and implements the project, most often, entirely at its cost and operates the system for a pre-specified period. It is characteristic of this model to entrust the end-to-end responsibility to the selected partner i.e. both the back-end and the front-end. The options of the partners, in terms of the disposition of assets and control at the end of term are kept open till the end of period – sometimes called the concession period.
- **BOOT (Build Own Operate Transfer):** Build, Own, Operate, and Transfer (BOOT) model is a popular PPP model used to build and improve infrastructure, enhance efficiency and economic growth. A BOOT funding model involves a single organization, or consortium (BOOT provider) for designing, building, funding, owning and operating the scheme for a defined period and then transferring the ownership to an agreed party.
- **Joint Venture:** A joint venture (often abbreviated as JV) is an entity formed between two or more parties to undertake any economic activity together. The parties agree to create a new entity by both contributing equity, and they then share in the revenues,



expenses, and control of the enterprise. The venture can be for one specific project only, or a continuing business relationship. Joint venture (JV) model implies co-operation of public and private sectors to provide services. However, the basic idea of JV in PPP is sharing of benefits (joint) and risks (venture) by the public and private sectors in the long-term.

#### **8.4. Revenue Model**

##### **Suggested PPP Models for CCMC**

- Handing over the management of Facilitation centres in Coimbatore to the private sector, NGOs preferably to corporate sector.
- Urban Solid waste management can be handed over to private partners.

##### **BOOT Model for CCMC Department**

Considering the nature of the services provided by the CCMC and the revenue streams available with the Department, it is proposed that the Build Own Operate Transfer (BOOT) model be used for financing the project. The proposed BOOT model for the project would be as follows:

##### **Procurement**

Government of India will support the entire cost of establishment, operation and maintenance of the applications, procurement of hardware & software, Project Labor costs for Issue of, Facilities, Training and Consulting Costs for a period of 2 years.

##### **Operation and Maintenance (2 years)**

- Implementation of the applications, maintenance of software & hardware, training and program management would be handled by the Implementing Agency and the Consulting Agency



- Operation and maintenance of service delivery channels would be carried out by the Implementing Agency

### **Sustainability of the Project**

The sustainability of the project would be ensured through Cost Recoveries due to:

- Internal efficiencies in the Department
- User charges levied on online transactions
- Wider tax recovery.

### **Internal Efficiencies**

- It is estimated that there would be a significant reduction in the O&M Expenditure due to utilization of ICT tools in Procurement, Sales & Distribution, Inventory Management, Reporting & MIS, Intranet, e-Mail etc.

### **Fees from Delivery of services through various channels**

Under the proposed project, the SMS based information that is provided (about tax payable etc.) to the citizens will be charged.

## **8.5. Key Considerations**

### **For Members of the Public**

PPP brings together the expertise of the Government and the private sector to meet the needs of the public effectively and efficiently. PPP projects will be structured to deliver public services that can better meet the needs of the public without compromising the necessary quality or service standards.



**For the public sector, PPP can provide better value for money through:**

- Private Sector Innovation, particularly by tapping on the flexibility of the private sector in facilitating innovation and searching for new and better ways to provide services.
- Optimal Whole lifecycle costing by contracting out the design, build, maintain and operate phases to the same private company (or consortium), which will optimize the project cost over the entire contract length.
- Better asset utilization by sharing Government assets/facilities with third-party users.
- Optimal sharing of responsibilities between the public and private sector, such that each party is responsible for activities that it can best manage.

**For the Private Sector, PPP offers more business opportunities**

- The private sector will be engaged to deliver more services which were traditionally performed in-house by public agencies (e.g. Design, operations and maintenance services).
- The private sector has greater room to innovate and offer efficient solutions for public services.

A variety of public-private financing structures are being implemented for infrastructure projects. These structures differ in ways the public-sector and private-sector entities share the responsibilities, risks, and rewards associated with the projects. Some of the Public Private Partnership frameworks that can be considered for financing the cost of the project include: BOOT (Build Own Operate Transfer), BOO (Build Own Operate), BOT for specified periods (otherwise called concession contracts), Joint Ventures, Private Finance Initiative (PFI) etc.



## **Role of PPP Participants**

### **Public Agency – CCMC**

- Specify the Project outcomes/outputs, Act as final Decision making authority for finalizing project specifications
- Monitor the performance of Private Agency service providers such as the Consultant and the Implementing Agency
- Pay the PPP provider when the services are delivered

### **Private Agency - Consultant**

- Designs the facilities, equipment and work processes that provides services to the public or to the Government.
- Design of proposed e-Governance application including solution framework
- Assist the Department to identify the Implementing Agency through preparation of RFP, Bid evaluations, vendor negotiations etc.
- Program Management of the project to assist the Department in monitoring the performance of the Implementing agency
- Change and Transition Management

### **Private Agency - Implementing Agency**

- Develop the e-Governance application based on the specifications defined
- Pilot Implementation and rollout
- Phased rollout of e-Governance application across the state
- Maintenance of IT application including databases, hardware and network (LAN)





- Setting up and maintenance of service delivery infrastructure such as Call Centers, Single Window Cells etc.

### **Feasibility Management**

The following care has to be taken while adopting the above stated PPP model;

- Management of core activities with respect to service delivery has to be under the control of the Government.
- All policy level decisions and framing of rules have to be under the control of the Government.
- Well-researched and negotiated legal contract
- Strong regulatory and institutional environment
- Analysis of the state of utility, existing regulation, financial viability and risks



## 9. Project Implementation Strategy & Sustainability Plan

### 9.1. Stakeholders Involvement

The major stakeholders and their interest in e-governance implementation at ULBs are as follows:

<b>Key Stakeholder</b>	<b>Interest</b>
<b>External Stake Holders (G2C &amp; G2B)</b>	
<b>Citizens</b>	Accessibility / Quality / Value / Time taken to receive services, transparency in status of application / request / suggestion / complaint and their progress.
<b>Businesses (Suppliers, contractors and vendors who execute projects for the ULBs)</b>	Increase transparency in operations of departments, better information flow, quicker processing of operations and activities including bill payments

<b>Key Stakeholder</b>	<b>Interest</b>
<b>Internal Stake Holders (G2G &amp; G2E)</b>	
<b>Corporation Departments</b>	Enhance reachability, level of service delivery and intra-departmental interactions Reduce backlogs of applications Enhance internal process efficiencies and optimize costs
<b>Employees</b>	Improved staff productivity, Efficiency enhancement of day-to-day tasks execution, easier citizen interface by reducing citizen



visits, improvement of working conditions

## Participation by Stakeholders

This section states each of the stakeholder groups / stakeholder, corresponding roles and responsibilities, their level of influence, the extent of their involvement, and the stage at which they would be involved (i.e. conceptualization, design, implementation and continuous improvement).

The following table attempts to summarize the above mentioned stakeholders as identified earlier and their roles & responsibilities as below:

#	Stakeholder	Roles & Responsibilities	Level of Influence	Communication Strategy
1	Corporation / Municipality	<ul style="list-style-type: none"> <li>Define Policies</li> <li>Approval of works/ projects</li> <li>Monitoring of departmental functions</li> <li>Strategic decision making</li> </ul>	High	<ul style="list-style-type: none"> <li>Communicate the policy changes, to enable the working group to define and Frame work-plan</li> </ul>
2	Employees	<ul style="list-style-type: none"> <li>Perform duties as per the timeliness</li> <li>Participate in defining policies</li> </ul>	High	<ul style="list-style-type: none"> <li>Awareness creation and sensitization through training programmes</li> </ul>
3	Citizens	<ul style="list-style-type: none"> <li>Should keep themselves informed about government policies</li> <li>Payment of taxes</li> <li>Demand for delivery of services as per defined</li> </ul>	High	<ul style="list-style-type: none"> <li>Awareness creation through sensitization programs</li> </ul>



		SLAs		
		<ul style="list-style-type: none"> <li>Participate in defining policies &amp; projects</li> </ul>		
4	Businesses	<ul style="list-style-type: none"> <li>Execution of the works in an effective manner within specified time lines and specifications</li> <li>Inform department officials on any variation</li> </ul>	Medium	<ul style="list-style-type: none"> <li>Awareness creation through notification and circular to registered contractors</li> </ul>

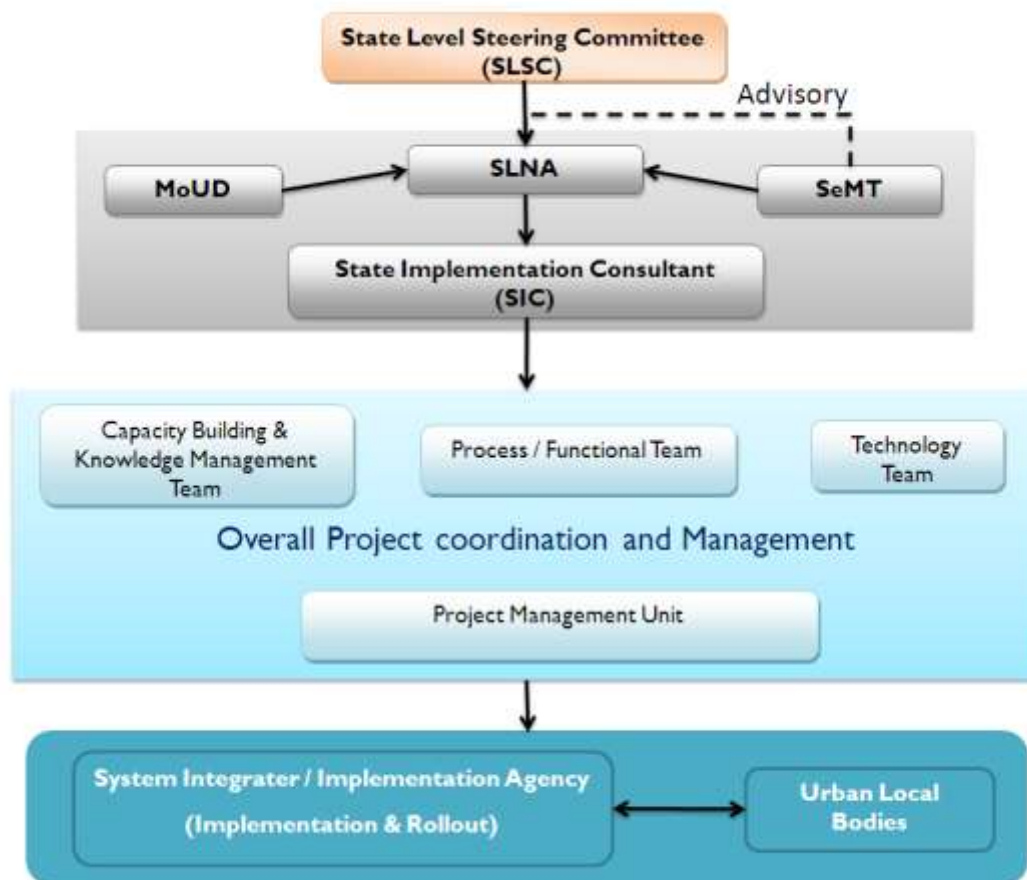
## 9.2. Institutional Structure

For smooth implementation of the SLS of eGovernance in Municipalities for Tamil Nadu state it is necessary to have a well-defined Institutional framework / structure with a clear understanding of the responsibilities of various entities involved in the project. This would drive the project in a proper direction and ensure successful completion. The table below gives the list of entities and their responsibilities;

S. No.	Institutions	Role
1.	Tamil Nadu Finance Infrastructure Development Corporation (TUFIDCO)	State Level Nodal Agency (SLNA)
2.	Agency selected by State Government	State Implementation Consultant (SIC)
3.	Software Development Agency (SDA) / Application Service Provider (ASP) selected by Government along with SIC	System Integrator / Implementation Agency (IA)

4.	SeMT created as a part of NeGP	Advisory services
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A pictorial representation of the institutional structure is as shown in the diagram below;



### State Level Nodal Agency:

TUFIDCO will be the project owner entrusted with the responsibility of seeing the entire implementation through to completion. The Project Steering Committee is the decision making body at the State level. It will comprise of executive members from the Corporation, Departments, State Implementation Consultant (SIC) and the Implementation Agency (IA). They would be the final authority for issue resolution and would be



responsible for representing Government of Tamil Nadu in the program for state wide implementation.

The responsibilities of SLNA would be as follows but not limited to;

- Setting up of Project Steering committee and Project Management team with members from State, ULBs and SIC.
- Setting up of other teams and define roles, under its control for project implementation and monitoring namely;
  - **Process Management Team** – Domain experts covering all identified civic services from identified ULB for process standardization
  - **Technology Management Team** – Experts from SLNA, SIC and SeMT to support all technological requirements for implementation of SLS in pilot ULB and rollout across the state.
  - **Capacity Building Team** – Experts from the domain who have expertise in Training and Knowledge management for capacity building at SLNA and ULB levels in accordance to the defined MoUD framework.
- Identification of SIC for implementation of the SLS in the pilot ULB and rollout to remaining ULBs across the state within the stipulated duration.
- The SLNA along with the identified SIC shall be responsible for the following activities related to the implementation of the SLS in the pilot ULB and rollout to remaining ULBs across the state;
  - Appraisal of the project in terms of techno-economic aspect using their expertise in the ULB functional domain
  - Proper management of funds received from Central Government.
  - Fund disbursements to ULBs as per the guidelines of the scheme.
  - Preparation and implementation of terms and conditions of contract or agreements between SLNA, ULBs and with solution providers and vendors
  - Preparation of Utilization Certificates on a periodic basis after release of funds through different installments of central assistance



- Timely submission of physical and financial progress reports to MoUD.
- Maintain audited accounts of funds released to ULBs and Implementing Agencies

### **State Implementation Consultant (SIC):**

SLNA shall select an agency that shall be termed as the SIC. The SIC will assist SLNA (TUFIDCO) by providing consultancy services for the implementation of the SLS at the identified ULB and further rollout to all remaining ULBs across the state. They would work very closely with the SLNA during the entire duration of this project.

The responsibilities of SIC would be as follows but not limited to;

- Preparation of RFP based on the approved DPR for selection of appropriate System Integrator / Implementation Agency for the implementation of SLS.
- Provide end-to-end support to SLNA in the Bid Process Management for selection of System Integrator / Implementation Agency.
- Provide Process management support to SLNA.
- Provide Technology management support to SLNA.
- Provide Capacity Building, Change Management and Knowledge Management support to SLNA.
- Complete Project Management starting from Project inception to Implementation at pilot ULB and further Rollout of the SLS to remaining ULBs across the state.
- Periodically report to SLNA on the Physical and Financial progress of the project.
- Ensure proper Exit Management before completion of the tenure of System Integrator / Implementation Agency.
- Co-ordination with various stakeholders of this project.

### **System Integrator / Implementation Agency (IA)**

The System Integrator / Implementation Agency also termed as Software Development Agency / Application Services Provider has a major role of implementing the SLS as per the



RFP prepared by SIC. SI / IA has to design/develop/customize and implement the SLS as per the technical and functional architecture and other specifications and details provided in the RFP. The pilot implementation has to be done at the selected ULB CCMC and then the SLS has to be rolled out to other ULBs in the state.

The responsibilities of SI / IA would be as follows but not limited to;

- Prepare a detailed Project Plan for the implementation of the SLS in the pilot ULB and further rollout to other ULBs across the state.
- Prepare detailed Gap Analysis report and SRS on the existing applications and applications to be developed including integration of the SLS with existing applications in the state.
- Design, Develop/Customize and Deploy the SLS in a centralized environment.
- Setup and Configure the necessary IT infrastructure for deployment of the SLS.
- Provide training to all stakeholders of the pilot ULB, CCMC.
- Provide support to SLNA & SIC during UAT.
- Implement SLS at the pilot ULB, CCMC.
- Identify the issues in the SLS and fix them and prepare for state-wide rollout.
- Rollout the SLS to all other ULBs across the state
- Provide necessary training, handhold support to the ULBs
- Prepare Exit Management plan and perform smooth transition before end of the tenure.

### **Advisory body (SeMT created under NeGP)**

The State eGovernance Mission Team formed under the NeGP initiative comprises of a team of experts namely; Project management consultant, Technology management consultant, Finance management consultant and Capacity Building and Change management consultant who are entitled with the responsibility of supporting various IT initiatives of





the State Government. For this project the SeMT created under NeGP would play the advisory role and support the SLNA as and when required.

The responsibility of SeMT would be as follows but not limited to;

- Provide Advisory services to SLNA in terms of Technology Management, Project implementation and rollout.

### **9.3. Tendering and Bid Process Management**

In this project tendering and bid process management is of utmost importance for selecting an appropriate State Implementation Consultant (SIC) and System Integrator (SI). The role of the SIC & SI are as defined in the previous section. The activities listed are to be borne in mind and the RFP has to be prepared for selection of SIC & SI by the SLNA.

SIC will play an important role in the preparation of RFP for selection of SI and end-to-end bid process management. Activities such as software development, hardware procurement and installation, capacity building, implementation at pilot ULB, state-wide rollout to other ULBs and O & M for 3 years shall be the broad set of activities of SI. The complete Program Management for tenure of 2 years shall be the responsibility of SIC.

### **9.4. Project Implementation and Rollout**

Under this project as per MoUD guidelines the identified core civic services and few “Other modules” that have impact on different stakeholders namely; citizens, businesses, department employees and related government departments have been considered for implementation as a part of eGovernance implementation in Municipalities. The civic services considered for implementation are as follows;



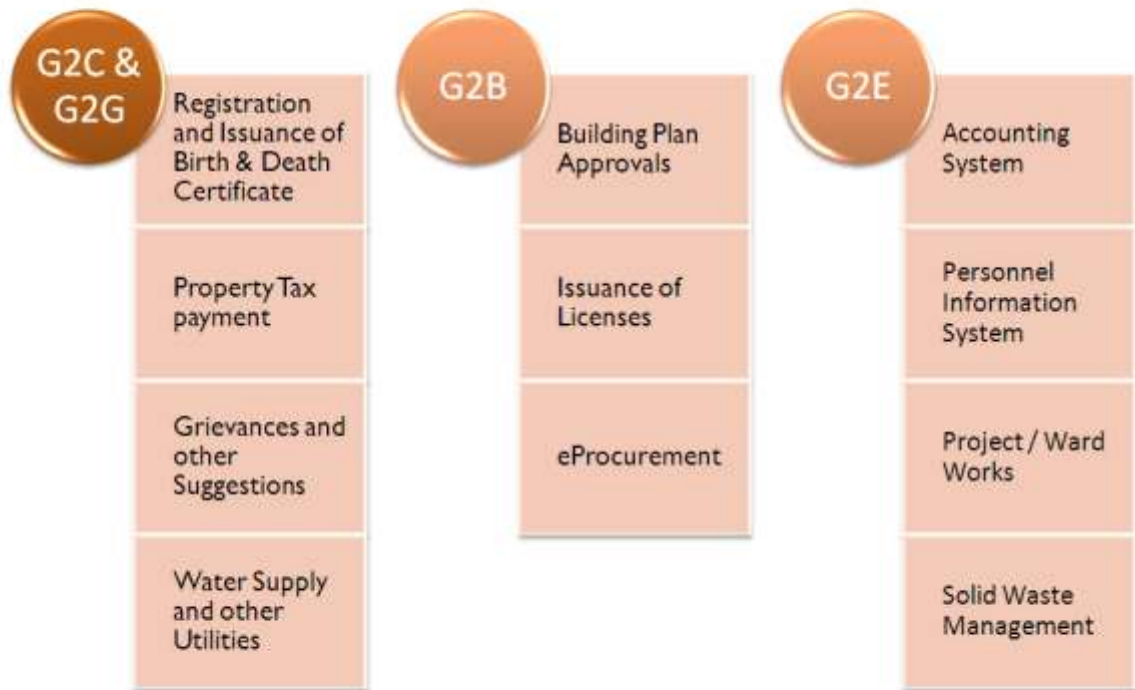
Detailed Project Report for State Level Solution for eGovernance in all  
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S. No.	Services / Management Functions
1	Registration and Issue of Births/ Deaths Certificate
2	Payment of Property Tax, Utilities Bills and Management of Utilities that come under the ULBs
2.1	Property Tax
2.2	Water Supply & Other Utilities
3	Grievances and Suggestions
4	Building Approvals
5	Procurement and Monitoring of Projects
5.1	e-Procurement
5.2	Project/ Ward works
6	Health Programs
6.1	Licenses
6.2	Solid Waste Management
7	Accounting System
8	Personnel Information System

The above services are categorized as follows;

## Service Categorization



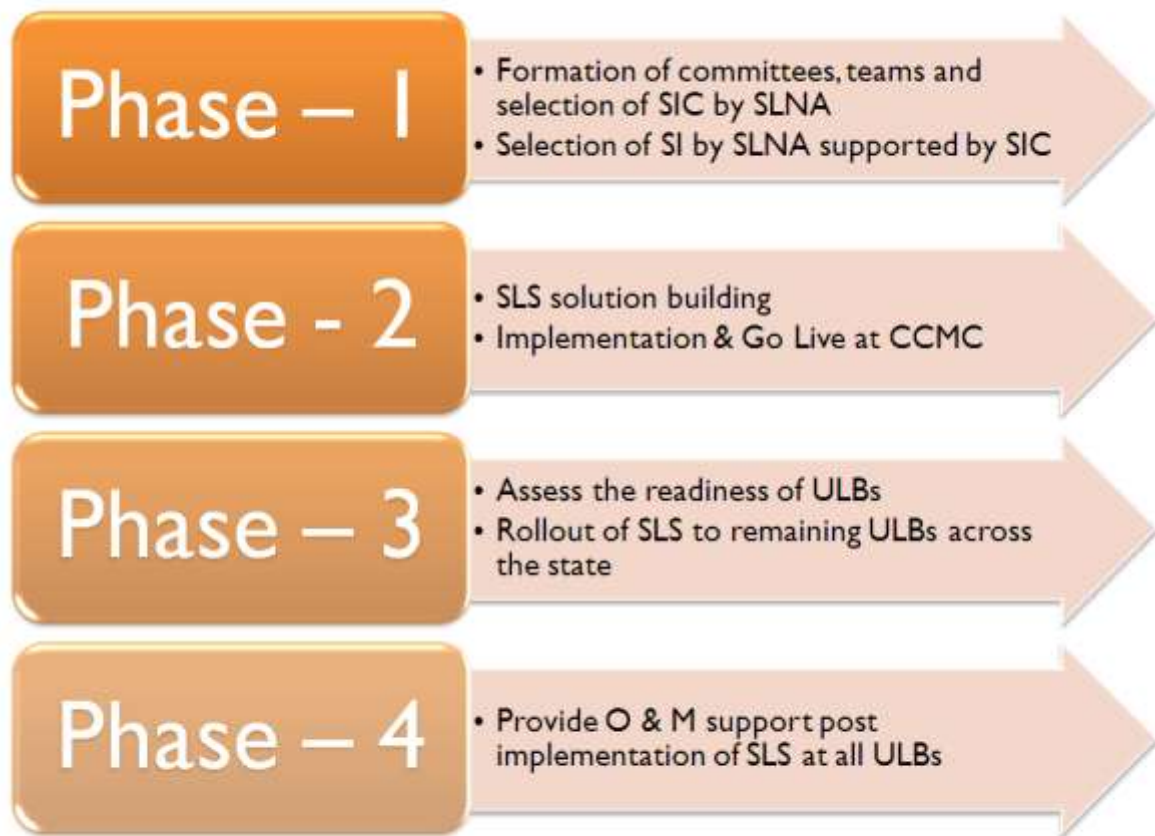
Based on our **As-Is study** conducted with the related stakeholders namely; CCMC, Special Grade ULB Pollachi, First Grade ULB Arani, Belt Area Pallavapuram and RDMA office Tiruppur we understand that there has been some amount of progress made towards automation of some of the services listed above. However, during our As-Is study it was noted that there was a need for the enhancement of the existing implemented application modules in order to accommodate additional functionalities for providing enhanced service delivery as well as migrate the legacy applications to 3-tier architecture.

With the above background, the overall implementation strategy would be categorized into three major parts namely;

- I. **Part – I:** A State Level Software Solution (SLS) covering all the civic services identified shall be designed taking into consideration the requirements of all the

- ULBs. The SLS shall comprise of existing applications with enhancements as well as applications under development and applications that are to be freshly developed. The complete SLS shall be thoroughly tested before implementation at CCMC which is the identified pilot ULB.
2. **Part – 2:** On successful “Go Live” of the SLS at the pilot ULB, it would be rolled out to the remaining ULBs covering the entire state.
  3. **Part – 3:** Post implementation of SLS in all the ULBs there is a need for O & M support for 2 years.

The implementation shall be in a phased manner for this eGovernance solution in Municipalities. The diagram below shows the four phases of this project with a brief description of the phases spanning over Part-I, Part-2 and Part-3;





✓ **Phase 1:**

- Formation of committees and teams.
- Selection of SIC, RFP preparation & Bid Management for selection of SI for implementation of SLS.
- Onboarding of SI.

✓ **Phase 2:**

- Study & Gap Analysis
- IT infrastructure setup
- Design, Develop / Customize, Deploy, Test, Train, UAT and Go Live of SLS by SI at CCMC
- STQC Certification

✓ **Phase 3:**

- Assess the readiness of the ULBs to start using the SLS.
- Rollout of SLS to remaining ULBs of the state

✓ **Phase – 4:**

- Provide O & M support post implementation of SLS in all ULBs for a period of 2 years.

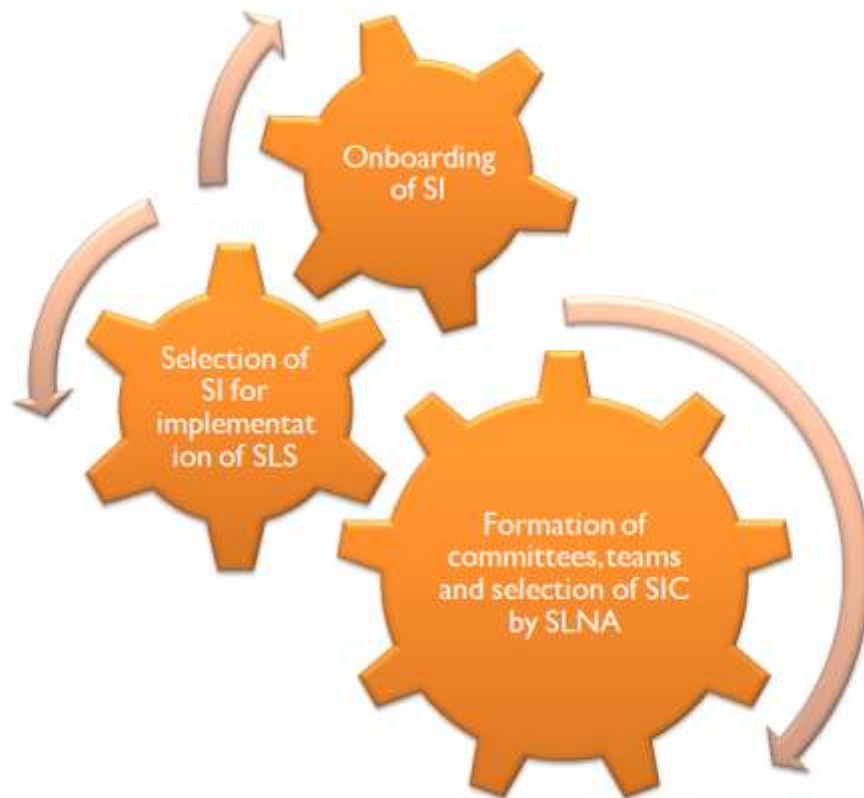
## **9.5. Project Phasing Strategy**

The deployment of SLS requires identification of a SIC which in inturn would select an appropriate vendor who shall perform the task of SI. SI would take of the implementation of this project. The entire project shall be in a phased manner. Initially, focus would be to build the SLS as per the eGovernance standards taking into account the existing implemented applications and applications that are working in silos. On thorough testing of the SLS it would be implemented in the pilot ULB at CCMC and then rolled out to the remaining ULBs in the state. Detailed description of the key activities under each of the phases, but not limited to, are as stated below;

### **Phase – I: (Duration: 6 months)**

Prior to the commencement of this phase, this DPR has to be approved in the CSMC Meeting held by MoUD.

The diagram below gives a picture on the 3 key activities that needs to be performed under this phase.



The individual tasks under each of the above shown key activities are described below;

**Formation of committees, teams and selection of SIC by SLNA:**

This phase comprises of activities that needs to be performed by the SLNA. Below is the list of activities that are to be performed during this phase, but not limited to;

- Setting up of Project Steering committee and Project Management team with members from State, ULBs and SIC.



- Formation of other teams and define roles, under its control for project implementation and monitoring namely;
  - **Process Management Team** – Domain experts covering all identified civic services from the pilot ULB for process standardization
  - **Technology Management Team** – Experts from SLNA, SIC and SeMT to support all technological requirements for implementation of SLS in pilot ULB and rollout across the state.
  - **Capacity Building Team** – Experts from the domain who have expertise in Training and Knowledge management for capacity building at SLNA and ULB levels in accordance to the defined MoUD framework.
- Selection & Onboarding of SIC
  - Identification of SIC that shall provide consultancy services to SLNA for implementation of the SLS in the pilot ULB and rollout to remaining ULBs across the state within the stipulated duration.
  - Onboarding of SIC and finalizing the strategy for the implementation of this project within the stipulated timeframe.

### **Selection of SI by SLNA supported by SIC**

As per the Government policy prevailing in the state of Tamil Nadu, SI has to be selected through a tendering process for which SIC has to work in close consultation with SLNA and perform various activities. Few major activities SIC shall involve are as follows;

- Prepare a detailed RFP in consultation with SLNA based on this approved DPR for selection of SI for the implementation of SLS, get the RFP approved and float the RFP.
- Perform end-to-end bid management activities namely;
  - Provide complete support to SLNA in conducting Pre-bid conference and providing pre-bid responses to the queries raised by the prospective bidders for SI engagement.



- SIC shall receive the bids submitted by the prospective bidders and perform pre-qualification and technical evaluation.
- SIC shall conduct the Technical Presentations by bidders along with SLNA and evaluate the bidders and submit a report to SLNA.
- SIC shall support SLNA in opening and evaluation of commercial bids submitted by the bidders who have been technically qualified.
- SIC shall work closely in finalizing the contract agreement that has to be signed between SI and SLNA.

### **Onboarding of SI**

- The next activity would be to support SLNA in the onboarding of SI and getting the contract agreement signed between SI and SLNA.
- Work closely with SI on preparing a detailed project plan on SLS implementation at pilot ULB and other ULBs of the state.

### **Phase – 2: (Duration: 9 months)**

During this phase of the project the focus would be on building (Design & Development) the SLS and implementation at pilot ULB by SI with the consultancy support from SIC. SIC would mostly be involved in monitoring the progress of the activities of SI in building the SLS and supporting SLNA in approving the deliverables of SI. Few major activities during this phase include;

SI shall perform the following activities during this phase;

- Conduct a detailed study of the existing applications implemented the applications that are under development and the applications that need to be freshly developed and prepare a detailed Gap Analysis Report.
- Prepare a detailed SRS for the SLS and get the same approved by the committee.
- Based on the Gap Analysis Report and the approved SRS, mobilize the team to





customize / develop the applications pertaining to the civic services and build the SLS in consultation with various stakeholders of SLNA, CCMC and SIC.

- Setup and configure the IT infrastructure at the SDC for a centralized deployment of SLS.
- Thorough testing of the SLS to meet the requirements of the pilot ULB, CCMC
- Deploy the SLS on the staging servers at SDC and release it for UAT. SI team has to support the SLNA, CCMC during the UAT.
- Make necessary arrangements for getting STQC certification for the SLS
- Provide extensive training to the staff of pilot ULB CCMC on computer fundamentals and the application usage.
- Provide extensive technical training to SLNA staff on administration aspects of SLSS.
- On successful completion of the UAT and STQC certification SI shall deploy the SLS on the production servers at SDC and declare Go Live of SLS for the pilot ULB CCMC.

SIC shall perform the following activities during this phase;

- The SLNA along with the identified SIC shall be responsible for the following consultancy activities related to the implementation of the SLS in the pilot ULB and rollout to remaining ULBs across the state;
  - Provide Process management support to SLNA.
  - Provide Technology management support to SLNA.
  - Provide Capacity Building, Change Management and Knowledge Management support to SLNA.
  - Complete Project Management starting from Project inception to Implementation at pilot ULB and further Rollout of the SLS to remaining ULBs across the state.
  - Periodically report to SLNA on the Physical and Financial progress of the project.
  - Ensure proper Exit Management before completion of the tenure of System



Integrator / Implementation Agency.

- Co-ordination with various stakeholders of this project.
- Appraisal of the project in terms of techno-economic aspect using their expertise in the ULB functional domain
- Proper management of funds received from Central Government.
- Fund disbursements to ULBs as per the guidelines of the scheme.
- Preparation and implementation of terms and conditions of contract or agreements between SLNA, ULBs and with solution providers and vendors
- Preparation of Utilization Certificates on a periodic basis after release of funds through different installments of central assistance
- Timely submission of physical and financial progress reports to MoUD.
- Maintain audited accounts of funds released to ULBs and Implementing Agencies

### **Phase – 3: (Duration: 3 months)**

During this phase the focus would be to rollout the SLS to all the remaining ULBs across the state. SI shall perform the rollout related tasks and SIC shall support SLNA to monitor the rollout to the remaining ULBs in the state.

The following activities shall be performed during the rollout phase;

- SI shall ensure the stabilization of the SLS deployed at the centralized SDC.
- SI shall interact with the ULBs and understand if there is any specific customization required to the functionalities provided in the SLS and incorporate the same in the SLS.
- SI shall gather necessary information related to the organization structure and the details of staff performing various roles ULB wise that are ready for using the SLS. SI shall enable the required functionalities and provide access for the ULB staff to use the SLS at each ULB.
- SI shall provide extensive training to the staff of each ULB on computer fundamentals and the application usage.

### **Phase – 4: (Duration: 2 years)**



- SI shall provide Operations and Maintenance (O & M) support after the implementation of SLS in all ULBs for a period of 2 years.

An indicative Project Plan is as shown below;

S. No.	Phases & Activities	Responsibility	M1	M2	M3	M4	M5	M6
<b>Phase – I: Formation of committees, Selection of SI for implementation of SLS and onboarding of SI</b>								
1.	Formation of committees and teams.	SLNA & SIC						
2.	Selection of SIC, RFP preparation & Bid Management for selection of SI for implementation of SLS and Onboarding of SI.	SLNA & SIC						

S. No.	Phases & Activities	Responsibility	M7 – M15					M16 – M18					
	Phase 2 & 3: Design, Develop, Implement & Rollout the SLS												
	Design, Develop & Implement	SI & SIC											



# Detailed Project Report for State Level Solution for eGovernance in all ULBs in Tamil Nadu



	in Pilot													
	Rollout to other ULBs	SI & SIC												

S. No.	Phases & Activities	Responsibility	24 Months
	<b>Phase – 4: O &amp; M support post implementation.</b>		
5.	O & M Support	SI & SLNA	

## Snapshot of MCC offices:

MCC Offices	Total Sites
Head Office / Central Office	1
Zonal Offices	5

Presence of sections at sites		
Section	Central Office	Zonal Office
Revenue	√	√
Engineering	√	√
Town Planning	√	√
Health	√	√
General Administration	√	x
Accounts & Stores	√	x
Council	√	x
GIS	√	x
IT	√	x



<b>Total</b>	<b>9</b>	<b>4</b>
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## Delivery Channels

For efficient and enhanced delivery of civic services there is a need to identify the various channels that can be used for the delivery of proposed services i.e. through Govt. offices or through private partners or electronic channels etc. For example:

- **Government Channel:** The citizen services are to be made available through centres directly run by the Corporations/ Municipalities at the main office as well as zonal offices. CCMC has set up of “Facilitation Centres” to deliver services.
- **Electronic channels:** The CMA website would be used as a powerful and eventually the most focused service delivery channel. Additionally KIOSKs, Mobile computing etc. may also be used as service delivery channels.

The service delivery channels have to be developed in order to provide services. These channels are categorized as Primary and Extended channels and they are developed in staged manner.

### Stage I – Develop Primary Channels

During the First year, the focus will be on developing three key channels mainly, CSC (Citizen Service Center), the present Departmental access points and CMA website. These three channels enjoy high public awareness, extended service applications and mature technologies. Furthermore, CSCs is state initiative and will not attract much investment and departmental access points already exist as a part of service delivery channel. The CMA website can be strengthened and can be made a single sign on access point for citizens.

### Stage 2 – Develop Extended Channels



During the second year, SLNA should seek to propose and integrate Call Center by addressing the issues of channel conflict and distributed customer access. Furthermore, CCMC should expand coverage by establishing a network of kiosks and amending the state website with mobile computing capabilities. Kiosks should allow distributed and remote access to the website for those customers who do not own personal computers. Mobile computing capabilities allow customers to access the services through their regular mobile phones on Push-Pull mechanism.

### **Implementation in other ULBs of Tamil Nadu**

This DPR covers the detailed strategy, methodology and costing for the implementation of e-governance at the CCMC as the pilot ULB. However, the other ULBs of Tamil Nadu also need to be brought within the fold of e-governance to fully realize the benefits of the project for the entire population of the state. For that, each of the other ULBs has to take up the following activities in a systematic manner:

- Obtain sanction from MoUD to be included in the JnNURM mission mode cities
- SIC to prepare a DPR for implementation of e-governance at the respective ULBs
- The DPR would contain details of the various process improvement activities to be taken up at the ULB, capacity building, data digitization and hardware required etc.
- Details of the network architecture to be set up, need to be highlighted. This would include setting up of the LAN in the ULB and the last mile connectivity to SDC and/or TNSWAN
- Since the hardware procurement (mainly servers) are at a state level and would be housed in the SDC, the cost of servers need not be accounted for in the individual DPRs of the ULBs.
- These cost heads need to be discoursed in detail in the DPR and a cost estimate prepared.

- This estimate and the DPR would be passed by the governing council of the respective ULBs and sent to the SLNA, which would be sent to MoUD for final approval.
- MoUD scrutinizes the DPR and allocates the requisite funding.
- The System Integrator would do the rollout to the ULBs. Program management would be taken up by the SIC.

A tentative list of cost heads is given below:

<b><i>Cost Head</i></b>
<b>Hardware Cost</b>
<b>Data Digitization Costs</b>
<b>Training Costs</b>
<b>State Implementation Consultancy Charges</b>
<b>Software License Costs</b>
<b>Recurrent Charges</b>
<b>Miscellaneous</b>

This break up is purely indicative and would vary according to the specific situation in the particular ULB.

## **9.6. Sustainability Plan**

### **Procedural Sustainability**

The committee structure identified in the previous section would ensure that there is clear division of responsibilities among all the key program implementation stakeholders. This would ensure the smooth initiation and progress of the implementation exercise and enable the implementation agency to complete the roll out on time. The key committees and bodies that are formed to ensure procedural sustainability is recapped below:



- TUFFIDCO
- Steering Committee
- State Implementation Consultant
- Implementation Agency
- Support Team

Out of this, the Steering Committee is the decision making body at the Corporation level. It will comprise of members from the Corporation, Department, State Implementation Consultant (SIC) and the Implementation Agency (IA). Processes for issue resolution and escalation would follow tightly laid out procedures which will ensure that progress of the program is uneventful.

### **Resource Sustainability**

Development of the proposed solution will be undertaken by an Implementation Agency (IA). The process of selecting the IA, daily monitoring of progress and liaising between CCMC and the IA would be carried out by a State Implementation Consultant (SIC). The SIC would ensure that SLAs are met and implementation is on schedule. This dual responsibility structure will ensure that resourcing continuity is maintained and enforced. Even in case of failure to ensure resource continuity, there would be enough controls put in place to ensure that transition between outgoing and incoming resources are smooth and handled without incident. This model would systemically ensure that resources who are best suited to carry out the implementation program would be deployed to ensure completion of the implementation according to plan. SLNA will exercise ultimate control and final authority over such staffing decisions. SLNA would be advised and supported by the SIC.

### **Technological Sustainability**

In this section, the technological sustainability of the MMP has been discussed in brief. By technological sustainability, we mean to ensure that the Solution developed will be fool





proof and future proof to the extent feasible. The following are key aspects that need to be considered in order to ensure technological sustainability:

- i. Solution defined should address all functional & non-functional requirements as defined in the SRS & FRS
- ii. Solution should adopt open standards and be interoperable with major technological platforms such as Microsoft, Linux and Unix. It should be able to exploit new technologies in future
- iii. Solution should be designed with open standards such that it can be easily integrated with a wide variety of solutions without too much of complexity (example: integration with standalone systems, legacy systems, other web based systems, etc)
- iv. Solution development process should adopt standard development life cycle processes with adequate review check points and stage gates so that quality is embedded into the execution process
- v. Solution should be designed in such a way that it can handle the requirements of the Corporation for at least 5 years in the future in terms of scalability of transactions, speed and additions of new functionality
- vi. Solution should be easily maintainable and customizable
- vii. Documentation accompanying the solution should be robust from the perspective of end user manuals, comments in source code and technical design documents. They must be up to date and version controlled. Solution support related documents should also be developed and maintained
- viii. Source code of the solution will be maintained using source code control software and backup copies will be maintained



- ix. Solution will incorporate latest security standards and will have single sign on features
- x. Solution will be able to provide interface in local language
- xi. Solution will be developed in a modular fashion so that maintenance and extensions are easy
- xii. Solution should maintain data accuracy, consistency and security and have archival features built in
- xiii. Solution will be audited periodically (once in 6 months) for security controls. Likewise, performance tuning will be undertaken annually
- xiv. A structured requirements management process and tool will be used for managing new requirements. A change control board comprising of the Steering Committee & Programme Manager will ensure that the solution development and maintenance iterations will be coherent and include related requirements on a priority basis
- xv. Disaster recovery and business continuity drills will be conducted on periodic basis (at least once in a year) to test readiness in case of the need to use the alternate site

### **Financial Sustainability**

The ambitious plan of implementing e-governance is not without financial implications. Majority of the funding for this project is expected to come from JnNURM funds. Even so, Government of Tamil Nadu believes that for the initiative to be sustainable on a long term basis, there needs to be service charges imposed for all services and to increase the service charge for some services. The social aspect of this will indeed be the primary concern in implementing service charge rates. The strata of the society which are absolutely deserving of exemptions will definitely be excluded from any increase in charges that might be implemented.



For strictly illustrative purposes, consider the following revenues that can be achieved with a meager increase in service charge for a few critical services. The following schedule shows the expected returns upto year five. A 10% increase in transaction volume has been assumed year after year.

Service	Transacti on Volume	Incr ease (IN R)	Value(INR ) Year 1	Year 2	Year 3	Year 4	Year 5
Registration of Births	50,000	5	2,50,000	2,75,000	3,02,500	3,32,750	3,66,025
Corrections to Register	5,000	5	25,000	27,500	30,250	33,275	36,603
Property Tax Assessment	9,00,000	10	90,00,000	99,00,000	10890000	1,19,79,000	1,31,76,900
<b>Total</b>			<b>92,75,000</b>	<b>1,02,02,500</b>	<b>1,12,22,750</b>	<b>1,23,45,025</b>	<b>1,35,79,528</b>

Note: The transaction volume is indicative in nature.

For the purpose of understanding only 2 services have been considered with an increase in the charges by Rs. 5/- for Registration of Births or corrections to register and Rs. 10/- increase in the charges of Property Tax Assessment. On similar grounds other G2C services can be identified and charges can be levied appropriately.

This mode of charging the citizens/businesses would help the ULBs to get additional revenue for sustaining the project beyond the 4 years of funded duration.

### **Revenue Model for Sustainability at the Central Infrastructure level:**

On the similar lines we would propose the following model for sustaining the project at the central IT infrastructure level. The SDC would provide integrated, centralized IT infrastructure as well as SLS support to all the ULBs for providing better services to the citizens and other stakeholders, they need to meet the expenditure incurred in the operation and maintenance of the data centre as well as other related tasks. Hence for the



sustenance beyond the funded period of 4 years we would suggest to charge the ULBs based on the usage of the SLS.

Charges may be levied to the ULBs on the following few parameters. This is an indicative list;

<b>Service</b>	<b>Quantity</b>	<b>Unit Price (INR)</b>	<b>Total Charges (INR)</b>
No. of Services from SLSS consumed by ULBs.	No. of services	Price to be fixed by Apex committee	
Duration of Network connectivity to SDC from the ULBs.	No. of incoming connections and their duration in hrs.	Price to be fixed by Apex committee	
Storage and backing up of data per ULB.	Volume in MBs	Price to be fixed by Apex committee	
Additional support provided by CCMC for rollout and training of new modules to the ULB.	Support duration in Man months /Man	1.50 Lakhs per Man month	



<b>Service</b>	<b>Quantity</b>	<b>Unit Price (INR)</b>	<b>Total Charges (INR)</b>
	days/Man hours		
<b>Total</b>			

### **Contractual Sustainability**

SLNA would enter into multiple contracts to enable the implementation of e-governance. The two most important contracts that would be entered into would be:

- Contract with State Implementation Consultant (SIC)
- Contract with Implementation Agency (IA)

The contract with the SIC will be for a certain period of time, mutually agreed between the two parties. The contract would detail terms and conditions and lay down detailed SLAs which would define the performance of the SIC and the indicators to measure their performance. This in turn would be largely influenced by the performance of the IA and their ability to deliver on commitments.

The contract with IA would be drawn in detail in consultation with the SIC. The SLAs laid down will be jointly derived at and made part of the contract. Payment terms would be dictated by SLAs and key milestones which have been defined during the entire term of the implementation phase.

These contracts, with tightly binding terms, would ensure that the contractual sustainability of the project is taken care of. The responsibility of strict enforcement of these contracts rests primarily with SLNA. The contracts drawn out with the IA would be enforced by the



SIC and SLNA jointly. This multi-responsibility structure will ensure that contractual obligations are met.

## 10. Project Costing

This section describes the costing of various components required for SLS as well as at CCMC. The table below gives details on the following;

- Capital investments at SLS (including Primary Data Centre & Disaster Recovery Centre)
- Operational Cost of SLS
- Investment cost at CCMC
- Recurrent charges at CCMC

Summary of Project cost for SLS and CCMC	
Item	Total cost (INR) in Lakhs
SLS Capital investment cost	
SLS Operational cost	
CCMC Investment cost	
CCMC Recurring cost	
<b>Grand Total</b>	



### 10.1. Detailed Bill of Material for State Level Solution & Project Expenditure (One Time & Recurring)

Based upon the cost components explained in the following sections, the break-up of the total fund requirement under JNNURM for the implementation of SLS would be as follows:

<b>SLS Capital investments Cost (including Primary Data Centre &amp; Disaster Recovery Centre)</b>					
<b>S.No</b>	<b>Cost Head</b>	<b>Year 1 (INR)</b>	<b>Year 2 (INR)</b>	<b>Year 3 (INR)</b>	<b>Total Budgeted (INR) Lakhs</b>
<b>1</b>	Hardware and Server Infrastructure (Primary Data Centre)	233.80	0.00	0.00	
<b>2</b>	Hardware and Server Infrastructure (Disaster Recovery Centre)	287.30	0.00	0.00	
<b>3</b>	Software Components and Licenses (OS, RDBMS & Middleware) at Primary Data Centre	293.36	0.00	0.00	
<b>4</b>	Software Components and Licenses (OS, RDBMS & Middleware) at (Disaster Recovery Centre)	69.60	0.00	0.00	
<b>5</b>	Software Development / Customization with Operations cost	602.27	30.11	0.00	
<b>6</b>	Third Party Audit (STQC Certification) cost	0.00	50.00	0.00	
<b>7</b>	State Implementation Consultancy Cost	122.10	122.10	0.00	
<b>8</b>	Wet Lease of External competency in PeMT	18.60	21.00	31.15	
<b>Total</b>					



SLS Operational Cost					
S. No.	Cost Head	Year 1 (INR Lakhs)	Year 2 (INR Lakhs)	Year 3 (INR)	Total (INR Lakhs)
1	O & M support (for 2 years) post Go Live cost	0	188.14	225.77	413.91
2	Network connectivity	5	10	20	35.00
Total					448.91

The detailed break-up of the above cost components are as shown below;

#### Hardware and Server Infrastructure (Primary Data Centre):

Item	Qty	Cost (INR Lakhs)	Total (INR Lakhs)
<b>Hardware</b>			
<b>Servers</b>			
Application Server (Rack Servers)	11	6.00	
Database Server (Rack Mountable)	5	10.00	
Web Server	2	3.00	
GIS Application Server	1	5.00	
GIS Database Server	1	10.00	
Directory Services Server	1	3.00	
DC-DR Replication Server	1	3.00	
SMS Gateway Server	1	3.00	
<b>SAN Storage and Tape Library</b>			
SAN Storage (20 TB Usable scalable to 30 TB)	1	40.00	
SAN Switch	2	5.00	
Tape Media (Lot)	1	10.00	
<b>Network Components</b>			





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Item	Qty	Cost (INR Lakhs)	Total (INR Lakhs)
L2 Switches (24 port)	6	1.00	
Firewall (Unified Threat Management - UTM)	2	10.00	
Router	1	1.80	
<b>Total</b>			

**Hardware and Server Infrastructure (Disaster Recovery Centre):**

Item	Qty	Cost (INR Lakhs)	Sub-Total (INR Lakhs)
<b>Servers</b>			
Application Server Rack Servers)	6	5.00	
Database Server (Rack Mountable)	3	10.00	
Web Server	1	3.00	
GIS Application Server	1	5.00	
GIS Database Server	1	10.00	
Directory Services Server	1	3.00	
DC-DR Replication Server	1	3.00	
<b>SAN Storage and Tape Library</b>		0.00	
SAN Storage (20 TB Usable scalable to 30 TB)	1	40.00	
SAN Switch	2	5.00	
Tape Media (Lot)	1	10.00	
<b>Network Components</b>		0.00	
Core Router	2	30.00	
Core Switch	2	30.00	
L2 Switches (24 port)	2	0.75	
Firewall (Unified Threat Management - UTM)	2	10.00	



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Item	Qty	Cost (INR Lakhs)	Sub-Total (INR Lakhs)
Router	1	1.80	
<b>Total</b>			

**Software Components and Licenses (OS, RDBMS & Middleware) at Primary Data Centre:**

Item	Qty	Cost (INR Lakhs)	Total (INR Lakhs)
<b>OS &amp; RDBMS Software</b>			
Linux (Licenses)	25	1.50	
RDBMS Support cost	1	15.00	
Linux Virtualization Licenses	50	0.60	
Antivirus Licenses	50	0.012	
MS Office 2010 Pro	249	0.24	
<b>Middleware</b>			
GIS Application Software	1	50.00	
Directory Services Software	500	0.035	
EMS Software (Additional licenses)	1	25.00	
NMS Software (25 additional licenses)	1	3.00	
Backup Software	1	5.00	
DC-DR Replication Software	1	50.00	
<b>Total</b>			

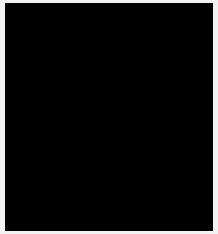
**Software Components and Licenses (OS, RDBMS & Middleware) at (Disaster Recovery Centre):**

System Software	Qty	Cost (INR Lakhs)	Total (INR Lakhs)
Linux Licenses	16	1.50	



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RDBMS support cost	1	15.00	
Linux Virtualization Licenses	50	0.60	
Antivirus Licenses	50	0.012	
<b>Total Cost of System Software</b>			

### **Software Development / Customization with Operations cost:**

For Application Development / Customization of core Civic services, in the wake of considering the re-usability aspects of the “Corporation of Chennai” application modules from eGov Foundation, Chennai the overall effort estimated and the cost derived is shown in the table below;

It is assumed that the “Corporation of Chennai” applications are compatible for re-usability and are on 3-tier architecture and follow SOA.

The effort estimate is for customization of Core Services as well as fresh development of few “Other Modules”. The effort is for the following tasks for each of the applications;

1. Customization of “Corporation of Chennai” applications to meet the functionalities of ULBs (As per detailed FRS provided in DPR)
2. Gap analysis, Study & updation of SRS
3. Preparation of Technical Design & Database Architecture for new modules
4. Enhancement of existing modules to n-tier architecture and Multi-Tenancy support
5. Coding & Testing of new Modules
6. Integration with Online Payment Gateway, SMS, UID & SSDG, MSDG
7. STQC Certification
8. Documentation
9. UAT & Installation
10. Implementation of SLS
11. Fresh development and implementation of applications for Other modules

<b>Name of the</b>	
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Module	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
<b>Customization effort of Applications Developed and Implemented for Core Civic Services</b>									
Registration and Issue of Births & Deaths certificates	2.10	3.00	1.25	3.00	0.90	1.80	1.50	1.50	15.05
Property Tax	2.60	4.20	1.25	6.30	0.90	1.80	2.10	2.10	21.25
Grievances and other Suggestions	2.20	2.40	1.25	2.40	0.90	1.80	1.20	1.20	13.35
Accounting System	6.30	7.20	1.25	9.60	0.90	1.80	2.40	2.40	31.85
Water Supply & Other Utilities	2.60	4.20	1.25	4.20	0.90	1.80	1.20	2.10	18.25
Solid Waste Management	1.80	3.60	1.25	3.60	0.90	1.80	1.20	1.80	15.95



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Name of the Module									
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
Building Plan Approval	2.40	3.60	1.25	2.40	0.90	1.80	1.20	2.40	15.95
Trade Licenses	1.50	3.00	1.25	3.00	0.90	1.80	1.20	1.50	14.15
Project Ward Works	1.50	3.00	1.25	3.00	0.90	1.80	1.20	1.50	14.15
Personnel Information System	6.30	7.20	1.25	9.60	0.90	1.80	2.40	2.40	31.85
eProcurement	2.60	4.20	1.25	4.20	0.90	1.80	1.20	2.10	18.25
Implementation of SLS									16.00
Total customization effort									



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Name of the Module									
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
<b>Applications to be freshly developed (Other Modules)</b>									
Schools Management System	1	0.5	0	3	1.80	1.80	1.20	3.00	12.30
Council Management	1	0.5	0	1	1.80	1.80	1.20	3.00	10.30
File Tracking System	1	0.5	0	1	1.80	1.80	1.20	3.00	10.30
Legal Issues Management	1	0.25	0	0.75	1.80	1.80	1.20	3.00	9.80
On Line Booking Management System	1	0.25	0	0.5	1.80	1.80	1.20	3.00	9.55



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Name of the Module									
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
Assets Management System	2	0.75	0	6.25	1.80	1.80	1.20	3.00	16.80
Document Management System	1	0.5	0	3.75	1.80	1.80	1.20	3.00	13.05
Electoral Management System	1	0.5	0	0.75	1.80	1.80	1.20	3.00	10.05
Census Management System	1	0.5	0	1	1.80	1.80	1.20	3.00	10.30
Fleet Management System	1	0.5	0	12.5	1.80	1.80	1.20	3.00	21.80





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Name of the Module									
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
Stores & Inventory System	1	0.25	0	7.5	1.80	1.80	1.20	3.00	16.55
Online Portal	1	0.5	0	6.25	1.80	1.80	1.20	3.00	15.55
Total development and implementation effort									
Grand Total									
Total (INR Lakhs) (Assumed Person Month rate @ 1,50,000/-)									
Onsite Operations Support Cost for Year 1									
Onsite Operations Support Cost for Year 2									



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Name of the Module									
	Gap analysis, Study & updation of SRS	Preparation of Technical Design & Database Architecture for new modules	Enhancement of existing modules to n-tier architecture and multi-tenancy support	Coding & Testing of new Modules	Integration with SMS, UID & SSDG, MSDG	STQC Certification	Documentation	UAT & Installation	Total
Total									

Note: The above effort has been estimated based on the discussions with stakeholders of different ULBs as well as with eGov Foundation (for re-usability of available application components) that there is a possibility of re-using few of the compatible application components from the “Corporation of Chennai” applications for the Core services as well as available application components for few of the other modules namely; Legal Issues Management System, Online Booking Management System, Asset Management System and Stores & Inventory System. There would be a need to customize the application components to suit the ULB needs.

**Third Party Audit (STQC Certification) cost**

Decription	Cost (INR) (In Lakhs)
STQC Certification Cost	
<b>Total</b>	

**State Implementation Consultancy Cost:**

S.NO	Constituents of SIC	Number (s)	Period	Appr. Cost per Man month (lakhs)	Number of Man Months	Total Cost (lakhs)
1	Project Management Consultant	1	2 Years	2.75	24	
2	Solution Architect/ Technology Expert	1	1.5 year	2.2	18	
3	Network Security expert	1	9 months	2.2	9	
4	Capacity Building Consultant	2	1 year	2.2	24	
5	BPR & Urban Reforms Process Consultant	2	1 year	2.2	24	
6	Procurement Consultant	1	6 months	2.2	6	
	<b>Total</b>					

**Wet Lease of External competency in PeMT:**

Wet Lease of External Competencies in PeMT									
Rs in Lakhs									
Role	Year 1			Year 2			Year 3		
	No	Unit price	Cost	No	Unit cost	Cost	No	Unit cost	Cost
Project Manager	1	8.00	8.00	1	8.80	8.80	1	9.68	
Chief Data Administrator	1	7.00	7.00	1	7.70	7.70	1	8.47	
Security Governance							1	10.00	
<b>Total</b>	<b>2</b>		<b>15.00</b>	<b>2</b>		<b>16.50</b>	<b>3</b>		
Engagement of additional Industry Specialists on a part time basis									
Rs in Lakhs									
Role	Year 1			Year 2			Year 3		
	MD	C/MD	Cost	MD	C/MD	Cost	MD	C/MD	
Economists/ Financial Experts	30	0.12	3.6	25	0.12	3	25	0.12	
GPR Experts	0	0.1	0	15	0.1	1.5	0	0.1	
<b>Total</b>			<b>3.6</b>			<b>4.5</b>			
<b>Total Cost</b>			<b>18.60</b>			<b>21.00</b>			
<b>Total Cost for 3 years</b>									

Note:MD: Man Days, CTG: Cost to the Government, C/MD: Cost per Man-day

**SLS Operational Cost:****O & M support (for 2 years) post Go Live cost:**

The O & M support cost has been arrived as follows;

S. No.	Description	Total (INR Lakhs)
1	Year 1	
2	Year 2 (10% of SLS Capital investment cost)	
3	Year 3 (12% of SLS Capital investment cost)	
Total		

**Network Connectivity:**

The network connectivity cost has been arrived as follows;

S. No.	Description	Total (INR Lakhs)
1	Year 1	
2	Year 2 (assuming to double the bandwidth required in Year 1)	
3	Year 3 (assuming to double the bandwidth required in Year 2)	
Total		

Note: As there would be a considerable increase in the usage of SLS year-on-year the cost estimate for network connectivity increases with every year.



## 10.2. Detailed Bill of Material for CCMC

Coimbatore City Municipal Corporation (Pilot ULB)				
Cost table (Breakup of Investment Costs)				
S.No	Description of Activity	Year I	Year II	Total Budgeted (INR) Lakhs
<b>INVESTMENT COST</b>				
<b>I</b>	IT infrastructure Cost			
	Hardware (PC, Printers, Plotters etc.)	129.00	0.00	
	Networking (Router, Switch etc.)	5.55	0.00	
<b>ii</b>	Data Digitization Services	243.00	0.00	
<b>iii</b>	Training	102.59	87.50	
<b>iv</b>	Site Preparation	0.00	0.00	
	<b>Total Investment Cost</b>			

CCMC Recurring Cost				
<b>(A)</b>	<b>RECURRENT CHARGES</b>			
S.No	Description of Activity	Year I	Year II	Total Budgeted (INR) Lakhs
	Handholding support staff (2 nos. for 1 year)	0.00	12.00	
	Network connectivity per year	2.00	2.00	
	<b>Total</b>			
<b>(B)</b>	<b>Miscellaneous</b>	24.01	4.38	
	<b>Total Recurrent Cost (A+B)</b>			



### IT infrastructure Cost:

Item Name	Quantity	Unit Price (INR Lakhs)	Amount (INR Lakhs)	
Hardware (PC, Printers, Plotters etc.)				
Desktop with Win 7 preloaded	249	0.40		
Multi-Function Printer	13	0.20		
Standalone Laser Printer (A4)	21	0.10		
Dot-matrix Printer	40	0.10		
High End Scanner (A3 size)	8	0.15		
Plotter (A0 size)	3	6.00		
Wall Mount Racks	10	0.15		
Total				
Networking (Router, Switch etc.)				
L2 Switches (24 port)	5	0.75		
Routers	1	1.80		
Total				

### Data Digitization Cost:

Area	Number of Records (Lakhs)	Effort in MM	Per MM Rate (INR) in Lakhs	Cost per Record (INR)	Total Cost (INR Lakhs)
Birth and Death Records (Data Migration)	10.00	6.00	1.50	0	9.00
Property tax records digitization	9.00	NA	NA	10	90.00



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Area	Number of Records (Lakhs)	Effort in MM	Per MM Rate (INR) in Lakhs	Cost per Record (INR)	Total Cost (INR Lakhs)
Grievances Complaints records (Data Migration)	0.25	1.00	1.50	0	
Accounting System (Data Migration)	3.00	3.00	1.50	0	
Water supply and other utilities (Data Migration)	10.00	6.00	1.50	0	
Building Permit records (Data scanning & entry)	3.00	NA	NA	7	
Trade Licenses (Data Migration)	2.00	2.00	1.50	0	
Solid Waste Management (Data digitization - Complete Coimbatore city map divided into zones and wards; layers include Roads, Garbage bins & collection points, Dumping yards etc.)	5 Zones 100 Wards	24.00	1.50	0	
eProcurement (Data Migration)	10.00	6.00	1.50	0	
Personnel Information System (Data Entry)	800 employees data	40.00	1.50	0	
<b>Total</b>					
Data Migration - is to move data from existing legacy Db server to the new Db server.					

**Training Cost:**

Training	Year 1	Year 2
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Category	Number	Cost Per Participant(INR Lakh)	No. of Days	Total Cost (INR Lakh)	Number	Cost Per Participant(INR Lakh)	No. of Days	Total Cost (INR Lakh)
<b>Technical Training</b>				<b>54.82</b>	<b>Refresher Training</b>			
Computer Fundamentals	200	0.01	2.00	4.00	250	0.01	2.00	
Application Training	847	0.02	3.00	50.82	350	0.02	3.00	
<b>Project Management</b>				<b>16.00</b>				
Technical	30	0.20	2.00	12.00	55	0.20	2.00	
Non-Technical	10	0.20	2.00	4.00	10	0.20	2.00	
<b>Leadership Training</b>				<b>16.80</b>	<b>Refresher Training</b>			
Commissioner, Dy. Commr.	2	0.40	1.00	0.80	2	0.40	1.00	
<b>HoDs</b>								
Technical	10	0.40	1.00	4.00	17	0.40	1.00	
Non Technical	10	0.40	1.00	4.00	17	0.40	1.00	
Superintendents	20	0.40	1.00	8.00	40	0.40	1.00	
<b>GPR Training</b>				<b>4.90</b>				
Commissioner, Dy. Commr.	2	0.20	1.00	0.40	0	0.20	1.00	
Technical Staff	10	0.15	1.00	1.50	0	0.15	1.00	
Superintendents	20	0.15	1.00	3.00	0	0.15	1.00	
<b>Technology Training</b>				<b>1.60</b>	<b>Refresher Training</b>			
Database	4	0.20	1.00	0.80	4	0.20	1.00	



Training Category	Year 1				Year 2			
	Number	Cost Per Participant(INR Lakh)	No. of Days	Total Cost (INR Lakh)	Number	Cost Per Participant(INR Lakh)	No. of Days	Total Cost (INR Lakh)
administration								
Server and n/w administration	4	0.20	1.00	0.80	4	0.20	1.00	
<b>E-Governance Awareness Training</b>				<b>8.47</b>	<b>Refresher Training</b>			
All Staff	847	0.01	1.00	8.47	350	0.01	1.00	
<b>Total Training Cost</b>				<b>102.59</b>				
<b>Total Training Cost for Year I and Year 2</b>								

### 10.3. Financing Plan

The NMMP on e-Governance in CCMC would be implemented as a part of Jawaharlal Nehru Urban Renewal Mission (JNNURM) and the central assistance is expected to be 50% of the project cost and the remaining cost of the project would be borne by State Government (20%)&Urban local bodies (30%).

The cost of land & building, site preparation, civil Infrastructure, employee cost, electricity & communication cost shall be borne by the state government/ULB.

Financing Plan (Centre / State / ULB share)

Period	Centre (INR) in lakhs	State (INR) in lakhs	ULB (INR) in lakhs	Other sources of funds (if any) (INR) in	Total (INR) in Lakhs



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				lakhs	
Year 1	1069.69	427.64	641.44	0	
Year 2	263.61	105.45	158.17	0	
Year 3	138.46	55.38	83.08	0	
Grand Total					