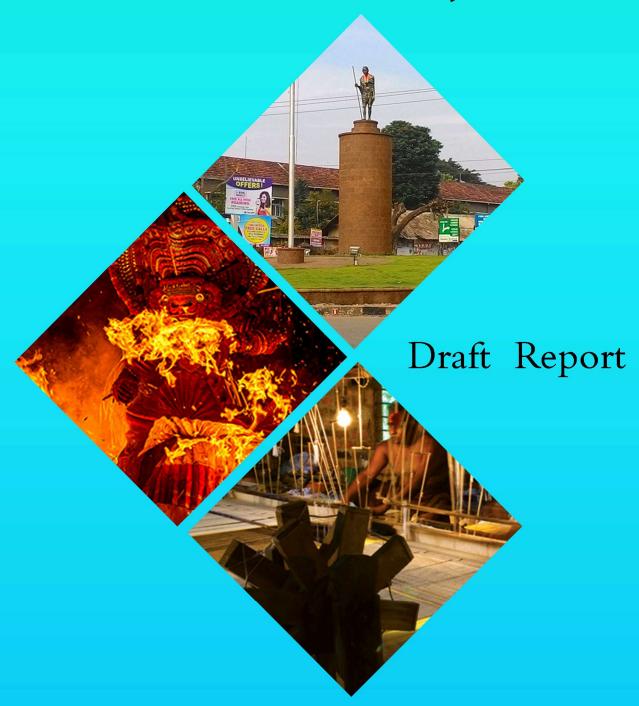








FOR KANNUR CITY, 2041



MASTER PLAN FOR KANNUR CITY, 2041

UNDER AMRUT SCHEME

DRAFT REPORT



Prepared by

KANNUR CORPORATION &
LSGD PLANNING, KANNUR
GOVERNMENT OF KERALA
DECEMBER 2022

FOREWORD

Kannur has its origin from "Kaanathoor", a coastal village formed by the silt deposited from Kaanam Puzha. In olden days there was a fort on the western side of Kaanathoor, known as "Katlayi Kota", which once flourished as the capital and great trading centre of Kolathiri Rajas. Kannur is the place where the only Muslim royal family in Kerala ruled with its headquarters at "Arakkal Kettu", near the present Kannur city. Kolathiri gave them a separate territory covering the Kannur bazaar for their control and they virtually became a power in respect of trade and political influence. Kannur city was once a stall for horses imported from Arabia and Kutch. The Portuguese traders got permission to build a fort in Kannur from Kolathiri in 1505 AD and St. Angelo's fort was built by Sir Francisco de Almeida.

This AMRUT Master Plan for Kannur Municipal Corporation can be figuratively called its manifesto of developments and is aimed at determining the future of the city has been formed recently by the adding the surrounding Panchayats to erst while Kannur Municipality and it is the right time for us to equip ourselves to rise to the occasion for utilizing in maximum the opportunities lying ahead. On this occasion, it is with great pleasure that I present this Master Plan for Kannur City. The Plan is intended, to be used as a general guide for the future development of land within the Corporation area for many years to come.

The plan is the product of extensive community participation over the last few couple of years. The contribution of every citizen and stakeholder who participated in the preparation of Master Plan can be seen in the following pages. Special thanks are extended to the members of Council, Municipal Standing Committee, Special Committee and its Working Groups who volunteered their precious time to guide the planning process, with their diligence and hard work. I appreciate the efforts put in by the officials of the LSGD Planning, Kannur who prepared this development plan through a process of people's participation, carefully understanding the aspirations and expectations of the citizens of the city.

Contained within this report are people's aspirations, dreams, and vision for transforming Kannur city into a smart urban centre with multifunctional zone for providing all basic facilities required for a district head quarters, this Master Plan aims at developing a vital central commercial area at the heart of the city, It also includes

ideas for the urbanization of surrounding areas for a sustainable development, and for

laying the foundation for a strong economy by utilizing the potentials offered by the

traffic corridors, airport, seaport and the proposed inland navigation to exploit canal

tourism potentials available in and around the city, educational infrastructure and

commercial activity nodes to be created outside the city centre for a balanced growth of

the corporation area. It depicts a Transportation Plan for accommodating all future

needs to provide smooth transit for all road users. The Master Plan also includes

strategies for developing a city that enriches our lives with more urban and civic

amenities with precautions to ensure qualitative life without much damage to the

present environment.

I hope that you will read this plan with great enthusiasm and will find that it

addresses the critical problems in the development scenario of the city. Finally the plan

is open-ended allowing for revisions and additions every five years. And I hope this

open-ended nature of the plan will help us fine-tune the proposed incentives and

regulations, as and where defects are identified at later stage.

Kannur

Date: 05/12/2022

Adv. T.O. Mohanan

Mayor

Kannur Corporation

PREFACE

The 74th Constitutional amendment and subsequent state legislations have put forward a paradigm shift in the development planning process. The focus has shifted from physical planning to spatial planning for economic and social development. The inclusiveness of the development process is another important consideration in the nation at present. The Planning Commission, Government of India, in the Approach to 12th Five Year Plan, articulated this view as following "Urban planning cannot be limited to spatial allocations and engineering solutions: It must encompass and connect various socio-technical considerations too". The Development Plan has multiple objectives in this backdrop - to ensure efficiency of built form of the town so as to augment economic development, facilitate inclusive and faster development by the impetus given to various sectors of economy and put in place a regulatory mechanism for limiting the anthropogenic threats to the already depleting environmental resources by keeping the demands of development well within the carrying capacity of our precious environment.

Kannur is one of the highly urbanized districts of Kerala, with nearly two-third of its population living in urban areas as per the census 2011. The population of the urban areas of Kannur district is increasing. This is contrary to the general trend of rural areas of coastal belt that are gradually urbanized. This necessitated a study on the urbanization pattern of the District. Planners have to study the process of urbanization of an area because this is one of the main criteria considered to be crucial in the planning process. The LSGD Planning has been instrumental in the preparation of Town Planning Schemes in the State as per the provisions contained in the Town Planning Acts in force. Accelerated urbanization in the State, a fact underlined by the 2011 Census of India figures, made it imperative to prepare Master Plans for all urban settlements in the State on a priority basis. The Department has taken up the challenging task of preparation of 32 Master Plans in the first stage and further 29 in the next stage to cover all the municipal areas in the State. Kannur Municipal Corporation was included in the latter scheme list of 29 plans.

Among the five hundred cities that have been selected under AMRUT, Kannur Municipal Corporation is also included. Hence the preparation of Master Plan materialized by focusing on the thrust areas of AMRUT Mission. Water supply, sewerage and septage management, storm water drainage to reduce flooding, non-

motorized urban transport, green space/parks are the thrust areas of the mission. Kannur city is famous for its tourism potential such as St. Angelo fort, Payyambalam Beach, Light house, Arakkal kettu etc. These tourism spots have played a major role in development of the city. The development strategy of the city is based on its historical, social and cultural aspects ensuring the people's participation in all stages of planning.

I take this opportunity to appreciate efforts of the officials of the Kannur District office of the Department, especially Sri. Ravi Kumar P, Town Planner, Sri. Sooraj T C, Smt. Sanma Jishnudas, Deputy Town Planners and Sri Ranjith K V, Retired Town Planner, Sri. Nidheesh K P, Sri. Sathyababu K, Smt. Jiji Bhaskaran P and Sri. Rijesh N M, former Deputy Town Planners of this office in the preparation of this document played anchor role in this regard, right from conceptualization to completion. I also appreciate the consistent efforts of Sri Pramod Kumar C P, Chief Town planner, Sri. J Jayakumar, Additional Chief Town Planner and other officials of Planning Wing of this Office for their efforts in vetting and finalizing the AMRUT Master Plan for Kannur City.

Certainly, this plan document for Kannur city will provide a frame work for development of the city for years to come.

Thiruvananthapuram

Date:

PRASANTH H
Chief Town Planner (Planning),
LSGD Planning,
Government of Kerala

ACKNOWLEDGEMENT

The Master Plan for Kannur Town (present Corporation area) is prepared as a part of preparation of Master Plans for towns in the Kerala State vide GO (Rt.) No.181 LSGD Dated 25/01/2015 of Local Self Government Department as a part of AMRUT Scheme. A methodology was evolved for the preparation of Master Plans at the State level and the same was adopted with suitable modifications at the City level. People participation has been a crucial element in the methodology. The Master Plan once sanctioned shall give directions to the development process in the Corporation area for years to come. Suitable provisions for monitoring and review of the Master Plan is inbuilt. This AMRUT Master plan is a GIS based Master Plan which is formulated by using spatial data and attributes for analysis part and proposal part. Moreover, this is a 'Risk Informed Master Plan' in which the disaster occurred during mega floods 2018 and 2019 has been studied and based on this risk zones have been identified and certain regulation have been imposed for saving the life and property during a future hazard moreover the Sponge City concept and Resilience City concept have been adopted as far as possible by creating conservation zones which include paddy fields, wet land, mangrove area etc.

I take this opportunity to appreciate the interest and enthusiasm shown by the Honourable Mayor and Deputy Mayor in the preparation of this master plan. The role of former Mayors and Deputy Mayors also has to be acknowledged here. I should like to place on record my gratitude towards Sri. K Sudhakaran, Honourable MP of Loksabha, Dr. V Shivadas, Honourable MP of Rajyasabha, Sri. Kadannapaly Ramachandran, Honourable MLA and Sri. Sumesh K V, Honorable MLA for their valuable suggestions in the preparation of this Master Plan report. We have heavily relied on statistical data from various Development Departments. Their readiness to share the data is gratefully acknowledged. The collection of data, analysis and preparation of this report would not have been possible without the active involvement and painstaking efforts taken by Councillors of Kannur Corporation, as well as members of Special Committee and its various Working Groups.

I am also very much grateful to Sri Prasanth H, Chief Town Planner (Planning), Sri Pramod Kumar C P, Chief Town Planner, Sri. J Jayakumar, Additional Chief Town Planner and Smt. Girija K S, Sri. Jiji George former Chief Town Planners, for guiding

us in the right direction in the fulfilment of this study. I whole-heartedly acknowledge the able and valuable support given by Sri. Ajay Kumar S, Senior Town Planner, C K. Sabithamini and Smt. Asha Ajay Ghosh, Town Planners, Smt. Sindhu Rani P V and Smt. Raji S S Deputy Town Planners, and all staff members of the Office of the Chief Town Planner (Planning), Thiruvanathapuram.

I take this opportunity to acknowledge the valuable contribution made by Sri. Ranjith K V, Rtd. Town Planner, Sri. Sooraj T C, Smt. Sanma Jishnudas, Deputy Town Planners, Sri. Nidheesh K P, Sri. Sathyababu K, Sri. Rijesh N M, Smt. Jiji Bhaskaran P, former Deputy Town Planners of this office, Sri. Rajeev P M, Sri. Arun Chandran, Sri. Akhil V, Sri Vipin A V, Sri. Jishnu Areekkad, Sri. Sunil Kumar. O, Assistant Town Planners. They played key roles in the successful completion of this report. assistance offered by, Smt. Sajina V, Ist Gr. Town Planning Surveyor/Draftsman, Smt. Deepa A V, IInd Gr. Town Planning Surveyor/Draftsman, Ms. Prashitha C, Dr. Sooraj G, Planner Associates, Ms. Ranjusha V Nair, Smt. Murshida M K, Planning Assistants (GIS), Ms. Divya P G, former Planner Associate, Smt. Aiswarya K, former Planning Assistant, Gopalakrishnan P P, Sri. Mudhassir M K, former Planning Assistants (GIS), Ramsheera K, Computer Assistant, Sri. Manoj A V, Sri. Pradeepan U, Sri. Sreejesh, Sri. Niral N C M, Sri. Shiju Thottathil, Statistical Investigators of this office for the preparation of this report, needs special mention. All the staff members of the LSGD Planning, Kannur Office and also Secretary and staff members of Kannur Municipal Corporation need to be specially acknowledged for their keen participation at various stages without which this work would not have been completed in the present form and time frame.

Kannur RAVI KUMAR P
Date: 05/12/2022 Town Planner

LSGD Planning, Kannur

CONTENTS

PART I - STUDY AND ANALYSIS

Chap	Chapter 1 - Introduction	
1.1	General	1
1.2	The Corporation area	1
1.3	Need for Master Plan	4
1.4	Delineation of planning area	5
1.5	Organizational structure	5
1.6	Methodology	6
1.7	People's participation in the preparation of Master Plan	7
1.8	Earlier planning efforts and its appraisal	8
1.8.1	Development plan for Kannur Municipal area – 2031	9
1.9	Conclusion.	10
Chap	ter 2 - Profile of the City	13 - 22
2.1	Location.	13
2.2	Connectivity	13
2.3	Area and population	15
2.4	Administrative division.	16
2.5	Soil	18
2.6	Physiography	18
2.7	Climate	19
2.8	History	20
2.9	Natural resources.	22

Chap	ter 3 - Regional Settings & Urbanization Trends in the District	23 - 32
3.1	Regional linkage	23
3.2	Urbanization	24
3.3	Hierarchy of settlements	27
3.4	Functional character of the Corporation area in the district	28
3.5	Population concentration pattern	29
3.6	Activity pattern of the towns in the district	29
3.7	Connectivity	30
3.8	Spatial structure of the district	31
3.9	Inference	32
Chapt	ter 4 - Demography	33 - 44
4.1	Population size	33
4.1.1	Comparison with district and state	33
4.1.2	Comparison with other Municipal Corporations in Kerala	34
4.1.3	Comparison with neighbouring local bodies	34
4.2	Population distribution.	34
4.3	Growth pattern	36
4.3.1	Comparison with district and state	37
4.3.2	Comparison with other Municipal Corporations in Kerala	37
4.4	Population density	38
4.4.1	Comparison with other Municipal Corporations in Kerala	38
4.5	Sex ratio	39
4.5.1	Comparison with district and state	39
4.5.2	Comparison with other Municipal Corporations in Kerala	40
4.6	Child sex ratio.	40
4.7	Literacy rate	41
4.8	Age-sex pyramid	41
4.9	Inference	42

Chapter 5 - Occupational Structure		45 - 50
5.1	Workers	45
5.2	Work participation rate	46
5.2.1	Temporal variation - comparison with district and state	46
5.2.2	Comparison with other Municipal Corporations in Kerala	46
5.2.3	Comparison with other Municipalities in District	47
5.2.4	Male and female WPR comparison with other Municipal Corporations in Kerala	47
5.2.5	Comparison of decadal variation of gender based work participation rate	47
5.3	Occupational structure	48
5.4	Inference	49
Chapte	er 6 - Land Use	51 - 62
6.1	Land use at city level.	52
6.2	Comparison of existing land use with planning standards	52
6.3	Land use concentration pattern	54
6.3.1	Residential concentration.	55
6.3.2	Industrial concentration	55
6.3.3	Commercial concentration	56
6.3.4	Public and semi-public concentration	57
6.3.5	Paddy concentration	58
6.3.6	Dry agriculture concentration	58
6.3.7	Recreational concentration	59
6.3.8	Transportation concentration	59
6.3.9	Water bodies other major land uses	60
6.4	Inference	60

Chapt	Chapter 7 - Agriculture & Allied Sectors	
7.1	Agriculture	63
7.1.1	Existing status.	64
7.1.2	Inference	67
7.2	Animal husbandry	68
7.2.1	Existing status	68
7.2.2	Inference	70
7.3	Fisheries	70
7.3.1	Existing status	70
7.3.2	Development potentials	71
7.3.3	Development issues	72
7.3.4	Inference	72
Chapt	er 8 - Industries	73 - 78
8.1	Existing status.	74
8.2	Development potentials and problems	76
8.3	Inference	77
Chapt	er 9 - Trade and Commerce	79 - 86
9.1	Existing scenario	79
9.1.1	Important commercial nodes and their hierarchy	79
9.1.2	Informal sector/ street vendors	82
9.2	Development potentials and problems	83
9.3	Inference	84

Chapter	: 10 - Tourism, Culture & Heritage	87 - 10
10.1	Existing status.	87
10.2	Types of tourism	88
10.2.1	Beach tourism	88
10.2.2	Pilgrim tourism	92
10.2.3	Cultural tourism	93
10.2.4	Heritage tourism.	94
10.2.5	Other tourist spots influencing Kannur Corporation area	96
10.3	Potentials and problems.	99
10.4	Inference	100
Chapte	r 11 - Traffic and Transportation	101 - 120
11.1	Analysis of existing status	101
11.1.1	Road network	101
11.1.2	Vehicle population	103
11.1.3	Traffic volume studies.	104
11.1.4	Capacity utilization.	106
11.1.5	Characteristics of intercity passenger and vehicular traffic	107
11.1.6	Characteristics of public transport	109
11.1.7	Speed and delay characteristics	110
11.1.8	Parking facilities	111
11.1.9	Pedestrian movements	113
11.1.10	Accident prone locations.	114
11.1.11	Hierarchy of traffic nodes	116
11.1.12	Railway transport.	116
11.1.13	Water network	116
11.1.14	Airways	117
11.2	Development potentials and problems	117
11.3	Inference	118

Chapter 12 - Water Supply		121 - 132
12.1	Existing status	121
12.2	Sources of water supply	121
12.3	Treatment, storage and distribution	122
12.4	Water scarcity	124
12.5	Ongoing schemes.	126
12.6	Potentials and problems	128
12.7	Inference	130
Chapte	r 13 - Drainage, Sewerage & Solid Waste Management	133 - 144
13.1	Drainage	133
13.1.1	Analysis of existing status.	133
13.1.2	Ongoing projects	135
13.1.3	Potentials and problems.	135
13.2	Sewerage system	136
13.2.1	Analysis of existing status	136
13.2.2	Ongoing projects.	137
13.2.3	Potentials and problems	138
13.3	Solid waste management.	138
13.3.1	Analysis of existing status	138
A	Collection.	140
В	Disposal	140
\mathbf{C}	Treatment	141
13.3.2	Ongoing projects	143
13.3.3	Potentials and problems.	143
13.4	Inference	143

Chapter 14 - Energy		145 - 150
14.1	Existing status.	145
14.1.1	Consumption	146
14.1.2	Connection and distribution.	146
14.1.3	Other sources of energy.	148
14.2	Development potentials and problems	148
14.3	Inference	150
Chapte	r 15 - Education	151 - 160
15.1	Analysis of existing status.	151
15.2	Educational status	152
15.3	Educational institutions.	152
15.3.1	Primary schools	153
15.3.2	High schools	153
15.3.3	Higher secondary schools	153
15.3.4	Special schools	154
15.3.5	Higher educational institutions	154
15.4	Potentials and problems	159
15.5	Inference	160
Chapte	r 16 - Health	161 - 172
16.1	Analysis of existing scenario.	161
16.1.1	Major hospitals in Kannur Corporation area	162
16.2	Health issues in the Corporation area	167
16.2.1	Epidemics	167
16.2.2	Life style diseases	167
16.2.3	Covid-19	169

Master Pla	nn for Kannur City, 2041 Conter	nts
16.3	Potentials and problems.	169
16.4	Inference	
Chapter	17 - Housing	173– 184
17.1	Existing status	173
17.1.1	House hold size	. 173
17.1.2	Zone wise comparison	174
17.1.3	Overall housing scenario in the planning area	. 174
17.1.4	Flats in Corporation area	177
17.1.5	Slums.	177
17.1.6	SC/ST Colonies	179
17.1.7	Housing for poor.	182
17.2	Potentials and problems	183
17.3	Inference	184
Chapter	18 - Recreation & Civic Amenities	185 - 194
18.1	Recreational facilities.	186
18.1.1	Parks	186
18.1.2	Open spaces	187
18.1.3	Cinema theatre	189
18.1.4	Ponds	189
18.1.5	Swimming pools	189
18.1.6	Assembly halls	190
18.1.7	Sports and arts training centres.	190
18.1.8	Libraries and reading rooms.	191
18.2	Civic amenities.	192
18.2.1	Police station and fire station	192
18.2.2	Post Offices and telephone exchanges	193

Master Pla	an for Kannur City, 2041 Contents	
18.2.3	Burial grounds and crematorium.	193
18.2.4	Comfort stations	193
18.2.5	Oil and gas filling stations	193
18.2.6	Public Offices.	193
18.3	On-going projects	193
18.4	Potentials and Problems	193
18.5	Inference	194
Chapter	r 19 - Social Welfare	195 - 202
19.1	Analysis of existing status	195
19.1.1	Scheduled Caste / Scheduled Tribe (SC/ ST)	195
19.1.2	Below poverty line (BPL)	196
19.1.3	Children	196
19.1.4	Women	197
19.1.5	Differently abled persons	198
19.1.6	Old aged people	199
19.1.7	Social welfare pension / Financial aids	199
19.2	Development potentials and problems	199
19.3	Inference	200
Chapter	20 - Environment	203 - 210
20.1	Existing status.	203
20.1.1	Sensitive / Fragile areas	204
20.1.2	Pollution	206
20.2	Conservation efforts	207
20.3	Development potentials and problems	208
20.4	Inference	208

Chapte	r 21 - Municipal Finance	211 - 214
21.1	Municipal finance	211
21.1.1	Analysis of existing status	211
21.1.2	Sources of fund	213
21.2	Municipal Governance	213
21.3	Development potentials and problems	213
21.4	Inference.	214
Chapte	r 22 – Disaster Management-Risk Assessment	215 - 246
22.1	Introduction	215
22.2	National policy	216
22.3	State policy	216
22.4	District level study of disasters	217
22.4.1	Flood	219
22.4.2	Landslide and landslip.	221
22.4.3	Drought	223
22.4.4	Thunder and lightning.	224
22.4.5	Epidemics/pandemics	225
22.4.6	Coastal related disasters	225
22.4.7	Earthquake	226
22.4.8	Air accidents	226
22.4.9	Chemical and industrial disasters	227
22.4.10	Fire	227
22.5	Kannur city - study of disasters	227
22.5.1	Micro watersheds of Valapattanam river in the study area	227
22.5.2	Flood.	228
22.5.3	Epidemics/Pandemics.	231
22.5.4	Drought	232

22.5.5	Coastal hazards	232
22.5.6	Fire	233
22.6	Hazard analysis	234
22.7	Analysis of critical facilities	235
22.8	Integrated analysis of land use v/s hazard zone	237
22.9	Analysis of hazard zone v/s distribution of infrastructure and identification gap.	238
22.9.1	Analysis of rescue related infrastructure	238
22.9.2	Need of permanent shelters	238
22.9.3	Safe route and potential camp locations of Kannur Municipal Corporation.	243
22.9.4	Analysis of catchment of shelters against settlement	244
22.10	Mitigation measures	244
22.10.1	Flood	244
22.10.2	Epidemics/Pandemics	244
22.10.3	Drought	244
22.10.4	Coastal area disasters	245
22.10.5	Fire	245
22.11	Inference	245
Chapte:	r 23 - Spatial Structure	247 - 256
23.1	Functional character.	247
23.2	Activity pattern	249
23.3	Hierarchy of settlements	251
23.3.1	Existing hierarchy of settlements	252
23.4	Existing hierarchy of nodes	252
23.5	External development thrust	253
23.6	Existing road network.	254
23.7	Existing spatial structure	256

Master Pla	an for Kannur City, 2041 Contents	
23.8	Inference	256
Chapter	· 24 - Projected Requirements	257 - 226
24.1	Population	257
24.1.1	Arithmetical increase method	257
24.1.2	Geometrical increase method.	258
24.1.3	Incremental increase method	258
24.1.4	Decreasing rate method.	259
24.2	Work force.	260
24.3	Water supply	260
24.4	Solid waste and sewerage	262
24.5	Energy	262
24.6	Education	263
24.7	Health	264
24.8	Housing	264
24.9	Recreation and civic amenities	265
24.10	Social welfare	265
24.11	Traffic and transportation	266
24.12	Inference	272
	PART II - DEVELOPMENT VISION	
Chapter 25 - Summary of Analysis & Regional Linkage		
25.1	Major findings of spatial analysis	273

Chapter	25 - Summary of Analysis & Regional Linkage	273 - 284
25.1	Major findings of spatial analysis	273
25.1.1	Regional study	273
25.1.2	Demography	274
25.1.3	Occupation	274
25.1.4	Existing land use	274
25.2	Major findings of sectoral analysis	274

Master Pla	n for Kannur City, 2041 Contents	
OF 0 1		0.77
25.2.1	Sectors of economy	275
25.2.2	Sectors of physical infrastructure	277
25.2.3	Sectors of social infrastructure	279
25.2.4	Disaster management.	282
25.2.5	Linkage of development parameters of spatial and sectoral analysis	283
25.3	Inference	283
Chapter	26 - Vision, Goals & Objectives	285 - 288
26.1	The vision statement.	285
26.2	Goals	285
26.3	Aim and objectives.	286
26.3.1	Goals	286
26.3.2	Objectives	286
Chapter	27 - Development Concepts, Policies & Strategies	289 - 298
27.1	Suggested city form and development direction	289
27.2	Suggested settlement pattern	291
27.3	Suggested hierarchy of nodes	293
27.4	Suggested road network	293
27.5	Suggested spatial structure.	295
27.6	Envisaged city functions	296
27.7	Development concept	296
27.8	Policies and strategies.	297
27.8.1	Policies	297
27.8.2	Strategies	297

PART III - LAND USE PLAN AND SECTORAL PROPOSLS

Chapte	r 28 - Proposed Land Use Plan	299 - 310
28.1	Existing scenario	299
28.2	Proposed land use pattern	299
28.3	Built-up zone	302
28.4	Green-blue zone	306
28.5	Special zone	308
28.6	Risk area	309
Chapte	r 29 -Traffic and Transportation Plan	311 - 336
29.1	Transport development plan for Kannur Corporation	311
29.2	Transportation Plan	313
29.3	Road widening proposals	314
29.3.1	Major roads in the city	314
29.4	NH bypass	323
29.5	Coastal highway from Azheekkal fort to Edakkad	323
29.6	Mobility hub with parking plaza	323
29.7	Junction improvement proposals	324
29.7.1	Other junctions to be improved	328
29.8	Parking facilities	328
29.8.1	On street parking.	328
29.8.2	Pay and park	328
29.8.3	Multi-level car parking	328
29.9	Pedestrian facilities	330
29.9.1	Sidewalks or walkways.	330

Master	Plan	for	Kannur	City,	2041
		<i>)</i> -			

Contents

29.9.2	Marked crosswalks	331
29.9.3	Sky walks	331
29.10	Cycle tracks	331
29.11	Public transport system	332
29.11.1	Renovation of old bus stand and KSRTC bus stand	332
29.11.2	Strengthening of public transport system	332
29.11.3	"Sugama"- mini bus service of Kannur Corporation	332
29.12	Other proposals	333
29.12.1	Bus bays with Hi-tech waiting shelters	333
29.12.2	Truck terminal	333
29.12.3	Beautification of major roads and junctions	333
29.12.4	Marine walk/ride	333
29.12.5	Shuttle service at tourist destinations	333
29.12.6	Public information system	334
29.12.7	Prepaid auto and taxi stand	334
29.12.8	Traffic regulations like odd even system	334
29.13	Railway over bridges (ROB)	334
29.14	Other modes of transportation	334
29.14.1	Waterways	334
29.14.2	Rail connectivity	334
29.14.3	Air connectivity	335
29.15	Inference	335
Chapter	r 30 - Sectoral Proposals	337 - 356
30.1	Recreation and civic amenities.	337
30.2	Trade and commerce	338
30.3	Industries	339
30.4	Water supply	341
30.5	Drainage, sanitation and solid waste management	341

Master Plan for Kannur City, 2041 Contents			
20.0	Tourism gulture and haritans	0.40	
30.6	Tourism, culture and heritage	343	
30.7	Housing	344	
30.8	Energy	344	
30.9	Education	345	
30.10	Health	346	
30.11	Social welfare	346	
30.12	Agriculture and allied sectors	347	
30.12.1	Agriculture	347	
30.12.2	Animal husbandry	350	
30.12.3	Fisheries	350	
30.13	Environment and disaster management	351	
30.14	Municipal finance and Governance	355	
Juapiel	31 – Priority Action Plan, Fiscal Requirement And Resource Mobilization	357 - 38	
31.1	Industrial park at Pallipoyil	357	
31.1.1	Location details	357	
31.1.2	Need for the project	357	
31.1.3	Project brief	358	
32.1.4	Responsible agencies	359	
31.1.5	Suggested implementation mechanism	359	
31.1.6	Funding and resource mobilization.	359	
31.1.7	Project period and priority	360	
31.2	Sewage treatment plant at Neerchal	360	
31.2.1	Location details	360	
31.2.2	Need for the project	360	
31.2.3	Project brief	361	
31.2.4	Responsible agencies	361	
31.2.5	Suggested implementation mechanism	361	

31.2.6	Funding and resource mobilization.	361
31.2.7	Project period and priority	362
31.3	Mobility hub	362
31.3.1	Location details	362
31.3.2	Need for the project	362
31.3.3	Project brief	363
31.3.4	Responsible agencies	363
31.3.5	Suggested implementation mechanism	363
31.3.6	Funding and resource mobilization	363
31.3.7	Project period and priority	364
31.4	Green park at Thottada	364
31.4.1	Location details	364
31.4.2	Need for the project.	364
31.4.3	Project brief	364
31.4.4	Responsible agencies	364
31.4.5	Suggested implementation mechanism.	365
31.4.6	Funding and resource mobilization.	365
31.4.7	Project period and priority	365
31.5	Cyber park at Eachur	365
31.5.1	Location details	365
31.5.2	Need for the project	366
31.5.3	Project brief	366
31.5.4	Responsible agencies	366
31.5.5	Suggested implementation mechanism	367
31.5.6	Funding and resource mobilization	367
31.5.7	Project period and priority	367
31.6	Theyyam Museum	367
31.6.1	Location details	367

Master Pi	lan for Kannur City, 2041 Contents	
31.6.2	Need for the project.	368
31.6.3	Project brief	368
31.6.4	Responsible agencies	368
31.6.5	Suggested implementation mechanism	369
31.6.6	Funding and resource mobilization	369
31.6.7	Project periods and priority	369
31.7	Sky walk	369
31.7.1	Location details	369
31.7.2	Need for the project	369
31.7.3	Project brief	370
31.7.4	Responsible agencies	370
31.7.5	Suggested implementation mechanism	370
31.7.6	Funding and resource mobilization	371
31.7.7	Project periods and priority	371
31.8	Phasing of selected projects	371
Chapte	r 32 - Smart City Components	373 - 380
32.1	Smart city concept of India	373
32.1.1	Basic criteria for selection of city/Municipal area as smart	374
32.1.2	Area based smart city development	375
32.2	Smart cities - promoting sustainable and smart cities	375
32.3	AMRUT (Atal Mission for Rejuvenation and Urban Transformation) Mission	376

Smart city components included in the Master Plan of Kannur

City.....

32.4

379

PART IV - DEVELOPMENT CONTROLS

Chapter 33 - Zoning Regulations			
33.1	General guidelines	381	
33.2	Guidelines for large scale projects	387	
33.3	Zoning regulations	389	
Annexur	e I	411 - 414	
Annexure II		415 - 416	
Annevur	o III	117 - 118	

LIST OF FIGURES

Figure.1.1	District map of Kannur
Figure.1.2	Location of Kannur Municipal Corporation
Figure.1.3	Organizational structure for the preparation of Master Plan
Figure.1.4	Methodology of Master Plan preparation
Figure.1.5	Location of DTP Schemes in old Kannur Municipality
Figure.1.6	Proposed land use map of Kannur Municipality as per Published Development Plan for the Town
Figure.2.1	Location of Kannur Municipal Corporation area and its adjoining local bodies
Figure.2.2	Road network of Kannur district
Figure.2.3	Ward map of the planning area
Figure.2.4	Village map of the Kannur Municipal Corporation area
Figure.2.5	Desom map of the Kannur Municipal Corporation area
Figure.2.6	Physiography of Kannur Municipal Corporation area
Figure.3.1	Regional Connectivity of Kannur Municipal Corporation area
Figure.3.2	Urban LSGs in Kannur district as per 2001 Census
Figure.3.3	Urban LSGs in Kannur district as per 2011 Census
Figure.3.4	Cumulative Functional Index (CFI)
Figure.3.5	Settlement hierarchy in Kannur district
Figure.3.6	Functional character of Kannur district
Figure.3.7	Population concentration pattern of Kannur district
Figure.3.8	Connectivity of Kannur district
Figure.3.9	Spatial structure – Kannur district

Figure.4.1	Decadal variations in population of Kannur Municipal Corporation area				
Figure.4.2	Comparison of population with other Municipal Corporations in Kerala				
Figure.4.3	Comparison of population with neighbouring local bodies				
Figure.4.4	Ward wise population of Kannur Municipal Corporation area				
Figure.4.5	Growth rate comparison of Kannur Corporation area with state and district				
Figure.4.6	Comparison of population growth rate with other Municipal Corporations in Kerala				
Figure.4.7	Gross population density of State, District and Kannur Municipal Corporation area				
Figure.4.8	Ward wise distribution of gross population density				
Figure.4.9	Comparison of gross population density of Kannur Municipal Corporation with other Municipal Corporations in Kerala				
Figure.4.10	Sex Ratio - Comparison with district and state				
Figure.4.11	Decadal variation in sex ratio of Kannur Corporation area				
Figure.4.12	Sex Ratio comparison with other Municipal Corporations in Kerala				
Figure.4.13	Comparison of child sex ratio of district and state				
Figure.4.14	Comparison of literacy rate with district and state				
Figure.4.15	Comparison of male and female literacy rate with state and district				
Figure.4.16	Age-sex pyramid				
Figure.5.1	Decadal variation of total number of workers in Kannur Municipal Corporation area				
Figure.5.2	Share of main and marginal workers in planning area				
Figure.5.3	WPR in Kannur Corporation area				
Figure.5.4	Temporal variation in WPR - comparison with district and state				
Figure.5.5	Comparison of WPR with other Municipal Corporations in Kerala				
Figure.5.6	Comparison of WPR with other Municipalities in Kannur District				
Figure.5.7	Comparison of male and female WPR with other Municipal Corporations in Kerala				

Figure.5.8	Comparison of decadal variation of gender based WPR of Kannur Corporation					
Figure.5.9	Decadal variation of main workers in Kannur Corporation area					
Figure.5.10	Classification of workers					
Figure.6.1	Existing land use break up					
Figure.6.2	Existing land use map of Kannur Corporation area					
Figure.6.3	Distribution of residential land use					
Figure.6.4	Concentration pattern of residential land use					
Figure.6.5	Distribution of industrial land use					
Figure.6.6	Concentration pattern of industrial land use					
Figure.6.7	Distribution of commercial land use					
Figure.6.8	Concentration pattern of commercial land use					
Figure.6.9	Distribution of public and semi-public land use					
Figure.6.10	Concentration pattern of public and semi-public land use					
Figure.6.11	Distribution pattern of paddy land use					
Figure.6.12	Concentration pattern of paddy land use					
Figure.6.13	Distribution of dry agriculture land use					
Figure.6.14	Concentration pattern of dry agriculture land use					
Figure.6.15	Concentration pattern of recreational land use					
Figure.6.16	Concentration pattern of transportation land use					
Figure.6.17	Distribution of other important land use					
Figure.7.1	Existing agricultural land use					
Figure.7.2	Zone wise land utilization for agricultural purpose					
Figure.7.3	Paddy concentration in zone wise					
Figure.7.4	Cultivation area details of cash crops					
Figure.7.5	Percentage area under other crops					

Figure.7.6	Details of household livestock					
Figure.7.7	Location of available fish landing centres					
Figure.8.1	Location of different industrial units in Kannur Corporation area					
Figure.8.2	Distribution of micro, small and medium enterprises					
Figure.8.3	Year wise growth of MSMEs					
Figure.8.4	Types of industries					
Figure.8.5	Number of labourers engaged in different MSMEs					
Figure.8.6	Year wise employment growth of MSMEs					
Figure.9.1	Types of commercial activities in Kannur Municipal Corporation area					
Figure.9.2	Major commercial nodes in the Kannur Municipal Corporation area					
Figure.9.3	Spatial distribution of informal sectors					
Figure.10.1	Yearly tourist data					
Figure.10.2	Monthly tourists (Year 2019)					
Figure.10.3	Important tourist locations in Kannur district					
Figure.11.1	Existing road network in Corporation area					
Figure.11.2	Peak hour traffic flow at major intersections in the Corporation area					
Figure.11.3	Traffic volume on major roads					
Figure.11.4	Capacity utilization of major roads					
Figure.11.5	Distribution of intercity flow of passenger movement					
Figure.11.6	Distribution of intercity flow of goods traffic movement					
Figure.11.7	Distribution of intercity flow of passengers based on mode of travel					
Figure.11.8	Distribution of intercity flow of goods vehicles based on mode of travel					
Figure.11.9	Distribution of purpose wise trips made by vehicles					
Figure.11.10	Commodity wise distribution of goods traffic in planning area					
Figure.11.11	Bus transport routes in Kannur Corporation area					
Figure.11.12	Parking locations in the planning area					

Figure.11.13	Pedestrian crossings in Kannur Corporation area					
Figure.11.14	Hierarchy of traffic nodes					
Figure.11.15	Existing rail network					
Figure.11.16	Proposed alignment of inland water way					
Figure.12.1	Sources of water supply					
Figure.12.2	Details of water scarcity					
Figure.12.3	Wards facing water scarcity in the city					
Figure.13.1	Physiography of Kannur Corporation area					
Figure.13.2	Split up of sanitary waste disposal of houses in the Corporation area					
Figure.13.3	Percentage of houses and flats in the Corporation that are having facility of waste treatment					
Figure.13.4	Disposal of solid waste from houses					
Figure.13.5	Details of waste treatment method at own compound					
Figure.14.1	Existing energy sources for cooking uses in the Corporation area					
Figure.14.2	Monthly electrical consumption in the Corporation area					
Figure.14.3	Location of different substations					
Figure.15.1	Comparisons of literacy rate with state and district					
Figure.15.2	Comparison of literacy rate with other Municipal Towns in Kannur district					
Figure.15.3	Year wise comparison of male and female literacy rate					
Figure.15.4	Present educational status of Kannur Corporation area					
Figure.15.5	Ownership of schools					
Figure.15.6	Spatial distributions of primary schools and their service area					
Figure.15.7	Distribution of high schools in Kannur Corporation area					
Figure.15.8	Spatial distribution of higher secondary schools and their service area					
Figure.15.9	Locations of arts and science colleges in Kannur Corporation area					

Figure.15.10	Locations of different professional colleges in Kannur Corporation area				
Figure.16.1	Details of physical infrastructure of PHC's in the Corporation area				
Figure.16.2	Details of physical infrastructure of PHC's in the Corporation area				
Figure.17.1	Household size comparison with district and state				
Figure.17.2	Household size comparison with other Municipal Corporations				
Figure.17.3	Variation of household size in Kannur Corporation area and other urban local bodies of the district during the period of 2001 and 2011				
Figure.17.4	Zone wise data of household size				
Figure.17.5	Ownership of buildings				
Figure.17.6	Percentage variations for different types of buildings				
Figure.17.7	Percentage variations of houses in each range of plinth area (sq. m)				
Figure.17.8	Percentage variations of houses in terms of number of storeys				
Figure.17.9	Percentage variations in terms of material used for walls				
Figure.17.10	Percentage variations in terms of material used for floors				
Figure.17.11	Percentage variations in terms of material used for roofs				
Figure.18.1	Location of various parks and open spaces in the Corporation area				
Figure.18.2	Location of libraries in the Corporation area				
Figure.18.3	Location of civic amenities in the Corporation area				
Figure.19.1	Zone wise distribution of SC population in Kannur Corporation area				
Figure.19.2	Zone wise distribution of ST population in Kannur Corporation area				
Figure.19.3	Location of Anganwadis in the Corporation area				
Figure.19.4	Ward wise details of Kudumbasree units in the Corporation area				
Figure.19.5	Details of differently abled group				
Figure.20.1	The location of all the eco sensitive areas in the Corporation area				
Figure.22.1	Ecological Sensitive Zones as per Gadgil Report				
Figure.22.2	Flood prone areas in Kannur district				

Figure.22.3	Landslide susceptibility map for Kannur district				
Figure.22.4	Landslide and flood affected Panchayats in Kannur district				
Figure.22.5	Drought areas in Kannur district				
Figure.22.6	Coastal hazard susceptibility map of Kannur district				
Figure.22.7	Micro-watershed in Kannur Municipal Corporation				
Figure.22.8	Inundated areas in Kannur Municipal Corporation(2018-2020)				
Figure.22.9	Flood prone areas of Kannur Municipal Corporation				
Figure.22.10	Flood prone areas of Kannur Municipal Corporation - Ward wise				
Figure.22.11	Coastal hazard susceptibility map				
Figure.22.12	Vulnerable areas of Kannur District				
Figure.22.13	Location of critical infrastructures at Kannur Municipal Corporation				
Figure.22.14	Flood prone areas v/s Land use map of Kannur Municipal Corporation				
Figure.22.15	Location of rehabilitation centres at Kannur Municipal Corporation				
Figure.23.1	Functional character of Kannur Corporation area				
Figure.23.2	Ward wise classification of major land use in Kannur Corporation area				
Figure.23.3	Activity pattern of Kannur Corporation area				
Figure.23.4	Hierarchy of Settlements				
Figure.23.5	Hierarchy of Nodes				
Figure.23.6	External development thrust of Kannur Corporation area				
Figure.23.7	Existing road network				
Figure.23.8	Formulation of existing spatial structure				
Figure.24.1	Projected population- Arithmetical increase method				
Figure.24.2	Projected population-Geometrical increase method				
Figure.24.3	Projected population-Incremental increase method				
Figure.24.4	Projected population-Decreasing rate method				
Figure.24.5	Projected WFPR				

Figure.24.6	Projection - V/C ratio in major road stretches
Figure.27.1	Suggested city form
Figure.27.2	Suggested settlement pattern
Figure.27.3	Suggested road network and hierarchy of nodes
Figure.27.4	Suggested spatial structure
Figure.28.1	Proposed land use break-up
Figure.28.2	Proposed land use map
Figure.29.1	Transportation Plan
Figure.29.2	Location of identified pay and park lots
Figure.31.1	Location of industrial park at Pallipoyil.
Figure.31.2	Location of sewage treatment plant at Neerchal
Figure.31.3	Location of mobility hub
Figure.31.4	Location of green park
Figure.31.5	Location of the cyber park at Eachur
Figure.31.6	Location of the Theyyam museum
Figure.32.1	Smart solutions – Illustrative list

LIST OF TABLES

Table.2.1	Details of election wards in Corporation area			
Table.3.1	Growth of population in the district			
Table.3.2	Rural-Urban break up of population (Kannur district)			
Table.4.1	Comparison of population of Kannur Municipal Corporation with state and district			
Table.4.2	Ward wise population of planning area			
Table.5.1	Category of main workers			
Table.6.1	Existing land use break up			
Table.6.2	Land use comparison of Kannur Municipal Corporation area with planning standards			
Table.7.1	Extent of land use in Kannur Corporation area			
Table.7.2	Details of yield of some crops			
Table.7.3	Existing irrigation facilities			
Table.7.4	Available infrastructure facilities			
Table.7.5	Equipment details			
Table.7.6	Farmers details			
Table.7.7	Details of diary units			
Table.7.8	Different means of fishing used in planning area			
Table.8.1	Categorization of industries based on the investment			
Table.11.1	Categorization of roads based on the material used			
Table.11.2	Categorization of footpaths based on the material			
Table.11.3	Growth of vehicle population in Kannur District			

Table.11.4	Number of motor vehicles having valid registration in Kannur district and State in 2015			
Table.11.5	Peak hour traffic volume at major intersections in the Corporation area			
Table.11.6	On street Parking locations in Kannur Corporation area			
Table.11.7	Parking duration of vehicles at major parking corridors in Kannur Corporation area			
Table.11.8	Growth in accident in Kannur Corporation area			
Table.12.1	Details of public distribution system in the Corporation area			
Table.12.2	Details of water supply schemes in the Corporation area			
Table.13.1	Details of commercial establishments			
Table.13.2	List of Vehicles in city used for solid waste collection			
Table.14.1	Details of different sections under KSEB			
Table.14.2	Details of solar panels in the Corporation area			
Table.16.1	Details of various hospitals in Kannur Corporation area			
Table.16.2	Major Epidemics in the corporation area for the last five years			
Table.16.3	Life style diseases for the last five years in the Corporation area			
Table.16.4	Covid-19 cases and death in Kannur Corporation area			
Table.17.1	Details of recognised slums in Corporation area			
Table.17.2	Details of identified slums in Corporation area			
Table.17.3	Details of identified colonies in Kannur Corporation area			
Table.17.4	Zone wise details of BPL families			
Table.17.5	Details of houseless families in Kannur Corporation area			
Table.18.1	Details of theatres in the Corporation area			
Table.18.2	Details of sports training centres in the Corporation area			
Table.18.3	Details of arts training centres in the Corporation area			

Table.19.1	Temporal variation of SC and ST population in the Corporation area				
Table.19.2	Details of old age group				
Table.19.3	Details of social welfare pension/financial aids				
Table.21.1	Details of income and expenditure of Kannur Corporation area				
Table.22.1	The type of disaster occurred in different local bodies in 2018 monsoon				
Table.22.2	Disaster prone wards in Kannur Municipal Corporation				
Table.22.3	Emergency response team & available tools at collection centres				
Table.22.4	Details of camps and rehabilitation centres				
Table.22.5	Details of income and expenditure of Kannur Corporation area				
Table.23.1	List of wards and their functional character in Kannur Corporation area				
Table.23.2	Derivation of activity pattern				
Table.24.1	Final projected population in Kannur Corporation area				
Table.24.2	Projection – Water supply				
Table.24.3	Projection - Solid waste management				
Table.24.4	Sewerage treatment plant capacity requirement				
Table.24.5	Projection details of energy sector				
Table.24.6	Future demand of educational institutions based on URDPFI guidelines				
Table.24.7	Projection of health facilities Guidelines				
Table.24.8	Projections - Housing demand				
Table.24.9	Projected details of recreational and civic amenities				
Table.24.10	Projected details of social welfare requirements				
Table.24.11	Projection - V/C ratio in major road stretches				
Table.28.1	Proposed land use break up				
Table.29.1	Widening proposals for the major roads in the city				

Table.29.2	Details of identified pay and park lots
Table.31.1	Prospective agencies for the materialization of the project
Table.31.2	Prospective agencies for the materialization of the project
Table.31.3	Prospective agencies for the materialization of the project
Table.31.4	Prospective agencies for the materialization of the project
Table.31.5	Phasing of selected projects

ABBREVIATIONS

ADB Asian Development Bank
ADS Area Development Society

ATM Automated Teller Machine

BMW Bio Medical Waste

BOD Bio Chemical Oxygen Demand

BPL Below Poverty Line

CBD Central Business District

CDS Community Development Society

CFU Colony Forming Unit
CI Concentration Index

CIF Cumulative Functional Index

CWRDM Centre for Water Resources Development and Management

dB Decibel

DDMA Disaster Management Authority

DIC District Industries Centre

DO Dissolved Oxygen

DPC District Planning Committees

DPR Detailed Project Report

DTP Scheme Detail Town Planning Scheme

DTPC District Tourism Promotion Council

DUR District Urbanization Report

FAR Floor Area Ratio

GIS Geographical Information System

Ha Hectare

HORTICORP Horticulture Products Development Corporation Ltd.

HP Horse Power
HQ Head Quarters

IDMST Integrated Development of Small and Medium Towns

IFS Indian Foreign Service

IHSDP Integrated Housing and Slum Development Programme

IMA Indian Medical Association

IMAGE Indian Medical Association Goes Eco-Friendly

IT Information Technology

KIAL Kannur International Airport Ltd.

KINFRA Kerala Industrial Infrastructure Development Corporation

KIRTADS Kerala Institute for Research Training and Development studies

of Scheduled Caste and Scheduled Tribe

KITTS Kerala Institute of Tourism and Travel Studies

KMBR Kerala Municipality Building Rules

KRFB Kerala Road Fund Board

KSDMA Kerala State Disaster Management Authority

KSEDM Kerala State Entrepreneur Development Mission

KSFDC Kerala State Film Development Corporation

KSIDC Kerala State Industrial Development Corporation

KSPCB Kerala State Pollution Control Board

KSRTC Kerala State Road Transport Corporation

KSTP Kerala State Transport Project

KSUDP Kerala State Urban Development Project

KTDC Kerala Tourism Development Corporation

KVASU Kerala Veterinary and Animal Science University

KVIB Khadi and Village Industries Board

KW Kilo Watt

KWA Kerala Water Authority

LSG Local Self Government

M metre

m² square metre

MDR Major District Road

MLD Million Liters per Day

Mg/l Milligram per litre

MSME Micro, Small and Medium Enterprises

MSL Mean Sea Level

NATPAC National Transportation Planning and Research Centre

NGOs Non Governmental Organisations

NH National Highway

NREGS National Rural Employment Guarantee Scheme

NRHM National Rural Health Mission

PCB Pollution Control Board

PCU Passenger Car Unit

PH Potential of Hydrogen Ions

PPP Public Private Participation

Pp sq.km Persons per square kilometer

PWD Public Works Department

RKI Rebuild Kerala Initiative

R.S. No. Resurvey Number

SH State Highway

SIC Spatial Integration Committee

SIDBI Small Industrial Development Bank of India

SPV Special Purpose Vehicle

Sq.km Square Kilometer

SSA Sarva Siksha Abhiyan

STP Sewage Treatment Plant

TC Road Thalassery Coorg Road

UDPFI Urban Development Plans Formulation and Implementation

URDPFI Urban and Regional Development Plans Formulation and

Implementation

VAMBAY Valmiki Ambedkar Avas Yojana

VCB Vented Cross Bars

V/C Ratio Volume/Capacity Ratio

WFPR Work Force Participation Rate

WTP Water Treatment Plant

PART I STUDY AND ANALYSIS

