DINDIGUL

LOCAL PLANNING AREA

DRAFT MASTER PLAN REPORT 2041

VOLUME I

DINDIGUL LOCAL PLANNING AUTHORITY

DISTRICT TOWN AND COUNTRY PLANNING - DINDIGUL DISTRICT

Master Plan for Dindigul Local planning Area

Name of Local Planning Authority	:	Dindigul Local Planning Authority
Reference No	:	4867/2018/DD2
Directorate of Town & Country Planning Reference No	:	5904/2024/TCP 1
Resolution for consent in No. Dated of the Dindigul Local Planning Authority	:	

Member Secretary/Deputy Director
Dindigul Local Planning Authority,
Dindigul

14/8/24

Deputy Director of Town and Country Planning,
Chennai

29/8/24

Joint Director of Town and Country Planning,
Chennai

30/8

Director of Town and Country Planning,
Chennai

17/12/2024

for ADDL. CHIEF ~~Principal~~ Secretary to Government,
Housing and Urban Development Department,
Government of Tamilnadu

PROFORMA

DINDIGUL LOCAL PLANNING AUTHORITY			
I	**Proposal**		
1.	Letter No and date of Municipality in which proposals submitted to Regional Deputy Director for notification of L.P.A.		-
2.	Lr.No. and date of Regional Deputy Director in which proposals submitted to DT & CP		---
3.	Lr.No. and date of DT & CP in which proposals submitted to Government		Letter No. 16304/73, Dated. 02.06.1973.
II	**NOTOFICATION**		
4.	(i). The G.O. details of preliminary notification under section 10(1) (ii) G. O details of Notification under section 10(1) (b)		1. G.O.Ms.No.1996 RD & LA Dept. dated 20.09.1973 2.G.O.Ms.No.1025 RD & LA Dept Dt.16.04.1974.
5.	Publication details of the notification in Tamil Nadu Government Gazette		Part-II, Sec-2, Page 270 Dated. 15.05.1974
6.	Republication details in Districts Gazette. (i) Tamil (ii) English		-
7.	The G.O. details in which confirmation was ordered under section 10(4) of the Act.		G.O.Ms.No.1864 RD & LA Dept. Dt.17.8.74
8.	Publication details of the above said confirmation in Tamil Nadu Government Gazette.		-
III	**CONSTITUTION**		
9. (a)	The G.O. details in which authority was constituted U/S 11/11 (3) of the Act.		G.O.Ms.No.1138 RD & LA Dept. dated.07.06.76. G.O.Ms.No.759 H&UD. dated. 01.06.1993
9.(b)	The G.O details in which Local Planning Authority, the appointment of members		G.O.Ms.No.37 H&UD. dated. 03.02.1999 and G.O.Ms.No.42 H&UD. dated. 09.02.1999
10.	Publication details in the Tamil Nadu Government Gazette		Part-II, Sec-2, Page 403 Dated. 07.07.1976
IV	**CONSENT**		
11.	Extension of time granted for the preparation of present land and building use map (up to date details with C.No. and date to be entered here.		31.12.1979 (Letter 26487/78/D4, dated. 16.07.1979, 10.03.1980)
12.	Resolution No. and Date in which LPA adopted the present Land Building use Map.		Resolution No. 1, Dated. 16.12.1976.
13.	Resolution No. and Date in which the L.P.A. resolved to submit the Master paln to Government for consent under section 24(2)		Resolution No.124 dated : 09.05.1976

	of the Act (The Commissioner R.D.D'S DT & CP'S LR.Nos. and date in which the proposals submitted to Govt. should also be noted against this col).		
14.	The G.O. details in which the Government accorded consent.		G.O.Ms.No.656 H & UD Dept dated.21.05.1980.
V	**PUBLICATION**		
15.	Publication details of this notification in form No.1 in the Tamil Nadu Government		Part-VI, Sec-1, Page 361, Dated. 23.07.1980.
16.	Republication details in form No.1 in District Gazette.		-
17.	Date of submission of Master Plan various Government Department with letter Nos.		-
18.	Date of submission of O & S to DT & 7 CP for advice (Lr. No. and date of commissioner and Region 1 Deputy Director in which O & S were sent to this office should be noted here).		No Objection & Suggestion Received
19.	Letter. No. and date in which DT & CP has given advice on O & S.		-
20.	Resolution No. and Date in which the L.P.A. considered and approved the Draft Master Plan.		Resolution No.36, dated.26.06.1984
VI	**PUBLICATION**		
21.	Submission of master plan to Govt., for final approval (Lr.No. and dt. in which u/s 28 of the Act the LPA R.D.D. and DT & CP submitted the Master plan to Government for final approval.		Roc. No 8523/84F1, dated 28.06.1984. Dy DT&CP Roc No. 758/84 MR4, Dated. 30.06.1984 DTCP's Roc No. 4605/84MP, Dated. 27.07.1984
22.	The G.O.details in which government accorded its approval.		G.O.Ms.No.1014 Housing & Urban Development Dept. Dt.03.12.1984.
VII	**REPUBLICATION DETAILS OF APPROVAL IN**		
23.	The Republication details of the approval G.O. in the District Gazette.		TNGG Part II sec. 2 page 57 dt.09.01.1985.
24.	The Republication details of the approval G.O. in the District Gazette.		No.2, Page3 and 4, Dindigul District dated. 10.03.1990
25.	The Republication of the approval G.O.in the notice board of the office of the LPA.		23.10.1987
26.	The Republication of the approval G.O. on the notice board of the office of the District collector concerned.		12.01.1988

27.	The Republication of the approval G.O. on the notice board of the office of the Regional Deputy Director.		Madurai Regional Deputy Director office on 12.01.1988
28.	The Republication of the approval G.O.on the notice board of the Local Authorities compared in the Area.		Dindigul P.U 18.11.1987 Dindigul Municipality 23.10.1987.
29.	The Republication of the approval G.O. in one or more leading daily news papers circulating in the LPA.		Dinamalar Dated. 30.05.1985 Page 4
VIII	**REVIEW**		
30.	Letter no and date of Local Planning Authority in which proposals submitted to Commissioner Secretary, H&UD		Roc No. 26/93 DLPA dated. 06.12.1993 Resolution No 24, dated. 01.12.1993. D.T.C.P Roc No. 42454/93MP1, dated. 10.05.1994, 05.01.1994, 05.08.1994.
31	Review details of Master Plan ordered by the Government by the Govt. {(sec 32(2)(b) & R13)}		GO.Ms No. 464, H&UD Dated. 24.04.1995.
32	Resolution No and date in which the LPA resolved to submit the Master Plan to Govt. for consent {Sec 24(2) &R.5}.		Resolution No. 51/94-95 dated. 10.04.1995 DT&CP Roc No. 21498/95MP2, dated. 04.04.1996, 09.12.1996.
33	Review details of Master Plan Consented by the Govt.		GO.Ms No. 122, H&UD Dated. 16.04.1998.
IX	**PUBLICATION DETAILS OF:**		
34	Notification in From No.1 in the Tamil Nadu Government Gazette.		Part II section 1 page no.1549 dt.04.11.1998.
35	Notification in form No.1 in District Gazette. {R.15(1)}		Dindigul District Gazette dated. 10.01.1999
36	By the Local Planning Authority in the Notice Board of {R15(2) – 15(6)}		Local Planning Authority 16.11.1998 Dindigul Collector's Office 10.12.1998 Madurai Regional Office 05.02.1999 Local daily News Paper 01.01.1999 All Local Bodies 16.11.1998
37	Date of submission of O & S to DT & CP for advice {sec 26(2) & R.8}		DLPA Letter No. 1272/1990 dated. 04.08.1999.
38	Letter No. and Date in which DT & CP has given advice on O & S {Sec 26(2) & R.8}		Special Commissioner of Town & Country Planning Roc No. 18054/98MP2, dated. 19.01.2000.
39	Resolution No. and date in which the LPA considered the Master Plan		-
40	Letter No. and date of submission of Master Plan to Government for approval {Sec 28 & R.10(1))		-
41	The G.O. details in which the Government accorded its approval {Sec 28 & R.11(1)		G.O.Ms.No.327 H & D (4) (2) Dt.24.07.2001.

X	ADDITIONAL AREA		
1.	(i). The G.O. details of preliminary notification under section 10(1) (ii) G. O details of Notification under section 10(1) (b)		G.O.Ms.No.151, H & UD Dept dated.13.10.2014.
2.	Publication details of the notification in Tamil Nadu Government Gazette		Part II, Sec 2, Page No. Dated.
3.	Republication details in Districts Gazette. (iii)Tamil (iv)English		-
4.	The G.O. details in which confirmation was ordered under section 10(4) of the Act.		G.O.Ms.No.11, H & UD Dept dated.19.01.2018.
5.	Publication details of the above said confirmation in Tamil Nadu Government Gazette.		Gazette No. 7, Part II, Sec 2, Page No.157-158, Dated.14.02.2018.

Member Secretary / Deputy Director
Dindigul Local Planning Authority
Dindigul

CERTIFICATE – A

Authenticated copies of the following for Master plan are enclosed.

I. G.O. notifying planning area date of publication in government gazette.

II. Land and building use map of Planning area and the resolution of the planning authority adopting the land and building use Map

III. (a) Master Plan (authentic cated in the reports and maps included there in) with the resolution of the planning authority requesting approval of government for its publication.

IV. (b) Check list for the process as per rules also to be sent by Deputy Director while forwarding pointing out the missions.

V. (c) A check list certificate from Deputy Director as in certificate B.

Member Secretary / Deputy Director
Dindigul Local Planning Authority
Dindigul

CERTIFICATE – B

Scrutinized and Certified that,

I. The boundary of the Master Plan has been marked in red line in the plan and area corresponding to the planning area notified.

II. The reports and all the Plans have been authenticated.

III. The categoristion in zoning map and the categorisation in zoning regulation are tallied and found correct.

IV. The Survey Nos. and boundary descriptions have specified corresponding to the delineations made in the corresponding and designated uses are tallied.

V. Detailed Development plans/Town planning Schemes boundaries and the notification of Industrial/ Residential areas already made public health act and municipal act and in operation are retained and indicated in the plan.

VI. All the procedure prescribed Master Plan (Preparation, Publication and sanction) Rules is followed.

Member Secretary / Deputy Director
Dindigul Local Planning Authority
Dindigul

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List of Abbreviations

AMRUT	Atal Mission for Rejuvenation and Urban Transformation
C	Corporation
CBD	Central Business District
CPCD	Central Pollution Control Board
CPHEEO	Central Public Health and Environmental Engineering Organization
CWSS	Combined Water Supply Scheme
DEWATS	Decentralized Waste Water Treatment Systems
DTCP	Directorate of Town and Country Planning
ECS	Equivalent Car Space
FAR	Floor Area Ration
FSI	Floor Space Index
GDP	Gross Domestic Product
GIS	Geographic Information System
ISWM	Integrated Solid Waste Management
ITI	Industrial Training Institute
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
LOS	Level of Service
LPA	Local Planning Area
LPCD	Litres Per Capita per Day
MCM	Million cubic meters
MLD	Million Litres per Day
MOEF	Ministry of Environment and Forest
MP	Master planning
MSW	Municipal Solid Waste
NBC	National Building Code
NDVI	Normalized Difference Vegetation Index
NEERI	National Environmental Engineering Research Institute
NH	National Highway
OHT	Over Head Tank
PCU	Passenger Car Unit
PMAY	Pradhan Mantri Awas Yojana
PPH	Person per Hectare
P&SP	Public and Semi Public PPH Persons per Hectare
PVC	Polyvinyl Chloride
RADPFI	Rural Area Development Plan Formulation and Implementation
RCC	Reinforced Cement Concrete

ROW	Right of Way
RTF	Right of Education
SC	Scheduled Caste
SH	State Highway
SIPCOT	State Industries Promotion Corporation of Tamil Nadu Ltd.
SOI	Survey of India
ST	Scheduled Tribes
STP	Sewage Treatment Plant
TANSIDCO	Tamil Nadu Small Industries Development Corporation Limited
TNCDBR	Tamil Nadu Combined Development Building Rules
TNUIFSL	Tamil Nadu Urban Infrastructure Financial Services Limited
TNPCB	Tamil Nadu Pollution Control Board
TP	Town Panchayat
TPD	Tonnes Per Day
TWAD	Tamil Nadu Water Supply and Drainage Board
ULD	Urban Local Body
URDPFI	Urban and Regional Development Plans Formulation and Implementation
WHO	World Health Organisation

1 Project Background

1.1 An overview - Master Plan

1.1.1 AMRUT Sub- Scheme: GIS Based Master Plan

India's urban population is expected to increase from 377 million in 2011 to 534 million in 2026. The larger number of settlements as well as a larger percentage of population has to be planned for urgently to ensure economic growth of the nation and well-being of the people. In order to address this requirement, the GIS-based Master Plan Formulation Scheme is to be taken up as a centrally funded reform for 500 AMRUT (Atal Mission for Rejuvenation and Urban Transformation) cities by Ministry for Urban Development, to be implemented by State Governments. Dindigul Local Planning Area (LPA) is selected as an AMRUT city due to its rapid urbanization. Directorate of Town and Country Planning is the State Nodal Agency (SNA) for implementing the scheme in Tamil Nadu State

1.1.2 Need of Master Plan

A master plan is a dynamic long-term planning document that provides a conceptual layout to guide future growth and development. Master planning is about making the connection between buildings, social settings, and their surrounding environments. A master plan includes analysis, recommendations, and proposals for a site's population, economy, housing, transportation, community facilities, and land use. It is based on public input, surveys, planning initiatives, existing development, physical characteristics, and social and economic conditions.

Master planning can assume some or all of these roles:

- Develop a phasing and implementation schedule and identify priorities for action.
- Act as a framework for regeneration and attract private sector investment.
- Conceptualize and shape the three-dimensional urban environment.
- Define public, semiprivate, and private spaces and public amenities.
- Determine the mix of uses and their physical relationship.
- Engage the local community and act as builder of consensus.

As city regeneration initiatives are generally long-term propositions, it is important to

consider the master plan as a dynamic document that can be altered based on changing project conditions over time. These changes sought to either allow for more density and height in some areas, or to restrict and lower the height of the buildings—including the definition of areas under patrimonial protection. This flexibility has been beneficial to the real estate sector, enabling increases in the number of floors and housing units per building.

Master plans can have an important role in determining the shape of the urban environment. If not well conceived, they can lead to problems in the future. For instance, one of the criticisms of Santiago's master plan was that it was too flexible in setting standards for beautification and building volume design. Hence, the quality of these buildings in terms of architectural design and construction materials was considered one of the weaknesses of the repopulation program (see photograph). The residents also criticized the unpleasant contrast of the high tower buildings with the existing historic urban fabric, as well as the fact that the new towers are not well integrated within the traditional neighbourhoods. All these issues could have been addressed well in advance as part of the master plan.

1.2 Master Plan preparation - Provision under TCP Act, 1971

As soon as may be, after the declaration of a local planning area under section 10 and after the constitution of the appropriate planning authority under section 11, the local planning authority shall, within such time as may be prescribed and after consulting the regional planning authority and the local authorities concerned, prepare and submit to the Government, a plan hereinafter called the "master plan", for the local planning area or any part of it and such other area or areas contiguous or adjacent to the local planning area, as the Government may direct to be included in the master plan.

The master plan may purpose or provide for all or any of the following matters, namely:

- The way the land in the planning area shall be used.
- The allotment or reservation of land for residential, commercial, industrial, and agricultural purposes and for parks, playfields, and open spaces.
- The allotment and reservation of land for public buildings, institutions and for civic amenities.
- The making of provision for national highways, arterial roads, ring roads,

- major streets, lines of communication including railways, airports and canals.
- The traffic and transportation pattern and traffic circulation pattern.
- The major road and street improvements.
- The areas reserved for future development, expansion and for new housing.
- The provision for the improvement of areas of bad layout or obsolete development and slum areas and for relocation of population.
- The amenities, services, and utilities.
- The provision for detailed development of specific areas for housing, shopping, industries and civic amenities and educational and cultural facilities.
- The control of architectural features, elevation and frontage of buildings and structures.
- The provision for regulating the zone, the location, height, number of storeys and size of buildings and other structures, the size of the yards and other open spaces and the use of buildings, structures, and land.
- The stages by which the master plan shall be carried out; and
- Such other matters as may be prescribed.

1.3 Local planning area of Dindigul

Dindigul LPA is in Dindigul District which is bound by Karur and Trichy districts on the North, by Sivaganga on the East, by Madurai and Theni district on the South and Tirupur Districts on the West. Total District area is 6266.64 Sq.km and its 2011 population is 21,59,775. It has 10 taluks one Municipal Corporation, 3 municipalities, 23 town panchayats and 306 village panchayats. Details of LPA Profile is mentioned in Table 1-1.

Table 1-1 Dindigul District - Overview

S. No	Overview of Dindigul District	
1	District area	6266.64 Sq.km
2	District Population	21,59,775
3	No. of taluks in the district	10
4	No. of Municipal Corporation	1
5	No. of Municipalities	3
6	No. of Town Panchayats	23
7	No. of Village Panchayats	306

Source : Census of India

Existing Dindigul LPA area is 198.91 sq.km. Proposed expansion of the Dindigul LPA includes. 1048.47 Sq.km totaling 1247.38 Sq.km. Its population as per 2011 census is 8,11,445. The local planning area (LPA) comprises six taluks, one Municipal Corporation, five Town Panchayats, five Census towns, and 93 Village panchayats. Overview of Dindigul LPA is mentioned in Table 1-2.

Table 1-2 Dindigul LPA - Overview

S. No	Overview of Dindigul LPA	
1	Existing Dindigul LPA area	198.91 sq. km
2	Proposed expansion of Dindigul LPA area	1048.47 sq. km
3	Total area of Dindigul LPA	1247.38 sq.km
4	LPA Population	8,11,445
5	No. of taluks in the LPA	6
6	No. of Municipal Corporation	1
7	No. of Town Panchayats	5
8	No. of Census Towns	5
9	No. of Village Panchayats	93

Source : Census of India

1.3.1 Administrative units in Local Planning Area

1.3.1.1 Dindigul Municipal Corporation

Dindigul Town is the administrative headquarters of Dindigul District. Its area is 14.01 Sq.km and population is 207327 as per 2011 census having a density of 14799 persons per sq.km. It is well known for its locks and tannery Industries. Town is located at 420 km from state capital Chennai. The closest major town to the Town is Madurai which is at 62 km. Dindigul is another important industrial town which shares border with Dindigul. Town has Industries, good tourism spot and wonderful agriculture which makes it as a most promising Town. So, developing an infrastructure for knowledge development is viable. Corporation area extent is mentioned in below Table 1-3.

Table 1-3 Corporation in LPA

S. No	Corporation	Area in Sq.km	Total Population 2011	Density per sq.km
1	Dindigul (M.Corporation)	14.01	207327	14799

Source : Census of India

1.3.1.2 Town Panchayats

Town Panchayats in the LPA includes Agaram, Eriodu, Thadikombu, Vadamadurai and Vedasandur with a combined area of 79.39 Sq.kms. According to 2001 census, the total population of these five town panchayats was calculated to be 73,083 resulting in a population density of 921 per Sq.kms. Town panchayat details is mentioned in Table 1-4.

Table 1-4 Town Panchayats in LPA

S.No	Town Panchayats	Area in Sq.km	Total Population 2011	Density per sq.km
1	Agaram (TP)	21.00	15610	743
2	Eriodu (TP)	15.17	8890	586
3	Thadikombu (TP)	25.00	18838	754
4	Vadamadurai (TP)	16.09	18015	1120
5	Vedasandur (TP)	2.13	11730	5507
Total		79.39	73083	921

Source : Census of India

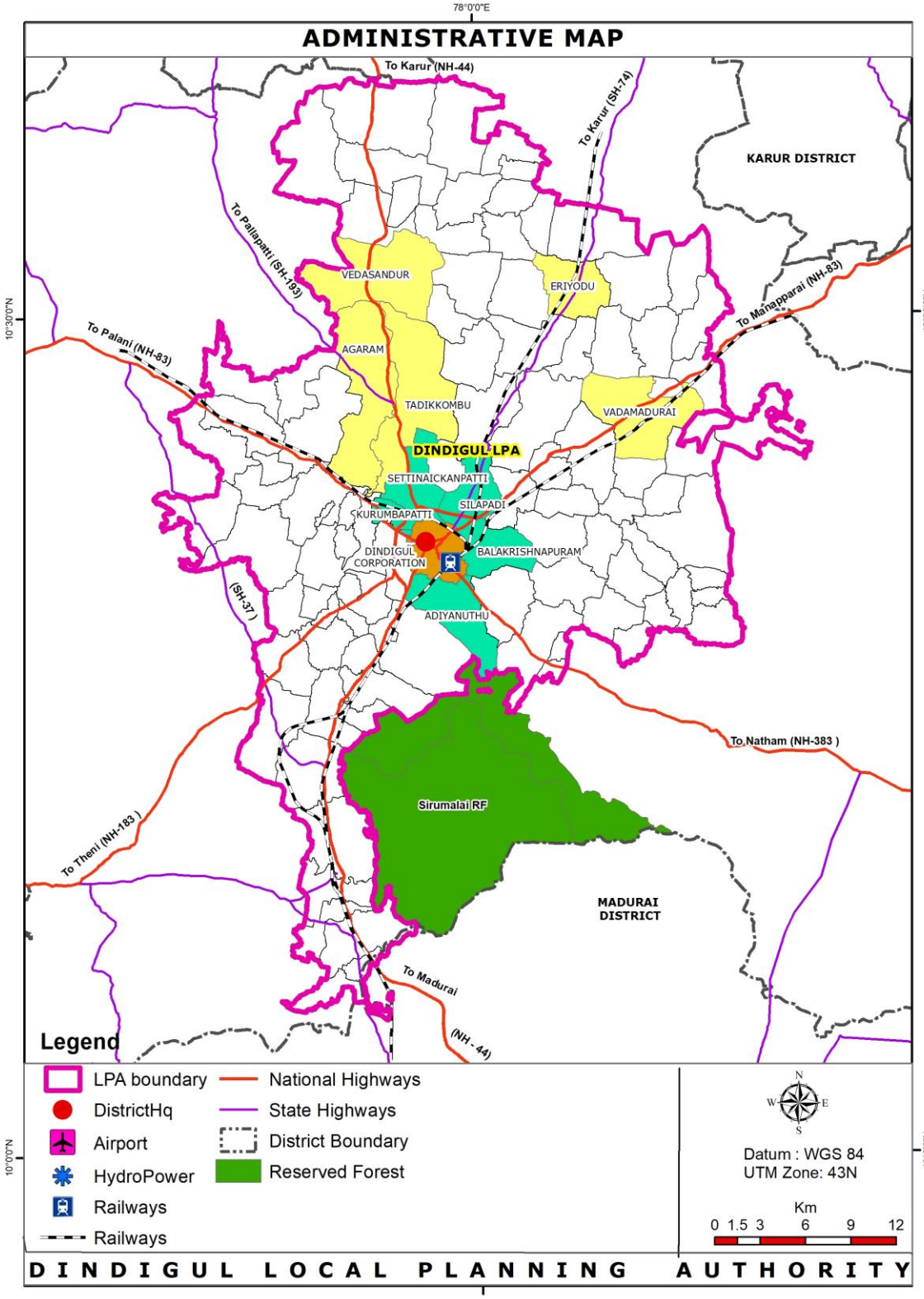
1.3.1.3 Village Panchayats

The planning area encompasses five census towns and 93 villages. The total area of these 93 villages panchayats measures 1039.16 Sq. Km with a total population of 531,035 and a corresponding density of 511 per Sq. Km. Village panchayat detail is mentioned in Table 1-5.

Table 1-5 Villages in LPA

S.No	Description	Area in Sq.km	Total Population 2011	Density per sq.km
1	Village Panchayats	1039.16	531035	511

Source : Census of India



Map 1-1 showing administrative map of Dindigul CLPA

1.4 Structure of Master plan Report

Certainly, here's the structured outline of the report along with brief descriptions of each section based on the provided Table of Contents:

1. **Project Background**
   - ❖ Introduction to the background and context of the project.
   - ❖ Overview of the Master Plan, including the AMRUT Sub-Scheme and the need for the Master Plan.
   - ❖ Understanding the provisions under the TCP Act, 1971.
   - ❖ Defining the Local Planning Area of Dindigul and its administrative units.
   - ❖ Presenting the overall structure of the Master Plan report.
2. **Master Plan Approach**
   - ❖ Detailing the approach taken for creating the Master Plan.
   - ❖ Describing the Master Plan process, highlighting key steps and stages.
   - ❖ Explaining the methodology employed, including survey and studies, and base map preparation.
3. **Regional Setting**
   - ❖ Highlighting the importance of the region within the larger context.
   - ❖ Identifying locational advantages that influence planning decisions.
   - ❖ Discussing the regional connectivity and transportation systems.
   - ❖ Analyzing the regional economy and its dynamics.
   - ❖ Recognizing the natural setting and potential opportunities within the region.
4. **About Planning Area**
   - ❖ Providing information about the study area's location and boundaries.
   - ❖ Tracing the historical evolution of the Local Planning Area (LPA) and its origins.
   - ❖ Describing the physical features of the planning area, including its topography and landscape.
5. **Demographic Profile**
   - ❖ Analyzing the historical population growth within the LPA.
   - ❖ Presenting population trends and distribution patterns.
   - ❖ Calculating population density and understanding its implications.
   - ❖ Examining birth and death rates as indicators of demographic dynamics.

- Illustrating population age distribution through a pyramid.
- Exploring household sizes and their significance.
- Assessing literacy rates and their correlation with development.
- Investigating sex ratio variations and their socio-economic impact.
- Studying urbanization trends and spatial growth patterns.
- Summarizing observations drawn from demographic data.

6. Economic Activities

- Presenting the economic scenario within the LPA.
- Analyzing the local economy and its contributions to the state's GDP.
- Classifying major sectors of the economy (primary, secondary, tertiary).
- Detailing the occupational patterns and workforce distribution.
- Highlighting the role of agencies like SIPCOT and SIDCO in promoting industries.
- Summarizing key observations derived from economic analysis.

7. Transportation and Mobility

- Assessing the current transportation scenario within the planning area.
- Evaluating existing regional linkages and their efficiency.
- Analysing the condition of roads, especially the NH roads.
- Conducting a traffic survey, including major road assessments and junction analysis.
- Understanding the transport network and its characteristics.
- Examining parking facilities and availability.
- Describing existing public transport systems, rail, and air transport.
- Identifying issues related to traffic and transportation, including congestion and circulation patterns.

8. Housing

- Conducting an analysis of the current housing situation.
- Assessing existing housing needs and shortages.
- Addressing the challenges posed by slums and informal housing settlements.
- Estimating housing needs and demands in the future.
- Summarizing key observations related to housing.

9. Physical Infrastructure

- Evaluating the water supply situation, including sources and distribution.

- Discussing sewerage and wastewater management systems.
- Analysing the stormwater management system and its components.
- Mapping water bodies within the Dindigul Corporation area.
- Exploring solid waste management practices.
- Examining the electricity scenario, generation, transmission, and distribution.
- Delving into the realm of renewable energy sources and their integration.

10. Social Infrastructure

- Assessing educational facilities available within the planning area.
- Evaluating the healthcare facilities and their accessibility.
- Identifying public open spaces and their significance.
- Exploring other social infrastructure facilities like community centres, etc.

11. Environment

- Understanding climatic conditions, including temperature, rainfall, and humidity.
- Examining the impact of mining activities on the environment.
- Analysing water resources and groundwater availability.
- Describing the geological and topographical aspects of the region.
- Identifying environmentally sensitive areas and their conservation needs.
- Investigating environmental pollution, including air and water pollution.

12. Disaster Management

- Discussing strategies and measures for disaster preparedness and management.

13. Tourism and Heritage

- Elaborating on tourism development plans and heritage conservation initiatives.

14. Existing Land Use

- Comparing existing land use maps from different years (2001, 2021).
- Evaluating changes and trends in land utilization.

15. Master Plan Strategy

- Conducting a SWOT analysis of the Master Plan concept.
- Identifying strengths, weaknesses, opportunities, and threats.
- Establishing a visionary framework for the Master Plan.
- Defining aims and objectives to guide the planning process.

16. Population Projection

- Explaining methods used to project population growth.
- Detailing arithmetic, geometrical, and incremental increase methods.
- Presenting the final projected population, its distribution, and spatial growth patterns.

17. Economic Planning

- Discussing plans for industrialization, including agro-based industries.
- Introducing the concept of Special Economic Zones (SEZs).
- Highlighting the significance of handloom industries.
- Addressing how transportation corridors can boost the local economy.
- Providing projections for employment opportunities within the planned industries.

18. Traffic and Transportation

- Detailing transportation strategies, including link road proposals. Presenting road projects, junction improvements, and other transport-related proposals.

19. Housing

- Presenting the housing strategy, addressing the housing needs of the projected population.
- Proposing solutions to housing shortages and slum-related issues.

20. Physical Infrastructure

- Identifying sources and projects related to water supply.
- Discussing sewerage, sewage treatment plants, storm water systems, and solid waste management. Exploring electricity generation, transmission, distribution, and power infrastructure development.

21. Social Infrastructure

- Evaluating educational and healthcare facilities.
- Identifying public open spaces and sports infrastructure.

22. Environment

- Designating conservation zones for natural and ecological preservation.
- Discussing the concept of blue and green infrastructure.
- Exploring social forestry and its benefits.

23. Tourism and Heritage

- Proposing measures for tourism development and heritage preservation.

24. Proposed Land Use

- Outlining the land use strategy for the planned development.
- Analysing continuous building areas and development suitability.
- Comparing different land use scenarios for the future.

25. Way forward

- Providing a roadmap for the implementation of the Master Plan.

1.5 Master Plan Process

Master Plan/New Town Development Plan is a land use plan prepared for towns with regulatory guidelines to ensure orderly development of the planning area. In the broader sense, it aims at land use regulations and provision of effective road network, fixing alignment of bye-pass roads, ring roads etc. It involves a continuous process like deriving, organizing, and presenting a broad comprehensive programme for urban development and renewal. It is designed to fulfil local objectives of the physical well-being and indirectly including social, economic aspects considering both the immediate need and those of foreseeable future. The development is regulated according to the Master Plan/ New Town Development Plan prepared for the town, which paves way for fair development of the town improving the quality of life of the urban populace.

1.6 Methodology

Master Plans prescribe the spatial pattern on how the city should get developed for a period of twenty years in India. The time for the preparation of Master Plan in India varied from 1 to 4 years and in some cases, it is beyond that also. As the time for the preparation is too long, Ministry of Urban Development, Government of India, looked forward, on how the technology can be harnessed to prepare the master plans for the towns and Cities. In this context, the Government have thought to use High Resolution Satellite Imageries and GIS as a tool to speed up the preparation of Master Plan. In this context, Ministry of Human Development has formulated GIS Based Master Plans for Cities and Towns. It involves preparation of Existing Land use Plan using High Resolution Satellite Imagery using GIS, preparation of Concept Plan, Preparation of Infrastructure Plan and Preparation of Proposed Land use Plan. Methodology of master plan preparation is represented in Figure 1-1 and the process of methodology is shown in Figure 1-2 .

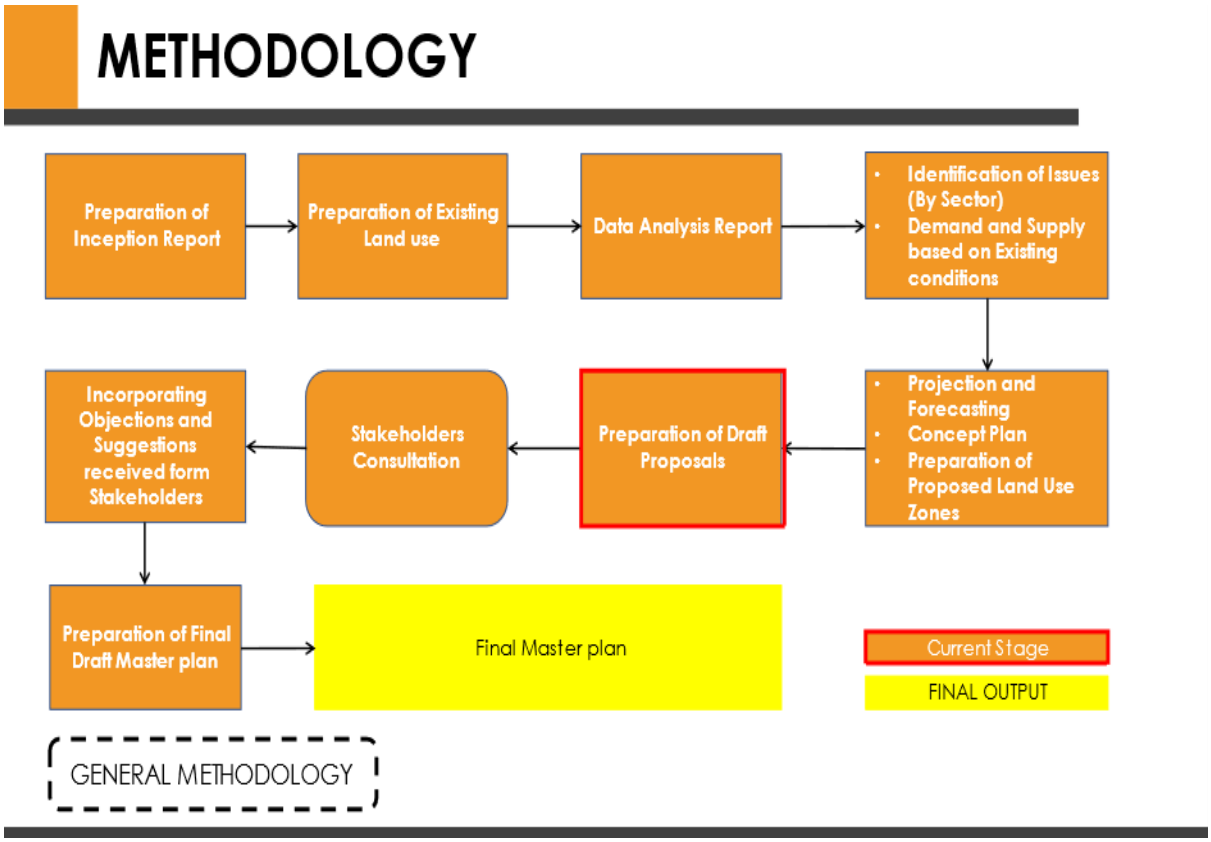


Figure 1-1 Methodology for Master Plan Preparation

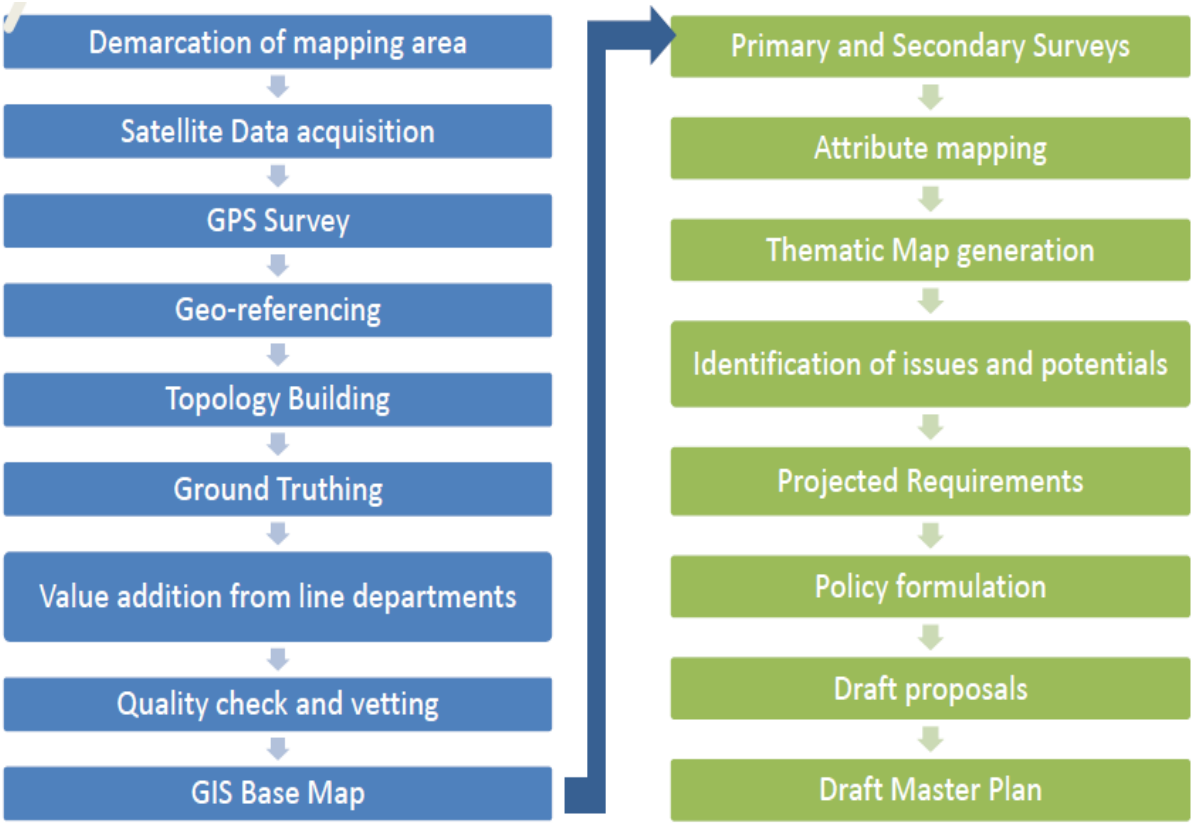


Figure 1-2 Process of Methodology

1.6.1 Survey and Studies

Planning Surveys will vary in content and scope from the surveys needed to be carried out for a Master Plan/ Development Plan etc. Basic data is collected generally by a sample survey and this data will broadly cover housing, transport, physical services, social services, amenities etc. Aspects like family income, means of livelihood, and nature of employment are also covered. In addition, depending in the nature of the exercise, a detailed surveys and projections are also required over the plan period / horizon year so that future requirements are adequately catered to. The preliminary planning survey may be considered to consist of the following components:

- Preparation of Base Map of the urban area.
- Existing Land Use Survey.
- Utilities and Services Surveys.
- Survey of Community facilities like Schools, Hospitals, Clinic, Parks and Play grounds, etc.
- Sample household survey for collecting essential data on housing, transport services and amenities.

1.6.2 Base Map preparation

In the absence of an accurate base map, no planning exercise can be undertaken. The base map should show all the streets, lanes and open spaces and division of area by plots with survey numbers. The base map should show all physical features including contours. In most of the urban areas, this map may not be available readily and where available, it may be outdated. The first step, therefore, would be to get any available map on a scale in which the individual plots with their survey numbers, are/can be shown and then proceed to check that map, from part to whole. While checking, omission and errors and new sub-divisions should be entered on the map. For this survey, a team of experienced field staff working under a qualified town planner are required. While the field staff is engaged in checking the map and making it up to date, the town planner supervising the work may undertake other surveys which do not require a detailed base map. The amount of information to be represented on the map depends on scale, projection, conventional signs, draughting skill, methods of map-making, purpose of map, etc. and hence would vary from map to map. Uniformity of base map about presentation of features, scale, size and

notations would facilitate the readability of these maps and comparison of one map with another. Every base map must be provided with a key map, chosen to a suitable scale at the right-hand upper corner. A map will not make sense unless a list comprising of various. symbols, etc. used for various types of elements shown is provided in the form of a legend which is usually shown in the right-hand side of the map. It is essential to give every map a title. In the normal practice, titles of the study/project are written in a horizontal line at the bottom of the map.

Now a days, aerial photography is used for preparation of base map. Large scale aerial photography is being used for generation of base maps and other thematic maps for urban areas as it proves to be cost and time effective and reliable. Wealth of information pertaining to land features, land use, built-up areas, city structure and urban form, physical aspects of environment, etc. is available from the aerial photography. It is the skill of the interpreter who can extract the information useful for generation of various thematic maps and graphic data required for preparation of urban development plan. For preparation of base map, the following stages of work are generally involved are shown in the following Figure 1-3.

A base map is a fundamental map that contains information for those who need to refer to it repeatedly throughout the project or process. A base map should have followed information:

- Village boundary
- Farmland and survey information
- Streams and rivers
- Slope
- Important local landmarks within the village
- Settlements
- Road's network and connectivity
- Existing traditional /large water bodies.

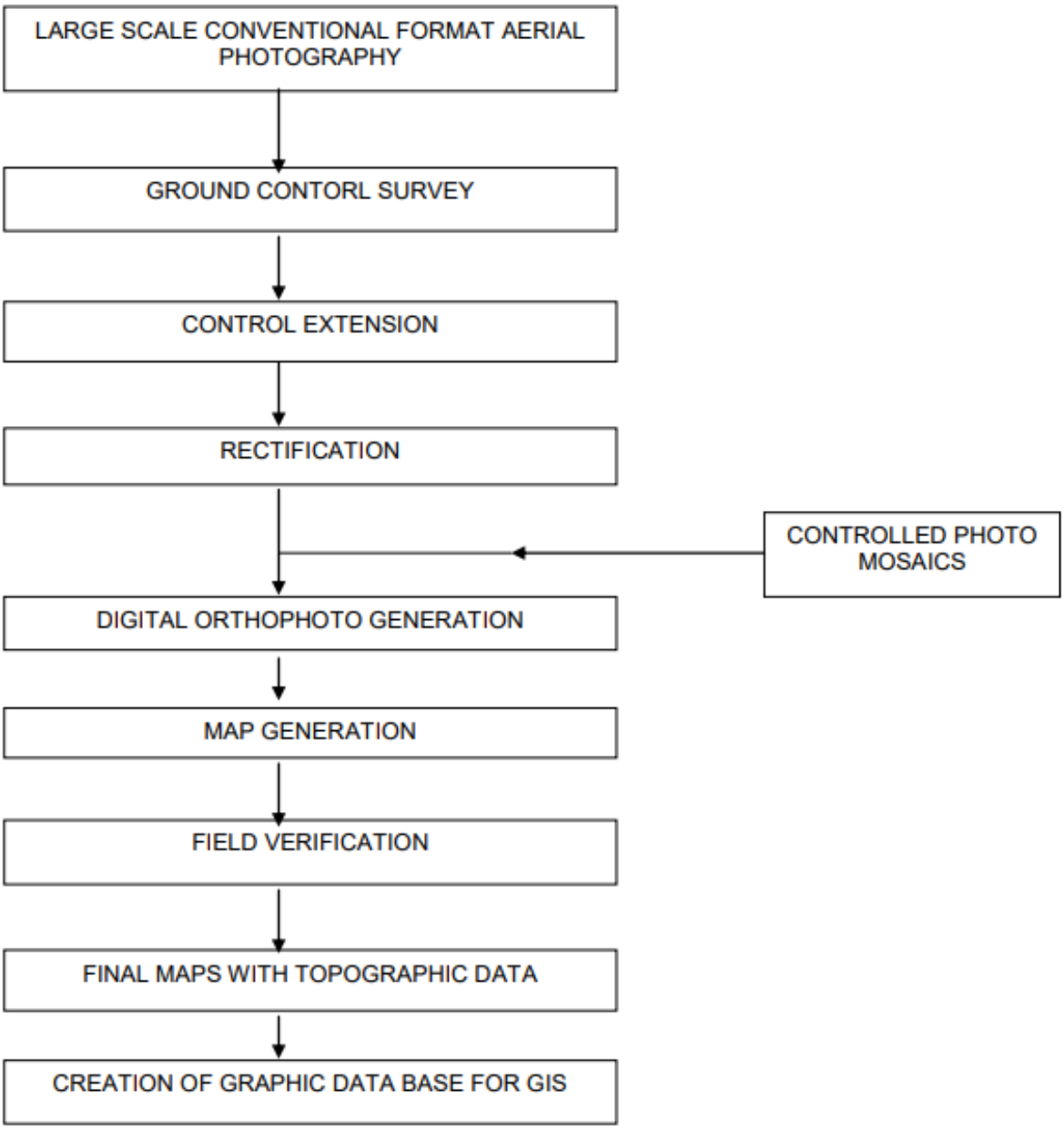


Figure 1-3 Chart for Base map Preparation

There is no single map that contains all the above information and therefore to prepare a base map there needs to be two maps such as (1) Cadastral Map and (2) Toposheet which contain the above information. Along with these two maps, there needs to be some consultations with village people to identify and locate important local landmarks that people use to visualise the respective areas in their mind and to communicate to farmers and other stakeholder for an effective water management and planning at village and / or Gram Panchayat level.

Cadastral Maps are available at,

- District Land Record Office

Taluk or Panchayat Office contains Information about:

- Farmlands
- Local Roads
- Grazing Lands
- Traverse Land
- Settlements
- Tanks

Topo sheets are available at Survey of India which Contains Information about

- River and Streams
- Roads
- Contours
- Height Points
- Water Bodies
- Important Landmarks

1.6.2.1 Standardization of Data Using Remote Sensing and GIS

GIS is a computer-based system, capable of input, storage, manipulation, analysis of data useful for planning, decision-making and implementation. GIS is a powerful tool which helps planners to view different scenarios and their outcome so that an optimal strategy may be chosen for planning and development. It is basically a map processing technique and not for generation of base maps. Once the spatial and attribute data is generated in GIS, its application areas are many and varied. These include resource inventory and management, planning and monitoring, land records for taxation and ownership controls, facilities and services management, environment impact assessment, etc. The PC-based GIS system is available in the market both in raster and vector modes and data from remote sensing and other sources can be integrated. Planning agencies can acquire such system to have quick analysis of geo-referenced data for planning and development.

Remote sensing data is used to study and monitor land features, natural resources, and dynamic effects of human activities on urban areas. Today, with the resolution available, the application of remote sensing data for urban development plans could mainly be for assessment of natural resources, land use monitoring and planning and map-making.

A broad base map of the city and city-region, indicating physical features including major road network, may be prepared quickly with the help of satellite imageries. Applications of remote sensing data are numerous, and it can be interpreted with the help of computer aided analysis. Both methods require certain amount of ground support information which should normally be collected by an interpreter to develop a key and is generally referred as ground truth. Using the ground truth or interpretation key, the remote sensing data is analysed, interpreted and maps related to existing features, land use, broad settlement structure, resource analysis, etc. could be generated. Visual interpretation is easy technique and personnel having elementary training can make use of remote sensing data for generation of maps.

2 Regional Setting

2.1 Importance of the Region

Dindigul is the administrative headquarters of the Dindigul District. As a major district headquarters, the city plays a crucial role in the governance and administration of the region. It serves as a hub for various government offices and departments, providing essential services to the residents of the district. Dindigul is situated in the western part of Tamil Nadu, acts as a link between the western districts and other parts of the state. The region surrounding Dindigul is known for its agricultural activities. The planning area is the major centre for cultivation of crops like millet, paddy, cotton, and fruits. Its agricultural produce contributes to the state's food supply and economy. The city is known for its production of locks and tanneries, contributing to the manufacturing sector. It also houses various small and medium-scale industries that generate employment and economic growth. Dindigul's well-developed transportation network, including road and rail connections, plays a crucial role in connecting the city to other parts of Tamil Nadu and neighbouring states. It facilitates the movement of goods and people, contributing to regional trade and commerce.

2.2 Locational Advantages

The city is well-connected by road and rail networks. National Highway NH-44 (previously NH-7) passes through Dindigul, connecting it to major cities like Madurai, Coimbatore, and Bengaluru. The city's railway station is an important junction on the Southern Railway network, facilitating smooth movement of people and goods. Geographical setting of the Dindigul region is situated about at 10.3626° North latitude and 77.9803° East longitude. The city of Dindigul is situated at an average elevation of around 287 meters (942 feet) above sea level. The landscape is mostly level to gently undulating, with a few nearby little hills and ridges. Dindigul LPA is also located close to the Western Ghats, a mountain range that runs parallel to the western coast of India that is known for their rich biodiversity and play a crucial role in the regional climate and ecology. The region around the planning area is traversed by several rivers and streams. Kudaganar River and the Marudanadhi River are among the major water bodies that pass through or near the city. These rivers are vital for irrigation and water supply to the agricultural lands in the area.

2.3 Regional Connectivity - Transport

Dindigul Town is well connected regionally with the surrounding class I towns with NH and class II and III towns with SH roads. NH 83 connects Coimbatore (110km from Dindigul) and Tiruchirappalli (99km from Dindigul) along Dindigul. NH 44 connects Karur and Madurai (63km from Dindigul) along Dindigul. NH 45 connects Theni with Dindigul.

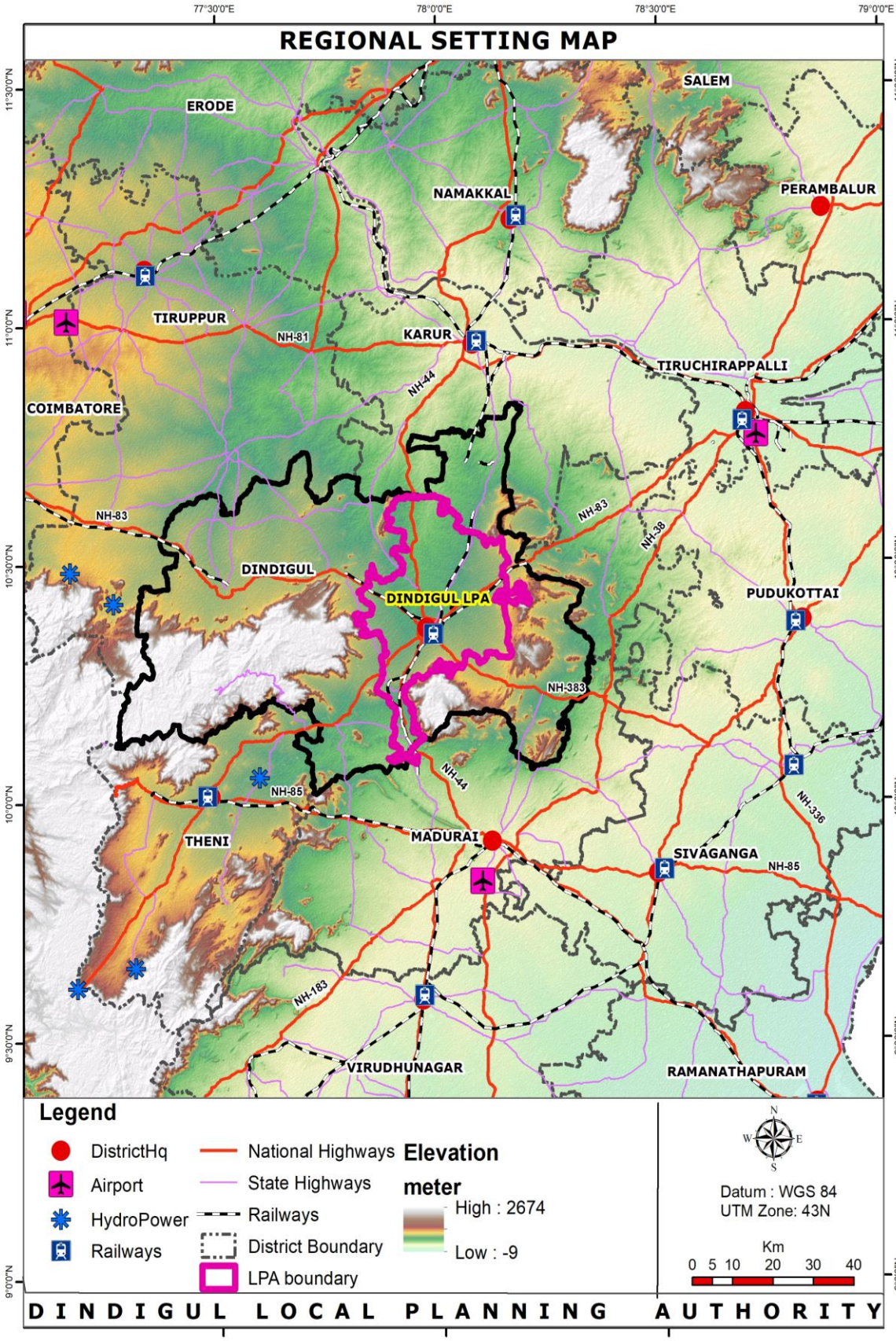
It also has railway connectivity along southern railway. It has a prominent Madurai Junction of about 77km from Dindigul Railway Station. Railway connectivity to nearby station is mentioned in Table 2-1.

Table 2-1 Major Cities near Dindigul

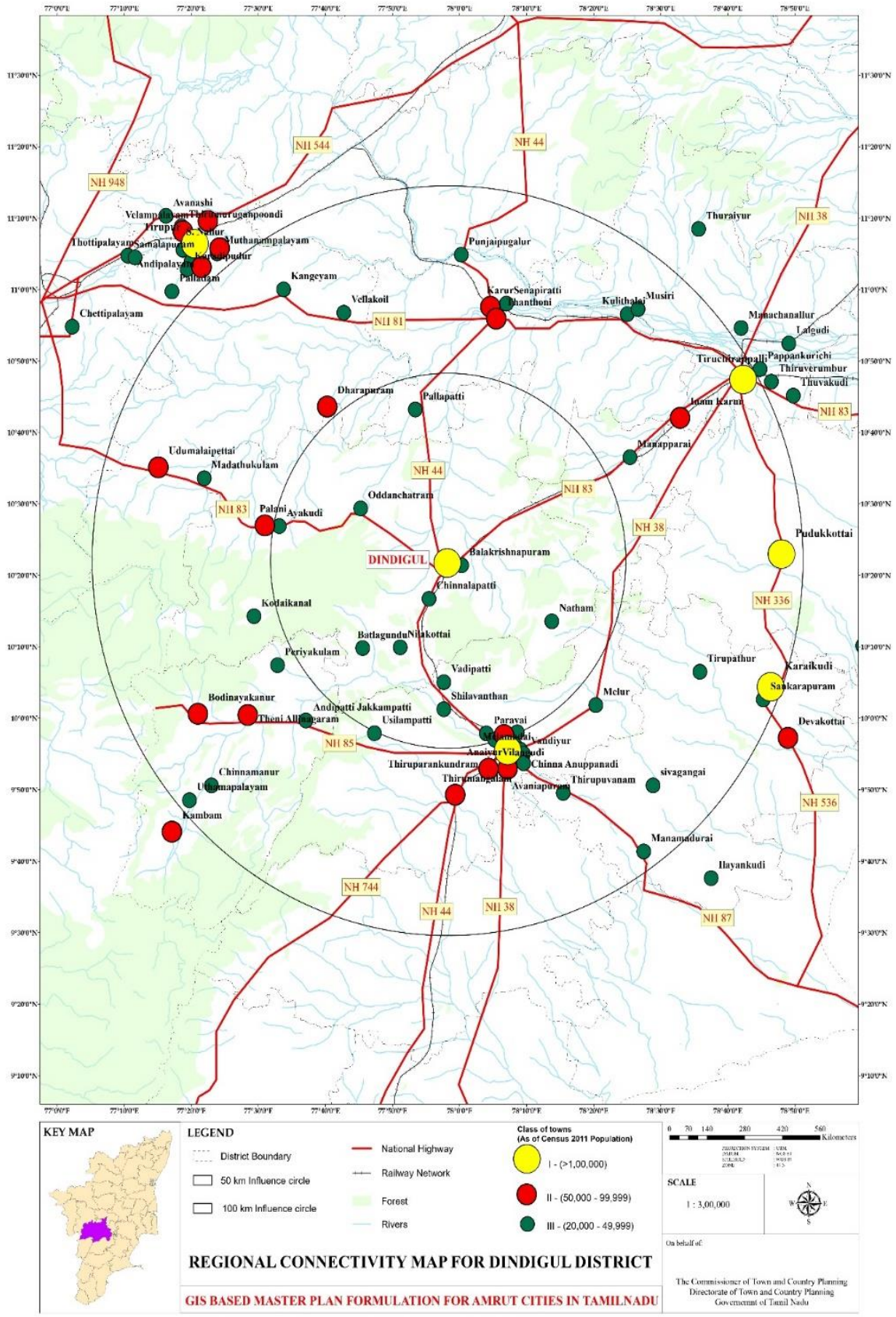
S. No	Town Name	Distance from Dindigul (km)
1	Tiruchirappalli (M Corp.)	99.00
2	Karur(M)	77.00
3	Kodaikannal(M)	94.00
4	Madurai (M Corp.)	63.00
5	Palani(M)	59.00

Source : Census of India

The suburban area of Dindigul expands along Vada Madurai on NH 44 towards Karur District Thadikombu on NH 83 towards Trichy District, and Adiyanathu on NH 383 towards Karaikudi District, all of which are peripheral areas of the corporation.



Map 2-1 Map Showing Regional Connectivity of the Dindigul CLPA



Map 2-2 Map Showing Regional Connectivity of the Dindigul CLPA

Table 2-2 Towns near Dindigul based on Class of Towns

S.No	District Name	Town Name	Total Population of Town
CLASS I			
1	Tiruchirappalli	Tiruchirappalli (M Corp.)	847387
2	Pudukkottai	Pudukkottai (M)	117630
3	Sivaganga	Karaikkudi (M)	106714
4	Madurai	Madurai (M Corp.)	1017865
5	Tiruppur	Tiruppur (M.Corp)	444352
CLASS II			
1	Karur	Inam Karur (M)	67131
2	Karur	Karur (M)	70980
3	Karur	Thanthoni (M)	53854
4	Sivaganga	Devakottai (M)	51865
5	Madurai	Anaiyur (M)	63917
6	Madurai	Thirumangalam (M)	51194
7	Madurai	Avaniapuram (M)	89635
8	Madurai	Thiruparankundram (M + OG)	50004
9	Theni	Bodinayakanur (M)	75675
10	Theni	Theni Allinagaram (M)	94453
11	Theni	Kambam (M)	68090
12	Tiruppur	Dharapuram (M)	56007
13	Tiruppur	Velampalayam (M)	87427
14	Tiruppur	S.Nallur (M)	70115
15	Tiruppur	Neripperichal (CT)	53579
16	Tiruppur	Veerapandi (CT)	50301
17	Tiruppur	Udumalaipettai (M)	61133

Source : Census of India

2.4 Regional Economy

Agriculture plays a crucial role in Dindigul's economy. The region's fertile plains support the cultivation of crops like millet, paddy, cotton, and fruits. Farming is a major source of income and employment for a significant portion of the local population. Dindigul's economy is supported by ago-processing industries that add value to agricultural products. Food processing units, such as rice mills, flour mills, and fruit-processing facilities, contribute to the economy and help in preserving agricultural produce. The city is known for its manufacturing industries. Dindigul is famous for its production of High-quality locks, which are widely distributed and exported few years back. Additionally, there are tanneries,

spinning mills textile units, and other small-scale manufacturing activities that contribute to the local economy. Dindigul is also known for its traditional handicrafts. Artisans produce items like brassware, stone carvings, and wooden crafts, which have a market both within the city and in other parts of Tamil Nadu. Dindigul acts as a trading center for agricultural produce and manufactured goods. Traders from nearby rural areas bring their produce to the city's markets for distribution. The city's strategic location facilitates trade between different regions. While not the primary driver, tourism is growing around Dindigul LPA. The city's cultural heritage, historical landmarks, and proximity to hill stations like Kodaikanal attract visitors and contribute to the local economy.

2.5 Natural setting in the region

The Palani Hills are a range of hills located in the northwest direction of Dindigul city. These hills are part of the Western Ghats Mountain range and are known for their biodiversity and rich flora and fauna. The Palani Hills Wildlife Sanctuary, which is home to various wildlife species and endemic plants, is an important environmental feature in the region. About 70 kilometres (43 miles) from Dindigul. Kodaikanal is a popular hill station known for its scenic beauty and pleasant climate which is located on the west side of Dindigul city. Kodaikanal Lake, a man-made lake located in the heart of the town, is a prominent water body surrounded by lush greenery and serves as a major tourist attraction. Also, Sirumalai is situated towards the southwest part of the city. Furthermore, Dindigul is surrounded by hills and landforms, contributing to its topographical diversity. These natural features add to the scenic beauty of the area and influence local weather patterns.

2.5.1 Key potentials

Dindigul possesses several key potentials that can drive its development and contribute to its growth as a dynamic and prosperous city. These potentials encompass a range of economic, cultural, and geographical advantages that make Dindigul a unique and promising location. The key potentials of Dindigul are:

2.5.1.1 Strategic Geographical Location

Dindigul's strategic location at the junction of major highways and railway lines Positions it as a transit point for goods and people. This makes it an ideal hub for logistics, warehousing, and distribution, fostering economic activities and attracting investments.

2.5.1.2 Agricultural Productivity

Dindigul's fertile land and favourable climate support diverse agricultural activities. The cultivation of a variety of crops, both food and cash crops, can contribute to food security, income generation, and agro industries like food processing.

2.5.1.3 Textile Industry

Dindigul's textile industry has earned a reputation for producing high-quality cotton sarees and garments. By modernizing manufacturing processes, improving design capabilities, and focusing on sustainable practices, the industry can experience further growth and global recognition. The region has a significant presence of textile-related businesses due to its historical importance in the textile sector.

2.5.1.4 Historical and Cultural Heritage

The presence of the Dindigul Fort, ancient temples, and other historical sites offers a window into the region's past. Leveraging these assets for cultural tourism can boost the local economy, create jobs, and preserve the city's unique heritage.

2.5.1.5 Educational Institutions

The city's existing educational institutions can be expanded to offer a wider range of courses and research opportunities. This can attract students from neighbouring areas and even internationally, leading to a skilled workforce and innovation-driven growth.

2.5.1.6 Natural Attractions

The picturesque Sirumalai Hills and the Kamarajar Sagar Dam offer opportunities for nature-based tourism and outdoor recreational activities. Development of infrastructure, eco-friendly accommodations, and adventure sports facilities can attract tourists and boost local businesses.

2.5.1.7 Skilled Workforce

Dindigul's skilled workforce, particularly in the textile sector, can be harnessed for diversification into emerging sectors such as IT, manufacturing, and service industries. Skill development programs can equip the local population with the necessary skills for these sectors.

2.5.1.8 Connectivity

Dindigul's central location with well-connected roadways and railway networks can enhance its accessibility to markets and industries. Improved transportation can attract

investments and facilitate the movement of goods and people.

2.5.1.9 Cultural Diversity

Celebrating the city's diverse cultural heritage through festivals, events, and crafts can not only boost tourism but also provide livelihoods to local artisans and craftsmen.

2.5.1.10 Water Resources

Proper management of water resources like the Kamarajar Sagar Dam can ensure both irrigation for agriculture and a consistent water supply for the city, while exploring hydroelectric power generation options can contribute to sustainable energy.

2.5.1.11 Small and Medium Enterprises (SMEs)

Encouraging the growth of SMEs can generate jobs, support innovation, and contribute to the local economy's diversification. Creating an enabling environment for entrepreneurship and offering financial support can aid SME development.

2.5.1.12 Rural-Urban Linkages

Establishing stronger linkages between urban Dindigul and its rural surroundings can facilitate the flow of agricultural products, skills, and knowledge. This integrated approach can foster holistic development.

2.5.1.13 Healthcare Infrastructure

By improving healthcare facilities, Dindigul can not only cater to the needs of its residents but also attract patients from nearby areas, thus supporting medical tourism and boosting the local economy.

2.5.1.14 Sustainable Development

Utilizing sustainable agriculture practices, promoting eco-tourism, and adopting renewable energy sources can position Dindigul as a role model for environmentally conscious development, attracting environmentally conscious industries and residents. In summary, Dindigul's unique blend of geographical advantages, cultural heritage, and economic opportunities can propel it towards sustainable and inclusive development. By capitalizing on these potentials and implementing strategic policies, Dindigul can create a thriving and harmonious urban environment for its residents and future generations. Dindigul is a city with a rich cultural heritage, surrounded by natural beauty, and strategically located in Tamil Nadu. The region's economy thrives on agriculture, manufacturing, trade, and tourism. With its well-connected transportation networks, the

city serves as a significant administrative and economic hub for the surrounding districts. Dindigul's diverse economic activities, natural water sources, and topographical diversity make it an essential and vibrant part of the state's landscape and economy.

3 Review of Existing Master Plan

3.1 Introduction

Review of existing master plan helps to evaluate the effectiveness of the current plan in achieving its intended goals and objectives. By reviewing the outcomes and impacts of past planning decisions, stakeholders can identify what has worked well and what areas need improvement.

3.2 Planning area

The Government of Tamil Nadu in G.O. Ms No. 1864 RDLA DT 17-8-1974 declared Dindigul Municipal area and its surrounding area of 21 village as Dindigul Local Planning Area. The total extent of the planning Area is 198.81 Sq.Km. The name of the revenue villages included in the planning area and Extent of villages and town ate given in Table 3-1.

Table 3-1 Planning area – Towns and Villages

S. No	Name of Village and Town	Area (Sq.km)
1	Dindigul Municipality	14.01
2	Adiyanoothu	19.18
3	Alukkuvarpatty	6.03
4	Alamarathupatty	3.18
5	Anaipatty	2.47
6	A. Vellodu	23.98
7	Balakrishnapuram	14.07
8	Chettinaickanpatty	12.43
9	Kalikampatty	4.97
10	Ponnimanthurai	3.48
11	Kurumbapatty	4.44
12	Mullipadi	8.98
13	Munnilaikottai	8.17
14	N. Panjampatty	2.49
15	Pallapatty	9.36
16	Pillayarnatham	6.68
17	Pithalaipatty	2.44
18	Seelapadi	12.50
19	Anumantharayankottai	16.80
20	Thamaraikulam	6.59
21	Thottanoothu	14.40
22	Vakkampatty	2.12
Total Area		**198.81**

Source : Census of India

The local planning area is now having administrative control by Dindigul Municipal Council and Dindigul, Authority, and Roddiarchatram Panchayat Union Council. The regulatory, preparation and execution of development plans prepared under Town and Country Planning Act 1971 are carried out by Dindigul Local Planning Authority, which functions at Dindigul with Collector as a Chairman, under Section 1 (4) (a) of the T & C.P. Act 1971 from 01.09.1993 onwards.

3.3 Review of Master Plan

3.3.1 Population

Growth rate of dindigul LPA in 1971 and 1981 is increased in growth rate and between 1981 and 1991 is declined. This may be due to exodus of population to other major cities mainly for economic opportunities. The central part of the town has the highest growth rate. Population projected for 2021 for the Dindigul Corporation and Dindigul LPA is almost tallied with the actual population as per census 2001. Dindigul Corporation has been found out the most urbanized settlement of Dindigul LPA apart from the urban nodes comprising of 68.47% population of the LPA. The Central part of the Dindigul Corporation is intensively developed, whereas the use of commercial, residential, and institutional activities is concentrated in the core area of Corporation. Beyond the Central Business District, development is concentrated along the radial roads, indicating a pattern of urban expansion from the core to the periphery. Further the developments are mainly concentrated along the other urban node.

3.3.2 Industries

The Industrial development has been taking at a faster rate. Several medium and small-scale industrial developments have been concentrated in the area zoned for industrial development along the NH 44 Vedasandur, Thadikoombu.

3.3.3 Traffic and Transportation

The studies about transportation would seek to establish the relative connections of the Town with the rest of the hinterland on one hand and to provide facilities for internal circulation systems in the Town namely roads and railways. There is no airport. The nearest airport is at Madurai and Trichy, which are at about 65 km and 85 km from this town. Main Arterial Roads linking the Town with other Urban Centres. The road pattern providing for

the movement and circulation within the Town. Main Arterial Roads comprise of National Highway, State Highway and Major District Road.

3.3.4 Physical Infrastructure

The source of drinking water supply for Dindigul Town is Kamarajar Sager reservoir (Earthen dam) at Authoor, which is about 20 km from the Town and infiltration, wells on the Vaigai Riverbed at Peranai 40 km from the Town. The total water supply is 10.95 LPCD (Liters Per Capita per Day), and per Capita supply is 73 LPCD, there is no source augmentation has identified for ultimate demand and There is no pucca drainage in the Town. The total length of the drain is 1840 metres. The amount of solid waste collected per day in the Town is about 30 tonnes. This waste is disposed of at a compost yard located about 3 km away, situated in S. No: 777/29B, 30, 33, and 34 of Chettinaickanpatty village at an extent of 5.00 hectares from the town. Collection of solid waste is done by using 2 Lorries, 3 trailers, 80- rubbish carts, and 26-night soil carts. The disposal of 30 tonnes of solid waste is inadequate as compared to the estimated generation of 63 tonnes (assumed at 350 / person / day) by individual households, commercial establishments, and others.

3.3.5 Social Infrastructure

The enrolled pupil strength of all educational institution in Dindigul Town is 60119. According to the records available in education department. Within the Local Planning area, health facilities with adequate bed strength are situated within the corporation limit of the Dindigul which is sufficient for the present population. But for the rest of the LPA, there is a gap in bed strength which couldn't be able to serve the surrounding population.

3.3.6 Open Space and Recreation

In Dindigul planning area the notified urban open spaces are mainly situated in the corporation limit. The city is facing lack of green open spaces which form a dual utility – being the lungs of the city and recreational space for the citizens, status of notified open spaces is comparatively less to compared to the standards like URDPFI, WHO (World Health Organization) and UN-habitat.

3.3.7 Land use zoning

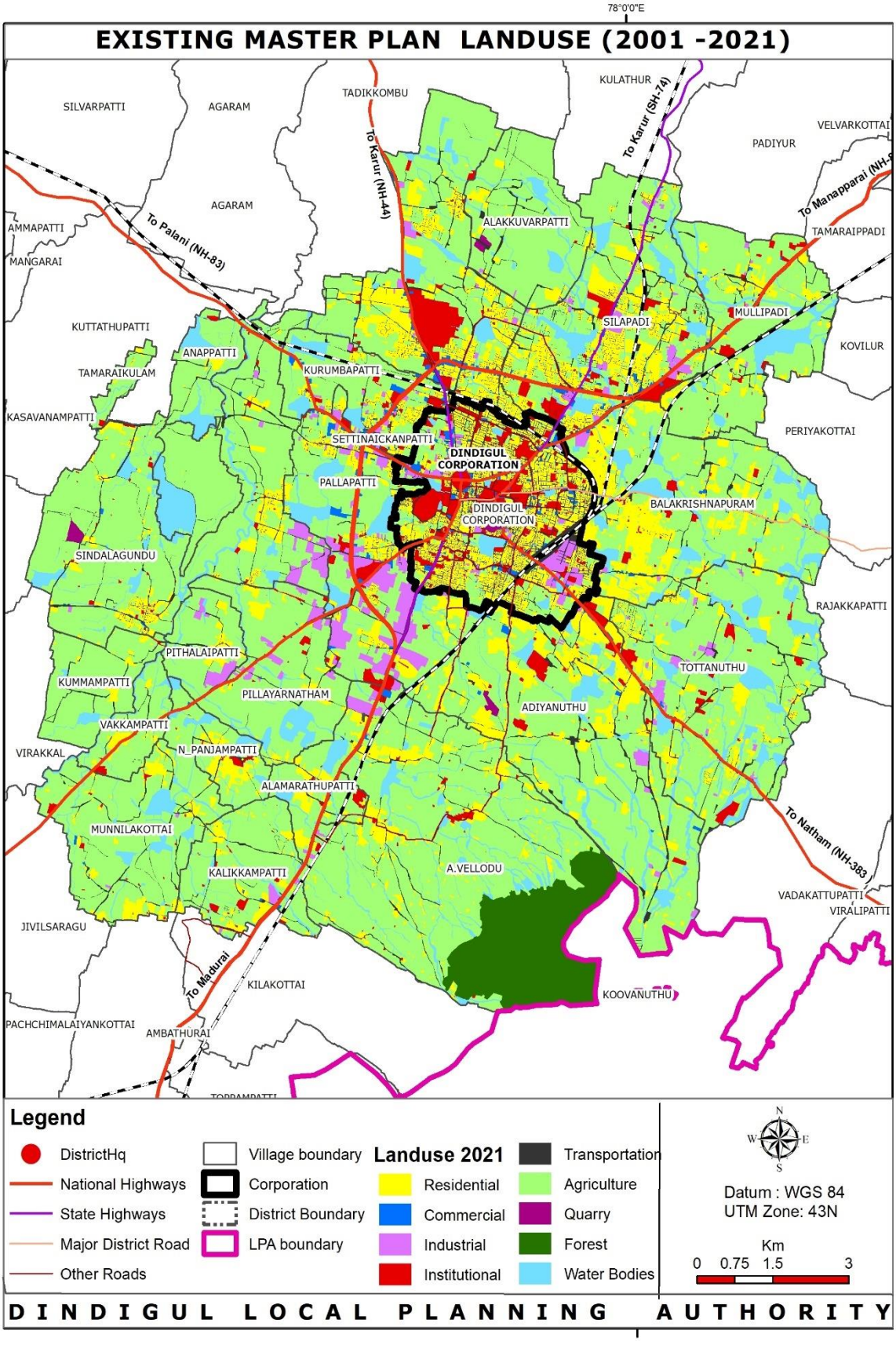
Land use is the outcome of the master plan, in this chapter of review the existing master plan and proposed land use has been compared and super imposed with present scenario of 2023. For Large city like Dindigul, URDPFI Guideline has recommended 36 – 39%

of residential. From below table 3-2, even though the residential zoning is provided 36.58 sq.km is provided only 28.71 sq.km is achieved in the real time. The Corporation was performed for Existing Land Use (2001), Proposed Land Use of Existing Master plan for year 2021 which is currently in force and the Actual Land Use achieved for year 2011. A superimposed map was prepared for year 2021 to find the development trend in the old LPA to analysis the changes within the LPA. The Existing Master plan consists of two major parts *Developable Area* (Residential, Commercial, Industrial, and Institutional) and *Undevelopable Area* (Water Body, Agriculture lands). Comparing the Superimposed Map and Table the following changes are calculated for the Old LPA, this explains the improper analysis of housing requirement for the projected year. The Commercial Land use have Increase by 2.80 Sq.km and achieved 1.77 Sq.km respectively, from the superimposed map we can see that in urban area Ward B shows more improvement in commercial whereas in proposal commercial development is oriented toward the Ward E, this indicated the requirement of proper suitability analysis before the Preparation of Land Use for the LPA. When it comes to industrial, development is noticeably more in the Rest of Old town area which is 7.12 Sq.km is proposed and achieved 4.83. Also, for institutional old town had developed along the southern side of town area and following the same trend of growth in the rest of LPA area. For undevelopable areas, Agriculture land is reduced from 158.2 (Existing Land use 2001) to 118.2 sq.km but agriculture land sustained for124.06.km which is less than of 6.2 sq.km from the proposed land use. Land use breakup for the year 2001 and for the present year is shown in Table 3-2.

Table 3-2 Land Use Breakup – 2001 and present

S. No	Land Use	Existing	Proposed	Present Status - 2023	
1	Residential	12.58	36.58	28.71	7.81
2	Commercial	0.40	2.80	1.77	1.03
3	Industrial	3.12	7.12	4.83	2.29
4	Institutional	2.87	12.47	5.98	6.49
5	Transportation	7.16	7.16	-	-
6	Agriculture	158.2	118.2	124.06	5.86
7	Water Body	14.06	14.06	-	-
Total		**198.91**	**198.91**		**-**

Source : Census of India



Map 3-1 Existing Master Plan Land Use 2001-2021

4 About Planning Area

4.1 Study Area and Location

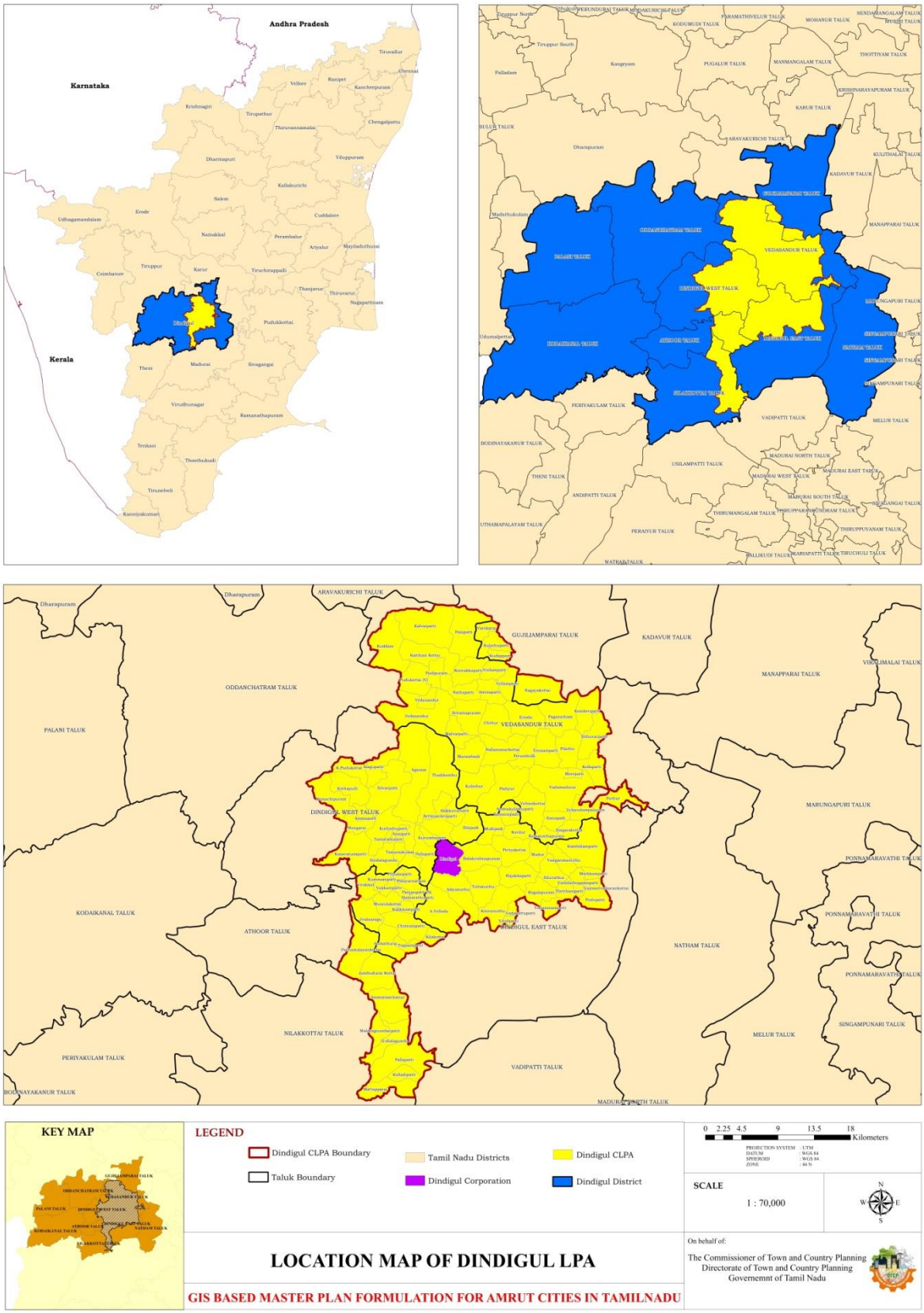
Dindigul is located at 10.35°N 77.95°E and has an average elevation of 265 m (869 ft). The town is in Dindigul district, 420 km (260 mi) from Chennai and 100 km (62 mi) south-west of Tiruchirappalli.

Dindigul is in the foothills of Sirumalai hills. The topography is plain and hilly, with the variation resulting in climatic changes. There are no notable mineral resources available in and around the town. The soil type is thin veneer soil, which is mostly black clayey soil with red soil. Summer season is from March to July, while December to January marks the winter season. The temperature ranges from a maximum of 37 °C (99 °F) to a minimum of 29 °C (84 °F) during summer and a maximum of 26 °C (79 °F) to a minimum of 20 °C (68 °F) during winter.

Dindigul receives rainfall with an average of 812 mm (32.0 in) annually. The Southwest monsoon, with an onset in June and lasting up to August, brings scanty rainfall. Bulk of the rainfall is received during the Northeast monsoon in the months of October, November and December.

The climatic conditions of Dindigul are favourable for horticulture and cultivation of different flower varieties. Apart from flowers, Dindigul is famous for producing fruits like orange, pineapple, guava, vegetables, like onions, and other non-food crops like tobacco, eucalyptus, and coffee.

The Dindigul district total extent is 6266.64 Sq.km, with the proposed local planning area (LPA) covering 1247.38 Sq.Km. Within the LPA, the Dindigul Corporation covers about 14.01 Sq.km, situated at the core of the Dindigul District which is shown in below Map 4-1.



Map 4-1 Map Showing Location of the Dindigul CLPA

4.2 Evolution of LPA (History and Etymology)

The history of Dindigul revolves around its iconic fort, situated atop a small rock hill near the town. Dindigul occupied a strategic position on the border of the Moovendars of ancient Tamilakam, including the Pandyas, Cheras, and Cholas. According to legend, the Chera king Dharmabalan constructed the temples of Abirami and Padmagirinathar in the area. The ancient Tamil epic Silappathikaram mentions Dindigul as the northern border of the Pandya kingdom, with its capital in Madurai. The historian Strabo referenced the town in his work around 20 A.D., while Pillni, a prominent historian of the time, described the Pandya king in his writings.

During the 1st century CE, the Chola king Karikal Cholan conquered the Pandya kingdom, bringing Dindigul under Chola rule. In the sixth century, the Pallavas took control of Dindigul and much of southern India, ruling until the 8th century CE when the Cholas retook it. Despite raids by the Delhi Sultanate into southern India, Dindigul remained unharmed. Later in the same century, the town became part of the Vijayanagara Empire. The Vijayanagara army commander Kampanna Udayar played a pivotal role in capturing Madurai from the Madurai Sultanate. In 1559, the Nayaks became powerful, with their territory bordering Dindigul to the north. After the death of King Viswanatha Nayak in 1563, Muthukrisna Nayakka ascended to the throne in 1602 A.D. and built a strong hill fort in 1605 A.D., along with a fort at the hill's base. Successors Muthuveerappa Nayak and Thirumalai Nayak continued Muthukrishna Nayak's legacy. Dindigul regained prominence during the Nayak rule of Madurai under Thirumalai Nayak. Following his less successful immediate successors, Rani Mangammal took over and ruled the region efficiently.

In 1736, Chanda Sahib, a lieutenant of the Mughal Empire, seized power from Vangaru Nayak, leading to Dindigul coming under the rule of the Mughals. In 1742, the Mysore army, under Venkatarayar, captured Dindigul, and Venkatarayar governed the town on behalf of the Maharaja of Mysore. During his rule, Dindigul Semai served as the capital, overseeing 18 palayams, which were small regions comprising a few villages. However, these palayams sought independence and refused to pay taxes to Venkatarayar.

Venkatappa succeeded Venkatarayar as governor in 1748 but faced similar challenges. In 1755, Haider Ali was sent by the Maharaja to address the situation in Dindigul. Haider Ali later became the Maharaja of Mysore and appointed Purshana Mirsaheb as the governor of

Dindigul in 1777. Mirsaheb fortified the fort and its garrison. The tomb of his wife, Ameer-um-Nisha-Begam, who died during childbirth, is now known as Beg Dindigul. In 1783, the British Army, led by Captain Long, took control of Dindigul. After an agreement between Mysore and the British army in 1784, Dindigul was returned to Mysore province. In 1788, Tipu Sultan, Haider Ali's son, was crowned the King of Dindigul. However, in 1790, James Stewart of the British army recaptured Dindigul during the third war of Mysore. In the treaty of 1792, Tipu ceded Dindigul to the British, making it the first region in the Madurai District to fall under British rule. From 1798 to 1859, the British army, under Statten, occupied Dindigul fort. Subsequently, the headquarters of the British army moved to Madurai, with Dindigul serving as a taluk. Dindigul remained under British rule until India gained independence on 15 August 1947.

The present Dindigul District was part of Madurai District till September 1985. In September 1985, Dindigul district was established from the Madurai district through G.O. Ms. No. 1255, dated 2.9.1985. Initially named "Dindigul Anna District" in honor of the former Chief Minister of Tamil Nadu, C.N. Annadurai, the district underwent several name changes over the years. It has been officially known as Dindigul district since July 1, 1997.In recent times, Dindigul has seen significant growth, marked by the establishment of several new companies setting up branches in the town. Notable among these are Chennai Silks, Unlimited, Jos Allukas, and Tanishq.


Figure 4-1 Rock fort Temple, Dindigul

5 Demographic Profile

5.1 Population Growth in LPA

5.1.1 Population Trends

The LPA is home to about 8.11 lakh people, among them about 4.05 lakhs (49%) are male and about 4.06 lakhs (51%) are female population. 63% of the whole population are from general caste, 33% are from schedule caste and 4% are schedule tribes. Child (aged under 6 years) population of Dindigul Town is 12%, among them 51% are boys and 49% are girls. There are around 2.06 lakhs households in the Town and an average of 3.9 persons live in every family. The following Table 5-1 briefly illustrates comparison of Dindigul LPA with the district.

Table 5-1 Populations Details of LPA

S. No	Contents		Tamil Nadu	Dindigul District	Dindigul Corporation	Dindigul LPA	LPA Contribution to district in %
1	Population	Urban	34917440	808040	207327	280410	34.72%
		Rural	37229590	1351735	-	531035	28.67%
		Total	72147030	2159775	207327	811445	37.57%
2	Urban Population %		48.40%	37.41%	100.00%	35.55%	-
3	Area in Sq.km		130060	6036	14.01	1247.38	16.36%
4	Density (Person per hectare)		555	358	14799	650	-
5	Households		18524982	560773	53573	206251	36.78%
6	Sex Ratio	Urban	1000	1008	1012	1008	-
		Rural	993	992	-	1002	-
		Total	996	998	1012	1005	-
7	Literacy Rate %		80.09%	76.26%	81.69%	69.74%	-
8	Scheduled Castes	Persons	14438445	452376	15724	148993	32.94%
9	Scheduled Tribes	Persons	794697	8064	143	322	3.99%

Source : Census of India

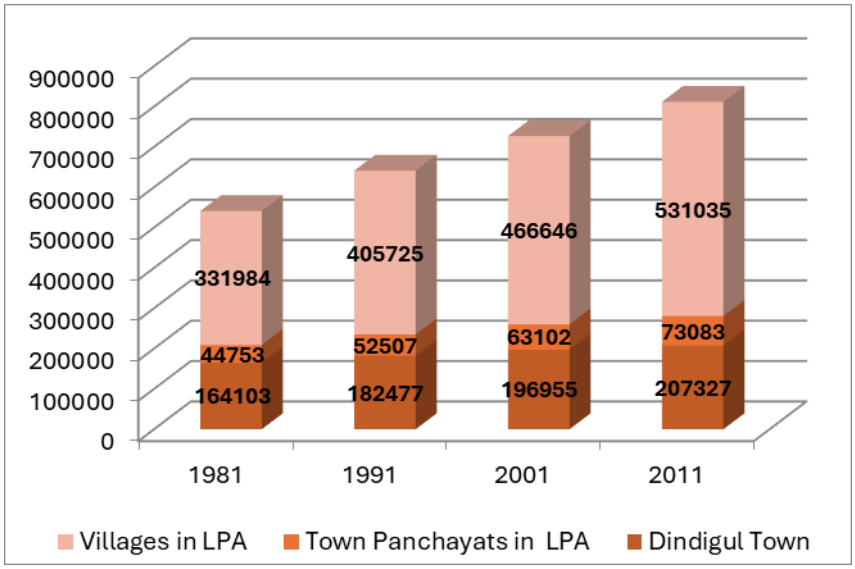


Figure 5-1 Population in Town and Village

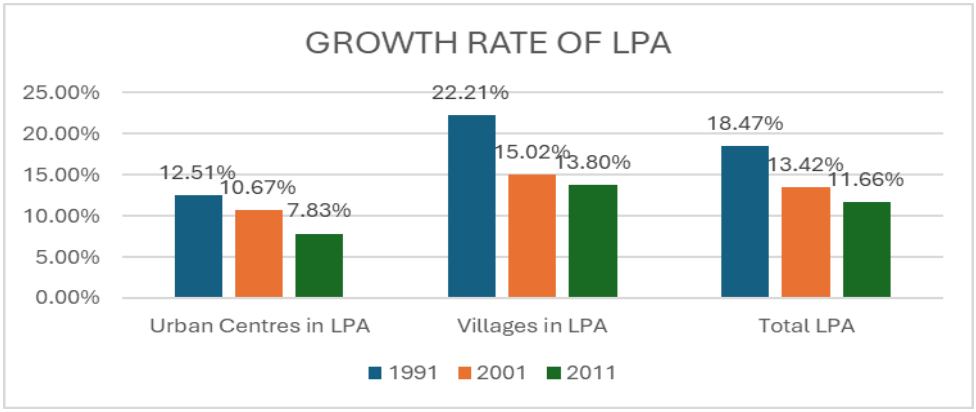


Figure 5-2 Growth rate of LPA

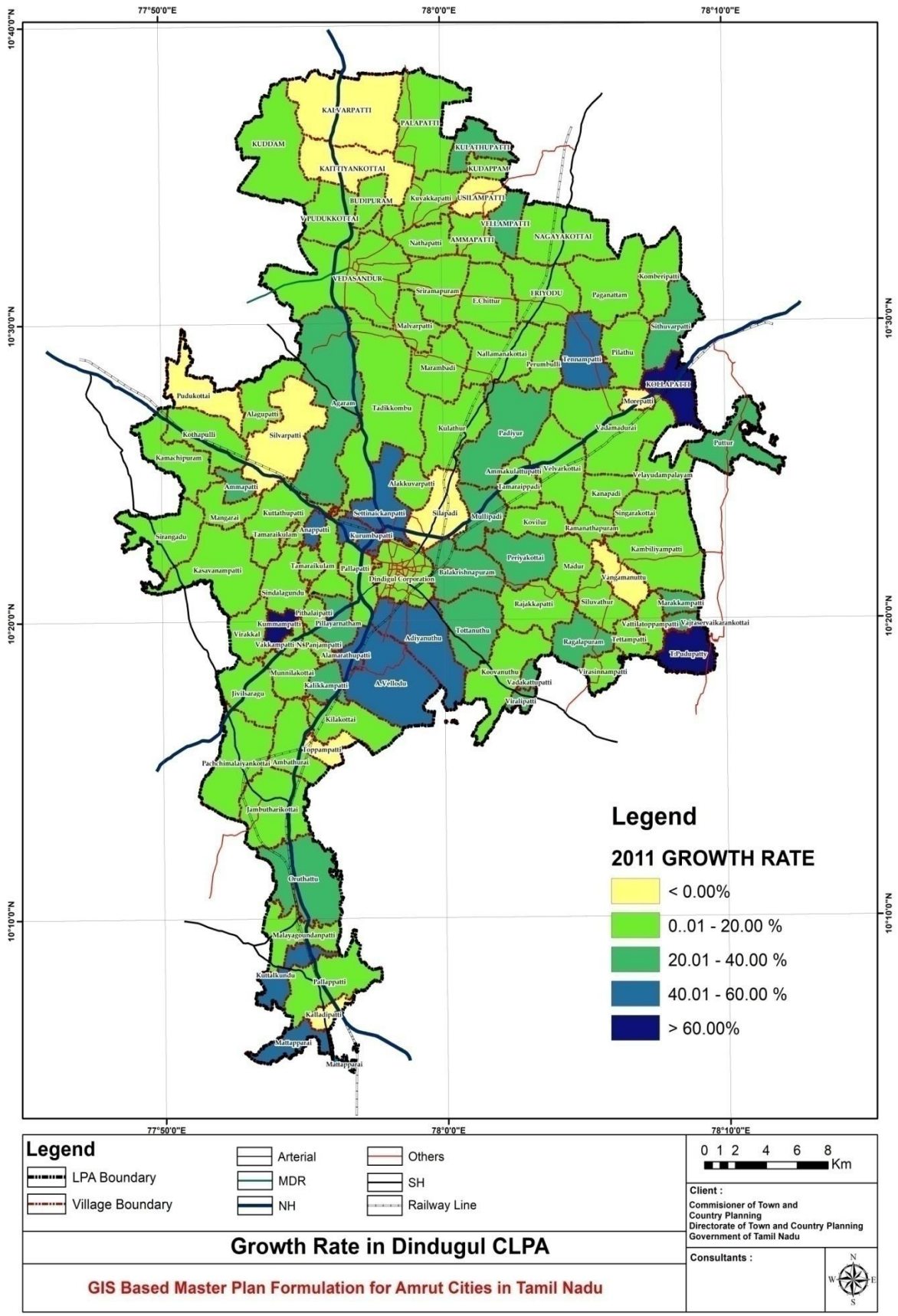
Dindigul Town have high growth rate of 11.20% in 1991 and it decreases in 2001 to 7.93% and to 5.27% in 2011.Town Panchayats in LPA has growth rate of 17.33% in 1991 and it increases to 20.18% in 2001 and slightly decreased to 15.82 in 2011.Village Panchayats in LPA has higher growth rate of 22.21% in 1991 and it decreases slightly to 15.02% in 2001 and to 13.80% in 2011.

Dindigul LPA's decadal population growth rate has been 18.47% during 1981-1991. The population growth during the decade 2001-2011 was 11.66% which is lower than the state's average of 27.16% for urban population growth. During 2011, it is at 11.66%. It is clear that urban areas are displaying growth in population over villages.

Table 5-2 Growth rate of LPA

S. No	Description	1981	1991		2001		2011		Change in Growth Rate (2001 - 2011) %
		Population	Population	1991	Population	1991	Population	1991	
1	Dindigul Town	164103	182477	11.20%	196955	7.93%	207327	5.27%	-2.67%
2	Town Panchayats in LPA	44753	52507	17.33%	63102	20.18%	73083	15.82%	-4.36%
3	Total Urban centres in LPA	208856	234984	12.51%	260057	10.67%	280410	7.83%	-2.84%
4	Villages in LPA	331984	405725	22.21%	466646	15.02%	531035	13.80%	-1.22%
Total LPA		**540840**	**640709**	**18.47%**	**726703**	**13.42%**	**811445**	**11.66%**	**-1.76%**

Source : Census of India



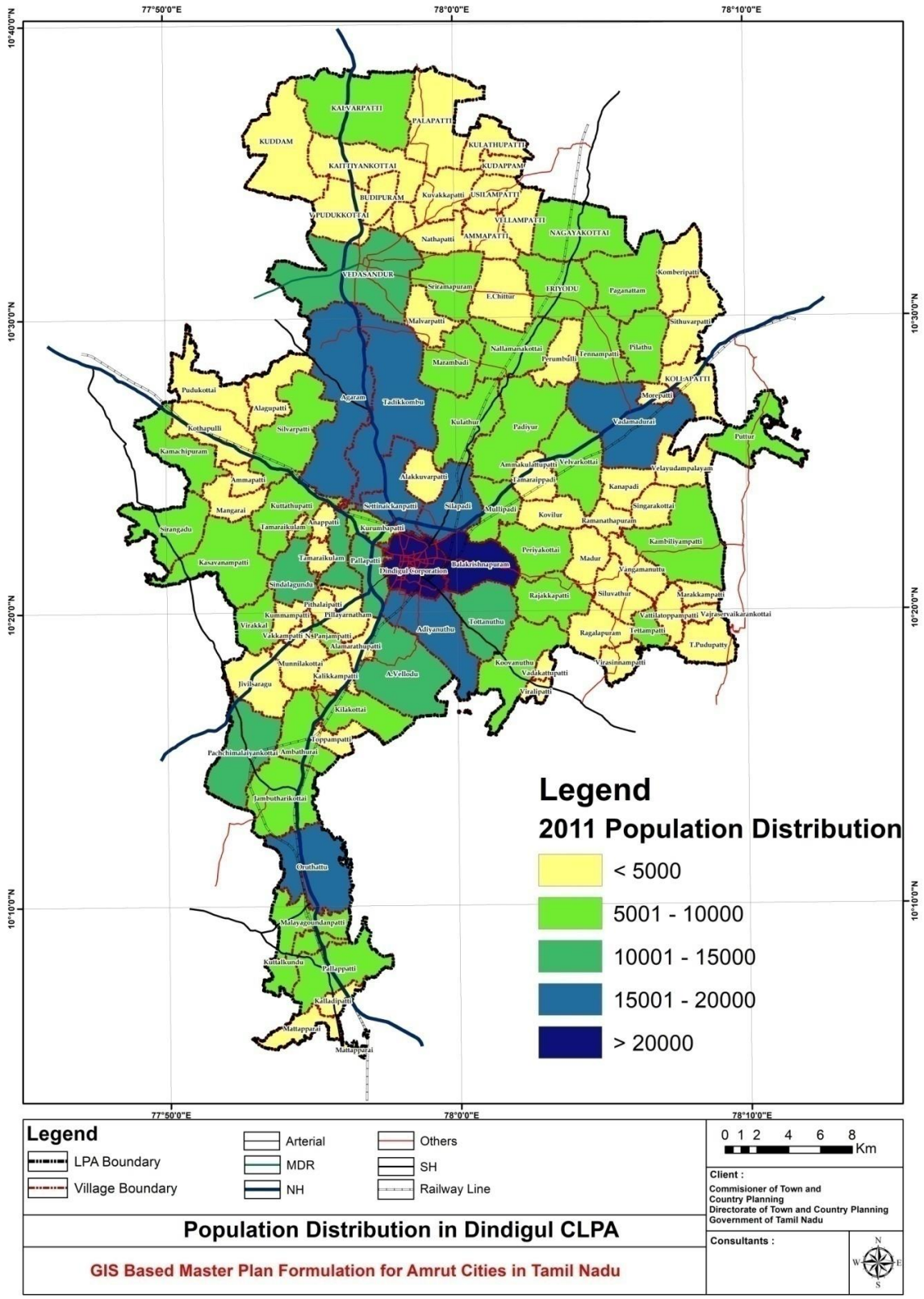
Map 5-1 Showing Population Growth Trend in Dindigul CLP

5.1.2 Population Growth rate of LPA

Population growth rate is a measure that indicates how fast a population is increasing or decreasing over a certain period, usually expressed as a percentage. It's calculated by comparing the difference between the birth rate (number of births per 1,000 people each year) and the death rate (number of deaths per 1,000 people each year) and adjusting for net migration (the difference between the number of people immigrating to a region and the number emigrating from it.

In Dindigul local planning area, there is a higher growth rate in Vedasandur, Adiyanathu, Vadamadurai, and Thadikombu. These are the major villages that have a higher growth rate. The Dindigul town population increased from 164,103 in 1981 to 207,327 in 2011. The growth rate decreased from 11.20% (1991–2001) to 7.93% (2001–2011), with a significant decline of -2.67% in the growth rate from 2001 to 2011. The town panchayat population within LPA increased from 44,753 in 1981 to 73,083 in 2011. The growth rate fluctuated, with a peak of 20.18% from 2001 to 2011, but a decline in the growth rate to -4.36% during the same period. The combined population of urban centers increased from 208,856 in 1981 to 280,410 in 2011. The growth rate decreased from 12.51% (1991–2001) to 7.83% (2001–2011), with a decline of -2.84% in the growth rate from 2001 to 2011.

Villages in LPA, the population increased from 331,984 in 1981 to 531,035 in 2011. The growth rate decreased gradually from 22.21% (1991-2001) to 13.80% (2001-2011), with a minor decline of -1.22% in the growth rate from 2001 to 2011. Total LPA The overall population within the LPA increased from 540,840 in 1981 to 811,445 in 2011. The growth rate decreased from 18.47% (1991-2001) to 11.66% (2001-2011), with a decline of -1.76% in the growth rate from 2001 to 2011. Overall, while the population of the Dindigul LPA continued to increase over the decades, the growth rates experienced a decline from 2001 to 2011 across various areas within the LPA.



Map 5-1 Map showing Population Distribution in Dindigul CLP

5.1.3 Population Distribution

The term "population distribution" describes how people are dispersed over a specific nation, region, or area. It is influenced by various factors including geography, climate, resources, economic opportunities, social and cultural factors, and government policies. There are one Class I town, four Class IV towns, and one Class V town in Dindigul LPA. In addition, Dindigul CLPA includes 94 Village Panchayats, 5 of which belong to Census towns. Dindigul CLPA has an overall population of 8.11 lakhs as per the 2011 census, with 404,175 males and about 406,020 females, accounting for a gender ratio of 99.5%. The population distribution in urban and rural areas is presented in the Table 5-3 and mapped below.

Table 5-3 Male and Female Population

S.No.	Dindigul Planning Area	Total Population 2011	Total Male Population	Total Female Population
1	Dindigul (M.Corp)	207327	103027	104300
2	Town Panchayats	73083	36372	36711
3	Village Panchayats	531035	264776	265009
4	Dindigul CLPA	811445	404175	406020

Source : Census of India

Population distribution is moves towards the majority of the population resides in the village panchayats, with a total population of 531,035, followed by the population in Dindigul Municipal Corporation (207,327) and town panchayats (73,083). The combined local planning area (CLPA) has the highest overall population of 811,445. Urban-Rural Divide: The population distribution across Dindigul's administrative divisions reflects a typical urban-rural divide, with the urban area (Dindigul Municipal Corporation) having the smallest population compared to the village and town panchayats. This indicates a higher concentration of people in rural areas within the planning area.

5.2 Population Density

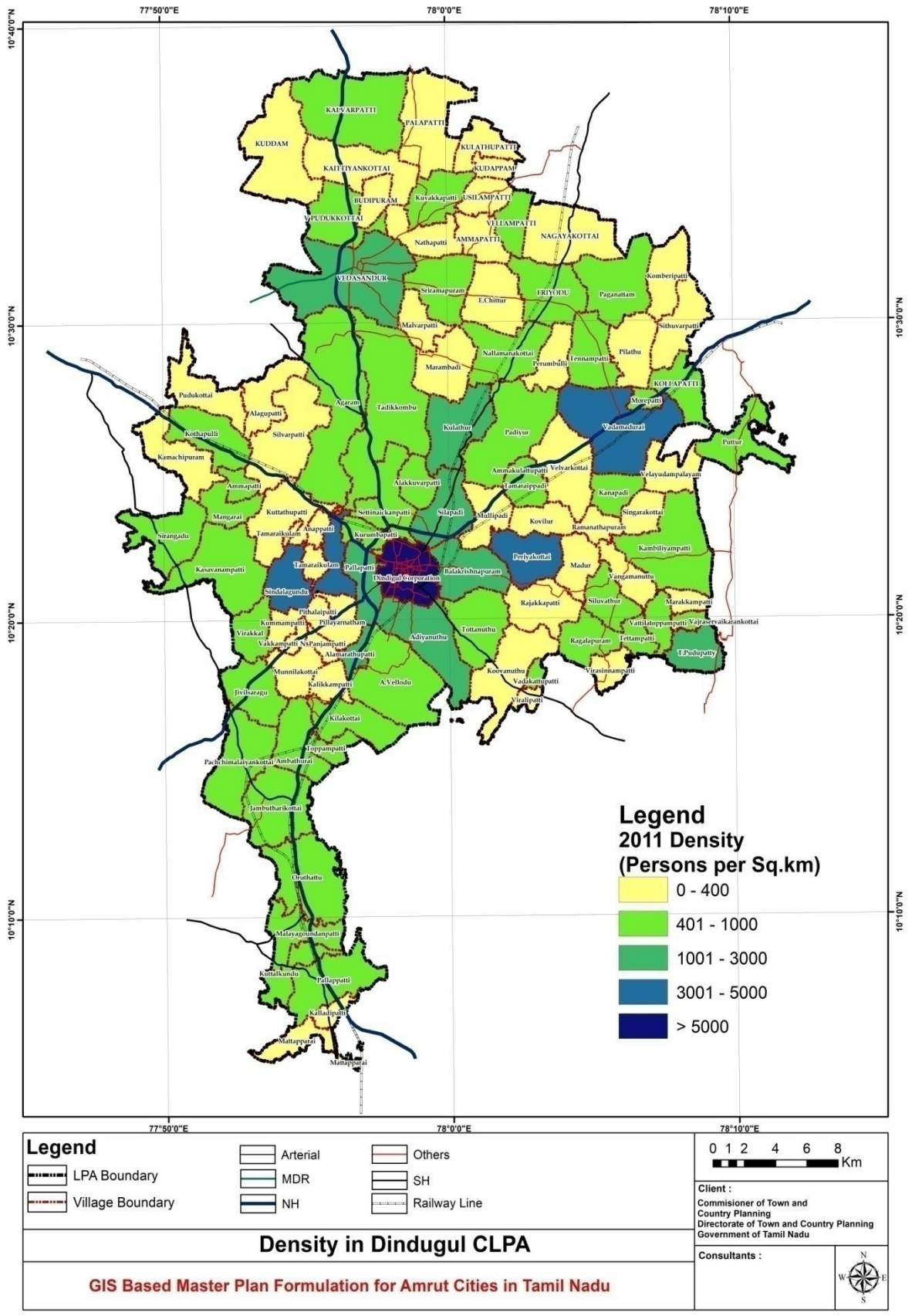
Population density is a measure of the number of people per unit area, usually expressed as persons per square kilometres. It is calculated by dividing the total population of an area by its land area. Population density can vary widely between different regions and town is influenced by factors such as geography, economic development, and settlement patterns. Dindigul Town has population density of 14058 persons per Sq.km in

2001.Population density in Dindigul Town has been increasing with the raise in its population. As per 2011 census, it is having a density of 14799 persons per sq. km. Town Panchayats in LPA has population density of 795 persons per Sq.km in 2001 and it increases to 921 persons per Sq.km in 2011. Village Panchayats in LPA has population density of 404 persons per Sq.km in 2001 and it increases to 460 persons per Sq.km in 2011. Density of Dindigul LPA is 583 persons per Sq.km in 2001 and it increases to 651 persons per Sq.km in 2011. Population density is given in the Table 5-4 below.

Table 5-4 Population Density of LPA

S. No	Description	Area in Sq.km	2001		2011	
			Population	Density	Population	Density
1	Dindigul Town	14.01	196955	14058	207327	14799
2	Town Panchayats in LPA	79.39	63102	795	73083	921
3	Villages in LPA	1153.98	466646	404	531035	460
Total LPA		1247.38	726703	583	811445	651

Source : Census of India



Map 5-2 Map Showing the Population Density in Dindigul CLPA

5.3 Birth Rate and Death Rate

Birth Rate is the term used to define the number of babies born every year per 1000 people in a population. Death Rate is the term used to define the number of deaths every year per 1000 people in a population. Natural increase in a population occurs where Birth rate is greater than death rate.

Sl. No.	District	2020 (Provisional)				
		Mid Year Esti-mated Popula-tion	Births	Deaths	Birth Rate	Death Rate
1	2	3	4	5	6	7
1.	Chennai	8472503	95716	73243	11.3	8.6
2.	Kancheepuram	3209499	40362	31233	12.6	9.7
3.	Thiruvallur	2330597	18790	17858	8.1	7.7
4.	Cuddalore	2657722	30264	20722	11.4	7.8
5.	Villupuram	3207007	38636	28227	12.0	8.8
6.	Vellore	4003068	61778	34831	15.4	8.7
7.	Tiruvannamalai	2398745	25535	21026	10.6	8.8
8.	Salem	3750157	49173	33337	13.1	8.9
9.	Namakkal	1797796	17273	15145	9.6	8.4
10.	Dharmapuri	1452408	26863	11957	18.5	8.2
11.	Krishnagiri	1846495	25181	14391	13.6	7.8
12.	Erode	2428717	28345	23336	11.7	9.6
13.	Coimbatore	4012535	45588	39959	11.4	10.0
14.	Tiruppur	2756703	23140	20867	8.4	7.6
15.	The Nilgiris	812518	6097	5219	7.5	6.4
16.	Tiruchirappalli	2915416	42298	29442	14.5	10.1
17.	Karur	1110182	12592	10410	11.3	9.4
18.	Perambalur	544565	8051	5687	14.8	10.4
19.	Ariyalur	711846	9146	7078	12.8	9.9
20.	Pudukkottai	1572034	18162	14520	11.6	9.2
21.	Thanjavur	2465195	40311	24797	16.4	10.1
22.	Nagapattinam	1550938	16308	12760	10.5	8.2
23.	Thiruvarur	1231681	13865	11761	11.3	9.5
24.	Madurai	3372671	45737	35936	13.6	10.7
25.	Theni	1353830	16640	12776	12.3	9.4
26.	Dindigul	2227739	25693	19948	11.5	9.0
27.	Ramanathapuram	1363862	16979	11423	12.4	8.4
28.	Virudhunagar	2088680	26752	19666	12.8	9.4
29.	Sivagangai	1351592	18871	13159	14.0	9.7
30.	Tirunelveli	3078645	43546	32441	14.1	10.5
31.	Thoothukkudi	1879911	22629	16341	12.0	8.7
32.	Kanniyakumari	2211741	23698	17716	10.7	8.0
	STATE	76167000	934019	687212	12.3	9.0

Source: Director of Public Health and Preventive Medicine (Civil Registration System), Chennai-6

Figure 5-3 Birth rate and Death rate

While comparing the birth rate and death rate, Dindigul's death rate is in line with the states death rate of 9.0, while the birth rate is lower compared to the state's birth rate.

5.4 Population age pyramid

A population pyramid is a way to visualize two variables: age and sex. They are used by demographers, who study populations. A population pyramid is a graph that shows the distribution of ages across a population divided down the centre between male and female members of the population. The shape of the population pyramid reflects the

characteristics of the population. The left side shows the percentage of males while the right side shows the percentage of women in each age group.

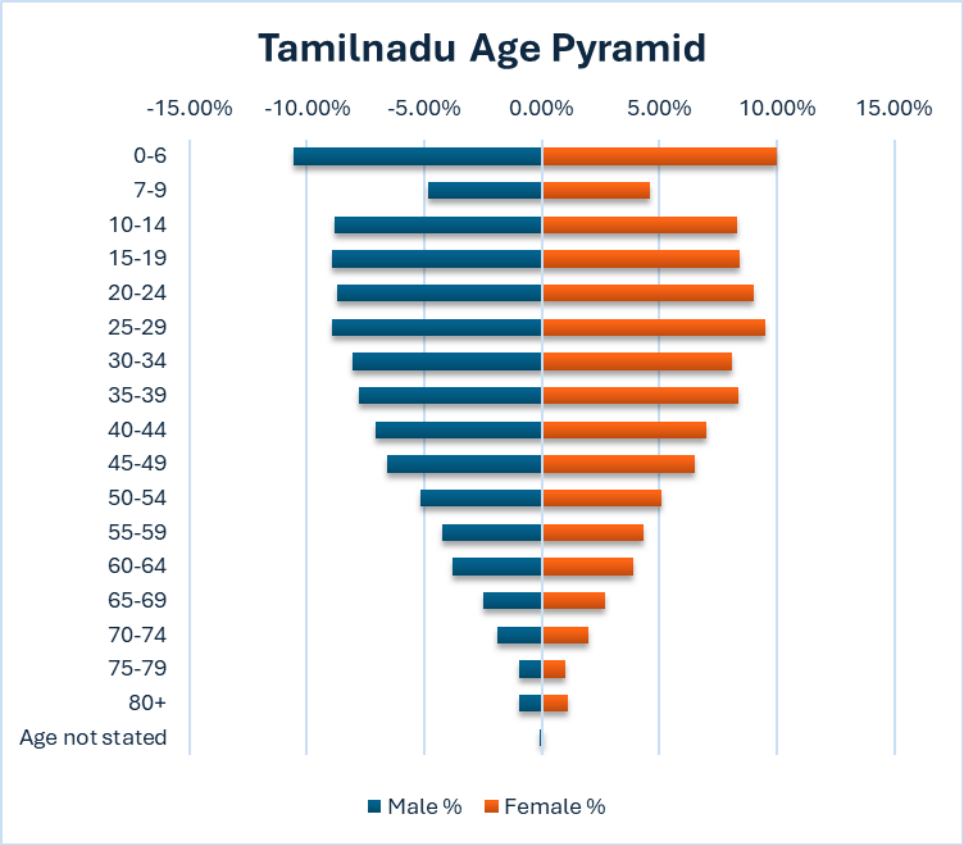


Figure 5-4 Tamil Nadu Age Pyramid

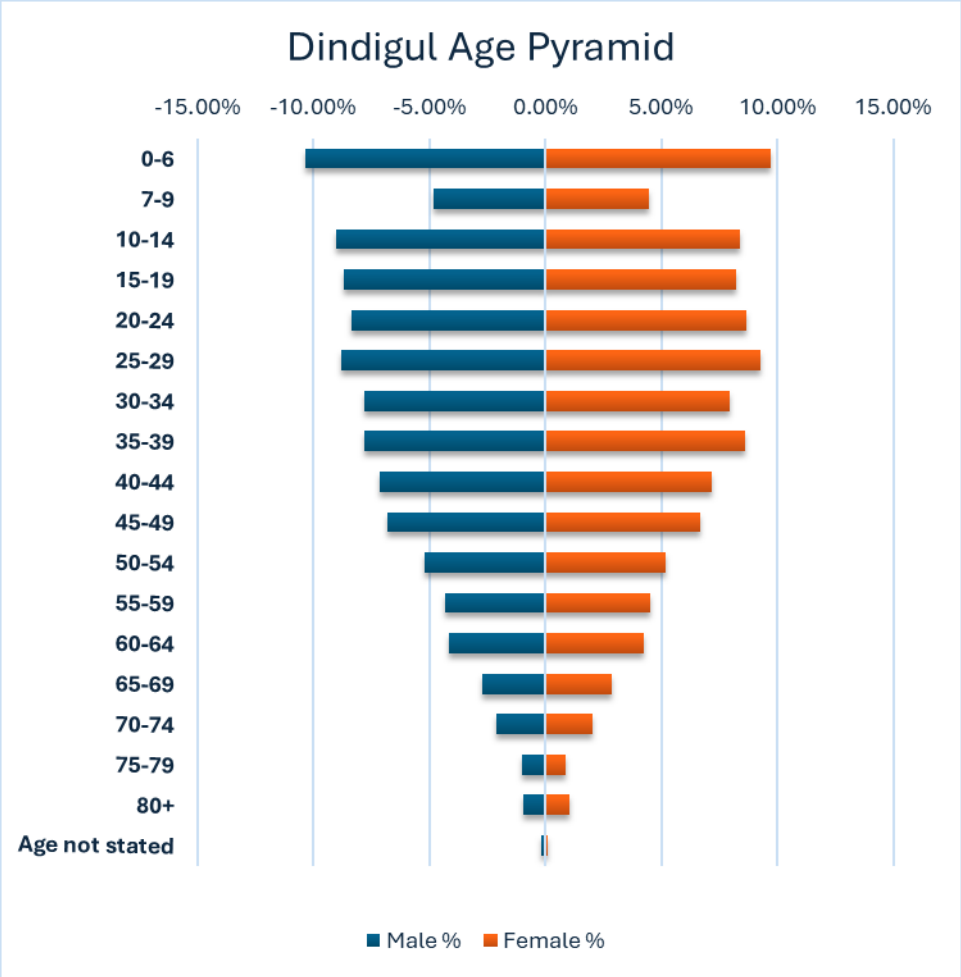
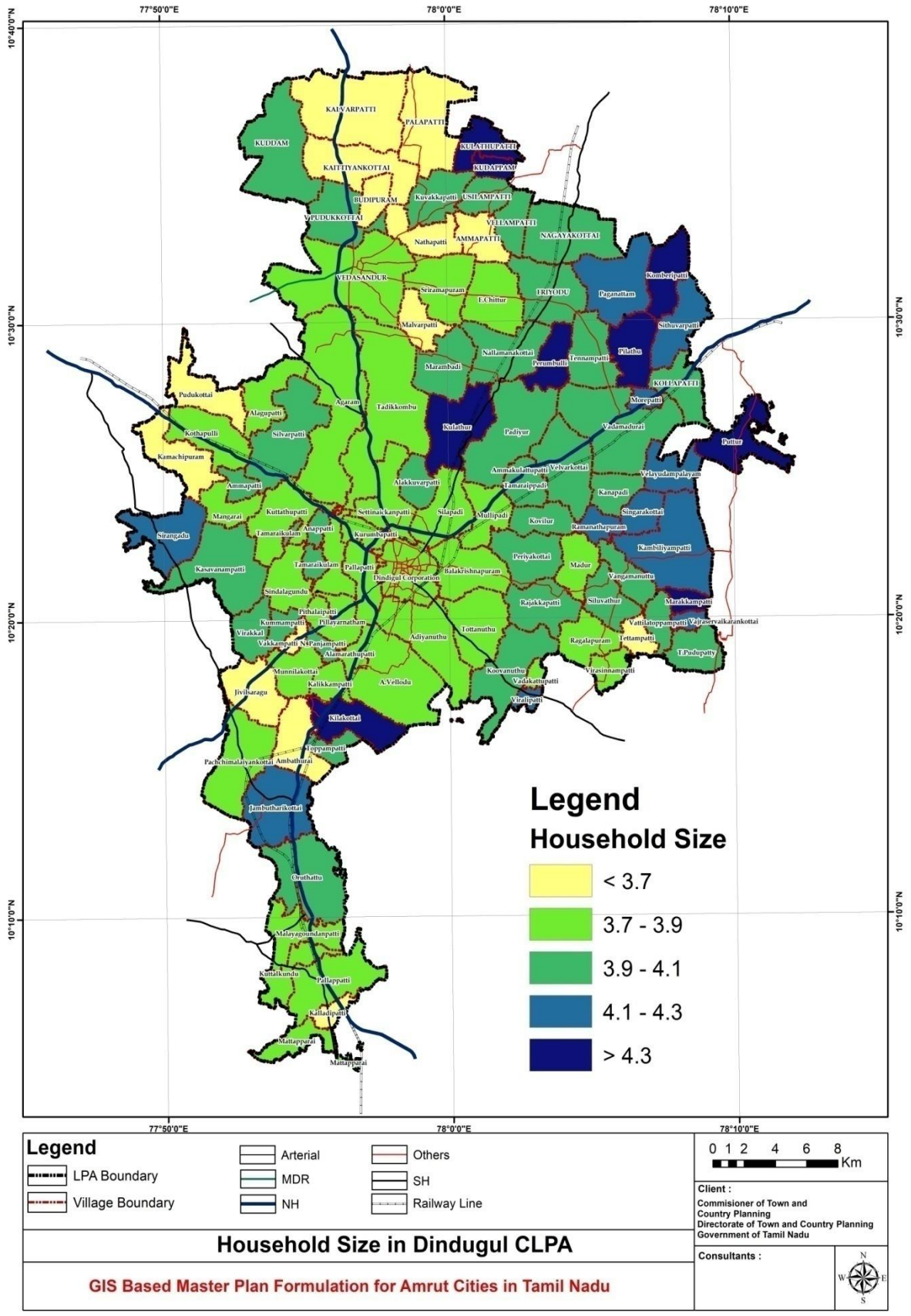


Figure 5-5 Dindigul Age pyramid

5.5 Household size

A household is defined as 'a group of persons who commonly live together and would take their meals from a common kitchen unless the exigencies of work prevented any of them from doing so '(*Source: Census 2011).*

Persons in a household may be related or unrelated or a mix of both. However, if a group of unrelated persons live in a census house but do not take their meals from the common kitchen, then they are not constituent of a common household. Each such person should be treated as a separate household. The important link in finding out whether it is a household or not, is a common kitchen. There may be one member households, two member households or multi-member households. Household size is calculated by dividing the number of households by the total population.



Map 5-3 Map Showing Household Size in Dindigul CLPA

Table 5-5 Household Size

S. No	Description	Households	Population	Household size
1	Tamilnadu	18524982	72147030	3.9
2	Dindigul District	560773	2159775	3.9
3	Dindigul Town	53573	207327	3.9
4	Town Panchayats in LPA	18535	73083	3.9
5	Villages in LPA	134143	531035	4.0
Total LPA		**206251**	**811445**	**3.9**

Source : Census of India

The table 5-5 clearly shows that Dindigul's average household size of 3.9 is below the national average household size of 4.4 as per census 2011 but equal to the state average household size of 3.9.

5.6 Literacy rate

As per Census, a person aged seven and above who can both read and write with understanding in any language, is treated as literate. A person, who can only read but cannot write, is not literate. *(Source: Census 2011)*

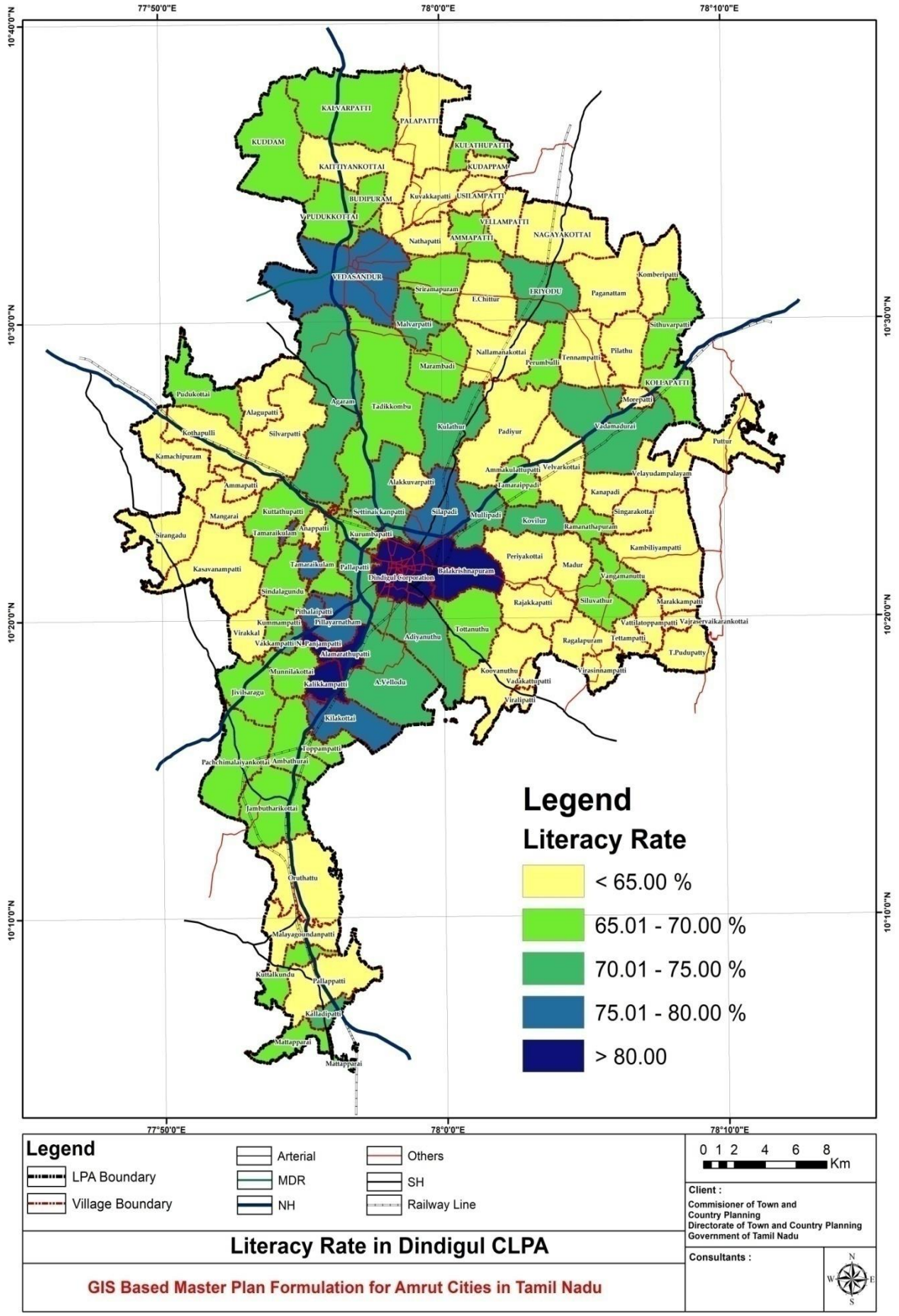
Literacy is one of the important social indicators for development. The following Table 5-6 illustrates literacy rate in Dindigul LPA in comparison with district and state.

Table 5-6 Literacy Rate

S. No	Area	Literacy Rate		
		Persons	Male	Female
1	Dindigul District Urban	75.68%	80.64%	70.77%
2	Dindigul District Rural	64.38%	72.46%	56.24%
3	Dindigul District	68.61%	75.51%	61.70%
4	Dindigul Town	72.24%	75.12%	69.39%
5	Town Panchayats in LPA	60.60%	66.72%	54.53%
6	Villages in LPA	56.92%	64.01%	50.11%
Total Dindigul LPA		**61.16%**	**67.08%**	**55.46%**

Source : Census of India

In 2011 Average literacy rate of Dindigul LPA is 61.16 percent of which male and female literacy was 67.08 and 55.46 percent respectively. It is less than that of average Literacy rate in Tamil Nadu. However, Literacy rate in urban areas is higher than rural areas.



Map 5-4 Map Showing the Literacy Rate in Dindigul CLPA

5.7 Sex ratio

Sex ratio has been defined as the number of females per 1000 males in the population; it is expressed as 'number of females per 1000 males' *(Source: Census 2011).* Dindigul LPA is having a sex ratio of 1005 and is higher than the state average of 996. The following Table 5-7 Sex Ratioconsists of Sex Ratio and Child Sex Ratio at State, District and LPA levels.

Table 5-7 Sex Ratio

S. No	Name	Sex Ratio	Child Sex Ratio
1	Dindigul District Urban	1008	948
2	Dindigul District Rural	992	926
3	Dindigul District	998	935
4	Dindigul Town	1012	936
5	Town Panchayats in LPA	1009	943
6	Villages in LPA	1001	932
Total Dindigul LPA		**1005**	**934**

Source : Census of India

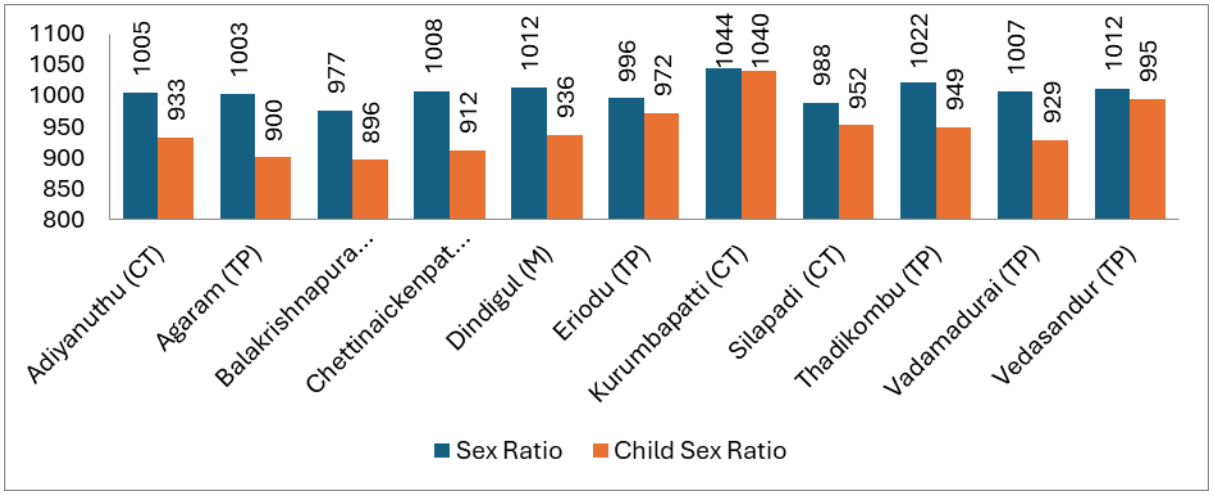


Figure 5-6 Sex Ratio

5.8 Urbanisation and Growth trends of the planning area

5.8.1 Urbanisation Trend

In Dindigul LPA, there is 1 municipal corporation with an area of 14.01 sq.km and 5 town panchayats namely Agaram, Eriodu, Thadikombu, Vadamadurai, and Vedasandur, with a combined area of 79.39 sq.km as of the census of 2011. Up until 1971, Dindigul was the only urban local body in the planning area. Dindigul gained the status of a municipality on 11th November 1899 and in the year 1988, the town was given the status of a special-grade

municipality. From 1988, the entire municipal area of Dindigul was controlled by the Dindigul municipality. The municipality will soon be upgraded to a municipal corporation in 2014.

In 1981 Vedasandur became an urban local body due to its urbanisation. Agaram, Eriodu, Thadikombu and Vadamadurai became town panchayat in 2001. In the LPA, Dindigul is in core centre of the LPA. Other ULBs are in the close surrounding area. Only Vadamadurai and Vedasandur are in the northern part of the LPA and there is no ULBs in the southern part of the LPA. This may be due to the presence of Sirumalai Reserve Forest and hilly terrain in the southern part of the LPA.Dindigul ULB's is mentioned in Table 5-8.

Table 5-8 ULBs in Dindigul LPA

S. No	ULBs in the LPA		
	Upto 1971	1981 - 1991	2001 – till now
1	Dindigul	Dindigul	Dindigul
2	-	Vedasandur	Vedasandur
3	-	-	Agaram
4	-	-	Thadikombu
5	-	-	Vadamadurai

Source : Census of India

5.8.2 Spatial Growth Trend

Spatial growth refers to the expansion and development of geographical areas over time. It encompasses the physical, economic, and social changes that occur within a region, city, or community. Spatial growth can occur in various forms, such as urbanization, suburbanization, and the development of rural areas.

Urban expansion in Dindigul follows a ribbon development pattern, characterized by continuous settlements along transportation corridors like roads and highways. Growth radiates outward from the Dindigul Fort area towards NH 44 in the north and Vedasandur and Chinnalapatti in the south. Ribbon development offers convenient access to transportation and can stimulate economic development.

The Ribbon development pattern involves buildings, houses, and commercial establishments being constructed in a continuous line along linear transportation routes such as roads, railways, or rivers. Ribbon development can offer convenient access to transportation routes, benefiting residents and businesses. Additionally, it has the potential to foster a sense of community and stimulate economic development along the route.

The suburban areas of Dindigul extend along highways like NH 44 towards Karur district, NH 83 towards Trichy district, and NH 383 towards Karaikudi district. These peripheral areas contribute to the city's expansion. Dindigul's transportation infrastructure is well-connected, with highways facilitating access to neighboring districts. NH 44 leads towards Madurai and Karur, NH 83 towards Trichy, and NH 383 towards Karaikudi. The city's terrain, with an average elevation of 265 meters and located in the foothills of the Sirumalai hills, influences its climate. The mix of plains and hills creates variations in temperature, precipitation, and wind patterns, contributing to the region's diverse climate,

These environmental conditions also affect agriculture, biodiversity, and residents' quality of life. The elevation and hilly terrain of Dindigul have significant effects on its climate, influencing factors such as temperature, precipitation, and wind patterns. These variations create a diverse climate across the region, enhancing its natural beauty. Moreover, the climate's impact extends to agriculture, biodiversity, and the overall quality of life for residents.

Here are some key aspects of spatial growth.

- **Urban Growth**

Urban spatial growth involves the expansion of cities and towns. It includes the development of residential, commercial, and industrial areas, as well as the establishment of infrastructure such as roads, public transportation, and utilities. Urban growth is often driven by factors such as population increase, economic opportunities, and migration from rural to urban areas.

- **Suburbanization**

Suburban spatial growth occurs as cities expand outward, leading to the development of suburban areas surrounding the urban core. This process is often influenced by factors such as the availability of land, housing affordability, and preferences for suburban living.

- **Rural Development**

Spatial growth is not limited to urban areas; it can also involve the development and expansion of rural regions. Rural development may include improvements in agricultural practices, the establishment of small towns or villages, and the creation of rural infrastructure to support economic activities.

- **Industrial and Economic Zones**

Spatial growth can be driven by the establishment of industrial zones, special economic zones, or technology parks. These areas are designated for specific economic activities, attracting businesses, and promoting economic development in the region.

- **Infrastructure and Transportation**

The development of transportation networks, such as highways, railways, and airports, plays a crucial role in spatial growth. Improved infrastructure can open previously remote areas for development and economic activities.

- **Environmental Considerations**

Spatial growth should also consider environmental sustainability. Smart growth and sustainable development practices aim to minimize negative environmental impacts and preserve natural resources.

- **Government Policies**

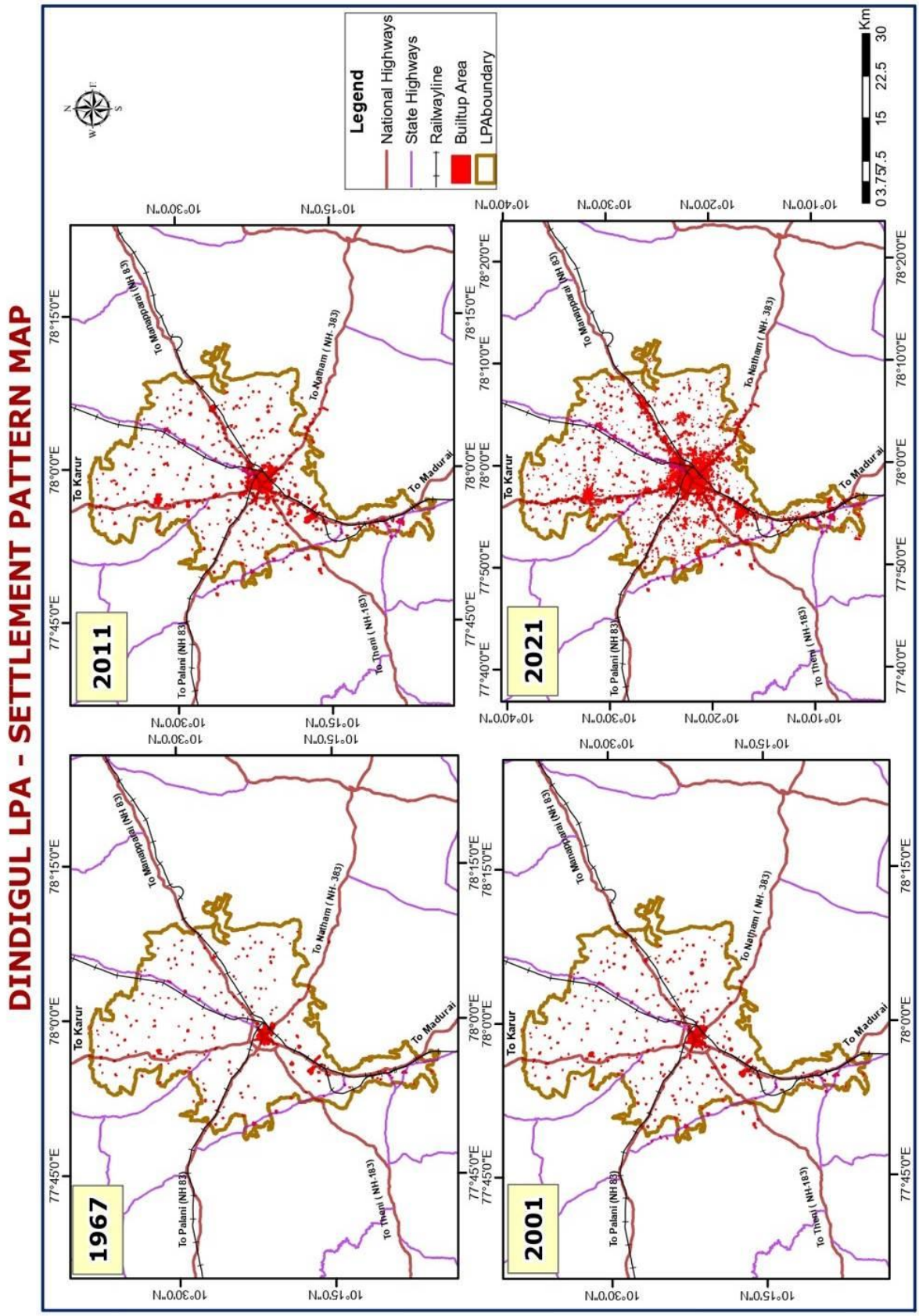
Spatial growth is often influenced by government policies, zoning regulations, and urban planning strategies. These policies shape the direction and intensity of development within a region.

- **Land Use Planning**

Efficient land use planning is essential for managing spatial growth effectively. Balancing residential, commercial, industrial, and recreational spaces can lead to more livable and economically vibrant communities.

- **Population Distribution**

The distribution of population across a region influences spatial growth patterns. The concentration or dispersion of people can impact the demand for services and infrastructure in specific areas. Analyzing spatial growth trends can help to make decisions about resource allocation, infrastructure development, and sustainable urbanization. Dindigul has experienced urbanization as rural populations have moved to the city in search of better opportunities. This has led to the growth of residential areas, commercial zones, and industrial estates. Spatial growth trend is started from the center of the Local Planning Area and spread out in radially according to the road pattern and some of the settlements formed along the settlements more so in the northern part of the Local planning area due to the terrain.



Map 5-5 Settlement Formation in Dindigul LPA

5.9 Observations

- **Population Growth**

Dindigul has seen a consistent increase in its population over the years. This growth can be attributed to several factors, including the city's strategic location, economic opportunities, and educational facilities. The city's location along major transportation routes and its proximity to other urban centers make it an attractive destination for migrants from rural areas and nearby regions seeking better livelihood prospects.

- **Urbanization**

Dindigul, like many other cities in India, is experiencing rapid urbanization. This phenomenon involves the movement of people from rural areas to urban centers in search of employment, education, and improved living standards. As a result, there has been a noticeable shift in the population from rural to urban areas within Dindigul, leading to the expansion and development of urban infrastructure and services.

- **Economic Activities**

The economy of Dindigul is primarily based on agriculture, with the cultivation of crops such as millets, cotton, and horticultural products being significant contributors to the local economy. Additionally, the city boasts a thriving small-scale industrial sector, including textile manufacturing, leather goods production, and food processing industries. These economic activities play a crucial role in providing employment opportunities and driving the city's growth and development.

- **Education and Literacy**

Dindigul has made significant strides in improving its educational infrastructure and literacy rates. The presence of various schools, colleges, and vocational training centers has helped increase access to education and skill development programs. As a result, the literacy levels in Dindigul have been steadily rising, empowering the local workforce and enhancing the overall socio-economic fabric of the city.

- **Cultural Diversity**

Dindigul, like many other urban centers in India, is characterized by its cultural diversity. The city is home to people from various linguistic, religious, and cultural backgrounds, creating a rich tapestry of traditions, customs, and practices. This cultural diversity adds

vibrancy to the social fabric of Dindigul and fosters a spirit of tolerance and inclusivity among its residents.

- **Gender Ratio**

Monitoring the gender ratio in Dindigul is essential for ensuring gender balance and addressing any potential gender disparities within the population. A balanced gender ratio is indicative of a healthy and equitable society where both men and women have equal opportunities and access to resources and services.

- **Age Structure**

Understanding the age structure of Dindigul's population is crucial for planning and providing essential services such as healthcare, education, and social welfare. An analysis of the distribution of different age groups helps policymakers anticipate future demographic trends and tailor policies and programs to meet the needs of various age cohorts effectively.

- **Migration**

The movement of people in and out of Dindigul can significantly impact its demographic composition and socio-economic dynamics. Factors such as economic opportunities, infrastructure development, and quality of life influence migration patterns, with migrants contributing to the city's workforce, cultural diversity, and overall growth and development. Monitoring migration trends helps policymakers assess the city's attractiveness and identify areas for improvement to better accommodate the needs of both residents and newcomers.

6 Economic Activities

6.1 Economic Scenario

6.1.1 Economy of LPA

According to Indian Census of 2001, Dindigul town's urban workforce participation rate is 35.24 percent. Dindigul, being the headquarters of the district, has registered growth in the secondary and tertiary sectors, with a corresponding decrease in the primary Sector. Major employment in the Town is provided by industrial estates, hand loom, trading and commerce activities. Approximately 90 percent of the workforce is employed in the tertiary sector. The district at large has only two industrial estates, with one of them located in the Town. Oddanchatram is one of the important towns in Dindigul district. Oddanchatram Vegetable market (also known as Gandhi market) is the largest vegetable market in Tamil Nadu. As of 2001, there were approximately 60 tanneries, 165 lock manufacturing units and large number of cotton spinning mills.

6.1.2 Gross and Net Domestic product

In economics, both Gross Domestic Product (GDP) and Net Domestic Product (NDP) are important indicators used to measure the economic performance of a country or region. Here's an explanation of both concepts:

- **Gross Domestic Product (GDP)**

GDP represents the total monetary value of all finished goods and services produced within a country's borders during a specific period, typically a year or a quarter. It measures the overall economic output or production of a country.

GDP is calculated by summing up the value added by each sector of the economy, including agriculture, manufacturing, services, and government spending, while excluding the value of intermediate goods to avoid double counting. It can be calculated using three main approaches: the production approach, the income approach, and the expenditure approach. Regardless of the method used, the final GDP figure should be the same. GDP is widely used as a key indicator of a country's economic health and performance. It helps policymakers, economists, investors, and businesses analyze trends, make comparisons between countries, and formulate economic policies.

❖ **Net Domestic Product (NDP)**

NDP is a measure of the total economic output of a country after accounting for depreciation or the wear and tear on its capital goods during the production process. It represents the net value of goods and services produced within a country's borders.

Unlike GDP, which measures the total production output irrespective of capital depreciation, NDP adjusts GDP by subtracting the depreciation of capital goods. This adjustment provides a more accurate picture of the economic output available for consumption and investment. NDP is calculated by subtracting the depreciation or the consumption of fixed capital (CFC) from GDP. CFC represents the amount of capital that is worn out, consumed, or used up in the production process during a specific period.

NDP provides a clearer indication of the sustainability of economic growth over time. higher NDP compared to GDP suggests that the country is able to maintain or increase its productive capacity, while a lower NDP indicates a decline in the value of the country's capital stock. Like GDP, NDP is used by policymakers, economists, and analysts to assess the overall economic performance of a country, make comparisons, and formulate economic policies that promote sustainable growth and development.

6.1.2.1 Primary Sector

In Dindigul district, the primary sector emerges as the primary contributor to the Gross Domestic Product (GDP). This dominance can be attributed to the district's rich agricultural landscape, characterized by fertile lands and favourable climatic conditions, facilitating diverse crop cultivation including millets, cotton, pulses, spices, and horticultural products. Livestock farming, particularly dairy and poultry, further bolsters the agricultural output. Additionally, forestry resources support timber production and wood processing industries, while fishing activities in water bodies contribute to the economic output. Although mining and quarrying activities exist, they may not be as pronounced as agriculture. Overall, the district's reliance on agriculture and allied sectors underscores the importance of the primary sector in driving economic growth and sustaining livelihood.

Table 6-1 Primary Sector GDP

S.No	Sector	At Current Price (Rs. in Lakhs)							
		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	Agriculture	333593	325464	313115	438208	421377	319959	395554	435942
2	Livestock	70590	80400	82180	114048	90972	123569	121015	130707
3	Forestry & Logging	12638	12369	14405	13615	15335	24889	20893	23027
4	Fishing	1042	1746	1756	2385	3517	338	3353	762
5	Agriculture & Allied Activities (3+4+5+6)	417864	419980	411457	568256	531200	468754	540815	590427
6	Mining & Quarrying	5645	4516	4542	6203	6525	8920	7510	9842
7	Primary (5+6)	423509	424496	415998	574460	537725	477674	548325	600279

Source: Economic and statistics department

The agriculture sector in Dindigul district experienced fluctuations in its value over the observed period. Despite some variability, the sector demonstrated overall growth. It reached its peak value of 438,208 Lakhs in 2014-15, indicating a period of robust agricultural production. However, it experienced a slight dip in the following year, recording 313,115 Lakhs in 2013-14. Nevertheless, the sector rebounded and continued its upward trajectory, reaching 435,942 Lakhs in 2018-19. These fluctuations could be attributed to factors such as weather patterns, market demand, and government policies affecting agricultural productivity and profitability in the region.

The livestock sector also witnessed fluctuations in its value but exhibited consistent growth trends overall. Its value reached its highest at 130,707 Lakhs in 2018-19, indicating a steady increase in livestock production and related activities in Dindigul district. This growth could be attributed to factors such as increasing demand for meat, dairy products, and other livestock-related goods, as well as initiatives aimed at improving livestock farming practices and productivity.

The forestry and logging sector demonstrated relatively steady growth throughout the observed period. There was a continuous increase in the sector's value from 12,638 Lakhs in 2011-12 to 23,027 Lakhs in 2018-19. This growth could be attributed to sustainable forestry practices, increased demand for timber and wood products, and the development of forest-based industries in the region. Additionally, efforts to conserve and manage forest resources may have contributed to the sector's positive performance

The fishing sector in Dindigul district experienced fluctuations in its value, with peaks and troughs observed over the years. The sector reached its highest value at 3,353 Lakhs in 2017-18, indicating a period of significant growth compared to its value of 1,042 Lakhs in 2011-12. These fluctuations could be influenced by factors such as changes in fish stocks, fishing regulations, market demand, and environmental conditions affecting fishing activities in the region.

This category encompasses agriculture, livestock, forestry, logging, and fishing. The combined value of agriculture and allied activities demonstrated overall growth over the observed period, reaching 590,427 Lakhs in 2018-19. This growth reflects the collective contribution of various sectors to the agricultural and rural economy of Dindigul district, highlighting the importance of diversification and integration of allied activities to enhance overall economic development.

The mining and quarrying sector in Dindigul district showed fluctuating trends in its value over the observed period. Despite fluctuations, the sector reached its peak value of 9,842 Lakhs in 2018-19. Factors such as changes in mineral prices, mining regulations, and demand for minerals may have influenced the sector's performance during this period.

The primary sector, comprising agriculture and allied activities along with mining and quarrying, demonstrated overall growth during the observed years. The combined value of these sectors reached 600,279 Lakhs in 2018-19, highlighting the significant contribution of primary sector activities to the economic output and development of Dindigul district. This growth underscores the importance of primary sector industries in driving economic growth, employment generation, and rural livelihoods in the region.

6.1.2.2 Secondary Sector

The secondary sector in Dindigul district primarily focuses on manufacturing, construction, and electricity, gas, and other utility services. The manufacturing sector in the district has experienced significant growth over the observed period, with its GDP increasing

from 20 lakh Rs in 2011 to 83 lakh Rs in 2019. This substantial increase reflects the expansion and development of manufacturing industries in the region, driven by factors such as industrialization, technological advancements, and market. On the other hand, there has been a decrease in the GDP of utility services in recent years, particularly from 2017-18 to 2018-19. This decline could be attributed to various factors such as changes in energy consumption patterns, regulatory measures, or fluctuations in demand for utility services in the district

Furthermore, the construction sector in Dindigul district has witnessed remarkable growth, doubling its GDP since 2011-12 to 2018-19. This growth may be attributed to increased infrastructure development, urbanization, and construction activities driven by government projects, private investments, and real estate development in the region. Overall, the GDP from the secondary sector in Dindigul district has shown positive growth trends from 2011-12 to 2018-19, fuelled by the expansion of manufacturing and construction activities. While the manufacturing sector has emerged as a significant contributor to the secondary sector's GDP, the construction sector has also played a pivotal role in driving economic growth and development in the district. However, the recent decrease in utility services GDP highlights the need for further analysis and measures to address any underlying issues affecting this sector's performance. Table 6-2 Secondary Sector GDP.

Table 6-2 Secondary Sector GDP

S. No	Sector	At Current Price (Rs. in Lakhs)							
		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	Manufacturing	204740	278921	324899	355602	468427	573753	703858	831186
2	Electricity, Gas, Water Supply &Other Utility Service	14546	22475	22528	28269	35132	40340	45176	38429
3	Construction	275992	303795	337076	349875	363174	388355	421523	468724
4	Secondary (8+9+10)	495278	605191	684503	733746	866734	1002448	1170557	1338339

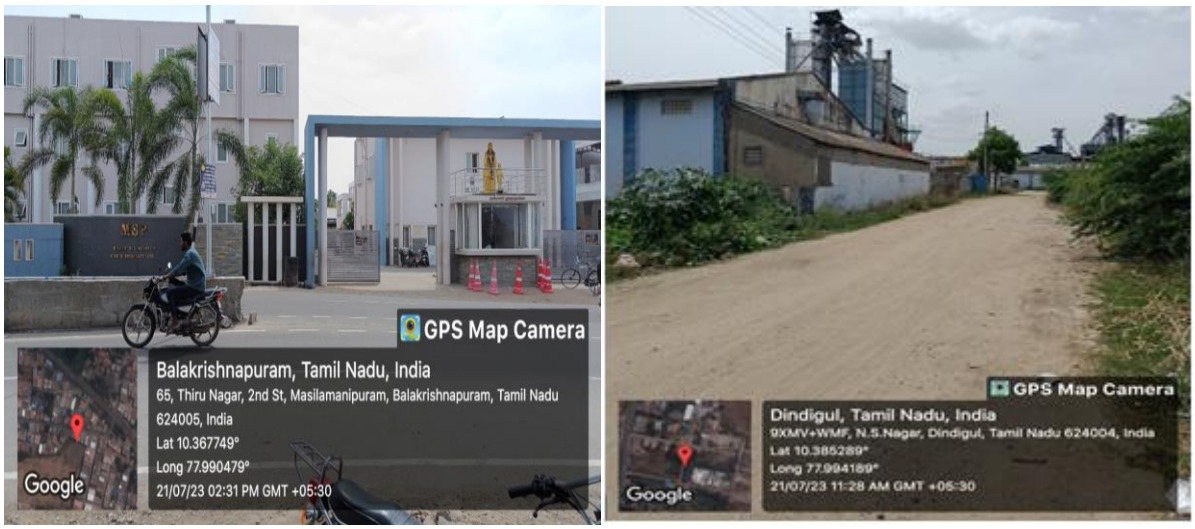


Figure 6-1 Industrial area - Balakrishnapuram

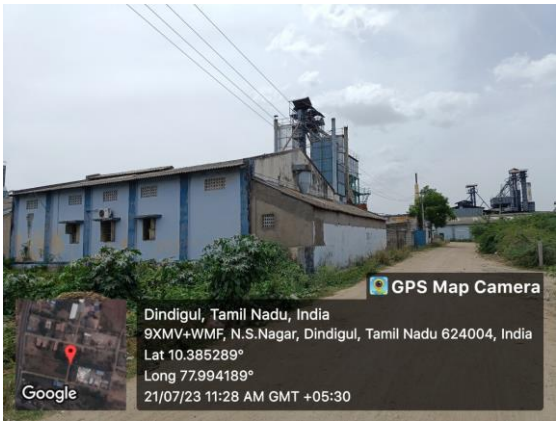


Figure 6-2 Industrial area – N.S Nagar, Dindigul

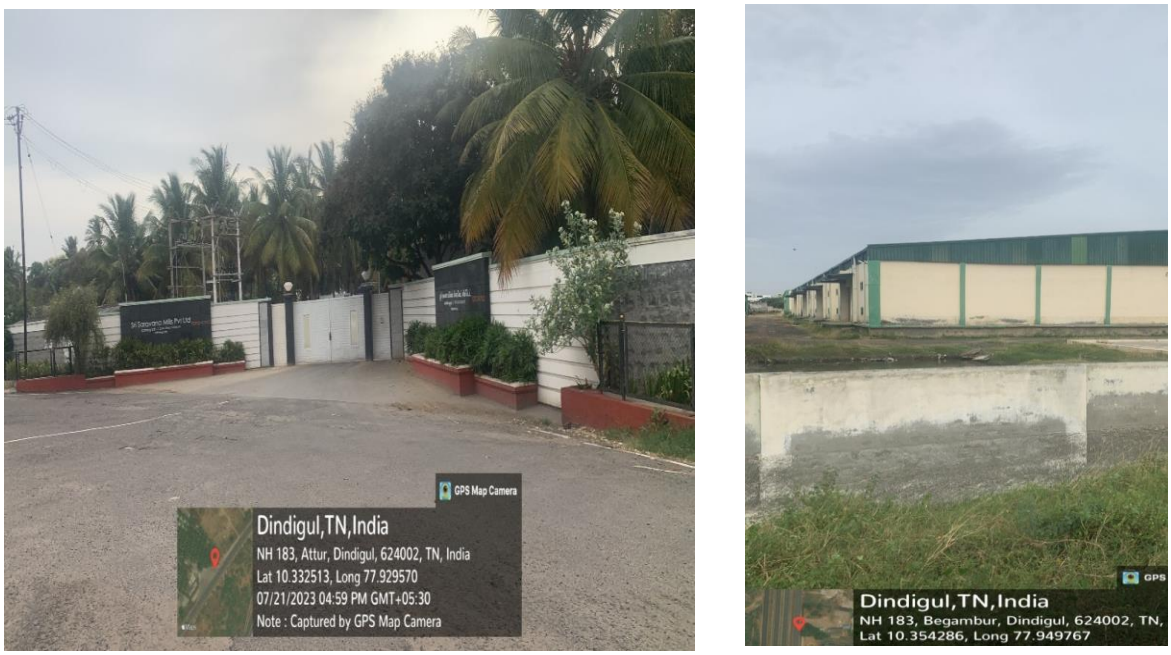


Figure 6-3 Saw Mill - Bagambur

Figure 6-4 Industrial area - Chennamanayakkampatti

The secondary sector, comprising manufacturing, electricity, gas, water supply, other utility services, and construction, exhibited consistent expansion, culminating in a value of 1,338,339 Lakhs by 2018-19. This growth signifies the robust development and diversification within secondary industries in Dindigul district. The manufacturing sector, in particular, experienced substantial advancement, showcasing the district's evolving industrial landscape and its ability to meet growing demands. Additionally, the construction sector played a pivotal role in bolstering the secondary sector's performance, reflecting investments in infrastructure and urban development initiatives. Despite challenges such as fluctuations in utility services, the overall upward trajectory of the secondary sector underscores its crucial role in driving economic progress and fostering employment opportunities within the district. Continued efforts to enhance efficiency, innovation, and sustainability within secondary industries are vital to sustaining this growth momentum in the future.

6.1.2.3 Tertiary Sector

The tertiary sector in Dindigul comprises various sub-sectors, including Industry, Trade, Repair Service, Hotels & Restaurants, Railways, Transport by other means, Storage, Communication & Service related to Broadcasting, Financial Service, Real Estate, Ownership of Dwelling and Business Service, Public Administration, Other Service, and Services (Sum: 13 to 21). The Table 6-3 below shows the contribution of these sectors towards GDP.

Table 6-3 Tertiary Sector GDP

S. No	Sectors	At Current Price (Rs in Lakhs)							
		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	Industry (6+11)	500923	609707	689044	739950	873259	1011368	1178067	1348181
2	Trade, Repair Service, Hotels & Restaurants	193669	230600	262841	279562	278727	301566	333199	368433
3	Railways	2598	2848	2878	3163	3210	3252	3338	3282
4	Transport by Others means	95901	105741	110731	112390	114790	117334	126985	142753
5	Storage	1174	1263	1493	1655	1727	1817	1795	1914
6	Communication & Service related to Broadcasting	32977	37157	45683	52177	59966	60633	62656	69647
7	Financial Service	42673	48487	52780	60932	66808	75025	88670	97283
8	Real Estate, Ownership of Dwelling and Business Service	197014	229200	265222	201316	323090	349578	377792	412603
9	Public Administration	73682	72783	84087	106268	91545	94699	105480	120629
10	Other Service	109075	120823	137444	158920	175591	199013	222450	262648
11	Services (Sum:13 to 21)	748764	848901	963158	1076384	1115453	1202917	1322364	1480192

Source: Economic and statistics department

The table (6-3) provides valuable insights into the economic landscape of Dindigul District by showcasing the contribution of various sectors to the Gross District Domestic Product (GDDP) from 2011-12 to 2018-19.

Strongest Growth Sectors:

- The industry sector exhibited the most significant growth, with its contribution to

GDDP more than doubling from 500,923 Lakhs in 2011-2012 to 1,348,181 Lakhs in 2018-2019.

- This indicates a thriving industrial base in Dindigul.

Consistent Growth Sectors: Trade, Repair Services, Hotels and Restaurants: This sector experienced steady growth, reflecting the importance of commerce and hospitality in the district's economy. Its contribution rose from 193,669 Lakhs in 2011-12 to 368,433 Lakhs in 2018-19.

- Transport by Others Means: This sector, encompassing various transportation modes beyond railways, witnessed continuous growth, with its contribution increasing from 95,901 Lakhs in 2011-12 to 142,753 Lakhs in 2018-19.
- Storage: The value of storage services also showed a consistent upward trend, reaching 1,914 Lakhs in 2018-19 from 1,174 Lakhs in 2011-12.
- Communication & Service related to Broadcasting: This sector, including communication services and broadcasting activities, experienced notable growth, with its contribution rising from 32,977 Lakhs in 2011-12 to 69,647 Lakhs in 2018-19.
- Financial Service: The financial service sector demonstrated significant growth, with its contribution increasing from 42,673 Lakhs in 2011-12 to 97,283 Lakhs in 2018-19, highlighting the growing importance of financial activities in the district.
- Other Services: This sector, encompassing various services contributing to the district's economy, demonstrated steady growth, reaching a value of 262,648 Lakhs in 2018-19.

Sectors with Fluctuations:

- Railways: The value of railway services remained relatively stable with slight fluctuations between 2,598 Lakhs in 2011-12 and 3,338 Lakhs in 2018-19.
- Real Estate, Ownership of Dwelling and Business Service: The value of this sector varied over the years, reaching its peak at 412,603 Lakhs in 2018-19, indicating some fluctuations in real estate and business activities.
- Public Administration: The value of public administration services showed some fluctuations, with a notable increase from 73,682 Lakhs in 2011-12 to 120,629 Lakhs in 2018-19.

- Overall Services Sector: The cumulative value of services (sectors 13 to 21) demonstrated substantial growth, rising from 748,764 Lakhs in 2011-12 to 1,480,192 Lakhs in 2018-19. This highlights the significant contribution of the services sector to Dindigul's GDDP.

We can infer from the data that Dindigul District boasts a well-rounded economy with a robust industrial sector. The value of industrial output more than doubled between 2011 and 2018, showcasing significant growth. Commerce and hospitality also play a vital role, with the trade and service sector experiencing steady expansion. Furthermore, the district demonstrates a strong foundation in transportation and communication infrastructure. Sectors like storage, transportation beyond railways, and communication services have all witnessed consistent growth. This suggests an efficient flow of goods and information within Dindigul. The financial services sector has also seen a remarkable rise, highlighting the growing importance of financial activities in the district's economic landscape. Interestingly, the value of railway services remained relatively stable, while real estate and business services exhibited some fluctuations. Overall, the analysis suggests a positive outlook for Dindigul's economy. The substantial growth in the services sector, encompassing various areas like communication, finance, and other services, further strengthens this notion. With a diversified economic base and consistent growth across key sectors, Dindigul seems poised for continued economic prosperity.

Table 6-4 Gross Domestic Product

SI.NO	SECTORS	AT CURRENT PRICE (RS. IN LAKHS)						
		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	Gross District Value Added	1667551	1878588	2063659	2384590	2519912	2683039	3041246	3418810
2	Gross District DomesticProduct FDHG	1808226	2046282	2251353	2602548	2754216	2952385	3348709	3753129
3	Per Capita Income (in Rupees)	83561	94309	103509	119398	126113	135115	153328	171972

Source: Economic and statistics department

Source: Economic and statistics department

Gross District Value Added This indicator represents the total value added to the district's economy through all sectors. The Gross District Value Added increased from 1,667,551 Lakhs in 2011 to 3,418,810 Lakhs in 2018, indicating overall economic growth. Gross District Domestic Product this represents the total economic output of the district. The Gross District Domestic Product grew from 1,808,226 Lakhs in 2011 to 3,753,129 Lakhs in 2018, reflecting the district's expanding economy. Per Capita Income (in Rupees), This indicator shows the average income per person in the district. The per capita income increased from 83,561 Rupees in 2011 to 171,972 Rupees in 2018, signifying rising prosperity and economic well-being for the residents.

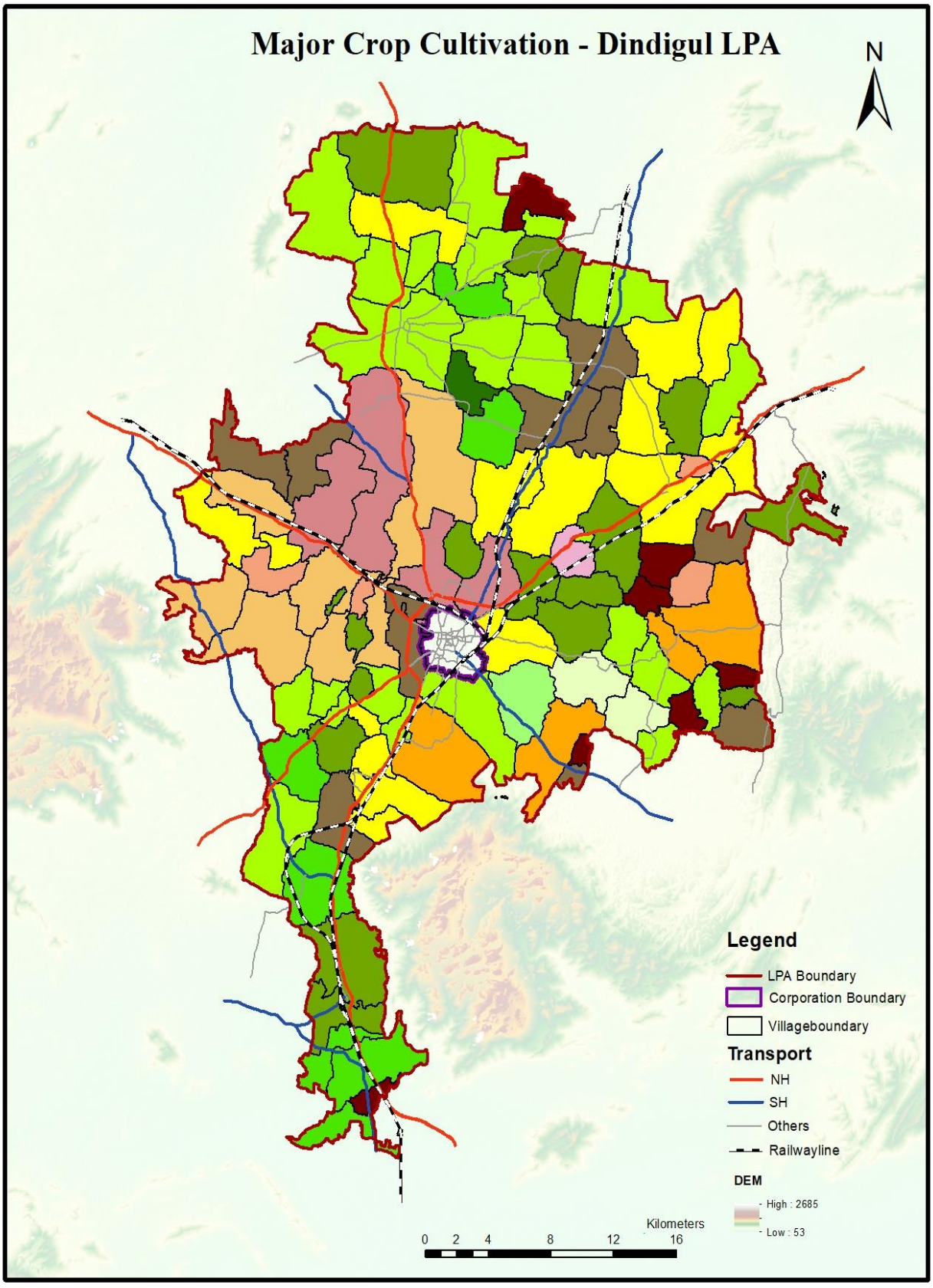
6.2 Major sectors of economy

6.2.1 Primary

The primary sector includes all those activities the end purpose of which consists in exploiting natural resources: agriculture, fishing, forestry, mining, deposits.

6.2.1.1 Agriculture

Dindigul city which is an important wholesale market for Onion and Groundnut. It has the network of inter-district roads connecting Coimbatore, Tirupur, Trichy, Karur, Madurai and Sivagangai District. Educationally, Dindigul is a well-developed and popular city. Oddanchatram is a noted market centre for vegetables. It is also famous for the export of Butter, manufactured in the nearby villages. Batlagundu is an important market Centre for Banana Leaves and Tomato. Pattiveeranpatti in Batlagundu block is famous for Cardamom and Coffee curing enterprise.



Map 6-1 showing the Major Crops in LPA

Table 6-5 Agricultural production

S. No	District	Dindigul		State	
	Crop	Area ('000Ha)	Produce ('000 T)	Area ('000Ha)	Produce ('000 T)
1	Cholam	48.53	36	405	427
2	Maize	28.96	191	400	2,565
3	Cotton	3.94	12	112	243
4	Sugarcane	1.62	153	128	13,284
5	Total Pulses	17.66	10	803	473
6	Paddy	9.53	36	2,036	6,882

Source: Economic and statistics department

The increased cultivation areas and higher production figures reflect the district's agricultural development and productivity. These changes can be attributed to factors such as improved agricultural practices, better irrigation facilities, adoption of modern technologies, and favourable weather conditions.

The agricultural sector's growth is crucial for the overall economic development and livelihoods of the local population in Dindigul LPA. In the district of Dindigul, various crops are cultivated, with significant variations in the area under cultivation and the resulting produce. Cholam, also known as sorghum, is grown across 48.53 thousand hectares, producing 36 thousand tons, indicating a relatively low yield per hectare. Maize cultivation covers 28.96 thousand hectares, with a much higher yield of 191 thousand tons, suggesting a more efficient cultivation process or better-suited conditions for maize. Cotton, on the other hand, is grown on a smaller scale, with 3.94 thousand hectares producing 12 thousand tons, indicating potentially lower demand or less favourable growing conditions for cotton in the region. Sugarcane cultivation is notable, covering 1.62 thousand hectares but yielding a substantial 153 thousand tons, suggesting high productivity per hectare and possibly indicating a focus on sugarcane due to its economic viability or suitability to the local climate. Pulses, despite covering 17.66 thousand hectares, produce only 10 thousand tons, indicating lower productivity or potentially less focus on pulse cultivation compared to other crops. Paddy cultivation is significant, covering 9.53 thousand hectares, but the yield of 36 thousand tons suggests relatively lower productivity per hectare compared to other crops.

The data from the table 6-5 provides valuable insights to analyse crop trends, plan for agricultural advancements, and address any challenges that may arise in sustaining and further improving agricultural productivity in the district. It also suggests that while certain

crops like maize and sugarcane are grown efficiently and yield high production per hectare, others like pulses and paddy might benefit from improved cultivation practices or investment to increase their productivity. This could lead to a more balanced agricultural output and potentially higher economic returns for farmers in the Dindigul district.

6.2.1.2 Horticulture

Horticulture plays a significant role in the agricultural landscape of Dindigul, Tamil Nadu, contributing to the region's economic growth and providing livelihood opportunities to farmers. Horticulture involves the cultivation of fruits, vegetables, flowers, spices, medicinal plants, and other high-value crops. The development of horticulture in Dindigul district has not only contributed to food security but also enhanced the region's overall economic prosperity. The sector's growth has resulted in improved incomes for farmers, reduced dependence on traditional crops, and better market linkages for horticultural produce. The continued focus on research, technology adoption, and government support will play a crucial role in further strengthening and diversifying horticulture in the Planning area.

Dindigul LPA cultivates a diverse range of crops in Dindigul district, including bananas, grapes, mangoes, jackfruit, guava, lemon, orange, sweet potato, ladies finger, tomato, cabbage, and brinjal. This diversity suggests that the district has favourable agro-climatic conditions for cultivating various types of crops. Significant Production, bananas, mangoes, and grapes appear to be the major crops in terms of both area under cultivation and total production. These crops have large areas dedicated to their cultivation and contribute substantially to the overall agricultural output of the LPA Yield Variation there is considerable variation in the yield (in kg/ha) among different crops.

Table 6-6 Horticulture

S. No	District	DINDIGUL		
		Area (Ha)	Produce (T)	Yield (Kg/Ha)
A	**KHARIF**			
1	Banana	3,786	1,54,909	40,919
2	Grape	195	6,063	31,032
3	Mango	15,816	59,690	3,774
4	Jack	382	15,527	40,594
5	Guava	1,938	28,558	14,738
6	Lemon	2,388	18,441	7,721

S. No	District	DINDIGUL		
		Area (Ha)	Produce (T)	Yield (Kg/Ha)
7	Orange	1,337	2,146	1,606
B	**RABI**			
1	Sweet potato	13	252	18,692
C	**KHARIF & RABI**			
1	Ladies finger	430	3,315	7,717
2	Tomato	2,501	31,903	12,756
3	Cabbage	88	5,969	67,836
4	Brinjal	988	15,159	15,336
District Total		**29,862**	**3,41,932**	**2,62,722**

Source: Economic and statistics department

Importance of High-Value Crops: Certain crops such as grapes, mangoes, and bananas have relatively high yields per hectare and are likely high-value crops contributing significantly to the agricultural economy of the district. The above Horticulture plays a significant role in the agricultural landscape of Dindigul, Tamil Nadu, contributing to the region's economic growth and providing livelihood opportunities to farmers. Horticulture involves the cultivation of fruits, vegetables, flowers, spices, medicinal plants, and other high-value crops. The development of horticulture in Dindigul district has not only contributed to food security but also enhanced the region's overall economic prosperity. The sector's growth has resulted in improved incomes for farmers, reduced dependence on traditional crops, and better market linkages for horticultural produce. The continued focus on research, technology adoption, and government support will play a crucial role in further strengthening and diversifying horticulture in the Planning area.

Dindigul LPA cultivates a diverse range of crops in Dindigul district, including bananas, grapes, mangoes, jackfruit, guava, lemon, orange, sweet potato, ladies finger, tomato, cabbage, and brinjal. This diversity suggests that the district has favourable agro-climatic conditions for cultivating various types of crops. Significant Production, bananas, mangoes, and grapes appear to be the major crops in terms of both area under cultivation and total production. These crops have large areas dedicated to their cultivation and contribute substantially to the overall agricultural output of the LPA Yield Variation there is considerable variation in the yield (in kg/ha) among different crops.

Table 6-6 shows seasonal variability and categorizes crops into Kharif (monsoon season) and Rabi (winter season) crops. This suggests that agricultural activities in Dindigul district are seasonal and may vary based on climatic conditions and cropping patterns.During the Kharif season, significant areas are dedicated to banana cultivation, covering 3,786 hectares and producing 1,54,909 tons, with a relatively high yield of 40,919 kg per hectare. Other Kharif crops include grapes, mangoes, jackfruit, guava, lemon, and orange, each contributing to the agricultural output of the district.In the Rabi season, sweet potato cultivation is notable, albeit on a smaller scale, covering 13 hectares and producing 252 tons, with a high yield of 18,692 kg per hectare. Additionally, there are crops like ladies' finger, tomato, cabbage, and brinjal that are cultivated across both the Kharif and Rabi seasons, adding to the overall agricultural diversity and production of the district.

Overall, Dindigul district shows a balanced cultivation pattern, with a focus on high-yield crops like banana, sweet potato, cabbage, and brinjal, which contribute significantly to the total agricultural produce of the district. The data reflects a well-rounded agricultural economy with a mix of staple and cash crops, indicating the region's potential for agricultural development and sustainability.

6.2.1.3 Animal Husbandry

Animal husbandry is an essential component of the agricultural sector in Dindigul district, Tamil Nadu. It involves the rearing and management of livestock for various purposes, including milk production, meat, eggs, wool, and other products. Animal husbandry contributes significantly to the economy, food security, and rural livelihoods in the region.

The Table 6-7 shows the livestock data of Dindigul district. An analysis of livestock population data for Dindigul district reveals variations across its six blocks. Dindigul block leads in total livestock population (75,447) followed by Vedasandur (63,480) and Guziliamparai (77,309). Nilakottai and Vadamadurai have the lowest livestock populations (44,451 and 48,228 respectively). Cattle population is highest in Dindigul (23,500) and lowest in Vadamadurai (15,873). Interestingly, Nilakottai has the fewest buffaloes (29) while Vedasandur has the most (4,002). Sheep population is concentrated in Guziliamparai (20,541) and lowest in Nilakottai (9,392). Goat population is highest in Dindigul (35,125) and

lowest in Vadamadurai (22,871).

Poultry variation is also evident. Vedasandur has the highest poultry population (1,22,292) followed by Dindigul (75,447) and Vadamadurai (52,320), while Guziliamparai has the least (44,102). These variations likely stem from factors like agricultural practices, grazing land availability, and animal market presence influencing livestock population distribution. Similarly, the higher poultry concentration in Vedasandur and Dindigul might indicate commercial poultry farms in these areas. The lower human population in Dindigul block, despite having a moderate livestock population, could be due to a higher concentration of rural settlements with agricultural activities in other blocks.

Table 6-7 Animal Husbandry

S. No	Block	Cattle	Buffaloes	Sheep	Goats	Total Livestock	Poultry	Population
1	Dindigul	23,500	1,136	15,586	35,125	75,447	68,430	1,20,709
2	Guziliamparai	20,186	9,625	20,541	26,957	77,309	44,102	3,92,979
3	Nilakottai	19,089	29	9,392	15,941	44,451	1,11,304	1,58,687
4	Vadamadurai	15,873	452	8,862	22,871	48,228	52,320	1,15,741
5	Vedasandur	17,368	4,002	17,886	24,224	63,480	1,22,292	1,16,999
District total		**2,97,004**	**27,061**	**1,72,066**	**3,48,868**	**8,46,374**	**37,36,373**	**21,59,775**

(Source: Animal husbandary & statistics department)

Table 6-8 Animal Husbandry

S. No	Block	Cattle	Buffaloes	Sheep	Goats	Total Livestock
1	Dindigul	194.7	9.4	129.1	291.0	625.0
2	Guziliamparai	51.4	24.5	52.3	68.6	196.7
3	Nilakottai	120.3	0.2	59.2	100.5	280.1
4	Vadamadurai	137.1	3.9	76.6	197.6	416.7
5	Vedasandur	148.4	34.2	152.9	207.0	542.6
District total		**137.5**	**12.5**	**79.7**	**161.5**	**391.9**

(Source: Economic and statistics department)

6.2.1.4 Sericulture

Sericulture, the practice of cultivating silkworms to produce silk, is an important agricultural activity in Dindigul district. The region's favourable climatic conditions and suitable soil make it ideal for mulberry cultivation, the primary food source for silkworms.

The below Table 6-8 reveals variations in sericulture practices across Dindigul district's blocks. Vadamadurai leads in area under mulberry cultivation (572 acres), followed by Vedasandur (213 acres) and Guziliamparai (180 acres). Dindigul and Nilakottai have the lowest mulberry cultivation areas (143 and 87 acres respectively). This translates into cocoon production, with Vadamadurai again leading the pack (2,08,592 kgs), followed by Vedasandur (77,603 kgs) and Guziliamparai (65,512 kgs). Dindigul and Nilakottai

produce the least amount of cocoons (52,214 kgs and 31,734 kgs respectively). Despite having a smaller mulberry cultivation area, Vedasandur boasts the highest value (Rs. 3,16,80,000) due to potentially higher cocoon yield per acre. Overall, the district produces 11,79,834 kgs of cocoons with a total value of Rs. 48,16,48,000. These variations could be due to factors like soil suitability for mulberry cultivation, farmer expertise, and availability of sericulture infrastructure in each block.

Table 6-8 Sericulture

S.No	Block	Area under Mulberry (Acres)	Production of Cocoons Kgs.	Value (in Rs.)
1	Dindigul	143	52,214	2,13,16,000
2	Guziliamparai	180	65,512	2,67,44,000
3	Nilakottai	87	31,734	1,29,55,000
4	Vadamadurai	572	2,08,592	8,51,54,000
5	Vedasandur	213	77,603	3,16,80,000
District total		**3,235**	**11,79,834**	**48,16,48,000**

Source: Economic and statistics department

6.2.2 Secondary Sector

The manufacturing and Industry sector are known as the secondary sector, sometimes as the production sector. The secondary sector includes secondary processing of raw materials, food manufacturing, textile manufacturing and industry.

6.2.2.1 Lock Industry

Dindigul Lock has a certain brand image and hence it has wide scope of business opportunity. Lock manufacturing has always been one of most important popular and employment oriented, yet traditional cottage industries in India. Dindigul locks are always in demand, because they can guarantee aspects like quality, reprocessing facility, key facility and most importantly, they are attractive in design. The lock manufacturing industry in dindigul is more than 100 years old and spread over laces like Mettupatti, Nagal Nagar, Perumalkovilpatti, Paraipatti, Balamarathupatti, Nallampatti, Kammalalpatti and some other places.Locks and steel safes are manufactured in Dindigul and operated as a co-operative sector. Locks manufactured in Dindigul are sold in national and international markets and is well-known all-over India for its quality. Dindigul locks received geographical indication on 30 August 2019. A decline in lock industry is observed in modern times and other industries like leather, handloom, and aggro opportunities have gained significance.

Figure 6-5 Lock Industry

Silk, muslin, and blanket manufacturing is common in Dindigul and after Coimbatore, the Town has the second largest textile spindling capacity in the State. Chinnalapatti silk, a brand of silk saree is produced out of Chinnalapatti located 11 km (6.8 mi) from the Town. The climate condition of the region is conducive for horticulture and agriculture. The district at large produces non-food crops like coffee, flowers, tobacco, and eucalyptus. Dindigul is the centre for wholesale trading of fruits like orange, pineapple, sapota and guava, and vegetables like onion. Dindigul was an important centre of trade in tobacco and manufacture of cigars during the British times. A favourite cigar of Winston Churchill called Churut, the 'Light of Asia', was produced in Dindigul. The tobacco industry is one of the main

sources of employment for the inhabitants of Dindigul. The central government has a research centre for tobacco in Vedasandur. This is one of the two centers in India, the other one is Rajamundri.

Figure 6-6 Tobacco Industries

In modern times, it has the largest trading centre in the state for chewing tobacco and scented betel nuts. Well-known brands of scented chewing tobacco like Angu Vilas, Roja Supari etc. operate out of the Town and sent to various places in the state and outside.

6.2.2.2 Leather Industry

Dindigul is also one of the leading leather producers and suppliers in the state. The first tanning industry in Dindigul was established by Mr. Mohammed Ismail in 1939. It requires enormous quantity of fresh water. Dindigul town has been associated with iron products, like Iron Hundial, iron safe boxes. Another industry for which Dindigul is noted is Leather Tanning. The widely known “Roja Supari” are produced in this town and are being sent to various places in and around of our State. It is flourishing industry gives employment to wide section of people.

Figure 6-7 Tannery Industries

6.2.2.3 Handloom

This District is having a flourishing handloom industry at Chinnalapatti, which is located at 11 Kms away from Dindigul on the Madurai-Dindigul Road. Art –Silk sarees and Sungudi Sarees produced in Chinnalapatti are famous throughout India. More than 1000 families are engaged in this Industry.

6.2.2.4 Other Economy sectors

Nilakkottai town is famous for Brass Vessels and Jewellery and also, Nilakkottai Taluk is famous for the growing and marketing of flowers and export to foreign countries. Overall, the secondary sector in Dindigul plays a pivotal role in driving industrial development, economic growth, and employment generation. The growth and diversification of this sector are essential for the district's sustainable economic progress and raising the standard of living for its residents.

6.2.3 Tertiary

The tertiary sector, also known as the service sector, encompasses a wide range of economic activities that do not involve direct production of goods but instead provide services to individuals and businesses. In Dindigul, as in many other regions, the tertiary sector plays a crucial role in the district's economic growth and development. The tertiary sector covers a wide range of activities from commerce to administration, transport, financial and real estate activities, business and personal services, education, health and social work. The tertiary sector in Dindigul district is diverse and dynamic, providing a broad spectrum of services to meet the needs of the local population and businesses. The sector's growth and development complement the primary and secondary sectors, contributing to the overall economic prosperity of the district. As Dindigul continues to evolve, the tertiary sector is expected to play an increasingly significant role in shaping the region's economy and improving the quality of life for its residents.

6.3 Occupational Pattern

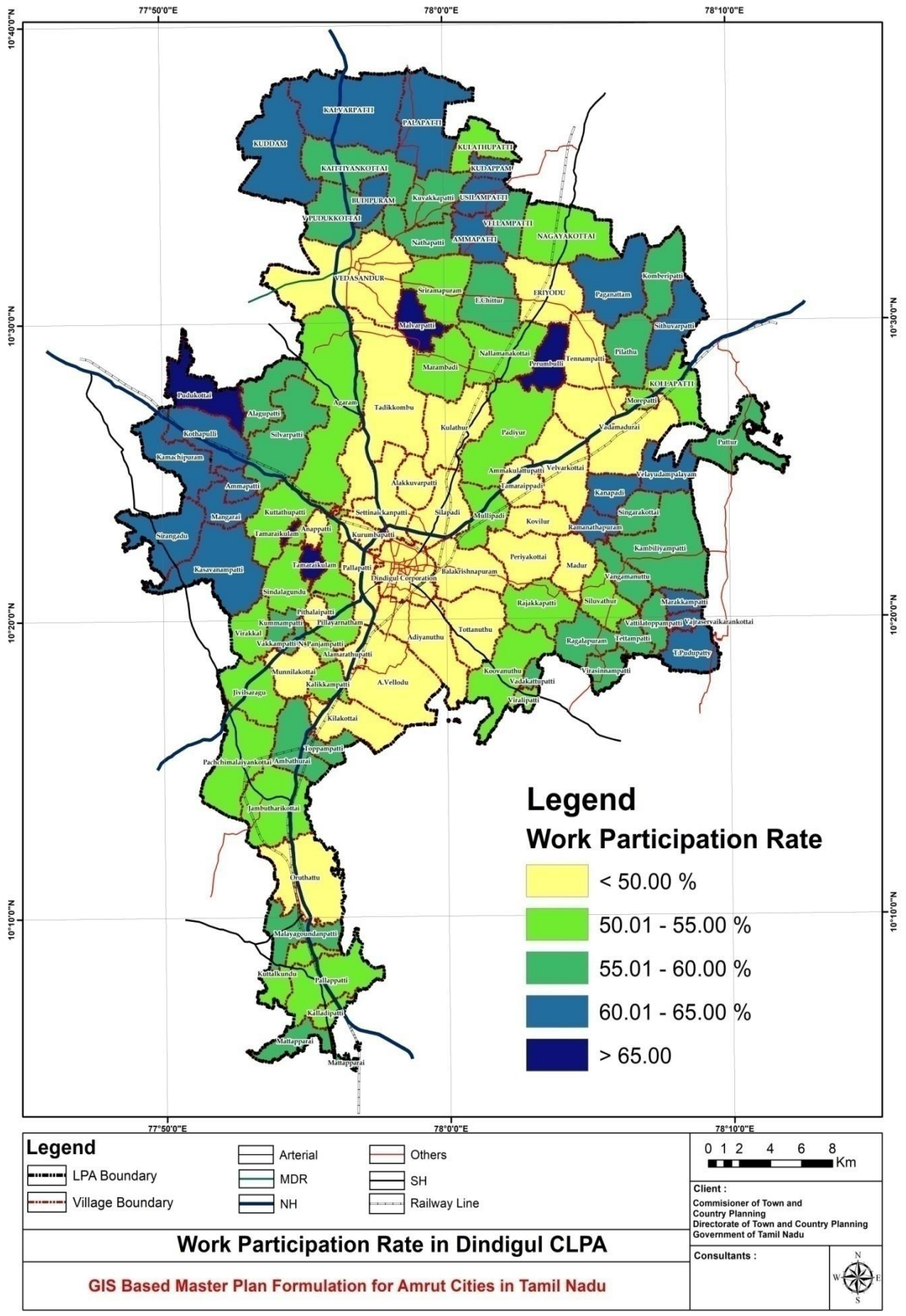
The Work Participation Rate (WPR), which is defined as the percentage of total workers to the total population. Villages in LPA has higher work participation rate of 52.12% while town panchayats in LPA have 47.27% and Dindigul Town has 37.53%. This may be due to the higher percentage of people in Dindigul town is young generation in education stage. Work force participation of Dindigul LPA is 47.95% which is greater than state average of 40.16%.

Table 6-9 Work Participation Rate

S.No	Area	Total Population	Total Workers	WFPR	Main Workers %	Marginal Workers %
1	Dindigul District Urban	808040	342962	42.44%	91.16%	8.84%
2	Dindigul District Rural	1351735	762193	56.39%	85.33%	14.67%
3	Dindigul District	2159775	1105155	51.17%	87.14%	12.86%
4	Dindigul Town	207327	77813	46.53%	95.41%	4.81%
5	Town Panchayats in LPA	73083	34546	47.27%	90.27%	10.77%
6	Villages in LPA	531035	276752	52.12%	83.75%	19.40%
Total Dindigul LPA		**811445**	**389111**	**47.95%**	**86.66%**	**15.39%**

WPR %	Village/Town	WPR %
Highest	Malvarpatti	70.30
Lowest	Oruthattu	31.48
Dindigul Town		46.53

Source : Census of India



Map 6-2 Map Showing the Work Participation Rate in Dindigul CLPA

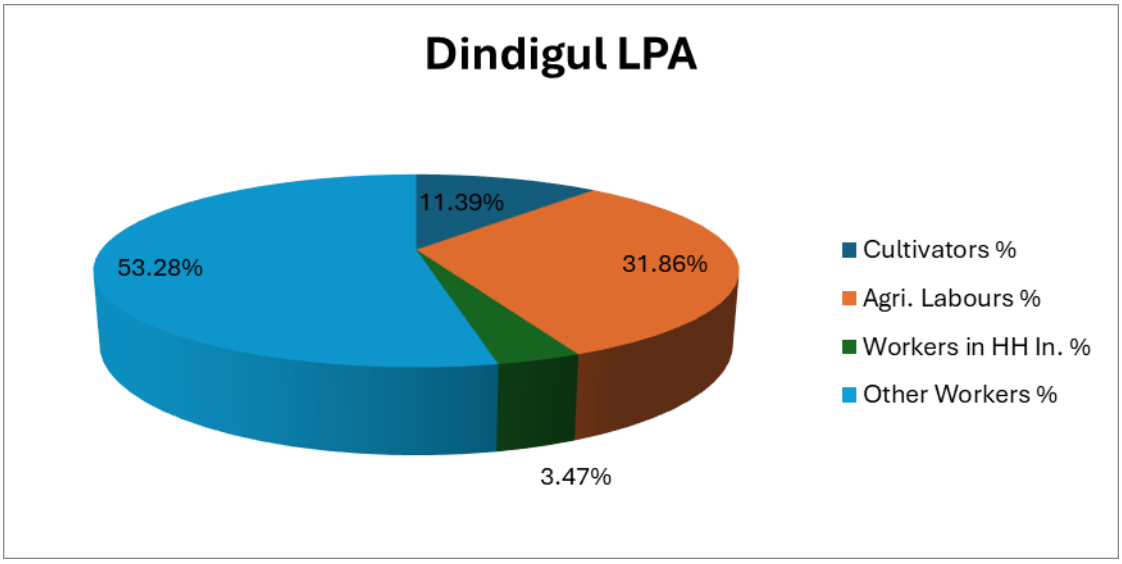


Figure 15 Dindigul LPA

Table 6-10 Occupational Pattern

S. No	Description	Cultivators %	Agri. Labors %	Workers in HH In. %	Other Workers %
1	Dindigul District Urban	5.43%	18.56%	3.76%	72.25%
2	Dindigul District Rural	21.27%	50.85%	2.07%	25.80%
3	Dindigul District	16.13%	40.37%	2.62%	40.88%
4	Dindigul Town	0.52%	0.49%	7.18%	91.81%
5	Town Panchayats in LPA	13.89%	29.57%	2.75%	53.78%
6	Villages in LPA	14.55%	42.24%	2.37%	40.83%
Total Dindigul LPA		**11.40%**	**31.88%**	**3.47%**	**53.26%**

Source : Census of India

In Dindigul Town, major workers are other workers with 91.81%. In Town Panchayats of LPA also, it is 53.78% which is major characteristic of an urban area. While in villages of LPA, Agricultural Labours and cultivators are more which comes about 56.79%.

6.4 Agencies that promote industries in Tamil Nadu (SIPCOT, SIDCO)

In Nilakottai, SIPCOT covering an area of 386.68 acres employs 1856 employees and has many MSMEs and Industries. Apart from lock manufacturing, there is also Five Perfume manufacturing industries which generates major share of employment in the area. In Adiyanoothu, SIDCO is operational with Fabrication, Plastics, food Processing and textiles and employs about 1487 nos and covers an area of 39.60 acres. The area and workers population of SIDCO & SIPCOT in Dindigul district is shown in the below Table 6-11 .

Table 6-11 SIDCO and SIPCOT Industries

S.No.	Industries	Village	Area (Acres)	Purpose	No. of workers
1	SIDCO Industrial Estate	Adiyanoothu	39.60	Fabrication, Plastics, food, textiles	1487
2	SIPCOT	Nilakottai	386.68	MSMEs and industries	1856

Source : Census of India

6.5 Observations

Dindigul faces several challenges within its economy that require attention for sustained growth and development. One pressing issue is the limited diversification of its economic base. While the town has a strong agricultural foundation, overreliance on traditional sectors can hinder resilience against market fluctuations and changing consumer demands. Insufficient modernization and technology adoption in agriculture can lead to productivity constraints.

Moreover, despite emerging sectors like agro-based and leather industries, infrastructural limitations and skill gaps can impede their full potential. The lack of adequate transportation networks, reliable power supply, and advanced logistics systems can hinder efficient production and distribution. Additionally, the availability of skilled labor tailored to the needs of these emerging industries is crucial for their successful establishment.

Another challenge is the need for value addition in the agriculture sector. Limited processing facilities and a lack of direct market access can prevent farmers from realizing the true potential of their produce. This issue extends to agro-based industries as well, where the absence of integrated value chains can hinder competitiveness in larger markets.

To address these concerns, there's a necessity for robust policy support from both local and state authorities. This includes strategic investment in infrastructure development, skill enhancement programs, and incentives to attract private sector participation. Embracing technology and modern agricultural practices can enhance productivity and market access. Fostering linkages between educational institutions and industries can also help bridge the skill gap.

In conclusion, while Dindigul's economy shows promise with its agricultural heritage and emerging industries, proactive measures are needed to overcome challenges such as limited diversification, infrastructural constraints, and value addition gaps. By focusing on

these aspects, Dindigul can establish a more resilient and vibrant economic landscape that benefits both the town and its residents.

The economy of Dindigul reflects a blend of traditional and emerging sectors, contributing to the town's dynamic growth. Rooted in agriculture, Dindigul benefits from its strategic location in a fertile region, driving a significant portion of its economy. The cultivation of crops like cotton, cereals, and pulses, along with horticulture, remains pivotal. Additionally, Dindigul's status as a major trading hub for agricultural produce further amplifies its economic significance. The town's recent foray into agro-based and leather industries has brought diversification, adding momentum to its economic landscape. As these industries gain traction, they promise to harness untapped potential for job creation and increased revenue. However, it's imperative that sustainable practices are upheld to ensure the longevity and stability of the economy, preserving both traditional strengths and emerging opportunities.

7 Transportation and Mobility

Transportation is the main element of urban infrastructure and an important factor for economic development for any place. The decisions made in developing new neighbourhoods or expanding the economic base of any region will have a direct and tangible impact on the transportation system. Insufficiency in the provision of transportation infrastructure has been the main cause of the deterioration of quality of life in urban areas. And also, the absence of efficient transportation planning for the growing population will create an imbalanced and unequal distribution of activities leading to more congestion in the core Town. Therefore, transportation has to be carefully planned to meet the demand for the increasing population.

7.1 Existing Transportation Scenario

7.1.1 Existing Regional Linkage

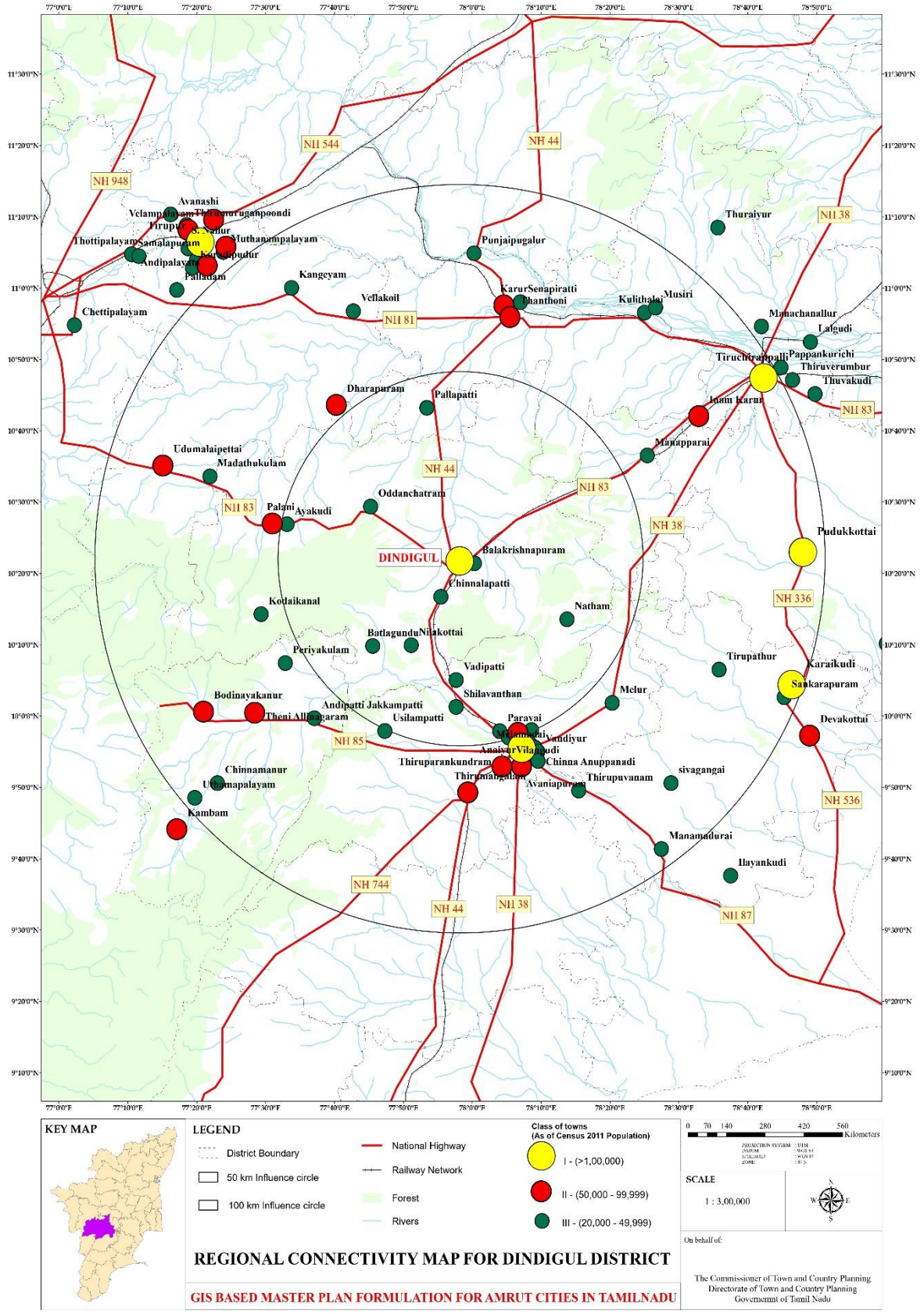
Dindigul Town is well connected regionally with the surrounding class I towns with NH and class II and III towns with SH roads. NH 83 connects Coimbatore (110km from Dindigul) and Tiruchirapalli (99km from Dindigul) along Dindigul. NH 44 connects Karur and Madurai (63km from Dindigul) along Dindigul. NH 45 connects Theni with Dindigul.

It also has railway connectivity along southern railway. It has a prominent Madurai Junction of about 77km from Dindigul Railway Station. Nearby station from Dindigul LPA is mentioned in Table 7-1.

Table 7-1 Existing Regional Linkage

S. No	Town Name	Distance from Dindigul (km)
1	Tiruchirappalli (M Corp.)	99.00
2	Karur(M)	77.00
3	Kodaikannal(M)	94.00
4	Madurai (M Corp.)	63.00
5	Palani(M)	59.00

Source: Transport department, Dindigul



Map 7-1 Map Showing Regional Connectivity of the Dindigul CLPA

7.2 Existing road condition

There are three national highways, NH 44 (largest highway in India) connecting Dindigul to Madurai and NH45A connecting Chennai to Kanyakumari and NH83 Coimbatore to Nagapattinam via Oddanchatram, Palani, Dindigul, Tiruchirapalli, and Thiruvarur via the Town. Natham road and Bathalagundu road are the two state highways that pass via the Town. Being the district headquarters, lot of district roads also connect Dindigul to other parts of the district.

7.2.1.1 Dindigul Town

Total length of the road based on its type is given below with availability of storm water drain for Dindigul Town. Road details and footpath details are mentioned in table 7-2 & 7-3.

Table 7-2 Road Details

S.No	Category	BT		CC		PB	
		No.	Length in 'm'	No.	Length in 'm'	No.	Length in 'm'
1	Major Roads	732	136170.12	133	15944.81	265	30447.92
2	Residential Streets	31	3747.29	217	15614.1	217	19647.28
Total		**763**	**139917.41**	**350**	**31558.91**	**482**	**50095.20**

Source: Transport department, Dindigul

Table 7-3 Footpath Details

Foot path		WBM		Earthern	
No.	Length in 'm'	No.	Length in 'm'	No.	Length in 'm'
1	138	4	789.05	140	16729.27
6	167	0	0	53	4197.9
7	305	4	789.05	193	20927.17

Source: Transport department, Dindigul

Road density is 195m per sq.km of Local Planning Area. Bitumen road is about 57.44% of the total road length while concrete road is 12.96%. Road types is mentioned in Table 7-4.

Table 7-4 Types of Road

S. No	Type of Road	Percentage
1	Bitumen Road	57.44%
2	Concrete Road	12.96%
3	Paver Block	20.57%
4	Footpath	0.13%
5	WBM	0.32%
6	Earthen	8.59%

Source: Transport department, Dindigul

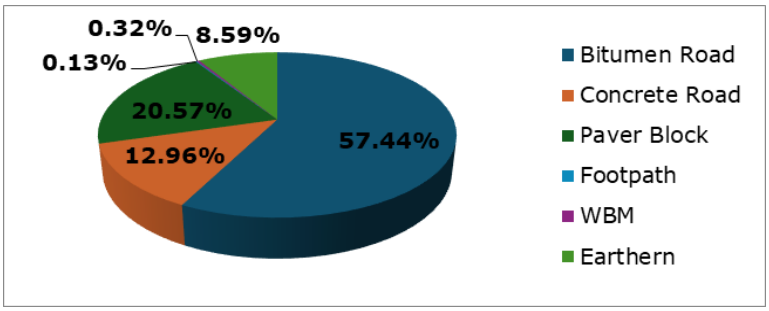


Figure 7-1 Type of road distribution

7.2.1.2 Other Blocks in the LPA

In other blocks of the Dindigul CLPA, Bitumen Road composition is the highest having 77.33% and Cement concrete road is the lowest having 0.43%. Other roads composition includes earthen road of 9.43%, gravel of 9.61%, WBM road of 2.68% and 0.49%.

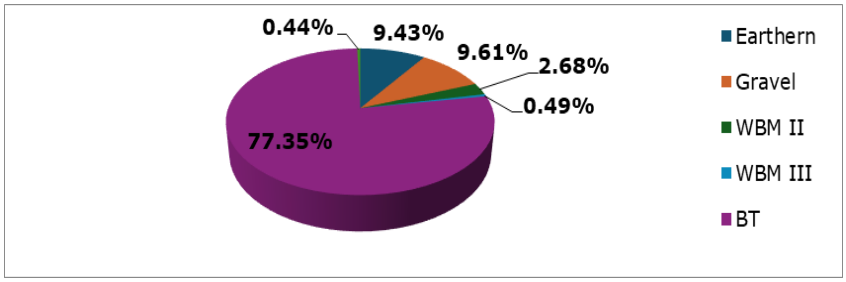
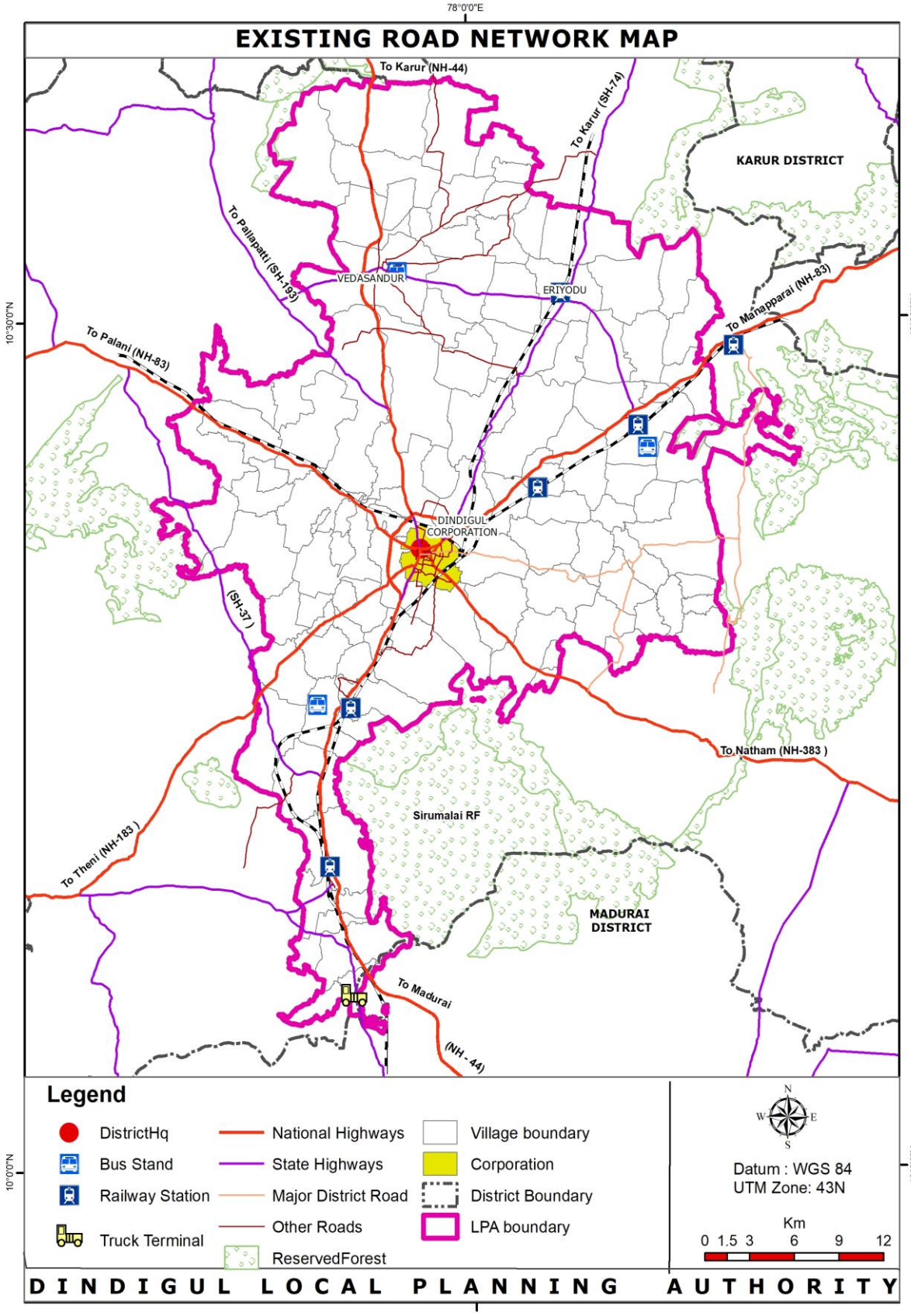


Figure 7-2 other blocks in LPA

Table 7-5 Roads in Other Blocks in LPA

S. No	Name of the Block	Road Surface Details - Length in Km							
		No of roads	Earthern	Gravel	WBM II	WBM III	BT	CC road	Total
1	Dindigul	253	50.95	0.85	4.60	0.30	290.86	4.85	352.41
2	Aathur	264	45.19	2.30	14.19	3.40	210.86	0.31	276.24
3	Nilakottai	230	4.15	5.90	9.31	3.32	202.75	0.70	226.13
4	Vedasandur	291	66.28	10.40	6.87	0.00	284.12	0.30	367.96
5	Vadamadurai	273	23.75	35.93	17.37	2.21	255.80	1.81	336.87
6	Guziliamparai	371	9.90	148.84	4.62	1.20	398.76	1.40	564.72
Total		1682.00	200.22	204.22	56.96	10.43	1643.15	9.37	2124.33

(Source: Transport department, Dindigul)



Map-7-2 Showing Road and Rail Network in Dindigul LPA

7.2.2 NH Roads in Dindigul LPA

Table 7-6 NH Roads in LPA

S.No.	Data required	Dindigul- Palani- Coimbatore Road NH 209 (New NH 83) Km 0/0 -18/740 (Palani Bypass Bus stop to Palakanoothu stretch)	Dindigul-Natham-Kottampatti Road NH 383 Km 0/0 - 38/0	Dindigul-Natham-Kottampatti Road NH 383 Km 38/0 - 45/6
1	Road connectivity	Madurai- Dindigul Coimbatore - Karur - Trichy	Sivagangai - Madurai- Dindigul Coimbatore - Karur -Trichy	Sivagangai - Madurai- Dindigul Coimbatore - Karur -Trichy
2	Existing road classification and their details of total width (m) and Length (km)	Length-18.74km, Width-10.00m	Length-38.00km, Width-10.00m	Length- 7.6 km, Width-10.00m
3	Road Classificatin and their total length in km	NH-18.74	NH-38	NH-7.6
4	NMT share and modes	---	---	---
5	Existing Pedestrian and bicycle network	Pedestrial paverblock footpath of 2.5m width is provided	Pedestrial paverblock footpath of 2.5m width is provided	Pedestrial paverblock footpath of 2.0m width is provided
6	Road Register (for roads owned by NH)	---	---	---
7	Traffic survey Details	Conducted in year-2017	Conducted in year-2017	Conducted in year-2017
	Traffice Volume	---	---	---
	Peak hour traffic	---	---	---
	PCU	19621		19414
	Average daily traffic V/C	---	---	---
	Junction survey	---	---	---
	Other traffice study details road wise	---	---	---

S.No.	Data required	Dindigul- Palani-Coimbatore Road NH 209 (New NH 83) Km 0/0 -18/740 (Palani Bypass Bus stop to Palakanoothu stretch)	Dindigul-Natham-Kottampatti Road NH 383 Km 0/0 - 38/0	Dindigul-Natham-Kottampatti Road NH 383 Km 38/0 - 45/6
8	Parking demand	---	---	---
9	New porposal for Junction Improvement	12 Junctions in the stretch is proposed for improvement	---	---
10	Road Widening Proposals	Widening to 4-lane is proposed	---	---
11	Industrial Corridors	---	---	---
12	Details Project report and Feasibility study reports	---	---	---
13	New proposed projects	Widening to 4-lane is proposed	---	---

Source: Transport department, Dindigul

7.3 Traffic Survey

Traffic surveys hold immense importance in the creation of a comprehensive urban master plan. By providing accurate data on traffic flow, congestion, commuting patterns, and transport behaviors, these surveys facilitate informed decision-making. Such data aids in designing efficient road networks, public transit systems, and traffic management strategies. Moreover, traffic surveys are crucial for predicting future transportation needs, planning sustainable infrastructure, enhancing safety measures, and optimizing budget allocation. They ensure that the master plan is data-driven, responsive to actual traffic demands, and aligned with sustainable urban mobility goals, ultimately creating a well-functioning and future-ready city.

7.3.1 Major Roads Survey

Traffic Survey Data has been collected from highway departments and also by conducting traffic surveys and its results are given below. Other major roads is mentioned in Table 7-7.

Table 7-7 Other Major Roads in LPA

HIGHWAYS DEPARTMENT TRAFFIC DATA			
S.NO	**NAME OF THE ROAD**	**PCV VALUE**	**CVPD VALUE**
1	Angunagar- Viralipatti Road Km.0/0-8/4	3211	599
2	Vedapatti- Velodu road (Via)Narsingapuram Km.0/0-8/380	3299	698
3	NH-45 to meet Dindigul- Siluvathur road (via)Periyakottai -Kovilur Km.0/0-8/0	4571	867
4	Kannivadi - Kuttathupatti Road Km.0/0-7/5	2578	480
5	Dindigul Vattanam road to meet Dindigul - Siluvathur road (via) Rengasamudrapatty-Alagarnaickkanpatty Km.0/0-7/4	5803	652
6	Padiyur Village road Km.0/0-5/4	2317	617
7	Mettupatti -Sirunaickenpatti (via) Mottanampatti road Km.5/4-9/2	2423	594
8	Thadikombu-Poothampatti road Km.5/4-9/2	2423	537
9	Seelapadi village Road	2256	511
10	Diindigul Siluvathur Road - Maniyakkaranpatti Road Km.0/0-2/6	2265	542
11	Padiyur- Molapadiyur road Km.0/0-2/6	3187	794
12	Nallamanaickenpatti village road Km.0/0-1/6	2274	544
13	Velvarkottai village road Km.0/0-1/4	2298	592
14	Thadikombu-Poothampatti road Km.4/8-/2	3023	731
15	Endalaparai village road Km.0/0-0/8	2126	520
16	Velvarkottai - Kuppamuthupatti road Which branching at Km.1/2 of village road Km.0/0-1/4 Velvarkottai village road Km.0/0-0/6	2147	563
17	Dindigul - sirumalai Ghat road Km.0/0-22/0	6817	1107
18	Dindigul-Manakathur road K.m 0/0-14/8	7467	1237
19	Veiladachampatti -Palayakannivadi K.m 0/0-9/0	15467	2102

HIGHWAYS DEPARTMENT TRAFFIC DATA			
S.NO	**NAME OF THE ROAD**	**PCV VALUE**	**CVPD VALUE**
20	Pettai mettupatti - Nagalnagar road K.m 0/0-2/230	16798	4465
21	Dindigul - Gugiliyamparai - Karur road SH-74 K.m. 0/0-18/4	17991	3132
22	Dindigul-Natham-Singampunari- Thiruppathur - Devakottai Rastha road K.m0/0-15/0	25772	4230
23	BCC Road K.m374/5-380/375	21654	4138
24	Chennai-Trichy-Dindigul Road Km.417/250-421/420	29481	5252
25	Coimbatore- Dindigul Road Km.158/635-161/0	14912	2783
26	Dindigul-vathlagundu -Periyakulam-Theni-Cumbum-Kumuli Road Km.0/6-2/760	16435	2771
27	Service Road of Railway over bridge @km.1/725-2/150/ & 2/210-2/360 in Dindigul-Natham-Singampunari-Thiruppathur -Karaikudi road	6659	1450

(Source: Transport department, Dindigul)

The collection and analysis of Traffic Data by the Highways Department present a valuable resource that offers intricate insights into the dynamics of road usage and traffic flow across different roads in Dindigul. This dataset provides two significant indicators: the Passenger Car Vehicle (PCV) values and Commercial Vehicle Per Day (CVPD) values for a range of roads within the locality. These numerical representations reflect the volume of vehicles, both personal and commercial, that traverse these roads on a daily basis. Such information serves as a critical tool for evaluating the efficiency, capacity, and overall performance of these roads.

In essence, the PCV values indicate the number of passenger cars that travel on the road daily, while the CVPD values represent the count of commercial vehicles passing through in a single day. These metrics collectively depict the load-bearing capacity of the roads, helping planners and authorities understand the traffic density and its composition. This knowledge is pivotal in making informed decisions about road maintenance, improvement, and expansion to accommodate the ever-evolving demands of transportation in a growing urban environment like Dindigul. Among the analyzed roads, several standout examples underscore the significance of this data. For instance, the Dindigul-Sirumalai Ghat

Road exhibits a PCV value of 6817 and a CVPD value of 1107, showcasing a significant influx of vehicles, including commercial ones, on a daily basis. Similarly, the Dindigul-Natham-Singampunari-Thiruppathur-Devakottai Rastha Road reveals a high PCV value of 25772 and a CVPD value of 4230, indicating a substantial volume of vehicular movement along this thoroughfare.

7.3.2 Junctions in Dindigul City

The analysis of traffic conditions at various junctions in Dindigul reveals crucial insights into the urban mobility challenges faced by the city. These insights, derived from the average Passenger Car Vehicle (PCV) values per hour, shed light on the intensity of vehicular movement, while also offering a snapshot of the prevailing traffic conditions. These junctions serve as microcosms of Dindigul's traffic landscape, each presenting unique challenges that impact the flow of vehicles, pedestrians, and goods. With an average PCV value of 8824 per hour, the Anna Salai Roundabout experiences severe traffic congestion. This congestion is primarily attributed to on-street parking, which restricts the available road space, hampering the smooth flow of vehicles. This underscores the need for efficient parking management solutions to alleviate congestion. Anjali Roundabout records an average PCV value of 9146 per hour, indicating severe traffic conditions. Narrow roads exacerbate the congestion in this area, highlighting the importance of road widening or alternative traffic management strategies to ease the traffic flow.

With an average PCV value of 10248 per hour, this junction experiences severe congestion due to the presence of pedestrians. The interplay between vehicular and pedestrian traffic necessitates pedestrian-friendly infrastructure and efficient signal management. Severe traffic conditions are observed at the YMR Patti Junction, with an average PCV value of 7774 per hour. This congestion is primarily attributed to the presence of trucks, underscoring the need for dedicated truck routes or alternative transport solutions to mitigate the impact on general traffic flow. The SMBM School Roundabout registers an average PCV value of 7248 per hour, indicative of severe traffic congestion. Pedestrian movement adds to this congestion, emphasizing the importance of creating safe pedestrian crossings and pathways.

With an average PCV value of 7958 per hour, the Saint Joseph School Junction experiences severe congestion primarily due to pedestrians. Adequate infrastructure to separate pedestrian and vehicular movement could alleviate this challenge. The Nagal Nagar Roundabout reports an average PCV value of 8624 per hour, indicating severe traffic congestion attributed to trucks. Strategies such as designated truck routes or off-peak hour movements could help alleviate this congestion. Severe traffic conditions are noted at the Periyar Statue junction, with an average PCV value of 8327 per hour. Truck movement adds to the congestion, necessitating comprehensive traffic management solutions.

With an average PCV value of 9374 per hour, the Kattaspari Trichy Junction experiences severe congestion due to trucks. Solutions such as optimized routing for trucks could mitigate congestion impact. The Palani Bypass Road records an average PCV value of 7536 per hour, indicative of severe traffic conditions primarily due to trucks. Strategic road planning to accommodate heavy vehicles could alleviate this congestion.

In conclusion, the comprehensive analysis of traffic conditions at these junctions in Dindigul offers a valuable perspective on the city's urban mobility challenges. The severity of congestion and the specific contributing factors highlight the need for tailored traffic management strategies, including road expansion, pedestrian-friendly infrastructure, optimized truck routes, and efficient parking solutions. Addressing these challenges can lead to smoother traffic flow, improved road safety, and enhanced overall urban mobility. Major Junction is mentioned in table 7-8.

Table 7-8 Major Junctions

S.No.	Junctions	Average PCV Values per hour	Traffic condition
1	Anna Salai roundabout	8824	Severe due to on street Parking
2	Anjali Roundabout	9146	Severe due to narrow roads
3	Dindigul Bus Stand North Junction	10248	Severe due to Pedestrians
4	YMR Patti Junction	7774	Severe due to Trucks
5	SMBM School Roundabout	7248	Severe due to Pedestrians
6	Saint Joseph School Junction	7958	Severe due to Pedestrians
7	Nagal Nagar Roundabout	8624	Severe due to Trucks

8	Periyar Statue	8327	Severe due to Trucks
9	Kattaspari Trichy Junction	9374	Severe due to Trucks
10	Palani Byepass Road	7536	Severe due to Trucks

(Source: Transport department, Dindigul)

Figure 7-3 Anna Salai Junction

Figure 7-4 Anjali Roundabout

Figure 7-5 Dindigul Bus stand North Junction

Figure 7-6 YMR Patti Junction

Figure 7-7 Saint Joseph School Junction

Figure 7-8 Nagal Nagar Roundabout

Figure 7-9 Periyar Statue

Figure 7-10 Kattaspathri Trichy Junction

Figure 7-11 Palani Bypass Road

Figure 7-12 SMBM School Junction

7.4 Transport Network and its Characteristics

The transport network in Dindigul plays a critical role in connecting the district to various parts of Tamil Nadu and the rest of India. It facilitates the movement of people, goods, and services, contributing to economic development and social integration. Since Road pattern in Dindigul LPA is Radial pattern, Ring radial road pattern is the most suitable road pattern for convenient connectivity of all the towns and villages in the local planning area. This network is a combination of radial and circular road patterns. It is a road pattern in which the major roadways, or radial roads, radiate outward from the centre and are joined by the ring roads, or concentric roads, which likewise radiate outward.

7.5 Parking scenario

On street parking in Dindigul city has become a menace in the city core area. There is no designated on-street parking and vehicles are parking haphazardly as parking is free. Parking is observed on major road stretches in the city core even at the designated 'No Parking' spaces. On-street parking Demand of two wheelers, cycles and cars is more on busy roads. Parking on EB Colony, Anna Nagar Road has been regulated to minimize the hindrance to the traffic. Vehicles are even parking close to junctions.

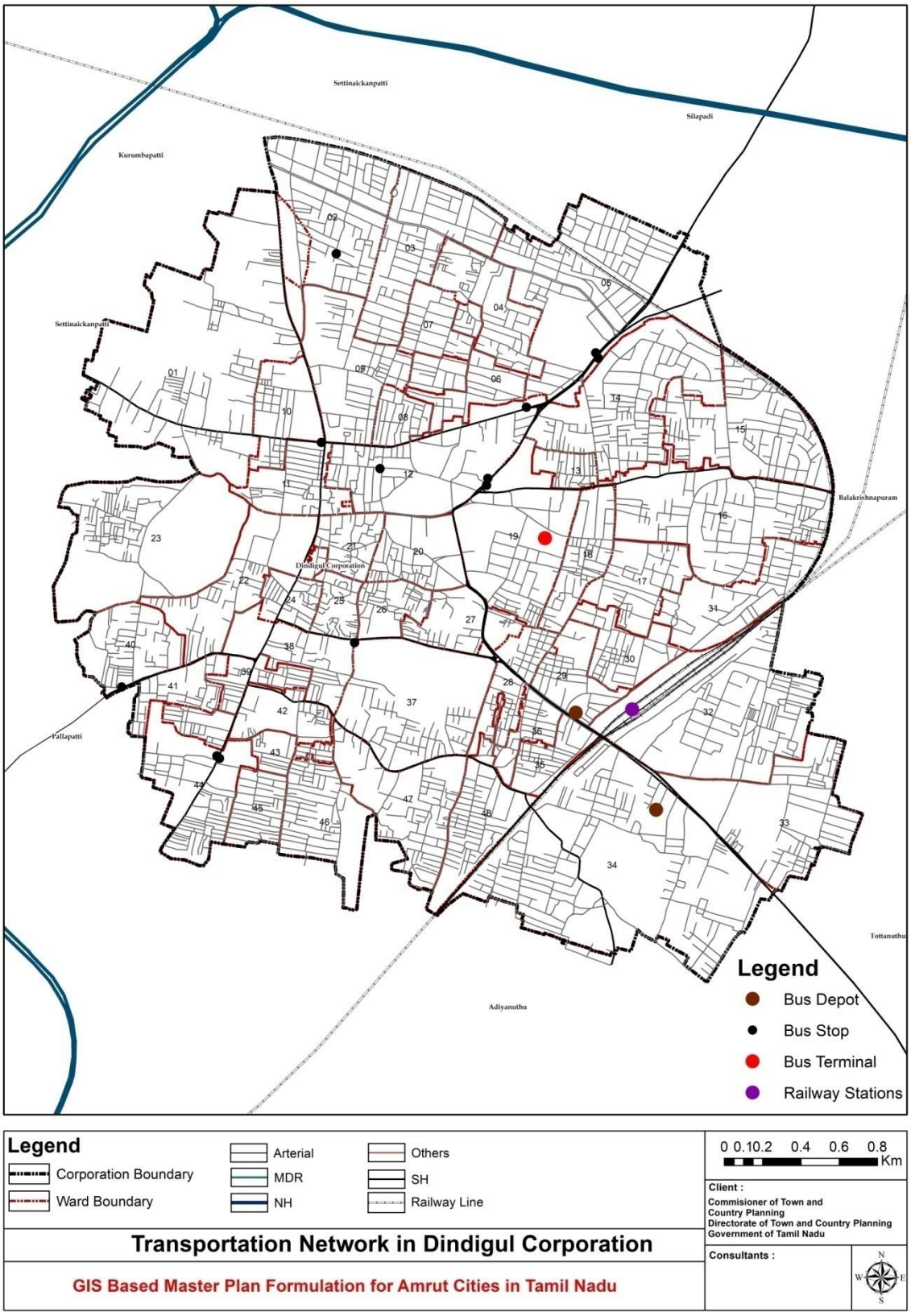
Figure 7-13 Parking space – EB Colony

Figure 7-14 Parking area – Bagambur

7.6 Existing Transit or public transport facilities

7.6.1 Public transport system

Dindigul is served by town bus service, which provides connectivity within the town and the suburbs. Minibus service operated by private companies caters to the local transport needs. There are 750 buses operated daily across 128 different routes. The Kamarajar bus stand is an A-grade bus stand covering an area of 6.78 acres (21,700 m^2) as of 2007 and is in the heart of the town. The Tamil Nadu State Transport Corporation operates daily services connecting various cities to Dindigul. The State Express Transport Corporation operates long-distance buses like Chennai, Bengaluru and Tirupati. There is significant truck transport with around 400–450 trucks entering the town for loading and unloading activities daily. Three wheelers, called autos and Call Taxi are also a common public transport system. Public Transport Buses: The Tamil Nadu State Transport Corporation (TNSTC) and private operators run regular bus services in and around Dindigul. Bus services connect the district to nearby towns and villages, as well as long-distance routes to other cities and states. Auto-rickshaws: Auto-rickshaws are a common mode of local transport within Dindigul town and nearby areas. Taxis and Cabs: Taxis and cabs are available for hire, providing convenient transportation for both local and outstation travel.



Map 7-2 Map Showing Transportation Network in Dindigul Town

7.6.2 Rail Transport

Railway Stations: Dindigul Junction is the main railway station in the district, located on the Chennai-Madurai railway line. It serves as a major railway hub, connecting Dindigul to various cities across India. Dindigul's railway network provides connectivity to major cities like Chennai, Bengaluru, Coimbatore, Madurai, and Tiruchirappalli, facilitating the movement of passengers and freight. Dindigul Junction railway station was established in 1875 when rail line for Trichy to Tuticorin was constructed. Dindigul railway junction is in the rail head from Chennai to Madurai and Karur to Madurai. It is also connecting Dindigul to Palani. All south bound trains plying south to Madurai from Chennai pass via Dindigul. There are also passenger trains running either side from Madurai to Tiruchirapalli and Palani.

7.6.3 Air Transport

Nearest Airports: Dindigul does not have its own airport. The nearest airports are Madurai International Airport (approximately 66 km away) and Trichy International Airport (approximately 130 km away). These airports offer domestic and international flights, connecting Dindigul to major cities across India and abroad. The nearest local and international airport is Madurai Airport located 70 kilometres (43 mi) away.

7.6.4 Characteristics of Transport Network

The transport network in Dindigul ensures good connectivity within the district and to neighbouring regions. It facilitates smooth movement of people and goods, supporting economic activities and trade. Including national and state highways, makes Dindigul easily accessible from various parts of Tamil Nadu and neighbouring states, promoting tourism and business opportunities. Economic Impact: A well-developed transport network contributes to the region's economic growth by enabling efficient movement of goods and raw materials, reducing logistics costs, and enhancing market access for agricultural and industrial produce. The transport network fosters social integration by connecting rural areas to urban centers, enabling access to healthcare, education, and other essential services for the rural population. Overall, the transport network in Dindigul is a crucial infrastructure that plays a key role in supporting the district's economic development, promoting regional integration, and enhancing the overall quality of life for its residents.

7.6.5 Modal Share

Nearly 30% of the total registered vehicles are car/jeep, 17.5% are two wheelers and 5.4% are cycles. Off-street parking facilities available - at Dindigul Railway junction, Central bus terminal and market area. Additional off-street parking sites are required in the city core area. The facility is proposed to be developed as a multilevel car parking complex with two floors of commercial space. The facility should have a capacity of 450 PCEs (850 Two-wheeler and 280 Four-wheeler) another location near road is suggested and land to be identified. The facility should be designed accommodate 400 PCE. Below chart represents Modal Share of Dindigul LPA.

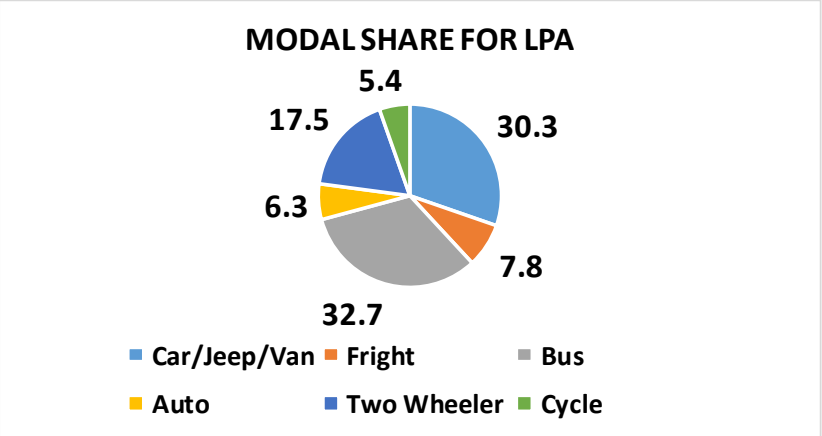


Figure 7-15 Modal Share

7.6.6 Traffic volume

Volume capacity ratio (V/C) is one of the most used indices for the assessment of traffic conditions in urban areas. V is the total number of vehicles passing a given point in one hour and C is the maximum number of cars that can pass the same point at a reasonable traffic condition. A v/c ratio less than 0.85 generally implies that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay & queuing conditions may occur. Once the demand exceeds the capacity (v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected, the analysis.

carried out revels that the v/c ratio of all ten intersections is below indicating that there is no delay or disruption in the traffic flow. However, The Periyar state junction which serves

as an important link between the CBD and other areas has a high concentration of vehicular

movement during the peak hours. When the development takes place in the surrounding areas of this junction, it will lead to traffic congestion in the future. So, a junction improvement will be required at GH junction. Necessary investments in the traffic facilities such as enhance public transportation, road widening, construction of new roads & overpasses, and more lanes can avoid traffic congestion in the future. The given table 7-9 have presented the peak hour traffic volume at the intersections.

Table 7-9 Traffic Volume Count

S.No	Name of the Junction	Road Width (in meter)	Capacity as per IRC	Volume	V/C	LOS
1	Anjali Round About	18	1500	1146	0.76	C
2	Saint Joseph School	15	1200	958	0.79	C
3	Nagal Nagar Junction	15	1200	1724	1.43	F
7	Kattaspatri Round About	15	1200	674	0.5	B
4	Periyar Statue Junction	12	900	1327	1.5	F
5	SMBM School Junction	12	900	948	1.05	F
6	Palani Byepass Round About	7.5	900	536	0.5	B

Source: Transport department, Dindigul

Sizeable daily traffic ranging from 11,714 PCU's to 35,867 PCU's is observed at various Inner Cordon locations. Whereas in the outer cordon locations the daily traffic is observed to be ranging from 2,672 pcu's to 40,903 pcu's. the share of Two Wheelers ranges from 45% to 60% and the share of car ranges from 20% to 25%. The total number of vehicles entering/exiting inner cordon and outer cordon daily is 1.64 lakhs and 1.24 lakhs respectively. From the OD survey carried out at the Outer Cordon locations, significant intercity traffic constituting about 22% is observed which need not use the City roads It is observed that about 70% of trips made at cordon are work trips. A share of 16% is observed with business purposes and the least is observed with education trips which contribute only 2%. The average occupancy of Car, Two-Wheeler and Auto Rickshaw is observed to be 2.4, 1.4 and 2.1 at Inner Cordon and 2.5, 1.5 and 2.3 at Outer Cordon respectively.

7.7 Traffic Junction and Circulation Pattern

Traffic circulation and junction in Dindigul town is a critical issue. Most of the Traffic

Junctions in Dindigul have multi- way (more than 3 arms). So, the traffic circulation and management become critical. The signal cycle time also becomes difficult to manoeuvre the traffic flow. And most of the junctions are without traffic signals in Dindigul makes it difficult for traffic movement. As shown in the figure below, all junctions are having more than 4 arms and, they are placed closer to each other making it far more difficult for the traffic flow. This creates more conflict points resulting in high chances of accidents. Also, the Pedestrian movement in the junctions adds to the woes of the traffic flow. Junction Improvements with pedestrian access is the way forward for improving the traffic circulation.

Figure 7-16 Traffic Flow

7.8 Traffic Congestion and on-street Parking Issues

Dindigul town's traffic circulation has been challenging because of bottlenecks and small roadways that exacerbate traffic congestion. Noise and air pollution are also caused by this. Major commercial roads are devoid of off-street parking spaces. Consequently, on-street parking is also present in the little streets, which worsens traffic and reduces pedestrian flow. Additionally causing traffic congestion are roadside vending stalls. There are no educational signs that aid in easing traffic jams. To improve off-street parking facilities and lessen traffic congestion, MLCPs must be installed. By creating zones for street vendors to vend, the right of way needed for improved vehicle circulation will also be regained.

8 Housing

Housing is a key input for economic, social, and civic development. Provision of appropriate residential areas concerning workplace, industrial area, and access to various facilities is also a key to a successful Town development strategy for any urban area. The main purpose of the housing sector is to assist all people especially the houseless, economically weaker sections of the society, and to expand the supply of developed land for housing possibly through land use planning.

8.1 Existing situation analysis

In Dindigul LPA, there are 2062228 households as per 2011 Census. There are 70.86% good houses, 27.66% liveable houses and 1.47% dilapidated houses as per 2011 census as shown below Table 8-1.

Table 8-1 Existing Household Analysis

S.No	Dindigul District			Dindigul Town	Town Panchayats in LPA	Villages in LPA	Dindigul LPA
	Total	Rural	Urban	Urban	Urban	Rural	Total
Total Census Houses	563,172	352,757	210,415	53,550	40,404	112,274	206,228
Good Houses	388,458	235,321	153,137	40,878	29,252	76,009	146,140
% of Good Houses	68.98%	66.71%	72.78%	76.34%	72.40%	67.70%	70.86%
Livable Houses	165,523	111,108	54,415	12,088	10,606	34,356	57,050
% of Livable Houses	29.39%	31.50%	25.86%	22.57%	26.25%	30.60%	27.66%
Dilapidated Houses	9,191	6,328	2,863	584	545	1,909	3,038
% of Dilapidated Houses	1.63%	1.79%	1.36%	1.09%	1.35%	1.70%	1.47%

(Source : Census of India)

The data indicates that a significant proportion of houses in Dindigul district are classified as good houses (68.98%), followed by livable houses (29.39%). Dindigul town has a higher percentage of good houses (70.86%) compared to the rest of the district, indicating relatively better housing conditions in the urban areas of the town. The percentage of

dilapidated houses is relatively low, suggesting that a relatively small number of houses are in urgent need of repair or reconstruction. It is crucial for local authorities and policymakers to monitor and address the housing conditions, especially in rural areas, to ensure better living standards for the residents. Initiatives focusing on housing development, renovation, and infrastructure improvement can contribute to enhancing the overall quality of life in Dindigul district.

8.2 Existing Housing need assessment

8.2.1 Housing Shortage

Houseless Households in the LPA in census 2011 is given below in Table 8-2. The specific data for Dindigul Municipal Corporation (M.Corp) indicates that there are 36 urban houseless households in the city. These houseless households account for a total urban population of 56 individuals.

Table 8-2 Household Size

Description	Total/ Rural/ Urban	Houseless households		Household size						
		Number	Population	1	2	3	4	5	6	7+
Dindigul District	Urban	155	282	94	32	12	5	7	3	2
Dindigul District	Rural	101	292	35	18	12	14	13	3	6
Dindigul District	Total	256	574	129	50	24	19	20	6	8
Dindigul (M.Corp)	Urban	36	56	21	12	2	0	1	0	0

(Source : Census of India)

The most common household sizes among urban houseless households in Dindigul (M.Corp) are 1 (21 households) and 2 (12 households). While the number of houseless households is relatively higher in urban areas, rural areas also have a considerable number of such households. The majority of houseless households have smaller household sizes (1 to 4 members), indicating a higher prevalence of single individuals or small families among the houseless population. It is important to address the issue of houselessness and provide appropriate support and social welfare measures to improve the living conditions of these households in Dindigul CLPA.

8.2.1.1 Ongoing and Completed Projects

8.2.2 Slums and Informal housing

Slums are defined based on the condition of the area and the buildings. An area, which is described as a source of danger to the health and safety of the people living in the area and its neighborhood and buildings, which are considered as unfit for human habitation. Slums have been either improved or redeveloped under various programs such as JNNURM, and PMAY. The term squatter describes a wide range of low-income settlements or poor living conditions. Slum at its simplest definition is a heavily populated area characterized by substandard housing and squatter. In the last decade, slum upgradations are executed under schemes and policies like JNNURM, and PMAY. The notified slums in Dindigul LPA is given below in table 8-3 as per census 2011.

Table 8-3 Slums in LPA

S.No	Description	Total/Rural/Urban	Total number of census houses	% of Total number of vacant census houses	% of Total number of occupied census houses
1	Agaram (TP)	Urban	1,721	7.03%	92.97%
2	Thadikombu (TP)	Urban	1,275	4.78%	95.22%
3	Dindigul (M)	Urban	29,563	4.08%	95.92%
Total Slums in LPA		Urban	32,559	4.26%	95.74%

(Source : Census of India)

Table 8-4 Housing Condition in LPA

	Tamilnadu	Agaram (TP)	Thadikombu (TP)	Dindigul (M)	Dindigul LPA
Total Houses	1,447,668	1,427	1,105	25,293	27,825
Good Houses	1,001,502	1,227	773	18,058	20,058
% of Good Houses	69.18%	85.98%	69.95%	71.40%	72.09%
Livable Houses	421,325	189	257	6,817	7,263
% of Livable Houses	29.10%	13.24%	23.26%	26.95%	26.10%
Dilapidated Houses	24,841	11	75	418	504
% of Dilapidated Houses	1.72%	0.77%	6.79%	1.65%	1.81%

Source – Census of India

8.3 Housing need and demand

Housing need and demand in Dindigul, like in many growing regions, is influenced by various factors such as population growth, urbanization, economic development, and migration patterns. Meeting the housing needs and demands of the population is essential to ensure adequate and affordable housing for all residents.

Table 8-5 Existing Housing Demand

S.No	Description	Population
1	Total Population 2011	811445
2	Households in LPA	206251
3	Slum Households	27825
4	Dilapidated Houses	3038
5	Houseless Households	36
6	Total Housing Demand	30899

The total housing demand for Dindigul was estimated to be 30,899. Housing demand represents the need for new residential units to accommodate the growing population or to address deficiencies in the existing housing stock. Meeting this demand is essential to ensure that residents have access to decent and affordable housing options. Addressing the housing need and demand in Dindigul requires a multi-faceted approach, involving collaboration between government authorities, private developers, and social organizations. Sustainable urban planning, affordable housing projects, and investment in housing infrastructure are essential components of ensuring a balanced and inclusive housing market in the district.

8.4 Observations:

The data indicates a significant housing demand in Dindigul, which includes both formal and informal housing needs. Addressing the needs of slum households, dilapidated houses, and houseless households is crucial to improve the overall living conditions in the district. To ensure sustainable urban development and inclusive growth, it is essential to plan and implement housing policies that cater to the varying needs of the population, including affordable housing options and slum redevelopment projects. Meeting the housing demand in Dindigul requires a collaborative effort between government agencies, urban planners, real estate developers, and social organizations. By providing adequate and affordable housing, Dindigul can enhance the well-being and quality of life of its residents.

9 Physical Infrastructure

9.1 Water supply

9.1.1 Dindigul City Municipal Corporation

In Dindigul Town, major source of water is Athoor Kamarajarsagar Dam and Cauvery River. Total quantity of water tapped from these sources is 17.50 MLD as shown in the table 9-1 below.

Table 9-1 Existing Water Source in Dindigul

S. No	Water sources in use	Name/ Location	Number of Water tapping points	Quantity of water tapped (MLD)
1	Surface water source 1	Athoor kamarajar sagar Dam	1	12.00
2	(River/ Dam/ Lake/ Pond/ Canal)			
3	Surface water source 2 (River/ Dam/ Lake/ Pond/canal)	River Cauvery	1	5.50
Total				**17.50**

Source – Dindigul Corporation

There are water treatment plants in Dindigul responsible for purifying the raw water sourced from rivers and reservoirs. These treatment facilities ensure that the water meets the required quality standards for drinking purposes. In Dindigul Corporation, Water tapped from the source is treated through WTP having a capacity of 26.40 MLD.

Table 9-2 Location of Water Treatment Plant

S. No	Name/ Location of Water Treatment Plant	Designed capacity of WTP (MLD)	Operational capacity of WTP (MLD)	Technology used for automatic monitoring
1	Athoor kamarajar sagar Dam	26.40	26.40	Bulk Metering
2	CWSS – Karur Nerur	--	--	Bulk Metering
Total		**26.40**	**26.40**	**Bulk Metering**

Source – Dindigul Corporation

Water tapped from the source is then stored in OHTs and distributed to the people. Existing OHTs and its capacity in Dindigul Town is given below.

Table 9-3 OHTs in Dindigul LPA

S. No	Name of Distribution station	Water supplied	Water storage capacity (GSR)	Water storage capacity (ESR)	Length of the distribution network (Km)	No.ofHouse holds covered by distribution
		(MLD)	(MLD)	(MLD)		station
1	Municipal office Back side OHT	1		1	19.492	3369
2	Poochinayakkanpatti OHT	0.5		0.5	10.763	1067
3	Bharathipuram	0.6		0.6	13.585	1303
4	Mettupatti	1		1	18.558	1929
5	Rock Fort (pumping supply)	4.77	3.2	0	25.887	3627
6	RM Colony (old)	0.5		0.5	14.751	2037
7	Bus stand (New)	0.23		0.23	9.732	1392
8	MVM Nagar	1.5		0.5	15.416	1031
9	Kodakanar (old)	0.3		0.3	9.479	375
10	Round road	1.5		1.5	28.484	4376
11	Anna nagar	1.5		1.5	23.099	2296
12	Savariyarpalayam	0.6		0.6	12.181	1079
13	Kullanampatti	0.5		0.5	14.479	1336
14	RM Colony (new)	0.4		0.4	11.538	1332
15	Kodakanar (New)	0.6		0.6	15.746	826
16	Santhai	1		1	13.881	2261
17	Bus stand (old)	1.24		1	18.739	1622
Total		17.50	3.2	11.73	275.81	31258

Source – Dindigul Corporation

In Dindigul Town, total water supplied to the people in a day is 77LPCD against the norm of 135 LPCD. House Service Connections provided in Dindigul Corporation as per Jal Jeevan Mission is provided below

Table 9-4 HSC Connections

Description	No. of households to be provided with water connections in base year 2021	Water Demand in base year 2021 (MLD)	No. of households to be provided with water connections in 2025	Estimated Water Demand in 2025 (MLD)	No. of households to be provided with water connections in year 2030	Estimated Water Demand in 2030 (MLD)	No. of households to be provided with water connections in year 2050	Estimated Water Demand in 2050 (MLD)
Residential/ Households	44616	34.55	45756	35.14	47521	36.03	54790	40.75
Commercial and Institutional establishments	1113	0.75	1200	0.81	1400	0.95	2000	1.35
	2	0.2	5	0.5	10	1	20	2

The data underscores the need for planned water supply infrastructure development to cater to the increasing water demand in Dindigul over the years. As the population and economic activities grow, the water demand from residential, commercial, institutional, and industrial sectors is expected to rise significantly. Proper water management and conservation measures are essential to ensure a sustainable water supply in the future, considering the projected increase in demand.

Figure 9-1 OHT – Anna Nagar

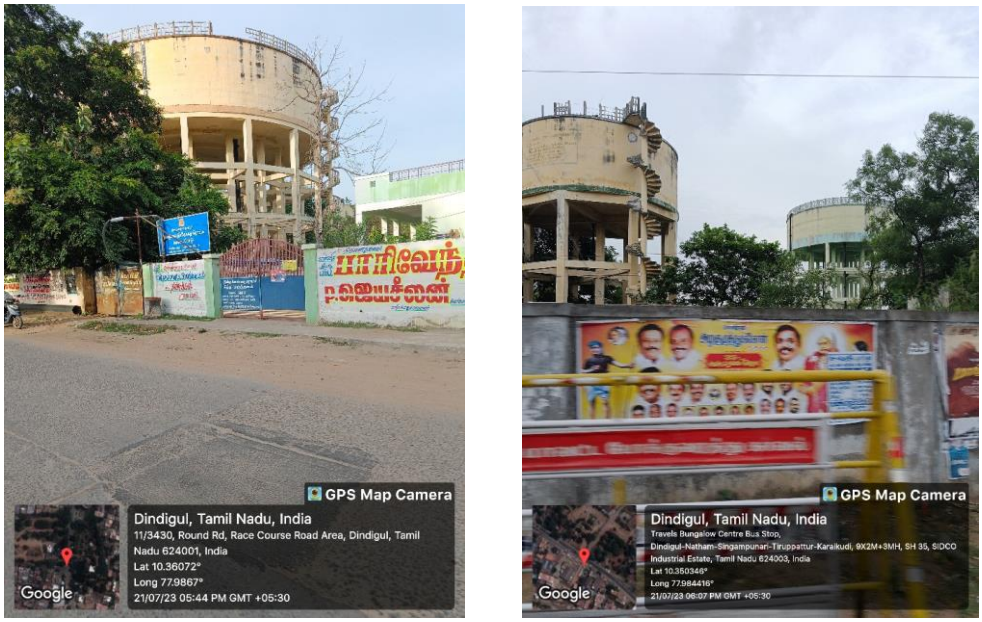


Figure 9-2 OHT – Racecourse road

9.1.2 Town Panchayats

Agaram Town Panchayat has a population of 15,610 as per the 2011 census. The water supply for Agaram is drawn from the Kaveri Combined Water supply Scheme, specifically the Chatrapatty Sump. The designed quantity of water drawn from this source is 1.143 MLD, which is equal to the current water supply demand based on the present population.

Eriodu Town Panchayat has a population of 8,890 as per the 2011 census. The water supply for Eriodu is drawn from the Cauvery Combined Water Supply Scheme located on Ayyalur Road in Eriodu. The designed quantity of water drawn from this source is 0.3 MLD. However, the current water supply demand based on the present population is 0.685 MLD, which indicates that the demand exceeds the designed quantity.

Thadikombu Town Panchayat has a population of 18,838 as per the 2011 census. The water supply for Thadikombu is drawn from the Kaveri Combined Water Supply Scheme, specifically the Undarpatty Pirivu near. The designed quantity of water drawn from this source is 1.502 MLD, which is equal to the current water supply demand based on the present population. Vadamadurai Town Panchayat has a population of 18,015 as per the 2011 census. The water supply for Vadamadurai is drawn from the Kaveri Combined Water Supply Scheme. The designed quantity of water drawn from this source is 1.4 MLD. However, the current water supply demand based on the present population is slightly lower at 1.337 MLD.

Vedasandur Town Panchayat has a population of 11,730 as per the 2011 census. The water supply for Vedasandur is drawn from the Vedasandur Kaveri Combined Water Supply Scheme. The designed quantity of water drawn from this source is 0.9 MLD, which is very close to the current water supply demand based on the present population, at 0.903 MLD. Considering all five Town Panchayats together, the total population is 73,083. The total designed quantity of water drawn from the various sources is 5.245 MLD, while the current water supply demand based on the present population is 5.57 MLD.

Table 9-5 Water Supply Schemes in Town Panchayats

S.No	Name of the Town Panchayat	Population as per 2011 census	Water drawn from		Water supply Designed quantity in MLD	Water supply Demand as per present population in MLD
			Name of the Source and Location	Maintained by TWAD/METRO/ULB		
1	Agaram	15610	Kaveri Combained Water supply Scheme (TWAD) - Chatrapatty Sump	ULB	1.143	1.143
2	Eriodu	8890	Cauvery Combined Water Supply Scheme - Ayyalur Road, Eriodu	TWAD	0.3	0.685
3	Thadikombu	18838	Kaveri Combained Water supply Scheme (TWAD) - Undarpatty Pirivu Near	TWAD	1.502	1.502
4	Vadamadurai	18015	Kaveri Combained Water supply Scheme (TWAD)	TWAD	1.4	1.337
5	Vedasandur	11730	Vedasandur Kaveri Combained Water supply Scheme (TWAD)	TWAD	0.9	0.903
Total		73083			5.245	5.57

The LPCD values, which represent the quantity of water available to each individual, range from 71 to 95 liters, indicating a reasonably adequate supply. The position of water supply is uniformly reported as "Good" in all Town Panchayats, suggesting that the water supply situation is generally satisfactory and meets the residents' needs. It is essential to continue monitoring the water supply infrastructure and ensuring its sustainability and efficiency to meet the growing demands of the population in these Town Panchayats effectively.

Table 9-6 Town Panchayat Water Supply Status

Sl.No.	Name of the Town Panchayat	Total Qty. in MLD	Frequency of supply	LPCD	Position of water supply (Good/ Comfortable)
1	Agaram	1.355	Daily	83	Good
2	Eriodu	0.692	Daily	71	Good
3	Thadikombu	1.695	Daily	79	Good
4	Vadamadurai	1.355	Daily	71	Good
5	Vedasandur	1.230	Daily	95	Good

The available infrastructure of the 5 Town panchayat as GLSR, OHTs, and House Service connections is given below Table 9-7.

Table 9-7 Quantity of Water Supply in MLD

Sl.No.	Name of the Town Panchayat	Quantity of Water Supplied in MLD				Total Qty. in MLD
		From Regular schemes	From Local Sources (HP/Open wells)	From mini power pump With Sintex	From Bore wells (Power Pump)	
		TWAD				
1	Agaram	0.610	0.050	0.090	0.605	1.355
2	Eriodu	0.300	0.047	0.085	0.260	0.692
3	Thadikombu	0.250	0.500	0.100	0.845	1.695
4	Vadamadurai	0.350	0.450	0.200	0.355	1.355
5	Vedasandur	0.900	0.200	0.130	0.000	1.230
Total		2.410	1.247	0.605	2.065	6.327

Table 9-8 OHTs and HSCs in Town Panchayats

S. No.	Name of the Town Panchayat	No. of House holds	Available Infrastructure				Service Connection		
			GLR		OHT		No.Of Public Taps	No. of House Service Connection	Commercial/Industrial Service Connection
			Nos.	Total capacity in lakh liter	Nos.	Total capacity in lakh liter			
1	Agaram	4365	1	0.05	29	8.80	255	962	4
2	Eriodu	3165	5	0.05	21	4.20	160	667	4
3	Thadikombu	4852	0	-	35	9.20	113	902	0
4	Vadamadurai	7032	2	1.06	22	9.00	274	2298	24
5	Vedasandur	6327	0	-	8	7.70	102	1582	28
	Total	**124456**	**71**	**36.06**	**293**	**159.80**	**4070**	**41724**	**468**

9.1.3 Village Panchayats

In villages, the source of water is from Hand Pumps, Power, and mini-Power pumps, Open Well and Cauvery water Distribution Scheme. The below Table 9-9 shows the quantity of water supply per day ranging from less than 40 Lpcd, 40-55 Lpcd and above 50 Lpcd.

Table 9-9 Water Supply Details in Village Panchayats

S. No.	Name of the Block	Number of Panchayats	Population (as per 2011 Census)	Total number of Habitations	Quantity of water supplied per day					
					less than 40 LPCD		Between 40-55 LPCD		Above 55 LPCD	
					Number of Habitations	Percentage	Number of Habitations	Percentage	Number of Habitations	Percentage
1	Dindigul	14	151204	307	30	9.77	34	11.07	243	79.15
2	Nilakottai	23	124478	184	20	10.87	162	88.04	2	1.09
3	Vadamadurai	15	78859	209	38	18.18	105	50.24	66	31.58
4	Vedasanthur	22	96379	382	30	7.85	336	87.96	16	4.19

Table 9-10 below lists the household connection for Dindigul LPA by block. Only 87.77% of the 51,571 households in Dindigul Block have furnished HSCs; the remaining 6,309 must be provided. In contrast, 57.19% of households in the Nilakottai and Vadamadurai Block have provided HSCs. In the Vedasandur block, 19,185 homes still need to provide HSCs, with 40.45% of the households having already received one.

Table 9-10 Household connection

S. No.	Block Name	Total Rural household as on (01/04/2023)	Total Household connections reported till (13/07/2023)	Balance to be Provided	Percentage of HSCs provided
1	Dindigul	51571	45262	6309	87.77%
2	Nilakottai	35696	20414	15282	57.19%
3	Vadamadurai	24079	9564	14515	39.72%
4	Vedasandur	32218	13033	19185	40.45%

Table 9-11 Existing Water Supply Demand in LPA

S. No	Description	Dindigul Town	Town Panchayats in Dindigul LPA	Villages in Dindigul LPA
1	Population (2021)	230374	81207	590066
2	Coverage of water Supply connection	66.00%	-	-
3	Per capita Supply (TWAD Board Norms)	135	90	55
4	Total quantity required as per TWAD Board Norms (in MLD)	31.10	7.31	32.45
5	Existing Per capita supply (in lpcd)	77	61	40
6	Total quantity supplied (in MLD)	17.50	5.30	23.60
7	Existing demand (in MLD)	13.36	2.01	8.85

Total water supplied in the LPA is 46.40 MLD while the gap as per norms is 24.22MLD. Dindigul Town has achieved a significant water supply connection coverage of 66.00%. The per capita water supply in Dindigul Town is higher compared to the Town Panchayats and villages within the Dindigul LPA, as per TWAD norms. The existing water supply in Dindigul Town is lower than the existing demand, indicating that the supply is not meeting the current requirements to some extent. Existing water supply in the Town

Panchayats and villages within the Dindigul LPA is lower than the existing demand, suggesting a gap that needs to be addressed to meet the water needs of these areas adequately. Efforts should be made to bridge the gap between water supply and demand in all areas, and sustainable water management practices should be adopted to ensure sufficient and equitable water supply to the residents of Dindigul district.

9.2 Sewerage

In Dindigul LPA, total sewage generated is 37.12 MLD. There is a sewage treatment plant in Dindigul Town for a capacity of 13.65 MLD. In Medical College, total sewage generation is 1.5 LL per day. In GH, Sewage generation is 5 LL per day.

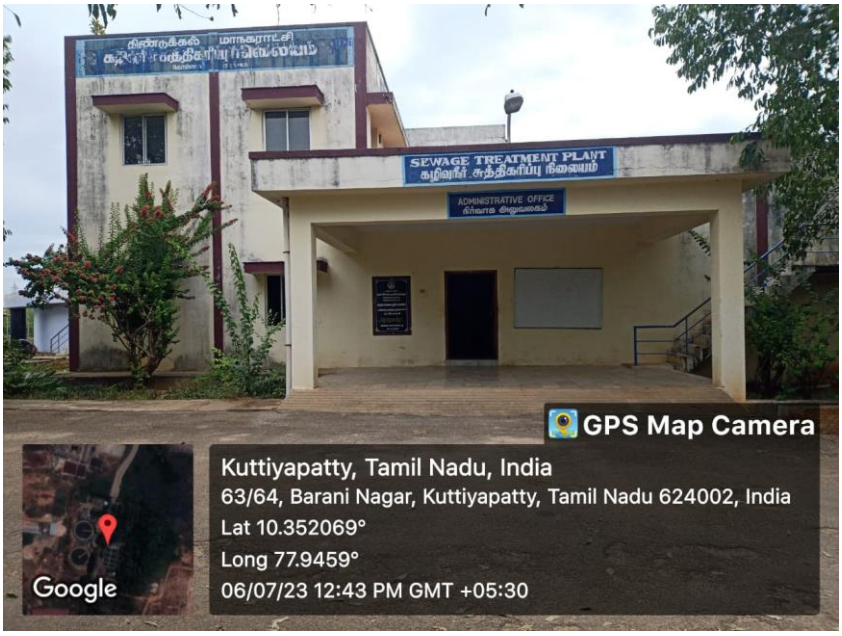


Figure 9-3 Sewage Treatment plant - Kuttiyapatty

The Ponmandurai Water Treatment Plant plays a crucial role in treating sewage and producing reusable water for industrial purposes. With a designed capacity of 13.65 MLD, the plant is currently operating at 3 MLD capacity, effectively treating and reclaiming water. The reclaimed water is then used for industrial needs, which can potentially generate revenue for the facility. Sludge generated during the treatment process is disposed of within the plant premises. The STP is equipped with automatic monitoring systems, including a digital meter, to ensure efficient and continuous monitoring of the treatment processes. The plant's efforts in water treatment and reuse contribute to sustainable water management practices in the region.

Table 9-12 Capacity of STP

Name/ Location of Water Treatment Plant	Designed capacity of STP (MLD)	Capacity at which STP is working(MLD)	If reused, Reuse capacity (MLD)	Reuse purpose (agriculture/ arboriculture/industry	Sludge generated (KLD)	Sludge disposal locations	Revenue generation from reused water/	Whether automatic monitoring is exercised in STP
Ponmandurai	13.65	3	3	Industry	0.40 KLD	STP Premises	Nil	Digital Meter Fixed at STP
Total	13.65	3	3	Industry	0.40 KLD	STP Premises	Nil	Digital Meter Fixed at STP

Table 9-13 Existing Sewage Demand in LPA

S.No	Description	Existing Water Supply (MLD)	Existing Sewage Generated (MLD)	Present Installed Capacity of STPs (MLD)	Present Gap (MLD)
1	Dindigul Town	17.50	14.00	13.65	0.35
2	Town Panchayats in Dindigul LPA	5.30	4.24	-	4.24
3	Villages in Dindigul LPA	23.60	18.88	-	18.88
Total Dindigul LPA		**46.30**	**37.12**	**13.65**	**23.47**

The data reveals that there is a significant gap in sewage treatment infrastructure in Dindigul LPA, especially in the Town Panchayats and villages. The sewage generated exceeds the existing water treatment capacity by a substantial margin, indicating a pressing need for the expansion and establishment of STPs in these areas to ensure proper sewage treatment and environmental conservation. The existing water supply in Dindigul Town appears to be closely aligned with the sewage generated, suggesting a relatively better sewage management system compared to the other regions in the LPA Efforts should be focused on addressing the sewage treatment gaps in the Town Panchayats and villages to achieve

comprehensive and sustainable water management in Dindigul LPA. The establishment and upgradation of sewage treatment facilities are essential to ensure the protection of the local environment and public health.

Table 9-14 Households with Sewer Connection Details

S.No	Description	No.of Households covered	sewage generated (MLD)	Sewage treated through STP (MLD)	Sewage to be treated (MLD)	Sewage recycled (MLD)
1	HH with sewer connections	11418	3.00	3.00	-	3.00
2	HH with sewer connections and connected to STP	11418	3.00	3.00	-	3.00
3	HH with sewer connections and not connected to STP	Nil	-	-	-	-
Total		**11418**	**3.00**	**3.00**		**3.00**

S. No	Description	No. of households covered	sewage generated (MLD)
1	HH with septic tanks	34313	10.56
2	HH without septic tanks and sewer connections	_	_
Total		**34313**	**10.56**

Total No. of wards in Dindigul LPA is 48 nos. UGSS covered wards are 2,3,4,5,6,7,8,9,11,12,13,14,15,16,17,18,20,21,22,26,27,28,29,30,32,43. Total No. of HSCs provided is 11719 nos. STP method is activated sludge process method. Length of sewer line is 95km. UGSS covered area is 22%. Proposed UGSS for a cost of 249.93 crores covers length of 121km and provides UGSS connection to 22586 nos of house connections. Proposed STP is having a capacity of 15.4 MLD.

9.3 Storm Water System

A well-designed and properly maintained Stormwater Drainage system is crucial for any urban area to mitigate the impacts of heavy rainfall and prevent flooding and water stagnation. Efficient SWD infrastructure ensures that stormwater is effectively channeled away from roads, streets, and properties, reducing the risk of damage to buildings and structures. Additionally, a robust SWD system helps protect the city's ecosystem by preventing water pollution and conserving water resources. In Dindigul Municipal Corporation, Storm Water Drain is available for a length of 246.92 km.

Table 9-15 Drains in Dindigul

S.No	Category	Length of SWD in Km
1	Major Roads	210030.19
2	Residential Streets	36894.41
Total		**246924.60**

Source – Dindigul Corporation

Continuous maintenance and periodic upgrades of the Storm water Drainage system are essential to ensure its optimal functioning and resilience to changing weather patterns and urban development. As Dindigul continues to grow and urbanize, future expansion and enhancement of the SWD network will be critical to meet the evolving needs of the city and cope with potential climate-related challenges. Overall, the extensive length of the Storm water Drainage system in Dindigul, covering major roads and residential streets, showcases the city's commitment to effective storm water management and its dedication to providing a safe and sustainable urban environment for its residents. Drain length in Town panchayats are listed below in Table 9-16.

Table 9-16 Drainage Length

Sl.No.	Name of the Town Panchayat	Drain Length in KM			Total Drain (in KM)
		Pucca Drain (in km)		Kutcha drain (in Km)	
		With Cover slab	Without cover slab		
1	Agaram	2.900	4.100	2.000	9.000
2	Eriodu	1.970	4.250	1.985	8.205
3	Thadikombu	0.000	12.198	7.250	19.448
4	Vadamadurai	0.000	6.603	4.000	10.603
5	Vedasandur	0.000	2.380	3.250	5.630
	Total	**42.710**	**223.814**	**114.662**	**381.186**

The above table 9-16 illustrates the existing drainage infrastructure in various Town Panchayats of Dindigul. Pucca drains with cover slabs are less prevalent in some areas, not ensuring better structural stability and longevity. On the other hand, kutcha drains serve as fundamental drainage infrastructure in some regions. To ensure effective storm water management and prevent waterlogging during heavy rainfall, it is essential to maintain, upgrade, and expand the drainage system where needed, based on the specific requirements and development of each Town Panchayat. Adequate investment and continuous maintenance are crucial to creating a resilient and efficient drainage network in Dindigul's Town Panchayats, ensuring the well-being and safety of residents and the sustainable development of the region.

9.3.1 Water bodies in Dindigul Corporation

All the drains from the Dindigul LPA drains into the water bodies present in the low-lying areas which are marked in the map 9-1 below.

Table 9-17 Water bodies in Dindigul Corporation

	Approx. area of the water body (in Acre)	Attach a geotagged photo	Water quality parameters	BOD	COD	Do	TDS	Turbidity
Muthusamy kulam	**10.14**	10.346698 77.987204		6	64	5.30	**1357**	**2**
Leppaiyan kulam	**6.31**	10.343084 77.984284		-	257	-	**1483**	**2**
Lingammal kulam	**3.59**	10.375518 77.964456		-	96	1	**1806**	**1**
Paraikulam	**13.24**	10.357192 77.976075		12	273	1.8	**4444**	**2**
Gopalasamuthram kulam	**3.85**	10.364678 77.974425		12	129	1.7	**1117**	**0**
Ayyan kulam	**16.65**	10.364821 77.963720		3	48	4.7	**1460**	**0**
Siluvathur road kulam	**8.12**	10.363080 77.985327		15	257	1.90	**756**	**0**
Maruthani kulam	**6.65**	10.373807 77.976036		-	129	-	**2964**	**0**
Kottai kulam	**1.88**	10.360851 77.965460		9	48	4.70	**330**	**0**

9.4 Solid waste Management

Total Solid waste generated in Dindigul LPA is 253.50 ton per day in 2021. For projected population in 2041, it is 296.45 TPD. In GH, total waste generation is 1.5KLD.

Table 9-18 Solid Waste Management

S.No	Description	2021 Population	NEERI Standards kg/capita/day	Quantity of waste generated (TPD)
1	Dindigul Town	230374	0.5 kg/day/person	115.19
2	Rest of Town Panchayats in LPA	81207	0.25 kg/day/person	20.30
3	Villages in LPA	590066	0.2 kg/day/person	118.01
4	Total Dindigul LPA	901647		253.50

In Dindigul town, wet waste is 46MT and dry waste is 46MT. Existing MCC in Dindigul Town having a capacity of 43MT is listed in Table 9-19 below.

Table 9-19 MCC Details

S.No.	MCC Site	Capacity (MT)
1	Paraipaty	5
2	Vehicle Shed	5
3	Vedapatty	5
4	Sandhai Road	5
5	Anna Nagar	5
6	Beski College	3
7	RM Colony	5
8	Govindapuram	5
9	KM Nagar	5

Solid waste generated in Town Panchayats is given below and its disposal is by dumping them in a landfill site which details are given below. Collectively, the total area of land available for processing solid waste in all the mentioned Town Panchayats is 37.42 acres.

Table 9-20 Solid Waste Generated Quantity details

Sl.No.	Name of the Town Panchayat	General Details								
		No. Of House hold (Current)	Total Qty of waste generated per day (TPD)	Total Qty of Waste Collected Per Day (TPD)	Bio-Degradable Waste (TPD)	Non Bio-Degradable Waste (TPD)		Silt (TPD)	Door to Door Collection %	Source segregation %
						Plastic Waste	Others			
1	Agaram	4414	3.756	3.756	2.066	0.062	1.253	0.38	82%	81%
2	Eriodu	3181	2.444	2.444	1.344	0.062	0.792	0.24	84%	80%
3	Thadikombu	4878	6.223	6.223	3.423	0.011	2.165	0.62	80%	80%
4	Vadamadurai	7008	4.580	4.580	2.519	0.106	1.495	0.46	79%	86%
5	Vedasandur	6406	2.965	2.965	1.631	0.017	1.019	0.30	88%	91%
Total		**124456**	**93.734**	**93.734**	**51.554**	**1.150**	**31.613**	**9.37**	**85%**	**85%**

Availability of land for waste processing ensures that both wet and dry waste can be managed in an organized and eco-friendly manner. The utilization of wet waste to produce compost supports sustainable agricultural practices and reduces landfill burden. Meanwhile, recycling of dry waste and the use of plastic waste in road projects contribute to environmental conservation and resource optimization.

Efforts by the Town Panchayats to manage solid waste responsibly, through waste processing and recycling, demonstrate their commitment to maintaining a clean and sustainable environment for residents and visitors alike. Continued focus on waste management infrastructure and regular awareness campaigns on waste segregation and recycling can further enhance the effectiveness of solid waste management practices in Dindigul Town Panchayats.

Table 9-21 Land Availability Details

Sl.No.	Name of the Town Panchayat	Land Availability			WET Waste Disposal	Dry Waste Disposal
		Whether Land available to process Solid Waste (Yes/No)	If Yes			
			Area of the Land in Acres	Classification of the land		
1	Agaram	yes	0.66	Punjai	Wet waste are processed to produce windrow compost and vermi compost	Dry waste are sent to recyclers. Plastic wastes are used in Road projects.
2	Eriodu	yes	1.42	Natham		
3	Thadikombu	yes	1.25	Natham		
4	Vadamadurai	yes	1.43	Government Purampookku		
5	Vedasandur	yes	2.66	Purampookku		
Total			37.42			



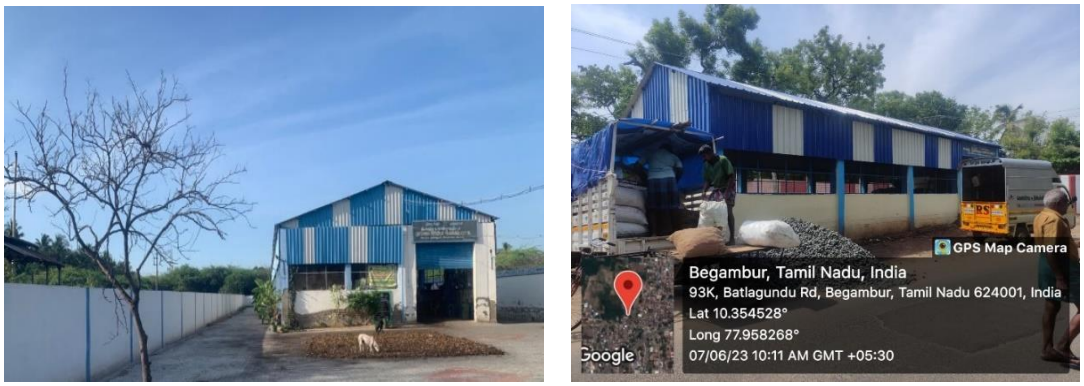
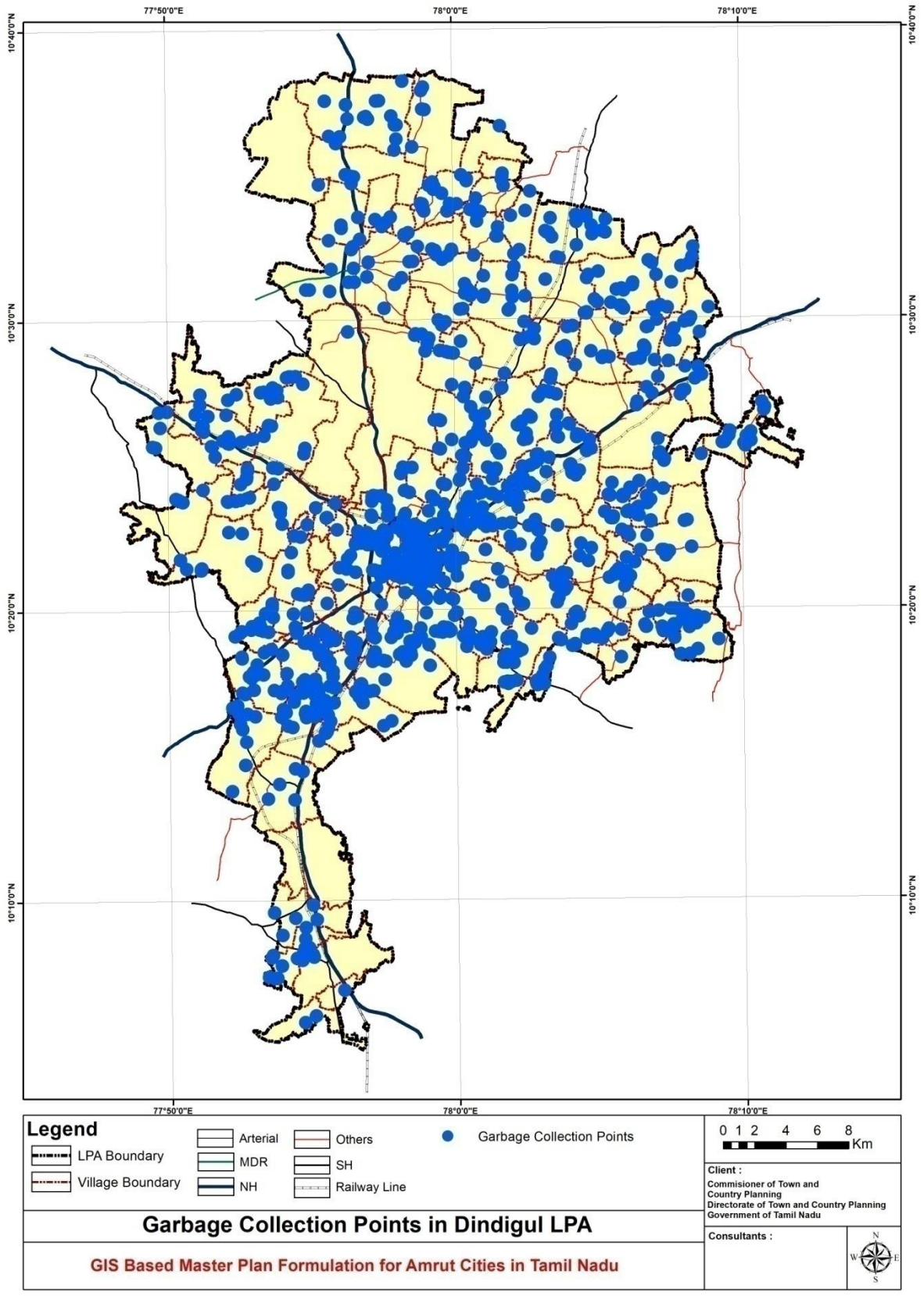
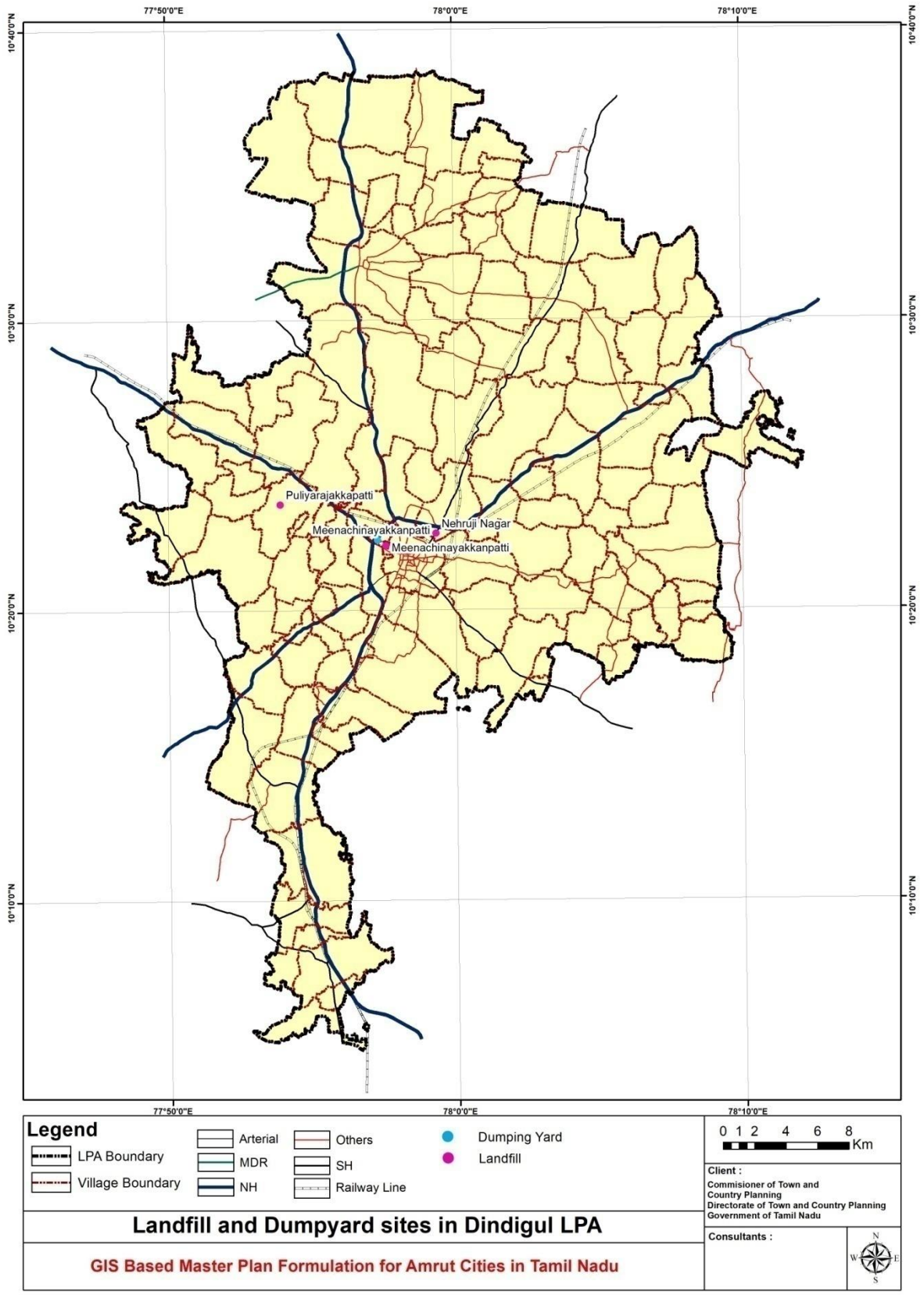



Figure 9-4 Micro compost unit - Bagambur

In Existing there are 1120 garbage collection points, 1 dumping yard and 3 landfill sites. The below map 9-1, shows the garbage collection point in Dindigul LPA.



Map 9-1 Map Showing Garbage Collection Points in Dindigul CLPA



Map 9-2 Map Show the Landfills and Dump yards in Dindigul CLPA

9.5 Electricity

9.5.1 Power Generation

Dindigul receives electricity supply from various power generation sources, including thermal power plants, hydroelectric power plants, and renewable energy sources such as solar and wind power. The city is likely connected to the regional power grid, which allows for the efficient distribution of electricity from different power generation centers.

Table 9-22 Power Generation Details

S.No.	Name of the Blocks/Municipalities	Name of the Stations/Sub Stations
1	Dindigul Municipality	Angunagar
2	Dindigul Block	Dindigul ,Tamaraipadi
3	Vadamadurai Block	Vadamadurai, Ayyalur
4	Vedasandoor Block	Vedasandoor, Minnukampatty, Renganathapuram, Eriodu, Nallamannarkottai
5	Guzilamparai Block	Chinnaluppai, Vallipatty, Chatrapatty, Kovilur, Palayam
6	Athoor Block	Sempatti, Thadicombu, Keelakottai, Gandhigram, Vittalnaickenpatty, Lakshmanapatty
7	Nilakottai Block	Nilakottai, Ammainaickanur, Ayyampalayam, Ramarajapuram, Sithargalnatham, Viruveedu
8	Thoppampatti Block	Vagarai

9.5.2 Electricity Transmission

Electricity generated from power plants is transmitted through high-voltage power lines to substations located in and around Dindigul. These substations step down the voltage to make it suitable for further distribution.

9.5.3 Electricity Distribution

The distribution network in Dindigul is responsible for delivering electricity to consumers, including residential, commercial, and industrial establishments. The distribution network consists of medium-voltage and low-voltage power lines, transformers, and distribution substations.

Table 9-23 Electricity Distribution

S. No	Item	Unit	Achievement (in percentage)
1	Industrial (HT) New	1905621905	63.54
	ADDL	--	--
2	Industrial (LT)New	157870000	5.26
	ADDL	--	--
3	Domestic	639950000	21.34
4	Commercial	169850000	5.66
5	Public water supply	58722000	1.96
6	Street lights	39148000	1.30
7	Huts	--	--
8	Agricultural(tatkal)	--	--
	(Normal,SFS)		
9	Others	27850000	0.93
10	Total	2999011905	100

9.5.4 State Electricity Board/Utility

The electricity infrastructure in Dindigul is likely managed by the Tamil Nadu Electricity Board (TNEB) or the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), which are responsible for power generation, transmission, and distribution across the state of Tamil Nadu.

9.5.5 Power Supply to Residential and Commercial Areas

Residential areas and commercial establishments in Dindigul receive electricity supply through a reliable network of power lines and substations. The electricity supply is typically provided round the clock, ensuring uninterrupted power to meet the energy needs of the residents and businesses.

Table 9-24 Power Supply Details

S. No	Sectors	Consumption (UNIT)	% of the Consumption
1	Industries (HT)	157870000	5.26
2	Industries (LT)	1905621905	63.54
3	Agriculture & Huts	0	0
4	Domestic	639950000	21.34
5	Commercial	169851250	5.66
6	Public lighting & Public Works	97872046	3.26
7	Sales to Licensees	0	0
8	Sales to Other States	0	0
9	Miscellaneous	27850286	0.93
Total		**2999015487**	**100%**

9.5.6 Rural Electrification

In addition to the urban areas, efforts are made to extend electricity access to rural and remote areas surrounding Dindigul. Rural electrification projects aim to bring electricity to villages and hamlets, improving the quality of life and supporting socio-economic development in these regions.

9.5.7 Power Infrastructure Development

The electricity infrastructure in Dindigul is subject to ongoing development and maintenance to cater to the increasing demand for electricity due to population growth, urbanization, and industrialization. The authorities continuously work on expanding the network and upgrading the infrastructure to ensure efficient and reliable power supply to all consumers.

Table 9-25 Power Infrastructure Development

Power purchased sectors name	Power purchased in M.U.
Private Sector (wind Mill)	191.66
Private sector (Solar)	341.12

Overall, the electricity infrastructure in Dindigul plays a vital role in supporting economic activities, enhancing living standards, and driving the city's progress. Reliable and accessible electricity supply is crucial for various sectors, including industry, commerce, education, healthcare, and household needs, making it a fundamental aspect of the city's development and well-being.

9.6 Renewable Energy

Renewable energy in Dindigul is gaining significance as the world shifts towards sustainable and eco-friendly energy sources. Here's an overview of the status of renewable energy in Dindigul.

Table 9-26 Renewable Energy Details

S. No	Name of the Power Stations	Year of Operation	Installed Capacity (MW)	Generation (MU)	Station Consumption (MU)	Net Unit sent out (MU)
1	Hydro	Nil				
2	Thermal	Nil				
3	Gas Turbine	Nil				
4	Wind Mills	2021-22	523.500	921.180	5.310	915.960
5	Solar	2021-22	456.259	598.000	3.090	597.250

Dindigul has actively invested in wind energy as a significant renewable energy source. As of the year 2021-22, the installed capacity of windmills in the region is 523.500 MW. These windmills have effectively generated 921.180 million units (MU) of electricity. A noteworthy aspect is that the station consumption is minimal at 5.310 MU, indicating efficient utilization of electricity within the wind mills. Consequently, Dindigul has been able to send out a substantial net unit of 915.960 MU to the power grid.

In line with the focus on renewables, Dindigul has also adopted solar power on a considerable scale. As of 2021-22, the installed capacity of solar power in the region is 456.259 MW. Solar power generation has contributed 598.000 million units (MU) of electricity. The station consumption for solar power is even lower, at 3.090 MU, resulting in a net unit sent out of 597.250 MU. Overall, Dindigul's energy landscape reflects a strong commitment to renewable energy sources, particularly wind and solar power. The substantial installed capacities and electricity generation from these sources are indicative of the city's efforts towards sustainability and reducing its carbon footprint. The absence of hydro, thermal, and gas turbine power stations further underscores the region's focus on cleaner and eco-friendly energy alternatives. With the continued growth of renewable energy initiatives, Dindigul is poised to be an exemplary model for sustainable energy practices in the region and beyond. Promoting awareness and educating the community

about the benefits of renewable energy is crucial for its wider adoption. Local authorities, NGOs, and environmental organizations may be conducting awareness campaigns to encourage the public to embrace renewable energy options and adopt energy-efficient practices. Overall, the integration of renewable energy in Dindigul's energy mix is a positive step towards achieving sustainable development and reducing dependence on fossil fuels. By tapping into the city's renewable energy potential, Dindigul can contribute to a cleaner and greener future while ensuring energy security and resilience for the community. As the world continues to prioritize renewable energy solutions, Dindigul's efforts in this direction are likely to play a significant role in shaping a sustainable energy landscape for the region.

10 Social Infrastructure

10.1 Educational Facilities

As of 2011, there are 19 municipal primary schools, 23 other primary schools, eight middle schools and 13 higher secondary schools in the Town. There were ten other private schools within the town. There were three engineering colleges and three arts and science colleges. Gandhi gram Rural University and Mother Teresa Women's University are the two universities present in Dindigul.

Figure 10-1 Marrys Higher Secondary School

Figure 10-2 High School - Bagambur

Figure 10-3 High School - Meenachinayakkanpatti

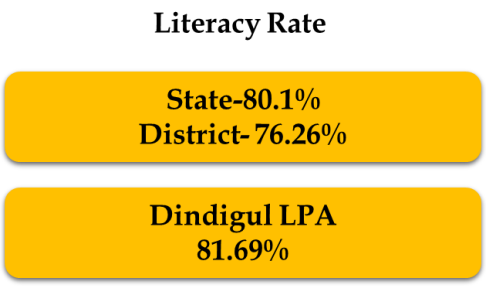


Figure 10-4 Literacy rate

Literacy rate of the LPA is higher than the district and state. It is evident from the fact that there are adequate educational facilities available for them as shown in the table 10-1 below. There are 614 schools and 21 colleges in the LPA.

Table 10-1 List of Schools

S.No.	Type of Institution	Number of Schools
1	Primary School	399
2	Middle School	91
3	High School	44
4	Higher Secondary School	80
Total		**614**

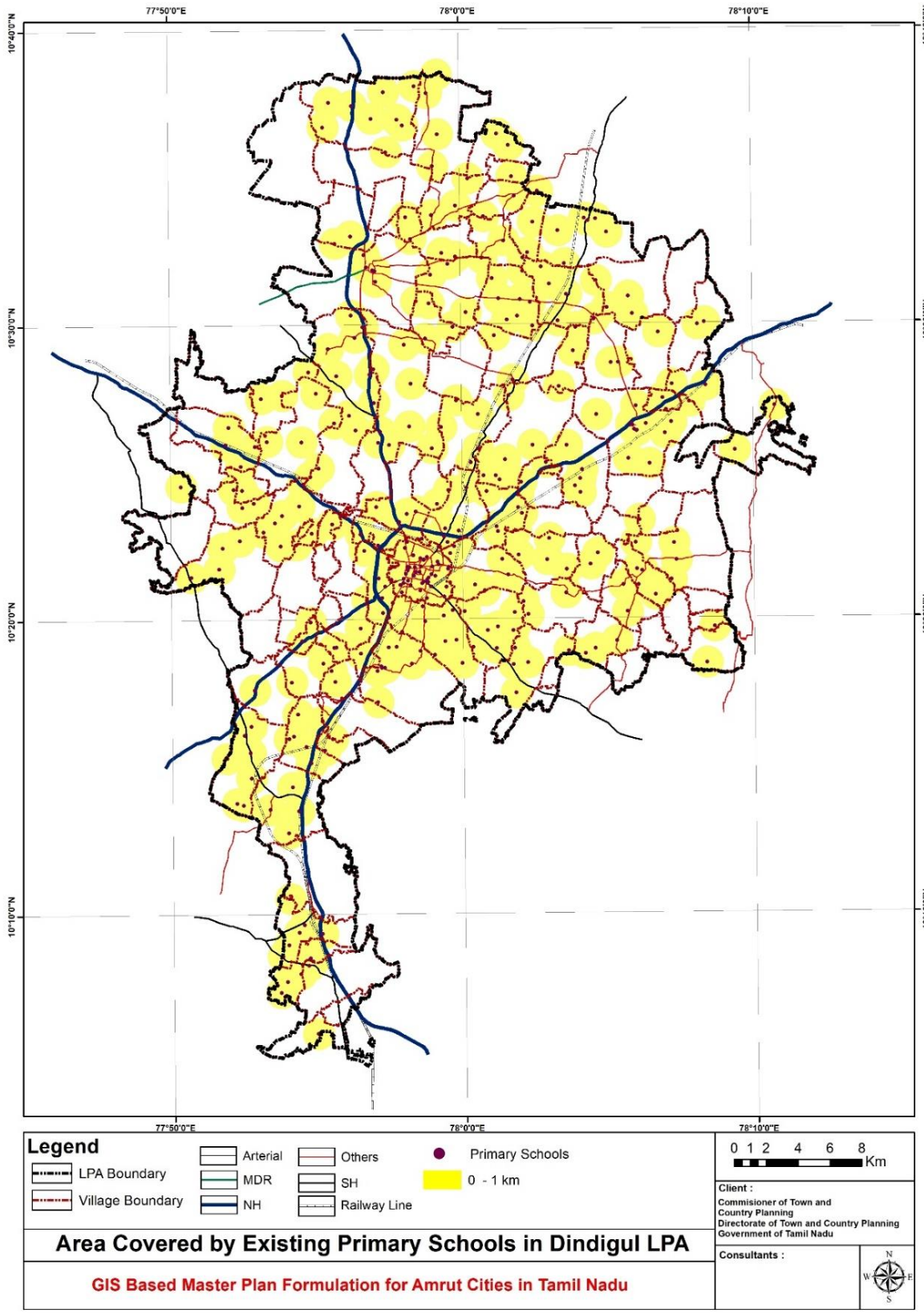
Table 10-2 List of Colleges

S.No	Type of Institution	Numbers
1	Engineering Colleges	3
2	Medical College	1
3	Arts & Science College	3
4	Polytechnic	15

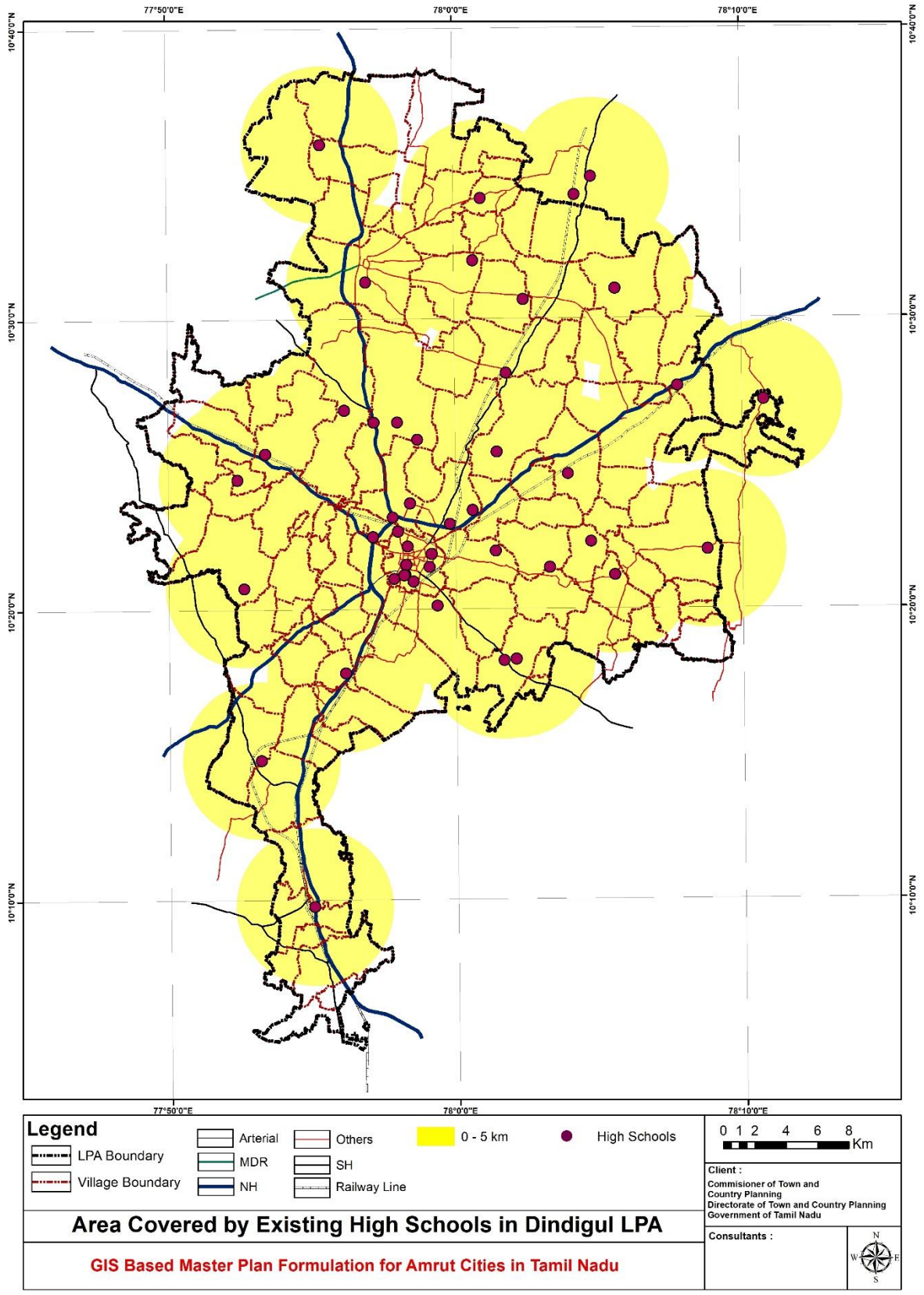
According to Tamil Nadu School Education Department, any place with a population of 300 and above must schools located at a distance as mentioned in Table 10-3 below.

Table 10-3 School Distance

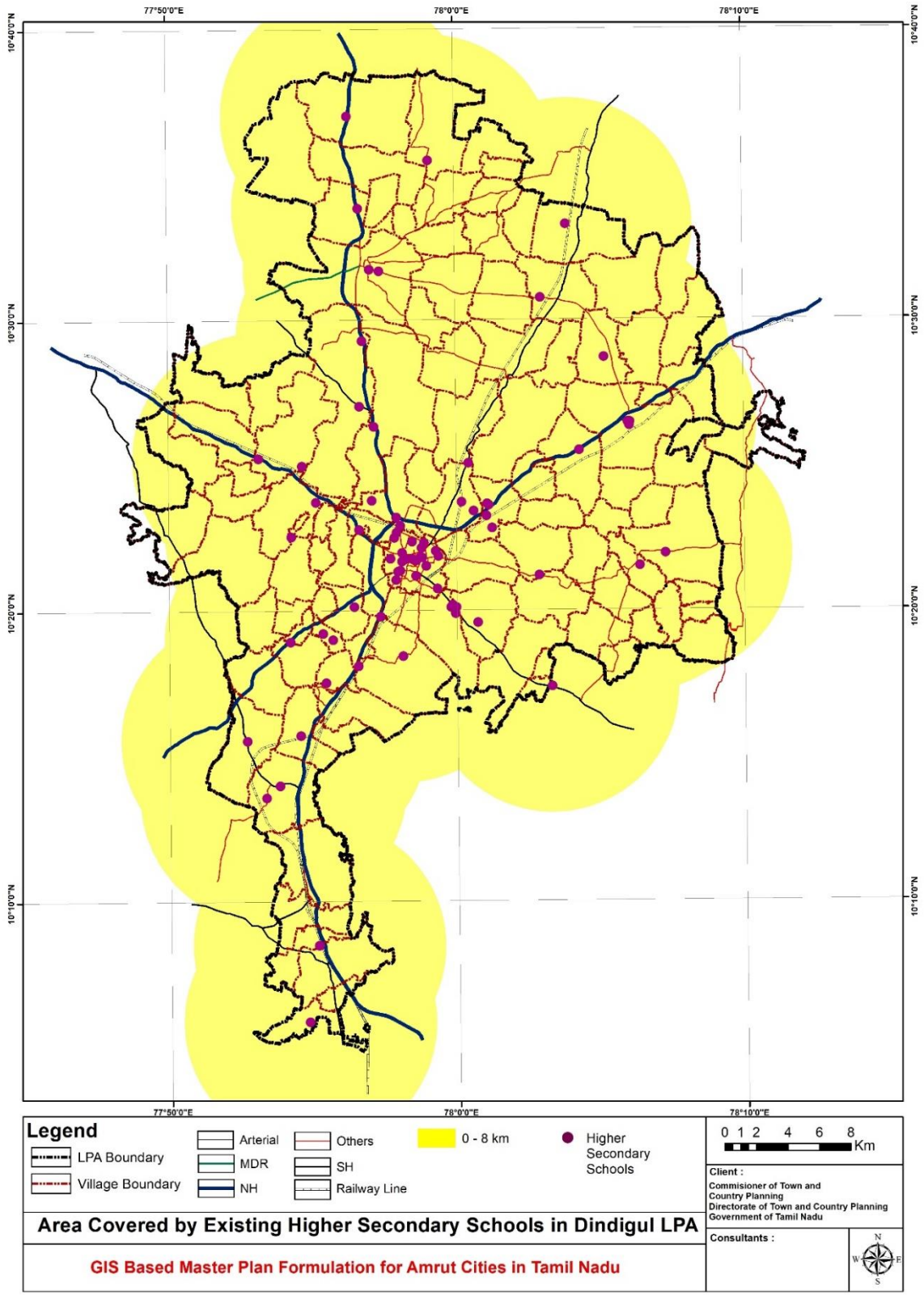
S.No.	Type of Institution	Distance
1	Primary Schools	1km
2	High Schools	5km
3	Higher Secondary Schools	8km



Map 10-1 Map Showing the Primary Schools and its influence area in Dindigul CLPA



Map 10-2 Map Showing the High Schools and its influence area in Dindigul CLPA



Map 10-3 Map Showing Higher Secondary Schools and its influence area in Dindigul CLPA

According to RTE Act 2009, a primary school must be accessed within a 1 km radius and a middle school within a 3 km radius. Presently, all the areas in Dindigul LPA are adequately covered by school facilities except primary school based on the above-mentioned norms. Improving the existing facilities will enhance the quality of education in Dindigul LPA.

10.2 Health care facilities

Health system infrastructure improves effectiveness, safety, timeliness, patient-centeredness, access, and efficiency. Inadequacies in health system infrastructure, limit access and contribute to poor quality of care and outcomes, particularly among vulnerable population groups.

Table 10-4 Hospitals and PHC+s

S.No	Hospitals and PHCs	Numbers
1	Government Hospital and Medical College Hospital	2
2	Primary Health Centre	6
3	Sub Primary Health Centre	25

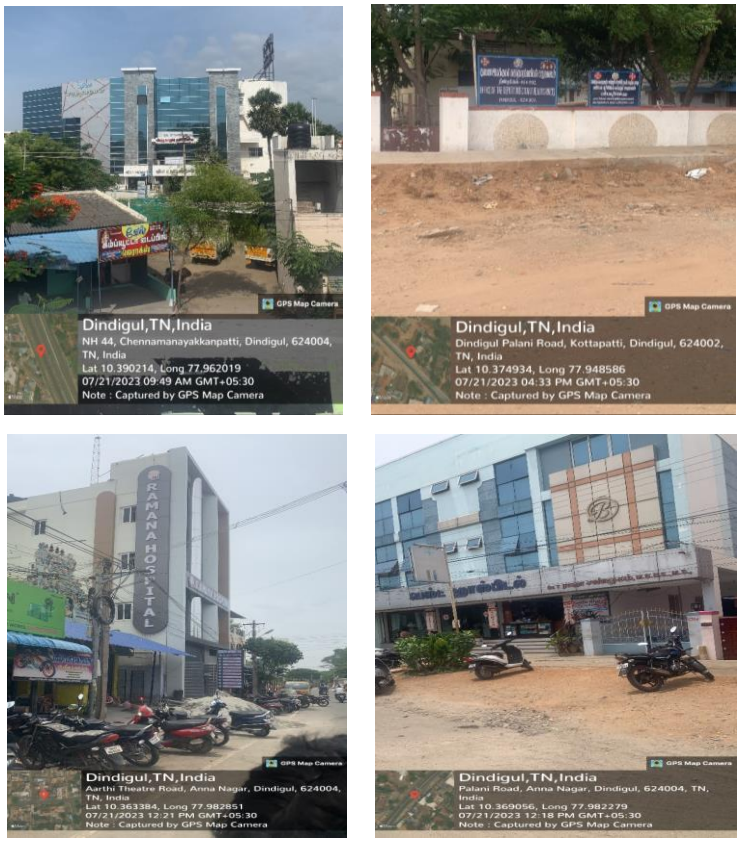
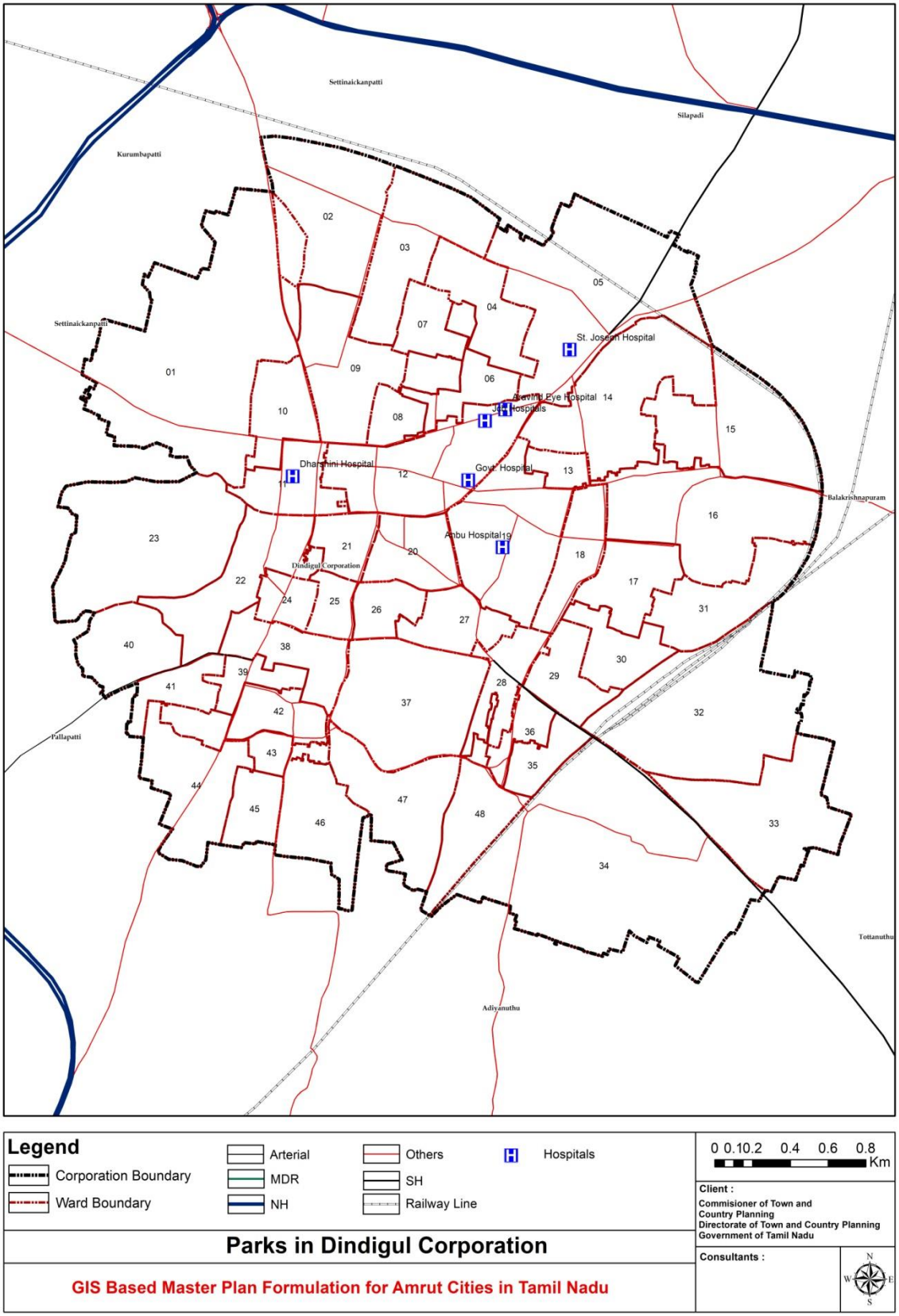


Figure 10-5 Hotels – Anna Nagar



Map 10-4 Map showing Hospitals in Dindigul Town

10.3 Public open spaces

Public sports facilities have played a very important role in promoting physical activity and participation in leisure sports activities. Therefore, there have been significant efforts to continue to improve the image of leisure sports and pursue the amelioration of service quality of public sports facilities. There are 4 main stadiums / Playgrounds in the Dindigul LPA. The city boasts well-equipped sports complexes, stadiums that cater to both traditional and modern sports. These facilities provide a platform for athletes of all ages to engage in sports such as cricket, football, basketball, tennis, and athletics. Moreover, Dindigul's commitment to inclusivity is reflected in its provision of facilities that accommodate differently abled individuals, ensuring that everyone has the opportunity to participate in physical activities. Beyond promoting physical health, Dindigul's sports infrastructure also serves as a catalyst for talent development. By nurturing budding athletes and providing them with access to quality training and coaching, the city contributes to the growth of local sports champions who can compete at regional, national, and even international levels. Such success stories not only bring pride to the city but also inspire younger generations to pursue their sporting dreams.

Table 10-5 Public open spaces

S.No.	Sports Stadium	Capacity
1	District main Stadium	300
2	Multipurpose Indoor Stadium	500
3	Malaikottai Mariamman Ground	-
4	NGO Colony Play Ground	-

The Sports Development Authority of Tamil Nadu, Dindigul District, envisions a dynamic sports landscape that engages the community, nurtures talent, and promotes active lifestyles. District Main Stadium: Located near the Collectorate with a seating capacity of 300. Equipped with a 400m athletic track, football and hockey fields, basketball and volleyball courts, kabaddi and Kho-Kho fields, shuttle courts, ball badminton courts, a throwball court, and a swimming pool. Additionally, it houses a gym hall. Multi-purpose Indoor Stadium: Situated near the Collectorate with a seating capacity of 500. The facility boasts nine shuttle courts and accommodates various indoor games like volleyball and basketball. Malakottai Mariyamman Kovil Playground: Located near Mariyamman Kovil, this

ground features basketball and volleyball courts, badminton courts, and a hockey/football field. It also houses a 200m athletic track. N.G.O. Colony Playground: Found in Balakrishnapuram, this ground has facilities for volleyball, badminton, and mini yoga. Number of Players Participating in Sports & Athletes: The project aims to cater to a daily average of approximately 600 individuals, encouraging active participation in various sports and athletic activities. The GIS-based master plan will enable strategic allocation and development of sports facilities, ensuring accessibility and inclusivity. It seeks to provide a range of sports options to meet the diverse interests and needs of the community. By mapping out these facilities and their capacities, the plan ensures efficient utilization of space and resources while enhancing the overall sports experience for Dindigul's residents. This initiative aligns with the district's commitment to promoting sports as a catalyst for holistic development, fostering talent, and fostering a culture of health and well-being. Through well-planned sports infrastructure, the project aspires to create an environment that encourages active living, community engagement, and the pursuit of excellence in sports and athletics. Parks play a significant role in enhancing the quality of life in any city, and Dindigul is no exception. These green spaces offer numerous benefits to residents, visitors, and the environment, making them an essential part of the city's infrastructure and urban planning. Parks in Dindigul Municipal Corporation is as follows.

Table 10-6 Parks in Dindigul

S.No	Name	Extent in Sq.m
1	Corporation T.B. Park (Nehru Park) Natham Road	1658.80
2	Kumaran Park	12879.00
3	Nehuriji Nagar Park	2843.00
4	M.V.M. Nagar Park - I	2810.40
5	Spencer Compound Street Park	1279.00
6	Vivekananda Nagar Park - I (Near BMS-Murugesan House)	1335.00
7	R.M.Colony Park - 8th Cross	6543.00
8	E.V.R. Salai Park (R.M.Colony)	2598.00
9	L.G.B.Compound Park	607.00
10	Vivekananda Nagar Park - II (Near TPO Apartment)	2065.00
11	M.S.P. Teachers Colony Park (SMB - Back Side)	1582.00
12	Round Road - EB Colony Park	378.00
13	R.M.Colony Park - I (Near NagammalKovil)	1838.00

S.No	Name	Extent in Sq.m
14	R.M.Colony 3 - Phase (Parl-I) (Near Burial Ground)	3490.00
15	P.A.K. Colony Park- I	1301.11
16	Rajalakshmi Nagar Park	2546.46
17	Maithili Nagar Park	910.03
18	Devasagaya Nagar Park	557.62
19	AbiramiGardan Park	967.00
20	R.M. Colony 13th Cross Park	2198.00
21	Thanalakshmi Nagar Park	797.30
22	Ram Nagar Park	501.00
23	R.M.Colony 10th Cross Park	9284.00
24	VeluNechiyar Park	479.00
Total Area		**61447.72**

S.No.	Parks and Playgrounds	Nos.	Area/Capacity
1	Parks	24	61447.72sq.m
2	Playgrounds	4	800 capacity

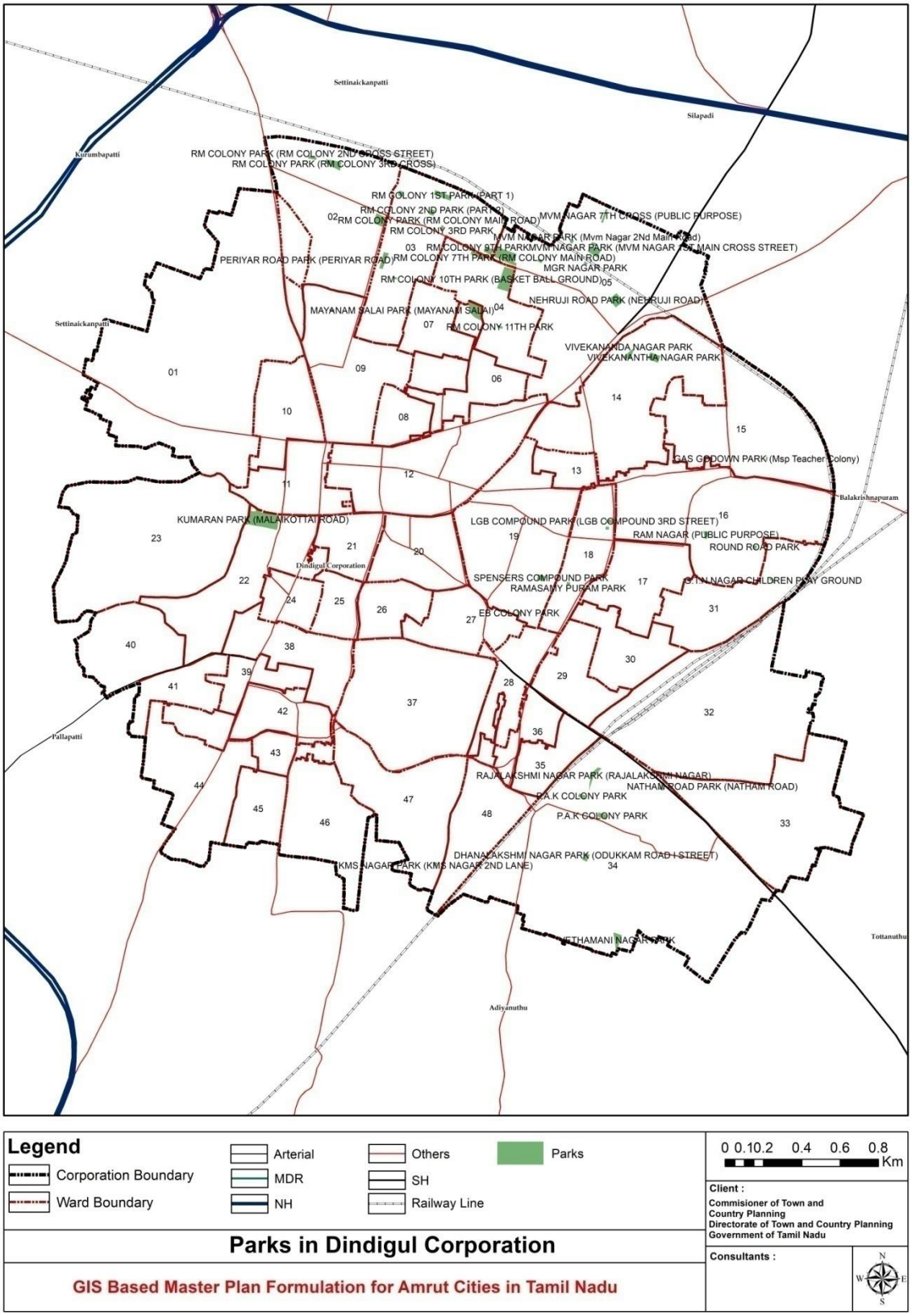
No. of Parks in town panchayats of LPA and its area is listed in Table 10-7 below.

Table 10-7 Number of Parks

S.No.	Name of the Town Panchayat	No.of Parks	Area of parks (in Sq.ft)
1	Agaram	1	2650
2	Thadikombu	2	3283
3	Vedasandur	1	1213
Total		**4**	**7146**

Figure 10-6 Ground - Chennamanayakkanpatti

Figure 10-7 Open Ground – Anna Nagar



Map 10-5 Map Showing Parks in Dindigul Town

Overall, parks in Dindigul serve as valuable assets, enriching the urban landscape and promoting a healthier and happier community. Their importance lies not only in providing recreational opportunities but also in contributing to environmental sustainability, community cohesion, and overall urban well-being.

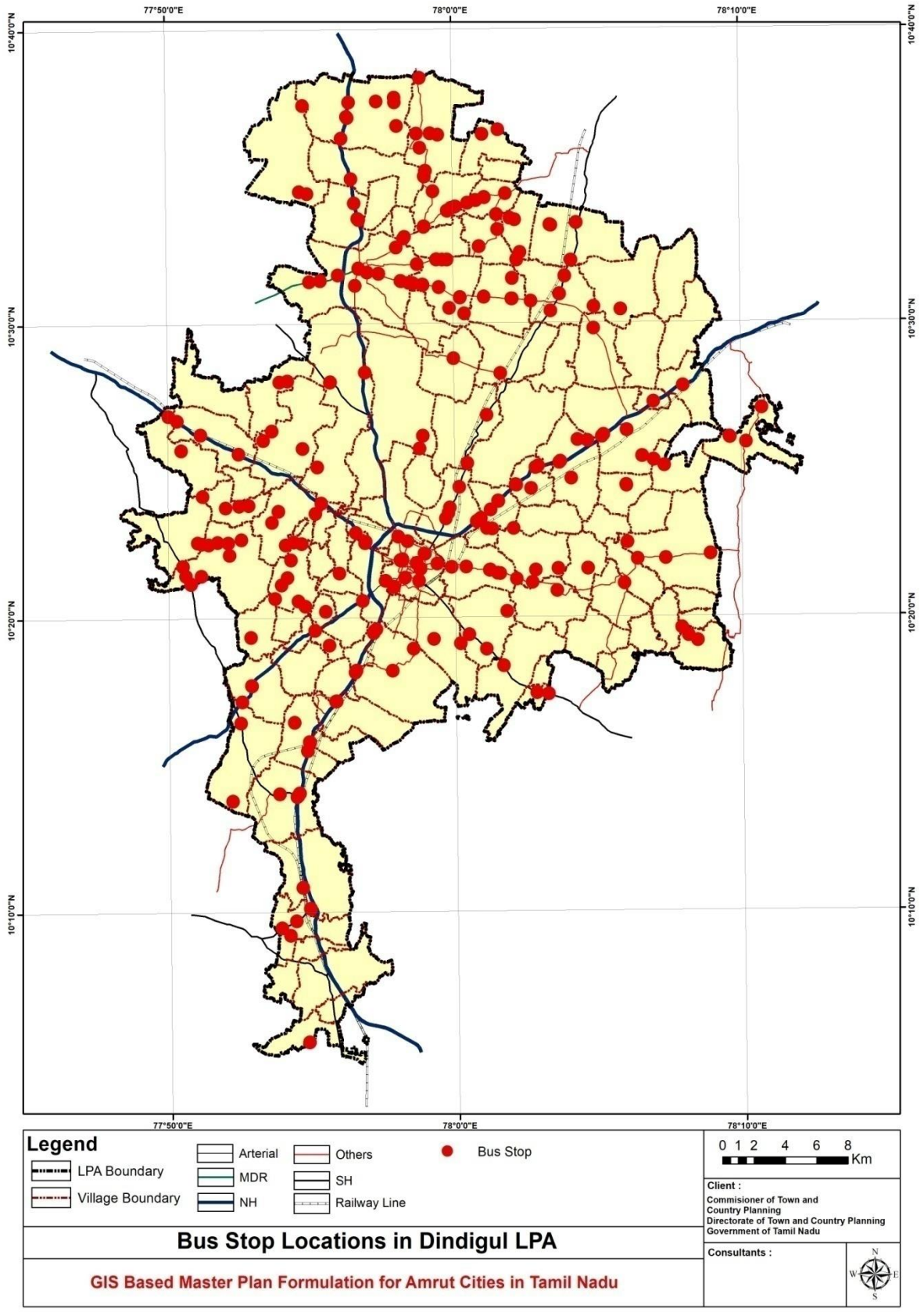
10.4 Other Social Infrastructure Facilities

Existing Community Toilets, Bus Stops and Fire Stations are mapped and given in Table 10-8 below.

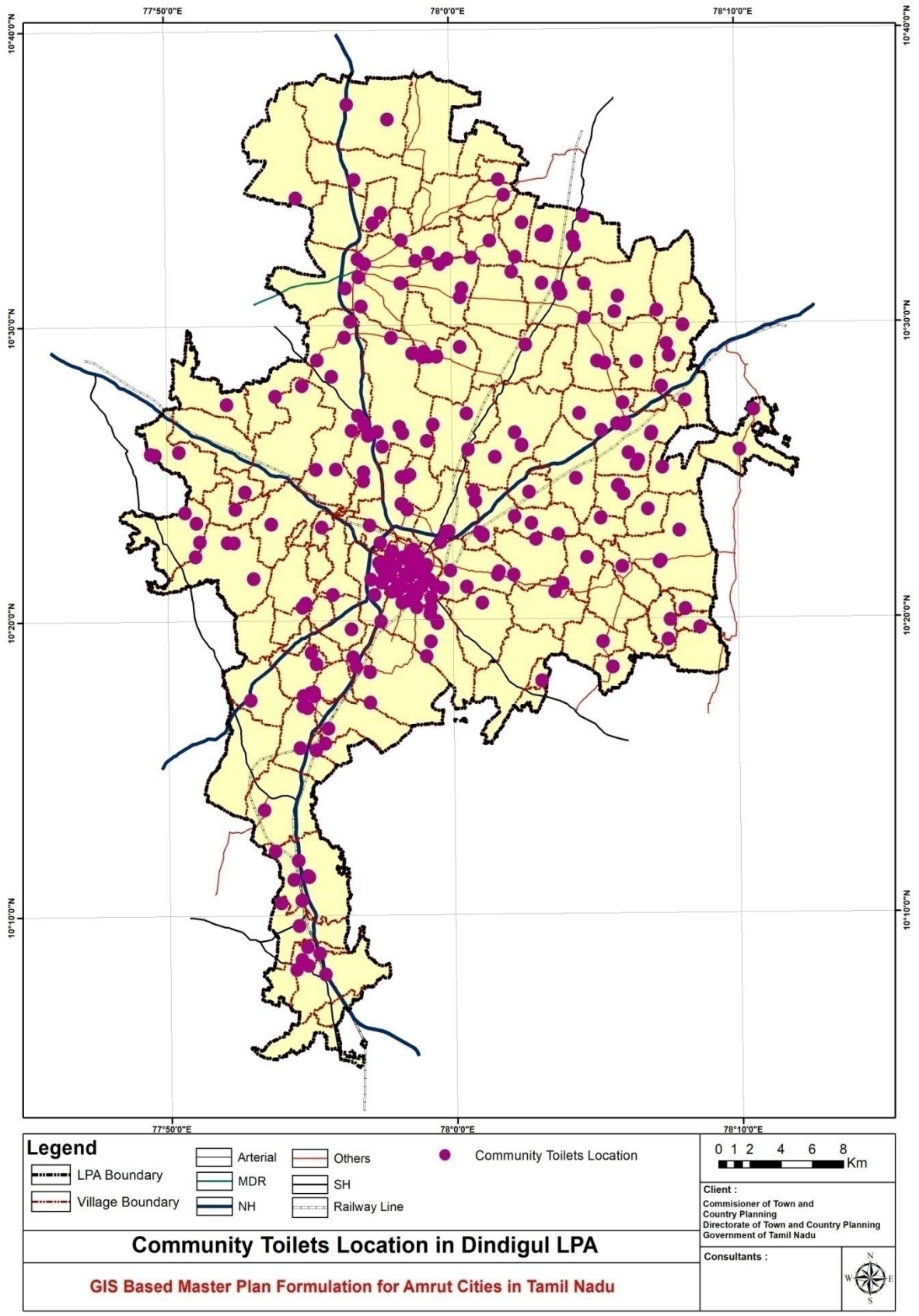
Table 10-8 Other Social Infrastructure

S.No	Facilities	Numbers
1	Community Toilet	260
2	Bus Stops	289
3	Fire Stations	2

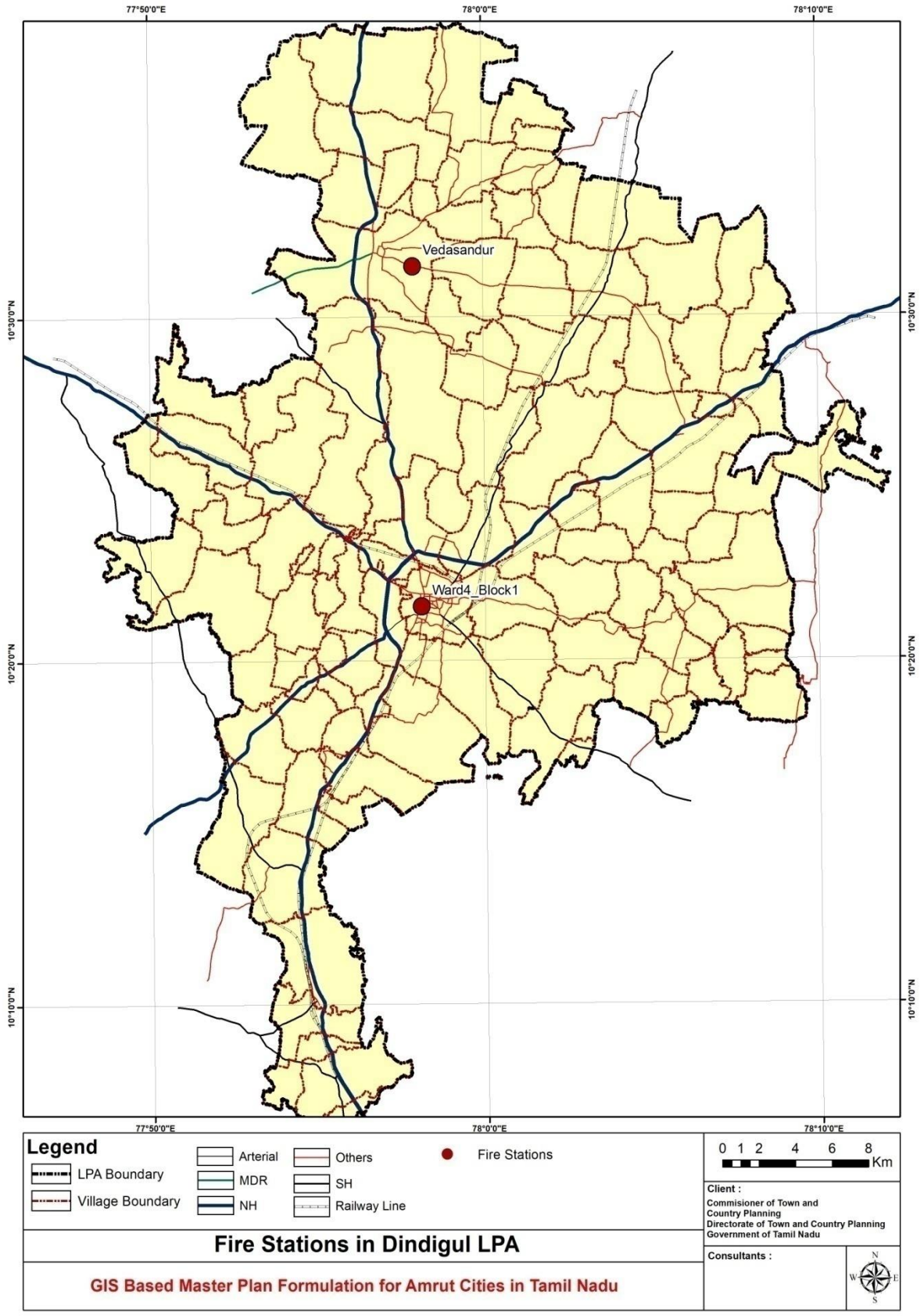
In Dindigul Corporation, there are 59 community toilets. In 59 toilets, there are 289 male closets, 329 female closets and 61 child's closets. For population of 207327, total no.of closet required is 3455 nos (one closet per 35 male, one closet per 25 female as per Swachh Bharat Guidelines). Public Toilets in Dindigul Corporation is 13 nos. In 13 toilets, there are 55 male closets and 65 female closets.



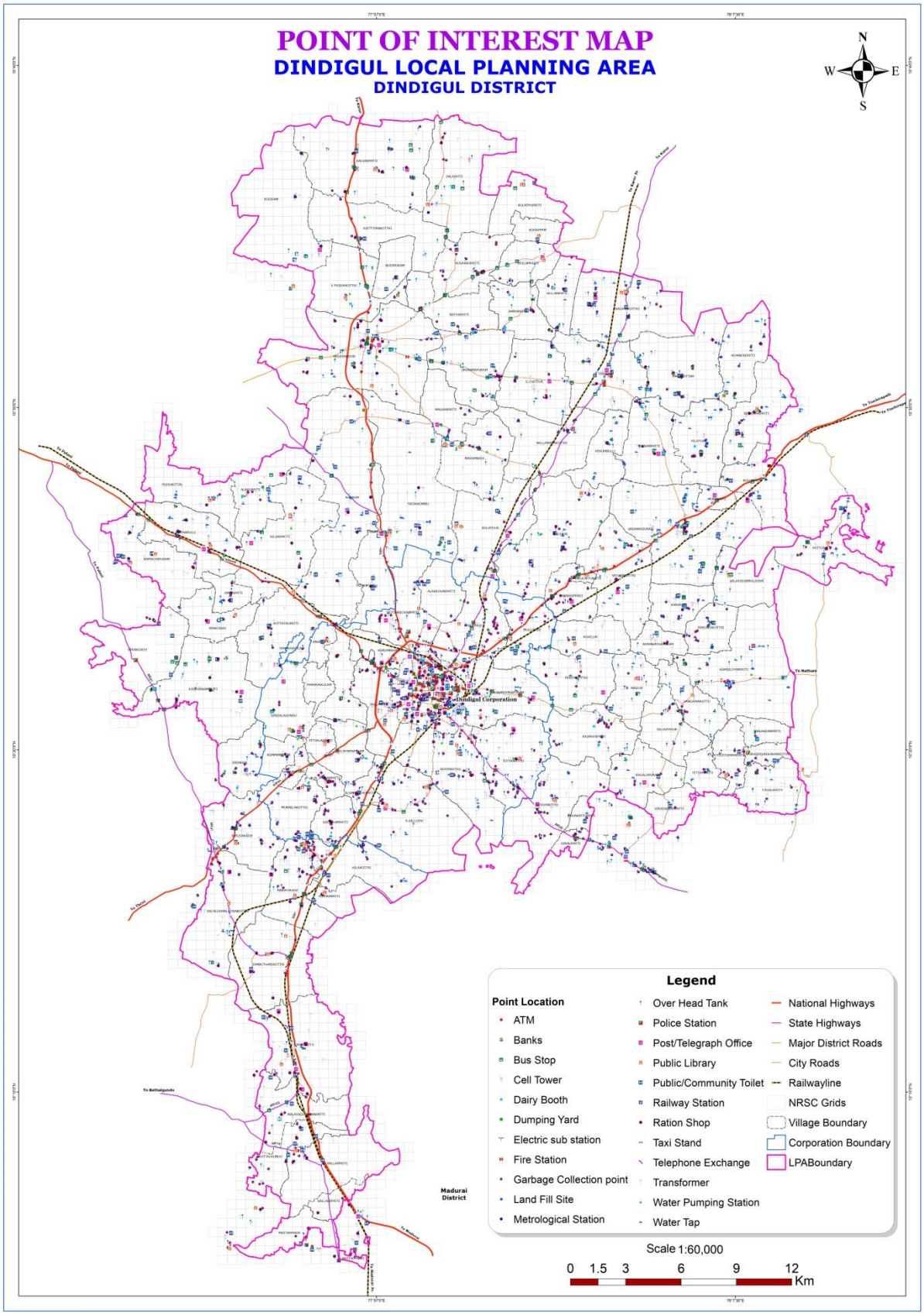
Map 10-6 Map Showing Bus Stop Locations in Dindigul CLPA



Map 10-7 Map Showing Community Toilets in Dindigul CLPA



Map 10-8 Map Showing Fire Stations in Dindigul CLPA



Map 10-9 Points of Interest Map in Dindigul CLPA

11 Environment

Environment plays an important role in healthy living and the existence of life on planet earth. Earth is a home for different living species and we all are dependent on the environment for food, air, water, and other needs. Therefore, it is important for every individual to save and protect our environment. Natural resources play an important role in our environment. They are essential to the world's economic, social and environmental well-being. We rely on natural resources for food, water, fuel, and much more. But beyond their daily utility, natural resources play a significant role in keeping the environment healthy and sustainable. The Forests, agriculture resources, mineral resources and water bodies in the Planning area has to be conserved for future generation.

11.1 Climatology

In a master plan, the climatology section deals with components, especially that are sensitive to or impacted by climate conditions. This section provides an in-depth analysis of the local climate and its potential effects on the proposed development or project. The goal is to ensure that the project is designed and implemented in a way that takes climate factors of Dindigul LPA.

11.1.1 Temperature

In Dindigul, the wet season is oppressive and overcast, the dry season is muggy and partly cloudy, and it is hot year round. Over the course of the year, as shown in Figure 11-1 the maximum temperature typically varies from 30°C to 39°C and is rarely below 30°C or above 39°C and minimum temperature varies from 20°C to 25°C and is rarely below 20°C.

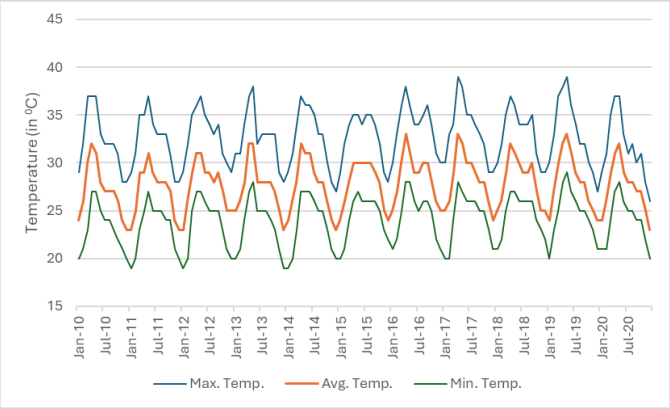


Figure 11-1 Temperature from 2010-2020 in Dindigul LPA

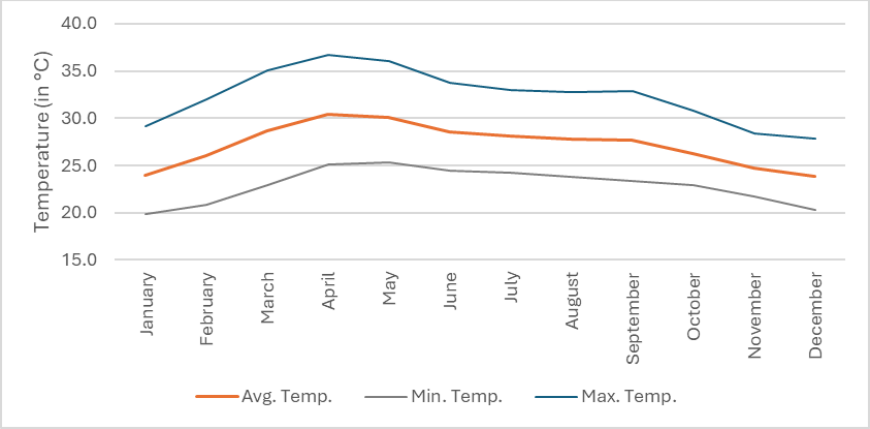


Figure 11-2 Temperature by month in Dindigul LPA (Average from 2000-2020)

Dindigul experiences a tropical climate with distinct seasons. In Dindigul, as shown in Figure 11-2, summers (March to June) are hot and dry. The daytime temperatures can soar, often exceeding 35°C (95°F) during the peak months of April and May. Night-time temperatures usually remain warm, ranging from 22°C to 25°C (72°F to 77°F). During monsoon (July to September) the region experiences moderate to heavy rainfall, which helps in cooling down the temperatures. During post-monsoon (October to November, the temperatures gradually start to decrease, and the weather becomes more pleasant. Further, in Dindigul winters (December to February) are relatively mild and comfortable. The temperatures during this season range from 20°C to 28°C (68°F to 82°F) during the day, while the nights can get cooler, with temperatures dropping to around 15°C (59°F) or lower.

11.1.2 Rainfall

During the summer season, Dindigul typically experiences limited rainfall. The average rainfall during this period has been relatively low, with an annual average of approximately 50 to 200 millimeters over the past 20 years. The region generally faces dry and hot weather conditions during these months.

11.1.2.1 Southwest Monsoon:

The southwest monsoon brings the primary rainfall to Dindigul. This season is crucial for agricultural activities and replenishing water reservoirs. Over the past five years, Dindigul has received an average annual rainfall of around 250 to 400 millimeters during the southwest monsoon. However, there have been variations in the monsoon's intensity, leading to differences in total rainfall from year to year. At present Southwest monsoon overshoots the Northeast monsoon in rainfall.

11.1.2.2 Northeast Monsoon

The northeast monsoon is the second major rainy season for Dindigul at present. Average rainfall during this season is higher compared to the southwest monsoon and plays a significant role in supporting agricultural activities. The average annual rainfall during the northeast monsoon has ranged from 300 to 600 millimeters over the past 20 years.

11.1.2.3 Winter Season

The winter season generally experiences limited rainfall in Dindigul. The region receives an average annual rainfall of about 50 to 70 millimeters during this period. The weather is relatively cool and dry during winter months.

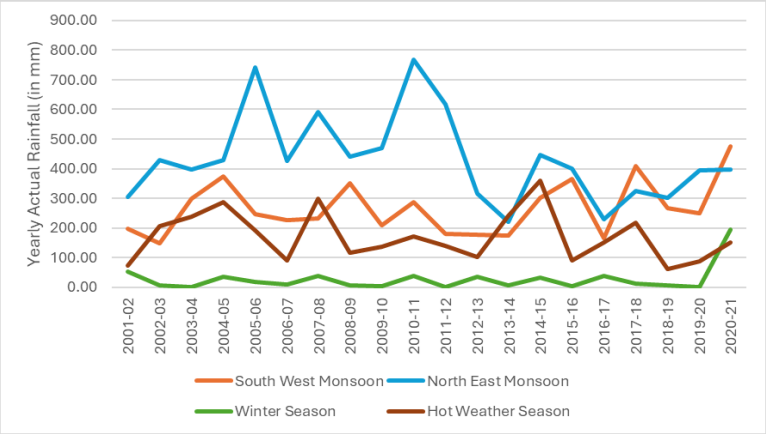


Figure 11-3 Average Rainfall by Seasons in Dindigul

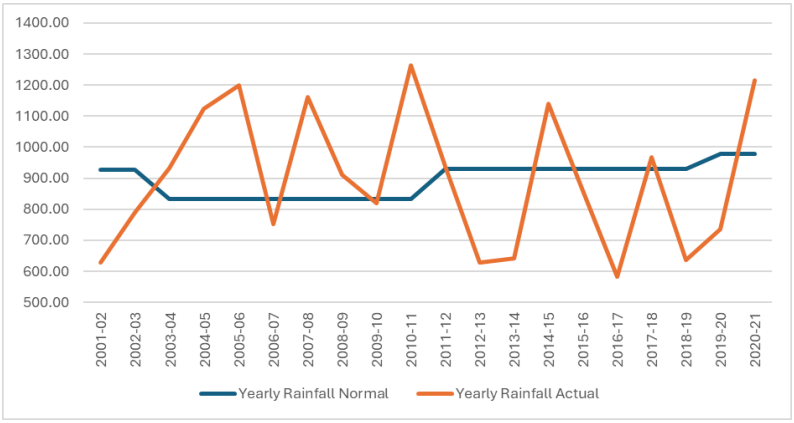


Figure 11-4 Comparison of Normal and Actual Rainfall in Dindigul

Before 2010, annual rainfall constantly surpasses the normal rainfall, however after 2010, annual rainfall fall behind the normal rainfall as shown in Figure 11-4.Considering monthly averages of rainfall for 20 years in Dindigul as shown in Figure 11-5.the region received a heavy rainfall during the month of October and average rainfall.

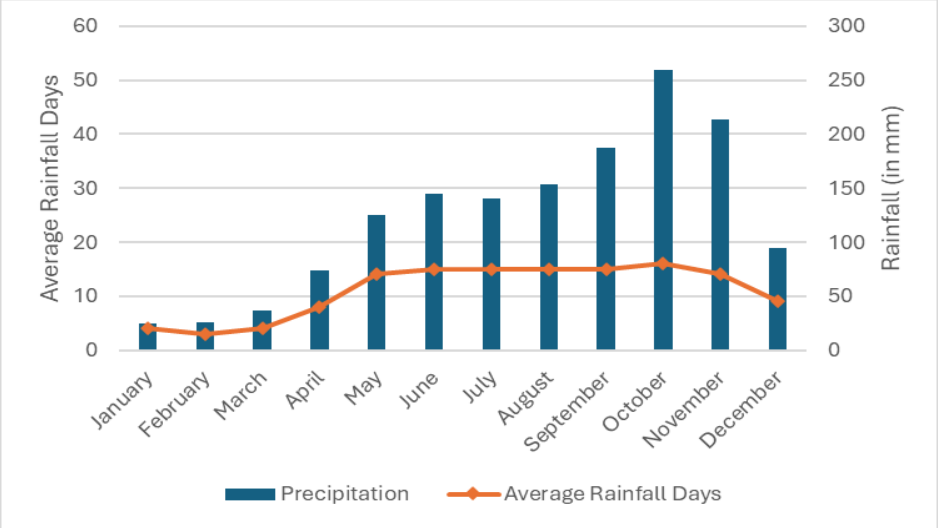


Figure 11-5 Average rainfall days and average rainfall by month in Dindigul

11.1.3 Relative Humidity

Dindigul, being a city in the state of Tamil Nadu, India, generally experiences a tropical climate with high humidity, particularly during the monsoon season and the summer months as shown in Figure 11-6.

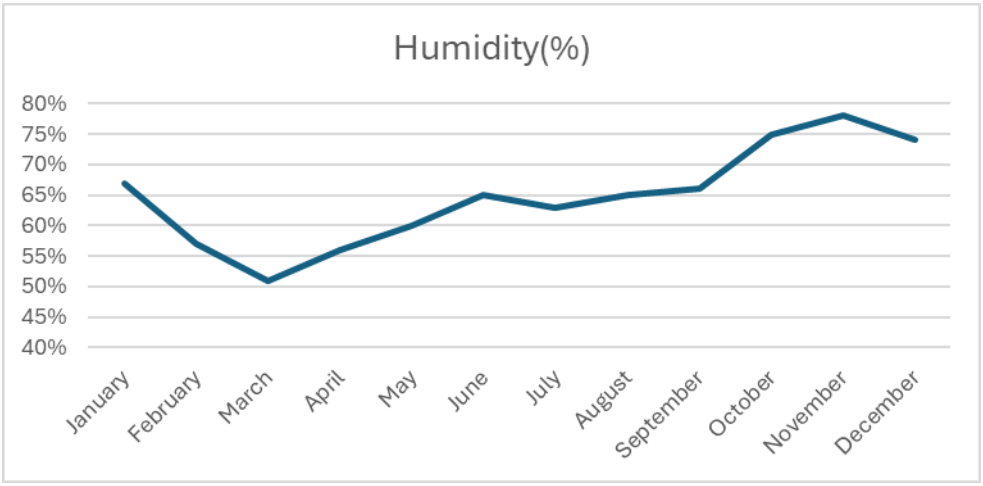
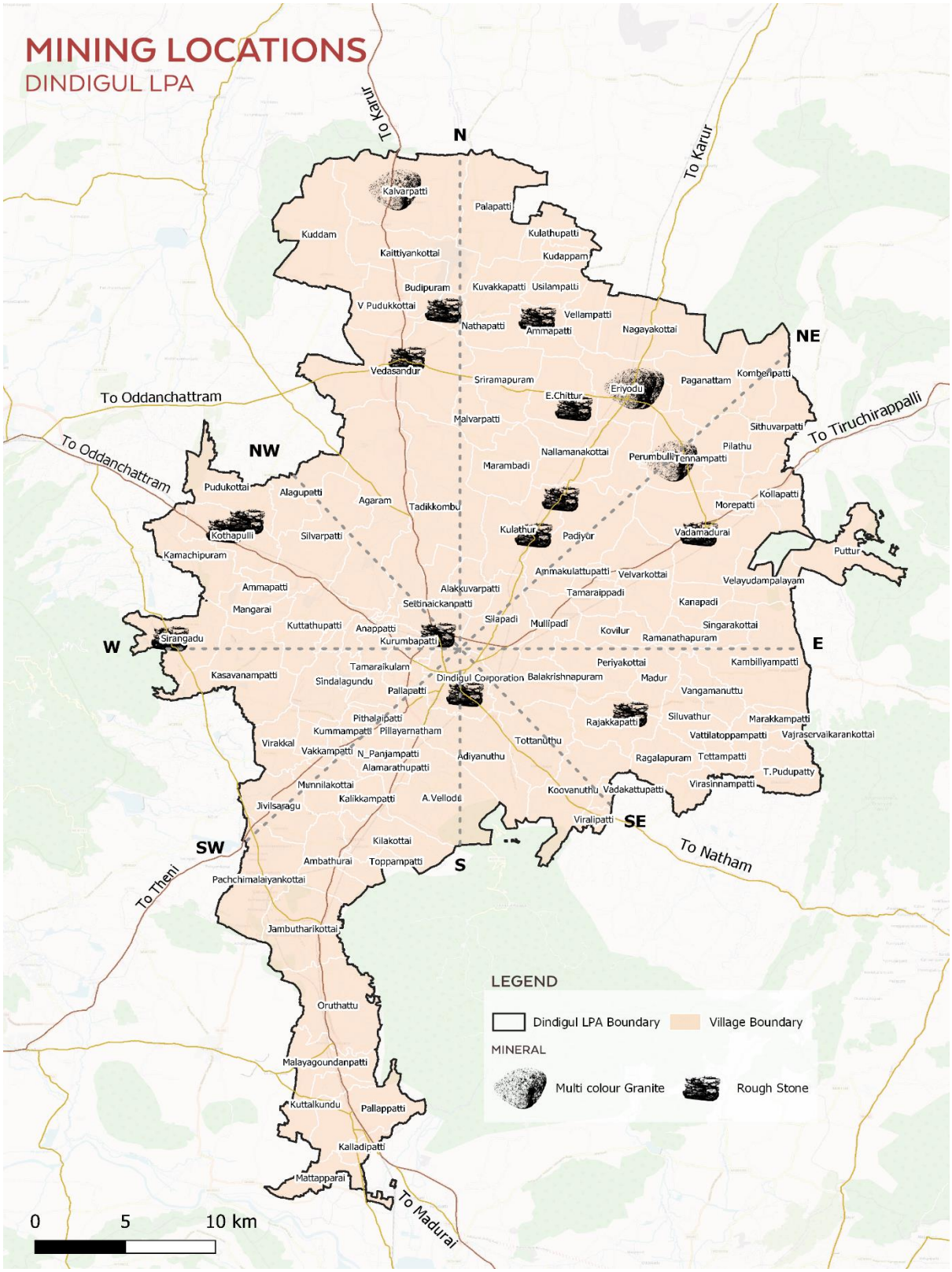


Figure 11-6 Relative Humidity in Dindigul

11.1.4 Mining

Limestone, Quartz, Feldspar, and Bauxite are among the district's industrially important mineral deposits. However, in LPA, rough stones are being the most minerals, and it is mostly mined in Vedasandur Taluk by Chettinad Cement Corporation Ltd.



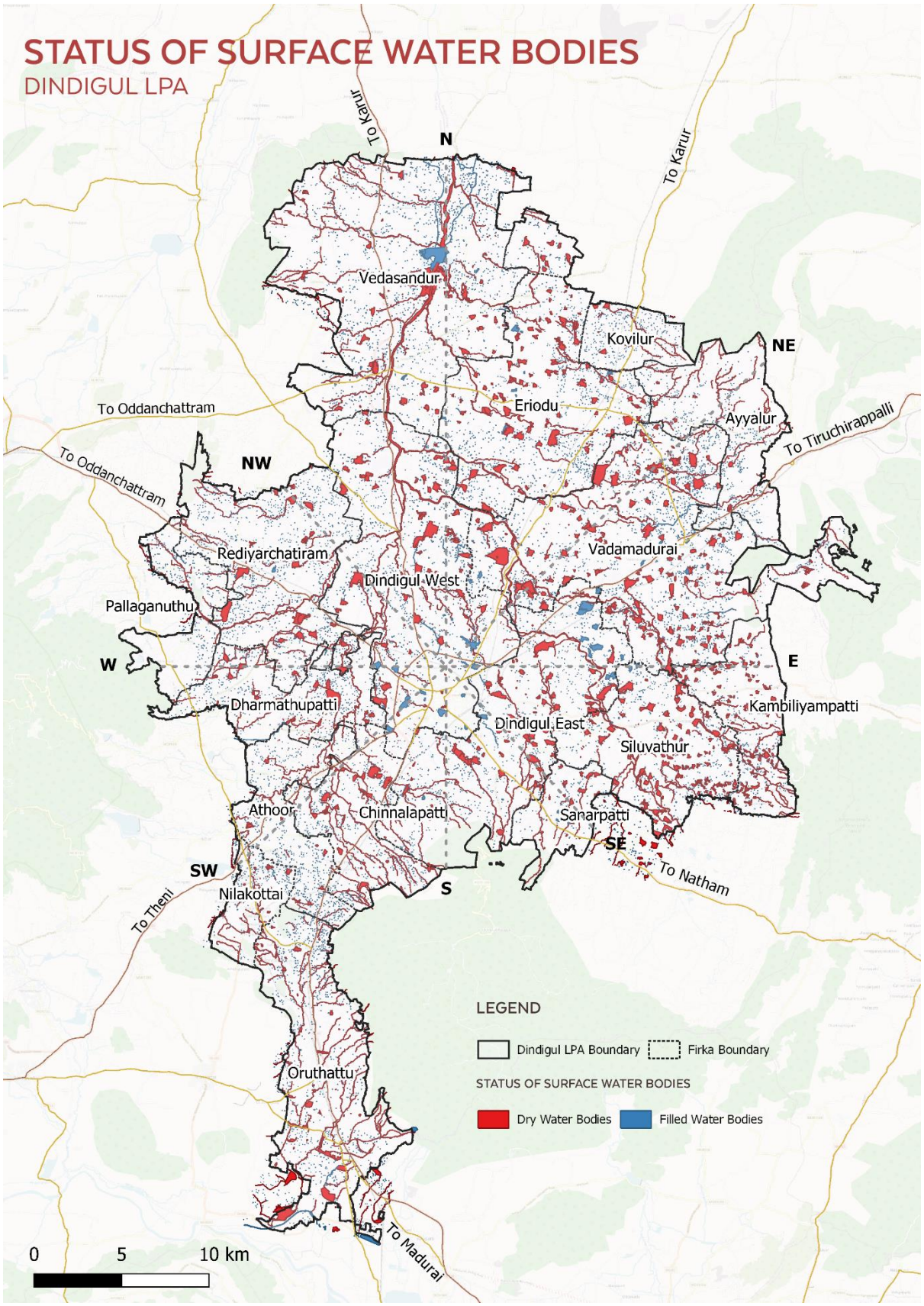
Map 11-1 Mining Location In Dindigul CLPA

Source: ENVIS Centre, Ministry of Environment & Forest, Govt. of India, District Survey Report, Dept. of Geology & Mining, Dindigul District (2019)

11.1.5 Water Resources

11.1.5.1 Surface water

The city relies on various surface water bodies such as reservoirs, lakes, and tanks to meet its water needs. Kamarajar Sagar Dam is a significant surface water source for Dindigul city (away from LPA). It is a major reservoir built across the Vaigai River, and it supplies water for both irrigation and drinking purposes. The dam provides a substantial portion of the city's water supply. Dindigul is a home to several tanks (man-made water bodies) that serve as storage reservoirs for rainwater harvesting and groundwater recharge. These tanks play a crucial role in augmenting the surface water supply during the monsoon season. Other than these water bodies as there are 273 lakes and 828 ponds inside LPA, whereas six and 165 are filled respectively.



Map 11-2 Surface Water Bodies in Dindigul CLPA

11.1.6 Ground Water

Ground water level varies across the planning area. To understand the level of ground water availability in Dindigul is analysed with help of monitoring wells. In Dindigul district there are 34 monitoring wells, out of 34, 15 falls under LPA boundary. Based on these 15 wells, the ground water level varies from 1.35 m. bgl to 36.65 m. bgl during pre-monsoon and 3.75 to 36.65 m. bgl during post-monsoon as shown in Figure 11-7.

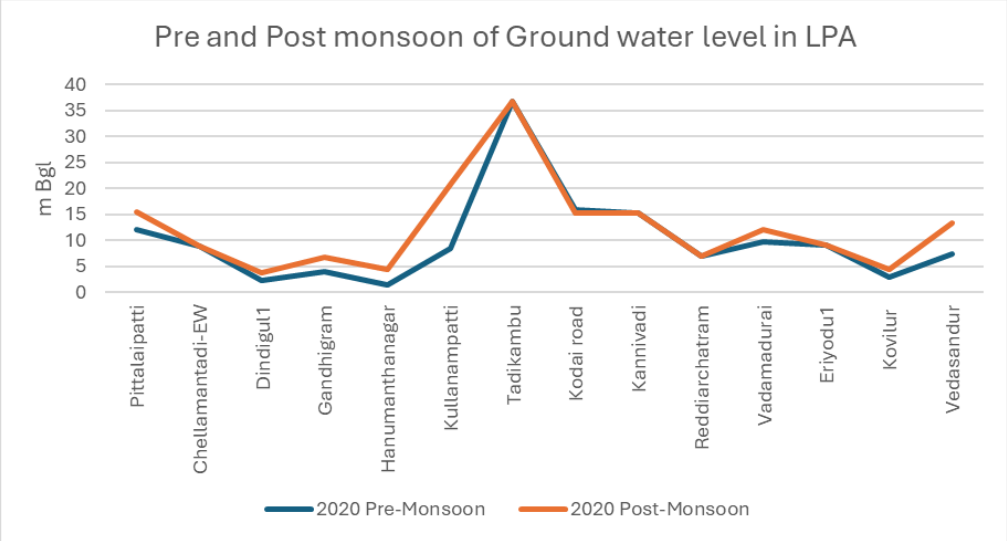


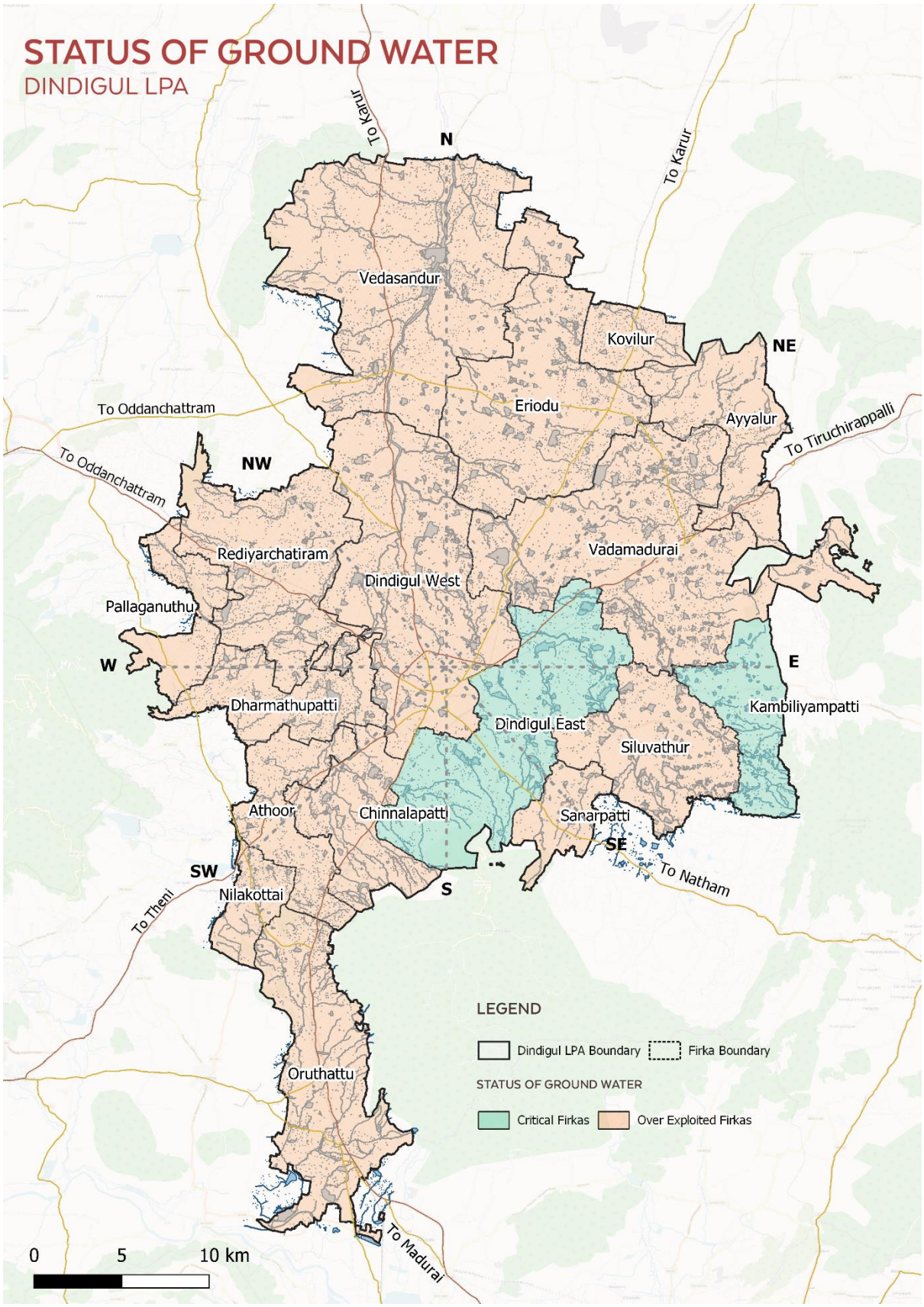
Figure 11-7 Pre and Post monsoon of ground water level in LPA, 2020

However, considering quality of ground water, firka based analysis is caried out. Out of 40 firkas in Dindigul, 17 falls under LPA either fully or partially as shown in (Map3).Firkas are classified based on the ground water extraction as shown in table 11-1.

Table 11-1 Extraction Categories as per Tamil Nadu Government

Stage of Ground Water Extraction	Extraction Category
≤ 70%	Safe
> 70% and ≤90%	Semi-critical
> 90% and ≤100%	Critical
> 100%	Over Exploited

Out of 17 firkas, 2 falls under critical firkas, whereas rest 15 falls under over exploited firkas as shown in map 3.



Map 11-3 Ground Water in Dindigul CLPA

11.1.7 Geology & Topography

11.1.7.1 Geo Technical Characteristics

The geological formation of Dindigul comprises a variety of rock types as shown in (geology map), which have been shaped by tectonic and geomorphic processes over millions of years. The major geological formations in the region include,

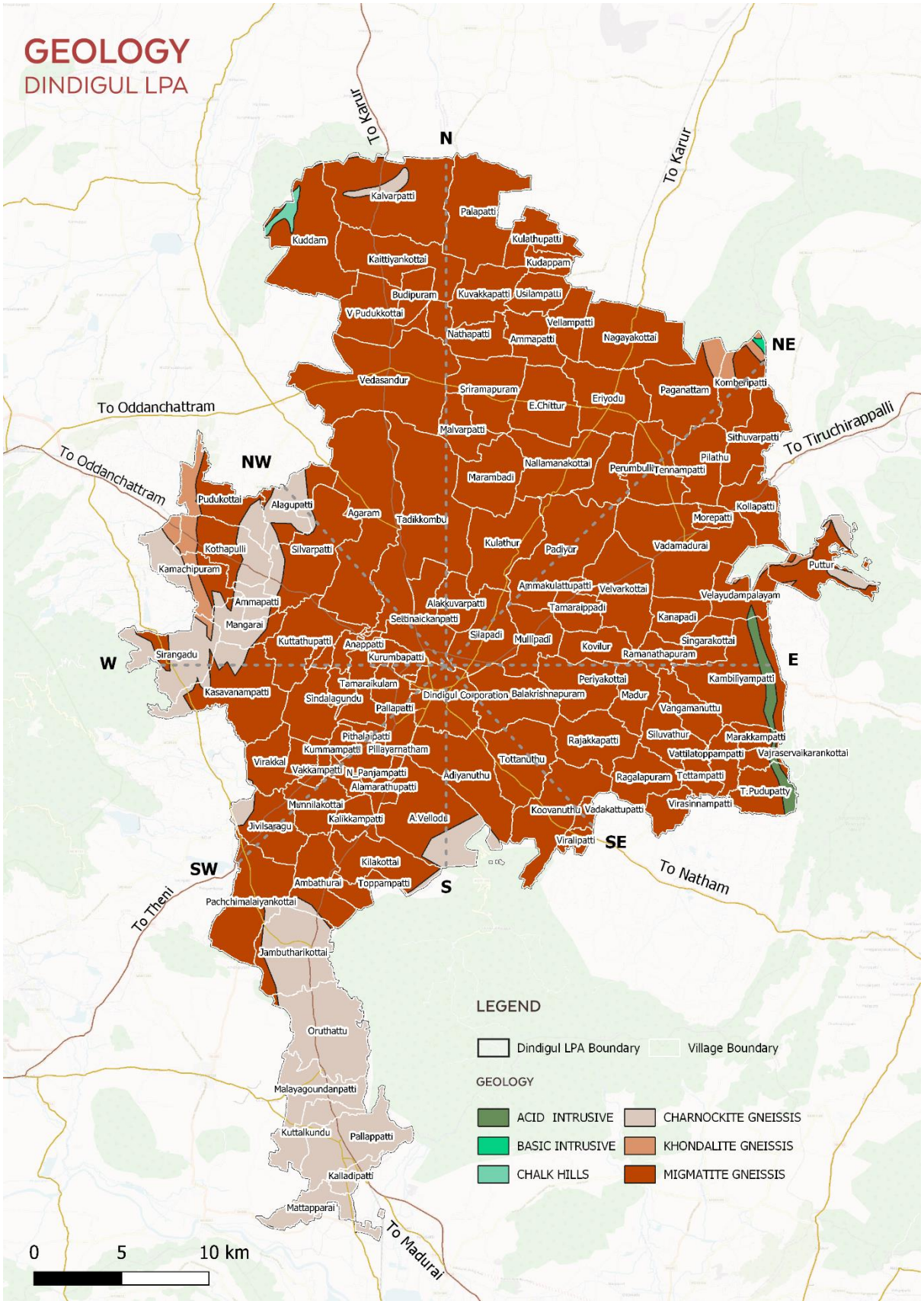
Proterozoic Supracrustal Sequences Overlying the Archean basement are Proterozoic supracrustal sequences, which include metasedimentary and metavolcanic rocks. These sequences were deposited during the Proterozoic Eon and have undergone metamorphism due to intense heat and pressure. Metasedimentary rocks like schist and quartzite are common in this formation.

Charnockite Intrusions is a distinctive rock type found in Dindigul district and throughout southern India. It is an intrusive igneous rock with a characteristic spotted appearance and is often associated with high-grade metamorphic rocks. Charnockite intrusions are prominent in the geological formation of Dindigul.

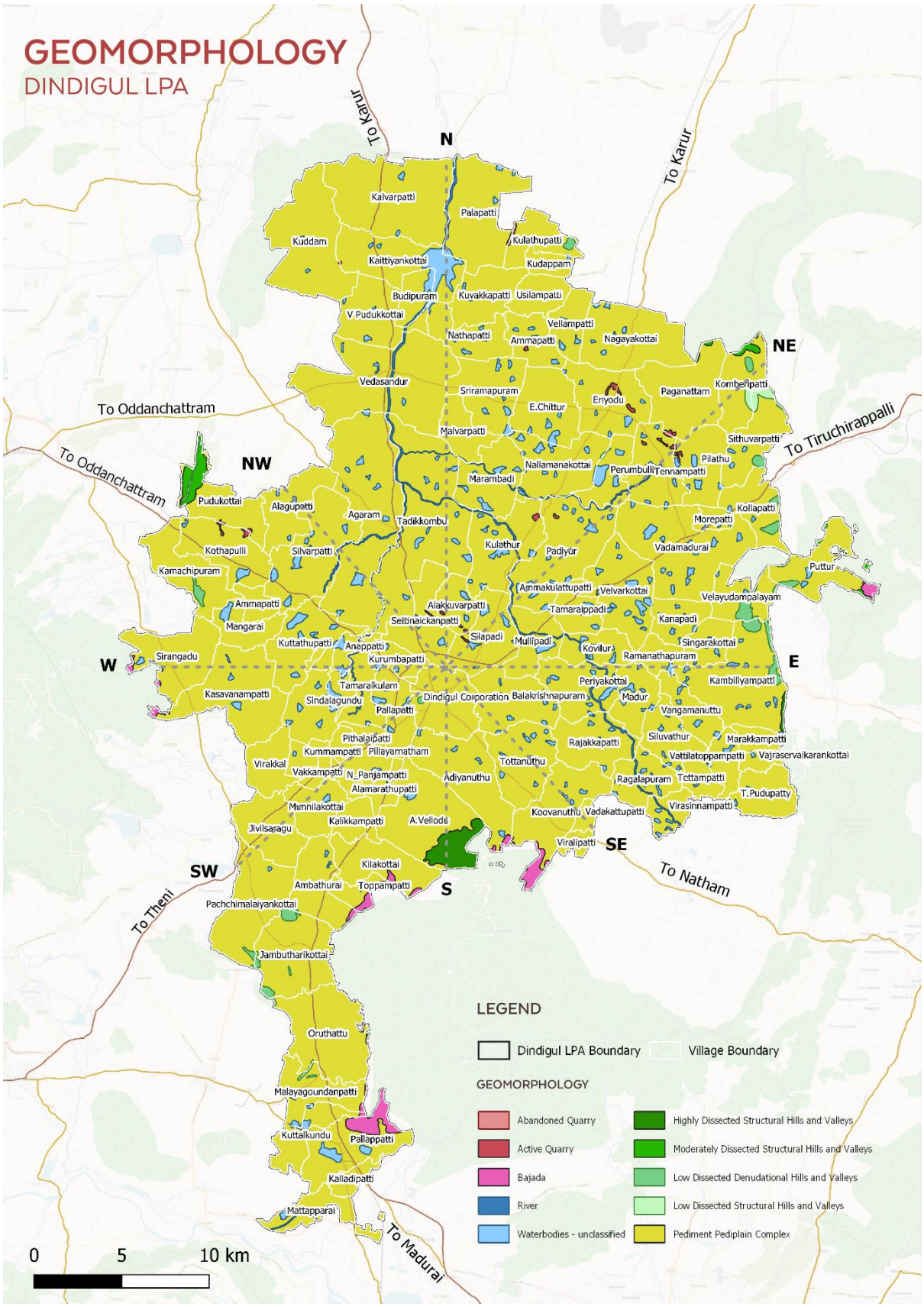
Granitic Plutons in Dindigul contains several granitic plutons, which are large intrusive bodies of igneous rock formed deep within the Earth's crust. These granitic rocks intruded into the older Archean and Proterozoic rocks, leading to the formation of composite geological formations with complex relationships.

Faults and Shear Zones structures such as faults and shear zones are also present in Dindigul, influencing the distribution and deformation of rock formations. These structural features are important in understanding the tectonic history and geological evolution of the region.

Quaternary Alluvium Recent geological deposits of Quaternary age, including alluvial sediments and colluvium, are found in river valleys and low-lying areas of Dindigul district. These deposits consist of unconsolidated sediments such as sand, silt, and clay, and are often fertile and suitable for agriculture. Dindigul LPA area mostly falls under pediment complex as shown in map 11-4, which refers to a large, gently sloping erosion surface that is typically found at the base of a mountain range or upland area. Pediment complexes are important features in arid and semi-arid regions, and they play a crucial role in shaping the landscape through erosional processes.



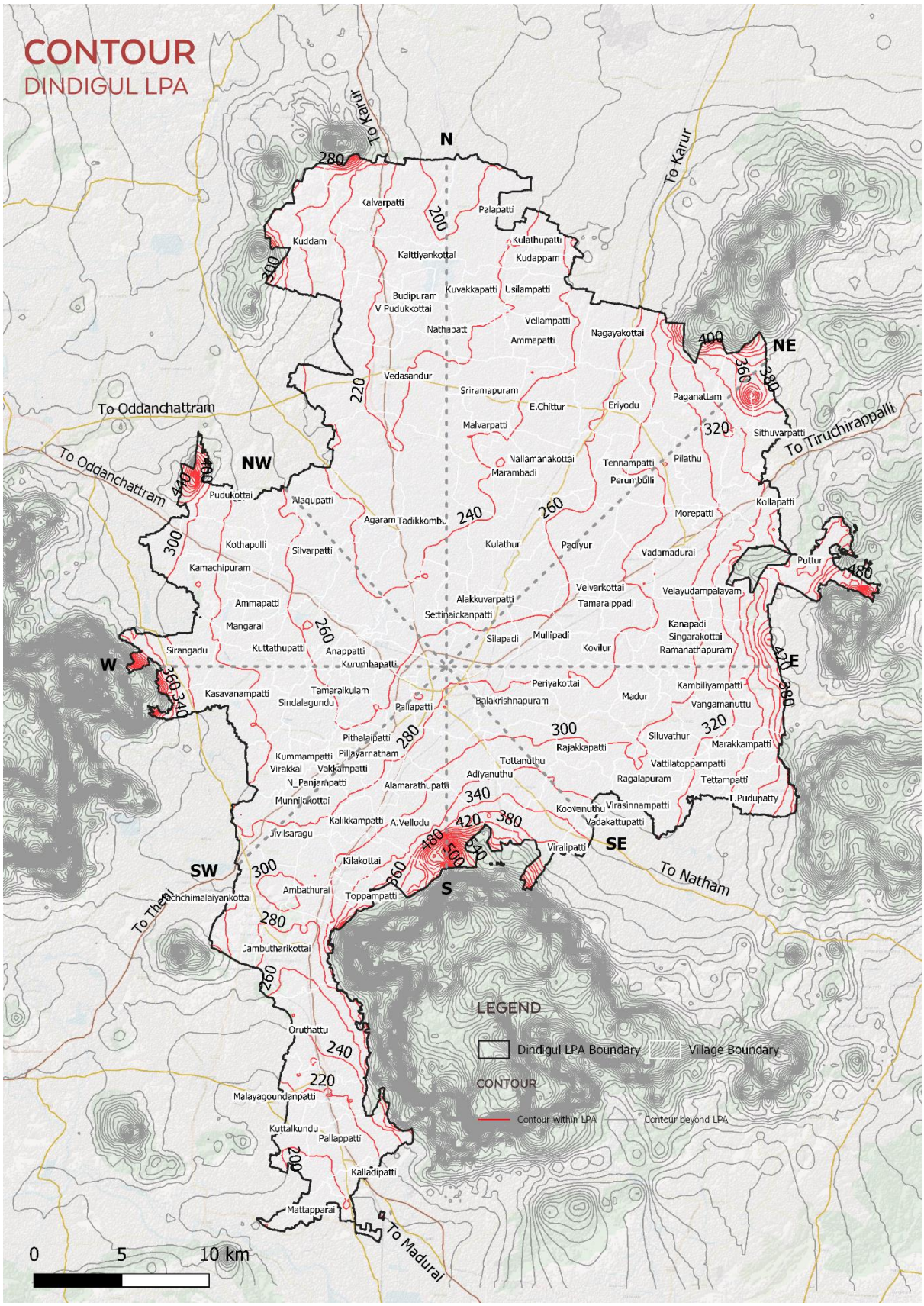
Map 11-4 Geology in Dindigul CLPA



Map 11-5 Geomorphology in Dindigul CLPA

11.1.7.2 Topography & Contours

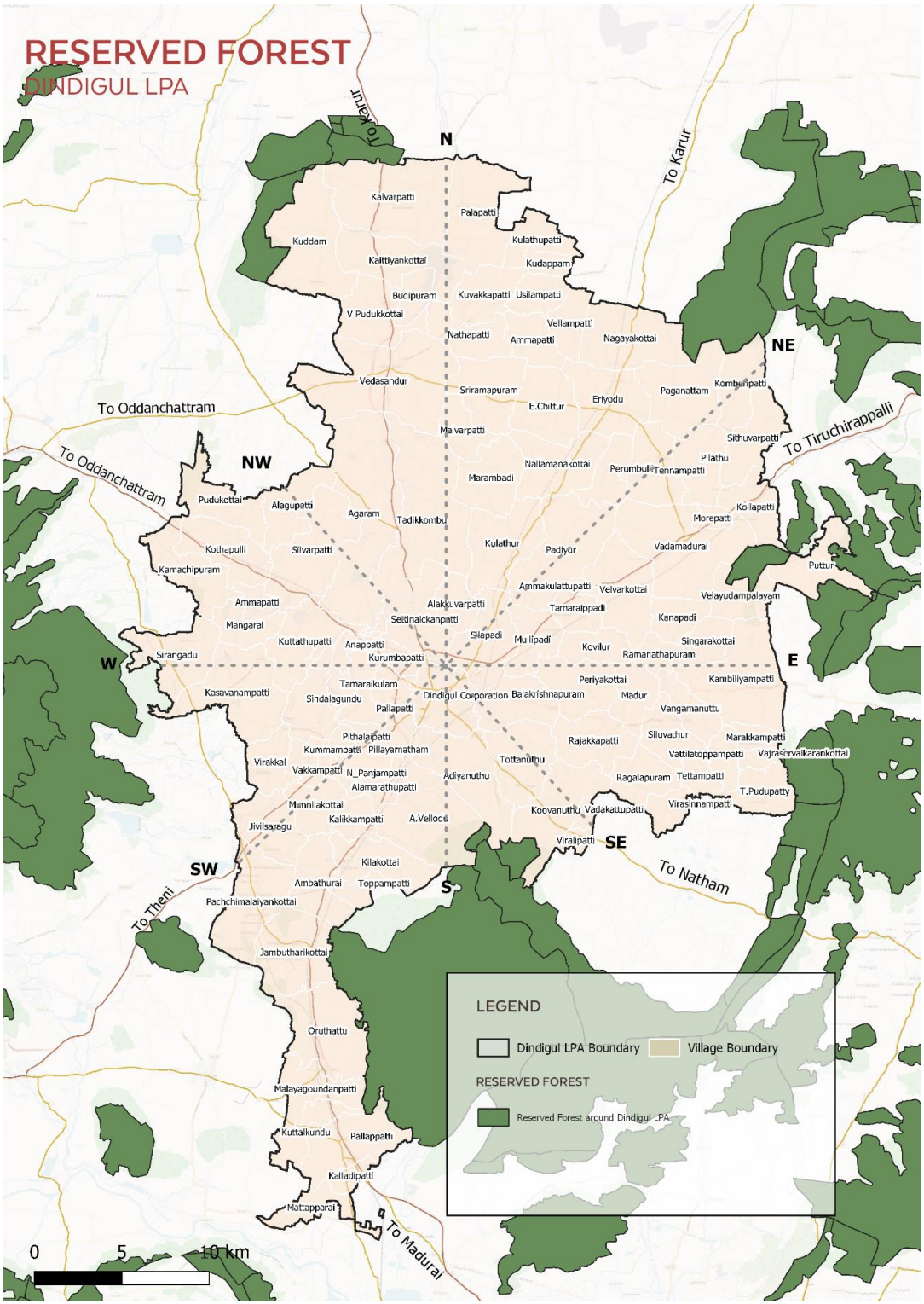
The terrain of Dindigul is made up of plains, valleys, plateaus, and hills. To the west of the city is the Western Ghats Mountain range, and to the east is more gently undulating landscape. There are variations in the Dindigul planning area from 220m to 750m MSL. Nonetheless, as indicated in (contour), over 90% of the LPA is flat ground with a mean sea level between 220 and 280 meters.



Map 11-6 Contour in Dindigul CLPA

11.1.8 Environmentally Sensitive Areas

11.1.8.1 Forests



Map 11-7 Reserved Forest in Dindigul CLPA

11.2 Environmental Pollution

11.2.1 Air Pollution

Air pollution has emerged as one of the challenging problems before mankind in the past few decades. With rapid rise in population, industries and automobiles the air pollution has become a major environmental problem in the modern world. Sulphur dioxide and oxides of nitrogen concentration at Dindigul district are for residential areas were well below the prescribed permissible standard. Suspended Particulate Matter concentration exceeded standard very often in Dindigul district. From the air quality index values of the stations such as residential, Traffic cum commercial and industrial areas under investigation, it is clear that the ambient air in Dindigul district is fairly clean especially near the residential area. Traffic cum commercial and industrial areas was more polluted which may be due to heavy vehicular movement as well as population. The current PM2.5 concentration in Dindigul is 1.4 times above the recommended limit given by the WHO 24 hrs air quality guidelines value.

Location	Buses	Two wheelers	Cars		Autos	
			LPG	NON-LPG	LPG	NON-LPG
Residential	110	400	30	200	45	27
Traffic cum bus stand	230	633	85	520	159	69
Industrial	160	551	65	170	22	15

Location	Quality rating			AQI	Category
	NO_x	SO_2	SPM		
Residential	10.3	2.5	460.2	24.3	Clean
Traffic cum bus stand	20.5	6.8	550.2	41.6	Moderately polluted
Industrial	18.2	6.7	667.2	40.3	Fairly clean

Figure 11-8 Air Pollution by vehicles

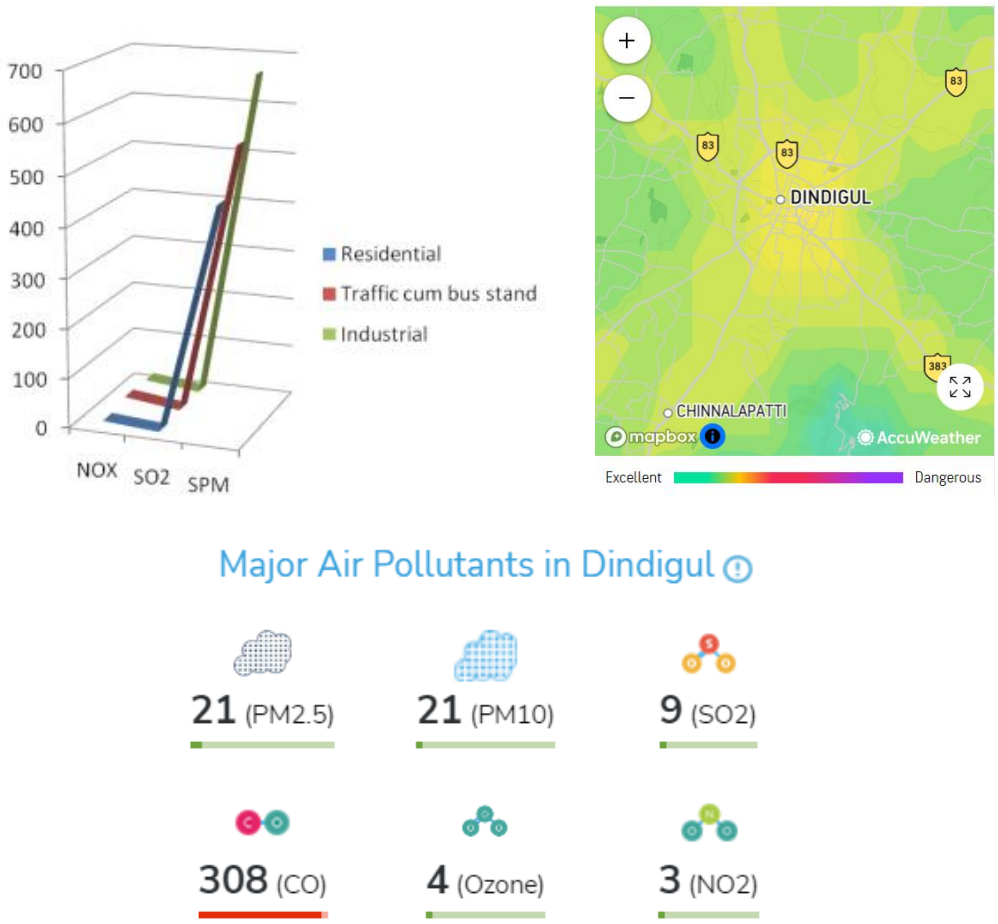


Figure 11-9 Major Air Pollutants

An air quality index has been calculated for the various areas, depending upon the observed concentrations of the pollutants monitored. The air quality categories based on the index values are given in Table 11-1 above. Though SPM values are high at all the locations during most of the monitored sites, the air quality index has indicated a fairly clean environment in the residential area. Some of the other ways of calculating air quality index have been reported [6]. From the AQI values of the areas, it is clear that ambient air in Dindigul district is fairly clean especially near the residential area. This trend is reflected in the periodic concentration plotted in Fig. 1. For SO2, NOx and SPM, there is a distinct pattern matching to the vehicular movement with the air quality in the area. Unlike the air quality clean in the residential area, the vehicular count as well as the air quality is high in traffic area and is a matter of concern. SO2 and NOx concentrations at Dindigul were well below the permissible standard limit in the residential area as permitted by the CPCB. SPM concentration exceeded the standard very often for the Dindigul district.

Based on the air quality index this is due to the heavy vehicular pollution observed from the vehicle census. Based on the above conclusion, the following recommendations are suggested. An air quality index calculated and reported to the public on a daily basis. More stringent measures should be taken to control vehicular and industrial pollution source. The problem of SPM can be checked by easing out of tempos and replacing them with more efficient and eco-friendly mass transport service. To control the pollutant plant of better filtering ability should be planted

11.2.2 Water Pollution

TNPC Board enforces the provisions of Water (P&CP) Act 1974, Air (P&CP) Act 1981 and Environment Protection Act 1986. As per the provisions of Water and Air Acts, each industry shall apply for consent of the Board both to establish and to operate the industry. Based on the polluting nature of the industry, they have been categorized as Red, Orange, Green and White. As per the instruction of CPCB, there shall be no necessity of obtaining CTO for White category of industries and an intimation to SPCB shall suffice. The significant type of industries functioning in the district are Textile spinning, Tannery, Pulp and Paper, Textile dyeing, Stone crushers and Brick chambers. These industries are being monitored by the officials of TNPC Board. In Dindigul District, there is a Common Effluent Treatment Plant (CETP) has been established to treat the trade effluent generated from the tanneries in Dindigul. The CETP is under operation since February 1997. At present, there are 49 members in the CETP.

A CETP has also been established for the treatment of wastewater generated from hotels located in kodaikanal and this is under operation since October 1999. At present there are 35 members in the CETP.In order to monitor the quality of water in river Amaravathi and Kodaikanal lake, samples of water are being collected monthly and analysed. The Board has given consent to both government and private hospitals in the Dindigul District. The Bio Medical Waste generated in the hospitals are being transported to the Common Bio Medical Waste Treatment and Disposal (CBMWT & D) facility located at Virudhunagar District for scientific disposal. The corporation, Municipalities and Town panchayats in the district are being instructed regularly to take action for the treatment and disposal of municipal solid waste as per the provisions of Solid Waste Management Rules 2016.

12 Disaster Management

Nature maintains equilibrium with very delicate balance among its components. Whenever there is any disturbance in this balance, natural disasters take place. Earthquakes, floods and landslides, etc. are natural environmental hazards of disastrous consequences. Disasters can be defined as a sudden, accidental event of great magnitude that causes considerable damage to life and property. They are sudden, drastic and normally occur without any alarm or warning. Some disasters may be short lived such as earthquakes and some other may be of long duration, such as floods. However, irrespective of the duration of a disaster, the damage in the form of deaths, injuries and losses of property is immense. The magnitude of the disasters can be judged by the fact that during the past two decades, occurrences of floods, earthquakes, landslides, cyclones, etc. have killed several million people.

India is a disaster-prone country due to its location on the globe, geological formation and long coastline. Due to natural causes and also due to activities of the human beings, disasters occur. Though disaster cannot be stopped or fully eliminated, its adverse effects can be minimized by taking appropriate steps in pre-disaster and post disaster phases. Therefore, disaster management is nothing but sum total of the efforts taken before, during and immediately after a disaster to minimize the damages.

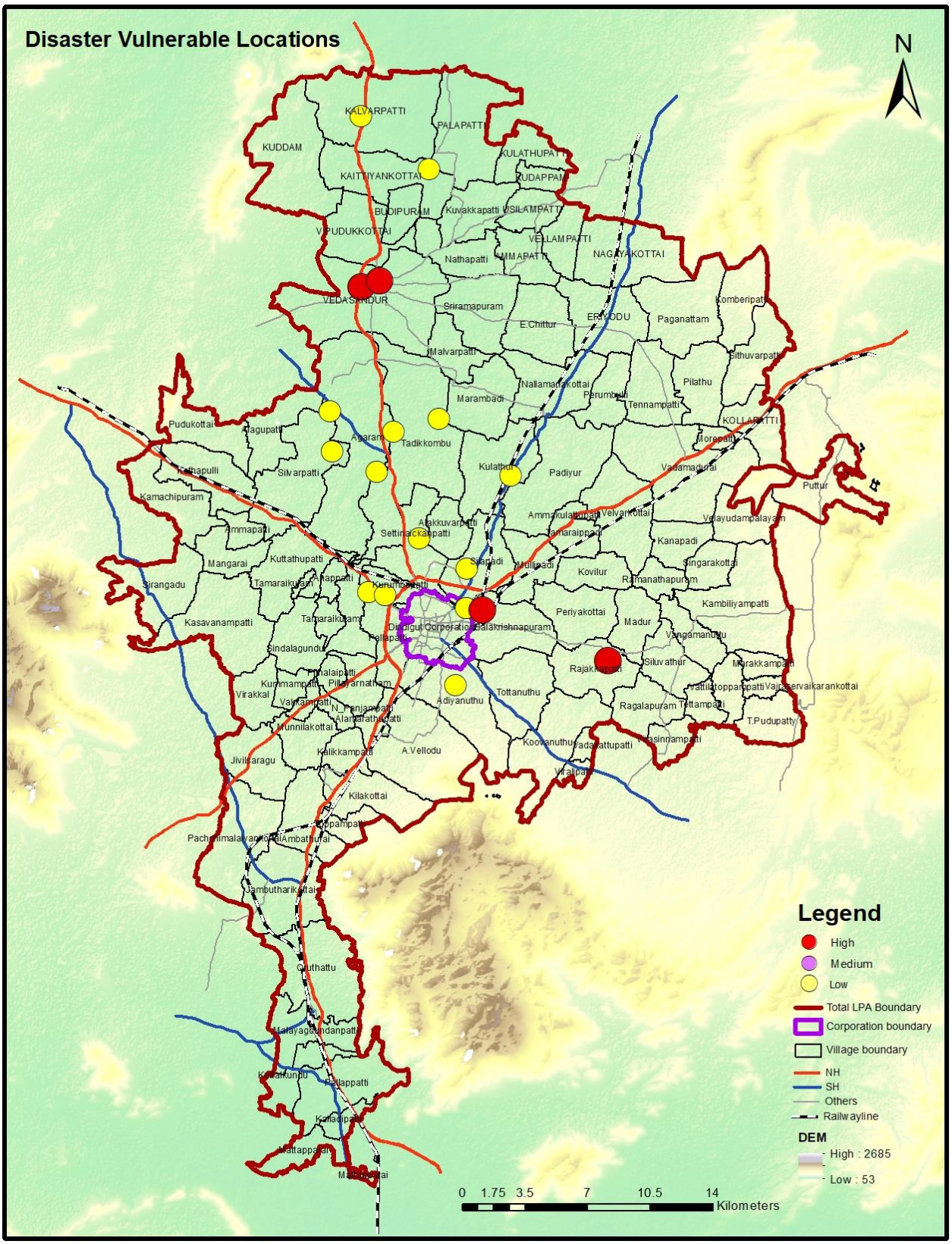
The United Nations defines a disaster as a serious disruption of the functioning of a society, causing widespread human, material, or environmental loss, which exceeds the ability of the affected society to cope using its own resources. To put it in other words, it is the occurrence of a sudden mishap/calamity/grave accident that disrupts the basic fabric and normal functioning of a society (or community).

Dindigul District having hilly terrains, rivers and forests, industries etc. is vulnerable to various kind of hazards like Flood, Land slide, Fire hazard, Road accidents, drought etc. Dindigul District experienced all the above hazards in the past and overcame it. Because of the past experience, the need of preparing an emergency response planning is felt by the District Administration. This intention has paved way for designing a plan to analyze preparedness, gear up the rescue and restoration during disaster situations as well as building up the capacity to face calamities of any form in future. The District Administration

has realized the necessity to compile a plan to facilitate faster and effective recovery during an emergency of any kind. This plan is more of a guidebook, which can help the administration to remain better prepared for both natural and man-made disasters to safeguard lives, livelihood, and property.

During Northeast Monsoon period there is absolute possibility of heavy rains resulting in inundation, floods etc. The depressions in the Bay of Bengal may intensify into Cyclonic Storms. The three months period (i.e.October –December) categorized as 'PERIOD OF ALERT'. The last two weeks of November and the first week of December will be the 'CRUCIAL PERIOD OF ALERT'.

The rains may cause heavy inflow of water in the rivers and jungle streams, odais etc. These water courses then become too narrow to carry large volume of water which flows. Therefore, the water overflows thereby breaching embankments, causes enormous damages to houses, huts, agricultural lands, roads, telephone lines, railway tracks, electricity lines and other public properties. It is not feasible to completely prevent nature's fury at one stroke. However, to minimize the damage caused by nature's onslaught and to ensure speedy relief thereby mitigating the sufferings of the people, the Dindigul District Administration must devise a plan and prepared a comprehensive "DISASTER MANAGEMENT PLAN". The plan can be set in motion when the need arises with the active co-ordination of inter departmental officials. In the above mentioned plan, vulnerable spots are identified in the district. Among them the spots that falls under Dindigul LPA is highlighted in Map



Map 12-1 Disaster Vulnerable Locations in Dindigul CLPA

Dindigul district is historically a drought prone district due to its geographical location and erratic rainfall patterns. The district does not have any perennial river source. Most of the rivers except river Vaigai (24 Kms of which passes through the district) are seasonal. Therefore, the district is prone to drought and drinking water shortage.The annual average rainfall of Dindigul district is 836 mm except Kodaikanal hill station and during 2020, the district has received 991.66 mm of rainfall. There is a need for the conservation of water as a drought proof measure. Various water conservation measures have been undertaken by the district administration to handle the drought scenario. Mitigation, preparedness, and prevention actions are to be taken before a disaster to reduce the likelihood of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction. The district can avail itself of four mechanisms (singularly or together) to reduce risk and vulnerability.

- Long term planning for mitigation, preparedness and prevention investments in the district,
- Enforcement of regulations, particularly building-safety codes and land use plans,
- Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability.
- Capacity building, including warning, the provision of relief and recovery assistance and community
- Level identification of risk and vulnerability.
- Based on the interim assessment of risk and vulnerabilities, the District will focus on the following areas for mitigation, preparedness and prevention;
- Resilience of lifeline systems (water, power and communications)
- Reduction in disaster impact on health care facilities, schools and roads
- Vulnerability reduction in flood-prone areas

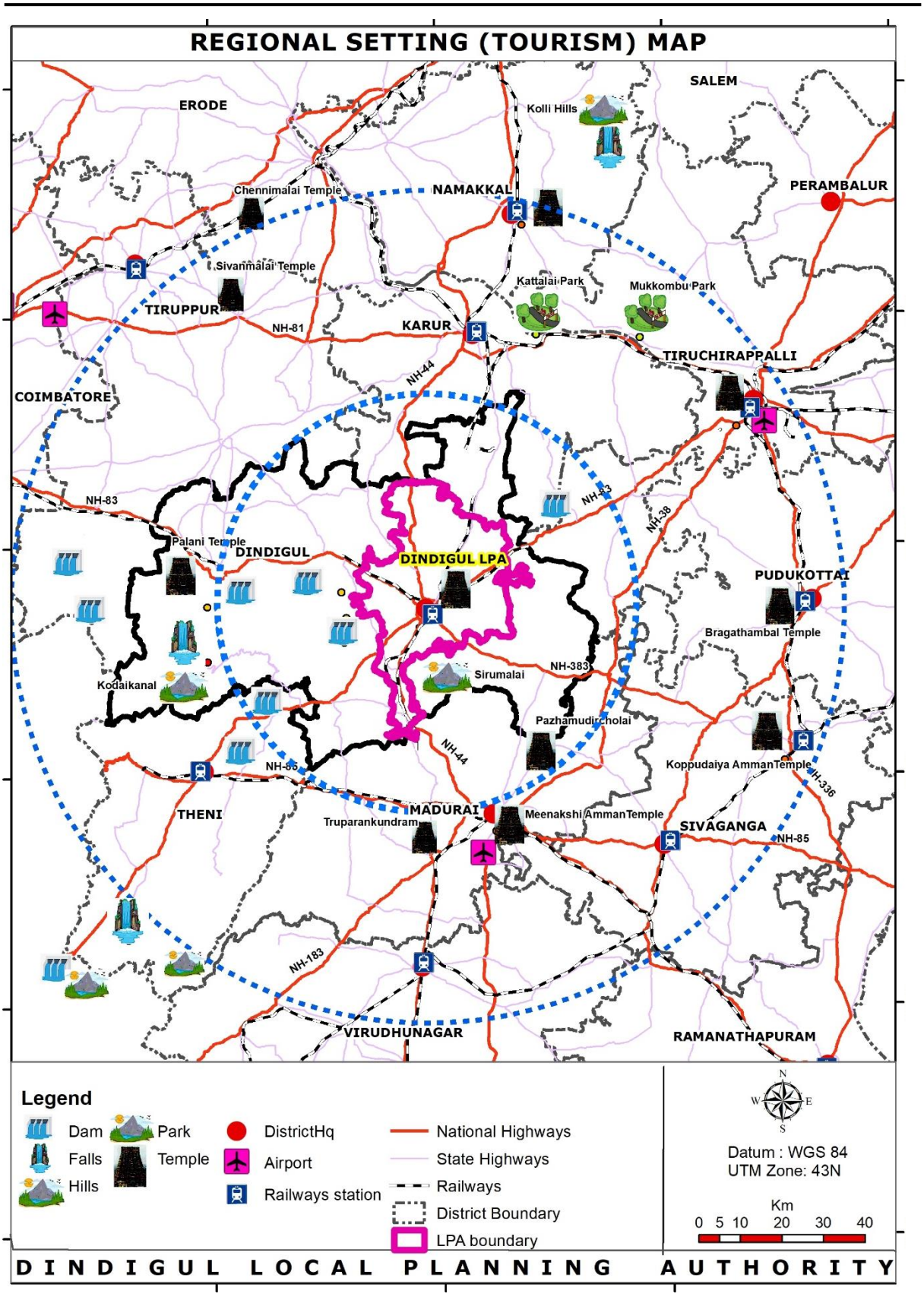
13 Tourism and Heritage

A place of historic significance, Dindigul is an interior region of Tamilnadu. Dindigul is a historical Town and administrative centre for Dindigul District, Tamil Nadu. The name Dindigul is derived from the combination of two words, the first Thindu means pillow and the second Kal means the stone is made up of these two words. It is related to those beautiful mountains from where the view of the whole Town is visible. Situated between the Palani hills and Sirumalai hills' foothills, this Town is not particularly known for its terrain. Its history & culture has found reverence, having been home to an ancient settlement. It was also the headquarters of the British Army at one point. Today, it is an industrial town and a tourism hub. Dindigul is a city located in the Indian state of Tamil Nadu, known for its rich history, cultural heritage, and scenic beauty. While it may not be as popular as some other tourist destinations in Tamil Nadu, Dindigul offers several attractions and experiences for visitors to explore.

Dindigul Fort is One of the main landmarks of the city, Dindigul Fort is a historic fortress built by the Nayak kings in the 17th century. It offers panoramic views of the surrounding area and provides insights into the region's architectural and historical significance. Berijam Lake is Located near Dindigul, Berijam Lake is a serene reservoir surrounded by lush greenery and rolling hills. Visitors can enjoy boating, picnicking, and birdwatching amidst the tranquil atmosphere of the lake. While not technically in Dindigul, Kodaikanal is a popular hill station located nearby, offering a perfect getaway from the city's hustle and bustle. Known for its pleasant climate, scenic beauty, and outdoor activities, Kodaikanal attracts tourists throughout the year.

Sirumalai Hill Station is Another nearby attraction, Sirumalai Hill Station is known for its picturesque landscapes, dense forests, and refreshing climate. It's an ideal destination for nature lovers, trekkers, and those seeking a peaceful retreat. Thadikombu Perumal Temple is the ancient temple dedicated to Lord Vishnu is situated around 20 kilometers from Dindigul. It is known for its architectural beauty and spiritual significance, attracting devotees and tourists alike. Dindigul is famous for its culinary delights, including the famous Dindigul biryani, which is known for its unique flavor and aroma. Visitors can explore local eateries and savor authentic Tamil Nadu cuisine. Apart from Dindigul Fort, the city boasts

several other historical sites and landmarks, such as the Begambur Big Mosque, Abirami Amman Temple, and Gujiliamparai Waterfalls, which offer glimpses into the region's rich past and cultural heritage. The Dindigul Fort is the main attraction here among many other historical monuments. The prominent attraction of this Town is the ancient Rock Fort that is perched on the top of the hill. It was constructed in 1605 by a Hindu King and later the fort was ruled by Tipu Sultan. After Tipu Sultan’s defeat by the Britishers, the fort came to be ruled under them.



Map 13-1 Showing the nearby Tourist Spots in Dindigul LPA

Apart from the Rock Fort, Arulmigu Kottai Mariamman Temple and Sri Abirami Amman Temple are famous attractions. Best time to visit Dindigul is in winters from October to March.

Following are the tourist places in and around Dindigul.

- Dindigul Fort Muthalagupatty(in LPA)

- Begambur Big Mosque Dindigul (in LPA)

- Kottai Mariamman Temple (in LPA)

- Thadikombu Perumal Temple (in LPA)

- Berijam Lake near Kodaikanal(114km from core area)
- Green Valley View (99km from core area)
- Palani (39 km)
- Sirumalai Reserved Forest (32km from core area)
- Sendraya Perumal Temple – Palaya Vathalagundu(39km from core area)

14 Existing Land Use

14.1 Existing Land Use Map – 2001

The 2001 existing land use in Dindigul reflects a diverse mix of urban development and open spaces, catering to various needs of the city and its residents. The city's land is categorized into different land use types, each serving specific functions and contributing to the overall urban landscape. Here is an overview of the existing land use in Dindigul in table 14-1.

Table 14-1 Existing Land Use Breakup details

Name of Land Use	Area in Sq.Km	% to the Total Developed Area	% to Total Town Area
Residential	4.86	63.6	34.74
Commercial	0.24	3.22	1.76
Industrial	0.50	6.54	3.57
Educational	0.36	4.71	2.57
Public and Semi-Public	0.55	7.23	3.95
Road and Railways	1.12	14.7	8.03
Non-Urban Area	2.42	-	17.27
Vacant	3.22	-	23.04
Land Under Water	0.43	-	3.07
Hillock	0.28	-	2.00
Total	**14.01**	**100.00**	**100.00**

Table 14-2 Classification of Land Use and Area in Extent

Name of Land Use	Area in Sq.Km
Residential	7.72
Commercial	0.16
Industrial	2.62
Educational	0.96
Public and Semi-Public	1
Road and Railways	6.53
Agriculture Wet	17.52
Agriculture Dry	131.47
Land Under Water	13.63
Total	**181.61**

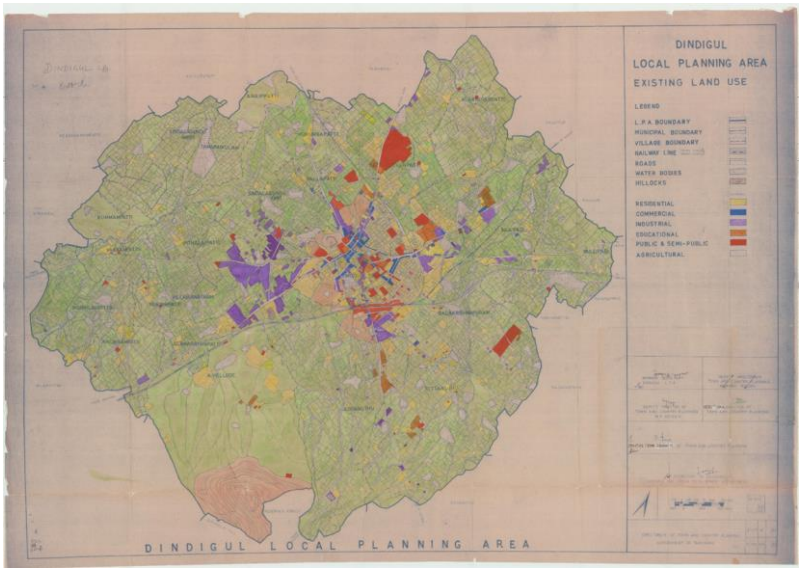


Figure 14-1 Existing Landuse 2001

14.2 Proposed Land Use Map – 2021

Table 14-3 Extraction Categories as per Tamil Nadu Government

Name of Land Use	Area in Sq.Km	%
Residential	24	60
Commercial	2.4	6
Industrial	4	10
Educational	1.6	4
Public and Semi-Public	8	20
Total	40Hec	100
Agricultural Area	15.881 Sq.Km	

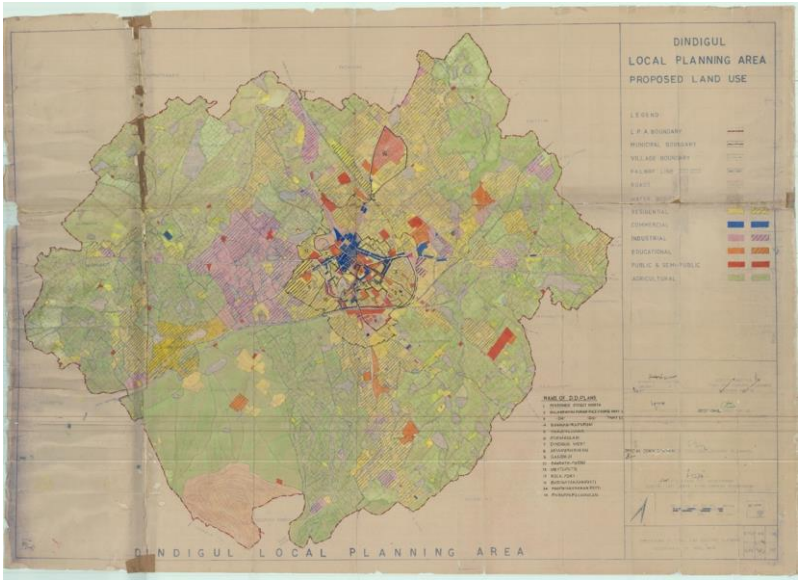


Figure 14-2 Proposed Landuse Map 2021

14.3 Existing Landuse Map 2021

Existing land use map for the year 2021 from land use survey is given below. Residential: Residential land use covers 6.309% of the total land area, accounting for 1382.33 hectares. These areas are primarily dedicated to housing the city's population and include individual houses, apartments, and residential neighbourhoods. Rural residential areas span 5261.62 hectares and are intended for housing in rural regions around Dindigul. Mixed land use covers 1031.09 hectares and represents areas with a combination of residential, commercial, and industrial uses. This category comprises 258.62 hectares of land with diverse uses that do not fit within specific land use classifications.

These are areas owned by the central government, covering 0.418% of the total land area, equivalent to 3.62 hectares. Areas designated for health services span 2.70 hectares. The areas, totalling 18.49 hectares, are reserved for public utilities and infrastructure services. Public and semi-public areas encompass 17.50 hectares and include facilities that serve the public. State government-owned land occupies 138.84 hectares. Areas designated for solid waste management span 2.76 hectares. Educational land use covers 342.22 hectares and is allocated for schools, colleges, and educational institutions. Railway property occupies 1.822% of the total land area, equivalent to 55.43 hectares. Land used for roads spans a considerable 2000.06 hectares, facilitating transportation within the city. The areas, totalling 74.86 hectares, are related to traffic infrastructure and management. Areas designated for transportation encompass 160.41 hectares. Industrial land use accounts for 1.164% of the total land area, covering 1463.69 hectares, and is reserved for factories and industrial activities.

Commercial areas cover a small portion, 0.045% of the total land area, equal to 56.28 hectares, dedicated to commercial activities. The areas, totalling 0.009% or 10.98 hectares, provide recreational spaces and facilities. Agricultural land occupies the largest portion, covering 86721.13 hectares, signifying the importance of agriculture in and around Dindigul. Green areas encompass 5903.08 hectares, preserving natural green spaces within the city. The areas, totalling 214.88 hectares, have specific designated uses. Vacant land comprises 84.656% of the total land area, occupying 3512.60 hectares. Waste land areas span 10036.12 hectares. Wet land areas cover 79.28 hectares. Heritage areas encompass 0.034% of the total land area, equivalent to 22.73 hectares. Areas designated for religious

purposes cover 19.56 hectares. Water bodies make up 5.529% of the total land area, totalling 6953.52 hectares, preserving natural water resources in the city.

The existing land use in Dindigul showcases a thoughtful balance between urban development, agricultural preservation, and environmental conservation, contributing to the city's overall sustainability and quality of life for its residents. It is important to note that land use patterns may change over time due to urban expansion, population growth, and evolving city planning strategies. Local authorities continually update land use plans to ensure efficient land utilization and sustainable urban development.

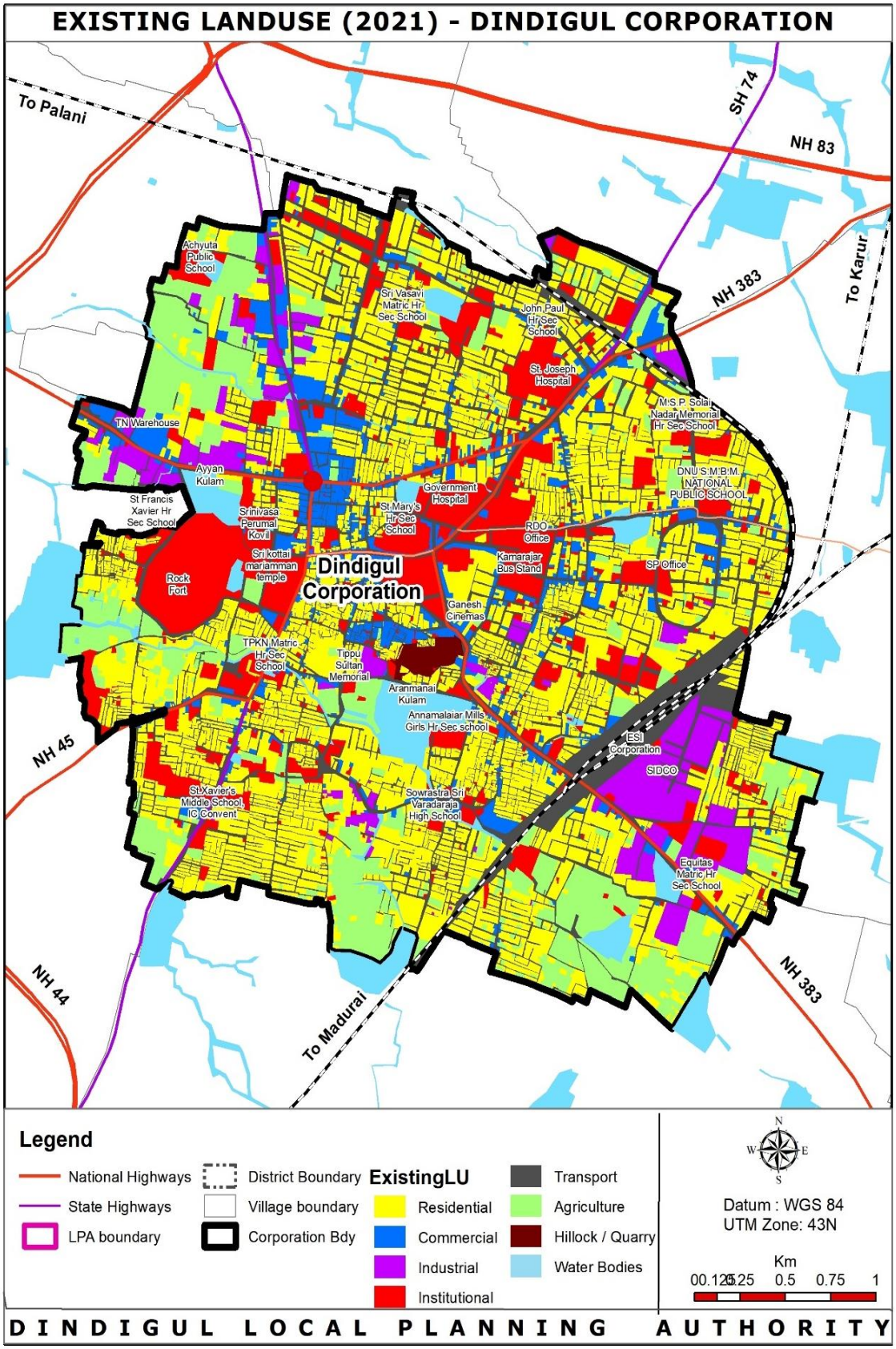
Table 14-4 Land Use Breakup Details

Name of Land Use	%	Area in Sq.Km
Residential	6.309	13.82
Rural Residential		52.61
Mixed		10.31
Others		2.58
Central Government Property	0.418	3.62
Health Services		2.70
Public Utilities		0.18
Public and Semi Public		0.17
State Government Property		1.3
Solid Waste Management		0.02
Educational		3.4
Railway Property	1.822	0.5
Road		20.00
Traffic Related		0.74
Transportation		1.6
Industrial	1.164	14.63
Commercial	0.045	0.56
Open Space & Recreational	0.03	0.48
Agricultural Land		850.78
Green Areas		59.03
Specific Land Use		2.14
Vacant Land	84.656	35.12
Waste Land		100.36
Wet Land		0.79
Heritage	0.034	0.22
Religious		0.19
Water Bodies	5.529	69.53

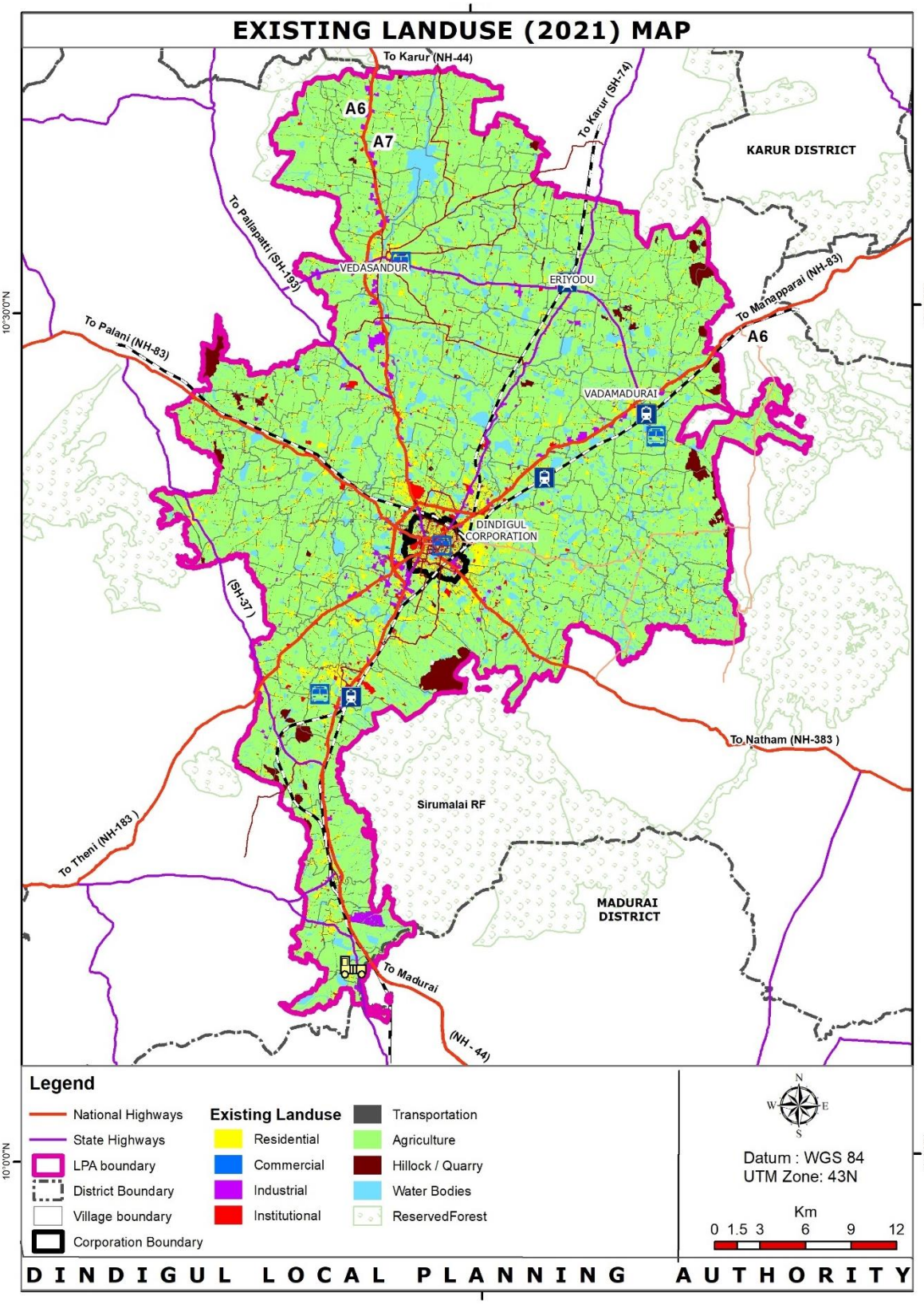
Table 14-5 Existing Land Use Breakup Details of LPA - 2021

S.No	Name of Land Use	Area in Sq. Km	Total Percentage
1	Residential	79.33	6.36
2	Commercial	0.56	0.04
3	General Industries	12.59	1.09
4	Special and Hazardous Industries	2.04	0.16
5	Institutional	4.78	0.38
6	Transportation	49.5	3.97
7	Open space & Recreational	0.48	0.04
8	Agriculture	992.95	79.54
9	Water body	105.15	8.43
Total		**1247.38**	**100**

The Table 14-5 shows the Existing Land use breakup details of Dindigul LPA. The Developed Land use accounts for 133.29 Sq. Km which is 10% of total LPA area. The undeveloped area (i.e.,) waterbody and Agriculture accounts for 1127.53 Sq. Km which is 90% of total LPA area.



Map 14-1 NRSC Landuse Map



Map 14-2 Field Vetting of Landuse Map

15 Master Plan strategy

15.1 Concept plan (SWOT Analysis)

15.1.1 Strengths

- As Dindigul expand over a larger area, it is significant enough to support a diverse range of urban activities, infrastructure, and amenities.
- Dindigul is regionally well connected with transport which paves the way for transportation-related businesses, such as logistics and trucking services, boosting the local economy.
- Potential for Industrial corridor development and Industrial cluster.
- Progressive nature of the forming community which accounts for 23 percent with ample manpower resource.
- Textile, Agricultural and mineral ore are the major economic booster,

15.1.2 Weaknesses

- Congestion during peak hours, especially on the arterial roads.
- Lack of Pedestrian facilities.
- Illegal On-street parking and vendor encroachment within the LPA are the main reasons for the reduction in carrying capacity.
- Congestion and limited access to tourist spots due to road issues can discourage visitors and affect the local tourism economy.
- Cutting down trees and unregulated land development threaten the environment.

15.1.3 Opportunities

- Development of Industrial cluster, provides opportunity for Employment.
- Water front development leads to a sustainable development, which reduce the water pollution
- Potential for Secondary level Urban Local Bodies
- Potential for IT Corridor.
- Expansion of Corporation area, due to the continuous urbanization.

15.1.4 Threats

- Heavy pollution along the water bodies
- Inadequate recreational facilities

15.2 Vision

In the heart of Dindigul's rich heritage and promising future, our vision takes root – a vision that endeavours to reshape the city into a living testament of sustainable progress and harmonious coexistence. United in purpose, we envision a city that honours its history while embracing the challenges of tomorrow through a series of transformative initiatives. Vision statement is developed based on detailed analysis of various sectors.

"Elevating Dindigul: A connected, sustainable city fostering integrated growth and strong economy."

Figure 15-1 Vision

Guided by this vision, Dindigul transcends its physical boundaries to emerge as a city that harmonizes legacy and innovation. In our collective endeavor, we honor the past, enrich the present, and lay the foundation for a future where Dindigul stands as an exemplar of sustainable urban evolution.

Followed by this vision statement, each proposal is discussed;

- **Continuous Building Area**

Nestled within Dindigul's vibrant neighbourhoods, we aspire to nurture a continuous building area that marries tradition with modernity. This amalgamation forms a canvas where architectural beauty and functional spaces unite, creating an urban tapestry that tells the story of a city in perpetual evolution.

- **Junction Improvement**

At Dindigul's crossroads, our vision unfolds with improved junctions that encapsulate the city's forward momentum. As these junctions ease traffic flow, they become the embodiment of efficient mobility and a reflection of Dindigul's commitment to a progressive urban experience.

- **Special Economic Zone**

In the shadow of Dindigul's renowned industries, our vision for a Special Economic Zone emerges as a beacon of economic diversity. With global investments and local entrepreneurship at its core, this zone fosters innovation, employment opportunities, and prosperity that resonates within the city and beyond.

- **Agro-Based Industries**

Rooted in Dindigul's agricultural heritage, our vision cultivates a city where agro-based industries flourish. By nurturing local resources, we not only enhance the city's economic landscape but also contribute to the nation's growth story while preserving the essence of the land.Shifting of Bus Stand and Off-Street Parking Facility: As Dindigul's heart beats anew, our vision envisions a bus stand shifted for better accessibility and a cityscape that incorporates off-street parking seamlessly. These enhancements reflect a commitment to convenience, allowing residents and visitors to explore the city with ease.

- **NH Widening and Other Roads Widening**

Connecting Dindigul to progress, our vision expands key roads, including the National Highway, ensuring smoother traffic flow, and underscoring the city's role as a pivotal hub for trade, culture, and connectivity.

- **New Water Source and Supporting Infrastructure**

To safeguard Dindigul's water security, our vision includes a new water source bolstered by resilient supporting infrastructure. This strategic approach ensures that the

city's growth remains sustainable while respecting the precious balance of nature.

- **New STP Proposal and UGSS Network**

In the realm of public health and sanitation, our vision brings advanced Sewage Treatment Plants (STPs) coupled with an Underground Sewerage and Sanitation (UGSS) network. This transformative step safeguards Dindigul's environment and citizens' well-being. New MCC Units: Within Dindigul's administrative sphere, our vision unfolds with new Municipal Corporation Center (MCC) units. These centers harness technology to elevate civic engagement, epitomizing a modern and citizen-centric governance model. Blue and Green Infrastructure: Inspired by Dindigul's natural beauty, our vision embraces blue and green infrastructure. Parks, water bodies, and green corridors become integral to the city's identity, offering spaces of respite and ecological balance for generations to cherish.

15.2.1 Aim

To elevate Dindigul into a connected, sustainable city that fosters integrated growth and a strong economy, capitalizing on its strengths, addressing challenges, seizing opportunities, and building a robust transportation network as a catalyst for inclusive development.

15.2.2 Objectives

1. Enhance existing schemes for inclusive growth.
2. Develop a well-connected transportation network for economic prosperity.
3. Integrate sustainable practices for a green and responsible city.
4. Empower local communities through participatory decision-making.
5. Promote tourism and preserve cultural heritage for economic boost.
6. Bridge skill gaps through targeted youth skill development programs.
7. Implement technology solutions for efficient governance and citizen engagement.
8. Support entrepreneurship and local business development.
9. Attract investment by developing modern economic zones.
10. Foster collaboration and alignment among stakeholders for unified development.

16 Population Projection

16.1 Methods of Population Projection

The population projections for Dindigul LPA are carried out for a period of 20 years with base year as 2011. The population for the year 2041 is projected by following mentioned methods. The method which corresponds to optimum value in the projected population is to be adopted for further analysis.

16.1.1 Arithmetic Increase Method

In this method the average increase in population for seven decades is calculated from the past census data obtained. The average increase is added to the base line population to find out the existing population and for the years 2031 and 2041. The following table 16-1 illustrates the arithmetic population projection for 2021, 2031, 2041 of Dindigul LPA. In this projection method, the census population data from 1981 onwards are utilized.

Table 16-1 Arithmetic Increase method

Arithmetic method			
Year	Population	Variation	Growth Rate
1981	540840		
1991	640709	99869	18.47%
2001	726703	85994	13.42%
2011	811445	84742	11.66%
Average Population Growth per Decade			90202
2021	901647	90202	11.12%
2031	991848	90202	10.00%
2041	1082050	90202	9.09%

16.1.2 Geometrical Increase Method

In this method, it is assumed that the percentage increase in population from the available census records, this percentage is fixed and then population of each future successive decade is calculated. The following table 16-2 illustrates the geometric population projection for 2021, 2031, 2041 of Dindigul LPA. In this projection method, the census population data from 1981 onwards are utilized.

Table 16-2 Geometric Increase method

Geometric method			
Year	Population	Variation	Growth Rate
1981	540840		
1991	640709	99869	18.47%
2001	726703	85994	13.42%
2011	811445	84742	11.66%
Average Growth rate per Decade			14.48%
2021	928914	117469	14.48%
2031	1063387	134474	14.48%
2041	1217328	153941	14.48%

16.1.3 Incremental Increase Method

This method combines the above two methods. The incremental increase is determined for each decade from the past population and the average value is added to the base year population along with the average rate of increase. The following table 16-3 illustrates the incremental increase method of population projection for 2021, 2031, 2041 of Dindigul LPA.

Table 16-3 Incremental Increase method

Incremental Increase method			
Year	**Population**	**Increase**	**Incremental Increase**
1981	540840		
1991	640709	99869	
2001	726703	85994	-13875
2011	811445	84742	-1252
Average		90202	-7564
2021	911367	99922	15180
2031	1021008	109642	9720
2041	1140370	119362	9720

16.1.4 Final Projected Population

When 2011 census population is projected using 1981,1991,2001 census data, population projected using Arithmetic Increase Method comes close to the original 2011 census population. Arithmetic Increase Method is the method that resembles the growth trend of the population of Dindigul LPA. Therefore, population of 1082050 shall be finalised as 2041 projected population.

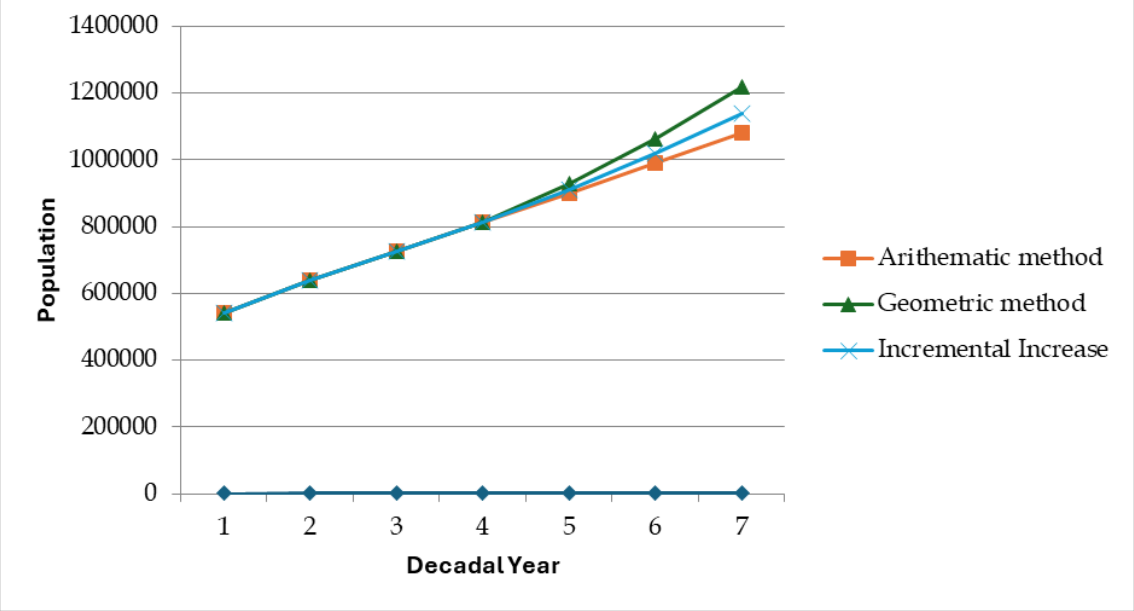


Figure 16-1 Projected Population Details

	1981	1991	2001	2011	Projected 2011	Projected 2021	Projected 2031	Projected 2041
Dindigul Town	164103	182477	196955	207327	213381	221735	236143	250551
Rest of Dindigul LPA	376737	439176	514237	604118	606254	679912	755705	831499
Total Dindigul LPA	540840	621653	711192	811445	819635	901647	991848	1082050

16.1.5 Population Distribution

The population distribution in Dindigul is dynamic and may change over time due to factors such as migration, urbanization, and government policies. The urban areas experience population growth due to the influx of people seeking better opportunities, while rural areas continue to rely on agriculture as the primary livelihood. It is essential for

the local authorities and policymakers to plan and manage the population distribution effectively to ensure balanced and sustainable development across the district. Adequate infrastructure, healthcare, education, and other essential services need to be provided to meet the needs of the population in both urban and rural areas.

16.1.6 Spatial Growth Pattern

The possible future spatial growth patterns that are commonly observed in many urban areas. Urban Expansion: As the population grows and urbanization continues, there might be an expansion of the urban areas in Dindigul. This expansion could lead to the conversion of rural or agricultural land into residential, commercial, or industrial zones.

Mixed-Use Developments: To accommodate the growing population and create sustainable and compact urban spaces, there may be an emphasis on mixed-use developments that integrate residential, commercial, and recreational areas within close proximity. As Dindigul grows, there would be a need for enhanced infrastructure, including improved transportation networks, water supply systems, waste management, and other utilities to support the increasing urban population. The rejuvenation and redevelopment of existing urban areas may take place to optimize land use and improve the quality of living for residents. There may be a focus on sustainable urban planning practices, such as promoting green spaces, eco-friendly buildings, and efficient use of resources to ensure environmental conservation and resilience to climate change. To manage population growth and prevent excessive urban sprawl, there could be the development of satellite towns or planned urban extensions around Dindigul. Dindigul may embrace smart city concepts, incorporating technology and data-driven solutions to enhance urban services, governance, and overall liveability.

17 Economic Planning

17.1 Industrialization

17.1.1 Agro Based Industries

Agriculture is one of the major economic sectors in the Local Planning area. Planning area is having fertile lands capable of cultivating Jowar, Maize, Coconut, Sugarcane, Mango and vegetables in large scale. Dindigul is one of the major agro based products exporters in Tamil Nadu. There is also Ottanchatram, one of the largest vegetable markets in the State in the nearby vicinity. Therefore, there is potential for Agro based Industries in the planning area.

17.1.2 SEZ – Special Economic Zone for Light Industries

Dindigul being strategically located and having many major corridors as mentioned above there is a potential for establishment of Special Economic Zone for Light Industries. This could generate employment for the people of Dindigul. This reasonable Industrialization could compliment for Urbanization of Dindigul Planning area.

17.1.3 Handloom

Dindigul has a long history in the Handloom industry and as a substantial amount of people being involved in it. There are total of 777 Handloom establishments in rural and 3437 establishments in urban area. Dindigul District is having a flourishing handloom industry at Chinnalapatti, which is located at 11 Kms away from Dindigul on the Madurai-Dindigul road. Art –Silk sarees and Sungudi Sarees produced in Chinnalapatti are famous throughout India. More than 1000 families are engaged in this Industry.

Table 17-1 Location of Handloom centre

S.No	Name/Location of Focal centre	No. of Societies	No. of the Families Engaged in Handlooms
1	Dindigul	23	2851
2	Chinnalapatty	8	1928
3	Palani	8	978
Total		**39**	**5757**

Source: Dindigul District Handbook 2021 - 2022

Figure 17-1 Handloom centre

17.2 Transportation Corridors Improving Economy

The envisioned introduction of ring roads strategically connecting the radial roads in Dindigul holds the promise of driving substantial economic development throughout the region. These ring roads, by orchestrating a seamless flow of traffic and optimizing connectivity, stand as powerful catalysts for economic growth. Through their systematic alignment, they open a multitude of avenues for enhanced economic activities. The efficient movement of goods and services forms the backbone of any thriving economy, and the proposed ring roads have the potential to amplify this vital aspect. By providing efficient routes for the transportation of goods, the roads can foster the growth of industrial sectors, commercial centers, and marketplaces, setting the stage for increased trade and commerce. Moreover, these improved connections can spur the creation of industrial clusters and business hubs, where companies can leverage strategic location advantages to collaborate, innovate, and expand their operations.

The impact extends to the logistics and warehousing domains as well. Ring roads create an optimized logistical framework, encouraging the establishment of distribution centers and storage facilities along their path. This, in turn, can lead to streamlined supply chains, cost savings, and heightened efficiency, making the region attractive for investments in logistics infrastructure. In the realm of real estate and property development, the advent of ring roads is poised to reshape urban landscapes. The newfound accessibility and

connectivity can trigger a surge in residential, commercial, and mixed-use real estate projects along these corridors. The subsequent rise in property transactions, construction activities, and related services can inject new life into the construction sector and stimulate local economic growth. Tourism and hospitality, too, can benefit significantly from the proposal. Ring roads can provide better access to tourist attractions, cultural landmarks, and recreational areas in and around Dindigul. This accessibility can elevate the city's tourism potential, encouraging the growth of hotels, restaurants, entertainment venues, and related services.

Job creation becomes an organic outcome of these economic activities. The collective impact of these developments generates a multitude of employment opportunities spanning various sectors. From construction jobs during the road development phase to positions in industries leveraging the improved connectivity, the ring roads contribute to job generation and local livelihood enhancement. Furthermore, these roads possess the power to attract investments. The streamlined transportation network can make Dindigul an appealing destination for domestic and foreign investors across diverse sectors. This, in turn, propels economic diversification, innovation, and overall growth.

The fiscal benefits of this proposition are also noteworthy. As economic activities flourish along the ring roads, local governments can witness an upswing in tax revenue. This newfound revenue can subsequently be reinvested into crucial areas such as infrastructure, public services, and community development initiatives. Additionally, the regional connectivity that the ring roads foster extends beyond Dindigul's boundaries. They serve as conduits for stronger ties with nearby cities and regions, facilitating inter-regional trade, collaboration, and resource sharing, thereby enriching the entire economic landscape. However, the realization of these economic gains hinges on meticulous planning, active stakeholder engagement, and a proactive approach to address potential challenges and harness opportunities, ultimately paving the way for a more vibrant, resilient, and prosperous economic future for Dindigul.

17.3 Employment Projection

In all OECD countries, an average of 65-70 % is considered as ideal workforce participation rate. Workforce participation rates are calculated as the total workers divided

by the total working-age population. The working age population refers to people aged 15 to 64. As Economy progresses, female workers increase year by year. Therefore, taking equal employment composition for both male and female with 5% increase in employment rate, city shall achieve 60% Work Participation Rate.

Table 17-2 Projected Employment Demand

S.No	Description	2011	2021	2031	2041
1	Total Population of Dindigul LPA	811445	901647	991848	1082050
2	Total Workers in LPA	389111	450824	545516	649230
3	Participation Rate	47.95%	50.00%	55.00%	60.00%
4	Male Workers	242489	252461	272758	324615
5	% of Male Workers to Total Workers	62.32%	56.00%	50.00%	50.00%
6	Female Workers	146622	198362	272758	324615
7	% of Female Workers to Total Workers	37.68%	44.00%	50.00%	50.00%

17.3.1 Industries and Employment Opportunities

- SIPCOT and SIDCO shall propose new industries and create employment opportunities.
- There is large scope for agro-based industries as one third of the land is agricultural land.
- There is also potential for growth in handloom industries which shall give Entrepreneurship and employment opportunities.

17.4 Stakeholders Consultation


Figure 17-2 Stakeholders consultation

Table 17-3 Stakeholders consultation and their remarks

S. NO	Name and designation	Suggestions	Remarks
1	Thirumathi.M.N. Poongodi, IAS., Collector Dindigul District	1) Drum Stick export center in Puspathur proposal sent to government 2) IT industrial corridor to be developed along veasandur, vadamadurai and gujiliyamparai which is dry land.	Puspathur is in Non LPA area Growth pole and Growth Center indentified in that area and incorporated in Master plan Report.
2	Thiru. Arasan, Secretary Real estate Owners Association	1) Road around the rock fort to be created, so that small cottage industries along the side developed. employment also created for the particular area 2) Trade center to be created 3) Parking facilities to be developed in dindigul city area.	Incorporated in the Master Plan Report

S. NO	Name and designation	Suggestions	Remarks
3	Thiru. Pandi Manikandan Joint Secretary Real estate Owners Association	1) Suggested to include Chinnalapatti Town Panchayat and Natham in Planning area. 2) Identify Viralipatti as major industrial spot there are potential for agro based industries like mango, coconut . 3) develop Sirumalai as major tourism spot so that we can develop employment.	Ambathurai, Munnilaikottai,Kalikkampatti. Keelakkottai are comes under Chinnalapatti Town Panchayat.these villages are already included as LPA area. Natham at present non Planning Area. In Viralipatti we have proposed major part as Industrial Land Use. Non Planning Area
4	Thiru.A.FrancisNoer Branch Manager SIDCO	Private industrial estate to be created in dindigul district	We have proposed 9.44 percentage Industrial zone in Dindigul LPA Area
5	Thiru.Arunasalam. G Lead District Manager.	IT industrial corridor to be developed along vadamadurai, vedasandur	Growth pole and Growth Center indentified in that area and incorporated in Master plan Report.
6	Thiru. Palanikumar Secretary YES Young Etreprenuer School, Secretary	Traffic regulation and Parking issues to be resolved in dindigul city.	Traffic Survey Conducted and proposal was included the Master plan report
7	Thiru. SureejBabu, Project Officer, SIPCOT,Nilakkottai	Another SIPCOT land identification Proposal is under process so that develop more employment opportunities for skilled and unskilled persons.	We have proposed 9.44 percentage Industrial zone in Dindigul LPA Area
8	Thir. BMS.Murugesan Dindigul Chamber of Commerce.	Methane production to be Implemented in dindigul to create power generation by using Biowaste	To be carried out by TANGEDCO

S. NO	Name and designation	Suggestions	Remarks
9	Mr.Venkadasalam Tamilnadu Spinning Mills Association	There is more scope for Agro based Industries. Due to wet process and high consumption of electricity the spinning mill development is down.	Incorporated in the Master Plan as increased industrial land use zone.

1. **Boost to Industrial Development:** Creating an SEZ specifically tailored for light industries can provide a dedicated space for these businesses to thrive. This can lead to increased production, job creation, and overall industrial output.
2. **Enhanced Efficiency:** SEZs often come with streamlined regulatory processes and infrastructure support, making it easier for businesses to set up and operate. This can lead to increased efficiency and productivity within the light industries sector.
3. **Stimulating Agro-based Industries:** By focusing on light industries, particularly those related to agro-processing, the SEZ can contribute to the growth of the agricultural sector. This can include activities such as food processing, packaging, and distribution, adding value to agricultural products and creating employment opportunities in rural areas.
4. **Encouraging Secondary Sector Growth:** Light industries such as lock manufacturing, tanneries, and other smaller industries often form the backbone of the secondary sector. Establishing an SEZ for these industries can attract investment, encourage innovation, and contribute to the overall growth of the secondary sector.
5. **Infrastructure Development:** The proposed expansion of industrial land use to 1.5 times the existing area indicates a commitment to infrastructure development. This can include roads, utilities, and other necessary facilities to support industrial activities within the SEZ.
6. **Attracting Investment:** SEZs are often designed to attract domestic and foreign investment by offering incentives such as tax breaks, duty exemptions, and streamlined regulatory procedures. This can help attract investment in light industries and stimulate economic growth in the region.

17.5 Industrial Corridor Proposal

The proposal to establish industries along State Highways (SH) in Vedasandur and Vadamadurai holds several potential benefits for the region. Firstly, it can spur significant economic growth by creating employment opportunities, increasing income levels, and attracting investment. This, in turn, can contribute to poverty reduction and an enhanced quality of life for the local population. Additionally, the introduction of industries diversifies the local economy, reducing its vulnerability to economic fluctuations and fostering economic stability. Improved infrastructure development, including roads, utilities, and transportation networks, is a natural outcome of industrialization, which benefits both industries and the community by enhancing accessibility to essential services. The proposal also offers skill development and training opportunities for the local workforce, further increasing employability. Sustainable industrial practices can boost environmental standards, and the increased tax revenue generated can fund essential public services. Overall, the proposal for industrial development along SH in Vedasandur and Vadamadurai has the potential to be a catalyst for regional progress, contributing to balanced economic growth and improved living standards.

17.5.1 Vedasandur

Based on the current numbers and past trends of wages and employment, it may be inferred that textiles, spinning mill, and weaving unit have the potential to generate significant employment opportunities. The larger/formal firms tend be more productive and tend to employ more skilled workers as compared to the smaller/informal firms. Textiles are currently dominated by very small sized enterprises operating in the informal segment. Thus, if we could ensure that the expansion of textiles and spinning mill is driven by more “dynamic” (formal, large, and more productive) enterprises through an appropriate set of policies, we will see not only employment growth, but also growth in wages.

17.5.2 Vadamadurai

The approach is increasingly also linked to agriculture, allowing spatially targeted policies and investment offering direct and indirect effects on agricultural outcomes. More specifically, they aim to target public investment for priority agro-ecological or underutilized zones along a corridor; promote domestic and foreign private investment into producing

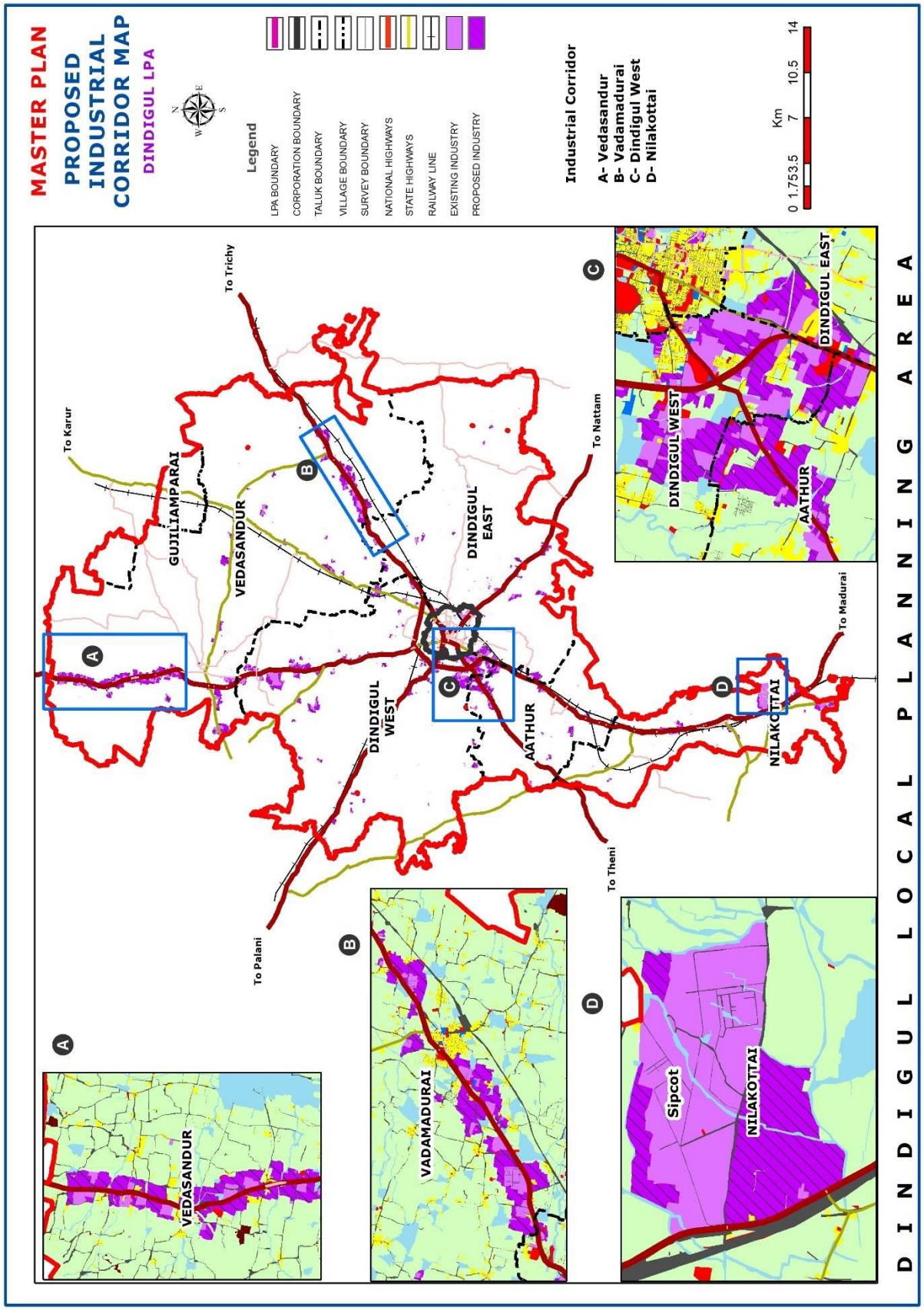
and processing agricultural goods; and help focus policies and support programs to link smallholder farmers to national, regional and international production networks. They can help improve agricultural input and output markets, transport and logistics, energy access and national and cross-border marketing. Corridors offer a means to link different sectoral strategies to promote economic transformation towards higher productivity sectors and activities, and more and better employment and market opportunities across low-income countries, with agriculture a focal sector. Corridors and SDIs therefore offer the potential to help reduce rural poverty, improve food and nutrition security, and improve environmental sustainability.

17.5.3 Dindigul West

In light of the ongoing numbers and past patterns of wages and work, it very well might be gathered that materials, turning factory, and winding around unit can possibly create critical business amazing open doors. The bigger/formal firms tend be more useful and will generally utilize more talented specialists when contrasted with the more modest/casual firms. Materials are right now overwhelmed by tiny measured endeavours working in the casual portion. In this way, on the off chance that we could guarantee that the extension of materials and it is driven by more "dynamic" (formal, huge, and more useful) undertakings through a fitting arrangement of strategies, we will see business development, yet additionally development in wages to turn factory.

17.5.4 Nilakottai

Nilakottai is well known for its thriving and garment industry, particularly in knitwear production. Its hosts numerous spinning mills, garment manufacturing and related business. The region benefits from factors such as skilled labors, favourable government policies, access to raw materials and a robust infrastructure. A textile industrial corridor in Nilakottai and its surrounding area would likely involve creating a dedicated zone with specialized infrastructure and facilities tailored to the needs of textile industries. This could involve provision for power supply, water availability, waste management, transportation infrastructure and common facilities. The establishment of such an industrial corridor could further boost the textile sector in Nilakottai, attract investment, generate employment and foster innovation and collaboration within the industry.



Map 17-1 Proposed Industrial Corridor map

17.6 Recommendations for Youth Skill Development Programme

Youth Skill India is an authorised with gspl under NSDC(Ministry of Skill Development, Government of India) and is working to provide skill development courses of Beauty & Wellness Sector Skills Council, Electronic Sector Skill Council, Telecom Sector Skill Council, Instrumentation, Automation, Surveillance & Communication Sector Skill Council. In a Response to Skill India Mission with an objective to train unemployed youth, school and college dropouts in various outcome-based trades, and help them get employment within the domestic industries as well as overseas.

Student Counselling and industry collaborations: Youth aspirations for jobs in the different sectors do not match with the opportunity available in the industry or service sectors. Hence, the opportunities available in the local industries and service sectors should reach the youth to tune themselves with the openings and what qualification and skill requirements are expected out of them.

By organizing seminars/melas for students in collaboration with the industry. Providing Counselling sessions to students to enable them to understand the market situation and job opportunities status with respect to their qualification/skill and Local industries and service sector can train the youth by providing internships (short term) for better understanding of the job roles and responsibilities through tie-ups with appropriate institutes.

Unified job portal for placements: Youth aspiration findings indicate that youth have a preference for placement services/ guidance with respect to applying for suitable jobs. Developing a unified job portal for job postings at all levels of skill across sectors can be developed. Such a portal would enable both employers and candidates to minimize time and effort in finding suitable vacancies and profiles.

- **Promotion of skill development in Service sector:** Private activity in the service sector can be nurtured to provide local employment to youth at a livable wage. Construction, trade and tourism, hospitality, retail and logistics can absorb local youth in significant numbers, and provide jobs suited to the needs of youth. Skill development programs can focus on such sectors, based on consultations with local players and training service providers.

- **Promotion of Traditional village and Household Industries:** The Small Industries Product Promotion Organization (SIPPO) promotes traditional industries which have availed credit schemes under the Prime Minister's Employment Generation Program (PMEGP) of the Khadi and Village Industries Commission (KVIC). Consultations revealed that traditional artisans and home-based businesses face marketing challenges, which need to be overcome to ensure sustainability. Interventions can identify local partners for providing marketing and technical support to such beneficiaries, to ensure that traditional sectors such as sungudi and handloom saris are sustained. In addition, traditional industries can be formalized through appropriate skill assessment and certification process under the Recognition of Prior Learning modality. This can be done in collaboration with the Handicrafts and Carpet Sector Skill Council (HCSSC).

The Dindigul LPA show high demand for skilled and semiskilled labour are: manufacturing, construction, education, human health & social work activities, trade and repair services, agricultural and allied activities, along with other services, show high levels of demand for both skilled and semi-skilled workers

The intended target groups are different from the eligibility criteria prescribed as part of the Qualification Pack. Target Group refers to the preferred set of youth who stakeholders have identified are most likely to benefit from the training. This could come from the Aspirations expressed in the Quantitative Survey, feedback from Industry and Govt. Stakeholders. For instance, though a training in handicrafts might require only 5th grade as an eligibility-criteria, the target group would be rural women in a cluster. TNSDC and the TSPs can continue to use the minimum criteria as mentioned in the Qualification Pack; however, qualifications that may constrain an interest-group may appropriately considered on a case-to-case basis (as approved by TNSDC).

17.7 Proposal for Cold Storage in Dindigul Local Planning Area

India, despite being the world's largest producer of fruits and second-largest producer of vegetables, faces a significant challenge – post-harvest losses. These losses, estimated at 25- 30% of production, result in economic hardship for farmers and limit the availability of fresh produce for consumers. Dindigul, a major agricultural producer in India, is also face

this challenge. This proposal outlines the establishment of a modern cold storage hub in Dindigul to address post-harvest losses and empower the agricultural sector.

17.7.1 Need for Cold Storage Facility

- Dindigul boasts a diverse range of agricultural produce, including fruits (banana, sapota, guava, lime), vegetables (tomato, eggplant, okra, chili, beans, cauliflower), flowers (jasmine, crossandra, chrysanthemum, gomphrena), and medicinal plants.
- The current annual production of agricultural products is 23,874 tonnes, and horticultural products reach 3,41,932 tonnes.
- However, a lack of proper storage facilities leads to substantial post-harvest losses. While Dindigul has existing cold storage facilities (total capacity: 7238 MT), they are likely insufficient to meet the growing demand. This necessitates the establishment of a comprehensive cold storage hub.

17.7.2 Proposed Solution: A Modern Cold Storage Hub

The proposed cold storage hub will be a state-of-the-art facility offering:

- **Temperature-controlled chambers**: Cater to the specific needs of various agricultural produce, ensuring optimal storage conditions.
- **Packing and sorting facilities:** Guarantee proper handling and organization for efficient storage and retrieval.
- **Pre-cooling chambers** may be proposed to quickly reduce field heat of freshly harvested produce, maximizing shelf life.
- **Refrigerated transportation services** may be proposed to minimize spoilage during produce movement.
- **Quality control measures:** Implement procedures to maintain optimal storage conditions and monitor produce quality.

17.7.3 Benefits

The cold storage hub will bring numerous benefits to Dindigul:

- **Reduced post-harvest losses**: Increased income and market stability for farmers.
- **Improved produce quality**: Fresher produce for consumers throughout the year.
- **Extended shelf life:** Wider market reach and distribution opportunities.

- **Enhanced food security**: Reduced spoilage translates to more food available for consumption.
- **Economic growth**: Increased revenue generation for farmers and associated businesses.

17.7.4 Location of Site Details

Based on the feasibility study for the Dindigul district, a strategic location with good accessibility for farmers and transportation links to markets will be identified. Proximity to major highways, agricultural production areas, and existing market centers (Ottanchatram, Batlagundu) can be considered.

The proposed location for the cold storage facility has been identified in Malayagoundanpatti village, Nilakottai taluk. The specific site is designated by survey number 273/3 and encompasses an area of 0.08 sq.km, which translates to approximately 8 hectares. This area provides ample space for the construction of a cold storage facility with the necessary capacity to meet the needs of the surrounding agricultural sector.

Figure 17-3 Proposed Location for Cold Storage Facility

- **Survey No : 273/3**
- **Village : Malayagoundanpatti**
- **Taluk: Nilakottai**
- **Area: 0.08 Sq.Km**

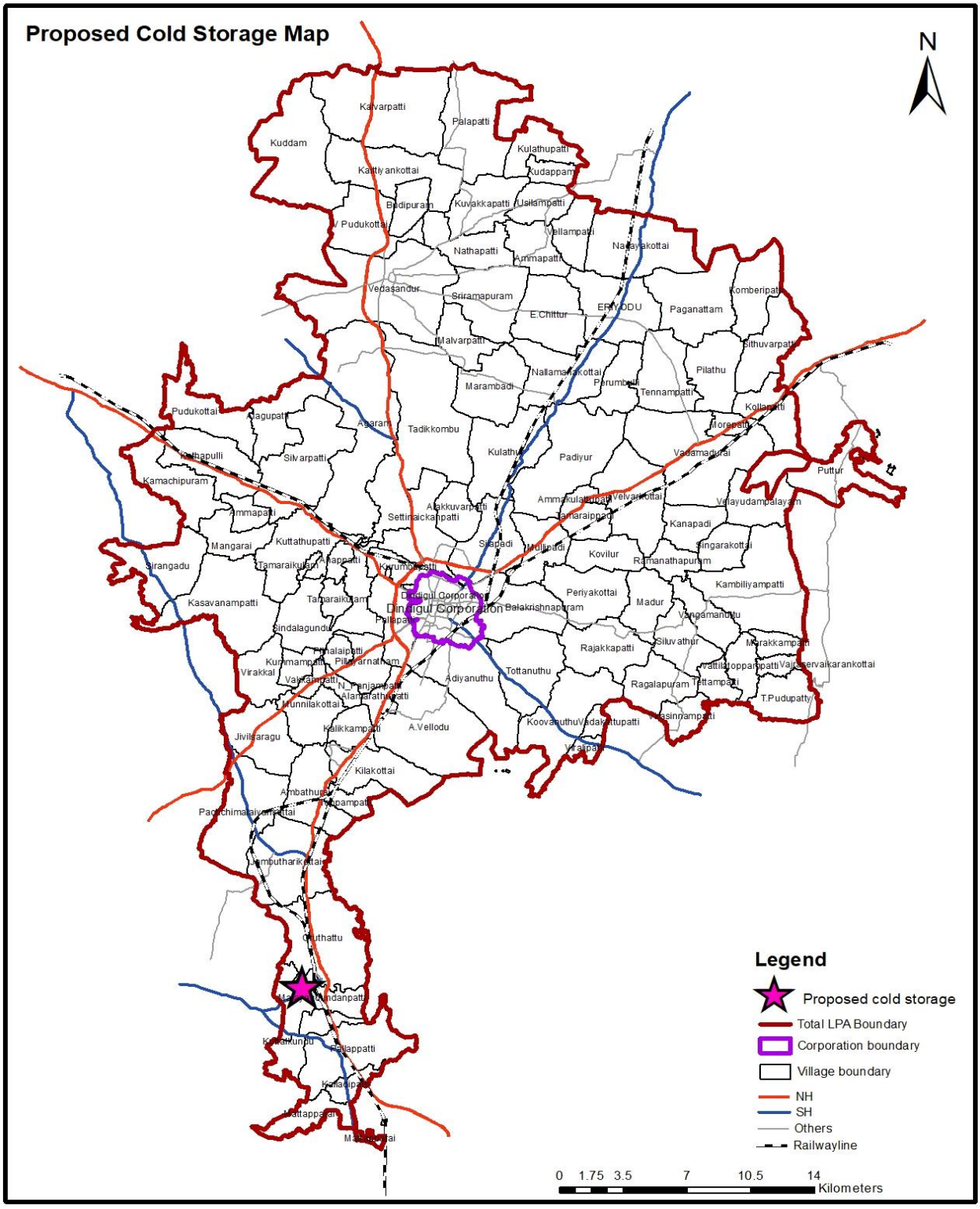
Target Users

The hub will cater to various stakeholders.

- **Farmers**: Small, medium, and large-scale producers can utilize the facility to store their produce.
- **Distributors and wholesalers:** Efficient storage and transportation will benefit those involved in produce distribution.
- **Consumers:** Improved access to fresh, high-quality fruits, vegetables, and flowers.

Establishing a modern cold storage hub in Dindigul is a crucial step towards a more sustainable and profitable agricultural sector. By minimizing post-harvest losses, this project will empower farmers, ensure food security, and provide consumers with year-round access to fresh produce.

Figure 17-4 Conceptual image for proposed cold storage hub



Map 17-2 Processed Cold Storage location map

18 Mobility Planning

The Grid of Roads is prepared for Dindigul LPA to address the problems confronted in the linkage and connectivity of the road network. A well-planned Grid of Roads Network provides better connectivity and access to the major arterial and sub-arterial roads. It strengthens the supply of lower order roads and their effective networking in the hierarchy. As per the IRC norms, the minimum standard distance to reach the Arterial, Sub arterial and Collector roads are, Arterial Roads - 4 km Sub Arterial Roads - 2 km Collector roads - 1 km The IRC recommends that the arterial roads are spaced at 8km or more in the sparsely developed urban areas and the sub-arterial roads in the similar area spaced between 3 to 5 km. Similarly, the collector roads are spaced between 2 km. This would enable easy access to any arterials within a 4 km distance and sub arterial within a 2 km distance. Figure 15.6 presents the conceptual grid of the road network pattern.

- The grid of road network plan is formulated for Dindigul LPA to develop a strong hierarchical order of roads which ensures smooth flow of traffic.
- The proposals are expected to enhance the functioning of the neighbourhoods through improved accessibility of the inner area.
- The road development proposals identified as part of this study are the development of new link roads ring road & widening of the existing collector roads under Local bodies.
- The new road developments are identified at places where the intensity of developments is less and where it is considered essential in the view of the long-time development perspective. While proposing this of roads, criteria such as abutting land use, length/width of roads, the hierarchy of roads, and traffic flow have been considered to meet the demand for present and future.
- The connectivity issues are mostly spotted in Villages like Nanjai uthukuli, Nasiyanur, Punjai Kalamanagalam, Perundurai, Vadanuga vellodu, Pallapalayam, Thindal, R.N Pudur, Suriyampalayam, Mettunasuvamplayam and Nanajai Lakkapuram.
- The absence of proper approach roads to the arterial and sub-arterial roads.

- Inadequate width of internal roads are the common problems observed at the neighborhood level.
- To provide better accessibility in the planning area, new road linkages are proposed at places where major inadequacies are experienced.

18.1 Transportation

- Existing Bus Stand in Dindigul Town is old, unorganized and lost its aesthetic look. Modernisation of the bus stand helps in changing the look of the Town. Modernisation with all the latest concepts and technology will improve public transportation.
- Provision of Off-street Parking is the need of the hour for the people as on street parking leads to congestion and encroachment.

18.2 Proposed Ring Radial Road Network

18.2.1 Introduction

Dindigul, a well-connected district headquarters in Tamil Nadu, faces growing traffic congestion due to its radial road pattern. This system struggles to handle increasing traffic volume, leading to bottlenecks, safety concerns, and air pollution. To address these challenges and ensure efficient movement of people and goods, this proposal recommends the implementation of a ring-radial road network for Dindigul LPA.

- Since Road pattern in Dindigul LPA is Radial pattern, Ring radial road pattern is the most suitable road pattern for convenient connectivity of all the towns and villages in the local planning area.
- This network is a combination of radial and circular road patterns. It is a road pattern in which the major roadways, or radial roads, radiate outward from the center and are joined by the ring roads, or concentric roads, which likewise radiate outward.

Why a Ring-Radial Road Network is needed,

- **Improved Connectivity:** A ring-radial network combines radial roads connecting the center with outlying areas and circular ring roads for cross-town movement. This facilitates efficient traffic flow, reducing reliance on congested central areas.

- **Reduced Congestion:** By distributing traffic across multiple routes, congestion on existing radial roads will ease, leading to shorter travel times and improved air quality.
- **Enhanced Accessibility:** New connections within the network will improve accessibility to various parts of the LPA, fostering social integration and economic growth.
- **Future-Proof Planning:** The network can be designed with expansion potential to accommodate population growth and future development needs.

18.2.2 Benefits of the Ring-Radial Road Network Proposal

- **Residents:** Residents will benefit from shorter travel times, improved accessibility to amenities, and a safer and more efficient transportation system.
- **Businesses:** Businesses will experience smoother movement of goods and services, leading to increased productivity and reduced transportation costs.
- **Public Transport:** Public transport systems will benefit from less congested roads, leading to improved reliability and increased ridership.
- **Emergency Services:** Emergency vehicles will have quicker access to all areas of the LPA, saving valuable time in critical situations.

Everyone within the Dindigul LPA will benefit from the ring-radial network including, Residents commuting to work, schools, and other destinations; Businesses ; transporting goods and services; Public transportation vehicles like buses and rickshaws; Emergency vehicles like ambulances and fire trucks and Tourists and visitors exploring the city.

The proposed ring-radial network is designed with a long-term vision. By incorporating principles of flexible and scalable design, the network can accommodate future population growth and development needs. This can be achieved through Land Acquisition by reserving land for future road expansions based on projected development patterns, Ensuring adequate right-of-way during construction and designing the network to accommodate future non-motorized and public transport infrastructure.

The following innovative Ideas may be proposed for the Ring-Radial Network:

- **Smart Traffic Management Systems**: Implementing intelligent traffic lights and signage to optimize traffic flow and reduce congestion.
- **Non-Motorized Transport (NMT) Infrastructure (share the space):** Integrating dedicated lanes for bicycles and pedestrians into the network, promoting a healthy and sustainable mode of transportation.
- **Public Charging Stations for Electric Vehicles**: Establishing a network of charging stations along the network to encourage the adoption of electric vehicles.
- **Urban Greening**: Integrating green spaces and trees into the network to improve air quality and aesthetics.
- **Park-and-Ride Facilities**: Developing parking facilities on the outskirts of the city, connected by public transport to the city center, to reduce traffic congestion in central areas.

18.2.3 Proposed Road Network in Dindigul LPA

Implementing a ring-radial road network in Dindigul LPA is a strategic investment in the city's future. The proposal offers a solution to current transportation challenges while fostering economic growth, improved accessibility, and a more sustainable and healthier urban environment. By incorporating innovative ideas, the network can evolve into a modern and efficient transportation system that serves the needs of a growing population for years to come.

Table 18-1 Proposed Grid of Road

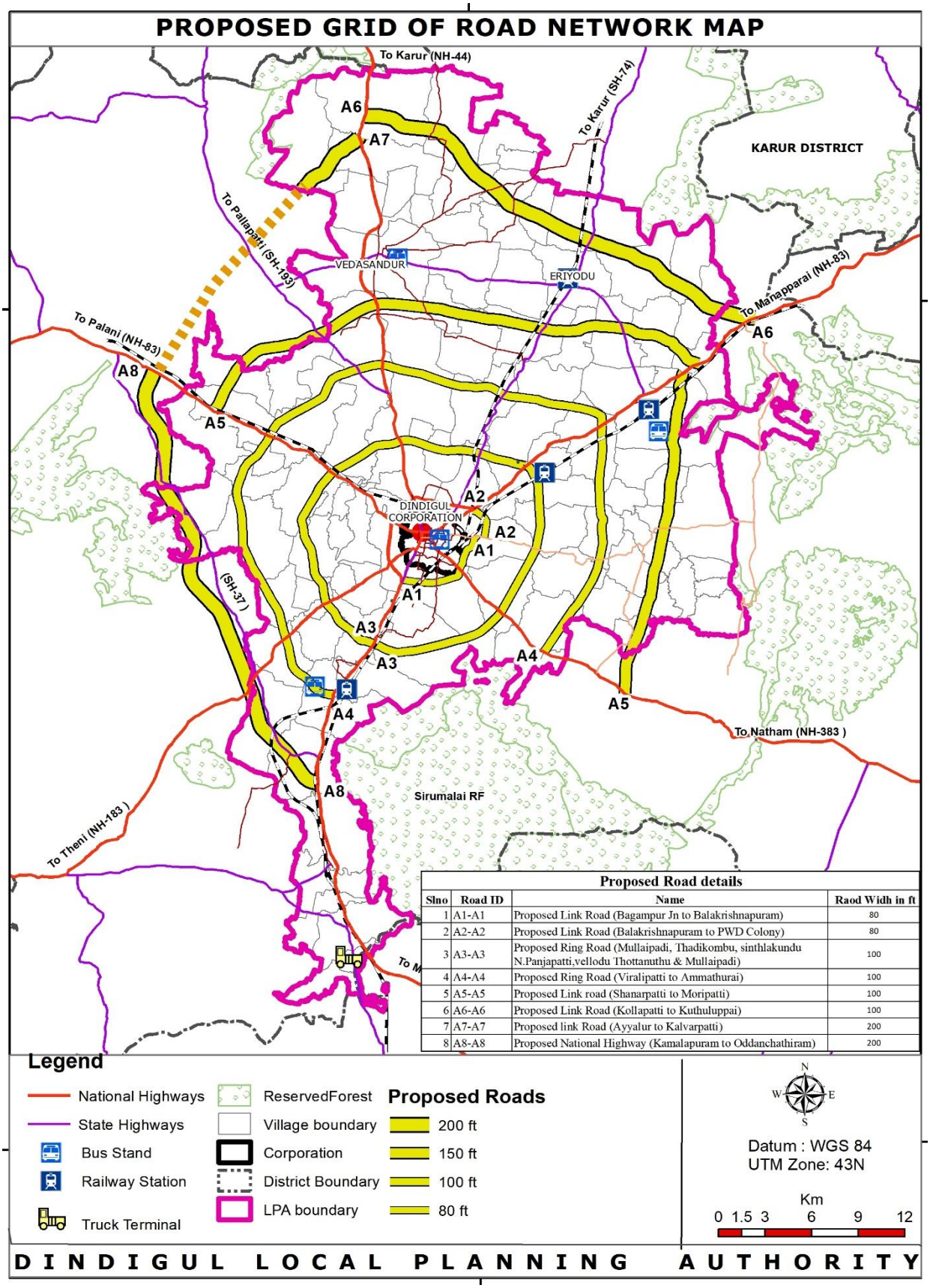
S.No.	Road Name	Road Id	Road Width In ft
1	Proposed Link Road (Bagampur to Balakrishnapuram)	A1	80
2	Proposed NH (Balakrishnapuram to PWD Colony)	A2	80
3	Proposed Link Road (Mullaipadi, Thadikombu, Sinthlakundu, N. Panjapatti, Vellodu,Thottanathu,& Mullaipadi)	A3	100
4	Proposed Link Road (Viralipatti to Ammathurai)	A4	100
5	Proposed Link Road (Shanarpatti to Moripatti)	A5	100
6	Proposed Link Road (Kollapatti to Kuthulappai)	A6	100

S.No.	Road Name	Road Id	Road Width In ft
7	Proposed Link Road (Ayyalur to Kalvarpatti)	A7	100
8	Proposed Link Road (Kamalapuram to Oddanchathiram)	A8	200

To reduce road congestion in Dindigul and surrounding Districts. Eight links are proposed connecting various Junctions with LPA. The urban road network expansion plan in Dindigul Corporation comprised several key routes aimed at improving connectivity and facilitating smoother traffic flow. These include the A1 ring road connecting from Bagampur to Balakrishnapuram and A2 ring road from Balakrishnapuram to PWD colony with road width 80 m.

The A3 ring road with width of 100 m is proposed to provide smoother traffic flow, thus the ROB will alleviate congestion and improve overall transportation efficiency passing through Mullaipadi, Thadikombu, Sinthlakundu, N. Panjapatti, Vellodu, Thottapatti and Mullaipadi. The proposed ring road A4 will serve as a vital link between Viralipatti to Ammathurai to streamline vehicular traffic and enhance regional connectivity, thus the road of width 100m will alleviate congestion and improve overall transportation efficiency. This infrastructure investment promises to boost economic activity and promote urban development. Additionally, it will contribute to safer and more convenient travel for residents and commuters alike.

The proposed link road A5 connecting Shanarpatti to Moripatti and A6 connecting Kollapatti to Kuthulupalli with road width of 100 m passing through NH -83 runs on the Eastern side of Dindigul city allows the commuters to travel along this road to Palani from Eastern district without entering the city which reduces the traffic flow. The link road connecting to Palani A7 is proposed with road width 200m passing through Ayyalur to Kalvarpatti. The purpose of proposed National highway connecting Kamalapuram to Oddanchattram width road width 200m is to promote regional connectivity and simplify vehicular traffic. This will reduce traffic and boost overall transportation efficiency. This infrastructural investment is expected to stimulate the economy and encourage urban growth. It will also make traveling safer and more convenient for both locals & commuters.



Map 18-1 Grid of Road

18.3 Road Projects

- NH 209 (Dindigul – Palani – Coimbatore Road) is proposed to be widened by the Highways department due to increase in PCU values.
- 12 Junctions in the NH 209 is proposed to be improved for better circulation for the commuters.
- Tirupur – Theni Road via Dindigul road proposal is underway and it helps in improving the connectivity to these cities.
- Other Road Widening Projects are as follows.

Table 18-2 Road Widening Works

S.No	Name of work	Cost Rs. In Lakhs
	2021-22	
1	Widening from Two Lane to Four Lane and Strengthening at km 5/0 - 7/8, 8/2 - 11/0 of Mettur - Palakanuthu - Oddanchatram - Dharapuram - Tiruppur Road including Re- Construction of culvert, Widening of culvert, Widening Minor Bridge, Construction of Retaining wall, Construction of Drain, Construction of center median, Junction Improvements and Bus Lay Byes (SH-37) - MDU - 054	4099.00
2	Widening from Two Lane to Four Lane and Strengthening at km 11/0 - 16/2, 18/0 - 19/4, 20/2 - 20/6 of Mettur - Palakanuthu - Oddanchatram - Dharapuram - Tiruppur Road including Re-Construction of culvert, Widening of culvert, Widening of Minor Bridge, Construction of Retaining wall, Construction of Drain, Construction of center median, Junction Improvements and Bus Lay Byes (SH-37) - MDU - 055	3808.00
	2022-23	

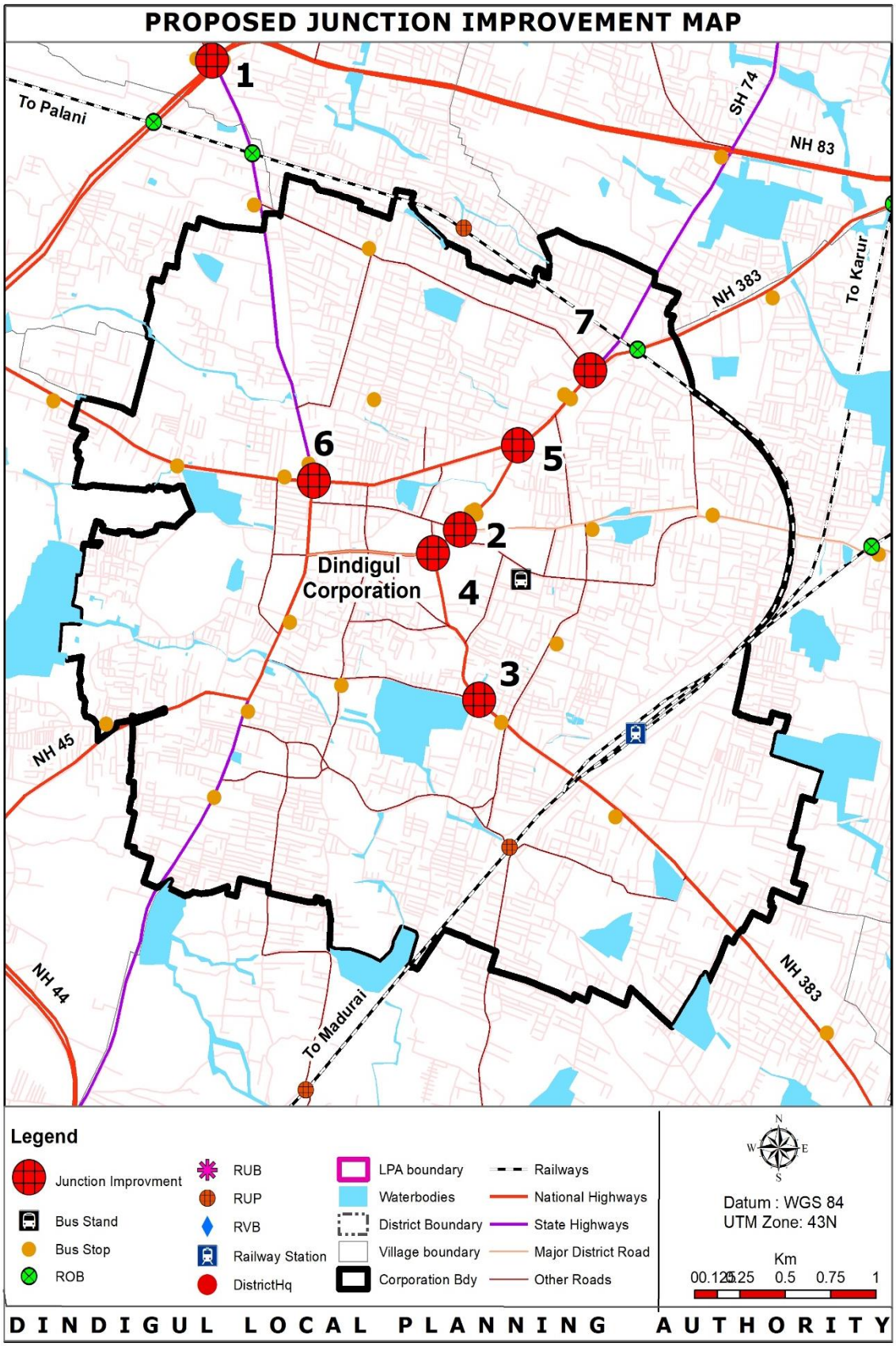
S.No	Name of work	Cost Rs. In Lakhs
1	Widening from Two Lane to Four Lane and Strengthening at km 0/0 - 3/4 of Mettur – Palakkanuthu – Oddanchatram – Dharapuram - Thiruppur Road (SH-37) including Re-Construction of Culvert, widening the culvert, Minor bridge, Construction of Drain, Center median, Providing Junction Improvement, Bus lay bye, Foot path and paver block	3200.00
2	Widening from Two Lane to Four Lane and Strengthening at km 16/2 - 18/0, 20/6 - 21/300 of Mettur – Palakkanuthu – Oddanchatram – Dharapuram - Thiruppur Road (SH-37) (extra length for 110m) including Re-Construction of Culvert, widening the culvert, Widening Minor bridge, Construction of Retaining wall Construction of Drain Construction of center median, Junction Improvement and Bus lay bye including Foot path and paver block (SH-37)	2700.00

18.3.1 Junction Improvements

The assessment of various junctions in Dindigul underscores the imperative for targeted enhancements to address the severe traffic challenges that hamper the city's urban mobility. The average Passenger Car Vehicle (PCV) values per hour, coupled with the specific traffic conditions identified, delineate the areas where strategic interventions can bring about a significant transformation in terms of efficiency, safety, and overall traffic management. One of the critical junctions, Anna Salai Roundabout, grapples with severe congestion largely due to on-street parking. To alleviate this issue, it becomes imperative to introduce effective parking management solutions. The creation of designated parking zones, coupled with the implementation of smart parking systems, holds the potential to liberate precious road space, thereby facilitating a more streamlined vehicular flow.The Anjali Roundabout showcases the repercussions of narrow roads on congestion levels. In this regard, urgent road widening initiatives or alternative traffic management strategies are imperative. Expanding the road infrastructure can substantially mitigate traffic bottlenecks and augment the flow of vehicles. At the Dindigul Bus Stand North Junction, the coexistence of pedestrians and vehicular traffic contributes to severe congestion.

Well-marked crossings and robust footpaths, assumes paramount importance. Ensuring signal synchronization that prioritizes pedestrian movement during peak hours can enhance safety and traffic flow. The YMR Patti Junction's challenges are compounded by the presence of trucks. To address this, exploring the feasibility of dedicated truck routes or regulating truck movements during peak hours could alleviate congestion for other vehicles. Similarly, the SMBM School Roundabout and Saint Joseph School Junction are burdened by pedestrian movement, warranting well-defined pedestrian pathways, crossings, and traffic signals that cater to both vehicles and pedestrians.

The Nagal Nagar Roundabout and Periyar Statue Junction are adversely impacted by truck movements. In response, a comprehensive approach is required, including potential truck route designations, road capacity enhancement, and the integration of intelligent traffic management systems. Moreover, optimizing truck routes for the Kattaspari Trichy Junction and augmenting the capacity of Palani Bypass Road for heavy vehicles are integral strategies to relieve congestion and ensure smoother traffic flow. In essence, rectifying the traffic conditions at these highlighted junctions mandates a comprehensive strategy that combines infrastructure upgrades, technology integration, effective traffic management policies, and specialized pedestrian solutions. By embracing this multi-faceted approach, Dindigul can revolutionize its traffic landscape, ushering in improved urban mobility, enhanced road safety, and an enriched overall living experience for both its residents and visitors.



Map 18-2 Proposed Junction Improvement Map

18.4 OTHER PROPOSALS

18.4.1 Proposal for a new bus stand in West Taluk, Dindigul

The current Kamarajar Bus Stand in Dindigul faces significant challenges, creating an unpleasant and unsafe environment for commuters. This proposal outlines the development of a new, well-designed bus stand in the west taluk of Dindigul to address these issues and cater to the growing needs of the district's public transportation system.

18.4.1.1 Benefits of a New Bus Stand

- **Improved Traffic Flow**: A new bus stand outside the city limits will decongest traffic within Dindigul, reducing travel time and creating a smoother flow for both buses and private vehicles.
- **Enhanced Passenger Experience**: A modern bus stand will offer a clean, safe, and organized space for passengers, with proper amenities like designated arrival and departure bays, waiting areas, restrooms, and cloakrooms.
- **Safety and Security**: Improved lighting, designated pick-up and drop-off zones, and potential CCTV surveillance will enhance security for passengers, particularly women and children.
- **Reduced Congestion**: Separating mofussil and town bus traffic will eliminate congestion within the new stand, allowing for efficient movement of buses.
- **Economic Opportunities:** The new bus stand can attract shops and eateries, creating employment opportunities and generating revenue for the corporation.

18.4.1.2 Key Components of the New Bus Stand

- **Strategic Location:** The bus stand should be situated in the west taluk with easy access to National Highways, ensuring convenient connectivity for incoming and outgoing buses.
- **Separate Terminals:** Designate separate terminals for mofussil and town buses to streamline traffic flow and passenger movement.
- **Adequate Bus Bays:** Provide sufficient bus bays with proper signage and designated routes for different destinations.
- **Passenger Amenities**: Develop well-maintained waiting areas, restrooms, cloakrooms,

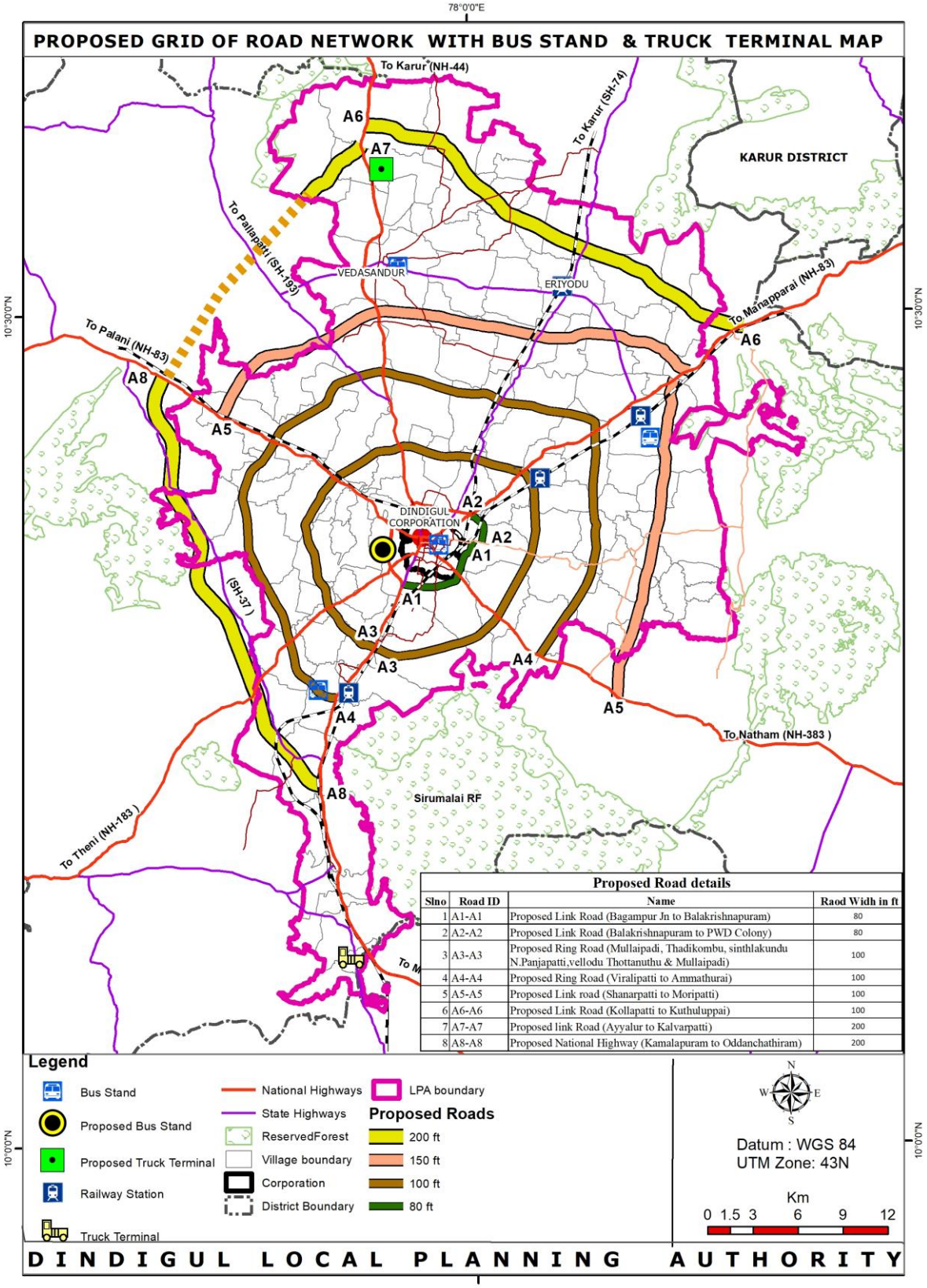
drinking water facilities, and a dedicated space for ticketing counters.

- **Accessibility Features**: Ensure ramps, elevators, and designated areas for people with disabilities.
- **Parking Facilities**: Include ample parking space for cars, two-wheelers, and autos to accommodate both short-term and long-term parking needs.
- **Waste Management**: Implement a proper waste management system to maintain cleanliness within the bus stand premises.
- **Security Measures**: Install CCTV cameras, deploy security personnel, and ensure proper lighting throughout the complex to deter crime and ensure passenger safety.

18.4.1.3 Location of Proposed Bus Terminus

The proposed location for the bus stand is in Dindigul west Taluk, specifically in Pallapatti village, Survey No.125, 368, 370 &371, covering an area of 12 acres is shown in below Map 18-3. This location has been selected for its accessibility and suitability to serve the transportation needs of the area.

Figure 18.1 Conceptual image for proposed bus stand in Pallapatti village



Map 18-3 Proposed Bus stand and Truck terminal location map

18.4.1.4 Additional Considerations

- **Sustainability:** Explore incorporating sustainable elements like solar power generation and rainwater harvesting into the design.
- **Future Expansion:** Consider the possibility of future expansion to accommodate additional passenger amenities or bus bays as needed.
- **Public-Private Partnership (PPP):** Investigate the possibility of a PPP model for financing, construction, and maintenance of the new bus stand.

The construction of a new bus stand in the west taluk of Dindigul presents a significant opportunity to modernize the city's public transportation infrastructure. By implementing this proposal, Dindigul can create a safe, efficient, and user-friendly bus stand that caters to the needs of passengers, promotes smoother traffic flow, and fosters economic development within the district.

18.4.2 Truck Terminals

Recognizing the crucial role that transportation of goods plays in the city's economy, the introduction of dedicated truck terminals is a pivotal proposal. These terminals will serve as designated areas for loading, unloading, and parking of trucks, thereby alleviating the congestion caused by truck movements within the city. Providing well-equipped facilities for freight vehicles, this initiative not only enhances traffic flow but also contributes to reducing air pollution and road wear and tear.

18.4.2.1 Proposal for Establishing Truck Terminals in Dindigul Local Planning Authority (LPA)

Dindigul, a key industrial and agricultural hub in Tamil Nadu, experiences significant traffic congestion on National Highways (NHs) and State Highways (SHs) due to heavy vehicle movement. Industrial areas located along Nilakottai, Vedasandur, and Eriyodu contribute significantly to this congestion, as heavy vehicles transporting exports and imports dominate these NHs. Additionally, haphazard parking of trucks and lorries along these highways poses a major safety hazard. To address these issues and improve overall traffic flow, this proposal recommends the construction of dedicated truck terminals within the Dindigul LPA.

Need for Truck Terminals

- **Congestion**: Heavy vehicles traveling for export and import purposes clog NHs and SHs, hindering smooth traffic flow for all vehicles.
- **Safety Hazards:** Haphazard parking of trucks along highways creates bottlenecks and reduces visibility, significantly increasing the risk of accidents.
- **Pollution**: Idling trucks contribute to air pollution within the city.
- **Economic Impact:** Traffic congestion caused by heavy vehicles leads to delays in deliveries and increases transportation costs, impacting businesses.

Location for Proposed Truck terminal

The proposed location for the Truck terminal in Vedasandur Taluk, specifically in Kaithiyan Kottai village, Survey No. 376/1B, covers an area of 11.12 acres is shown in the above Map 18-3. This location was selected after careful consideration of various factors such as accessibility, proximity to major roadways, and the need for a centralized hub for trucking activities.

The area's strategic location makes it an ideal choice for the truck terminal, as it is easily accessible from major highways and roads. This will facilitate the smooth movement of trucks to and from the terminal, reducing congestion and improving overall traffic flow in the region. Additionally, the large area of 11.12 acres provides ample space for parking, loading, and unloading of trucks, as well as for other ancillary facilities such as rest areas, fuel stations, and repair shops. This will help in efficiently managing trucking operations and ensuring the safety and convenience of drivers and other personnel.

The proposed location for the Truck terminal in Kaithiyan Kottai village is well-suited to meet the needs of the trucking industry in Vedasandur Taluk, and is expected to contribute to the overall development and economic growth of the region.

Key Components of Truck Terminals

The proposed truck terminals will be strategically located outside congested areas, offering the following features:

- **Designated Parking Areas**: Secure and spacious parking areas will be allocated for

trucks, eliminating the need for roadside parking.

- **Warehousing Facilities**: Warehousing facilities within the terminal will allow for temporary storage of goods, reducing the number of trucks on the road at any given time.
- **Amenities for Drivers**: Restrooms, restaurants, and basic repair facilities will cater to the needs of truck drivers during their breaks.
- **Security Measures:** The terminals will be equipped with security personnel and CCTV surveillance to ensure the safety of drivers, goods, and vehicles.

Benefits of Truck Terminals

- **Reduced Traffic Congestion:** Dedicated truck terminals will free up space on NHs and SHs, leading to smoother traffic flow for all vehicles.
- **Improved Road Safety:** By eliminating on-street parking, the risk of accidents involving trucks will be significantly reduced.
- **Enhanced Driver Facilities:** Truck terminals will provide a safe and comfortable environment for drivers to rest and take breaks, improving their well-being and reducing driver fatigue.
- **Environmental Advantages:** Reduced idling time and improved traffic flow will contribute to cleaner air and a healthier environment**.**
- **Boost to Local Economy:** The establishment of truck terminals can attract ancillary businesses like restaurants, repair shops, and motels, fostering economic growth.

The following proposals may be proposed based on the feasibility study,

- **Multi-Modal Transportation Hub**: Explore integrating the truck terminals with existing railway infrastructure or developing a future intermodal hub to facilitate seamless transfer of goods between different modes of transport.
- **Technology Integration:** Implement a truck management system to track arrivals, departures, and parking availability, improving efficiency and reducing waiting times.
- **Public-Private Partnerships:** Partner with private companies to develop and manage the truck terminals, leveraging expertise and attracting investment.

The construction of truck terminals in the Dindigul LPA presents a strategic solution to address traffic congestion, improve road safety, and promote economic growth. By implementing these recommendations, the LPA can create a more efficient and sustainable transportation network for Dindigul.

18.4.3 Off-Street Parking Facilities

The establishment of off-street parking facilities is a strategic step towards mitigating the on-street parking woes that often lead to traffic congestion and hinder smooth vehicular movement. By creating well-planned and easily accessible parking spaces in strategic locations, Dindigul aims to minimize on-street parking, thereby freeing up road space for seamless traffic flow. These facilities will not only ease parking-related stress for residents and visitors but also contribute to enhancing the aesthetic appeal of the city.

18.4.3.1 Proposal for Off-Street Parking Facilities in Dindigul Local Planning Authority (LPA)

Dindigul's Local Planning Authority (LPA) core area, encompassing the market, bus stands, and Rock Fort, experiences significant parking challenges. The lack of sufficient parking lots forces vehicles to park alongside roads, obstructing traffic flow, reducing pedestrian space, and creating safety hazards. This proposal outlines a plan to establish off-street parking facilities to address these issues and improve overall traffic management within the LPA. The primary objective of this proposal is to establish off-street parking facilities in strategic locations within the Dindigul LPA to:

- Reduce on-street parking, leading to smoother traffic flow and reduced congestion.
- Enhance pedestrian safety by creating designated parking areas away from walkways.
- Improve the overall aesthetic of the core area by removing unsightly on-street parking.
- Encourage foot traffic and economic activity by making the market, bus stands, and Rock Fort area more accessible.

Why Off-Street Parking is needed

The current reliance on on-street parking creates several problems:

- **Traffic Congestion**: Vehicles searching for parking create bottlenecks, hindering traffic flow and increasing travel times.
- **Pedestrian Safety Issues**: Parked cars obstruct walkways, forcing pedestrians to walk on roads, increasing the risk of accidents.
- **Limited Access:** The lack of dedicated parking discourages visitors to the market, bus stands, and Rock Fort, impacting local businesses and tourism.

Benefits of Off-Street Parking Facilities

Implementing off-street parking will offer numerous benefits:

- **Improved Traffic Flow**: Reduced on-street parking will lead to smoother traffic movement and decreased travel times.
- **Enhanced Pedestrian Safety**: Designated parking areas will free up walkways, improving pedestrian safety and creating a more walkable environment.
- **Economic Boost**: Increased parking availability will attract more visitors to the core area, benefiting local businesses and the overall economy.
- **Aesthetic Improvement**: Eliminating on-street parking will create a more organized and aesthetically pleasing streetscape.

- **To improve parking facilities furthermore, the following proposals may be proposed Multi-Level Parking**: Utilize vertical space by constructing multi-level parking facilities, maximizing parking capacity within a smaller footprint.
- **Smart Parking Systems:** Implement technologies like parking sensors and real-time availability displays to guide drivers efficiently to available spaces.
- **Park and Ride Facilities**: Develop parking areas outside the core area with shuttle services to encourage carpooling and reduce traffic within the LPA.
- **Integration with Public Transportation**: Encourage use of public transportation by providing convenient parking options for carpooling or switching to buses and rickshaws near the core area.

Establishing off-street parking facilities is a crucial step towards improving traffic management, enhancing pedestrian safety, and revitalizing the Dindigul LPA's core area. By implementing this proposal, the LPA can create a more attractive and accessible environment for residents, visitors, and businesses.

18.4.4 Improving Suburban Train Routes and Stations

With an aim to provide efficient and sustainable public transportation options, Dindigul is embarking on a mission to enhance its suburban train routes and upgrade station facilities. This proposal includes optimizing train schedules, expanding route coverage, and modernizing station amenities to offer a seamless commuting experience. The improved suburban train network aims to reduce road congestion, promote eco-friendly transportation, and provide convenient connectivity for the city's residents.

18.4.5 Non-Motorized Transport (NMT) Corridors

The provision of 2-meter-wide cycle lanes on roads leading to Dindigul Fort and the Aranmanaikula area suggests a commitment to supporting non-motorized transport options in those areas. By providing dedicated infrastructure for cyclists, pedestrians, and other non-motorized users, cities and local authorities can encourage sustainable and healthy forms of transportation. Promoting non-motorized transport has various benefits, including reducing traffic congestion, improving air quality, enhancing public health through increased physical activity, and fostering a more livable and vibrant urban environment.

- **Encouraging Active Transportation**

NMT corridors provide safe and convenient pathways for pedestrians and cyclists, encouraging people to choose walking or biking for their daily commute or leisure activities. This promotes physical activity and reduces sedentary lifestyles, leading to improved public health outcomes.

- **Reducing Dependency on Motor Vehicles**

By offering viable alternatives to motorized transportation, NMT corridors help reduce the reliance on cars and other motor vehicles. This leads to decreased traffic congestion on roads and highways, as well as a reduction in air and noise pollution, contributing to a healthier and more sustainable urban environment.

- **Enhancing Urban Accessibility**

NMT corridors improve accessibility within cities by providing direct and efficient routes for pedestrians and cyclists to travel between key destinations such as residential areas, commercial districts, schools, and parks. This accessibility benefits all residents, including those who may not have access to private vehicles or public transit options.

- **Promoting Healthier Lifestyles**

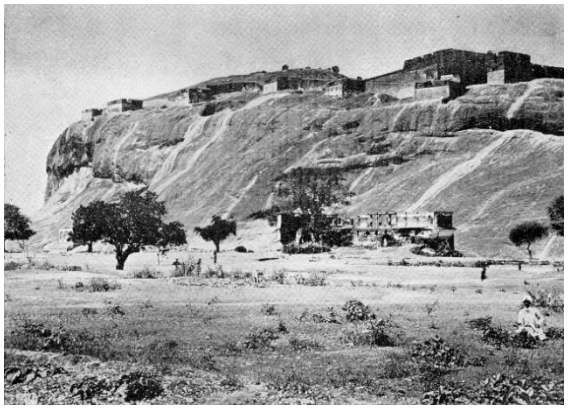
The availability of NMT corridors encourages people to incorporate physical activity into their daily routines by walking or cycling for transportation purposes. This can lead to a reduction in rates of obesity, cardiovascular disease, and other chronic health conditions associated with sedentary lifestyles.

- **Bolstering Overall Sustainability**

By promoting sustainable transportation options, such as walking and cycling, NMT corridors contribute to the overall sustainability of cities. This includes reducing greenhouse gas emissions, conserving energy resources, and enhancing the resilience of urban infrastructure in the face of climate change and other environmental challenges.

18.4.6 Proposal for Non-Motorized Transport (NMT)

The Dindigul Rock Fort and Aranmanaikulam area are renowned for their historical significance, scenic beauty, and vibrant culture. However, the rock fort, located in the core area of Dindigul corporation, experiences heavy traffic and congestion, which reduces the number of visitors exploring the fort. To enhance the visitor experience, increase public transport usage, and promote sustainable tourism practices, it is recommended to implement a Non-Motorized Transport (NMT) facility in the area. The provision of 2-meter-wide cycle lanes on roads leading to Dindigul Fort and the Aranmanaikulam area suggests a commitment to supporting non-motorized transport options in those areas.



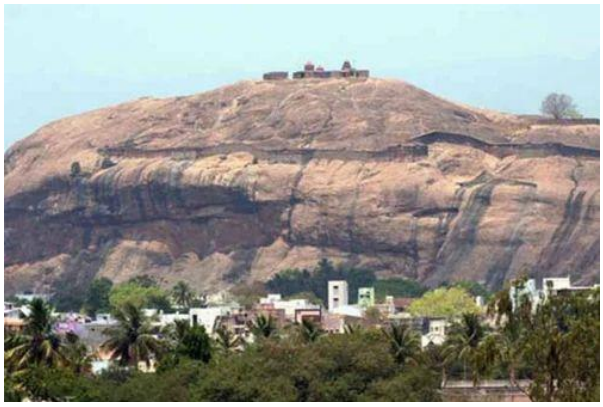


Figure 18-1 Dindigul Rock Fort

Why NMT is needed for the Rock Fort:

- The narrow pathways leading to the Rock Fort are often congested with vehicles, creating a frustrating experience for visitors and locals alike. Non-Motorized Transport

offers a congestion-free alternative.

- Vehicle emissions contribute to air and noise pollution, affecting the surrounding environment. NMT promotes a cleaner and quieter environment for all.
- Rock Fort is a significant cultural heritage site in Dindigul, and NMT facilities will help preserve its historical and architectural significance by reducing vehicular congestion and pollution.
- NMT facilities will improve accessibility to the fort for visitors, including tourists, local residents, and pilgrims, by providing safe and convenient modes of transportation.
- NMT encourages active modes of transportation such as walking and cycling, allowing visitors to explore the fort at their own pace and appreciate its beauty and heritage.

18.4.6.1 Benefits of NMT around the Rock Fort and Aranmanaikulam Area

- NMT allows visitors to explore the area at their own pace, appreciating the surroundings more fully.
- With fewer vehicles, the risk of accidents involving pedestrians and cyclists is significantly reduced.
- Cycling and walking are excellent forms of exercise, promoting a healthy lifestyle among visitors and locals.
- NMT infrastructure like bicycle rentals can create new business opportunities. Enhancing accessibility to cultural heritage sites through NMT facilities can boost local tourism and stimulate economic growth by attracting visitors and supporting local businesses.
- NMT aligns with sustainable tourism practices, attracting eco-conscious visitors.

To increase tourist attraction the following activities may be proposed,

- Designated cycling lanes will allow visitors to explore the Aranmanaikulam area and the foothills of the Rock Fort comfortably.
- For the adventurous, a secured rope-climbing route can be established on a designated section of the Rock Fort, offering a thrilling yet controlled ascent.
- A rope car system can be a viable option for visitors seeking a more accessible and panoramic view of the Rock Fort and the surrounding landscape.

Implementing a well-planned NMT facility around the Dindigul Rock Fort and Aranmanaikulam area presents a multitude of benefits. It reduces traffic congestion, promotes a cleaner environment, enhances accessibility, and fosters a more sustainable tourism experience. The proposed tourist activities like cycling, rope climbing, and a potential rope car system will further enrich the visitor experience, making Dindigul a more attractive and memorable destination.

Figure 18-2 Dindigul Fort road and Market road

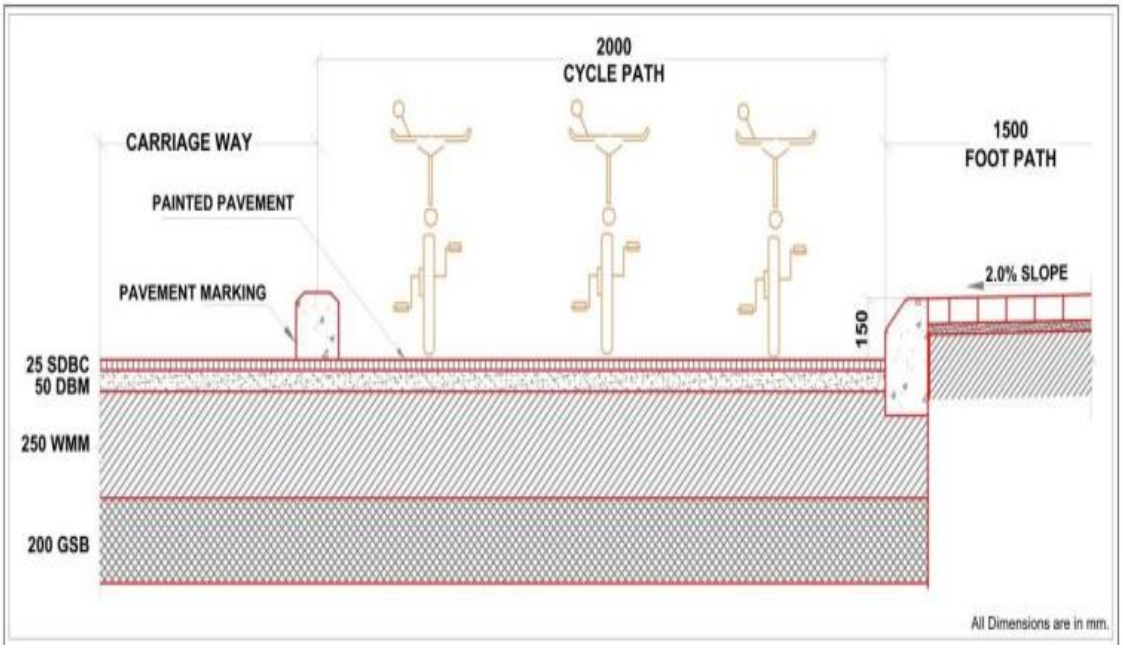


Figure 18-3 Cross section detail of NMT

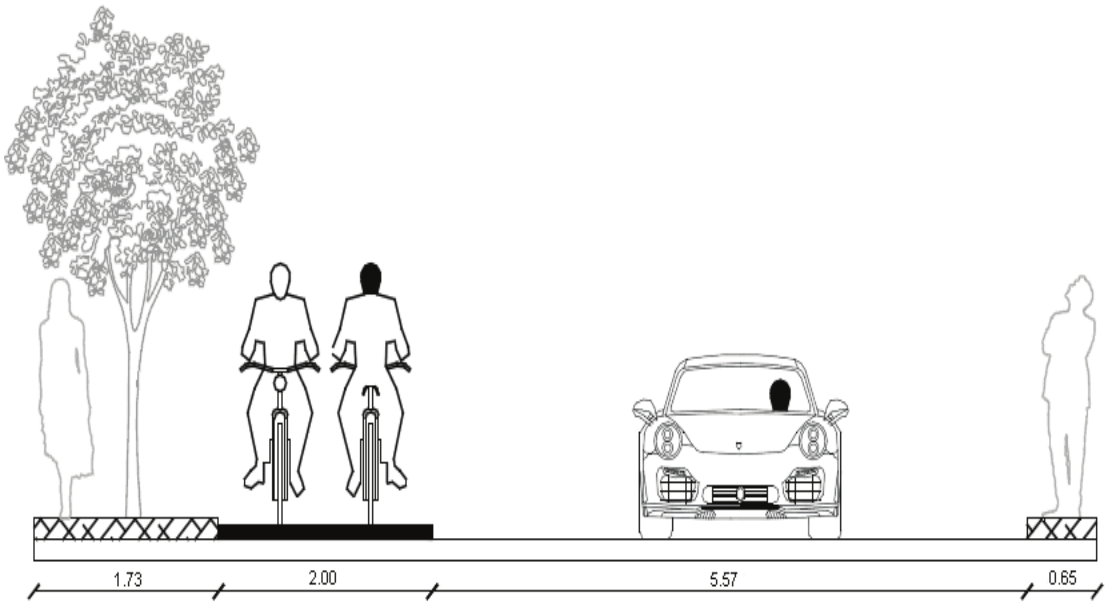
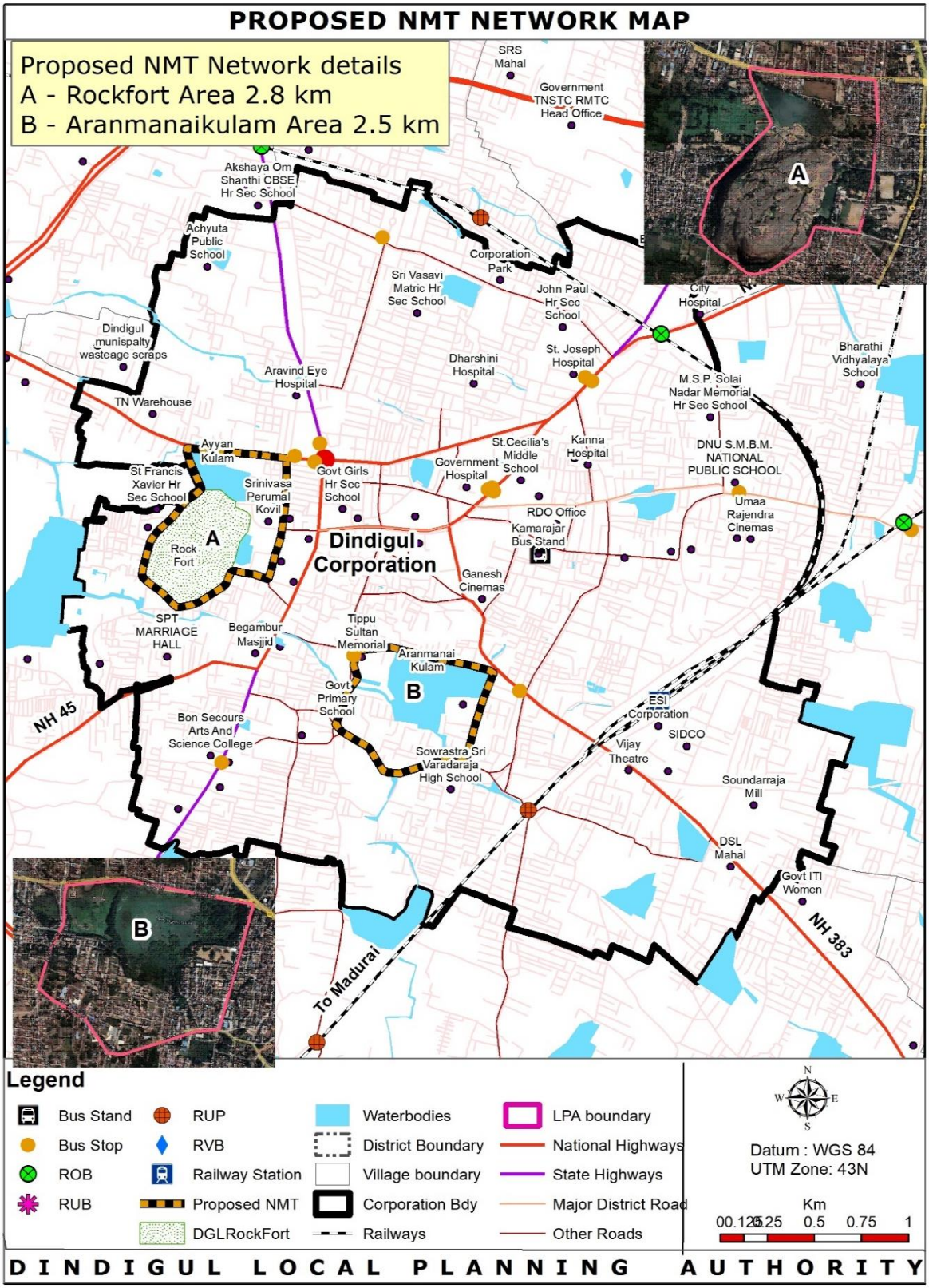


Figure 18-4 Cross Section of NMT Lane



Map 18-4 Proposed NMT Network map

19 Housing Requirements

19.1 Housing Strategy

The housing strategy devised for Dindigul LPA represents a comprehensive approach to address the evolving housing needs of the city's residents while fostering sustainable and inclusive urban development. At its core, the strategy centers around providing housing options that are both affordable and of high quality, catering to diverse income segments of the population. This approach aims to enhance living conditions, promote equitable access to housing, and create neighbourhoods that are vibrant, integrated, and harmonious.

One of the key principles driving this strategy is the promotion of affordable housing. Recognizing the pressing demand for economical housing solutions, Dindigul LPA will collaborate closely with both public and private stakeholders to conceptualize and implement housing projects that are financially viable for low- and middle-income families. Emphasis will be placed on deploying innovative construction techniques and optimizing land utilization to ensure that housing costs remain within reach.

A significant facet of this strategy entails the development of mixed-income neighborhoods. By thoughtfully integrating housing units designed to accommodate varying income brackets within the same locality, Dindigul LPA seeks to counter the challenges associated with concentrated poverty. This proactive approach encourages diverse communities, fostering social cohesion and engendering environments where residents from different economic backgrounds coexist and flourish together.

Embracing Transit-Oriented Development (TOD) principles will also play a pivotal role in shaping housing projects. Placing housing developments in proximity to public transportation hubs, commercial centers, and essential services is paramount. This not only reduces dependence on private vehicles but also enhances accessibility and encourages a pedestrian-friendly urban landscape. To rejuvenate underutilized or deteriorated areas within the city, the strategy emphasizes redevelopment initiatives. This involves upgrading existing housing infrastructure to contemporary standards and transforming blighted neighborhoods into modern, sustainable living spaces. Throughout the redevelopment process, considerations for environmental sustainability, infrastructural enhancement, and the creation of communal spaces will be integrated.

In alignment with a commitment to inclusivity, the strategy underscores the importance of housing solutions catering to vulnerable groups, including the elderly, differently abled individuals, and marginalized communities. Housing designs will be tailored to accommodate the unique needs of these groups, ensuring that their housing requirements are adequately addressed.

Furthermore, the strategy champions the integration of green and sustainable housing practices. Advocating for energy-efficient architectural designs, the use of eco-friendly construction materials, and the incorporation of green spaces within housing complexes, Dindigul LPA aims to reduce its environmental footprint while simultaneously enhancing the overall quality of life for its residents. Collaborations through public-private partnerships will form a cornerstone of the strategy's implementation. By forging alliances with private developers, the city can leverage their expertise to expedite housing development, maximize land usage, and diversify the array of housing options available.

Streamlining regulatory processes is another critical aspect of the strategy, aimed at expediting housing project approvals. By reducing bureaucratic hurdles, Dindigul LPA intends to encourage private sector participation and expedite the construction of much-needed housing units.Finally, community engagement will be paramount throughout the strategy's execution. Soliciting residents' opinions and preferences during the planning and design phases will ensure that housing projects are reflective of the aspirations and needs of the community they serve.In conclusion, the housing strategy set forth by Dindigul LPA signifies a holistic and inclusive approach to urban housing. By prioritizing affordability, sustainability, inclusivity, and community collaboration, the strategy strives to offer residents housing options that not only elevate their quality of life but also contribute to the overall growth and prosperity of the city.

19.2 Projection of Housing Need and demand

Housing shortage shall be arrived by finding the additional households required in 2041, dilapidated, slum houses and homeless households in 2011. In Dindigul LPA, housing shortage is 100285 as shown Table 19-1.

Table 19-1 Projected Housing Demand

S.No.	Description	Population
1	Total Population 2011	811445
2	Projected Population 2041	1082050
3	Additional Population	270605
4	Additional Households in 2041	69386
5	Slum Households	27825
6	Dilapidated Houses	3038
7	Houseless Households	36
8	Total Households Required in 2041	100285

19.3 Proposals in Housing

- Slum Housing shall be improved by providing affordable houses to the slum dwellers. There are 27825 slum houses and there are two projects under implementation by TNUHDB which will increase the livelihood of the people in slums.
- In Government Rental Scheme, 222220 Dwelling units is being constructed in Dindigul Bus Stand colony
- In Dindigul RM Colony, Old houses are proposed to be demolished and 110 new dwelling units are proposed to be developed.
- Slum Clearance Board proposed 870 dwelling units for Adiyanuthu Village under Fund from Asian Development Bank.

20 Physical Infrastructure Requirements

20.1 Water Supply

Existing water gap is 24.22 MLD. The Table 20-1 outlines Dindigul's projected water demand in 2041. Dindigul Town, with its expected population of 276,468, will need the highest amount of water at 37.32 Million Litres per Day (MLD). This is based on an allocated supply of 135 liters per person daily. Town Panchayats and villages have lower per capita allocations (90 liters and 55 liters respectively) due to their projected populations of 97,455 and 708,127, translating to water demands of 8.77 MLD and 38.95 MLD respectively. Combining these figures, Dindigul's total projected water demand in 2041 reaches 85.04 MLD.

Table 20-1 Projected Water Demand

S. No	Description	Projected Population (2041)	Per capita Supply (TWAD Board Norms)	Total quantity required in 2041 (in MLD)	Quantity Available
1	Dindigul Town	276468	135	37.32	17.50
2	Town Panchayats in Dindigul LPA	97455	90	8.77	5.30
3	Villages in Dindigul LPA	708127	55	38.95	23.60
Total				**85.04**	**46.40**

20.1.1 Identification of Source for Water Supply

Dindigul's future water demand is projected to be 85.04 MLD by 2041. This estimation considers the anticipated population growth and their daily water needs. Unfortunately, current water sources are only expected to provide 46.40 MLD in 2041. This results in a significant gap of 38.64 MLD between supply and demand.

A Potential Solution identified is Athoor Kamarajar Sagar Dam. The dam, with a maximum water level of 23.5 feet, receives water through Koolaiyar and Kodaganar river that flows through the hilly areas of Adalur, Panrimalai, and Pullaveli, Thandikudi respectively in the

Western Ghats. To bridge this water demand gap, Athoor Kamarajar Sagar Dam is proposed as a new water source. The dam has the potential to supply an additional 15 MLD of water specifically for Dindigul town.

Figure 20-1 Athoor Kamarajar Sagar Dam

20.1.2 Projects in Water Supply

Upcoming projects in Water supply in Dindigul Corporation is a significant step towards improving the living standards and providing better access to basic amenities, Dindigul Urban Local Body (ULB) is aiming to provide tap water connections to 15,703 households in the city. This ambitious project is part of the city's efforts to ensure safe and reliable access to clean drinking water for its residents. The proposed service level benchmark for per capita water supply in Dindigul is 135 liters per capita per day (LPCD). This benchmark represents the targeted amount of water that each individual should have access to on a daily basis. By providing 135 LPCD, the ULB aims to ensure that every resident receives an adequate and equitable water supply, meeting their daily water needs for drinking, cooking, hygiene, and other domestic purposes. The provision of tap water connections to a significant number of households will have a transformative impact on the quality of life in Dindigul. It will eliminate the dependency on alternative water sources, such as wells or tankers, and reduce the burden of fetching water from distant locations, especially for women and children.

Table 20-2 Water supply connections

Households to be provided with tap water (no.)	15703 Nos - ULB
Proposed service level benchmark for per capita supply of water (LPCD)	135LPCD -ULB

Dindigul, like many growing cities, is continually striving to enhance its water supply infrastructure to meet the increasing demand for water. The following are some key water infrastructure projects planned for the city.

This project aims to provide new house service connections to around 15,703 households in Dindigul. House service connections are essential to ensure that individual households receive a direct supply of treated water. The estimated cost for this project is 630.00 Lakhs. As the demand for water increases, there is a need to augment the water supply system from the Athilakshmipuram source to Dindigul Town. The additional supply from Athoor Head Works is expected to be 5.00 MLD (Million Liters per Day). The project components include laying of DI pipes over a distance of 19.910 Km, supplying a 200 KVA Generator, constructing open wells at Athoor (2 Nos), an Intake Tower (1 No), and 6 LL (Lakh Liters) capacity Overhead Tanks (3 Nos). The project also includes provisions for road restoration charges. The total estimated cost for this project is 2500.00 Lakhs. These water infrastructure projects are vital for ensuring a reliable and sustainable water supply to meet the needs of the growing population in Dindigul. The authorities are actively working to implement these projects to enhance water availability, improve water distribution, and address any water supply deficiencies. It's important to note that these projects are part of the city's efforts to improve its water infrastructure under various government initiatives, such as AMRUT (Atal Mission for Rejuvenation and Urban Transformation). These initiatives aim to transform cities by focusing on urban infrastructure development and improving the quality of life for residents. With the successful execution of these projects, Dindigul can expect improved water services and better management of its water resources to cater to the needs of its residents and businesses.

Table 20-3 Cost Estimation

S.No	Project Details	Project type (New project / Augmentation of existing infrastructure / replacing of existing infrastructure / any ongoing project under AMRUT)	Estimate Cost
1.	Providing House Service Connections (15703 x 4000 / E)		630.00 Lakh
2.	Additional Pumping main to be provided from Athilakshmipuram to Dindigul Town (After implementation of the scheme expected additional supply from Athoor Head Works is 5.00 MLD)	Laying of DI pipe 19.910 Km- Rs.950.00 Lakhs Supply of 200 KVA Generator – 1 No Rs.30.00 Lakhs 3) Construction of open well at Athoor – 2 Nos – Rs.150.00 Lakhs 4) Construction of Intake Tower – 1 No – Rs.30.00 Lakhs 5) Construction of 6 LL capacity OHT – 3 Nos – Rs.375.00 Lakhs 6) Road Restoration Charges - Rs. 30.00 Lakhs	2500.00 Lakh

20.2 Sewerage

Sewage generated for 2041 projected population is 68.04 MLD. Dindigul Town is expected to have a water demand of 37.32 MLD (Million Litres per Day) and sewage generation of 29.86 MLD. Existing Sewage Treatment Plants (STPs) in Dindigul Town can only handle 13.65 MLD, creating a gap of 16.21 MLD.

Town Panchayats in Dindigul LPA have a projected water demand of 8.77 MLD and sewage generation of 7.02 MLD. There are currently no STPs in Town Panchayats, so their entire sewage generation of 7.02 MLD requires additional treatment capacity.

Villages in Dindigul LPA have a projected water demand of 38.95 MLD and sewage generation of 31.16 MLD. Their existing STPs have sufficient capacity to handle this volume. The total water requirement for Dindigul LPA is 85.04 MLD, with a gap of 54.38 MLD between existing STP capacity and the total sewage generation is mentioned in the Table 20-4.

Table 20-4 Projected Sewage Demand

Description	Projected Water Supply (MLD)	Projected Sewage Generation (MLD)	Existing Capacity of STPs (MLD)	Additional capacity required (MLD)
Dindigul Town	37.32	29.86	13.65	16.21
Town Panchayats in Dindigul LPA	8.77	7.02	-	7.02
Villages in Dindigul LPA	38.95	31.16	-	31.16
Total Dindigul LPA	**85.04**	**68.03**	**13.65**	**54.38**

Cent Percent coverage of storm water drain and Underground Sewerage System is must have infrastructure for a Municipal Corporation and it helps to have a better lifestyle for the People. Proposal for Drains to the remaining wards (26 wards) has been submitted for administrative and technical sanctions. Proposed UGSS (Under Ground Sewerage system) for a cost of 249.93 crores covers length of 121km and provides UGSS connection to 22586 nos of house connections. Proposed STP is having a capacity of 15.4 MLD. Initiating Storm water Drain projects in Town panchayats helps in development of the towns.

20.3 Sewage Treatment Plant

There is huge gap for sewage generation for 2041 population and STP need to be proposed for treating the additional sewage generation. Dindigul City Municipal Corporation is undertaking a significant project to enhance its sewerage infrastructure and sewage treatment capabilities. The Phase II project aims to cover the remaining areas in the city with a comprehensive sewerage network, establish a new Sewage Treatment Plant (STP), and improve the existing STP's capacity. Additionally, the project includes provisions for reusing treated water to promote sustainable water management.

The key components of the project and their estimated costs are as follows,

This component involves laying new underground sewer lines, constructing manholes, and providing sewer connections for a total length of 112 Km. The estimated cost for this activity is 3423.72 Lakhs. The project will also focus on providing house service connections to

36,000 households, ensuring that individual properties are connected to the sewerage network. This initiative aims to improve sanitation and public health. The estimated cost for this activity is 2631.56 Lakhs. House Service Connections from Manhole to Property Boundary (27866 Nos): In addition to household connections, the project includes house service connections from manholes to property boundaries for 27,866 properties. The estimated cost for this activity is 787.29 Lakhs. A new pumping main will be laid over a distance of 7 Km to facilitate the efficient transfer of sewage to the STP. The estimated cost for this activity is 338.45 Lakhs. Sewerage Pumping Station (SPS) Lifting Station (8 Nos): The project involves constructing 8 Sewerage Pumping Stations (SPS) or lifting stations to manage the flow of sewage within the network. The estimated cost for this activity is 322.15 Lakhs. A new Sewage Treatment Plant (STP) will be designed and constructed to handle a capacity of 13.96 million Liters per Day (MLD). The STP will treat sewage and ensure environmentally sustainable disposal. The estimated cost for this activity is 2792.00 Lakhs.

A Supervisory Control and Data Acquisition (SCADA) system will be implemented to monitor and control the sewerage network efficiently. The estimated cost for this activity is 40.00 Lakhs. To mitigate any disruptions caused by the infrastructure development, road restoration work is planned as part of the project. The estimated cost for this activity is 2528.55 Lakhs.

Table 20-5 Sewage Treatment plant

S.No	Project Details	Project type	Estimate Cost
1	Providing sewerage network, new STP, augmentation for existing STP and Reuse of treated used water in Left out areas in Dindigul City Municipal Corporation – Phase II	Providing New Under Ground Sewer lines, Manholes and sewer connections for a length of 112 Km – 3423.72 Lakhs House Service connection – 36000 Nos – Rs.2631.56 Lakhs House Service connections from Manhole to Property Boundary - 27866 Nos – 787.29 Lakhs Providing Pumping Main Length 7 Km – 338.45 Lakhs Sewerage pumping station (SPS) Lifting station 8 Nos – 322.15 Lakhs Design & Construction of STP at 13.96 MLD – 2792.00 Lakhs SCADA system – 40.00 Lakhs Restoration of Roads – 2528.55 Lakhs	DPR reparation work is in progress for left out area. Total Project Cost – Rs.160.00 Crores

Table 20-6 Sewage Treatment coverage

Total households in ULB	46961 ULB
Households covered with sewerage / FSSM	11418 ULB
Households yet to be covered with sewerage/ FSSM	35543 ULB

The comprehensive project cost is Rs. 160.00 Crores. The preparation of the Detailed Project Report (DPR) for the remaining areas is in progress, indicating the city's commitment to completing the sewerage network and STP augmentation project in a systematic and effective manner. Once completed, this initiative will significantly improve the city's sanitation and environmental health, ensuring a cleaner and more sustainable living environment for its residents.

20.4 Storm Water System

The Drain Project in Dindigul is a crucial initiative aimed at improving the city's drainage infrastructure to enhance water management and prevent waterlogging during heavy rains. With a focus on constructing drains and culverts, the project aims to address drainage issues and create a more resilient urban environment.

20.4.1 Project Details

The project has identified and undertaken the development of 160 drains across the city. These drains play a crucial role in directing rainwater and excess water flow away from residential and commercial areas, ensuring proper drainage and preventing flooding. The total length of the drains covered under this project is 37,915 meters. The drains are strategically planned to cover areas that are prone to waterlogging and areas that require enhanced drainage infrastructure to manage water effectively. Additionally, the project includes the construction of culverts with a total length of 1,210 meters. Culverts are essential structures that facilitate the flow of water under roads and other obstructions, ensuring smooth water movement and minimizing disruptions caused by rainwater. The total appraised cost of the Project is Rs 1438.08 lakhs.

The overall objective of this project is to create a more resilient and sustainable Dindigul by improving storm water drainage. By enhancing the drainage capacity, the project aims to mitigate waterlogging and flooding during heavy rainfall, minimizing

disruptions to transportation and daily activities. This will ensure the smooth flow of rainwater away from residential and commercial areas, safeguarding properties from water damage. Additionally, effective management of storm water runoff will not only protect buildings but also improve the environmental health of the city by reducing pollution. This project aligns with Dindigul's commitment to sustainable development and represents a significant step forward under the project I & D 2022 initiative.

Table 20-7 Storm water system

No of drain taken up	160 nos
Length of the drain	37915 m
Length of the culvert	1210 m
Appraised cost	Rs 1438.08 lakhs

Water Bodies also need to be rejuvenated and The upcoming projects include the construction of rainwater harvesting structures and irrigation and drainage arrangements, along with desilting, footpath installation, and lighting arrangements in Ayyankulam and Lebbai Kulam. The estimated project cost for each location is approximately 3 crores.

Table 20-8 Water body rejuvenation details

Project	Name of the water body		Project details
Providing rain water harvesting structure by Construction of I & D arrangements , desilting, providing foot path and Lighting arrangement	Ayyankulam	Desilting – 60000 Cum – Rs.32.00 Lakhs I&D works – 340 Mtr – Rs.115.00 Lakhs Foot path – 1300 Mtr – Rs.77.00 Lakhs Lighting Arrangements -- Rs.20.00 Lakhs	3.00 Cr.
Providing rain water harvesting structure by Construction of I & D arrangements , desilting, providing foot path and Lighting arrangement	Lebbai kulam	Desilting – 50000 Cum – Rs.26.00 Lakhs I&D works – 250 Mtr – Rs.85.00 Lakhs Foot path – 2100 Mtr – Rs.125.00 Lakhs Lighting Arrangements -- Rs.20.00 Lakhs	3.00 Cr.

20.5 Solid Waste Management

For the projected population (2041) of Dindigul LPA is 1,082,050, with varying daily waste generation per capita across its three regions. Dindigul Town leads with 0.5 kg/day/person, translating to 125.28 tonnes per day (TPD) for its projected population of 250,551. Rest of Town Panchayats and Villages have a lower waste generation rate (0.25 kg/day/person and 0.2 kg/day/person respectively) but larger projected populations, contributing 24.36 TPD and 146.81 TPD to the total daily waste of 296.45 TPD is shown in the Table 20-9.

Table 20-9 Projected Solid Waste Demand

S.No	Description	Projected Population 2041	NEERI Standards (kg/capita/day)	Quantity of waste generated in 2041 (TPD)
1	Dindigul Town	250551	0.5 kg/day/person	125.28
2	Rest of Town Panchayats in LPA	97455	0.25 kg/day/person	24.36
3	Villages in LPA	734043	0.2 kg/day/person	146.81
4	Total Dindigul LPA	1082050		296.45

20.5.1 Increase in MCC Units

In the Dindigul Corporation, there are currently 9 Micro Compost Centers (MCCs) operational, with 7 more MCCs under construction. Additionally, a proposal for the establishment of additional MCCs has been submitted for approval.

In the 5 Town Panchayats within the Dindigul region, there is a pressing need to introduce the concept of Micro Compost Centers to enhance solid waste management practices. This initiative aims to improve waste segregation and composting at the local level, leading to more efficient and sustainable waste management.

The introduction of Micro Compost Centers in these areas will not only help in reducing the burden on existing waste management systems but also promote the concept of waste-to-resource conversion, contributing to a cleaner and healthier environment for the residents.

20.6 Proposal for Upgrading Physical Infrastructure

Dindigul District faces growing demands on its water supply, sanitation, solid waste management, storm water drainage, and electricity infrastructure. This proposal outlines a comprehensive plan to address these needs, ensuring sustainable development and improved quality of life for residents.

20.6.1 Current Infrastructure Status

Dindigul's current infrastructure faces several challenges. The water supply system struggles to meet demand, with the corporation area using 17.5 MLD and the LPA area requiring a significant 28.9 MLD. Projections indicate this demand will only grow by 2041, necessitating infrastructure expansion. Similarly, the existing sewerage system is incomplete, lacking full coverage across Dindigul. Upgrading to a comprehensive Underground Sewage System (UGSS) is crucial. Solid waste management also requires attention as waste generation is on the rise. The existing storm water drainage system is inadequate and requires improvement to handle heavy rainfall. Finally, the electricity grid needs additional sub-stations to meet the projected increase in power demand. These challenges highlight the need for significant infrastructure investment to ensure Dindigul's future growth and well-being.

20.6.2 Objectives

This proposal aims to tackle the city's growing water demands by increasing capacity and improving distribution efficiency. Sanitation will be significantly enhanced through achieving 100% Underground Sewage System (UGSS) coverage. For waste management, a sustainable system with a focus on processing and recycling will be developed. Additionally, the plan addresses storm water drainage to prevent flooding and waterlogging. Finally, it emphasizes ensuring a reliable electricity supply with a focus on integrating renewable energy sources. This multi-pronged approach will create a more sustainable and resilient future for Dindigul.

20.6.3 Key Components

20.6.3.1 Water Supply

The current water demand of Dindigul Corporation is 17.5 MLD and 28.9 MLD for the LPA area. Projections indicate significant growth by 2041. As the existing infrastructure

requires expansion to meet this future demand, proposals have been developed for short, mid, and long terms to ensure efficient development and planning of the water supply infrastructure in Dindigul Corporation.

SHORT-TERM

The short-term water plan prioritizes immediate improvements to ensure equitable access to clean water for all residents of Dindigul Corporation. This plan has three key thrusts: achieving universal water supply coverage, delivering a reliable water supply, and improving water distribution efficiency.

Firstly, the plan focuses on achieving 100% water supply coverage across the corporation. This means every household and business will have access to a reliable water connection, eliminating disparities in access to this vital resource. Secondly, the plan aims to deliver a consistent 20 million liters per day (MLD) of water. This might involve optimizing existing water sources, drawing from underutilized resources, or implementing temporary measures like water trucking until long-term solutions are in place. Finally, to meet the current demand of 28.9 MLD and improve distribution, the plan proposes the construction of additional overhead tanks. These tanks will increase storage capacity, ensuring consistent water pressure throughout the corporation. Additionally, efforts will focus on increasing House Service Connection (HSC) coverage to reach 80-85%. This means establishing individual water connections for households that currently lack them, reducing reliance on shared connections and promoting fairer water distribution.

By focusing on these three areas, the short-term water plan aims to create a more equitable and efficient water supply system for Dindigul Corporation. This will provide immediate benefits to residents and lay the groundwork for a sustainable water future.

Figure 20-2 Provision of HSC Connection and OHTs in Dindigul LPA

MID-TERM

Focusing on the future, the mid-term plan tackles the projected water demand increase to a staggering 38.82 MLD. To ensure all residents have access to this vital resource, a multi-pronged approach will be implemented.

The plan prioritizes securing new water sources. This might involve exploring options like advanced geological surveys to find new groundwater aquifers, constructing new dams or reservoirs to capture surface water, or implementing advanced treatment facilities to reuse wastewater for non-potable purposes. All these measures aim to diversify and augment the existing water supply.

Secondly, the plan emphasizes the importance of an efficient water distribution network. The existing transmission network will undergo a complete relaying process. This could involve replacing old pipelines with modern, high-efficiency materials to minimize water loss, optimizing the network layout to ensure smooth water flow, and installing pressure management systems to regulate water pressure and reduce bursts and leaks.

Finally, the plan includes the construction of new overhead tanks. These strategically placed tanks will increase storage capacity to meet peak demand periods and ensure consistent water pressure, improve water quality by allowing for longer settling times, and enhance system resilience by providing a temporary buffer during disruptions in the main supply network.

By combining securing new water sources with a more efficient distribution network and strategically placed storage tanks, the mid-term water plan aims to create a secure and sustainable water supply system that can effectively meet the growing needs of Dindigul's population.

LONG-TERM

The long-term water plan for Dindigul takes a visionary approach to ensure a sustainable and efficient water supply for the city's future. This plan recognizes the need to not only meet growing demand but also to manage water resources responsibly. Here's a breakdown of its key components:

Network Optimization: The existing water distribution network will undergo a complete redesign and re-zoning. This involves using advanced modeling software to analyze water flow patterns and identify areas with inefficiencies. By strategically re-zoning supply areas

and optimizing pipeline layouts, the plan aims to minimize water loss during distribution and ensure a more balanced flow throughout the city.

Universal Connections: Achieving 100% House Service Connection (HSC) coverage is a critical goal. This means every residence in Dindigul will have a direct connection to the water supply, eliminating reliance on public standpipes or shared connections. This not only improves convenience and access but also reduces the risk of contamination and promotes fairer water distribution.

Smart Monitoring: A Supervisory Control and Data Acquisition (SCADA) system will be implemented. This advanced technology acts as a real-time nerve center for the water supply system. Sensors installed at water sources, pipelines, and District Metering Areas (DMAs) will continuously monitor water flow, pressure levels, and potential leaks. The SCADA system will use this data to optimize water distribution in real-time, allowing for quick identification and repair of leaks, significantly reducing Non-Revenue Water (NRW). NRW refers to water that is lost in the system due to leaks, meter inaccuracies, and unauthorized connections. By minimizing NRW, the plan ensures efficient water use and reduces the strain on precious water resources.

By implementing these comprehensive strategies, the long-term water plan aims to create a sustainable future for Dindigul. The optimized network will minimize water loss, universal connections will ensure equitable access, and smart monitoring will promote efficient water use. This three-pronged approach will ensure a reliable and secure water supply for generations to come.

20.6.3.2 Sewerage and Sanitation

Dindigul's sanitation plan takes a phased approach to address current challenges and create a cleaner, healthier future for the city and its surrounding areas.

SHORT-TERM

Universal Underground Sewerage System (UGSS): The immediate priority is achieving 100% UGSS coverage across Dindigul Corporation. This comprehensive initiative involves constructing a network of underground sewers to collect wastewater from all households and businesses. This eliminates the reliance on insanitary septic tanks and pit latrines, significantly improving public health and hygiene.

Centralized Sewage Treatment: To manage the collected wastewater effectively, a Sewage Treatment Plant (STP) with a capacity of 16.21 MLD will be built within the corporation limits. This plant will treat the wastewater using advanced processes, removing harmful contaminants and pathogens before releasing the treated effluent.

Addressing Immediate Needs: Community Toilets: Recognizing the urgent need for sanitation facilities, the plan proposes constructing community toilets in areas lacking proper infrastructure. These facilities will provide immediate relief and improve public sanitation, especially in underserved communities.

MID-TERM

The vision of mid-term proposal is Expanding Capacity and Embracing Sustainability. Building upon the short-term achievements, the mid-term plan focuses on:

Scaling Up Sewage Treatment: As UGSS connections expand to new areas, the STP capacity will be strategically increased to ensure effective treatment of the growing volume of wastewater. This ensures clean and safe disposal of treated effluent, minimizing environmental impact.

Sustainable Water Management: The plan takes a forward-thinking approach by promoting water reuse. Treated domestic sewage water, after going through a multi-stage treatment process, will be reused for industrial purposes like cooling towers or manufacturing processes. This innovative approach reduces the strain on freshwater resources, promoting a more sustainable water cycle for Dindigul.

LONG-TERM

The long-term vision extends beyond Dindigul Corporation by introducing Sewage Treatment Plants (STPs) with adequate capacity in nearby town panchayats and villages. This creates a regional sanitation network, ensuring proper wastewater treatment across a wider area. The treated wastewater can then be used for non-potable purposes like irrigation, reducing pressure on freshwater sources for agriculture and landscaping. By implementing these multi-phased initiatives, Dindigul's sanitation plan strives to create a cleaner and more sustainable future for the city and its surrounding areas. This comprehensive approach not only improves public health and hygiene but also promotes responsible water management practices, safeguarding the environment for generations to come.

20.6.3.3 Solid Waste Management

Dindigul's solid waste management plan outlines a multi-pronged strategy to achieve efficient waste processing, minimize landfill use, and promote a more sustainable future. This plan recognizes the importance of a phased approach to tackle the challenge comprehensively.

SHORT-TERM

Establishing Material Collection Centers (MCCs): The cornerstone of the short-term plan is the construction of MCCs within Dindigul Corporation and municipalities. These centers will act as central hubs for waste collection. Residents can bring their waste to these designated locations, where it will be sorted into different categories like recyclables, organic waste, and non-biodegradable materials. This initial processing allows for efficient waste management and resource recovery.

Increased Waste Processing: By implementing proper segregation at MCCs, the plan aims to achieve a 50% waste processing rate. Organic waste can be composted, recyclables can be channeled into reprocessing facilities, and non-biodegradable materials can be disposed of responsibly. This reduces the amount of waste going to landfills, extending their lifespan and minimizing environmental impact.

MID-TERM

Universal MCC Coverage: The plan prioritizes expanding MCC coverage to 100% across corporations, municipalities, town panchayats, and villages. This ensures a comprehensive waste collection network across the entire region. With proper infrastructure in place, residents will have convenient access to waste disposal facilities, promoting responsible waste management practices.

Scaling Up for Growing Needs: Considering the projected waste generation of 33.30 tonnes per day (TPD) for the corporation and 10.19 TPD for municipalities, the MCCs will be strategically expanded and equipped to handle the increasing waste volume effectively.

LONG-TERM

The long-term vision for Dindigul's solid waste management is ambitious yet achievable. It aims for a 100% waste processing policy with a strong emphasis on maximizing recycling.

This means all waste will be diverted from landfills and directed towards treatment or resource recovery processes. Here's how this will be achieved:

Advanced Processing Technologies: The plan envisions investing in advanced processing technologies to handle various waste streams efficiently. Organic waste composting facilities will be expanded, and recycling capabilities will be strengthened to process a wider range of materials. This not only reduces reliance on virgin resources but also creates a circular economy where waste becomes a valuable input for new products.

Minimizing Landfill Use: By achieving a near-zero landfill policy through efficient processing and recycling, Dindigul can significantly reduce its environmental footprint. Landfills are major sources of air and soil pollution, and minimizing their use protects public health and the environment. By implementing this phased approach, Dindigul's solid waste management plan has the potential to transform the city into a model for sustainable waste management practices. The plan not only promotes a cleaner and healthier environment but also fosters a more resource-efficient future for Dindigul and its residents.

20.6.3.4 Storm Water Drainage

Dindigul's storm water drainage plan takes a multi-pronged approach to managing rainwater and mitigating flooding risks. The proposals are broken down into short, mid, and long term, as outlined below:

SHORT-TERM

The short-term plan focuses on constructing recharge pits along existing water bodies. These pits act as natural filters, allowing rainwater to percolate into the ground and replenish vital groundwater reserves. This helps combat water scarcity in the long run.

MID-TERM

The mid-term plan tackles the capacity of water bodies themselves. Through waterfront development projects, desilting removes accumulated sediment, and Deweeding improves Water flow and prevents blockages. This ensures water bodies can effectively hold and manage storm water during heavy rains.

LONG-TERM

The long-term vision is comprehensive. It aims for full coverage of storm water drains across all urban local bodies (ULBs) and villages. This extensive network will efficiently remove

rainwater, preventing flooding and waterlogging. Additionally, the plan emphasizes the importance of groundwater conservation measures like rainwater harvesting. By combining improved drainage infrastructure with responsible water management practices, Dindigul can create a more resilient and sustainable future.

20.6.3.5 Electricity

Dindigul's electricity plan outlines a strategic roadmap to ensure reliable and sustainable power for the future.

SHORT-TERM

The short-term focuses on immediate needs by installing adequate substations to meet the projected increase in power demands. Additionally, government buildings will be equipped with solar panels, reducing reliance on conventional energy sources and taking the first steps towards integrating renewable energy into the grid.

MID-TERM

The mid-term plan builds upon this foundation by focusing on strengthening the electricity infrastructure. Upgrading transmission lines will ensure efficient power delivery across the entire district. Furthermore, the plan sets a target of achieving 100% electricity supply, with an ambitious goal of meeting at least 50% of industrial power requirements through renewable energy sources. This shift towards renewables not only promotes environmental sustainability but also reduces dependence on fossil fuels and their price fluctuations.

LONG-TERM

The long-term vision is for Dindigul to become a leader in sustainable power generation. Achieving a 100% electricity supply guarantees reliable power access for all residents and businesses. This plan goes beyond mere availability by emphasizing the use of renewable energy sources. By installing additional substations to further strengthen the power grid and ensuring at least half of industrial power comes from renewables, Dindigul can achieve a sustainable and secure electricity future.

21 Social Infrastructure Requirements

Social infrastructure covers a range of services and facilities that meet local needs and contribute towards a good quality of life. It includes health provision, education, community facilities, youth, recreation, sports, faith, and emergency facilities. As the Town grows rapidly, the need to amplify the number of social infrastructures is essential to develop strong and inclusive communities.

21.1 Educational Facilities

As per URDPFI Guidelines, one primary school for every 5000 population is required and one high school is required for every 7500 population. There are adequate primary schools and 20 high schools required in the LPA as per norms for projected population.

Table 21-1 Educational Facilities Details

S.No	Type of Institution	Existing population	Existing number	Projected population 2041	Required nos as per URDPFI
1	Primary School	811445	399	1082050	nil
2	Middle School	811445	91	1082050	nil
3	High School	811445	44	1082050	20
4	Higher Secondary School	811445	80	1082050	
5	Engineering Colleges	811445	3	1082050	nil
6	Medical College	811445	1	1082050	
7	Arts & Science College	811445	3	1082050	
8	Polytechnic	811445	15	1082050	

Educational facilities in planning area is adequate for the people. However, Higher Education institutions helps in nurturing students in a better way.

21.2 Health Facilities

The IPHS standards recommend one health sub-centre for every 5000 population. Likewise Primary Health centre in urban and rural shall cater to a population of 50,000 and 30,000 respectively. For every 2,50,000 population, one hospital with more than 100 beds needs to be planned. Based on the recommendation of IPHS standards, the number of health facilities required based on the projected population is tabulated in the table 21-2.

Table 21-2 Health Facilities Details

S.No	Type of Health Facilities	Population Served	Required Numbers for 2041 Population
1	Government Hospital	2,50,000	2
2	Primary Health Centre (Urban)	50,000	3
3	Primary Health Centre (Rural)	30,000	25
4	Sub Primary Health Centre	5,000	217

21.2.1 Primary Health Centers

Dindigul's healthcare infrastructure is undergoing strategic planning to address the projected population growth by 2041. A critical aspect of this plan is ensuring accessible healthcare across both urban and rural areas.

The current situation reveals a lack of Primary Health Centres (PHCs) in the planning area, particularly in rural regions. To address this gap, the plan proposes establishing new PHCs specifically in these underserved rural areas. Two PHCs are planned for urban areas, each serving a population of 50,000, by recognizing the current lack of PHCs in rural areas, the plan proposes a significant expansion by establishing 25 new PHCs. Each of these rural PHCs will serve a population of 30,000 and to ensure widespread accessibility across the entire planning area, the plan calls for the establishment of 217 Sub Primary Health Centres (SHCs). Each SHC will serve a population of 5,000, providing a strong foundation for primary healthcare delivery in both urban and rural communities.

This multi-tiered approach, with a focus on establishing new PHCs in underserved rural areas, aims to create a robust healthcare network that can effectively meet the growing needs of Dindigul's population in 2041 and beyond.

21.3 Public Open Spaces

Parks in and around Dindigul Corporation need to be improved in such a way that it attracts people. Also, Playgrounds and parks need to be proposed outside Dindigul Corporation. Introduction of STEM Park (Science, Technology, Engineering and Mathematics) like concepts also helps students for academic purposes.

A strategic approach to enhancing the quality of life in Dindigul involves the transformation of Open Space Reservation (OSR) lands into vibrant parks and recreational areas. By repurposing these lands, the city can create inviting green spaces that serve as havens for relaxation, social interaction, and physical activity. Converting OSR lands into

parks not only addresses the need for open and accessible spaces amid urban development but also contributes to the city's aesthetics, environmental sustainability, and overall well-being. This endeavour aligns with the city's commitment to fostering a healthier and more connected community, inviting residents and visitors alike to enjoy the benefits of nature and recreation in the heart of Dindigul.

21.3.1 Proposal for Restoration of Abandoned Quarries in Dindigul Local Planning Authority (LPA)

Dindigul District boasts a rich mineral resource base, with limestone being the major mineral and several minor minerals like granite, blue metal, and quartz actively mined in Vedasandur and Natham taluks. While mining plays a vital role in the district's economy, abandoned quarries often become an eyesore and pose environmental challenges. This proposal outlines a plan for the restoration of abandoned quarries within the Dindigul LPA to promote environmental sustainability and create a more aesthetically pleasing landscape.

Figure 21-1 Limestone Quarry at Alambadi and Granite Quarry at Eriyodu

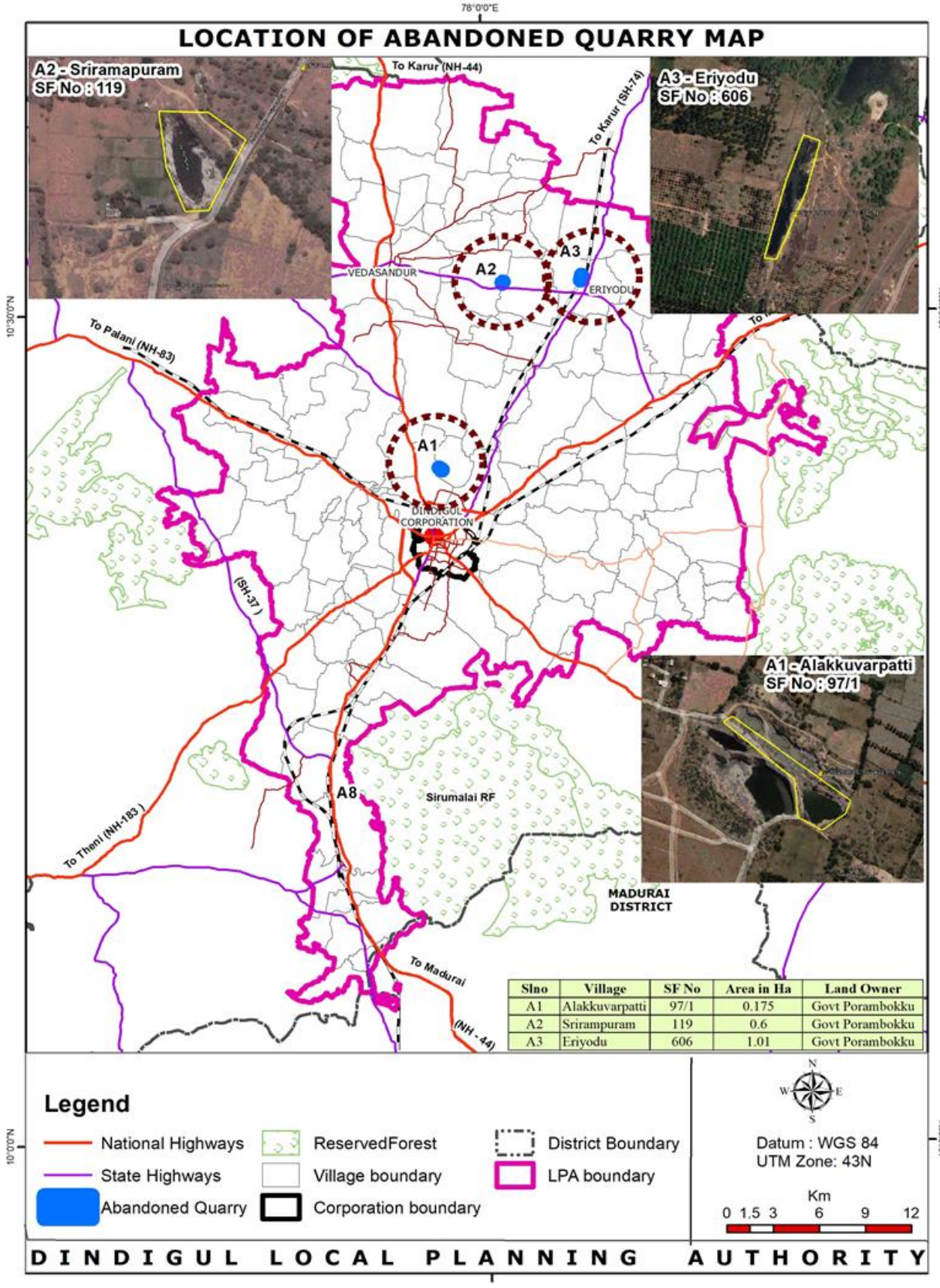
Why Restoration is needed

Dindigul faces a growing challenge with its abandoned quarries. These neglected sites, once bustling with mining activity, now pose a significant threat to the environment and the community's well-being. Unrestored quarries morph into dumping grounds, attracting all sorts of waste that seeps into the surrounding soil and water, causing pollution. The open pits themselves become gaping safety hazards, with the constant risk of falls for both people and animals venturing near them. Perhaps most concerning is the long-term ecological impact. The barren landscape discourages the return of native plants and animals,

disrupting the delicate balance of the local ecosystem and leading to a decline in biodiversity. These cascading negative effects make the restoration of abandoned quarries a pressing necessity for Dindigul. By taking action, the city can transform these eyesores into valuable assets, creating a safer and more sustainable future for all.

Restoring abandoned quarries offers numerous advantages:

Rehabilitation efforts can work wonders for the environment, improving air and water quality. This is achieved by preventing soil erosion and promoting the growth of new vegetation, which acts as a natural filter and reduces dust. The safety hazards posed by open pits are eliminated by filling them and creating a more natural landscape, bringing peace of mind to the community. Furthermore, re-vegetation with native plants and animals becomes possible, fostering a more balanced ecosystem and promoting biodiversity. The possibilities for the restored land are vast. It could be transformed into parks, recreational areas for the community to enjoy, or even utilized for small-scale agriculture, creating a productive space. Restoring abandoned quarries will create more sustainable and vibrant future for Dindigul.



Map 21-1 Location of Abandoned Quarry map

Key Components of Restoration

- **Site Assessment**: Conduct a comprehensive assessment of each abandoned quarry to understand its size, depth, and surrounding environment.
- **Debris Removal**: Remove any debris or waste materials present in the quarry pit.
- **Soil Preparation**: Assess the quality of existing soil and amend it if necessary to create a suitable base for vegetation growth.
- **Re-vegetation:** Implement a plan for planting native trees, shrubs, and grasses suitable for the local climate and soil conditions.
- **Monitoring and Maintenance**: Regularly monitor the progress of restoration efforts and provide necessary maintenance to ensure the sustainability of the new ecosystem.

The following proposals may be proposed based on the feasibility study;

- **Creation of Water Bodies**: In suitable locations, explore the possibility of creating small ponds or wetlands within the restored quarry, further enhancing biodiversity and providing habitat for aquatic life.
- **Solar Power Generation**: Utilize the open space of restored quarries for the installation of solar panels, promoting renewable energy generation in the district.

The restoration of abandoned quarries in Dindigul LPA presents a valuable opportunity to address environmental concerns, improve aesthetics, and create new green spaces for the community. By implementing this proposal and incorporating innovative ideas, Dindigul can transform these abandoned sites into valuable assets for the district's long-term sustainability and well-being.

21.4 Sports Infrastructure

Sports infrastructure in Dindigul plays a pivotal role in fostering a healthy and active community while nurturing local talent and promoting a sense of camaraderie. With a growing recognition of the significance of sports in personal development and community building, Dindigul has been investing in state-of-the-art facilities that cater to a diverse range of sports and recreational activities. Furthermore, Dindigul's sports facilities have become vibrant hubs for community engagement and recreation. They host tournaments,

matches, and events that bring people together, fostering a sense of unity and camaraderie. These spaces are not limited to athletes alone; they invite families, friends, and residents to come together, socialize, and partake in healthy activities that enrich their lives. As Dindigul continues to grow, the development of sports infrastructure remains a priority. By expanding existing facilities and introducing innovative sports programs, the city can ensure that its residents have ample opportunities to lead active and fulfilling lives. Moreover, with the potential to attract sports tourism and boost the local economy, investing in sports infrastructure becomes a multifaceted endeavour that benefits both individuals and the community.

21.4.1 Proposal for Construction of an Indoor Stadium in Dindigul LPA

An analysis of the social infrastructure sector in Dindigul LPA reveals a critical gap – the lack of sufficient recreational facilities to cater to the projected population growth by 2041. This concern is further highlighted by the age pyramid analysis indicating a high concentration of individuals between 0-6 and 10-14 years old. The primary objective of this proposal is to construct a well-equipped indoor stadium within Dindigul LPA to address the growing demand for year-round recreational facilities and foster a culture of sports participation among the district's youth.

21.4.1.1 Need for an Indoor Stadium

- **Insufficient Capacity:** Existing recreational facilities are primarily outdoor and lack the capacity to accommodate the projected population growth, especially for activities requiring shelter from the elements.
- **Limited Year-Round Options:** Dindigul experiences weather conditions that limit the usability of outdoor facilities for a significant portion of the year, hindering consistent training and participation in indoor sports.
- **Nurturing Future Talent**: The lack of a dedicated indoor stadium restricts opportunities to identify, train, and nurture young sporting talent in Dindigul.

21.4.1.2 Benefits of an Indoor Stadium

- **Year-Round Recreational Opportunities**: The stadium will provide a consistent platform for training and participation in badminton, basketball, volleyball, table tennis, and other indoor sports, regardless of weather conditions.

- **Improved Physical and Mental Health:** Increased access to sports facilities promotes physical activity among young people, contributing to improved physical and mental well-being.
- **Promoting Sports Culture**: The stadium can serve as a catalyst for fostering a vibrant sports culture in Dindigul, encouraging participation, and identifying local talent.
- **Hosting Tournaments**: The facility can host regional and national-level indoor sporting events, boosting tourism and the local economy.

21.4.1.3 Target users

- **Children and Young Adults**: The primary beneficiaries will be children and young adults, focusing on the demographic identified in the age pyramid analysis (0-6 and 10-14 years old).
- **Athletes and Sports Enthusiasts**: Aspiring athletes and sports enthusiasts of all ages will benefit from the dedicated training and competition opportunities.
- **Community as a Whole:** The stadium can become a hub for community events, promoting social interaction and a sense of belonging.

21.4.1.4 Location

The proposed indoor stadium in Dindigul will be located in Chetti Nayakanpatti village, Dindigul taluk. The site for the stadium is identified by survey number 465,462/1B and 461/1C1, with a total area of 0.07 sq.km. This translates to approximately 7 hectares, which is a substantial plot suitable for constructing a modern indoor stadium facility.

Figure 21-2 Location for proposed indoor stadium

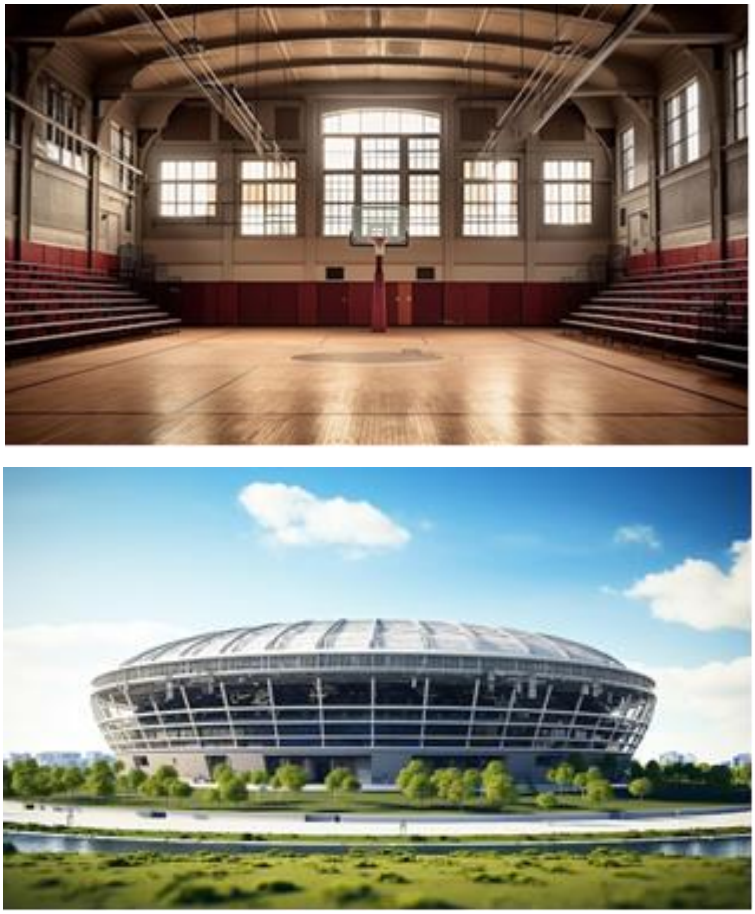
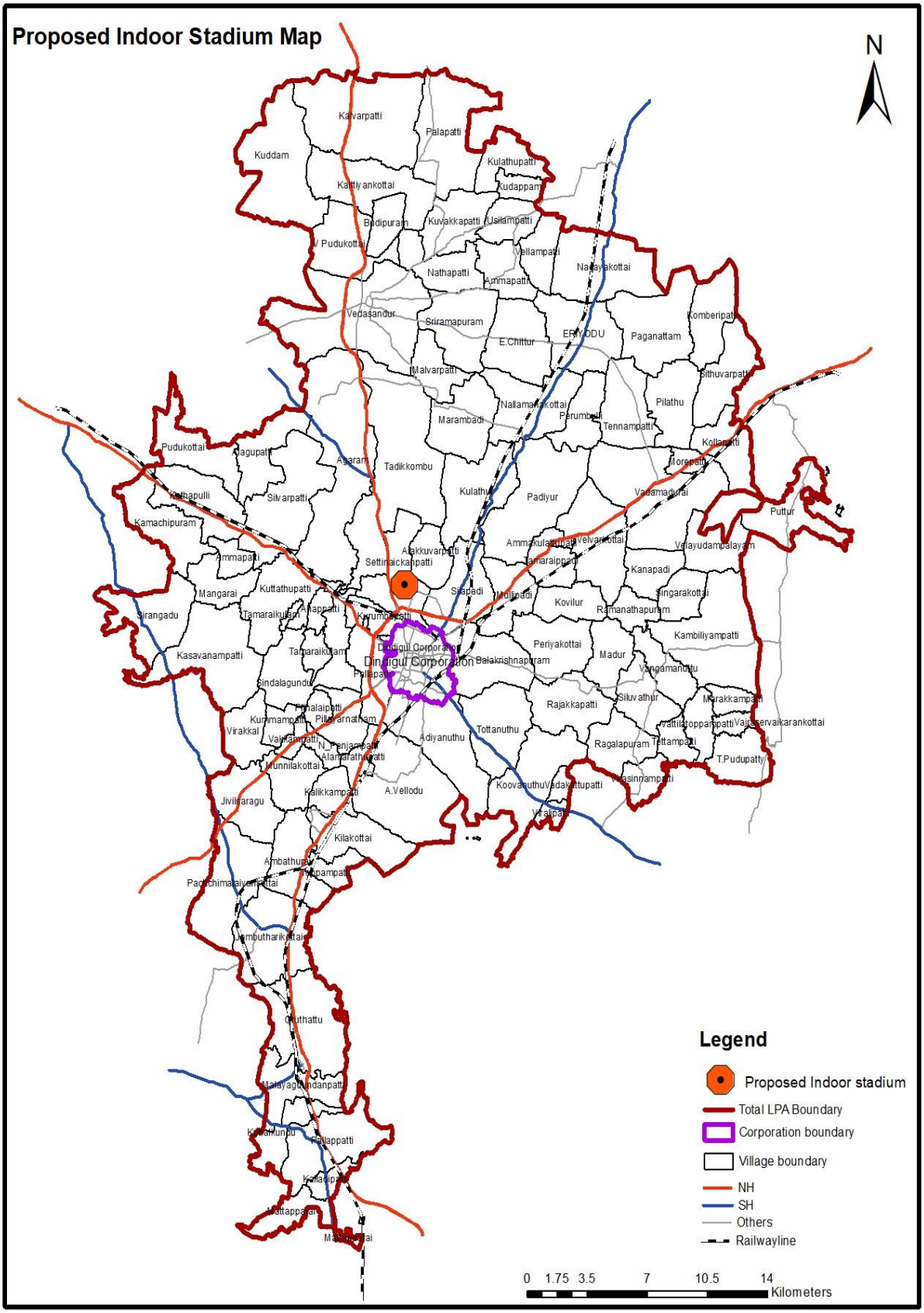


Figure 21-3 Conceptual image of proposed Indoor stadium



Map 21-2 Proposed Indoor stadium Location map

21.4.1.5 Key Components of the Indoor Stadium

The proposed indoor stadium in Dindigul will be a multi-sport facility catering to a variety of athletic pursuits. At its core lies a spacious, well-lit arena featuring a synthetic playing surface. This versatile court can accommodate badminton, basketball, volleyball, and other indoor court sports. Dedicated practice areas will be available for activities like table tennis, allowing focused training for athletes. Spectators won't be left out, with comfortable permanent tiered seating designed to accommodate a sizable audience.

Beyond the playing area, the stadium will boast a range of support facilities. Athletes and officials will have access to well-equipped changing rooms with showers and lockers. A medical room will ensure immediate medical attention is available if needed. Concession stands will cater to fans' refreshments, while public restrooms offer essential convenience. Accessibility is a priority, with ramps, elevators, and designated seating areas ensuring an inclusive experience for people with disabilities. Ample parking space will be provided to avoid traffic congestion on event days. Regular maintenance will be crucial to keep the stadium in top condition, ensuring a pleasant experience for athletes and spectators alike.

The plan also embraces the possibility of future expansion, leaving room for additional facilities such as a gymnasium or training rooms to accommodate the evolving needs of the community. The construction of an indoor stadium in Dindigul LPA represents a strategic investment in the well-being of the district's growing population, with a specific focus on its youth. This proposal demonstrates the potential of the stadium to promote a healthy and active lifestyle, nurture young talent, and create a vibrant hub for sports and recreation in Dindigul. By implementing this proposal, the LPA can ensure that Dindigul has the necessary infrastructure to cater to the needs of its future generations.

21.5 Proposal for Upgrading Social Infrastructure in Dindigul Planning Area

Dindigul District's social infrastructure plays a vital role in supporting the well-being of its residents. However, with a projected population increase, strategic investments are needed to ensure access to quality education, healthcare, and recreational facilities. This proposal outlines a comprehensive plan for upgrading the social infrastructure across Dindigul District.

21.5.1 Objectives

This proposal outlines a multi-faceted approach to improve the overall well-being of the community. A key focus is on enhancing educational opportunities. This will be achieved by increasing access to schools and by providing skill development programs, empowering residents with the tools they need to succeed. The plan also prioritizes improving healthcare accessibility by expanding primary healthcare facilities and hospitals, ensuring residents have convenient access to quality medical care. Looking beyond basic needs, the proposal recognizes the importance of leisure and recreation for a well-rounded life. By increasing recreational spaces, the community will benefit from improved quality of life and overall well-being. Furthermore, the plan embraces sustainability by incorporating water body conservation into recreational projects, ensuring a healthy environment for future generations.

21.5.2 Current Social Infrastructure

As of 2021, Dindigul has 933 educational institutions, 202 Primary Health Centers (PHCs), and 0.5 square kilometres of dedicated recreational space. While the number of educational institutions and other amenities is projected to increase by 2041, significant expansion is needed to meet the demands of a growing population.

EDUCATION SECTOR

Dindigul's education sector is set for a strategic upgrade with a focus on improved access, skill development and industry-aligned education.

Short term

In the short term, the plan prioritizes establishing primary and higher secondary schools in underserved LPA (Local Planning Area) villages. This targeted approach aims to bridge the gap in educational opportunities and improve literacy rates across the region.

Mid term

In the mid-term, the proposal suggests setting up skill training institutes like Industrial Training Institutes (ITIs) within the planning area. Equipping the workforce with relevant and in-demand skills will enhance their employability and contribute to the overall economic development of the LPA.

Long term

The long-term vision takes this a step further by proposing the establishment of new colleges specializing in agriculture and textiles. These specialized institutions will provide a skilled and qualified workforce that directly caters to the needs of Dindigul's key industries, fostering a strong connection between education and local job markets. By implementing this multi-pronged strategy, Dindigul's education sector can empower individuals, strengthen the workforce, and propel the LPA towards a more prosperous future.

HEALTH SECTOR

Dindigul is revamping its healthcare system to provide accessible and advanced medical care for all residents. The plan unfolds in phases, prioritizing immediate needs.

Short term

In the short term, strategically located Primary Health Centers (PHCs) will be established, forming a network that efficiently serves clusters of villages. This targeted approach directly addresses the critical issue of limited access to healthcare, particularly in rural areas.

Mid term

In the mid-term, the vision expands to include the construction of a brand new hospital within the LPA. This additional facility will be instrumental in meeting the growing healthcare demands of the population, ensuring timely access to quality medical services and reducing strain on existing facilities.

Long term

The long term holds a two-pronged approach. Existing urban PHCs will be expanded to strengthen their capacity and cater to a larger population in surrounding areas. This ensures continued improvement in accessibility for all residents. Additionally, the plan proposes building more ESI hospitals within the planning area. ESI hospitals play a vital role in extending the reach of health insurance benefits, providing much-needed financial security

for medical treatment to a wider segment of the population. This comprehensive strategy ensures Dindigul's healthcare system evolves to effectively serve the evolving needs of its citizens, creating a healthier and more secure future for all.

OTHER AMENITIES & RECREATIONAL FACILITIES

The proposal outlines a well-rounded strategy to enhance the overall quality of life for residents through improved amenities and recreational facilities.

Short term

In the short term, the plan focuses on waterfront development projects for Ayyankulam and Aranmanaikulam lakes. This initiative tackles two issues simultaneously: creating much-needed recreational space while also prioritizing water body conservation. These projects will transform the lakes into vibrant community hubs, offering scenic getaways and recreational activities. Additionally, the existing stadium will undergo a makeover, transforming it into a district sports complex. This upgrade will provide residents with improved facilities for sports and physical activity.

Mid term

The historic Dindigul Fort and its surrounding areas are proposed for development as a recreational hub. This project has the potential to not only revitalize a historical landmark but also significantly boost tourism potential for the district. Furthermore, the proposal explores the innovative concept of reviving abandoned quarries for waterfront development and recreational purposes.

Long term

The long term focuses on maximizing the use of existing resources. Small parks and recreational spaces will be developed in available open spaces, parks, and playfields. This ensures the effective utilization of these areas and prevents them from becoming neglected or misused.

Benefits

By implementing this multifaceted plan, Dindigul goes beyond simply meeting basic needs. Residents will benefit from improved access to quality education and skill development opportunities, enhanced healthcare accessibility, and increased recreational spaces for a

healthy and active lifestyle. The development of recreational hubs, like the revitalized fort, has the potential to attract tourists and boost the local economy. Most importantly, the plan prioritizes sustainable development by integrating water body conservation into infrastructure projects, ensuring a healthy environment for future generations. By implementing this proposal, Dindigul District can ensure its social infrastructure keeps pace with its growing population. This will not only improve the quality of life for residents but also foster a more vibrant and sustainable future for the district.

22 Environment Conservation

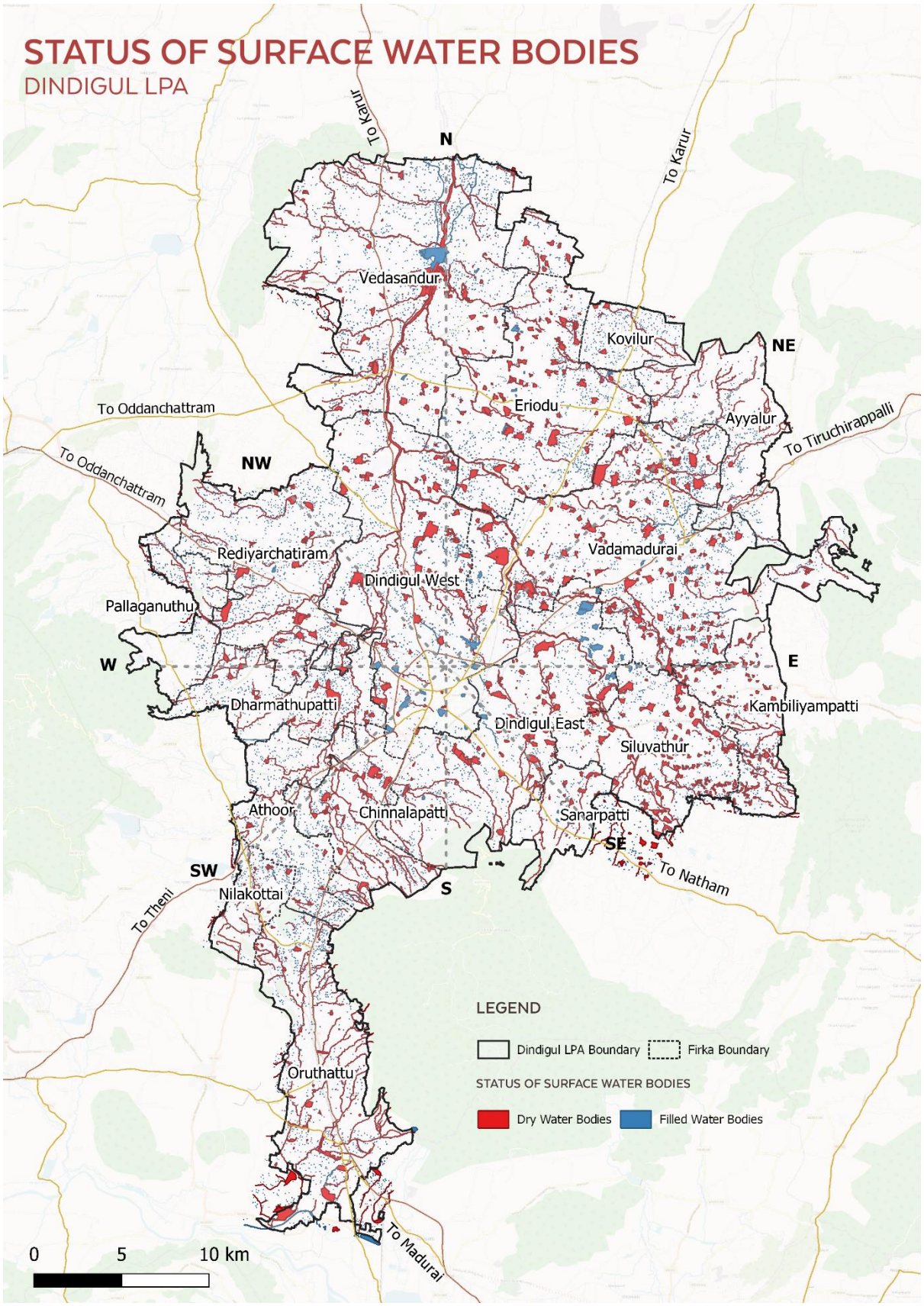
22.1 Identifications of conservation zones

22.1.1 Blue and Green Infrastructure

Blue and green infrastructure represents a critical aspect of urban planning in Dindigul, focusing on the preservation and integration of natural elements to create a more sustainable and liveable city. Blue infrastructure pertains to water bodies, such as rivers, lakes, and wetlands, while green infrastructure involves parks, gardens, forests, and other natural spaces. The incorporation of these elements within urban planning offers a multitude of benefits for both residents and the environment.

22.1.1.1 Blue Infrastructure

Dindigul's water bodies, including rivers and ponds, serve as important ecological assets. By preserving and restoring these natural features, the city can mitigate flooding, enhance water quality, and provide recreational opportunities. Integrating blue infrastructure in the master plan involves strategies such as creating waterfront promenades, implementing floodplain zoning, and developing storm water management systems that mimic natural processes. These approaches not only contribute to the city's aesthetics but also improve overall resilience to climate-related challenges.



Map 22-1 Waterbodies in LPA

22.1.1.2 Green Infrastructure:

Green spaces play a vital role in ensuring a balanced urban environment. Parks, green belts, and urban forests provide areas for relaxation, physical activities, and social interactions. When thoughtfully integrated, green infrastructure helps mitigate the urban heat island effect, enhance air quality, and provide habitat for biodiversity. By strategically placing green spaces throughout the city and linking them through pedestrian and cycling pathways, Dindigul can promote a healthier lifestyle, reduce pollution, and increase overall well-being.

22.1.1.3 Synergistic Benefits:

The integration of blue and green infrastructure offers numerous synergistic benefits. For instance, green areas can act as buffer zones along water bodies, reducing pollution runoff and providing habitat for aquatic species. Additionally, the presence of green spaces near water bodies can create visually appealing landscapes that attract residents and visitors alike.

22.1.1.4 Community Engagement and Identity:

Blue and green infrastructure also contribute to the city's cultural identity. Parks and waterfronts can host cultural events, festivals, and recreational activities that foster community engagement and a sense of pride among residents. These spaces become gathering points for social interactions and contribute to the vibrant spirit of the city.

22.1.1.5 Proposals

Incorporating blue and green infrastructure into Dindigul's urban planning is a proactive step toward building a sustainable and resilient city. By preserving water bodies, creating green spaces, and strategically connecting them, the city not only enhances its ecological health but also improves the overall quality of life for its residents. This comprehensive approach fosters urban sustainability while fostering a deep connection between the city and its natural environment.

A strategic approach to enhancing the quality of life in Dindigul involves the transformation of Open Space Reservation (OSR) lands into vibrant parks and recreational areas. By repurposing these lands, the city can create inviting green spaces that serve as havens for relaxation, social interaction, and physical activity. Converting OSR lands into parks not only

addresses the need for open and accessible spaces amid urban development but also contributes to the city's aesthetics, environmental sustainability, and overall well-being. This endeavour aligns with the city's commitment to fostering a healthier and more connected community, inviting residents and visitors alike to enjoy the benefits of nature and recreation in the heart of Dindigul.

22.1.1.6 Lakefront Development

Ayyan Kulam Lake (6.33 hectare), Aranmanaikulam lake (15.82 hectare) primary objective of the Lakefront Development was to transform this city-scale public space with efficient and robust infrastructure. The strategies to implement this transformation included creating complete pedestrian zones encircling the lake's edge, developing an outer ring road by strengthening the existing road network, enhancing recreational potential by improving public facilities, preserving historic buildings and encouraging overall development within the precinct.

The pedestrian promenade is lined with gardens, food courts and organized vending spaces. The design of the promenade includes 2 km-long uninterrupted pedestrian zone along the edge of the lake lined by street furniture. The street furniture zone comprises trees, lights, seating facilities and dustbins act as a buffer between the pedestrian zone and the cycle track. Amongst the various recreational activities provided, the mini train circling around the lake is the most popular. While designing, great attention was paid to the detailing of sidewalks, carriageways and on-street parking. Suggested activities Boating, Museum, Aquarium, Water walk, Butterfly park, Exhibition, safari, Ballon safari, Food courts, Kids play zone

Lakefront development includes features like parks, walking trails, and boat docks. These components facilitate public access to the water while preserving the surrounding ecosystem. Such developments help conserve the water body by implementing erosion control measures, reducing pollution, and maintaining water quality. Additionally, they create opportunities for recreational activities like swimming, fishing, and birdwatching, promoting a deeper appreciation of the natural environment. This balance between conservation and recreation benefits both residents and the ecosystem, fostering a sustainable coexistence between humans and their surrounding water bodies.

- **Green Spaces**

Design and create parks and green spaces within urban areas to enhance biodiversity, improve air quality, and provide recreational areas.

- **Green Roofs**

Implement green roofs on buildings to absorb rainwater, reduce heat absorption, and contribute to energy efficiency.

- **Rejuvenation of Water Bodies**

Rivers and Streams to Protect and restore natural watercourses to manage storm water, enhance habitat, and provide aesthetic value. Wetlands: Preserve or create wetlands that act as natural filters, improving water quality and providing valuable habitat for wildlife.

- **Retention Ponds**

Develop retention ponds to capture and temporarily hold storm water, reducing the risk of flooding downstream.

- **Permeable Pavements**

Use permeable materials for sidewalks, driveways, and parking lots to allow rainwater to infiltrate the ground, reducing surface runoff.

- **Tree Canopy**

Urban Forestry Promote and preserve urban tree canopy cover to mitigate the urban heat island effect, improve air quality, and provide shade.

- **Urban Agriculture**

Integrate community gardens and urban agriculture into the urban fabric to enhance green spaces, promote local food production, and improve community well-being.

- **Natural Infrastructure Living Shorelines**

Implement living shorelines along waterfronts to provide erosion control, habitat enhancement, and resilience to storm events. Benefits of Blue-Green Infrastructure Storm water Management Reduces surface runoff, minimizes flooding, and improves water quality by naturally filtering pollutants.

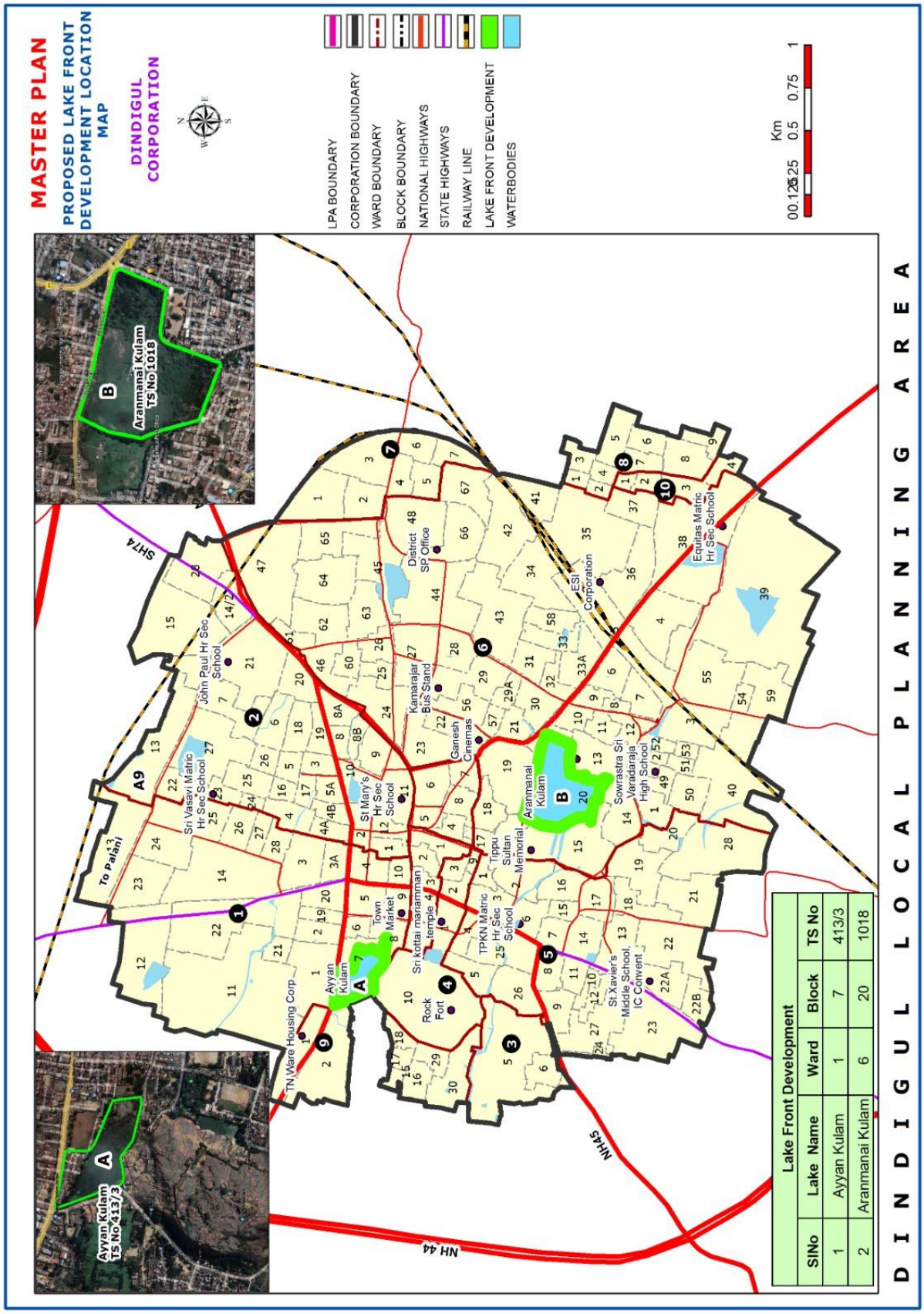
- **Climate Resilience**

Mitigates the impacts of climate change by reducing the heat island effect, managing extreme temperatures, and enhancing overall urban resilience. Public Health and Well-

being: Enhances the quality of life by providing recreational spaces, promoting physical activity, and improving air and water quality. Economic Value: Increases property values, attracts businesses, and contributes to economic development by creating attractive and sustainable urban environments. Community Engagement: Fosters community involvement through the creation of green spaces, parks, and communal areas.

- **Aesthetic and Cultural Value**

Improves the aesthetic appeal of urban areas and preserves cultural and natural heritage. Blue-green infrastructure is a holistic approach that recognizes the interconnectedness of natural and built systems, promoting sustainable urban development and environmental stewardship. It is often integrated into urban planning and design to create more resilient, liveable, and environmentally friendly city.



Map 22-2 Proposed Lake Front Development Map

22.2 SOCIAL FOREST

In the Divisional Forest Office, Social Forestry Division, Dindigul, a dedicated commitment to environmental conservation and community engagement is evident through their extensive planting activities. These endeavours contribute to the larger vision of creating a greener and more sustainable urban environment.

- **Green Tamil Nadu Mission (GTM) - 2022**

In 2022, a total of 301,350 seedlings were planted across 464 hectares as part of the Green Tamil Nadu Mission. This initiative is a testament to the division's dedication to reforesting and rehabilitating the landscape, enhancing ecological balance, and fostering a healthier environment.

- **Green Tamil Nadu Mission (GTM) - 2023**

In 2023, the Divisional Forest Office embarked on a transformative journey by planting 383,000 seedlings across 589 hectares as part of the Green Tamil Nadu Mission. This remarkable effort underscores their commitment to continuously expanding green cover and providing habitats for wildlife.

- **Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change and Response (TBGPCCR) - 2023**

With a holistic approach to conservation, the Divisional Forest Office planted 155,000 seedlings across 238 hectares in 2023 under the Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change and Response. This initiative not only contributes to climate change mitigation but also preserves the rich biodiversity that the region offers. These planting activities transcend mere tree planting; they embody a profound connection between people and nature. By creating lush green spaces and restoring biodiversity, the Divisional Forest Office is nurturing an environment that fosters cleaner air, improved water retention, and enhanced quality of life for the community. Each tree and seedling planted stands as a symbol of commitment to a sustainable future. Locations in LPA area are Vedasandur, Madur, Marambadi, Silvathur, Rajakkapatty, M.M. Kovilur and Ragalapuram. The pursuit of a greener and more sustainable future is evident through the dedicated planting activities under the Green Tamil Nadu Mission. These initiatives, facilitated by the Divisional Forest Office, Dindigul, are driven by a commitment to nurturing nature and preserving our ecosystem. Below are the details of these commendable efforts:

Table 22-1 Name of Panchayat/Local Planning Area

S. No	Name of Panchayat	Area in Ha	Name of Planting Location	Survey No	Planted seedlings (species-wise)
1	Ragalapuram	3.01	Jambu kulam	365	2300
2	Siluvathur	1.49	Thiruppankulam	487	5000
3	Ragalapuram	5.84	Ovichetikulam	268	1700
4	Rajakkapatty	7.97	Sambirankulam	208	4500
5	M.M.Kovilur	16.5	Chettikulam	32	2000
6	Ragalapuram	5	Ovichetikulam	-	-
7	Ragalapuram	5.79	Chinnathattankulam	6, 9, 10	3200
8	Vethalathoppanpatty	9.81	Periyakulam	-	4300
9	Siluvathur	4.58	Thirumukkulam	216	2300
10	Viralimayanpatti	6.8	Kottaimanthai	59	9000
11	Pachamalaiankottai	5.87	Aruppampatty	410	1500
12	Siluvathur	15.2	Servakarankulam	522	4800
13	Siluvathur	13.8	Posiyapillaivagal kulam	231	9700
14	Siluvathur	5.97	Thungapillaikulam	389, 390	1400
15	Siluvathur	6.63	Balankulam	449	2950
16	Madur	4.47	Koundankulam	425	1650
17	Viralimayanpatti	6.8	Thavasikulathupatty	-	9100
18	Padiyur	9.35	Pudhukulam	-	4000
19	Viralimayanpatti	11	Viralimayanpatti	59	6000
20	Padiyur	9.35	Padiyur	410	5900
21	Silukuvarpatti	17.2	Seerangampatti	507	10000
22	Molapadiyur	6.63	Vadamadurai	425	10000
23	Molapadiyur	5.79	Vadamadurai	-	4000

These planting activities stand as a testament to the Divisional Forest Office's dedication to nurturing our environment and conserving our natural resources. Through meticulous planning and nurturing, they contribute to a greener and more sustainable future for Dindigul and beyond

23 Tourism and Heritage REQUIREMENTS

23.1 TOURISM PROPOSALS

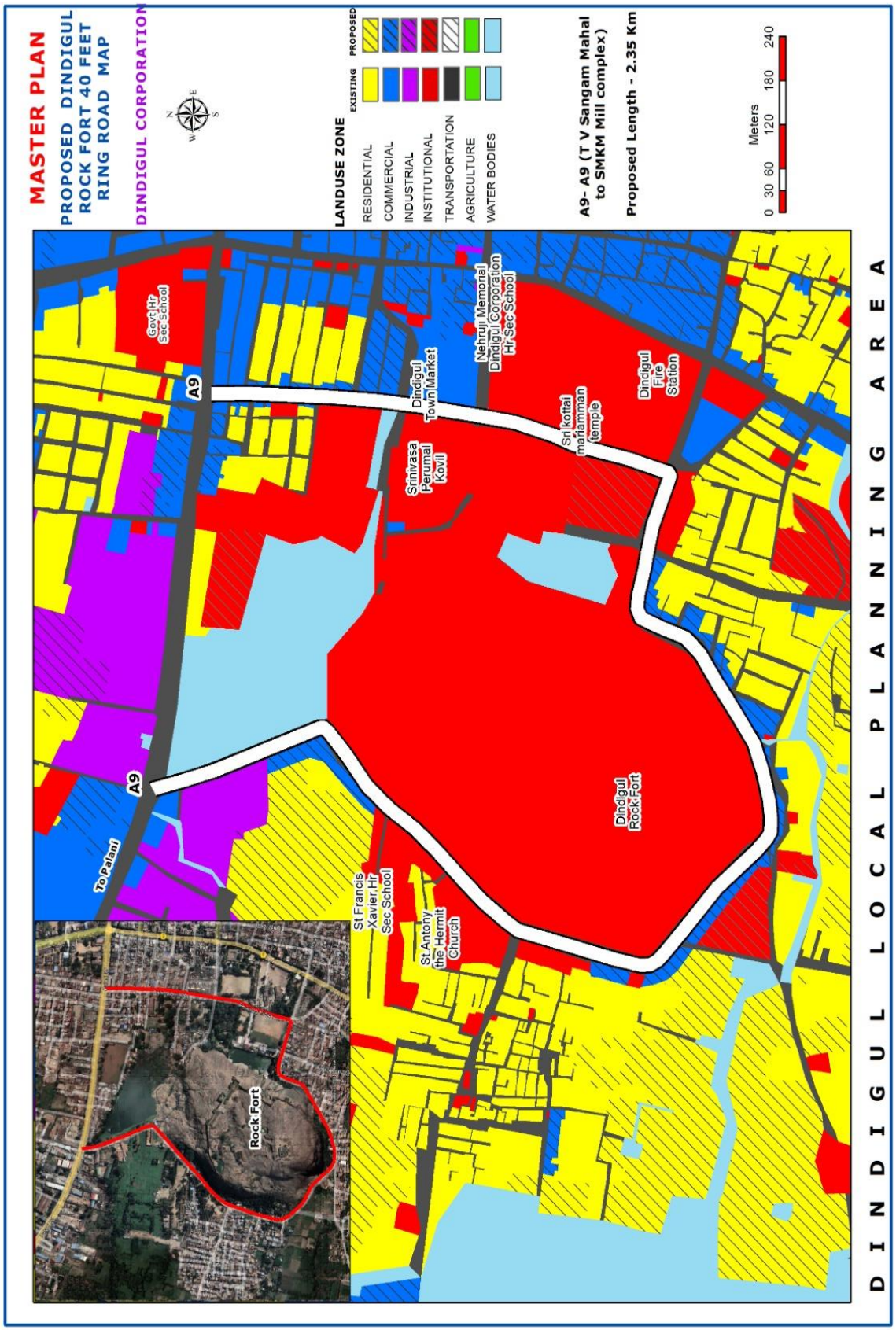
Rock Fort Circle Road

- Proposed Strengthening of Existing Road around Dindigul Rockfort to promote tourism and to facilitate pilgrimage by focusing the Dindigul Fort which we got as a natural blend of history and spirituality.
- The plan can also be enriched by introducing boating in "Kottaikulam" full of soft water throughout the year.
- As there are many groundnut candy cottage industries at 'Muthalagupatty' in the Western side of Rockfort, the said "Rockfort Circle Road" plan will also result into employment and economic developments.
- This plan can be supported by arranging parking facility in the government land available in front of Kottaikulam (i.e) between Mariamman temple and Fort.

Table 23-1 Road Name Details

S.No.	ROAD NAME	Road ID	Road Width in M
1	Proposed Ring Road (TV Sangam Mahal to Palani road SMKM Mill Complex)	A9	12

The proposed construction of the Ring Road, designated as Road ID A9, connecting TV Sangam Mahal to Palani Road through the SMKM Mill Complex, not only promises to streamline transportation and logistics in Dindigul but also has the potential to significantly enhance tourism in the region. By improving accessibility, reducing traffic congestion, and enhancing infrastructure, this new road will make it easier for tourists to visit the Dindigul Rock Fort and its surrounding attractions. This development can encourage day trips, boost the overall tourist experience, and serve as a catalyst for marketing Dindigul as a must-visit destination, thereby contributing to the growth of tourism in the area and supporting the local economy.



Map 23-1 Proposed Dindigul Rock Fort 40 feet ring road map

23.2 TOURISM DEVELOPMENT

There are many tourist spots around Dindigul and infrastructure for tourism development is lacking in Dindigul. Tourism Infrastructure shall be improved by forming a committee and proposing improvement of tourist spots and providing tourism supporting services in a better way.

- Strategic Vision for Elevating Tourism in Dindigul : To enhance tourism in Dindigul and unlock its potential as a captivating destination, a comprehensive strategy must be devised, embracing the city's unique cultural heritage, natural landscapes, and historical significance. This strategy envisions a multi-faceted approach that seamlessly integrates various aspects of tourism development.

- Preserving Cultural Heritage: Restore and conserve historical landmarks like the Dindigul Fort, temples, and heritage sites, creating a sense of historical connection for visitors.

- Develop guided tours that narrate the city's rich history, weaving in tales of bravery, culture, and tradition.

- Promoting Local Crafts and Cuisine: Establish craft workshops that showcase traditional art forms, enabling tourists to engage with local artisans and learn about their craft.

- Highlight Dindigul's unique culinary offerings, organizing food festivals and promoting local eateries that serve authentic regional dishes.

- Eco-Tourism and Adventure: Develop eco-tourism destinations in natural reserves like Sirumalai Hills, focusing on sustainable trekking, bird watching, and nature trails.

- Introduce adventure sports activities such as rock climbing and mountain biking to cater to thrill-seeking tourists.

- Cultural Festivals and Events: Organize cultural festivals that celebrate the city's diversity, inviting tourists to participate and immerse themselves in local traditions. Host music, dance, theater performances that showcase Dindigul's artistic talents.

- Promotion through Digital Platforms: Develop an engaging and informative tourism website that offers detailed itineraries, attraction information, and online booking options. Utilize social media platforms and travel blogs to create a buzz about Dindigul's unique offerings and experiences.

- Heritage Walks and Cycling Tours: Organize guided heritage walks that traverse historical neighborhoods, providing insights into the city's past and present. Launch cycling tours that enable tourists to explore Dindigul's lanes, immersing them in the local atmosphere.

- Hospitality and Infrastructure Development: Enhance hospitality infrastructure by establishing quality hotels, guesthouses, and homestays to accommodate diverse traveler preferences. Ensure transportation networks are well-connected and accessible, allowing tourists to navigate the city conveniently.

- Community Involvement and Skill Development: Engage local communities in the tourism sector, creating opportunities for cultural exchange and supplemental income. Provide training programs to locals involved in tourism, ensuring high standards of service and guest satisfaction.

- Heritage Conservation and Sustainability: Develop guidelines for responsible tourism to ensure that heritage sites and natural areas are preserved for future generations. Implement waste management initiatives and sustainable practices to minimize the environmental impact of tourism.

Collaboration and Partnerships: Collaborate with travel agencies, tour operators, and hospitality associations to jointly promote Dindigul as a destination. Forge partnerships with educational institutions and research centers to facilitate academic and cultural exchanges. By weaving these strategies together, Dindigul can position itself as a vibrant and culturally rich destination that caters to diverse interests. This strategic vision not only boosts tourism but also contributes to the local economy, preserves cultural heritage, and raises awareness about the city's unique offerings on a global scale.

23.3 Tourism Proposal

A Journey through Dindigul: Exploring Culture and Cuisine

- **Culture Meets Cuisine**

In 2020, India accounted for 6.33 million of the world's tourist arrivals. In 2019, Tamil Nadu welcomed a total of 501,731,166 tourists. However, due to the COVID-19 pandemic, tourist arrivals in Tamil Nadu declined in 2020-2021. In 2020, Dindigul district saw a total of 8,157,770 tourist arrivals, including 8,083,175 domestic tourists and 74,595 foreign tourist.

- **Cultural and Culinary Adventure**

Dindigul, a vibrant city in Tamil Nadu, is a sensory feast for the soul. Immerse yourself in the rich tapestry of history, spirituality, and delectable cuisine. Explore ancient temples, breathe in the serenity of nature, and tantalize your taste buds with authentic South Indian flavors. Dindigul offers a unique escape from the urban life, a place to reconnect with your inner self amidst captivating sights, sounds, and tastes. Abirami Amman Temple and Kottai Mariamman Temple, experiencing the city's rich religious heritage. Challenge yourself with a climb to the historic Rock Fort for panoramic views and exploration of its temples. Immerse yourself in the local culture at the Begampur Mosque and Tipu Sultan Memorial. Witness the illuminated Rock Fort and savor delicious street food.

Explore the bustling Gandhi Market, experiencing the sights, sounds, and aromas of local life. Afternoon Seek serenity at the Soundaraja Temple in Thadikombu. Embark on a unique culinary tour, learning to prepare the famed Dindigul Biryani and the art of spice making. Enjoy a delicious dinner showcasing your culinary creations. Sirumalai take in breathtaking views from the viewpoint, cool off at the mini waterfalls, seek blessings at the Vellimalai Sivan Temple, and explore the vibrant Biodiversity Park. Return to the Dindigul bus stand with lasting memories.

To make Dindigul as a culinary destination, the following activities may be proposed:

- **Culinary Events and Festivals**

Organizing food festivals, cooking demonstrations, or street food competitions can attract tourists interested in the local food scene.

- **Culinary Tours and Experiences**

Developing guided tours that visit spice markets, restaurants featuring local cuisine, or cooking classes can provide an immersive experience.

- **Promoting Responsible Tourism**

Highlighting sustainable practices in food production and sourcing ingredients from local farmers can appeal to eco-conscious tourists. This itinerary caters to travelers interested in,

- **Temples and History**, Explore ancient temples and the historic Rock Fort.
- **Culture and Food**, immerse yourself in local markets and learn to prepare the famed Dindigul Biryani. Sirumalai banana, Jasmine,
- **Nature,** Escape to Sirumalai for stunning scenery and a biodiversity park.

Dindigul offers a unique and enriching experience. This itinerary is a starting point for an unforgettable adventure.

Figure 23-1 Culinary Tourism in Dindigul

24 Proposed Land Use

24.1 Land use Strategy

24.1.1 Continuous Building Area

Buildings without side set back are permissible in a plot or site in continuous building areas set apart in the approved Master Plan or Detailed Development Plan or in the other areas as may be declared by the local body as CBA with the approval of the Directorate of Town and Country Planning or Government from time to time. CBA area details are collected from Corporation and incorporated in the schedule.

24.1.2 Development Suitability

Land suitability analysis is a prerequisite to achieving optimum utilisation of available land resources for defined use. Land suitability analysis is more than just a Geographical Information System (GIS) based procedure; it also can be used to locate the most suitable location for a project (Birch 2009). According to a study conducted by Joerin et al. (2001), land suitability analysis is one of the significant contributions of ArcGIS. The ArcGIS program is useful for analysing the scope desired to determine the suitability of land. Process of Land Suitability is the evaluation and grouping of specific areas of land in terms of their suitability for a defined use.

Objective of the Land Evaluation is the prediction of the inherent capacity of a land unit to support a specific land use for a long period of time without deterioration, to minimize the socio-economic and environmental cost.

24.2 Land Suitability Analysis

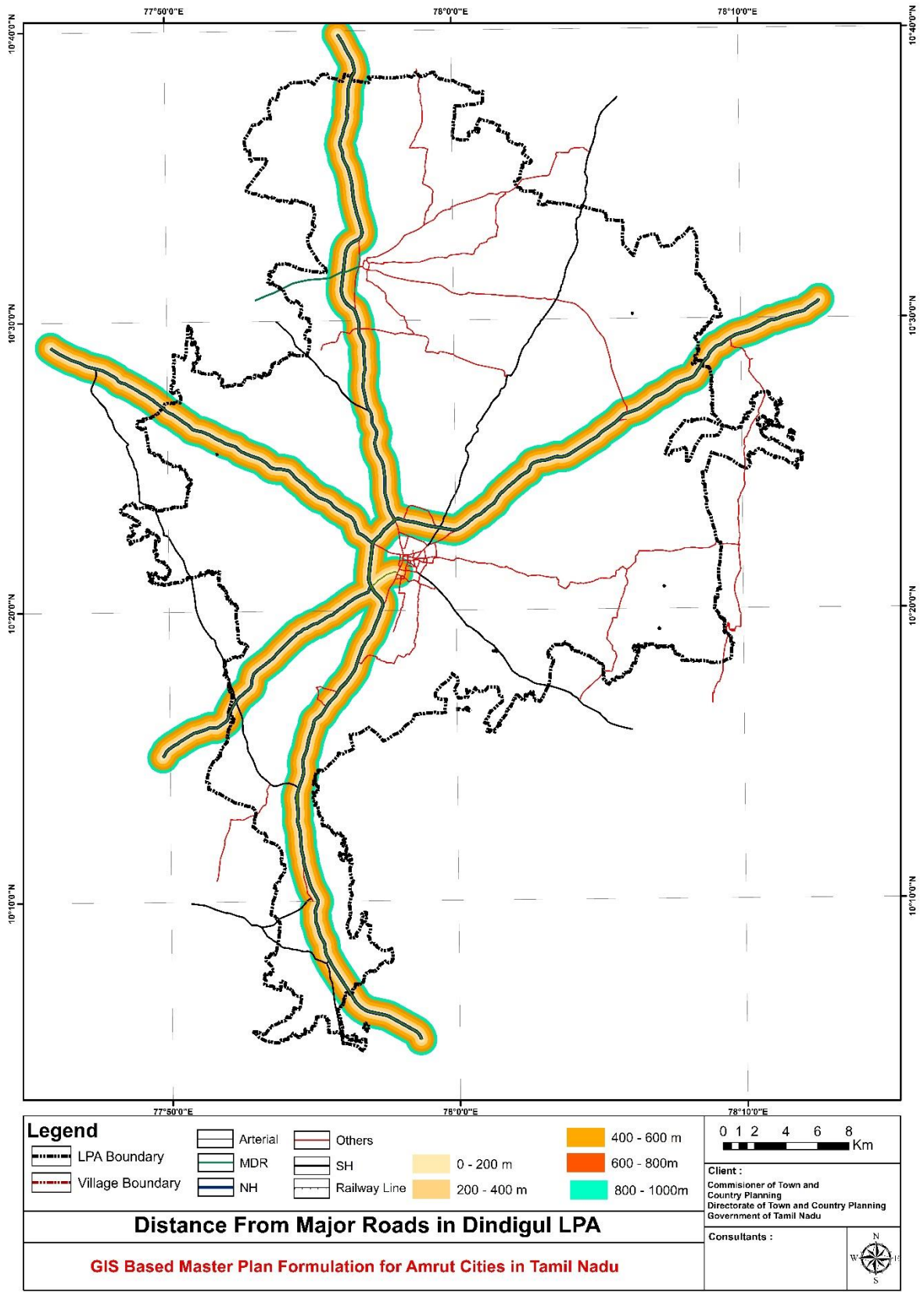
Land Suitability Analysis for Dindigul CLPA is carried out, rank for the factors is arrived based on AHP method. List of all the Land Suitability factors and their attributes and values are as follows in Table 24-1

Table 24-1 Land Suitability Analysis

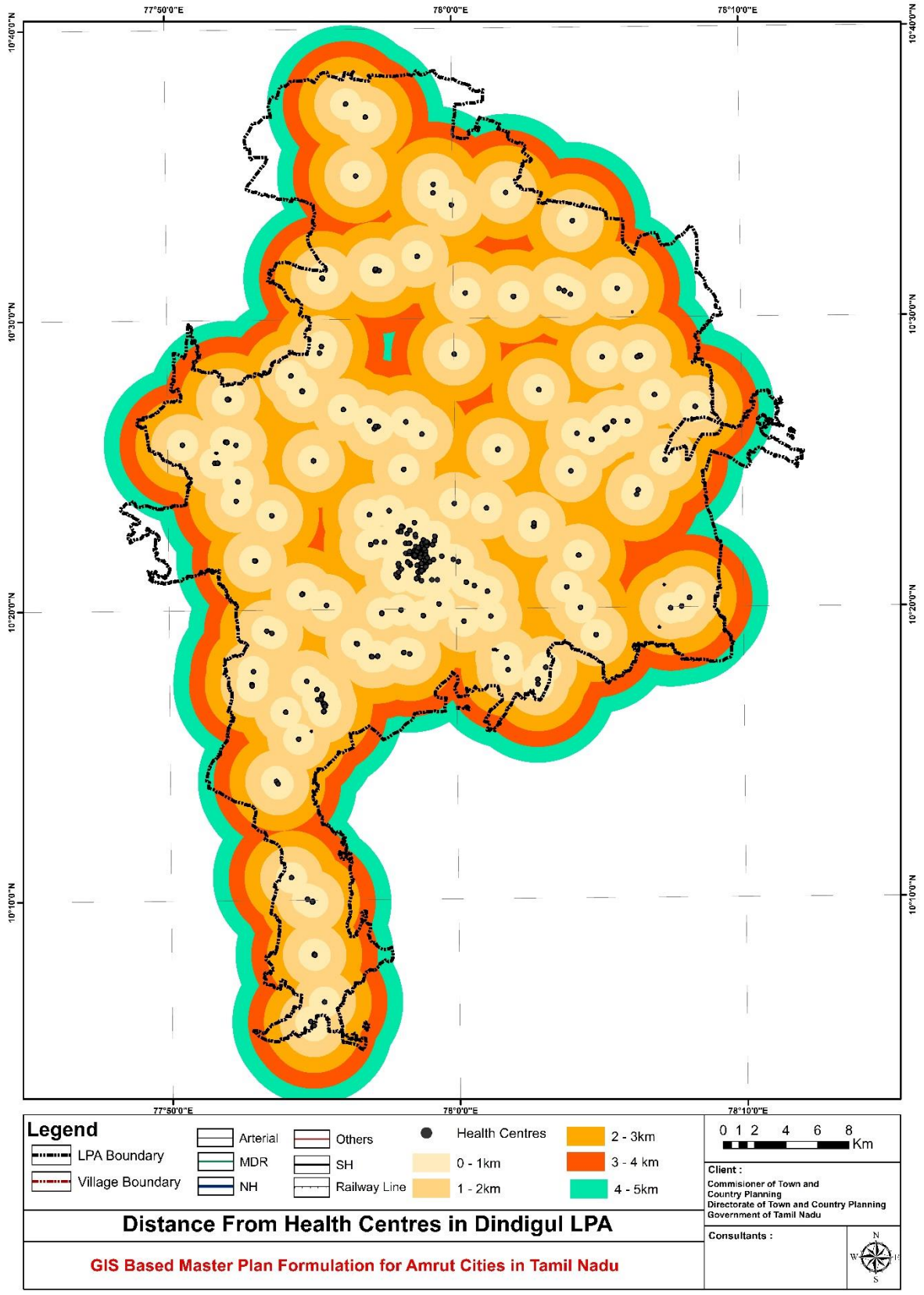
LAND SUITABILITY CRITERIA	ATTRIBUTES	VALUES
Land Use Classification	Developed	Restricted
	Agriculture Land	Restricted
	Water body	Restricted
	Vacant Land	5
Major Road (in m)	0-200	5
	200-400	4
	400-600	3
	600-800	2
	800-1000	1
Other Roads (in m)	0-200	5
	200-400	4
	400-600	3
Proximity to Railway station (in m)	0-500	5
	500-1000	4
	1000-1500	3
	1500-2000	2
	2000-2500	1
	2500-3000	1
Proximity to Railway Network (in m)	0-200	5
	200-400	4
	400-600	3
	600-800	2
	800-1000	1
Distance from Water Body	0 - 100 m	Restricted
	100 m - 200 m	1
	200 m - 300 m	2
	300 m - 400 m	3
	400 m - 500 m	4
	More than 500 m	5

Table 24-2 Land Suitability Criteria

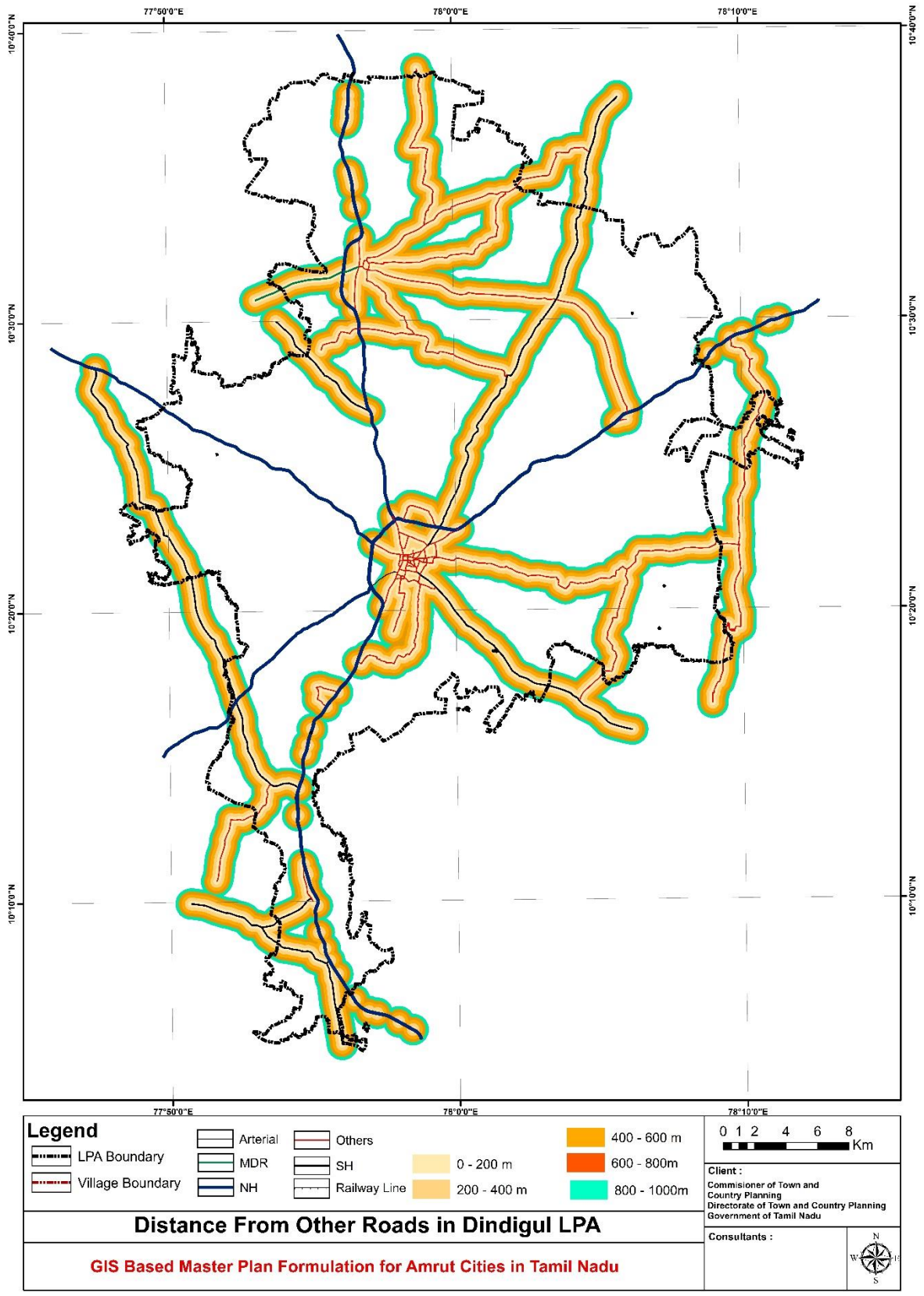
Land Suitability Criteria	Attributes	Values
Slope (in degrees)	Gentle (0–1)	5
	Moderate (1–3)	5
	Stiff (3–6) 8	4
	Steep (6–12)	3
	Very steep (More than 12)	2
Distance to Schools (in m)	0 Km - 0.25 Km	5
	0.25Km - 0.50 Km	4
	0.50Km - 1.00 Km	3
	1.00Km - 2.00 Km	2
	2.00Km - 5.00 Km	1
	More than 5.00 Km	0
Distance to Hospitals (in m)	0 Km - 1.0 Km	5
	1.0Km - 2.0 Km	4
	2.0Km - 3.0 Km	3
	3.0Km - 4.0 Km	2
	4.0Km - 5.0 Km	1
	More than5.0 Km	0



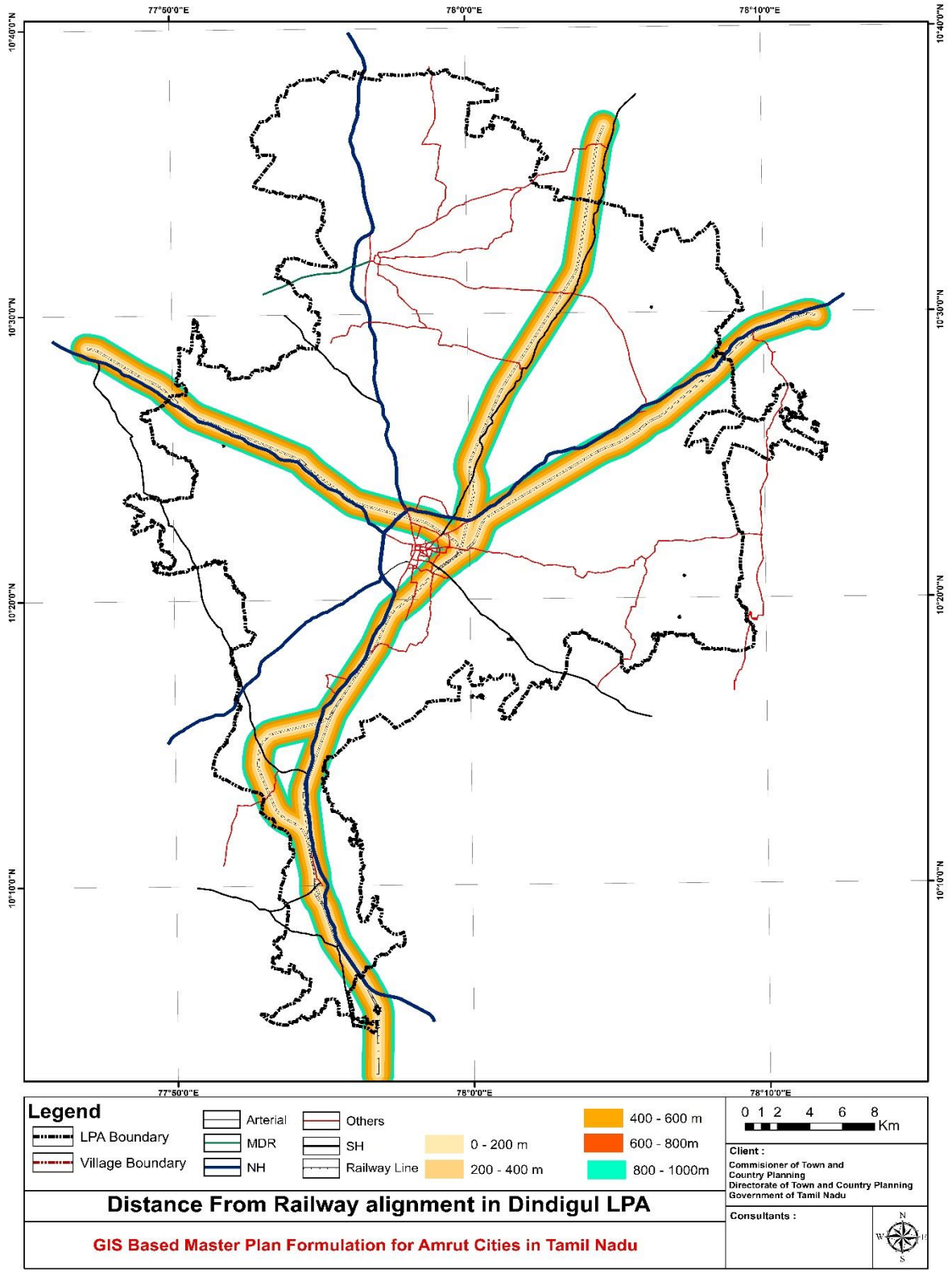
Map 24-1 Distance from Major roads in Dindigul LPA



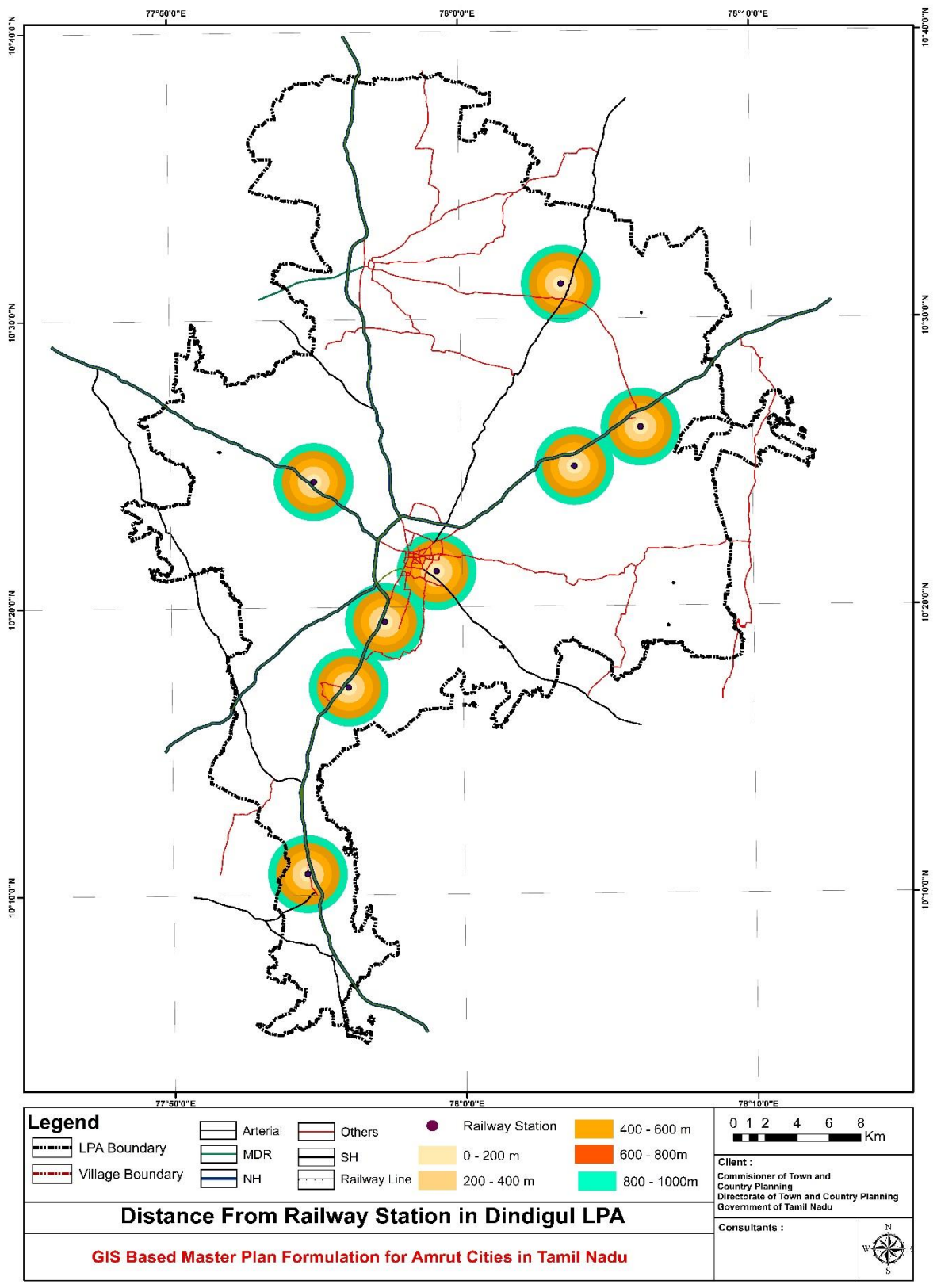
Map 24-2 Distance from Health Centres in Dindigul LPA



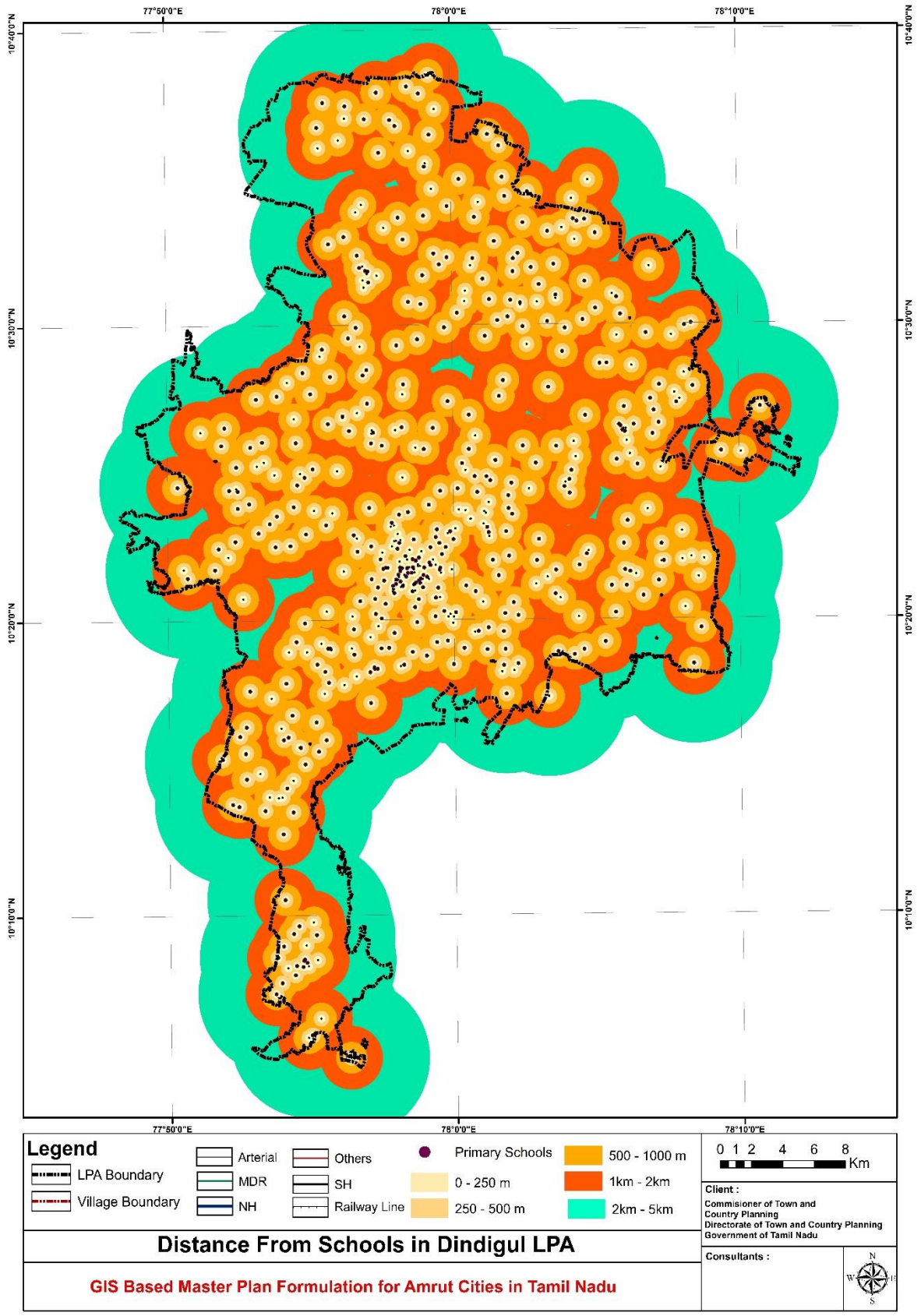
Map 24-3 Distance from Other roads in Dindigul LPA



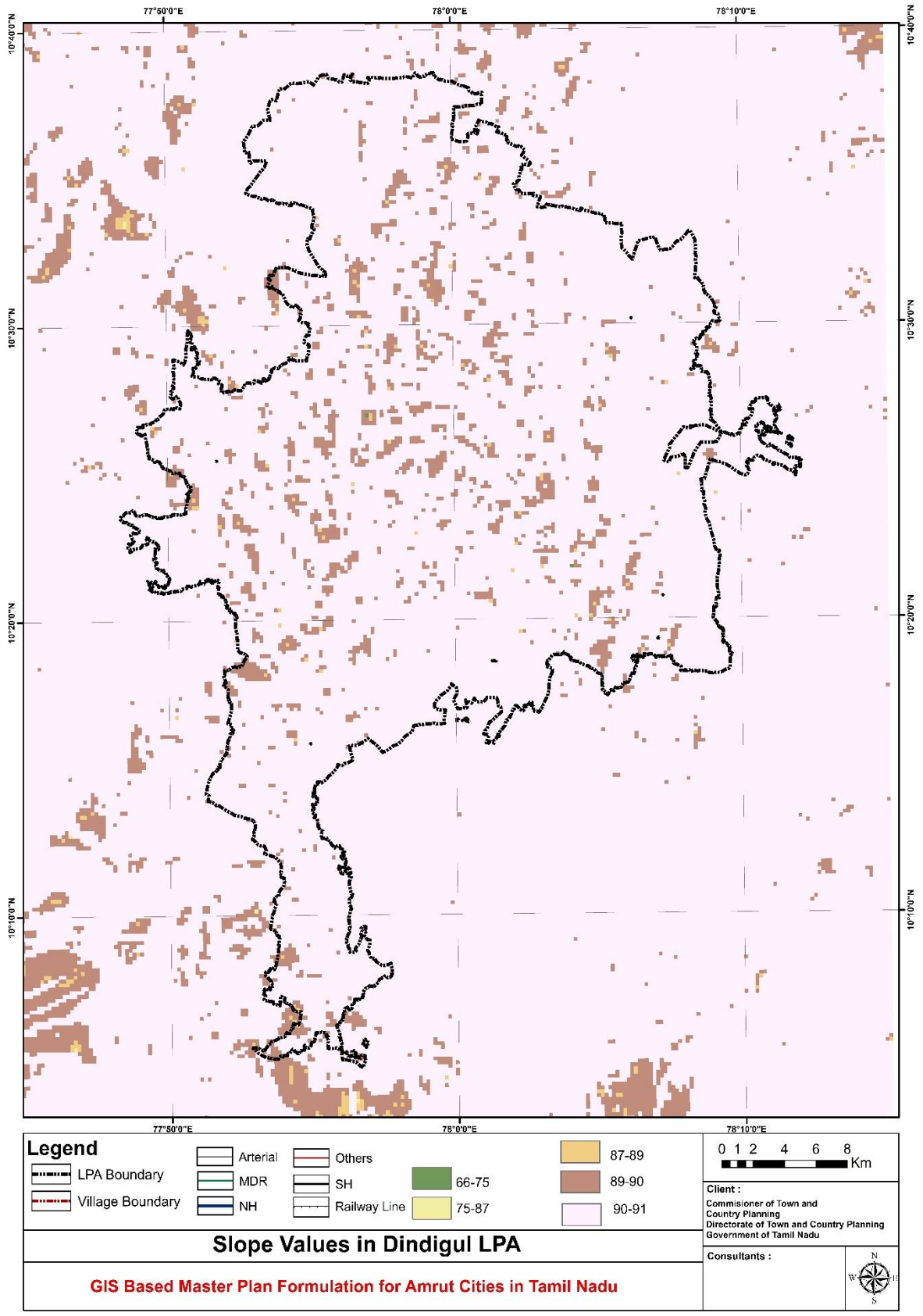
Map 24-4 Distance from Railway alignment in Dindigul LPA



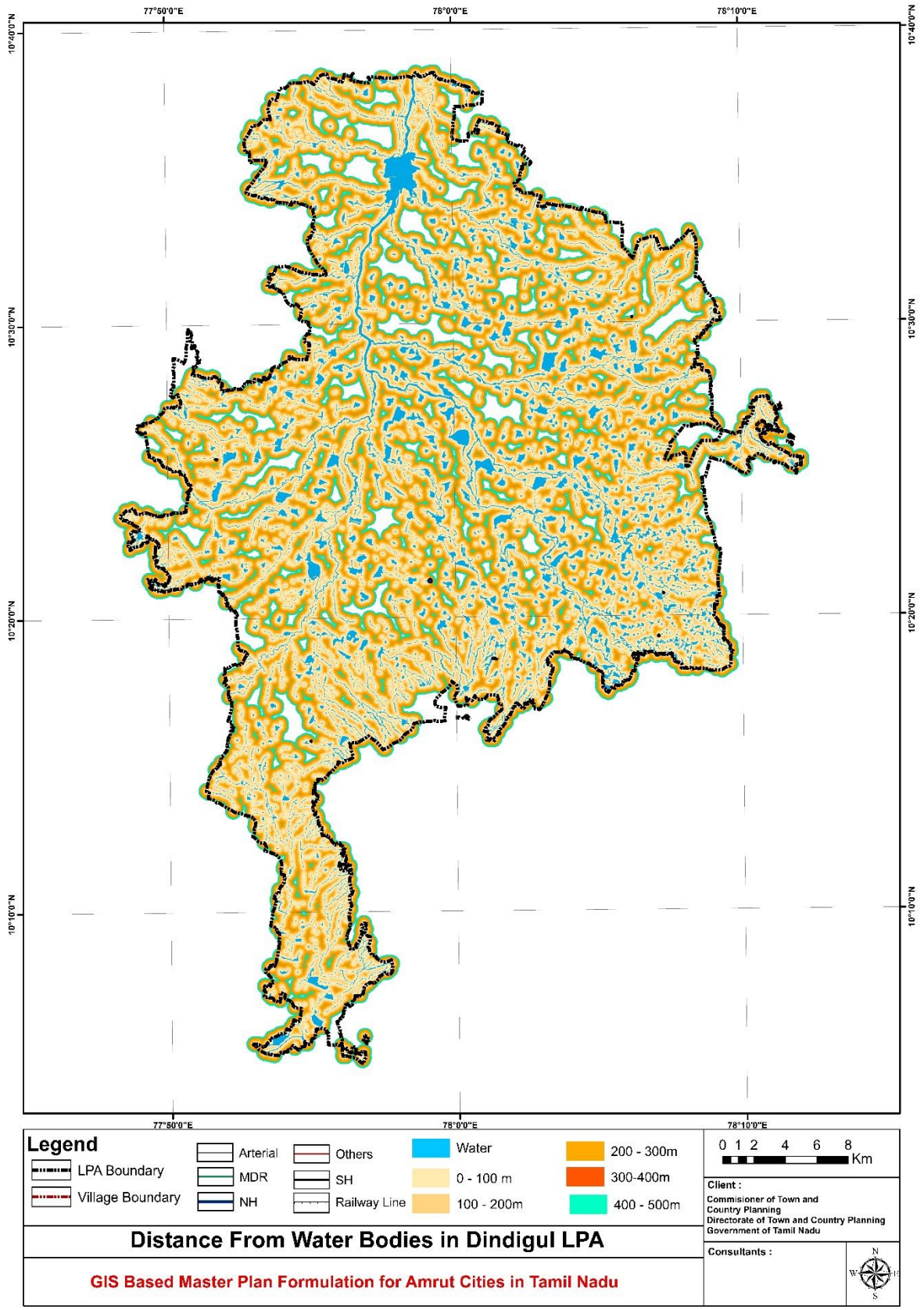
Map 24-5 Distance from railway station in Dindigul LPA



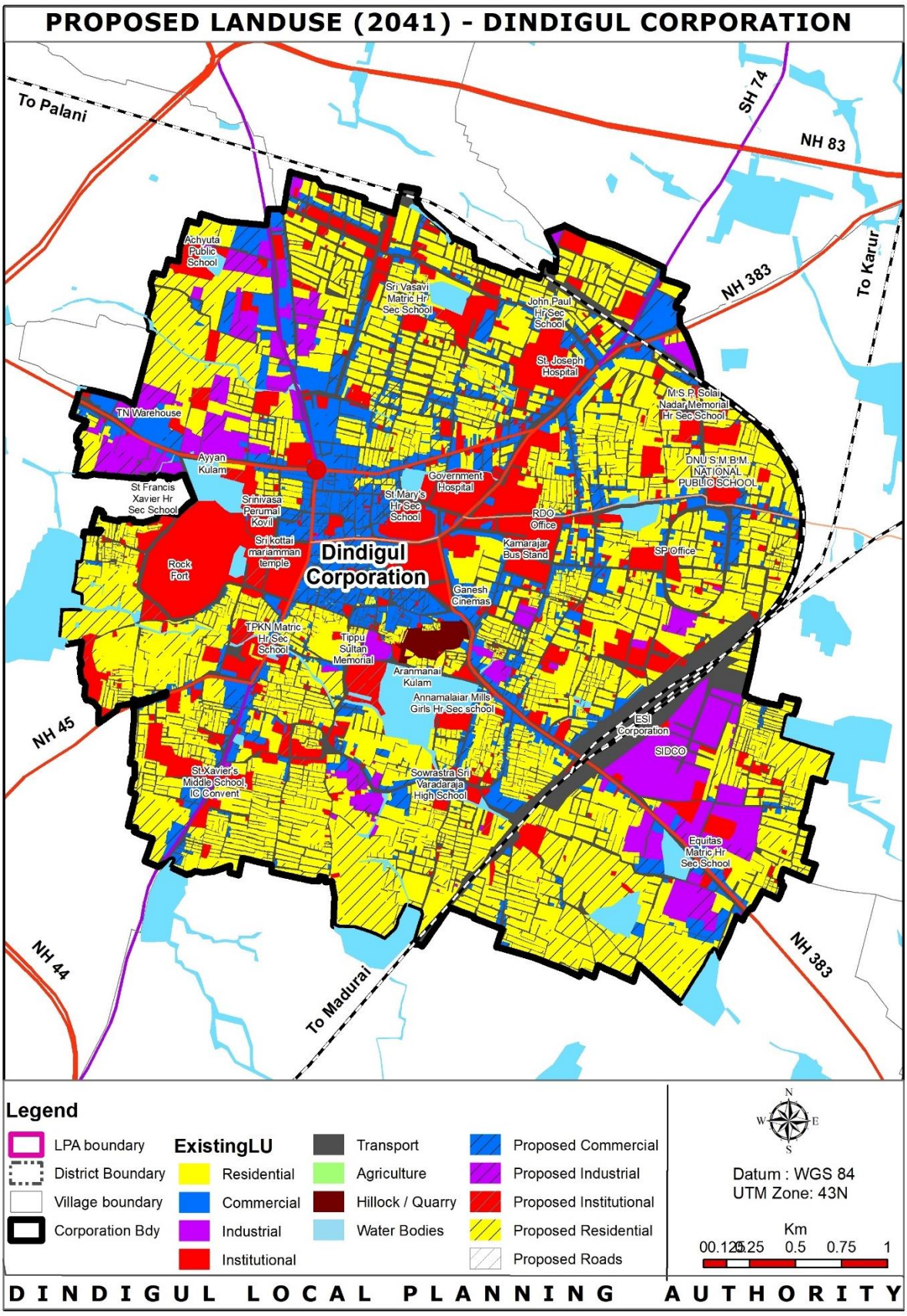
Map 24-6 Distance from Schools in Dindigul LPA



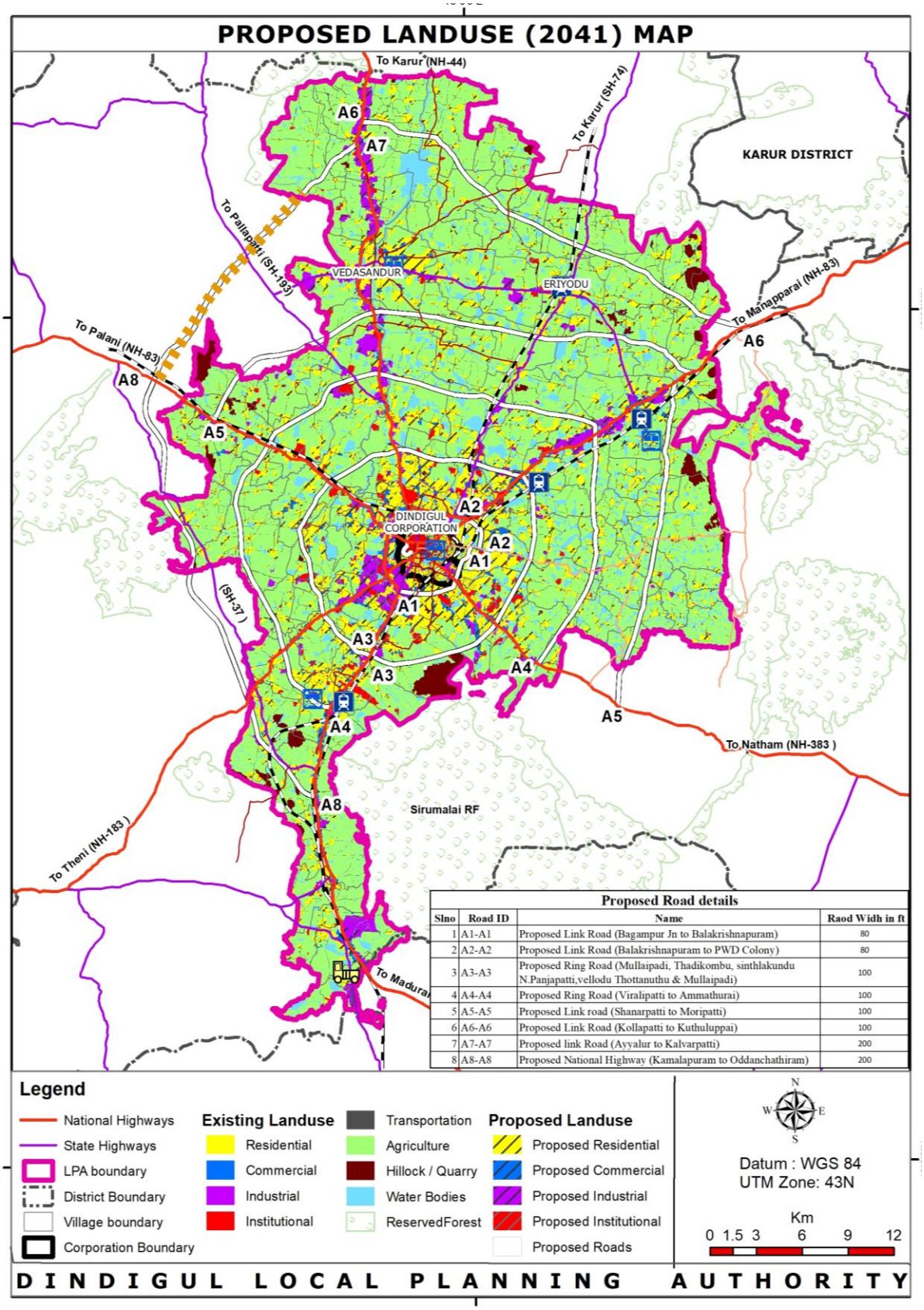
Map 24-7Slope value in Dindigul LPA



Map 24-8 Distance from water bodies in Dindigul LPA



Map 24-9 Proposed Land use Map



Map 24-10 Proposed Land use map 2041

The land use planning for Dindigul is a dynamic process that adapts to the changing needs of the city's population and urban growth. By adhering to the URDPFI guidelines and maintaining a balance between residential, commercial, industrial, and recreational spaces, Dindigul aims to create a sustainable and harmonious urban environment for its residents, ensuring a high quality of life and continued economic development. Effective land use planning remains a vital tool in shaping Dindigul's future growth and progress.

24.2.1 Residential Land Use

The Dindigul local planning area for the year of 2041, is projected to have an increase in population from 8 lakhs to 10.8 lakhs as described in population projection. This projected increase means adequate land has to be marked for the accommodated population by for end of plan period. With increasing residential demand, the need for the incidental public utilities and services are also to be increased. Keeping all these demands in mind, roughly an additional area of 9 sq.km is required. From an economic and environmental perspective, the agriculture dry land present to the west and the south-western parts of the LPA are the most suitable for residences as they have minimal impact. It should be considered that multiple parameters affect the process of organization. These parameters included. Residential has increased from 79.33 Sq.kms in 2021 to 109.33 Sq.kms in 2041, which is 8.76 % of the total LPA.

24.2.2 Commercial Use

Commercial has increased from 0.56 Sq.kms in 2021 to 15.56 Sq.kms in 2041, which is 1.25 % of the city not only from an economy and employment point of view but also in terms of spatial design and many other interlinked topics like traffic and transportation, infrastructure, etc. Currently, the only major commercial node that can be observed within the Corporation area. It could also be observed that commercial activity usually tends to happen alongside the major roads and CBD areas. This would ensure that they become economic growth engines and provide much needed socio-commercial life to a planning area. This distribution if made strategically taking into consideration the regional aspects, will also help channelize the traffic flow.

24.2.3 General Industrial Use

Dindigul LPA, has always been a significant industrial town, especially agro based industries are being responsible for the significant rise in population and economy of the

town in the 1970s. There is, however, an immense need for new age industries, especially those which could cater to the vision of being “Economically Vibrant” to pivot Dindigul into the future. Dindigul is easily poised to achieve the goal of being economically vibrant and hence the industrial infrastructure needs to be in a position to actively achieve this. Considering its rich exiting conditions and well connectivity, being a significant land for water recharge and having large areas of water bodies, no land allocation has been provided for Hazardous industries, having a good road and rail infrastructure makes it an ideal hub to host industries. With the upcoming proposed ring roads, link roads and the increasing population, the demand for further industrial places exists. The industrial zones have been identified in such a way that there is least impact on settlements, fertile cultivable lands, surface water bodies and ground water table. The Industrial Land use have increased from 14.63 Sq.kms in 2021 to 31.96 Sq.kms in 2041, which is 2.56 % of total LPA area.

24.2.4 Special and Hazardous Industries

Land suitability for special hazardous industries, several key factors has considered to ensure environmental safety, public health, and regulatory compliance. The existing industries located in Vedasandur, Nilakottai, Dindigul East and Dindigul West taluk’s. To protect natural reserves, wetlands, and other critical environmental areas from contamination, to considering all the factors there is no additional land proposed for Special and Hazardous Industries.

24.2.5 Institutional Use

Institutional use zones are essential for hosting all the public and semi-public uses like schools, colleges, clinics, hospitals, community halls, congregational spaces and service sector units like banks, government offices, etc. These institutional use zones are setup across all the proposed residential units, most of them often co-existing with the non-urban spaces and often overlooking a water body. This will help actively promote setting up institutions like schools/ colleges and hospitals that can take responsible stewardship for water bodies. The zones are based on the projection made in physical and social infrastructure, which projects a need to have a total of 184.36 ha minimum of additional area required for physical and social infrastructure educational spaces. These are the minimum which are required to fill the gap as the current projections. The Institutional Land use have increased from 5.26 Sq.kms in 2021 to 20.03 Sq.kms, which is 1.60 % of total LPA

24.2.6 Transportation Use

Transportation zone consists of all the existing and proposed roads, along with their earmarked Right of Ways (ROW). These include NH, SH, proposed arterial ring road and sub-arterial link roads. Transportation zone also includes other transportation infrastructure present in the LPA, i.e., the Dindigul City Bus Stand, the New Bus Stand and Railway Station. All the incidental traffic related infrastructure like traffic islands, etc. also come under this zone. The Transportation Land use have increased from 49.5 Sq.kms in 2021 to 54.64 Sq.kms, which is 4.38 % of total LPA area.

24.2.7 Open Space & Recreational

As discussed in Social Infrastructure chapter 9. Dindigul LPA is severely devoid of open Space and recreational. It has also been established that the overall quality of natural environment has been degrading. Household surveys have also established that both urban and rural settlements in Dindigul LPA completely lack good access to open space & recreational spaces like parks, playgrounds or green zones like urban forests, eco-parks or botanical gardens, etc. Chapter 19 projects a need to have at least 120 ha for open Space & Recreational spaces. To combat these issues, government lands/Panchayat next to areas of the highest environmental sensitivity and those that are prone to the risk of urbanization are earmarked under these uses.

24.2.8 Agriculture Use

Retaining Agricultural land to the maximum extent possible will help in maintaining the ecological balance and food security. The Agricultural Land use have decreased from 993.12 Sq.kms in 2021 to 908.67 Sq.kms in 2041, which is 72.84 % of total LPA area. While proposing developments only agricultural dry land, agriculture wet has been retained to the maximum extent.

24.2.9 Water Body

The water bodies in the area are carefully preserved and left undisturbed, covering approximately 105.15 Sq.kms, which accounts for about 8.43% of the total LPA area in 2021. This preservation is crucial for maintaining the ecological balance of the region, as these water bodies support a diverse range of flora and fauna. These water bodies play a vital role in the local ecosystem, serving as habitats for various aquatic species and contributing to the overall biodiversity of the area. They also serve as important sources of water for

irrigation, drinking, and other domestic purposes for the local communities.

24.3 Suggestions for Vertical Development

Sustainable Vertical City (SVC) is generally perceived as a Mixed-Use Development (MUD) in the form of a cluster of interconnected high-rise buildings, whereas, SVC is to be envisaged as a Built Environment to facilitate Quality of Life for all its inhabitants and visitors. Vertical City is a vision of a complete ecosystem in the sky-a place you never have to leave if you don't want to (Schiller, 2014). Ebenezer Howard had suggested Garden City for the targeted population of 32000 (Rangwala, 2016) in early 20th century, whereas, as per European Union (2011), urban center should have at least 50000 inhabitants. Functions and magnitude are the basic difference in an ideal 'SVC' and 'MUD' i. e. recently developed skyscrapers in 21st century. Perception of Sustainable Vertical City (SVC) may be different for various professionals / scholars / researchers and definition of SVC needs more clarity in terms of its magnitude and expectations from SVC by the all stakeholders like inhabitants, government, financers, technocrats, social scientists, environmentalists and service groups. Functions and zones of a city need to be discussed and accordingly parameters of SVC are to be determined. Challenges are associated in thoughtful conceptualization of SVC, particularly determining targeted capacity of inhabitants, habitable built-up area required per inhabitant open and common areas required as a ratio of habitable built up area. Statistics of total built up area and targeted capacity of inhabitants of vertical mixed-use developments so far may not be relevant for SVC, since these developments (even Shanghai Tower) are merely multi-functional buildings and not vertical cities. Parameters of sustainability are also varied in various regions in view of type of development. We may need to relook on current practices and it would be worthwhile to redefine parameters of sustainability for SVC to achieve real sustainability. Challenges associated with requirements and availability of various types of construction materials need to be discussed. Apart from engineering aspects; social, cultural and economic issues are also to be probed.

24.3.1 Advantages of Sustainable Vertical Cities

Following are some of the advantages of SVC

1. Built environment requirements for ever increasing population are supported. Remodelling and / or redevelopment of existing cities become easier because of migration to new developments.

2. Land is spared for other purposes including agriculture, mitigating environmental challenges and maintaining eco-system.

3. Cost and Fuel / Energy consumption in vehicular transportation and urban services is significantly reduced and thus air pollution is also reduced.

4. Inhabitants live within comfortable walking distance from their workplace, recreation, study and worship.

5. City systems are to work 24x7 and hence, opportunities of employment within cities and public participation in service, administration and management are enhanced.

6. Urban metabolism may turn healthy through efficient use of energy, materials and resources, waste management and recycling. Resources are optimally used and services are better managed through automation and integrated systems. It will be interesting to search for which kind of analysis and simulated results can be helpful in SVC; and the parameters for new design strategies in urban design.

24.3.2 Limitations of Sustainable Vertical Cities

SVC can be fascinating and enjoyable for particular strata of society and may be difficult to afford for some (particularly economically weaker section). Certain limitations are always associated with vertical growth some of them are as follows;

1. Environmental Impact is associated with such a large vertical development, particularly adverse of greater degree during construction phase and hence working out environmental management plan in line with established sustainability guidelines is a herculean task.

2. Cities are planned for generations with a growth potential and they do transform in course of time. In case of vertical development growth potential is restricted.

3. Vertical development is designed for a targeted life span. After completion of lifecycle, it has to be abandoned and chances of its reuse are not clear at this stage. Considering SVC as a No Growth City may be considered even an advantage of SVC; yet to be argued.

4. Evolution and growth of human settlements / cities is known from centuries and their further remodelling and transformation is feasible being horizontal growth. Whereas, concept of SVC is not time tested and hazards associated with its development and maintenance cannot be predicted at present.

5. Energy and Water footprint of SVC in construction phase is envisaged much higher than

development of conventional city of outwards growth model.

6. SVC may impact on microclimate of the region and may affect the natural flora and fauna of nearby areas, because significantly large surrounding area will be under wind and sun shadow by SVC.

7. Industrial zone (medium and heavy industry) is difficult to be incorporated in scheme because of associated air and noise pollution and other environmental hazards associated, and hence sustainable economy is questionable.

8. Connectivity to other such cities via air travel is not feasible in small SVC.

9. Chances of mass destruction are higher in case of natural calamities and other action generated disasters. In planning for a sustainable future for our planet, it is vital that we achieve a seamless and benign bio-integration of all human interventions in natural environment.

24.3.3 Challenges of Sustainable Vertical Cities

Conceptualization and determining the magnitude (total covered habitable and common open built up area) of SVC and construction in itself are challenges. Cities with the growing urban mass will turn to a more resource, land, food and energy demanding consumers and they should be productive to be genuinely sustainable. Some of potential challenges envisaged in building SVC are being mentioned hereunder.

- To fulfil demand of sustainable building materials, energy, water, and soil from nearby areas for building SVC.
- To create / mimic nature in sky and integrating natural ecosystem with urban ecosystem of SVC to provide open public spaces / gardens for visual and psychological comfort.
- Rapid Transportation across levels for public connectivity (apart from elevators for vertical movement installed in various service cores). Food Security is a formidable challenge and innovative solutions for incorporating agriculture, milk production and vertical eco farming facilities within SVC to cater to the daily needs of inhabitants is imperative.
- Generation of onsite energy through renewable resources to cater to the demand of

about 25% of annual energy consumption of SVC.

- Connectivity and coordination of horizontal and vertical movement and services for efficient functioning. Challenges are interrelated and should not be addressed independently. These often seem contradictory objectives; and their interrelations and contradictions need to be properly understood. Linking rapidly advancing technological scenario to the fields as diverse as climate, history, philosophy, economics, politics, culture, environment, aesthetics, and pragmatics is a challenge to conceptualize SVC (Cuthbert, 2006). SVC has to manage resilient and inclusive local economy and environment which is linked to the global economy and environment.

24.4 Comparison of Land Use

Table 24-3 Comparison of Existing and Proposed Land use - Corporation

S. No	Land Use	Existing land use (Sq.kms)	Total Percentage	Proposed Area (Sq.kms)	Total Percentage	Changes in sq.km	URDPFI Standards in %
1	Residential	4.85	34.62	5.4	38.54	0.55	36 – 39
2	Commercial	0.8	5.71	1.68	11.99	0.88	5 -6
3	General Industries	0.65	4.78	0.83	6.07	0.18	7 -8
4	Special & Hazardous Industries	0.018	0.12	0.018	0.12	0	-
5	Institutional	1.72	12.28	1.78	12.71	0.06	10 -12
6	Transportation	2.5	17.84	2.51	17.92	0.01	12 -14
7	OSR	0.07	0.50	0.15	1.07	0.08	14-16
8	Agriculture	2.95	20.94	1.19	8.37	-1.76	Balance
9	Water body	0.45	3.21	0.45	3.21	0	Balance
Total		**14.01**	**100**	**14.01**	**100**		**100**

Table 24-4 Comparison of Existing and Proposed Land use - LPA

S. No	Land Use	Existing Area in Sq. Kms	Area in %	Proposed Area in Sq. Kms	Area in %	Changes in Sq.kms
1	Residential	79.33	6.36	109.33	8.76	30
2	Commercial	0.56	0.04	15.56	1.25	15

3	General Industries	12.59	1.09	31.96	2.56	19.37
4	Special & Hazardous Industries	2.038	0.16	2.038	0.16	0
5	Institutional	4.78	0.38	19.44	1.56	14.66
6	Transportation	49.5	3.97	54.64	4.38	5.14
7	OSR	0.48	0.04	0.59	0.05	0.11
8	Agriculture	992.95	79.55	908.67	72.85	-84.28
9	Water Body	105.15	8.43	105.15	8.43	0
Total		**1247.38**	**100**	**1247.38**	**100**	

The proposed land use for the Total LPA in 2041 envisages a more balanced allocation of land to accommodate the growing population and promote economic development. Residential areas are projected to increase to 8.76%, providing adequate housing for the expanding population. Commercial spaces are expected to expand to 1.25%, catering to the city's economic needs. Industrial and institutional areas are proposed to increase to 2.74% and 1.60%, respectively, to support the growing industrial and educational sectors. Agricultural land is projected to decrease to 72.84% while still preserving a significant portion of land for agriculture. Transport and communication areas are proposed to increase to 4.38%, reflecting the city's infrastructure development plans. Water bodies and green areas are expected to remain stable at 8.43%. The land use planning for the Total LPA in Dindigul aims to strike a balance between urban development and preserving the city's natural resources. By accommodating the increasing population through expanded residential areas and promoting economic growth with the allocation of land for commercial and industrial purposes, the Total LPA seeks to create a sustainable and vibrant urban environment for its residents. Additionally, the preservation of agricultural land and green spaces ensures the city's long-term ecological stability and enhances the overall quality of life. Effective land use planning remains a critical tool in shaping the Total LPA's future growth and progress, supporting Dindigul's journey towards becoming a well-planned and sustainable urban center.

S.No.	Classification	Sub-category	Population Range	Governing Local Authority	Number of Cities as per Census of India, 2011
1	Small Town*	Small Town I	5,000 - 20,000	Nagar Panchayat	7467
		Small Town II	20,000- 50,000	Nagar Panchayat/ Municipal Council	
2	Medium Town	Medium Town I	50,000 to 1,00,000	Municipal Council	
		Medium Town II	1 lakh to 5 lakh	Municipal Council	372
3	Large City	--	5 lakh to 10 lakh	Municipal Corporation	43
4	Metropolitan City	Metropolitan City I	10 lakh to 50 lakh	Municipal Corporation/ Metropolitan Planning Committee	45
		Metropolitan City II	50 lakh to 1 Crore	- Same -	5
5	Megapolis	--	More than 1 Crore	- Same -	3

Figure 24-1 URDPFI Standards

Dindigul CLPA Comes under large city as per population criteria and standards for Land use composition of large cities are as follows:

S.No.	Land use Category*	Percentage of Developed Area			
		Small	Medium	Large Cities	Metropolitan Cities & Megapolis
1	Residential	45-50	43-48	36-39	36-38
2	Commercial	2-3	4-6	5-6	5-6
3	Industrial	8-10	7-9	7-8	7-8
4	Pub. & Semi Public	6-8	6-8	10-12	10-12
5	Recreational	12-14	12-14	14-16	14-16
6	Transport & Communication	10-12	10-12	12-14	12-14
7	Agriculture, Water bodies and Special areas	Balance	Balance	Balance	Balance
8	**Total Developed Area**	**100**	**100**	**100**	**100**

Figure 24-2 URDPFI Standards

The proposed land use plan for the Total LPA aligns with the Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines. These guidelines recommend specific land use percentages for different categories to ensure sustainable urban development. The proposed plan for the Total LPA complies with URDPFI guidelines, with residential land use falling within the range of 36-39%, commercial land use within 5-6%, and industrial land use within 7-8%. Similarly, institutional land use falls within the recommended range of 10-12%, and transport & communication land use aligns with the 12-14% range.

25 ZONING REGULATIONS

25.1 Residential use zone

In this zone buildings or premises shall be permitted only for the following purposes and accessory uses. Permissible non-residential activity shall be limited to one in a sub-division.

i) Any residence including dwelling, detached, semi-detached, tenements or flats and service apartments.

ii) Professional consulting offices and incidental uses thereto occupying a floor area not exceeding 40 Sq.m.

iii) Nursery schools, Primary Schools, High Schools, Higher Secondary Schools, Libraries and reading rooms.

iv) Parks, playgrounds, farms, gardens, nurseries, including incidental buildings thereon.

v) Cottage industries listed in G.O.Ps.Nos.565 and 566 dated 12.3.1962 as amended and indicated in Annexure - V, with number of workers not exceeding 8 and electric machineries not exceeding 5 H.P.

vi) Installation of Motor for pumping water, Air conditioning, Lifts, Solar Heaters, Dish Antennas, etc.

vii) Storage of domestic cooking gas cylinders subject to the conditions prescribed in G.O.M.sNo.329 dated 24.2.1977 viz. the applicant should obtain necessary clearance from the Director of Fire and Rescue Services and from the Dept. of Explosives of the Govt. of India.

viii) Working women hostels, old age homes

ix) Professional consulting offices, Schools of Commerce including Tutorial Institutions, Govt./Semi Govt. Offices, Banks, Pay Offices, Post Office, Offices of Electricity Board, Chennai City Corporation, Tamil Nadu Cooperative Milk Producers Federation Limited, etc. occupying a floor area not exceeding 300 sq.m.

x) Public Utility Buildings like sewage pumping stations, water works, Fire stations, Telephone exchanges.

xi) Swimming Pool attached to residential activity in a plot.

xii) Daily or weekly markets serving local needs.

xiii) Transport depots, Bus Terminus and Railway Stations.

xiv) Burning, Burial grounds, crematoria and cemeteries.

xv) Air-conditioned Cinema Theatres abutting min. 12 m wide road.

xvi) Banks and Safe Deposit Vaults, Business Office and other Commercial or Financial Institutions occupying floor area not exceeding 500 sq.m. Provided the width of the abutting road is minimum 10m.

xvii) Hotels, Restaurants occupying a floor area not exceeding 500 sq.m.

xviii) Hostels, Dormitories, Boarding and Lodging houses and Welfare Institutions occupying a floor area not exceeding 500 sq.m.

xix) Clinics, Hospitals, Dispensaries, Nursing Homes and other Health facilities occupying a floor area not exceeding 500 sq.m. Provided the width of the abutting road is minimum 10m.

xx) Establishments and shops retailing in vegetables, fruits, flowers, fish, meat and such other daily necessities of the residents, including provisions, soft drinks, newspapers, tea stalls, milk kiosks, cycle repair shops, internet / computer centres, ATMs etc. departmental stores occupying floor area not exceeding 500 sq.m. Or organized markets.

xxi) Bakeries, Confectionaries, Laundries, tailoring, Goldsmith shops, hairdressing saloons occupying floor area not exceeding 500 sq.m.

xxii) Fuel filling stations, and automobile service stations with installation not exceeding 30 HP.

xxiii) Industries listed by the Tamil Nadu Pollution Control Board as 'Green' Industries listed in Annexure - VI and subject to maximum installation of 30 HP.

xxiv) Taxi stands and car parking including multilevel parking

xxv) Automobile workshop with floor area not exceeding 300 sq.m and electrical installations not exceeding 15 H.P.

xxvi) Religious buildings and welfare institutions occupying a floor area not exceeding 500 sq.m.

(2) All uses/activities not specifically mentioned under sub-regulations (1) above shall be prohibited in this zone.

25.2 Commercial use zone

(1) In this zone, buildings or premises shall be permitted only for the following purposes and accessory uses:

i) All activities that is permissible in Residential Zone without restriction of floor area (except industries).

ii) All commercial and business uses including all shops, stores, markets, shopping centers and uses connected with the display and retail sale of merchandise but excluding explosives, obnoxious products, and other materials likely to cause health hazards and danger to lives.

iii) Fuel filling stations, automobile service stations and workshops with installation not exceeding 50 HP.

iv) Industries listed out by the Tamil Nadu Pollution Control Board as “Green” Industries listed in Annexure - VI and as “Orange Industries” listed in Annexure - VII subject to a maximum installation of 50 HP.

v) Research, Experimental and Testing laboratories not involving danger of fire, explosives or health hazards.

vi) Warehouses and other uses connected with storage of wholesale trade in commodities not notified under the Specified Commodity Act, but excluding storage of explosives or products which are either obnoxious or likely to cause health hazards.

vii) Buildings for development of software and its associated computer technology applications, IT Parks.

viii) Broadcasting, telecasting and telecommunication stations.

ix) Helipads subject to clearance by Civil Aviation department, Directorate of Fire and Rescue Services and police department.

x) Manufacture of computer hardware

xi) Preview theatres and dubbing theatres.

xii) Colleges, higher educational, technical and research institutions.

xiii) Foreign Missions, Embassies and Consulates.

xiv) Air-conditioned Cinema Theatres along roads of width min. 12 m and Assembly Halls and Kalyana Mandapams along roads of width min. 15 m and Multiplex / Malls along roads of width min. 18m.

(2) All uses/activities not specifically mentioned under sub-regulations (1) shall be prohibited.

25.3 Industrial use zone

(1) In this zone, buildings or premises shall be permitted only for the following purposes and accessory uses:

i) In approved layouts residential, commercial, and institutional and other activities as designated therein.

ii) Using electrical H.P or with employees not exceeding 100 in number but excluding industries of obnoxious and hazardous nature by reasons of odour, effluent, dust, smoke, gas, vibration or otherwise likely to cause danger or nuisance to public health or amenity.

iii) Residential buildings for security and other essential staff required to be maintained in the premises.

iv) All use permissible in Residential and commercial use zones

v) Storage of petroleum timber and explosives and inflammable and dangerous materials

vi) All industries (without restrictions of H.P or floor area or number of workers) except those industries listed under as Red category in Annexure of these regulations.

vii) Container terminals (at sites abutting or gaining access from minimum 18 metre wide public road)

(2) All uses not specifically mentioned under sub-regulations (1) shall be prohibited in this zone.

25.4 Special and Hazardous Industrial use zone

(1) In this zone buildings or premises shall be permitted only for the following uses and accessory uses:

i) All Industrial activities permissible in Industrial zone

ii) All special and hazardous industries (classified as 'Red' by the Tamil Nadu Pollution Control Board) without restriction of Horse Power that are likely to be dangerous to human life or health or amenity, but sufficient precaution to the satisfaction of the TNPC Board have been taken to eliminate noxious or dangerous effluents and to alleviate danger to human life or health or amenity (Annexure - VIII).

iii) Uses involving storage, handling and other uses, incidental to such industries.

iv) Residential, commercial, Institutional and recreational uses incidental to the uses listed above.

(2) All uses not specifically mentioned under sub-regulations (1) above shall be prohibited.

25.5 Institutional use zone

(1) In this zone buildings or premises shall be permitted only for the following purposes and accessory uses:

i) Educational institutions including colleges and institutions of higher education, research, technical and training in nature.

ii) Govt. and quasi Govt. offices and institutions

iii) Professional and business offices

iv) Art galleries, Archives, Museums, Public Libraries, Social and Cultural Institutions and Religious buildings.

v) Hospitals, Sanatoria, and other medical and public health institutions.

vi) Parks, Play fields, Swimming pools and other public and Semi public open spaces.

vii) Broadcasting, telecasting, installations and Weather stations.

viii) Public utilities, municipal and community facilities.

ix) Nursery, Primary and Secondary Schools.

x) Social and Cultural Institutions including Sabhas.

xi) Residential and commercial spaces not exceeding 500 sq.m.permissible in this use zone.

xii) Transport terminals, bus and railway stations, Airport, Harbour, and parking lots including multilevel parking lots

xiii) Cinema theatres and others entertainment centres and Kalyana mandapams.

xiv) Clubs, community halls, Assembly halls, Auditoriums and Theatres

xv) Sports stadium, Recreation Complexes, Exhibition, Fares.

xvi) Burial Ground, Burning Ground, Cemeteries, crematoria

xvii) Buildings for development of software and its associated computer technology applications I.T.Parks

xviii) Manufacture of computer hardware

xix) Bio- informatics centres.

xx) Container terminals at sites abutting and gaining access from public roads of width minimum 18 metres

xxi) Foreign mission, Embassies, Consulates

xxii) All public and semi public recreational uses and open spaces, parks and play grounds, zoological and botanical gardens, nurseries, waterfront developments, museums and memorials.

xxiii) Theme parks and amusement parks

xxiv) Open Air Theatre, Exhibitions, Circuses, Fairs and Festival grounds, public utilities.

xxv) Installations that may be necessary for the uses mentioned above.

xxvi) Installations that may be necessary for the uses mentioned above.

(2) All uses not specifically mentioned under sub regulations (1) shall be prohibited.

Note:

In the rest of the state, areas zoned for public and semi public use zone and educational use zone shall be equated to institutional use zone and the activities shall be regulated accordingly.

25.6 Open Space and Recreational use zone (only in CMA)

(1) In this zone buildings or premises shall be permitted for the following purposes and accessory uses:

i) All public and semi public recreational uses and open spaces, parks and play grounds, zoological and botanical gardens, nurseries, waterfront developments, museums and memorials.

ii) Theme parks and amusement parks

iii) Open Air Theatre, Exhibitions, Circuses, Fairs and Festival grounds, public utilities.

iv) Burial and burning grounds or crematoria.

v) Incidental residential uses for essential staff required to be maintained in the premises.

vi) Incidental commercial uses

vii) Hotels and restaurants not exceeding 300 sq.m.

viii) Beach cottages each not exceeding 100 sq.m. in floor area and 7.5 m in height.

ix) Sports stadia and recreational complexes.

x) Installations that may be necessary for the uses mentioned above.

(2) All uses not specifically mentioned in sub regulations (1) shall be prohibited.

25.7 Urbanisable use zone (only in CMA)

(1) In this use zone, buildings or premises shall be permitted for the following purposes and accessory uses.

i) All uses permissible in commercial and institutional use zones

ii) All industries with installations not exceeding 200 H.P and permissible in industrial use zone

(2) All uses not specifically mentioned in sub regulations (1) shall be prohibited.

25.8 Non-Urban use zone (only in CMA)

(1) In the Non-Urban use zone, buildings or premises shall be permitted for the following purposes and accessory uses:

i) All Agriculture uses

ii) Burning, Burial grounds, crematoria and cemeteries

iii) Salt pans and salt manufacturing.

iv) Brick, earthen tile or pottery manufacturing.

v) Stone crushing and quarrying.

vi) Sand, clay and gravel quarrying.

vii) Installation of electrical motors not exceeding 50 HP that may be required for the uses mentioned above.

viii) Incidental residential uses

(2) All uses not specifically mentioned in sub regulations (1) shall be prohibited.

25.9 Agricultural use zone:

(1) In the Agricultural use zone buildings or premises shall be normally permitted for the following purpose and accessory uses:

A. Normally permissible uses:

i) All Agricultural uses.

ii) Farm houses and buildings for agricultural activities.

iii) All the uses permissible in the residential use zone within the natham boundaries

(settlements)

iv) Dairy and cattle farms

v) Piggeries and poultry farms

vi) Forestry

vii) Storing and drying of fertilizers

viii) Installation of electric machinery of not exceeding 15 horse power may be allowed for the uses mentioned above.

ix) Sewage farms and garbage dumping sites.

x) Mills for grinding, hulling, etc. of cereals, pulses, food grains and oil seeds provided the site has proper access and installations do not exceed 50 H.P.

xi) Burning and Burial grounds, Crematoria and Cemeteries.

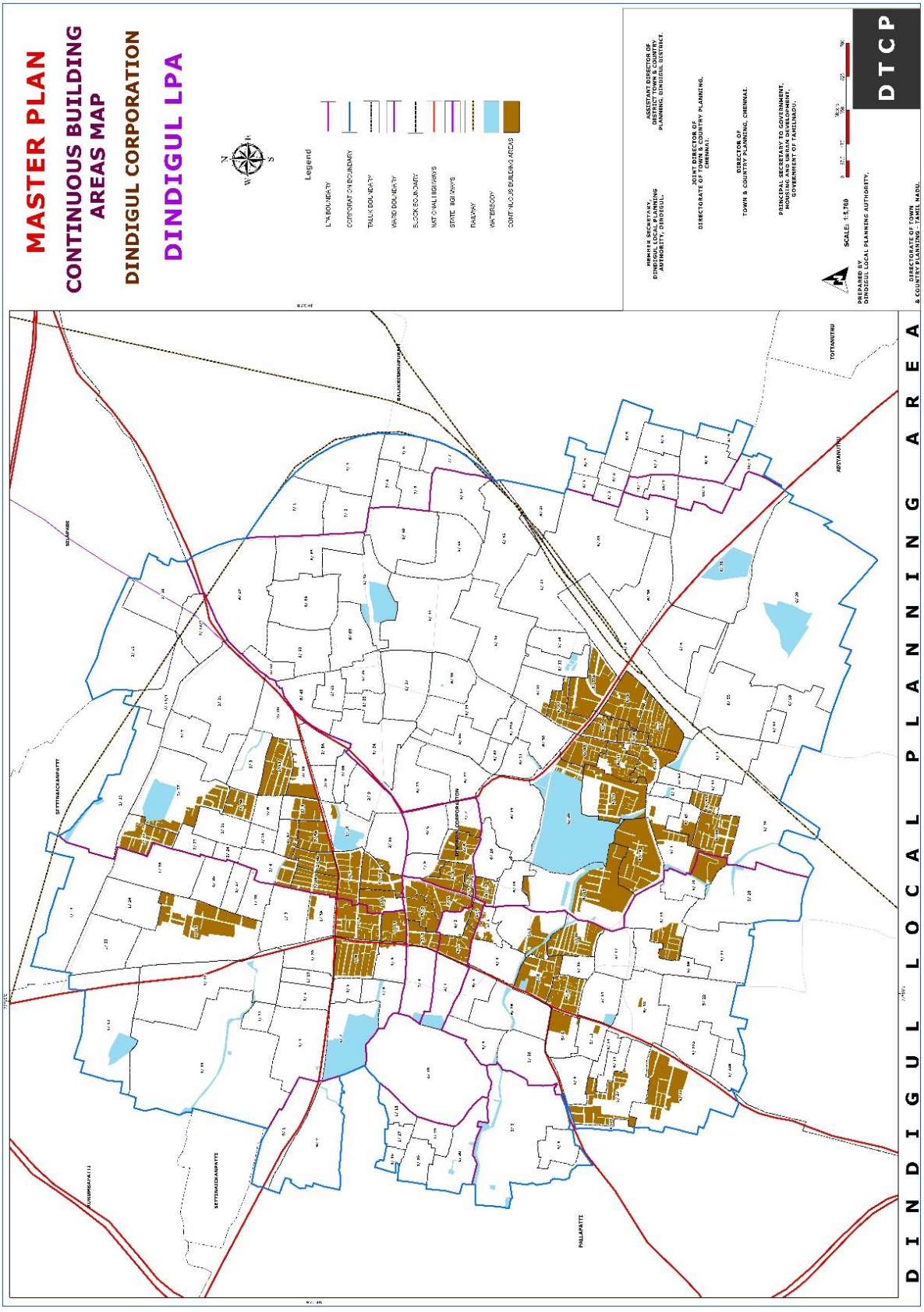
(2) All uses not specifically mentioned in sub regulations (1) shall be prohibited.

26 Continuous building area

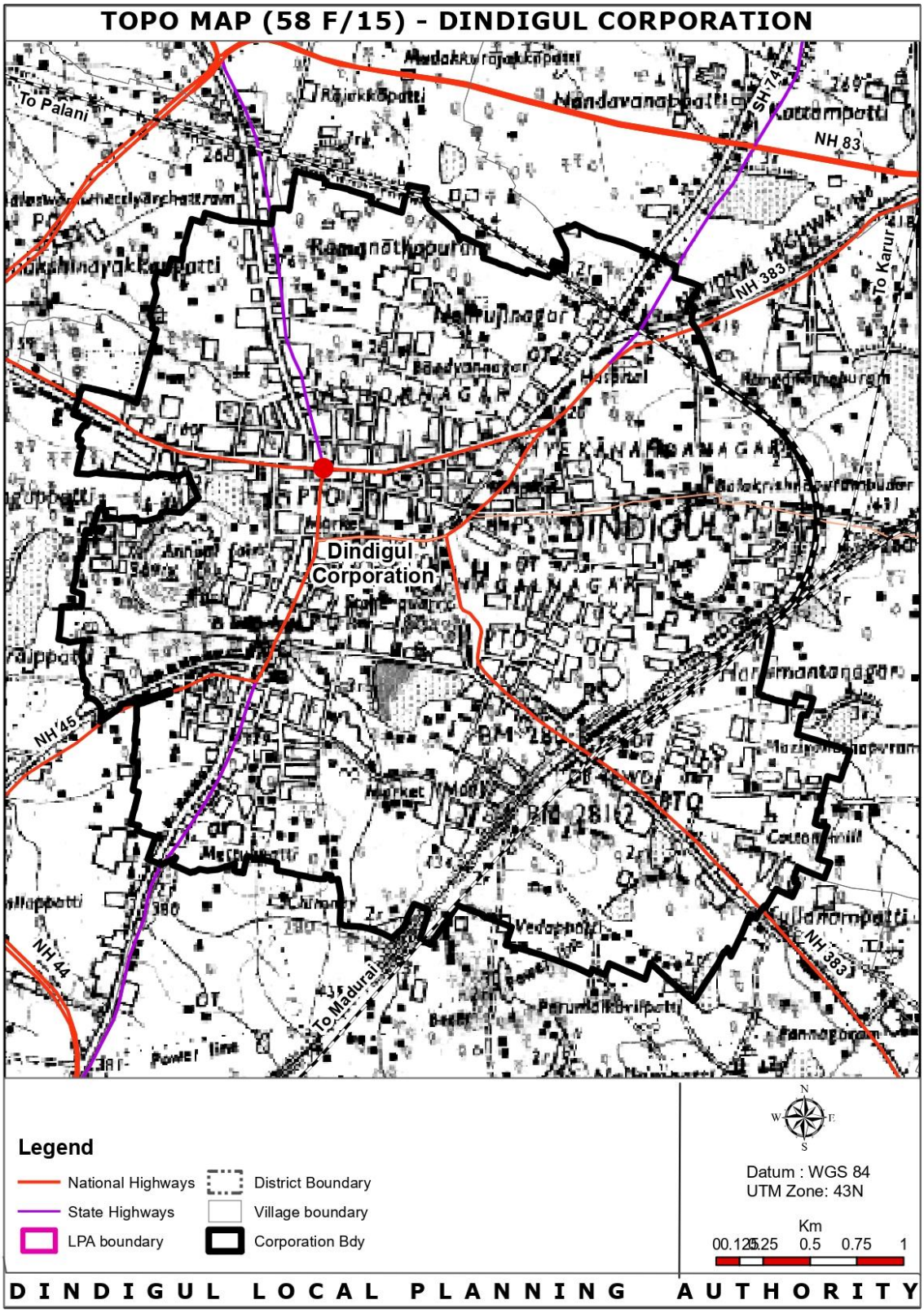
Continuous building area refers to an area within a city or urban environment where structures such as buildings, houses, commercial complexes, or other forms of construction are densely packed together without significant gaps or open spaces. This term is commonly used in urban planning and zoning to describe zones or neighbourhoods characterized by high building density and minimal green space or open areas. Continuous building areas often represent urban centres or districts where land use is primarily devoted to accommodating human activities, such as residential, commercial, or industrial purposes.

In such areas, buildings typically share common walls or have limited spacing between them, creating a continuous built form along streets or within blocks. The presence of continuous building areas can influence various aspects of urban life, including transportation patterns, infrastructure needs, access to amenities, and the overall urban fabric's character.

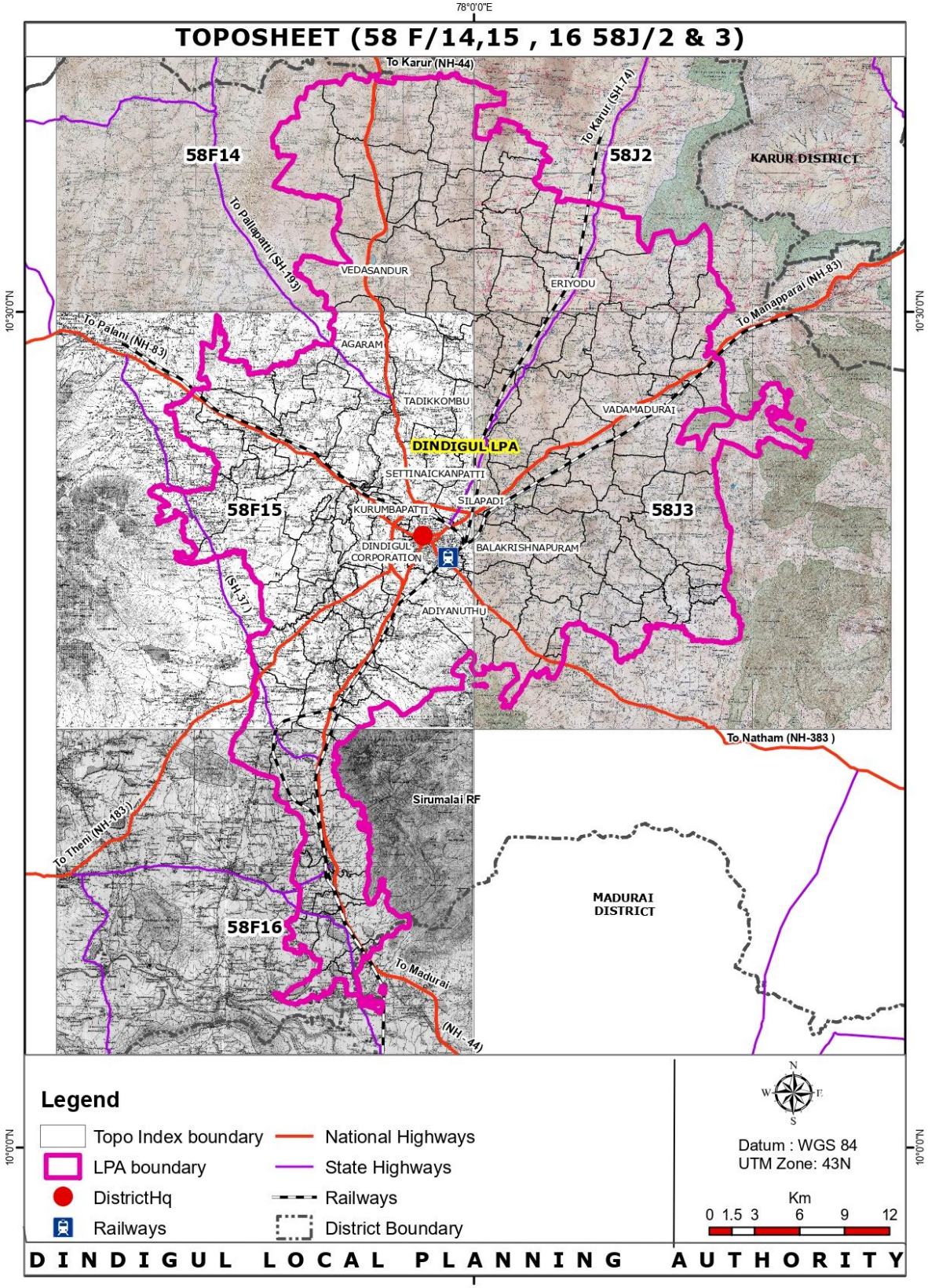
Buildings without side set back are permissible in a plot or site in continuous building areas set apart in the approved Master Plan or Detailed Development Plan or in the other areas as may be declared by the local body as CBA with the approval of the Directorate of Town and Country Planning or Government from time to time. However, in an approved layout area only in the plots classified for Continuous type of buildings it is permissible. However, in an approved layout area only in the plots classified for Continuous type of buildings it is permissible. (Source: Tamil Nadu Combined Development and Building Rules (TNCDBR), 2019 According to the TNCDBR, buildings without side set back are permissible in a plot or site in continuous building areas set apart in the approved Master Plan or DDPs. Dindigul LPA Continuous Building Area details are collected from Corporation, verified in the field investigation, and incorporated in the schedule.



Map 26-1 Continuous Building Area in Dindigul Corporation



Map 26-2 CBD Area in Dindigul Corporation



Map 26-3 Toposheet CBD Area in Dindigul LPA

27 Urban Governance

27.1 Urban Governance and Capacity Building

Urban governance refers to the mechanisms, processes, and structures through which cities and urban areas are managed and governed. It encompasses a wide range of activities and responsibilities aimed at ensuring the effective functioning, development, and sustainability of urban areas. Urban governance involves the formulation of policies, plans, and regulations that guide the development and management of cities. This includes urban planning policies, land use regulations, transportation strategies, environmental policies, and social welfare programs. It involves the establishment and management of administrative structures and institutions responsible for governing cities. This includes municipal governments, city councils, planning departments, and various regulatory agencies tasked with implementing policies and providing services to residents. Effective urban governance encourages active participation and engagement of citizens in decision-making processes related to urban development. This may involve public consultations, community meetings, participatory budgeting, and other mechanisms to solicit input and feedback from residents.

Urban governance includes the provision of essential services and infrastructure to meet the needs of urban residents. This includes services such as water supply, sanitation, waste management, transportation, healthcare, education, and public safety. It involves the management of finances and resources to fund urban development initiatives and provide essential services. This includes budgeting, revenue generation, taxation, borrowing, and financial planning to ensure sustainable and equitable allocation of resources. Urban governance often requires collaboration and partnerships between various stakeholders, including government agencies, private sector entities, civil society organizations, and community groups. Collaborative approaches can help address complex urban challenges and leverage resources more effectively. Effective urban governance promotes accountability and transparency in decision-making processes and resource management. This includes mechanisms for monitoring and evaluating government performance, ensuring transparency in decision-making, and combating corruption. Urban governance aims to promote sustainable development practices that balance economic, social, and

Environmental objectives. This includes initiatives to promote energy efficiency, reduce pollution, protect natural resources, and enhance resilience to climate change.

Merely building facilities isn't sufficient to enhance quality of life. Effective governance and citizen involvement are essential for sustaining the impact of interventions and strategies. Therefore, initiatives to enhance the efficiency and transparency of governing bodies through e-governance are crucial. Additionally, projects focusing on capacity building and awareness programs for various stakeholders, including the public, municipal staff, children, and urban poor, are vital. These programs for municipal staff should impart skills and technical knowledge, enhancing efficiency and capabilities for better project outcomes.

In addition to human resources, Dindigul LPA should embrace new technologies for database management and updates. This includes preparing maps and databases on GIS or other advanced platforms in the short term. Implementing the Solid Waste Management (SWM) plan outlined in this section necessitates professional expertise, specialized vehicles, and equipment. Considering these factors and the institutional structure advised by CPHEEO in its Solid Waste Management manual, the following measures for institutional strengthening and capacity building are recommended.

Furthermore, numerous studies must be undertaken to develop various plans and policies. Initiating an Integrated Mobility Plan, conducting Environmental Impact Assessments, and formulating an Environment Management Plan are critical tasks to be addressed in the short term. Additionally, raising awareness and promoting behaviour change is essential. Community campaigns to highlight the health and environmental benefits of underground drainage systems should be conducted to encourage residents to connect to them.

27.2 Institutional Framework for Service Delivery as Per 74th CAA

The institutional framework for service delivery as per the 74th Constitutional Amendment Act (74th CAA) primarily focuses on decentralization and empowerment of local government bodies, namely Urban Local Bodies (ULBs), to ensure efficient delivery of services to citizens at the grassroots level. Key stakeholders in this regard include various entities and organizations.

Table 27-1 Institutional Framework for service Delivery

S.No	Functions	Planning and Designed by	Operation and Maintenance	Source of fund
1	Urban planning including town planning	TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
2	Regulation of land use and construction of building	DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
3	Planning for Economic and Social development	DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
4	Roads and bridges	PWD/NHAI TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
5	Water supply for domestic and commercial	TWAD/PHED TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
6	Public health and sanitation conservancy and solid management	PHED/ TCPO/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
7	Slum improvement and Up gradation	TNSCB TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
8	Urban poverty and alleviation	TCPO/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
9	Provision of Urban amenities and facilities such as park playground, and gardens	TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
10	Promotion of cultural educational and aesthetic aspects	TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
11	Burial grounds, Cremation, and graveyard	TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
12	Vital Statistics including death and birth	Statistical Office Dindigul Corporation TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs

13	Public amenities including street light, Parking lots, bus stop, and Public Conveniences	TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
14	Regulations of Slaughterhouses, and tanneries	Dindigul Corporation TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
15	Fire services	Fire Police TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
16	Safety interest of the weaker section of the society including handicapped	Dindigul Corporation TCPO/DTCP/DLPA	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs
17	Urban forestry for protection of the environment and promotion ecological aspects	TCPO/DTCP/T.N Forest department	District Collector, Dindigul Corporation DTCP Dindigul	Central and State Government/ULBs

27.3 Organizational Management

Organizational management in urban governance involves the effective administration, coordination, and leadership within urban local bodies (ULBs) and related institutions responsible for managing cities and urban areas. Here are key aspects of organizational management in urban governance. Organizational management begins with establishing clear structures within ULBs, including defining departments, roles, and reporting relationships. This ensures clarity in responsibilities and promotes efficient decision-making. Human Resource Management Recruitment, training, and retention of qualified staff are essential for effective urban governance. Human resource management involves ensuring that personnel have the necessary skills, knowledge, and resources to fulfill their roles and responsibilities. Strategic Planning Urban governance requires long-term strategic planning to address various challenges and opportunities facing cities. Organizational management involves developing strategic plans that align with the city's vision and goals, and coordinating efforts to implement these plans effectively.

Financial Management Sound financial management is crucial for sustainable urban development. Organizational management includes budgeting, revenue generation, expenditure control, and financial reporting to ensure efficient use of resources and

compliance with financial regulations. Organizational management in urban governance involves establishing mechanisms to monitor and evaluate the performance of municipal services, projects, and initiatives. This allows for continuous improvement and accountability. Effective urban governance requires collaboration with various stakeholders, including residents, businesses, community groups, and other government agencies. Organizational management involves fostering relationships and partnerships to promote inclusive decision-making and citizen participation.

Technology and Innovation Leveraging technology and innovation can enhance the efficiency and effectiveness of urban governance. Organizational management includes adopting digital solutions for service delivery, data management, and communication to streamline processes and improve service quality. Identifying and managing risks is essential for ensuring the resilience of urban governance structures. Organizational management involves assessing potential risks, implementing mitigation strategies, and building resilience to external shocks and crises. Upholding ethical standards and transparency is fundamental to building trust and legitimacy in urban governance. Organizational management includes promoting accountability, integrity, and transparency in decision-making and operations. Continuous learning and capacity building are essential for adapting to evolving urban challenges and opportunities. Organizational management involves investing in training, professional development, and knowledge sharing among municipal staff and stakeholders.

28 Development Concept

This chapter presents the development concept for the Dindigul Local Planning Area (LPA), which serves as a foundational framework for envisioning and strategizing future growth and improvement within the region. The concept is instrumental in spatially organizing proposals for the master plan. Historically, Dindigul LPA has grown around the Rock Fort, a significant landmark that has influenced the region's spatial development. Initially, residential expansion was largely confined to the corporation limits, while growth in the remaining areas of the LPA was primarily directed along major transportation corridors. As the city evolves, a key goal is to manage its growth sustainably to ensure long-term viability and quality of life for its residents.

28.1 Core Pillars of Sustainability

The development concept focuses on three core pillars of sustainability:

28.1.1 Economic Sustainability

This involves creating a robust economic environment that supports diverse industries, commercial activities, and job opportunities. Economic sustainability ensures that the region can maintain financial health and offer equitable economic opportunities to its residents.

28.1.2 Social Sustainability:

This pillar addresses the need for inclusive development that enhances the quality of life for all residents. It involves improving access to essential services such as education, healthcare, and recreational facilities, as well as fostering social cohesion and community well-being.

28.1.3 Ecological Sustainability

This aspect focuses on protecting and enhancing the natural environment. It involves sustainable land use practices, conserving natural resources, and managing the impacts of development on water bodies, green spaces, and overall ecological balance.

28.2 Methodology For Assessing Development

An assessment of existing infrastructure facilities and population density was conducted across all village panchayats. To evaluate the level of development within each panchayat, a weighted scoring system was employed. The current development status of the Dindigul LPA was analyzed by conducted the weighted scoring system based on several

key indicators. The key indicators used for assessment include:

- Population Density
- Settlement pattern

28.2.1 Social Factor

- Educational Institutions
- Healthcare Facilities
- Transport facilities - Railway Stations /Bus Terminals

28.2.2 Economic Factor

- Commercial Buildings
- Industries
- Tourist Attractions

28.2.3 Ecological Factor

- Water Bodies
- Reserve Forest

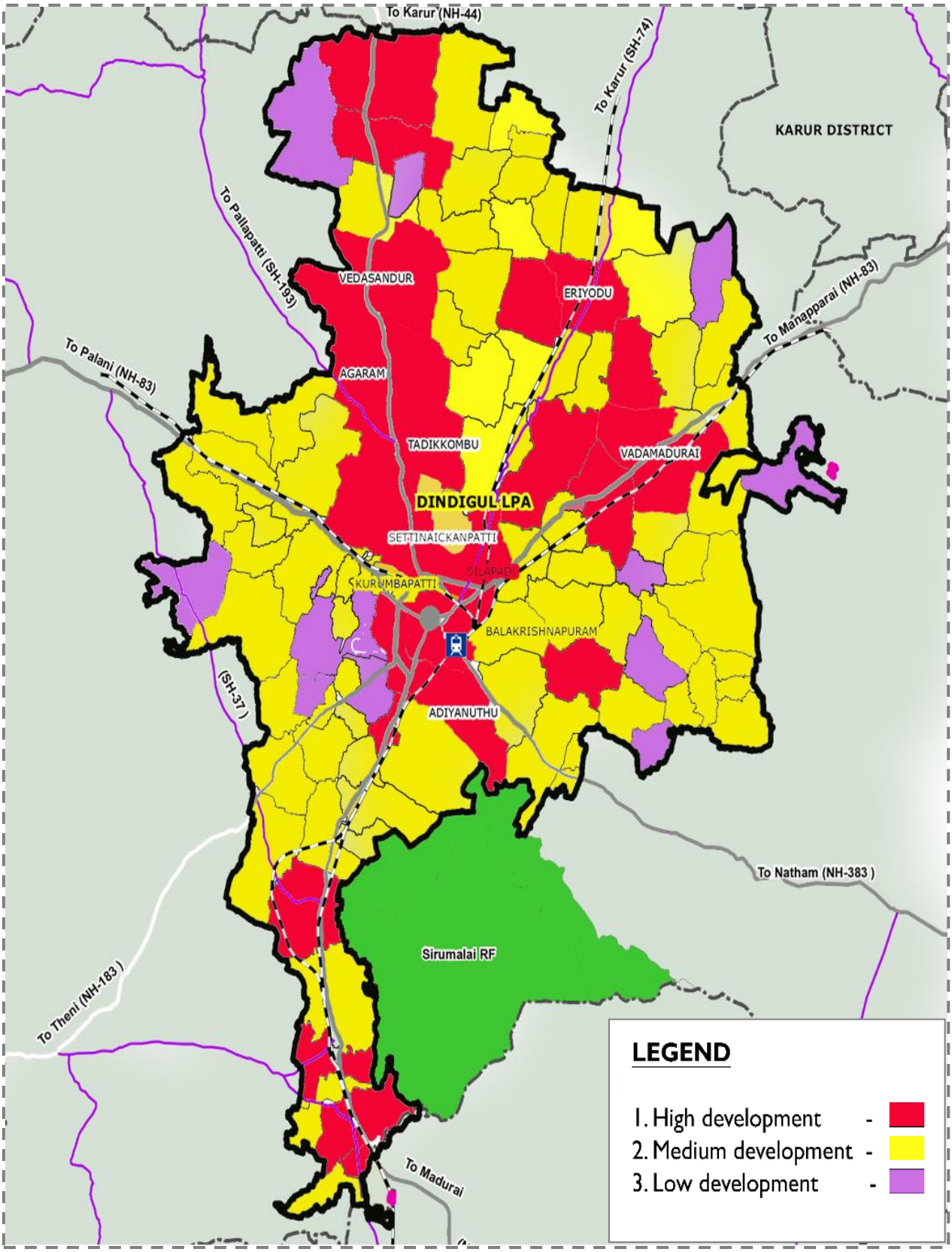
28.3 Scoring and Categorization

To quantify the level of development across different village panchayats within the LPA, a weighted scoring system was employed. Each indicator was assessed as follows:

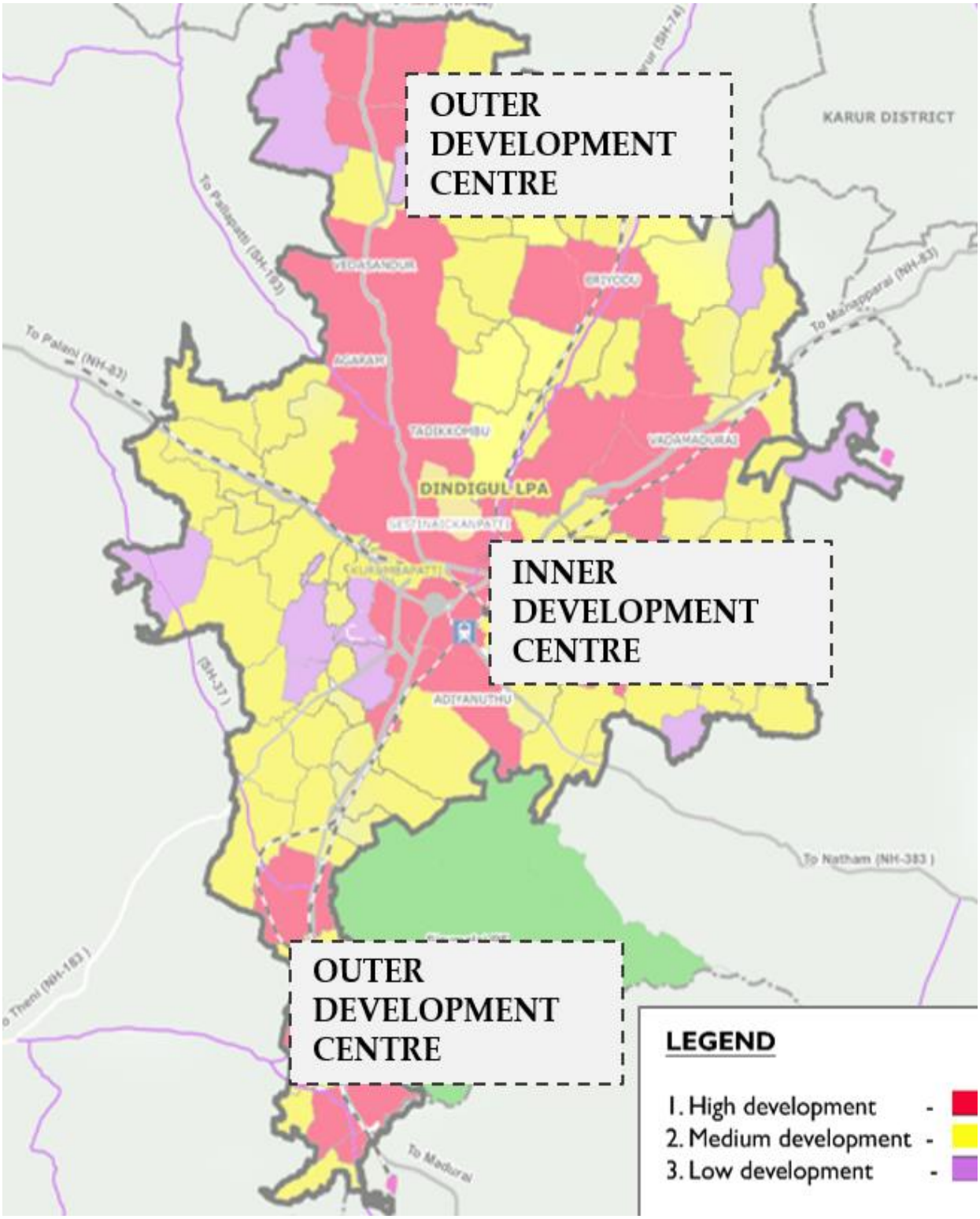
- Presence of an Indicator: Assigned a score of 1.
- Absence of an Indicator: Assigned a score of 0.

The total score for each panchayat was calculated by summing the scores for all indicators. Based on these scores, panchayats were categorized into three development zones:

- Low Development Zone: Panchayats with a total score of 0, indicating a lack of essential infrastructure and services.
- Medium Development Zone: Panchayats with a total score ranging from 1 to 3, reflecting moderate development with some presence of key indicators.
- High Development Zone: Panchayats with a total score exceeding 3, signifying well-developed areas with a higher concentration of infrastructure and services.



Map 28-1 Existing Development Order Map



Map 28-2 Potential of Future Development Prospect of Dindigul LPA

28.4 Implications and Strategies

This scoring and categorization provide a quantitative basis for understanding development disparities across the LPA. By identifying areas with varying levels of development, targeted strategies can be formulated to address specific needs and challenges. For instance:

- **Low Development Zones:** Focus on initiating basic infrastructure projects and essential services to improve living conditions.
- **Medium Development Zones:** Enhance existing facilities and services to support balanced growth and address emerging needs.
- **High Development Zones:** Concentrate on optimizing and upgrading infrastructure, promoting further economic and social opportunities.

This structured approach ensures that development efforts are aligned with the principles of sustainability and cater to the specific needs of different areas within the Dindigul LPA.

28.5 Future Development Prospect of Dindigul LPA

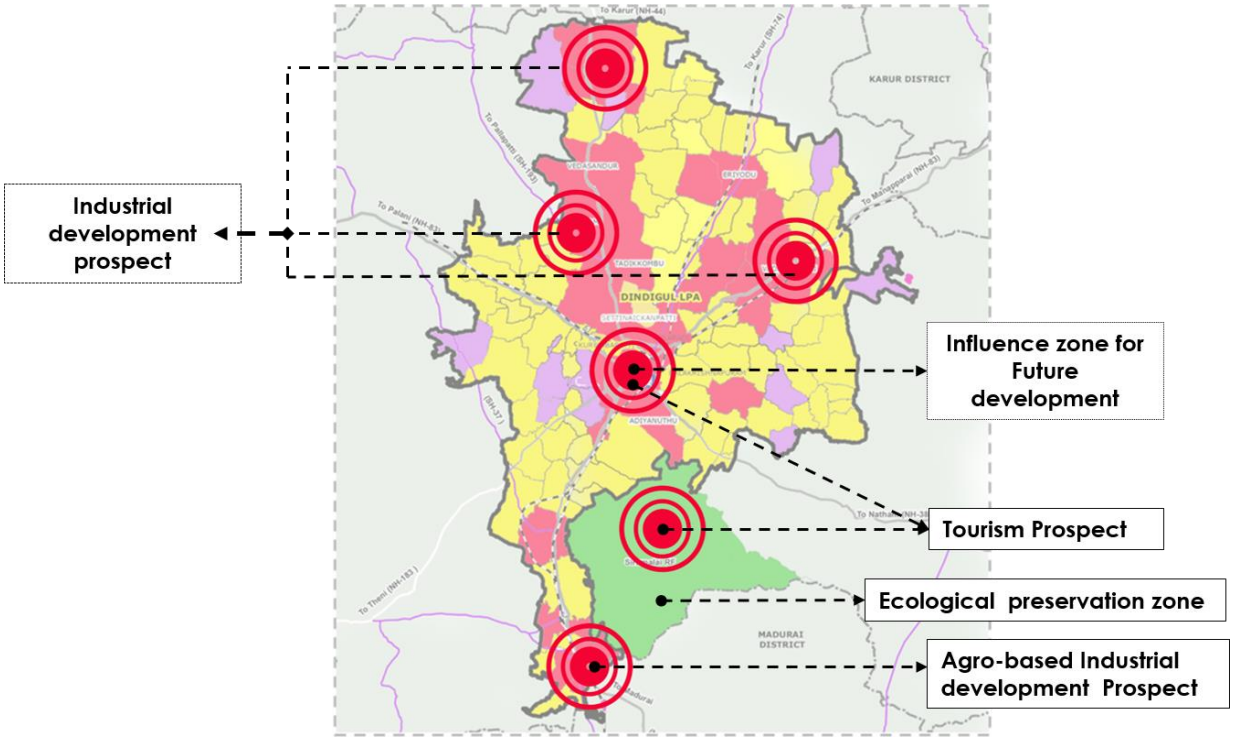


Figure 28-3 Future Development Prospect of Dindigul LPA

Based on the existing development framework, proposed layout approvals, and current land use in the Dindigul Local Planning Area (LPA), the future development prospects are outlined as follows:

Industrial development will be focused on the Vedasandur and Tadikombu village panchayats. The corporation and its surrounding villages will serve as a peri-urban area, acting as an influence zone for future development within the Dindigul LPA. This area is significant as it encompasses most of the tourism attractions, including the iconic Dindigul Rock Fort, which is centrally located within the corporation.

Siru Malai, a reserve forest near the Dindigul LPA, may be considered for future tourism opportunities. However, any development in this area should be carefully managed to preserve the natural reserve and its wildlife. Pallapatti and Malayangoundapatti village panchayats will be developed as agro-based industrial zones. This decision is driven by the extensive horticultural and vegetable cultivation occurring in the upper hills of Sirumalai and its surrounding villages.

The conceptual plan is crucial in shaping the future spatial layout of a city, rooted in sustainability principles. Here's a breakdown of the process. The development concept serves as the forerunner to formulating the proposed future spatial development of the planning area. Based on sustainability principles and aspects of development based on the same, parameters which help to quantify the existing and future development of the planning area are assessed using suitable methods. Building on the same, it is attempted to derive development order and spatial representations which relates to the economic, social and ecological domains of sustainability. These provide information regarding the future development strategy that needs to be considered for deriving the development concept. The final development concept is put together through integration of existing, prospects evaluated by environmental aspects. A development strategy is also put forward based on the derived development concept to further define the scope of the conceived development concept.

29 Block Costing

The previous chapters (Chapters 17 to 24) identify the planning proposals for the LPA. In the following sections the block cost for each sector is listed down. A list of components and their corresponding unit cost has been tabled. Following this a summary of the costs as per each category has been arrived at. Finally, the phasing of cost estimates of the development proposals has also been listed.

29.1 Land Cost

Land Cost The base line for the land cost is based on the Guideline Value provided by the Commercial Taxes and Registration Department. Based on this a map for the LPA has been prepared (Cost for the land under government ownership is not included)

29.1.1 Block Cost for Economic Proposal

S No	Proposal	Quantity	Cost of Private Land (INR Crores)	Development Cost (INR Crores)	Total Cost (INR Crores)
Economic Proposals					
1.	Cold storage hub (in ha)	8	-	20.00	20.00
2.	Provide skill development Training Centre (in ha)	2	0.50	10.00	10.50
3.	Industrial corridor proposal in Vedasanudur (in ha)	200	50	200	250
4.	Industrial corridor proposal in Vadamadurai (in ha)	150	45	200	245
6.	Industrial corridor proposal in Athoor (in ha)	100	40	200	240
7.	Industrial corridor proposal in Nilakottai (in ha)	80	35	200	235
	Total	**-**	**170**	**830**	**1000.00**

Table 29-1 Block cost for Economic Proposal

29.1.2 Block Cost for Mobility Proposal

S No	Proposal	Quantity	Cost of Private Land (INR Crores)	Development Cost (INR Crores)	Total Cost (INR Crores)
Mobility Proposals					
1.	A1 - Ayyalur to Kalvarpatti *(Link road) (in Kms)*	29.5	40.00	75.00	115.00
2.	A2 - Kamalapuram to Oddanchatram nh *(Link road) (in Kms)*	31.23	55.00	90.00	135.00
3.	A3 - Mullaipadi, Thadikombu, Sinthlakundu, N.Panjapatti, Vellodu,Thottanathu,& Mullaipadi *(Ring road) (in Kms)*	46.73	70.00	150.00	220.00
4.	A4 - Viralipatti to Ammathurai *(Ring road) (in Kms)*	64.53	112.00	200.00	312.00
5.	A5 - Shanarpatti to Moripatti *(Ring road) (in Kms)*	21.6	15.00	75.00	90.00
6.	A6 - Kollapatti to Kuthulappai *(Link road) (in Kms)*	35.11	60.00	112.00	172.0
7.	A7 - Begampur Jn to Balakrishnapuram (Ring road) *(in Kms)*	2.27	5.00	15.00	20.00
8.	A 8 - Balakrishnapuram to PWD Colony (Ring road) *(in Kms)*	6.7	5.00	10.00	15.00
9.	Junction improvement plan (Nos): 6	6	-	1.00	1.00
10.	Grid of ring radial road network plan in LPA	2.8	-	0.50	0.50
11.	New Bus Stand (in ha)	12.00	-	20.00	20.00
12.	Truck Terminal in Kaithiyan Kottai village (Vedasandur Taluk) (in ha)	11.12	-	15.00	15.00
13.	NMT network (in Sq.kms)	5.4	-	20.00	20.00
14.	Off-street parking facilities (in ha)	5.00	-	5.00	5.00
15.	Long-term improvements to suburban train routes (in ha)	10.00	-	10.00	10.00
	Total	**-**	**362.00**	**798.50**	**1150.50**

Table 29-2 Block cost for Mobility Proposal

29.1.3 Block Cost for Physical Infrastructure Proposals

S No	Proposal	Quantity	Development Cost (INR Crores)	Total Cost (INR Crores)
1.	Over Head Tank (OHT) (in ML)	37 MLD (Corporation) + 47.2 MLD (Rest of LPA	40.00	40.00
2.	Distribution Network for Non-Municipal area (in m)	12,09,940	25.00	25.00
3.	Installation of water Meters (in nos.)	2,05,000	50.00	50.00
4.	Network length for Sewerage line in non-municipal area (km)	60.78	36.78	36.78
5.	Localised Treatment Plant (MLD) (Including Land Area in ha)	77.80	25.46	25.46
6.	Common Effluent Treatment Plant (CETP) (1 ha) MLD (Including Land Area in ha)	25.50	8.72	8.72
7.	Land cost for disposal site for construction & demolition waste (in ha)	6.00	7.00	12.00
8.	Existing land fill site conversation cost to scientific landfill site	1.00	0.20	0.20
9.	Land Cost for proposed compost & waste segregation yards at 8 locations in non-municipal areas (in ha	3.00	5.00	8.00
10.	1 Storm water collection drain network (in m)	10.0000	750.0	750.0
11.	Covering existing open drains (in m)	5,55,000	150.0	150.0
12.	Rainwater harvesting system along with grit chamber (in nos.)	15465	15.00	15.00
13.	Electric substation – 110/11KV (2 nos.) (in ha)	5	9.76	9.76
	Total	-	**1082.92**	**1082.92**

Table 29-3 Block cost for Physical Infrastructure Proposal

29.1.4 Block Cost for Social Infrastructure Proposals

S No	Proposal	Quantity	Cost of Private Land (INR Crores)	Development Cost (INR Crores)	Total Cost (INR Crores)
1.	Primary School (20nos) & Area in ha	15	10.00	12.00	22.00
2.	Higher Secondary School (10 nos) & Area in ha	20	15.00	10.00	25.00
3.	Skill Training Institute (ITI) (2 nos) & Area in ha	10	5.00	8.00	13.00
4.	Primary Health Centre (20nos) & Area in ha	10	5.00	10.00	15.00
5.	Fire Station/ Fire Sub Station 4 nos (in ha)	2	0.50	2.00	2.50
6.	Indoor Sports Complex (in ha)	17	-	25.00	25.00
7.	Parks & green spaces (in Sq.km)	3.7	-	40.00	40.0
	Total	**-**	**35.5**	**107**	**142.5**

Table 29-4 Block cost for Social Infrastructure Proposal

29.1.5 Block Cost for Environment Proposals

S No	Proposal	Quantity	Cost of Private Land (INR Crores)	Development Cost (INR Crores)	Total Cost (INR Crores)
1.	Restoration of abandoned quarries in LPA (in ha)	6.56	-	15.00	15.00
2.	Blue green infrastructure in aranmanai kulam and ayyan kulam (in ha)	20	-	25.00	25.00
3.	Proposing Social Forest	-	-	5.00	5.00
	Total	**-**	**-**	**45.00**	**45.00**

Table 29-5 Block cost for Environment Proposal

29.1.6 Block Cost for Environment Tourism Proposals

S No	Proposal	Quantity	Cost of Private Land (INR Crores)	Development Cost (INR Crores)	Total Cost (INR Crores)
1.	Accessibility to Sirumalai Hills	-	-	25.00	25.00
2.	Cultural and Culinary Tourism Development	-	-	50.00	50.00
3.	Arranging Food Festivals and Workshops	-	-	20.00	20.00
	Total	**-**	**-**	**95.00**	**95.00**

Table 29-6 Block cost for Environment Tourism Proposal

29.1.7 Summary for Block Cost

S No	Proposal	Quantity	Cost of Private Land (INR Crores)	Development Cost (INR Crores)	Total Cost (INR Crores)
1.	Economic Sector	-	170	830	1000.00
2.	Mobility and Transportation	-	362.00	798.50	1150.50
3.	Physical Infrastructure	-		1082.92	1082.92
4.	Social Infrastructure	-	35.5	107	142.5
5.	Environment	-	-	45.00	45.00
6.	Tourism	-	-	95.00	95.00
	Total	**-**	**567.5**	**2958.42**	**3515.92**

Table 29-7 Summary for Block cost

29.1.8 Phasing Cost Summary - 5 Year

S. No	Phasing Year	Cost INR (Crores)
1.	FY 2023-2028	1000.00
2.	FY 2028-2033	878.98
3.	FY 2033-2038	878.98
4.	FY 2038-2043	636.94
	Total	**3515.92**

Table 29-8 Phasing Cost Summary – 5 Year

30 ANNEXURES

30.1 List of villages with 2011,2001,1991,1981 POPULATION

S.no.	Name	Population 2011	Population 2001	Population 1991	Population 1981
1	A.Vellodu	14812	10479	11810	10994
2	Adiyanuthu	17851	11887	10438	7711
3	Agaram	15610	12784	10816	10052
4	Alagupatti	2848	2772	2277	2248
5	Alakkuvarpatti	1398	1379	825	1342
6	Alamarathupatti	3717	2541	2407	2130
7	Ambathurai	9166	9017	8166	7048
8	Ammakulattupatti	245	131	1189	924
9	Ammapatti	2394	1819	1453	1554
10	Ammapatti	2034	1998	1769	1852
11	Anappatti	1224	879	2251	735
12	Balakrishnapuram	25627	19568	9201	6673
13	Budipuram	915	886	860	794
14	Dindigul Corporation	207327	196955	182477	164103
15	E.Chittur	4618	4105	4323	3235
16	Eriyodu	8890	7875	7456	6347
17	Jambutharikottai	9986	8649	8338	7125
18	Jivilsaragu	4757	4161	3019	2761
19	Kaittiyankottai	2705	3081	2246	2303
20	Kalikkampatti	3165	2561	1735	1788
21	Kalladipatti	1311	2281	1567	1327
22	Kalvarpatti	6995	7061	6425	6172
23	Kamachipuram	5010	4684	4244	4214
24	Kambiliyampatti	8437	7548	6753	6236
25	Kanapadi	2694	2391	1554	1344
26	Kasavanampatti	9005	8004	7825	6466
27	Kilakottai	8922	8437	6002	5297
28	Kollapatti	3302	2020	2737	2339
29	Komberipatti	4131	3542	3232	2462
30	Koovanuthu	6166	5323	5057	4168
31	Kothapulli	4816	4719	4130	3339
32	Kovilur	2022	1866	1862	1556
33	Kudappam	714	607	661	635
34	Kuddam	4785	4349	3742	3882
35	Kulathupatti	1273	985	1115	993
36	Kulathur	6570	5629	4813	3675

37	Kummampatti	1757	975	393	1132
38	Kurumbapatti	6182	4416	3940	2155
39	Kuttalkundu	7200	4595	4610	4396
40	Kuttathupatti	9270	8143	7083	7103
41	Kuvakkapatti	3676	3384	3132	2753
42	Madur	4659	4160	3669	3401
43	Malayagoundanpatti	5424	5088	6956	9065
44	Malvarpatti	1973	1916	1768	1481
45	Mangarai	3162	2867	2809	2590
46	Marakkampatti	1442	1198	1987	1121
47	Marambadi	6363	5571	5103	4728
48	Mattapparai	4360	3064	3705	3597
49	Morepatti	1681	2648	1500	1530
50	Mullipadi	7669	6315	5785	4949
51	Munnilakottai	3425	3134	3128	2568
52	N_Panjampatti	7476	6530	6162	5325
53	Nagayakottai	6919	6210	6382	5083
54	Nallamanakottai	5448	5299	5033	4346
55	Nathapatti	2900	2489	1978	1949
56	Oruthattu	19022	15511	12000	8489
57	Pachchimalaiyankottai	10438	9189	7169	6356
58	Padiyur	9876	8135	8223	6509
59	Paganattam	7556	6666	5654	4801
60	Palapatti	4807	4509	4482	4346
61	Pallapatti	13701	11834	8069	7503
62	Pallappatti	7633	7466	7694	7156
63	Periyakottai	7516	6209	5638	1256
64	Perumbulli	1889	1691	1643	1310
65	Pilathu	5054	4599	3922	3739
66	Pillayarnatham	2521	2092	1746	1555
67	Pithalaipatti	2558	2153	1471	1531
68	Pudukottai	1195	1563	1430	1791
69	Puttur	5756	4693	4197	3518
70	Ragalapuram	4442	3509	3044	3324
71	Rajakkapatti	5594	4869	4171	4143
72	Ramanathapuram	1295	1141	1498	1319
73	Settinaickanpatti	17701	12390	8183	6186
74	Silapadi	17824	17938	11365	5688
75	Siluvathur	4122	3539	3597	2718
76	Silvarpatti	7280	7419	6178	5521
77	Sindalagundu	10486	8869	7862	6191
78	Singarakottai	3119	2963	2422	2395

79	Sirangadu	6717	5756	9382	0
80	Sithuvarpatti	3521	2934	3251	2969
81	Sriramapuram	5649	4910	5056	4263
82	T.Pudupatty	2920	1748	1604	1459
83	Tadikkombu	18838	16081	14031	11981
84	Tamaraikulam	298	270	292	810
85	Tamaraippadi	3572	3396	2089	1819
86	Tennampatti	5937	4126	4876	4046
87	Tettampatti	8205	7773	7777	820
88	Toppampatti	1496	3156	2991	1164
89	Tottanuthu	10217	8461	7114	6560
90	Usilampatti	1600	1619	1384	1338
91	V Pudukkottai	4307	4120	3421	2721
92	Vadakattupatti	1423	1174	1104	721
93	Vadamadurai	18015	15549	12663	9991
94	Vajraservaikarankottai	1681	1373	2640	1205
95	Vakkampatti	2807	2802	2454	2365
96	Vangamanuttu	2276	2346	1987	2083
97	Vattilatoppampatti	2741	2357	1574	2860
98	Vedasandur	11730	10813	7541	6382
99	Velayudampalayam	2031	1785	1736	1169
100	Vellampatti	2032	1628	1560	1308
101	Velvarkottai	6867	5887	4953	4466
102	Virakkal	6038	5817	5680	4742
103	Viralipatti	804	654	488	441
104	Virasinnampatti	1910	1839	1505	716

30.2 List of villages with 2011 Population

S.no.	Name	TOT_P	TOT_M	TOT_F
1	A.Vellodu	14812	7277	7535
2	Adiyanuthu	17851	8904	8947
3	Agaram	15610	7795	7815
4	Alagupatti	2848	1387	1461
5	Alakkuvarpatti	1398	649	649
6	Alamarathupatti	3717	1861	1856
7	Ambathurai	9166	4560	4606
8	Ammakulattupatti	245	124	121
9	Ammapatti	2394	1193	1201
10	AMMAPATTI	2034	1035	999
11	Anappatti	1224	606	618
12	Balakrishnapuram	25627	12965	12662
13	BUDIPURAM	915	450	465
14	Dindigul Corporation	207327	103027	104300
15	E.Chittur	4618	2387	2231
16	ERIYODU	8890	4454	4436
17	Jambutharikottai	9986	4875	5111
18	Jivilsaragu	4757	2407	2350
19	KAITTIYANKOTTAI	2705	1356	1349
20	Kalikkampatti	3165	1568	1597
21	Kalladipatti	1311	632	679
22	KALVARPATTI	6995	3436	3559
23	Kamachipuram	5010	2503	2507
24	Kambiliyampatti	8437	4226	4211
25	Kanapadi	2694	1366	1328
26	Kasavanampatti	9005	4530	4475
27	Kilakottai	8922	4300	4622
28	KOLLAPATTI	3302	1672	1630
29	Komberipatti	4131	2064	2067
30	Koovanuthu	6166	3093	3073
31	Kothapulli	4816	2344	2472
32	Kovilur	2022	1002	1020
33	KUDAPPAM	714	365	349
34	KUDDAM	4785	2415	2370
35	KULATHUPATTI	1273	636	637
36	Kulathur	6570	3757	2813
37	Kummampatti	1757	874	883

38	Kurumbapatti	6182	3025	3157
39	Kuttalkundu	7200	3560	3640
40	Kuttathupatti	9270	4651	4619
41	Kuvakkapatti	3676	1851	1825
42	Madur	4659	2284	2375
43	Malayagoundanpatti	5424	2716	2708
44	Malvarpatti	1973	999	974
45	Mangarai	3162	1567	1595
46	Marakkampatti	1442	705	737
47	Marambadi	6363	3223	3140
48	Mattapparai	4360	2210	2150
49	Morepatti	1681	833	848
50	Mullipadi	7669	3827	3842
51	Munnilakottai	3425	1688	1737
52	N_Panjampatti	7476	3443	4033
53	NAGAYAKOTTAI	6919	3506	3413
54	Nallamanakottai	5448	2656	2792
55	Nathapatti	2900	1463	1437
56	Oruthattu	19022	304	297
57	Pachchimalaiyankottai	10438	5291	5147
58	Padiyur	9876	4924	4952
59	Paganattam	7556	3794	3762
60	PALAPATTI	4807	2342	2465
61	Pallapatti	13701	6933	6768
62	Pallappatti	7633	3853	3780
63	Periyakottai	7516	3733	3783
64	Perumbulli	1889	950	939
65	Pilathu	5054	2537	2517
66	Pillayarnatham	2521	1257	1264
67	Pithalaipatti	2558	1279	1279
68	Pudukottai	1195	588	607
69	Puttur	5756	2898	2858
70	Ragalapuram	4442	2247	2195
71	Rajakkapatti	5594	2821	2773
72	Ramanathapuram	1295	670	625
73	Settinaickanpatti	17701	8816	8885
74	Silapadi	17824	8966	8858
75	Siluvathur	4122	2093	2029
76	Silvarpatti	7280	3656	3624
77	Sindalagundu	10486	5240	5246
78	Singarakottai	3119	1565	1554
79	Sirangadu	6717	3361	3356

80	Sithuvarpatti	3521	1751	1770
81	Sriramapuram	5649	2782	2867
82	T.Pudupatty	2920	1444	1476
83	Tadikkombu	18838	9317	9521
84	Tamaraikulam	298	152	146
85	Tamaraippadi	3572	1781	1791
86	Tennampatti	5937	3030	2907
87	Tettampatti	8205	4180	4025
88	Toppampatti	1496	745	751
89	Tottanuthu	10217	5084	5133
90	USILAMPATTI	1600	806	794
91	V PUDUKKOTTAI	4307	2082	2225
92	Vadakattupatti	1423	693	730
93	Vadamadurai	18015	8975	9040
94	Vajraservaikarankottai	1681	841	840
95	Vakkampatti	2807	1415	1392
96	Vangamanuttu	2276	1153	1123
97	Vattilatoppampatti	2741	1339	1402
98	VEDASANDUR	11730	5831	5899
99	Velayudampalayam	2031	1010	1021
100	VELLAMPATTI	2032	990	1042
101	Velvarkottai	6867	3370	3497
102	Virakkal	6038	3001	3037
103	Viralipatti	804	400	404
104	Virasinnampatti	1910	972	938

30.3 List of villages with 2011,2001,1991 Growth Rate

S.no.	Name	Growth rate 2011	Growth rate 2001	Growth rate 1991
1	A.Vellodu	41.35	-11.27	7.42
2	Adiyanuthu	50.17	13.88	35.37
3	Agaram	22.11	18.2	7.6
4	Alagupatti	2.74	21.74	1.29
5	Alakkuvarpatti	1.38	67.15	-38.52
6	Alamarathupatti	46.28	5.57	13
7	Ambathurai	1.65	10.42	15.86
8	Ammakulattupatti	87.02	-88.98	28.68
9	Ammapatti	31.61	25.19	-6.5
10	Ammapatti	1.8	12.95	-4.48
11	Anappatti	39.25	-60.95	206.26
12	Balakrishnapuram	30.96	112.67	37.88
13	Budipuram	3.27	3.02	8.31
14	Dindigul Corporation	5.27	7.93	11.2
15	E.Chittur	12.5	-5.04	33.63
16	Eriyodu	12.89	5.62	17.47
17	Jambutharikottai	15.46	3.73	17.02
18	Jivilsaragu	14.32	37.83	9.34
19	Kaittiyankottai	-12.2	37.18	-2.48
20	Kalikkampatti	23.58	47.61	-2.96
21	Kalladipatti	-42.53	45.56	18.09
22	Kalvarpatti	-0.93	9.9	4.1
23	Kamachipuram	6.96	10.37	0.71
24	Kambiliyampatti	11.78	11.77	8.29
25	Kanapadi	12.67	53.86	15.63
26	Kasavanampatti	12.51	2.29	21.02
27	Kilakottai	5.75	40.57	13.31

28	Kollapatti	63.47	-26.2	17.02
29	Komberipatti	16.63	9.59	31.28
30	Koovanuthu	15.84	5.26	21.33
31	Kothapulli	2.06	14.26	23.69
32	Kovilur	8.36	0.21	19.67
33	Kudappam	17.63	-8.17	4.09
34	Kuddam	10.03	16.22	-3.61
35	Kulathupatti	29.24	-11.66	12.29
36	Kulathur	16.72	16.95	30.97
37	Kummampatti	80.21	148.09	-65.28
38	Kurumbapatti	39.99	12.08	82.83
39	Kuttalkundu	56.69	-0.33	4.87
40	Kuttathupatti	13.84	14.97	-0.28
41	Kuvakkapatti	8.63	8.05	13.77
42	Madur	12	13.38	7.88
43	Malayagoundanpatti	6.6	-26.85	-23.27
44	Malvarpatti	2.97	8.37	19.38
45	Mangarai	10.29	2.06	8.46
46	Marakkampatti	20.37	-39.71	77.25
47	Marambadi	14.22	9.17	7.93
48	Mattapparai	42.3	-17.3	3
49	Morepatti	-36.52	76.53	-1.96
50	Mullipadi	21.44	9.16	16.89
51	Munnilakottai	9.29	0.19	21.81
52	N_Panjampatti	14.49	5.97	15.72
53	Nagayakottai	11.42	-2.7	25.56
54	Nallamanakottai	2.81	5.29	15.81
55	Nathapatti	16.51	25.83	1.49
56	Oruthattu	22.64	29.26	41.36
57	Pachchimalaiyankottai	13.59	28.18	12.79

58	Padiyur	21.4	-1.07	26.33
59	Paganattam	13.35	17.9	17.77
60	PALAPATTI	6.61	0.6	3.13
61	Pallapatti	15.78	46.66	7.54
62	Pallappatti	2.24	-2.96	7.52
63	Periyakottai	21.05	10.13	348.89
64	Perumbulli	11.71	2.92	25.42
65	Pilathu	9.89	17.26	4.89
66	Pillayarnatham	20.51	19.82	12.28
67	Pithalaipatti	18.81	46.36	-3.92
68	Pudukottai	-23.54	9.3	-20.16
69	Puttur	22.65	11.82	19.3
70	Ragalapuram	26.59	15.28	-8.42
71	Rajakkapatti	14.89	16.73	0.68
72	Ramanathapuram	13.5	-23.83	13.57
73	Settinaickanpatti	42.87	51.41	32.28
74	Silapadi	-0.64	57.84	99.81
75	Siluvathur	16.47	-1.61	32.34
76	Silvarpatti	-1.87	20.09	11.9
77	Sindalagundu	18.23	12.81	26.99
78	Singarakottai	5.26	22.34	1.13
79	Sirangadu	16.7	-38.65	
80	Sithuvarpatti	20.01	-9.75	9.5
81	Sriramapuram	15.05	-2.89	18.6
82	T.Pudupatty	67.05	8.98	9.94
83	Tadikkombu	17.14	14.61	17.11
84	Tamaraikulam	10.37	-7.53	-63.95
85	Tamaraippadi	5.18	62.57	14.84
86	Tennampatti	43.89	-15.38	20.51
87	Tettampatti	5.56	-0.05	848.41

88	Toppampatti	-52.6	5.52	156.96
89	Tottanuthu	20.75	18.93	8.45
90	Usilampatti	-1.17	16.98	3.44
91	V Pudukkottai	4.54	20.43	25.73
92	Vadakattupatti	21.21	6.34	53.12
93	Vadamadurai	15.86	22.79	26.74
94	Vajraservaikarankottai	22.43	-47.99	119.09
95	Vakkampatti	0.18	14.18	3.76
96	Vangamanuttu	-2.98	18.07	-4.61
97	Vattilatoppampatti	16.29	49.75	-44.97
98	Vedasandur	8.48	43.39	18.16
99	Velayudampalayam	13.78	2.82	48.5
100	Vellampatti	24.82	4.36	19.27
101	Velvarkottai	16.65	18.86	10.9
102	Virakkal	3.8	2.41	19.78
103	Viralipatti	22.93	34.01	10.66
104	Virasinnampatti	3.86	22.19	110.2

30.4 List of villages with 2011 Area, Density, Households And Household Size

S.no	Name	Area	Density	Household size	No. of Households
1	A.Vellodu	2397.72	618	3.8	3936
2	Adiyanuthu	1274	1401	3.9	4615
3	Agaram	2100	743	3.9	3984
4	Alagupatti	1026.2	278	3.8	753
5	Alakkuvarpatti	304.34	459	4	352
6	Alamarathupatti	318.83	1166	3.8	973
7	Ambathurai	1460.88	627	3.7	2466
8	Ammakulattupatti	51.3	478	4.1	60
9	Ammapatti	244.12	981	4	600
10	Ammapatti	693.97	293	3.7	550
11	Anappatti	450.11	272	4.1	298
12	Balakrishnapuram	1410	1818	3.9	6561
13	Budipuram	504.84	181	3.7	249
14	Dindigul Corporation	1401	14799	3.9	53573
15	E.Chittur	2403.75	192	3.9	1182
16	Eriyodu	2192.67	405	4.1	2195
17	Jambutharikottai	1441.64	693	4.3	2319
18	Jivilsaragu	798.83	595	3.7	1289
19	Kaittiyankottai	864.12	313	3.6	745
20	Kalikkampatti	939.89	337	3.8	825
21	Kalladipatti	914.36	143	3.5	373
22	Kalvarpatti	720.37	971	3.7	1875
23	Kamachipuram	1514.69	331	3.5	1433
24	Kambiliyampatti	1517	556	4.2	2005
25	Kanapadi	528.38	510	4	673
26	Kasavanampatti	1816.32	496	4.1	2215
27	Kilakottai	1713.38	521	4.5	1985
28	Kollapatti	695.22	475	4	835

29	Komberipatti	1269.39	325	4.7	872
30	Koovanuthu	1720.33	358	4.1	1510
31	Kothapulli	1184.44	407	3.8	1267
32	Kovilur	662.97	305	4.1	496
33	Kudappam	333.83	214	5	144
34	Kuddam	1204.34	397	4.1	1179
35	Kulathupatti	331.15	384	4.6	277
36	Kulathur	350	1877	4.6	1418
37	Kummampatti	783.99	224	4.1	424
38	Kurumbapatti	1286.17	481	3.9	1591
39	Kuttalkundu	1207.22	596	3.9	1828
40	Kuttathupatti	2324.74	399	3.9	2380
41	Kuvakkapatti	817.2	450	4.1	897
42	Madur	1366.61	341	3.8	1242
43	Malayagoundanpatti	1042.12	520	3.9	1383
44	Malvarpatti	493.2	400	3.7	530
45	Mangarai	497.23	636	3.8	839
46	Marakkampatti	457.33	315	4.4	329
47	Marambadi	1828.64	348	4	1576
48	Mattapparai	1108.35	393	3.9	1131
49	Morepatti	245.25	685	4.3	389
50	Mullipadi	2399.97	320	3.8	2010
51	Munnilakottai	1108.33	309	3.8	911
52	N_Panjampatti	2932.88	255	4	1885
53	Nagayakottai	1790.28	386	4	1730
54	Nallamanakottai	1207.7	451	4.1	1327
55	Nathapatti	968.14	300	3.7	791
56	Oruthattu	2049.81	928	4	4791
57	Pachchimalaiyankottai	1680.29	621	3.9	2705
58	Padiyur	1151.06	858	4.1	2406

59	Paganattam	1613.18	468	4.2	1803
60	Palapatti	1310.38	367	3.6	1329
61	Pallapatti	1059.9	1293	3.9	3507
62	Pallappatti	1259.83	606	3.9	1959
63	Periyakottai	249.48	3013	4.1	1838
64	Perumbulli	858.32	220	4.4	428
65	Pilathu	2021.29	250	4.4	1141
66	Pillayarnatham	667.98	377	3.8	666
67	Pithalaipatti	685.95	373	3.9	661
68	Pudukottai	783.67	152	3.3	362
69	Puttur	1390.89	414	4.6	1249
70	Ragalapuram	921.84	482	3.8	1173
71	Rajakkapatti	1644.49	340	4	1409
72	Ramanathapuram	602.58	215	4.2	306
73	Settinaickanpatti	1838	963	3.9	4490
74	Silapadi	1609	1108	3.9	4612
75	Siluvathur	879.22	469	4	1019
76	Silvarpatti	2090.12	348	4	1842
77	Sindalagundu	213	4923	3.9	2716
78	Singarakottai	1136.58	274	4.2	744
79	Sirangadu	1624	414	4.3	1578
80	Sithuvarpatti	1043.33	337	4.3	820
81	Sriramapuram	1296.59	436	3.9	1442
82	T.Pudupatty	212.46	1374	4.1	707
83	Tadikkombu	2500	754	3.9	4777
84	Tamaraikulam	368.73	81	4	74
85	Tamaraippadi	659	542	4	902
86	Tennampatti	1210.17	491	4.1	1456
87	Tettampatti	897.88	914	3.6	2279
88	Toppampatti	250.2	598	4	377

89	Tottanuthu	1815.36	563	3.8	2699
90	Usilampatti	636.18	252	4	400
91	V Pudukkottai	697.85	617	4.1	1041
92	Vadakattupatti	183.99	773	3.8	376
93	Vadamadurai	420	4289	4	4533
94	Vajraservaikarankottai	347.82	483	4.2	403
95	Vakkampatti	1668.41	168	3.5	792
96	Vangamanuttu	763.36	298	4.1	560
97	Vattilatoppampatti	601.63	456	4	692
98	Vedasandur	1059.9	1107	3.9	3046
99	Velayudampalayam	702.86	289	4.2	485
100	Vellampatti	350.78	579	4.1	498
101	Velvarkottai	1916.07	358	4.1	1692
102	Virakkal	778.25	776	4	1509
103	Viralipatti	202.68	397	4.3	186
104	Virasinnampatti	717.1	266	3.9	496

30.5 List of villages with 2011 0-6 Population

S.no.	Name	child_perc	P_06	M_06	F_06
1	A.Vellodu	11.34	1680	850	830
2	Adiyanuthu	10.62	1896	981	915
3	Agaram	10.75	1678	883	795
4	Alagupatti	11.34	323	158	165
5	Alakkuvarpatti	11.72	484	235	249
6	Alamarathupatti	8.69	323	156	167
7	Ambathurai	10.72	983	486	497
8	Ammakulattupatti	17.96	44	20	24
9	Ammapatti	9.86	236	127	109
10	Ammapatti	11.11	226	126	100
11	Anappatti	15.28	187	80	107
12	Balakrishnapuram	9.7	2486	1311	1175
13	Budipuram	12.02	110	57	53
14	Dindigul Corporation	9.46	19603	10126	9477
15	E.Chittur	11.07	511	289	222
16	Eriyodu	10.13	901	457	444
17	Jambutharikottai	10.16	1015	547	468
18	Jivilsaragu	9.42	448	233	215
19	Kaittiyankottai	10.5	284	157	127
20	Kalikkampatti	9.45	299	153	146
21	Kalladipatti	8.7	114	54	60
22	Kalvarpatti	7.58	530	281	249
23	Kamachipuram	10.1	506	256	250
24	Kambiliyampatti	11.26	950	505	445
25	Kanapadi	11.36	306	185	121
26	Kasavanampatti	9.91	892	453	439
27	Kilakottai	8.97	800	385	415

28	Kollapatti	12.42	410	205	205
29	Komberipatti	11.72	484	235	249
30	Koovanuthu	11.06	682	347	335
31	Kothapulli	9.8	472	244	228
32	Kovilur	8.75	177	90	87
33	Kudappam	11.9	85	49	36
34	Kuddam	8.65	414	226	188
35	Kulathupatti	10.45	133	66	67
36	Kulathur	8.93	587	314	273
37	Kummampatti	9.33	164	89	75
38	Kurumbapatti	11.52	712	349	363
39	Kuttalkundu	11.25	810	366	444
40	Kuttathupatti	10.43	967	505	462
41	Kuvakkapatti	10.91	401	217	184
42	Madur	10	466	219	247
43	Malayagoundanpatti	10.86	589	309	280
44	Malvarpatti	8.67	171	93	78
45	Mangarai	10.85	343	168	175
46	Marakkampatti	13.87	200	99	101
47	Marambadi	10.61	675	360	315
48	Mattapparai	11.22	489	254	235
49	Morepatti	12.67	213	108	105
50	Mullipadi	10.12	776	406	370
51	Munnilakottai	9.69	332	179	153
52	N_Panjampatti	8.36	625	301	324
53	Nagayakottai	9.93	687	385	302
54	Nallamanakottai	10.76	586	283	303
55	Nathapatti	10.93	317	165	152
56	Oruthattu	8.67	171	93	78

57	Pachchimalaiyankottai	10.7	1117	593	524
58	Padiyur	11.33	1119	564	555
59	Paganattam	10.35	782	394	388
60	Palapatti	8.36	402	191	211
61	Pallapatti	11.8	1617	846	771
62	Pallappatti	11.16	852	421	431
63	Periyakottai	11.15	838	417	421
64	Perumbulli	10.64	201	102	99
65	Pilathu	11.91	602	307	295
66	Pillayarnatham	9.2	232	129	103
67	Pithalaipatti	10.13	259	132	127
68	Pudukottai	7.7	92	43	49
69	Puttur	14.82	853	438	415
70	Ragalapuram	10.49	466	245	221
71	Rajakkapatti	11.03	617	331	286
72	Ramanathapuram	10.27	133	79	54
73	Settinaickanpatti	10.22	1809	946	863
74	Silapadi	10.1	1800	922	878
75	Siluvathur	9.19	379	199	180
76	Silvarpatti	10.62	773	387	386
77	Sindalagundu	10.69	1121	598	523
78	Singarakottai	11.73	366	212	154
79	Sirangadu	10.85	729	378	351
80	Sithuvarpatti	10.39	366	197	169
81	Sriramapuram	10.05	568	288	280
82	T.Pudupatty	13.87	405	212	193
83	Tadikkombu	10.7	2015	1034	981
84	Tamaraikulam	8.39	25	11	14
85	Tamaraippadi	10.72	383	195	188
86	Tennampatti	11.03	655	353	302

87	Tettampatti	10.01	821	439	382
88	Toppampatti	10.23	153	81	72
89	Tottanuthu	10.33	1055	569	486
90	Usilampatti	11.06	177	92	85
91	V Pudukkottai	9.57	412	224	188
92	Vadakattupatti	12.44	177	94	83
93	Vadamadurai	11.17	2012	1043	969
94	Vajraservaikarankottai	10.71	180	106	74
95	Vakkampatti	8.76	246	139	107
96	Vangamanuttu	9.67	220	126	94
97	Vattilatoppampatti	10.73	294	145	149
98	Vedasandur	10.32	1211	607	604
99	Velayudampalayam	12.21	248	127	121
100	Vellampatti	9.89	201	101	100
101	Velvarkottai	11.56	794	389	405
102	Virakkal	10.58	639	337	302
103	Viralipatti	10.2	82	44	38
104	Virasinnampatti	10.16	194	98	96

30.6 List of villages with 2011 SC Population

S.no.	Name	SC_per	P_SC	M_SC	F_SC
1	A.Vellodu	11	1630	802	828
2	Adiyanuthu	12.85	2293	1137	1156
3	Agaram	29.19	4556	2314	2242
4	Alagupatti	41.15	1172	548	624
5	Alakkuvarpatti	4.36	180	86	94
6	Alamarathupatti	21.79	810	392	418
7	Ambathurai	23.5	2154	1078	1076
8	Ammakulattupatti	88.98	218	111	107
9	Ammapatti	22.64	542	268	274
10	Ammapatti	7.52	153	76	77
11	Anappatti	69.28	848	410	438
12	Balakrishnapuram	19.96	5115	2569	2546
13	Budipuram	19.02	174	90	84
14	Dindigul Corporation	7.58	15724	7839	7885
15	E.Chittur	14.08	650	337	313
16	Eriyodu	19.51	1734	847	887
17	Jambutharikottai	25.51	2547	1233	1314
18	Jivilsaragu	28.34	1348	668	680
19	Kaittiyankottai	14.05	380	192	188
20	Kalikkampatti	25.12	795	389	406
21	Kalladipatti	36.16	474	230	244
22	Kalvarpatti	33.52	2345	1148	1197
23	Kamachipuram	12.69	636	322	314
24	Kambiliyampatti	16.4	1384	662	722
25	Kanapadi	14.29	385	200	185
26	Kasavanampatti	16.16	1455	719	736
27	Kilakottai	14.36	1281	541	740

28	Kollapatti	12.72	420	201	219
29	Komberipatti	4.36	180	86	94
30	Koovanuthu	15.62	963	473	490
31	Kothapulli	16.61	800	397	403
32	Kovilur	26.36	533	266	267
33	Kudappam	29.55	211	108	103
34	Kuddam	12.14	581	286	295
35	Kulathupatti	13.98	178	86	92
36	Kulathur	36.93	2426	1227	1199
37	Kummampatti	5.86	103	51	52
38	Kurumbapatti	54.08	3343	1638	1705
39	Kuttalkundu	45.75	3294	1624	1670
40	Kuttathupatti	24	2225	1116	1109
41	Kuvakkapatti	14.58	536	253	283
42	Madur	18.93	882	418	464
43	Malayagoundanpatti	33.55	1820	923	897
44	Malvarpatti	13.18	260	123	137
45	Mangarai	29.7	939	454	485
46	Marakkampatti	3.61	52	22	30
47	Marambadi	6.44	410	201	209
48	Mattapparai	33.62	1466	730	736
49	Morepatti	59.49	1000	497	503
50	Mullipadi	21.45	1645	835	810
51	Munnilakottai	8.15	279	142	137
52	N_Panjampatti	9.78	731	304	427
53	Nagayakottai	13.6	941	477	464
54	Nallamanakottai	23.38	1274	640	634
55	Nathapatti	13.62	395	206	189
56	Oruthattu	0.63	120	60	60
57	Pachchimalaiyankottai	44.7	4666	2358	2308

58	Padiyur	15.18	1499	764	735
59	Paganattam	8.1	612	288	324
60	Palapatti	25.09	1206	580	626
61	Pallapatti	39.93	5471	2757	2714
62	Pallappatti	28.02	2139	1073	1066
63	Periyakottai	28.27	2125	1042	1083
64	Perumbulli	15.19	287	147	140
65	Pilathu	21.78	1101	523	578
66	Pillayarnatham	17.53	442	230	212
67	Pithalaipatti	25.18	644	330	314
68	Pudukottai	27.87	333	160	173
69	Puttur	4.24	244	121	123
70	Ragalapuram	24.45	1086	548	538
71	Rajakkapatti	20.09	1124	564	560
72	Ramanathapuram	6.33	82	42	40
73	Settinaickanpatti	28.17	4987	2463	2524
74	Silapadi	21.67	3862	1918	1944
75	Siluvathur	32.97	1359	691	668
76	Silvarpatti	34.9	2541	1277	1264
77	Sindalagundu	7.88	826	404	422
78	Singarakottai	19.69	614	324	290
79	Sirangadu	1.24	83	41	42
80	Sithuvarpatti	26.33	927	446	481
81	Sriramapuram	16.66	941	457	484
82	T.Pudupatty	59.86	1748	855	893
83	Tadikkombu	27.62	5203	2565	2638
84	Tamaraikulam	0	0	0	0
85	Tamaraippadi	44.06	1574	781	793
86	Tennampatti	26.12	1551	797	754
87	Tettampatti	19.94	1636	826	810

88	Toppampatti	36.9	552	279	273
89	Tottanuthu	35.46	3623	1815	1808
90	Usilampatti	21.75	348	172	176
91	V Pudukkottai	24.56	1058	499	559
92	Vadakattupatti	36.4	518	248	270
93	Vadamadurai	24.61	4434	2162	2272
94	Vajraservaikarankottai	52.94	890	435	455
95	Vakkampatti	11.4	320	170	150
96	Vangamanuttu	27.9	635	339	296
97	Vattilatoppampatti	29.95	821	416	405
98	Vedasandur	12.28	1440	694	746
99	Velayudampalayam	12.51	254	123	131
100	Vellampatti	17.22	350	172	178
101	Velvarkottai	39.46	2710	1328	1382
102	Virakkal	14.18	856	426	430
103	Viralipatti	0	0	0	0
104	Virasinnampatti	27.38	523	269	254

30.7 List of villages with 2011 ST Population

S.no.	Name	ST_per	P_ST	M_ST	F_ST
1	A.Vellodu	0.56	83	39	44
2	Adiyanuthu	0.1	18	10	8
3	Agaram	0	0	0	0
4	Alagupatti	0.04	1	0	1
5	Alakkuvarpatti	0	0	0	0
6	Alamarathupatti	0.03	1	1	0
7	Ambathurai	0	0	0	0
8	Ammakulattupatti	0	0	0	0
9	Ammapatti	0	0	0	0
10	AMMAPATTI	0	0	0	0
11	Anappatti	0	0	0	0
12	Balakrishnapuram	0.02	6	4	2
13	BUDIPURAM	0	0	0	0
14	Dindigul Corporation	0.07	143	63	80
15	E.Chittur	0	0	0	0
16	ERIYODU	0.1	9	3	6
17	Jambutharikottai	0.01	1	0	1
18	Jivilsaragu	0.15	7	4	3
19	KAITTIYANKOTTAI	0	0	0	0
20	Kalikkampatti	0	0	0	0
21	Kalladipatti	0	0	0	0
22	KALVARPATTI	0	0	0	0
23	Kamachipuram	0.02	1	0	1
24	Kambiliyampatti	0	0	0	0
25	Kanapadi	0	0	0	0
26	Kasavanampatti	0	0	0	0
27	Kilakottai	0.17	15	4	11

28	KOLLAPATTI	0	0	0	0
29	Komberipatti	0	0	0	0
30	Koovanuthu	0	0	0	0
31	Kothapulli	0	0	0	0
32	Kovilur	0	0	0	0
33	KUDAPPAM	0	0	0	0
34	KUDDAM	0	0	0	0
35	KULATHUPATTI	0	0	0	0
36	Kulathur	0.03	2	1	1
37	Kummampatti	0	0	0	0
38	Kurumbapatti	0	0	0	0
39	Kuttalkundu	0	0	0	0
40	Kuttathupatti	0	0	0	0
41	Kuvakkapatti	0	0	0	0
42	Madur	0	0	0	0
43	Malayagoundanpatti	0.04	2	1	1
44	Malvarpatti	0	0	0	0
45	Mangarai	0	0	0	0
46	Marakkampatti	0	0	0	0
47	Marambadi	0	0	0	0
48	Mattapparai	0.09	4	3	1
49	Morepatti	0	0	0	0
50	Mullipadi	0	0	0	0
51	Munnilakottai	0	0	0	0
52	N_Panjampatti	0.01	1	0	1
53	NAGAYAKOTTAI	0	0	0	0
54	Nallamanakottai	0.06	3	1	2
55	Nathapatti	0	0	0	0
56	Oruthattu	0	0	0	0
57	Pachchimalaiyankottai	0.02	2	1	1

58	Padiyur	0.04	4	3	1
59	Paganattam	0	0	0	0
60	PALAPATTI	0	0	0	0
61	Pallapatti	0	0	0	0
62	Pallappatti	0	0	0	0
63	Periyakottai	0	0	0	0
64	Perumbulli	0.05	1	1	0
65	Pilathu	0.02	1	0	1
66	Pillayarnatham	0	0	0	0
67	Pithalaipatti	0	0	0	0
68	Pudukottai	0	0	0	0
69	Puttur	0	0	0	0
70	Ragalapuram	0	0	0	0
71	Rajakkapatti	0	0	0	0
72	Ramanathapuram	0	0	0	0
73	Settinaickanpatti	0.05	9	5	4
74	Silapadi	0.02	3	1	2
75	Siluvathur	0.07	3	2	1
76	Silvarpatti	0	0	0	0
77	Sindalagundu	0	0	0	0
78	Singarakottai	0	0	0	0
79	Sirangadu	0	0	0	0
80	Sithuvarpatti	0	0	0	0
81	Sriramapuram	0	0	0	0
82	T.Pudupatty	0	0	0	0
83	Tadikkombu	0	0	0	0
84	Tamaraikulam	0	0	0	0
85	Tamaraippadi	0	0	0	0
86	Tennampatti	0	0	0	0
87	Tettampatti	0	0	0	0

88	Toppampatti	0	0	0	0
89	Tottanuthu	0.01	1	0	1
90	USILAMPATTI	0	0	0	0
91	V PUDUKKOTTAI	0	0	0	0
92	Vadakattupatti	0	0	0	0
93	Vadamadurai	0	0	0	0
94	Vajraservaikarankottai	0	0	0	0
95	Vakkampatti	0	0	0	0
96	Vangamanuttu	0	0	0	0
97	Vattilatoppampatti	0	0	0	0
98	VEDASANDUR	0.01	1	0	1
99	Velayudampalayam	0	0	0	0
100	VELLAMPATTI	0	0	0	0
101	Velvarkottai	0	0	0	0
102	Virakkal	0	0	0	0
103	Viralipatti	0	0	0	0
104	Virasinnampatti	0	0	0	0

30.8 List of villages with 2011 Literates

S.no	Name	P_LIT	M_LIT	F_LIT	P_ILL	M_ILL	F_ILL
1	A.Vellodu	10388	5517	4871	4424	1760	2664
2	Adiyanuthu	12643	6782	5861	5208	2122	3086
3	Agaram	11055	6033	5022	4555	1762	2793
4	Alagupatti	1732	980	752	1116	407	709
5	Alakkuvarpatti	1747	976	771	947	390	557
6	Alamarathupatti	2995	1601	1394	722	260	462
7	Ambathurai	6137	3446	2691	3029	1114	1915
8	Ammakulattupatti	164	93	71	81	31	50
9	Ammapatti	1429	813	616	965	380	585
10	AMMAPATTI	1418	793	625	616	242	374
11	Anappatti	672	399	273	552	207	345
12	Balakrishnapuram	20572	10925	9647	5055	2040	3015
13	BUDIPURAM	634	361	273	281	89	192
14	Dindigul Corporation	169370	87515	81855	37957	15512	22445
15	E.Chittur	2827	1642	1185	1791	745	1046
16	ERIYODU	6307	3461	2846	2583	993	1590
17	Jambutharikottai	6740	3570	3170	3246	1305	1941
18	Jivilsaragu	3277	1840	1437	1480	567	913
19	KAITTIYANKOTTAI	1688	986	702	1017	370	647
20	Kalikkampatti	2593	1356	1237	572	212	360
21	Kalladipatti	921	492	429	390	140	250
22	KALVARPATTI	4822	2736	2086	2173	700	1473
23	Kamachipuram	3199	1811	1388	1811	692	1119
24	Kambiliyampatti	4908	2817	2091	3529	1409	2120
25	Kanapadi	1747	976	771	947	390	557
26	Kasavanampatti	5561	3246	2315	3444	1284	2160
27	Kilakottai	6908	3508	3400	2014	792	1222

28	KOLLAPATTI	2205	1274	931	1097	398	699
29	Komberipatti	2298	1367	931	1833	697	1136
30	Koovanuthu	3916	2217	1699	2250	876	1374
31	Kothapulli	2950	1621	1329	1866	723	1143
32	Kovilur	1494	801	693	528	201	327
33	KUDAPPAM	455	257	198	259	108	151
34	KUDDAM	3268	1879	1389	1517	536	981
35	KULATHUPATTI	874	493	381	399	143	256
36	Kulathur	4727	3049	1678	1843	708	1135
37	Kummampatti	1159	646	513	598	228	370
38	Kurumbapatti	4072	2209	1863	2110	816	1294
39	Kuttalkundu	4773	2684	2089	2427	876	1551
40	Kuttathupatti	6207	3415	2792	3063	1236	1827
41	Kuvakkapatti	2266	1296	970	1410	555	855
42	Madur	2952	1660	1292	1707	624	1083
43	Malayagoundanpatti	3463	1935	1528	1961	781	1180
44	Malvarpatti	1405	772	633	568	227	341
45	Mangarai	1859	1079	780	1303	488	815
46	Marakkampatti	870	488	382	572	217	355
47	Marambadi	4449	2454	1995	1914	769	1145
48	Mattapparai	2872	1625	1247	1488	585	903
49	Morepatti	1071	603	468	610	230	380
50	Mullipadi	5478	3025	2453	2191	802	1389
51	Munnilakottai	2349	1278	1071	1076	410	666
52	N_Panjampatti	6087	2924	3163	1389	519	870
53	NAGAYAKOTTAI	4386	2573	1813	2533	933	1600
54	Nallamanakottai	3538	1966	1572	1910	690	1220
55	Nathapatti	1716	976	740	1184	487	697
56	Oruthattu	482	256	226	118	48	71
57	Pachchimalaiyankottai	6912	3925	2987	3526	1366	2160

58	Padiyur	6182	3540	2642	3694	1384	2310
59	Paganattam	4449	2607	1842	3107	1187	1920
60	PALAPATTI	2781	1642	1139	2026	700	1326
61	Pallapatti	9730	5330	4400	3971	1603	2368
62	Pallappatti	4843	2777	2066	2790	1076	1714
63	Periyakottai	4748	2646	2102	2768	1087	1681
64	Perumbulli	1240	715	525	649	235	414
65	Pilathu	3118	1806	1312	1936	731	1205
66	Pillayarnatham	1936	1015	921	585	242	343
67	Pithalaipatti	1945	1061	884	613	218	395
68	Pudukottai	818	467	351	377	121	256
69	Puttur	2581	1487	1094	3175	1411	1764
70	Ragalapuram	2729	1603	1126	1713	644	1069
71	Rajakkapatti	3539	1999	1540	2055	822	1233
72	Ramanathapuram	901	514	387	394	156	238
73	Settinaickanpatti	13206	7042	6164	4495	1774	2721
74	Silapadi	13892	7382	6510	3932	1584	2348
75	Siluvathur	2714	1578	1136	1408	515	893
76	Silvarpatti	4693	2700	1993	2587	956	1631
77	Sindalagundu	7178	3915	3263	3308	1325	1983
78	Singarakottai	2007	1157	850	1112	408	704
79	Sirangadu	4276	2417	1859	2441	944	1497
80	Sithuvarpatti	2375	1316	1059	1146	435	711
81	Sriramapuram	3690	2082	1608	1959	700	1259
82	T.Pudupatty	1535	860	675	1385	584	801
83	Tadikkombu	12835	6981	5854	6003	2336	3667
84	Tamaraikulam	233	128	105	65	24	41
85	Tamaraippadi	2381	1317	1064	1191	464	727
86	Tennampatti	3813	2216	1597	2124	814	1310
87	Tettampatti	5144	2965	2179	3061	1215	1846

88	Toppampatti	1002	569	433	494	176	318
89	Tottanuthu	6771	3634	3137	3446	1450	1996
90	USILAMPATTI	1034	593	441	566	213	353
91	V PUDUKKOTTAI	2969	1573	1396	1338	509	829
92	Vadakattupatti	871	468	403	552	225	327
93	Vadamadurai	12747	6964	5783	5268	2011	3257
94	Vajraservaikarankottai	1078	591	487	603	250	353
95	Vakkampatti	2025	1117	908	782	298	484
96	Vangamanuttu	1518	833	685	758	320	438
97	Vattilatoppampatti	1768	992	776	973	347	626
98	VEDASANDUR	9160	4854	4306	2570	977	1593
99	Velayudampalayam	1147	647	500	884	363	521
100	VELLAMPATTI	1176	666	510	856	324	532
101	Velvarkottai	4455	2493	1962	2412	877	1535
102	Virakkal	3892	2167	1725	2146	834	1312
103	Viralipatti	521	292	229	283	108	175
104	Virasinnampatti	1152	684	468	758	288	470

30.9 List of villages with 2011 Workers

S.no.	Name	TOT_WORK_P	MAINWORK_P	MARGWORK_P	NON_WORK_P
1	A.Vellodu	6821	4874	1947	7991
2	Adiyanuthu	8095	6737	1358	9756
3	Agaram	8118	7368	750	7492
4	Alagupatti	1636	1110	526	1212
5	Alakkuvarpatti	1472	1309	163	922
6	Alamarathupatti	1682	1182	500	2035
7	Ambathurai	5344	4909	435	3822
8	Ammakulattupatti	114	114	0	131
9	Ammapatti	1472	1309	163	922
10	Ammapatti	1239	1168	71	795
11	Anappatti	466	464	2	758
12	Balakrishnapuram	11178	8896	2282	14449
13	Budipuram	557	516	41	358
14	Dindigul Corporation	77813	74244	3569	129514
15	E.Chittur	2696	2107	589	1922
16	Eriyodu	4208	3589	619	4682
17	Jambutharikottai	5210	4796	414	4776
18	Jivilsaragu	2519	1998	521	2238
19	Kaittiyankottai	1566	1369	197	1139
20	Kalikkampatti	1732	1610	122	1433
21	Kalladipatti	665	372	293	646
22	Kalvarpatti	4406	3086	1320	2589
23	Kamachipuram	3052	2997	55	1958
24	Kambiliyampatti	4829	4395	434	3608
25	Kanapadi	1624	1502	122	1070

26	Kasavanampatti	5494	4647	847	3511
27	Kilakottai	3936	3414	522	4986
28	Kollapatti	1718	1645	73	1584
29	Komberipatti	2403	2262	141	1728
30	Koovanuthu	3146	2821	325	3020
31	Kothapulli	2890	2692	198	1926
32	Kovilur	857	610	247	1165
33	Kudappam	442	363	79	272
34	Kuddam	2964	2845	119	1821
35	Kulathupatti	647	543	104	626
36	Kulathur	3135	2620	515	3435
37	Kummampatti	981	949	32	776
38	Kurumbapatti	2564	2444	120	3618
39	Kuttalkundu	3763	2718	1045	3437
40	Kuttathupatti	5047	2959	2088	4223
41	Kuvakkapatti	2066	1161	905	1610
42	Madur	2321	1926	395	2338
43	Malayagoundanpatti	3039	1909	1130	2385
44	Malvarpatti	1387	1028	359	586
45	Mangarai	1957	1234	723	1205
46	Marakkampatti	907	833	74	535
47	Marambadi	3373	3011	362	2990
48	Mattapparai	2400	905	1495	1960
49	Morepatti	897	841	56	784
50	Mullipadi	3966	3077	889	3703
51	Munnilakottai	1707	1178	529	1718
52	N_Panjampatti	3748	2833	915	3728
53	Nagayakottai	3764	2556	1208	3155
54	Nallamanakottai	2763	1996	767	2685

55	Nathapatti	1726	1655	71	1174
56	Oruthattu	262	209	53	339
57	Pachchimalaiyankottai	5625	5324	301	4813
58	Padiyur	5429	5026	403	4447
59	Paganattam	4688	4013	675	2868
60	Palapatti	2936	2153	783	1871
61	Pallapatti	5891	5252	639	7810
62	Pallappatti	3884	3315	569	3749
63	Periyakottai	3691	2768	923	3825
64	Perumbulli	1240	1211	29	649
65	Pilathu	2823	2713	110	2231
66	Pillayarnatham	1300	1055	245	1221
67	Pithalaipatti	1266	802	464	1292
68	Pudukottai	786	751	35	409
69	Puttur	3348	3121	227	2408
70	Ragalapuram	2612	2274	338	1830
71	Rajakkapatti	2917	2332	585	2677
72	Ramanathapuram	794	536	258	501
73	Settinaickanpatti	7028	6653	375	10673
74	Silapadi	8297	6486	1811	9527
75	Siluvathur	2105	1537	568	2017
76	Silvarpatti	4203	2871	1332	3077
77	Sindalagundu	5753	5195	558	4733
78	Singarakottai	1852	1821	31	1267
79	Sirangadu	4064	2839	1225	2653
80	Sithuvarpatti	2170	2160	10	1351
81	Sriramapuram	2940	2686	254	2709
82	T.Pudupatty	1760	1721	39	1160
83	Tadikkombu	9353	8483	870	9485

84	Tamaraikulam	203	203	0	95
85	Tamaraippadi	1766	1569	197	1806
86	Tennampatti	2928	2642	286	3009
87	Tettampatti	4737	4603	134	3468
88	Toppampatti	887	874	13	609
89	Tottanuthu	4542	4030	512	5675
90	Usilampatti	966	750	216	634
91	V Pudukkottai	2462	2239	223	1845
92	Vadakattupatti	831	720	111	592
93	Vadamadurai	8212	7569	643	9803
94	Vajraservaikarankottai	1021	983	38	660
95	Vakkampatti	1605	1193	412	1202
96	Vangamanuttu	1287	1125	162	989
97	Vattilatoppampatti	1602	1421	181	1139
98	Vedasandur	4655	4177	478	7075
99	Velayudampalayam	1258	1255	3	773
100	Vellampatti	1123	1033	90	909
101	Velvarkottai	3359	2832	527	3508
102	Virakkal	3145	3054	91	2893
103	Viralipatti	424	418	6	380
104	Virasinnampatti	1052	1051	1	858