

MASTER PLAN SANGRUR

(2010-2031)



DEPARTMENT OF TOWN AND COUNTRY PLANNING
PUNJAB

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1. EXECUTIVE SUMMARY

1.0 Introduction

Sangrur City has population of 77989 persons as per 2001 census. In order to develop Sangrur city and its surroundings in orderly manner and recognizing the need for regulating the development of the entire influence area of Sangrur City, Government of Punjab declared Local Planning Area, Sangrur (L.P.A, Sangrur) vide notification no. 12/14/2007-4HGI/9813 dated 17.12.2007 (Annexure-I). The Local Planning Area, Sangrur includes one urban settlement of Sangrur and surrounding 34 villages. The Chief Town Planner, Punjab has been designated as the Planning Agency for L.P.A Sangrur vide notification no. 12/14/2007-4HGI/9819 dated 17.12.2007 (Annexure-II). The total area of L.P.A, Sangrur is 221.96 Sq. km (22196 hectares) out of which 21.58 Sq. Km. is urban area (9.72%) and 200.38 Sq. Km. is rural area (90.28%). According to census 2001, the total population of L.P.A. Sangrur is 1, 43,024 persons out of which urban population is 77989 persons.

1.1 Regional Setting

L.P.A. Sangrur is located in the heart of Malwa Region at a distance of 126 kms from Chandigarh and about 225 Kms from Amritsar. It is well connected by roads with many cities/Towns like Chandigarh, Ludhiana, and Bathinda. Two National Highways namely N.H.71 and N.H.64 passes through the town. It extends from 30°11'15'' to 30°20'21'' North latitude and 75°41'53'' to 75° 57'56'' East longitudes.

1.2 Historical Background

Sangrur took its name after the name of its founder 'Sanghu' a jatt about 400 years back. The town was a part of Jind State ruled by Phulkian dynasty of Punjab. The state of Jind comprises of three separate tracts, viz Sangrur, Jind and Dadri. The Tehsil of Sangrur is, somewhat, scattered and comprises of four ilaques separated from one another by British Territory of the late Raja Raghbir Singh. The Royal foundry was established in 1876 by Raja Raghbir Singh and contains a flour mill, an oil-press and apparatus for casting etc.

1.3 Legal Framework

The Punjab Regional and Town Planning and Development Act, (Amended) 2006, provides for the legal framework for preparation of Master Plan. The four-stage process involves declaration of Local Planning Area, designation of Planning Agency, preparation of Present Land Use and preparation and approval of Master Plan. The contents of the Master Plan as laid down by the Act are:-

- a) Broad indication of the manner in which the land in the area should be used
- b) Allocation of areas or zones of land use for different purposes
- c) Indication, definition and provision of the existing and proposed highways, roads, major streets and other lines of communication
- cc) Indication of areas covered under heritage site and the manner in which protection, preservation and conservation of such sites including its regulation and control of development, which is affecting either the heritage site or its vicinity, shall be carried out
- d) Regulations to regulate within each zone the location, height, number of storeys and size of buildings and other structures, open spaces and the use of buildings and structures.

The Act also provides for “Control of Development and Use of Land in Area where Master Plan is in operation”

1.4 Population Growth

The population of L.P.A, Sangrur has been recorded 143024 persons as per census data (2001) with a decadal growth rate of about 25.76% during the year 1991-2001. The average gross population density of Sangrur City is 40.34 persons per hectare as per census of 2001. However, ward wise densities vary considerably. The highest and the lowest densities vary between 392 persons per hectare in ward no. 7 and 6 persons per hectare in ward No. 14 respectively. The low average population density is due to big institutional areas, abundance of government and semi-government offices and vacant pockets.

1.5 Housing

Sangrur has an urban population of 77989, comprising 15126 households. But for the population (2031) of the city and fringe area which has been projected as 254426, will comprise of 50885 households and land requirement for them will be 2259 hectares.

1.6 Employment

The work force participation rate of L.P.A, Sangrur is 34.35% and that of Sangrur city is 32.30% as per 2001 census. The main sectors providing employment in Sangrur city are public administration and other services (37.43%), manufacturing (2.26%), Trade & Commerce (26.96%), Transport, Storage and Communications (8.53%).

1.7 Present Land Use

Preparation of Present Land Use map was undertaken with the help of Punjab Remote

Sensing Centre (PRSC), Ludhiana. For the core area of Sangrur City, Quick Bird data of 0.6m resolution was used, where as for the outer areas Cartosat I data of 2.5m resolution was used. The maps based on satellite imageries were updated by undertaking field surveys. Out of total area of L.P.A Sangrur, maximum proportion is occupied by agriculture (84.35%) followed by Residential use (9.40%) and transportation (2.24%).

1.8 Present Transport Network

The Regional Road network comprises of Chandigarh-Patiala-Sangrur-Bathinda, Ludhiana-Malerkotla-Sangrur-Patran road and a Bye Pass Connecting Patiala and Dhuri road, other less important roads are Sangrur-Sunam, Sangrur-Nabha road (Via Bhalwan), Sangrur-Ubhawal road. The Sangrur City has one R.O.B. on Sangrur-Dhuri road. Sangrur is not very fortunate in terms of rail network as it has a single railway line, i.e. branch line of Bathinda railway line. Nevertheless, the single railway line leads to fragmentation of land mass necessitating number of railway crossings to provide accessibility across various parts of the city.

1.9 Physical Infrastructure

The main source of water supply in Sangrur is from ground water. There are 16 Tubewells for the supply of water. The total amount of extracted ground water is 14.27 MLD. The city has sufficient supply of water but still approximately 10% of the populations remains unserved by water supply, near by 90% of the population is served by water supply.

As regards with sewerage, the 63% of the total population is covered with sewerage system and 5.04 Sq. km. area of city is covered under sewerage facilities. Though collection and transportation of solid waste is undertaken by Municipal Council Sangrur and dumped on Badrukhan-Ubhawal road in the open area. Disposal is not in the form of sanitary landfill as required by Municipal solid waste rules of the Ministry of Environment and Forest. Similarly, the disposal of Bio Medical waste too does not comply with relevant rules.

1.10 Social Infrastructure

L.P.A Sangrur has a large number of institutes imparting education at school, college and university level (arts, commerce, science, sports education, engineering and medical education) both at graduation and post graduation level. L.P.A Sangrur is at a forefront in providing health care facilities that serves not only Sangrur but also its neighboring towns/cities. L.P.A Sangrur has 20 hospitals that include two famous hospitals, i.e. Sibia

Health Care and Dr. Bansal Hospital. L.P.A Sangrur has one Ayurvedic Dispensary, one veterinary hospital and two veterinary dispensaries. In addition to neighborhood and small parks in the city, there are two city level parks in the city, namely Banasar Garden and B.S.N.L Park. There is one museum in the city. Sangrur city has 3 branch post offices, 4 sub post offices, and one head post office. Sangrur city has Government Telephone Exchange; it has two police stations and one police chowki near bus stand. In addition to these police facilities in the city, there is also a police line.

1.11 Traffic

Recent survey of Traffic volume on various roads indicate that most of the road network is not congested, only two roads, namely Sangrur-Barnala road and Sangrur-Patiala roads have traffic problems and have v/c ratio 0.95 and 1.33 respectively. There is acute shortage of parking, particularly, in the traditional bazaar in the old city area. The city has a truck terminal but the area of the terminal is not sufficient. However, the trucks are parked on the main roads, which lead to traffic congestion on the roads. The city does not have organized taxi stands and taxis are parked on the main roads.

1.12 Environment

Due to absence of any comprehensive data collection regarding quality of air by Punjab Pollution and Control Board, it cannot be reported about the quality of Air. In terms of air quality, though the ambient concentration of SO₂ and NO₂ is well within the norms, SPM levels far exceed the norms. Ground water is unfit for human consumption because of high contents of fluorides and chlorides. Surface water too is contaminated because of release of untreated sewerage waste water in open lands. Storage of waste water in dirty water ponds is a source of mosquito breeding and ground water pollution.

1.13 Population and Employment Forecast

The population of L.P.A, Sangrur is estimated to grow to 293521 persons in the year 2031 of which the population of Sangrur city and its urban fringe is estimated to be 254426 persons in the year 2031. The employment in 2031 of Sangrur city is estimated to be 59583 in which major share will be that of Trade & Commerce (16062), Manufacturing other than household industry (6611) and other services (22300).

1.14 Infrastructure Demand

The infrastructure requirements for the projected population by 2031 would be as follows:

- a) Water supply : 24.9 mld
- b) Wastewater : 19.9 mld

- c) Solid waste : 69.02mt ton per day
d) Power : 73 MW

1.15 Heritage

Two buildings namely Diwan Khana and Marble Baradari including tank have been declared as protected monuments under 'The Punjab Ancient & Historical Monuments and Archaeological Sites & Remains Act, 1964'.

1.16 Vision 2031

A specifically constituted “Think Tank” comparing official and non-official representatives from all walks of life articulated the Vision 2031 for Sangrur in following terms:

“To transform Sangrur into an industrial hub focused on Agro and Horticulture based industries and a service centre of Malwa sub region by providing high quality physical and social infrastructure to all its citizens in an inclusive and environmentally sustainable manner.”

The strategies to attain this vision would require spatial Land Use Planning, infrastructure planning and financing, enabling private investment in economic growth, ensuring environmentally sustainable development etc. The role of Master Plan in this regard would be that of facilitating a spatial Land Use Planning framework conducive to attaining the vision.

1.17 Proposed Land Use and Road Network

In the light of the above approach, Proposed Land Use Plan and Road Network Plans are incorporated in the Master Plan. The land in L.P.A, Sangrur has been zoned for residential, commercial, industrial, rural and agricultural purposes. Further areas have been designated for important specific purposes like public utilities, bus stand, truck stand, institutional, green belt along existing bye-pass. However, specific designations for public purposes like schools, hospitals, playground etc. have not been earmarked. The major road network has been proposed. The Proposed Land Use plan is shown in Drg. No. D.T.P (S) 345/2011 dated: 4-5-2011.

The major proposed road network comprises of five categories roads viz. R1-(200 ft), R2-(150 ft), R3-(100 ft) and R4-(80 ft) and R5-(60 ft). Road network is also shown on Drg. No. DTP (S) 346/2011 dated: 4-5-2011. The proposed road network comprises of the existing Bye pass, Outer Ring Road, radial roads and other roads of various right of way as explained above.

1.18 Zoning Regulations

"The Punjab Regional and Town planning & Development (Amendment) Act, 2006" provides for the "Control of Development and Use of Land where Master Plan is in Operation". However, control of development through parameters like sub-division of land, ground coverage, FAR, parking, building design and construction has been covered through various controls, which are elaborated before Zoning Regulations. The zoning regulations, included in the master plan, are confined to use of land. For this purpose, land use zones as shown in the Proposed Land Use Plan is one dimension and permissible uses in each of these zones is the second dimension supplemented with the landuse provisions as provided in various notifications issued by Punjab Government from time to time. In addition, regulations regarding maximum permissible densities and heritage conservation are also proposed.

2. INTRODUCTION

2.1 Initiation

To develop Sangrur city and its surroundings in an orderly manner and to prepare its Master Plan under "The Punjab Regional and Town Planning and Development Act 1995", Local Planning Area Sangrur (L.P.A.) was declared under section 56(1) of "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006" vide notification number 12/14/2007-4HGI/9813 dated 17.12.2007. (Annexure-I) . Accordingly, Chief Town Planner, Punjab has been designated as the Planning Agency for L.P.A Sangrur vide notification no. 12/14/2007-4HGI/9819 dated 17.12.2007 (Annexure-II). The L.P.A Sangrur comprises of 34 villages and one urban settlement which spreads over an area of 22196 hectares (221.96 sq. Km) but as per calculation of area by P.R.S.C Ludhiana, the total area of L.P.A Sangrur work out to 22228.18 hectares. The L.P.A. Sangrur accommodates approximately 1, 43,024 population and Sangrur city has a population of 77989 persons as per 2001 census. The jurisdiction of L.P.A. extends upto village Ladda in the north, village Ghabdan in the east, village Kheri in the South and village Kunran in the west. The physical extent and boundaries of L.P.A. are shown in Fig.2 and list of all rural settlements covered under the jurisdiction of. L.P.A Sangrur is given in Annexure-III.

2.2 Regional Setting of L.P.A Sangrur

Sangrur city is the district headquarters of Sangrur district. It is situated in Southern part of Punjab State in the "Heart of Malwa Region". The L.P.A. Sangrur extends from 30°11'15" to 30°20'21" North latitude and 75°41'53" to 75°57'56" East longitude

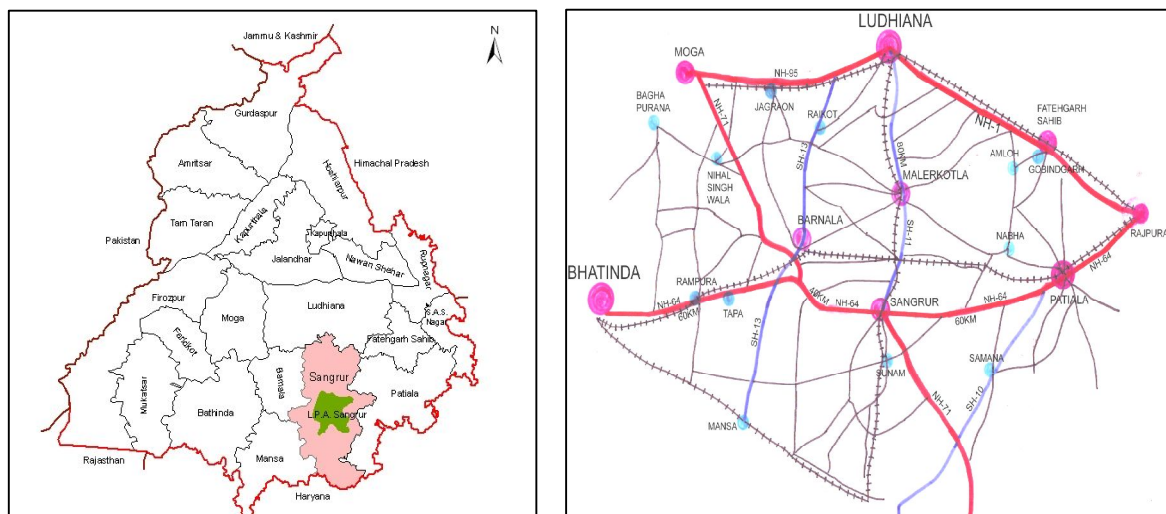


Fig: 1 Regional Setting

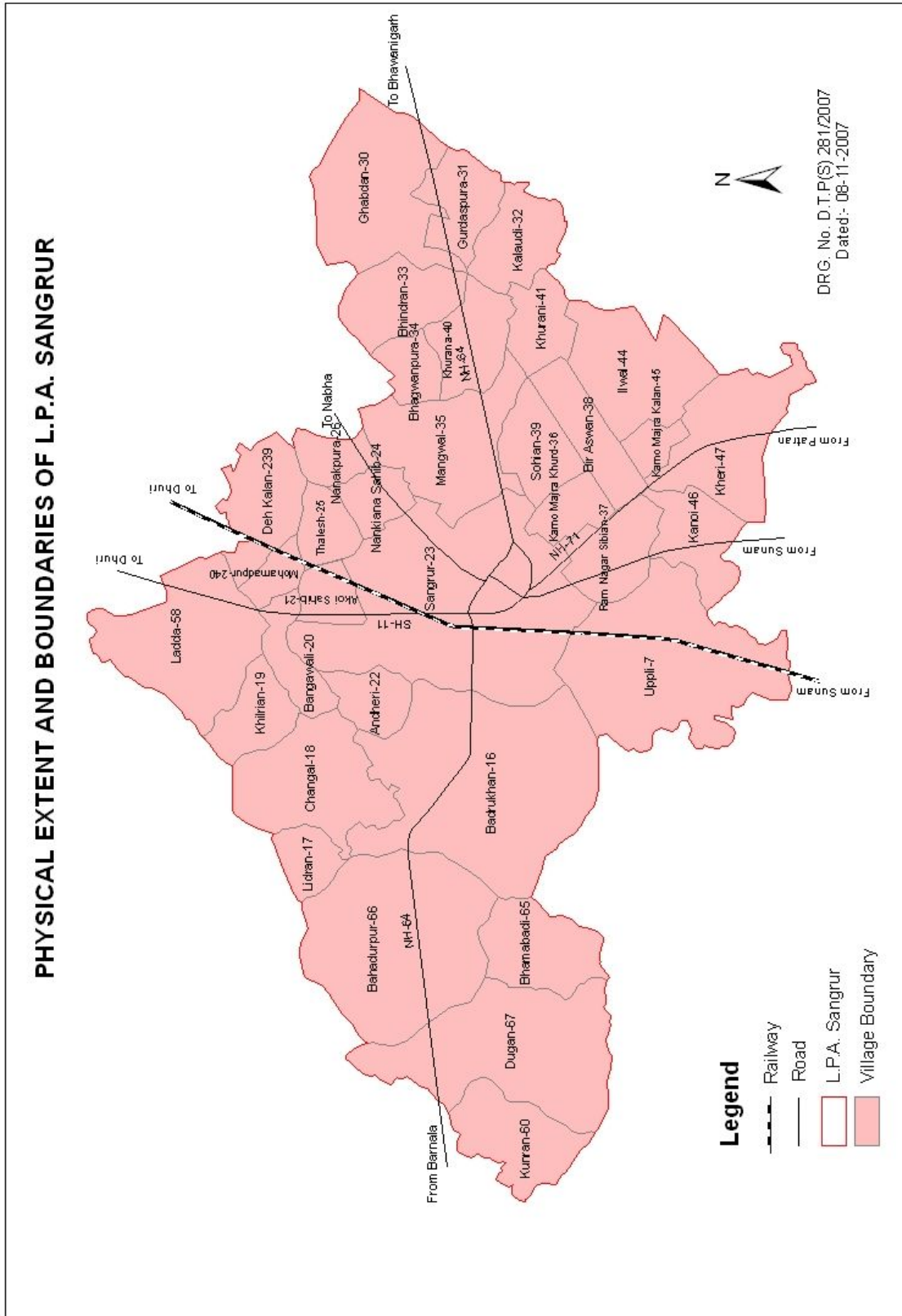


Fig. 2 : Physical Extent and Boundaries of L.P.A. Sangrur

It is located at a distance of about 126 km towards South-west from Chandigarh, about 225 km towards South from Amritsar. The Sangrur city is located at a distance of 102 km from Bathinda and at a distance of 80 km from Ludhiana. It is located on Ludhiana-Jakhal Railway line. It is linked with Dhuri and Jakhal by rail and with Patiala, Ludhiana, Bathinda and Jind by mettaled roads(shown in Fig -2). It is having important National Highways and State Highways like Chandigarh-Patiala-Sangrur-Bathinda road (N.H.-64), Sangrur-Patran road (N.H.-71) and Malerkotla -Ludhiana road (S.H.-11). The L.P.A, Sangrur comprising of city and its surroundings, is an important part of rich fertile Malwa region of the state. The topography of the area experienced a vast change with the various ventures connected with the Green Revolution. Initially, Sangrur district had 6 sub-divisions. In the year 2007, Barnala district carved out from district Sangrur with Barnala sub division.

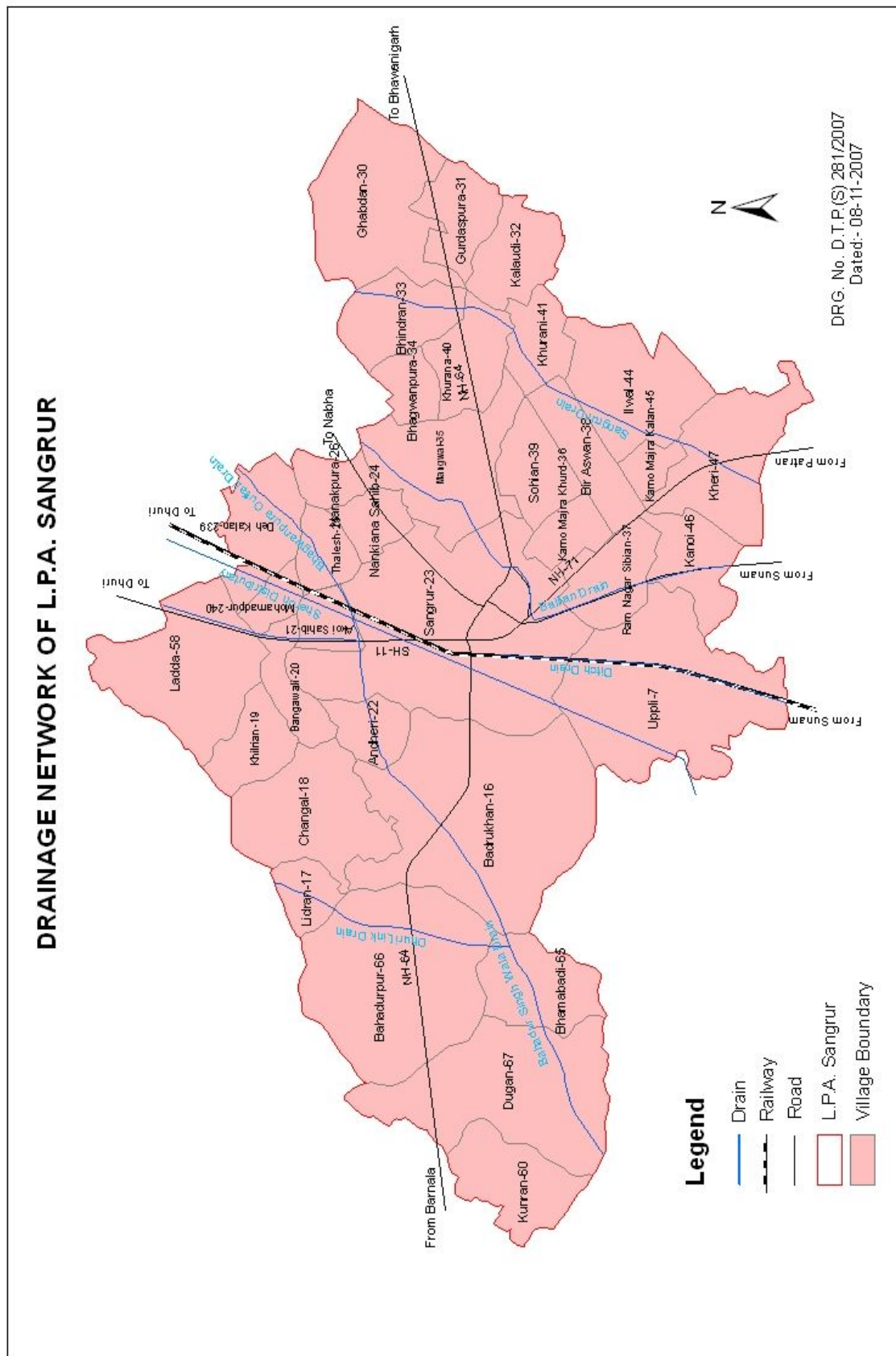
2.3 Physiography

Most of the Area of L.P.A Sangrur has mostly covered with the Kallar soils. However, the topography is under vast change with various venture connection with the Green Revolution and whole area of L.P.A is developed on green outlook. The water table is fairly high and sub soil water is fit for consumption for human beings. There is no major river flowing through the city.

2.4 Drainage System of L.P.A Sangrur:-

The drainage system of L.P.A Sangrur consists of natural drainage system. The drainage pattern of L.P.A. Sangrur, as shown in the fig. 3, indicates a very distinctive pattern of six drains passing through it, namely, Bahadur Singh Wala drain, Dhuri link drain, Baghwanpura out fall drain, Balian drain, Sangrur drain and Ditch drain along Dhuri-Jakhal Railway line.

- **Bahadur Singh Wala Drain:** - This drain falls in Sirhind choe near Bhikhi. It enters in district Sangrur from village Chaadon. It has a total length of 19.20 km from village Duggan to Ladda.
- **Dhuri Link Drain:** - This drain originates from village Kanjali and enters in village Lidran. After passing through village Lidran and Bahadur, it merges in Bahadur Singh Wala drain. It has a total length of 9.50 km. from village Lidran to Bahadurpur.
- **Bhagwanpura Outfall Drain:-**This drain originates from village Dehkalan and enters in the burji no.161500 of Bahadur Singh Wala drain and out falls on Dhuri-Sangrur road. It has, approximately, a total length of 4.96 km.



- **Balian Drain:** - It originates from the area of village Rupahedi and outfalls into Sangrur drain. It has a total length of 7.30 Km from village Mangwal to Kanno.
- **Sangrur Drain:-**This drain starts from village Bhindran and outfalls into Sirhind choe. It has total length of 10.82 km from the area of village Kheri to Bhindran.
- **Ditch Drain along Dhuri-Jakhal Railway line:** - It originates from Sangrur drain and outfalls into Sirhind choe. It has a total length of 3.60 Km from Sangrur to Uppli village as per revenue record, but physically, it is encroached upon and no traces are available.

2.5 Brief History of the City and its Landmarks

Sangrur took its name after the name of its founder 'Sanghu', a Jatt, about 400 years back. The town was a part of Jind State ruled by Phulkian dynasty of Punjab. In the first quarter of the last century, Raja Sangha Singh shifted his head quarter from Jind to Sangrur because of the place being nearer to Patiala and Nabha, the other two Phulkian States. Raja Sangat Singh ruled over it till 1834. Since he was issueless, his third cousin Sarup Singh was made the chief of the territory. He erected the walled town with a Katcha Castle in the centre. He declared himself a Hindu under an affidavit and he further affirmed his belief in Hinduism by erecting a Hindu Shrine each at the four gates provided in the walled city, He was succeeded by his son Raghubir Singh, who, later, was greatly influenced by the Jaipur city planning, reshaped the pattern of Sangrur, exactly on the lines of Jaipur, He laid out gardens, erected public and religious buildings constructed metalled roads around the town, He also made the castle pucca. The State of Jind consists of three separate tracts viz. Sangrur, Jind and Dadri. The tehsil of Sangrur is somewhat, scattered and comprises of four *ilaqas* separated from one another by British Territory or portions of the State of Patiala and Nabha. The city is surrounded by a mud wall, wide enough to mount guns, and provided with a moat. It has four gates, i.e. the Dhuri gate on the West, the Sunami or Jindi Gate on the South, the Patiala Gate on the East, and the Nabha gate on the North. Sangrur has some beautiful gardens like Khalifa Bagh, Karishna Bagh, Lal Bagh, Banasar Bagh, now gardens intersected by metalled roads and avenues of trees lie round the town. About a mile and a half to the north is Gurdwara Nankiana Sahib, with its pucca building, tanks and garden for the convenience of travellers, the cantonment and the royal cemetery. The streets of the city are broad and well paved or metalled and the houses of the official and trading classes are, generally, well built. The principal buildings of interest are the Diwan Khana, Baradari, the Royal Foundry, Idgah, Hathi

Khana, Kutta Khana, Baghi Khana and the Mubarak Mahal and some religious places like Mandir Mata Kali Devi, Mata Naina Devi, Mata Mansa Devi and Jayanti Devi also.

The Royal foundry was established in 1876 by Raja Raghbir Singh and contains a flour mill, an oil-press, and apparatus for casting etc. Mandir Shri Mata Kali Devi Ji is a building with a wide and spacious red stone floor. It was also built by the late Raja Raghbir Singh. The Royal cemetery, or shahi Samadhan, is situated outside the Nabha Gate, North of the town and contains the Samadhs or monuments of the deceased members of the Jind family.

2.6 Major Events in the Development History

2.6.1 Development Milestones in Sangrur

Sangrur city was established near about 400 years ago. Maharaja Raghbir Singh, who has been greatly influenced by the Jaipur city planning, reshaped the pattern of Sangrur exactly on the lines of Jaipur city, he laid out gardens, erected public and religious building, constructed mettaled roads around the town. He also made the castle pucca. All the main important buildings were made by Maharaja Raghbir Singh, i.e. Shahi Diwan Khana, Baradari, Bamba House, Idgah, Lal Bagh, Banasar garden. The Banasar Garden was constructed during 18th century. The Royal Foundary and Bamba House were constructed in 1876. Railway station was laid down in 1901. Three oil depots, i.e. Indian Oil, IBP and Bharat Petroleum, were established in 1999.

Table No: 2.6.1 Development Milestones of Sangrur City

Sr. No	Year	Major Events of Sangrur City
1.	18th century	Municipal Town & Sadar/Administrative Head Quarter of Jind
2.	18th Century	Banasar Garden
3.	1876	Royal Foundary was established
4.	1876	Bamba House
5.	19th century	Victoria Hospital
6.	1901	Establishment of Railway Station & first railway line was started
7.	1901	Establishment of Old Anaj Mandi
8.	1952	Establishment of Municipal Committee Sangrur
9.	1954	Establishment of District Jail
10.	1980	The Sangrur District Co-Operative Milk Products Union Ltd (SGR)
11.	1980	Sangrur Vanaspati Mills Ltd.
12.	1981	J.R. Solvent Industries Pvt. Ltd.
13.	1989	Egg's Tray Factory
14.	1989	Glucose Factory
15.	1992	Punjab Transfarmers And Electricals Ltd.
16.	1993	Shri Jindal Proteins Ltd.
17.	1999	Shagun Ghee Factory

18.	1999	Establishment of three oil depot, namely, Indian Oil, IBP and Bharat Petroleum
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Source: - District Gazetteer of Sangrur, DTP Office Field Survey-2009

2.6.2 Institutional Milestones

With the advent of various development milestones in the city, the institutional sectors also started concentrating and contributing towards the growth of the town. The establishment of educational institutions like Coutess Minto Girls' school in 1901 and Government Ranbir College in 1939 played a dominating role in the development of the region. However, National Nursing Institute and Bhai Gurdas Institute of Engineering and Technology started the era of technical education in Sangrur city. Mastuana Sahib Gurudwara is situated at distance of 6 km. West of Sangrur on the Sangrur-Barnala road; Mastuana Sahib was built by Sant Baba Attar Singh Ji and constructed here a Gurudwara, Gur Sagar and a Sarovar. He also started a high school here. A Degree College has also been functioning here since 1920. A Jor Mela held here for 3 days on 29, 30, and 31 January every year. The detail of institutional and Planning Milestones is given in table no.2.6.2 below:

Table No: 2.6.2 Detail of Institutional Milestones of Sangrur City

Sr. No.	Year	Events
1.	1901	Coutess Minto Girls' School
2.	1920	Akal Degree College (Mastuana Sahib)
3.	1939	Govt. Ranbir college
4.	1968	Gen. Gurnam Singh Public School
5.	2002	Bhai Gurdas Institute Of Engineering And Technology
6.	2004	National Nursing College

Source: - District Gazetteer of Sangrur, DTP Office Field Survey-2009

2.6.3 Planning and Administrative Milestones

Sangrur small town committee was established in 1950. After the independence when Sangrur was upgraded to become seventh district of the state it had a great positive effect on the growth and development of the area. The first master plan of Sangrur was prepared in the year 1990 for a period of 1990 -2005 period of which was extended up to 2010 but due to the lack of any legal backing the proposal of this plan could not be implemented to full extent as envisaged. However with the enactment of Punjab Regional and Town Planning and Development Act 1995 (Amendment 2006) to prepare the master plan of Sangrur under a framework; Local Planning Area, Sangrur was notified vide Notification no. 12/14/2007-4HGI/9813 Dated: 17-12-2007 u/s 56(1) of "The Punjab Regional and Town Planning & Development (Amendment) Act, 2006". The detail of planning and

administrative milestones relating to Sangrur is given in table 2.6.3 below:

Table No: 2.6.3 Planning and Administrative Milestones

Sr.No.	Year	Events
1.	1950	A small Town Committee was constituted at Sangrur
2.	1952	Establishment of first Municipal Committee
3.	1974	First Time Master Plan Prepared For Sangrur
4.	1975	Establishment of Improvement Trust
4.	1978	First Town Planning Scheme
5.	1979	First Development Scheme
6.	2000	District Administrative Complex (D.A.C)
7.	2001	Establishment of Judicial Complex
8.	2005	First Private Colony (Sangrur valley) was approved by PUDA

Source: - District Gazetteer of Sangrur, DTP Office Field Survey-2009

2.7 Legal Framework for Preparation and Implementation of Master Plan

Master Plan of L.P.A Sangrur is being prepared as per the provisions of "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006" (PRTPD Act, 2006)". Main provisions of the law are given as under: -

The act is the sole legal framework available for preparing Master Plans and Regional Plans. It is a comprehensive act and provides for the manner in which the use of land in the area of a Local Planning Area shall be regulated. The act also prescribes specific time period for various steps in the plan preparation process.

The act intends to achieve the following main objectives:

- I. To consolidate with suitable modifications, in one place laws dealing with the different aspects of urban development.
- II. To set up a high powered Board to advise the State Government and to guide and direct planning and development agencies, with respect to matters pertaining to the planning, development and use of urban and rural land.
- III. To set up a State level Urban Planning and Development Authority and to provide for the setting up of a Special Urban Planning and Development Authorities and New Town Planning and Development Authorities to promote and secure better planning and development of different regions, areas and cities.
- IV. To create a legal and administrative set up for the preparation and enforcement of Master Plans for regions, areas and for existing and new cities.
- V. To make the whole programme of urban development mainly a self - sustaining and self - paying process.
- VI. To interlink land development and house construction permitting full exploitation of

the urban land resource to provide a boost to the programme of house construction, especially, the economically weaker sections of the society.

- VII. To provide a legal, administrative and financial framework for the preparation and execution of Town Development Schemes aimed at filling the gaps in the required civil infrastructure and securing the renewal and redevelopment of congested and decayed areas in the existing towns.

2.7.1 The following sections of the Act deal with the Preparation of Master Plans:

- Under section 56(1), L.P.A Sangrur was notified vide notification no. 12/14/2007-4HGI/9813 dated 17-12-2007 (Annexure-I) in the official gazette for preparing Master Plan. Once an area has been declared under section-56 (1), no person can institute or change the use of land for any purpose or carry out any development in respect of any land without the previous permission of competent authority until the Master Plan comes into operation. However, this prohibition does not apply to any area comprised in *abadi deh* of any village falling inside its *lal lakir* or *phirni*.
- After the declaration of planning area, as above State Govt. has to designate the Planning Agency for the L.P.A under section 57. Accordingly, Chief Town Planner, Punjab has been designated as the Planning Agency for L.P.A Sangrur vide notification no 12/14/2007-4HG1/9819 dated 17-12-2007 (Annexure-II)
- Section 58 of the act states that:
 - (1) Designated Planning Agency will work under the overall directions and control of the State Government.
 - (2) The state Government may assign any or all of the following functions to the Designated Planning Agency, namely to
 - i. carry out survey of the regional planning area, L.P.A or a site for new town, as the case may be, and prepare reports on the surveys so carried out;
 - ii. prepare an existing land use map and such other maps as may be necessary for the purposes of preparing regional plan, master plan and a new town development planned
 - iii. prepare a regional plan, master plan and a new town development plan.
- Section 59 deals with the preparation of present land use map and fixes six months time for this purpose, after the designation of Planning Agency which may be extended by the State Govt. from time to time.
- Section 60 provides for expenses that the State Government or any other authority

functioning in the Planning Area may determine for payment to the designated planning agency as contribution towards the expenses incurred by it in the discharge of its functions.

Chapter X deals with the preparation and approval of Master Plans of towns / cities.

- The section 70(1) states that the planning agency shall not later than one year after declaration of planning area and after the designation of that agency for that area shall prepare and submit to the state government a master plan for its approval. The Master Plan so prepared shall –
 - a) Indicate broadly the manner in which the land in the area should be used.
 - b) Allocate areas or zones of land for use of different purposes.
 - c) Indicate, define and provide the existing and proposed highways, roads, major streets and other lines of communication.
 - cc) Indicate areas covered under heritage site and the manner in which protection, preservation and conservation of such site including its regulation and control of development, which is either affecting the heritage site or its vicinity, shall be carried out.
 - d) Include regulations to regulate within each zone the location, height, number of storeys and size of buildings and other structures, open spaces and the use of buildings, structures and land.
- Section 70(2) regulates the form and contents of the master plan and shall include such maps and such descriptive matter as may be necessary to explain and illustrate the proposals in the master plan.
- Section 70(3) has the provision for the state government to direct the designated planning agency to publish the existing land use plan and master plan and the information regarding the place or places where copies of the same may be inspected by the public for inviting objections in writing with respect to existing land use plan and master plan within a period of 30 days from the date of publication.
- Under section 70(4), the state government after considering the objections and in consultation with the board may direct the designated planning agency to modify the master plan or approve it as such.
- Under section 70(5), the Designated Planning Agency after approval of the state government shall publish the final master plan in the official gazette after carrying out the modification if any under intimation to the state government within a period of 30 days from the date of according approval by the state government.
- According to section 75, the Master Plan shall come into operation from the date of publication. Refer to sub section 5 of section 70.

- The section 76 provides for the amendment in the master plan and says that at any time after the date on which the master plan for an area comes into operation, and at least once after every ten years, after that date, the Designated Planning Agency shall, after carrying out such fresh surveys as may be considered necessary or as directed by the government, prepare and submit to the government, a Master Plan after making alterations or additions as it considers necessary.

- **Development Controls**

Chapter XI of "The Punjab Regional & Town Planning & Development Act" provides for "Control of Development and Use of Land in Areas where Master Plan is in Operation". This chapter in conjunction with the Punjab Regional Town Planning & Development (General) Rules 1996 has laid down the:

- (a) Procedure for applying for development permission.
- (b) The manner in which development permission may be granted, including the provisions for deemed permission.
- (c) Validity and lapsing of development permission
- (d) Provision serving "acquisition notice" if beneficial use of land is rendered impossible.
- (e) Control of unauthorized development.

Chapter XII, Section 91 of the Act deals with the preparation of Town Development Schemes. Although Town Development Scheme does not have any role to play in the preparation of Master Plan but has a significant role in the implementation of Master Plan proposals by way of planned development and through making land available for the open spaces, recreation, education and health services, transport and communication network, water supply, sewerage, sewage disposal and other public utilities including electricity and gas etc. It has a vital role in the preservation and protection of objects of historical importance i.e. natural beauty or heritage and of building actually used for religious purposes. Similarly, it takes care of imposing of conditions and restrictions with regard to open space to be maintained around building and various development controls etc.

In addition to above, Chapter XIV of the Act provides for "Control and Development along Scheduled Roads".

The flow chart showing the process of Master Plan preparation and approval is illustrated on next page.

Stages of Master Plan Preparation
(As per "The Provisions of the Punjab Regional & Town Planning & Development
(Amendment) Act, 2006")

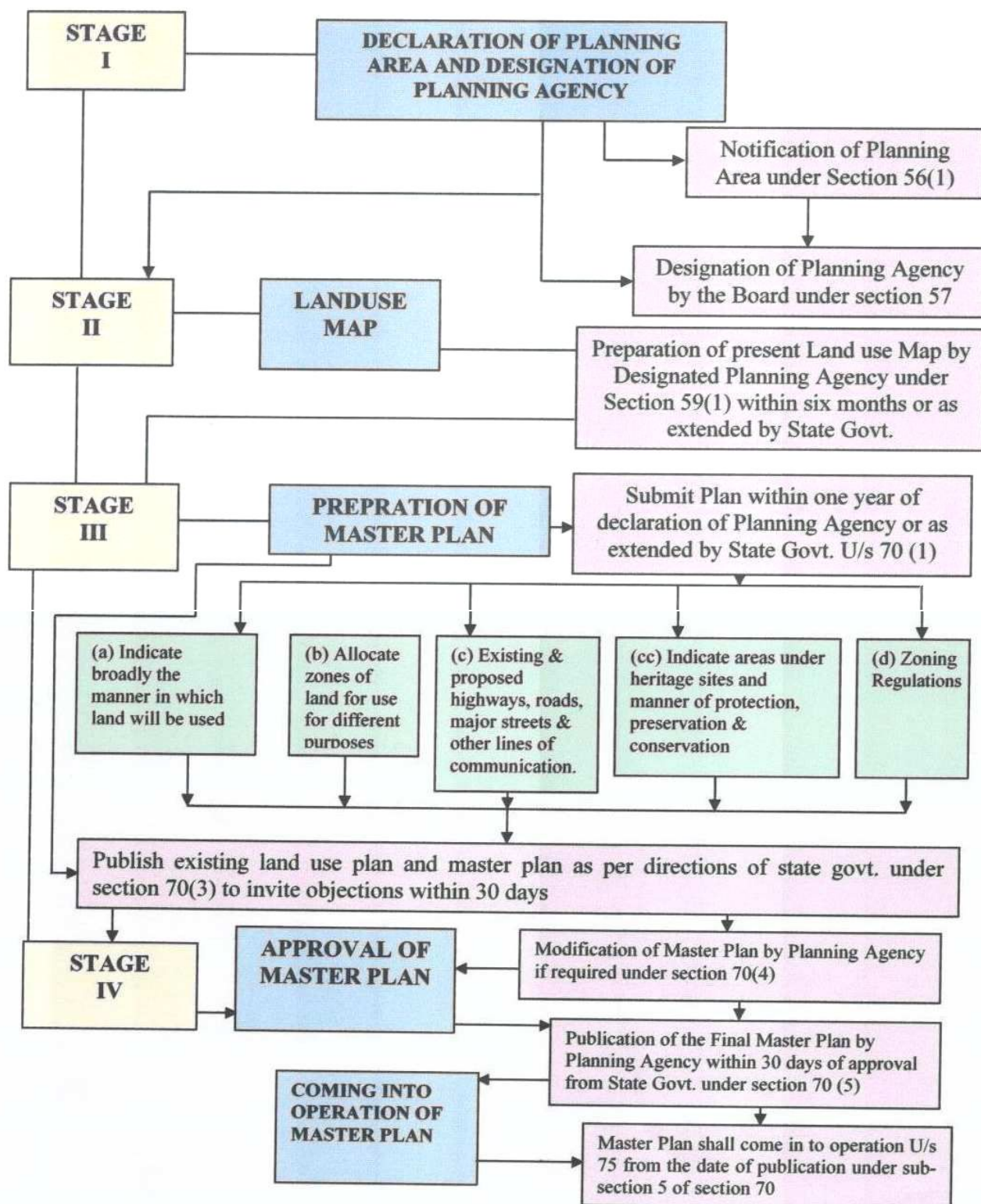


Fig. 4 Stages of Master Plan Preparation

2.7.2 Other Legislations

The acts, mentioned below, though do not have direct role in the preparation of Master Plan but have a definite role to play in the implementation of the Master Plan.

Punjab Town Improvement Act, 1922

The Punjab Town Improvement Act, 1922 is another tool which plays a significant role for the implementation of Master Plans in the following manner:

- (i) It helps to provide planned development through the mechanism of Development Schemes.
- (ii) It makes land available for the development of social and physical infrastructure like schools, health, parks and play grounds, good road network etc.
- (iii) Social housing can be made available within the purview of this act.

Punjab Apartment and Property Regulation Act, 1995 (PAPRA)

The Punjab Apartment and Property Regulation Act, 1995 has been enacted with a view to regulate the promotion of the construction, transfer and management of apartments on ownership basis, to regulate colonies and property transactions and to provide for registration of promoters and estate agents and enforcement of obligations on promoters and estate agents. Before the enactment of 1995 Act, the Punjab Regulation of Colonies Act, 1975 occupied the field. However, it was felt that the private colonizers were operating in the State with the sole motive of making profits without considering the interest and rights of individual buyers of plots / flats. In order to check, control and regulate the activities of private colonizers and to protect the interest of the consumers keeping in view the National Housing Policy, the legislature enacted the 1995 Act.

This act is an important tool for ensuring planned development within the framework of Master Plan. Master Plan envisages good living environment with a reasonable level of social and physical infrastructure for the inhabitants. This act helps in achieving these objectives of the Master Plan if enforced in the right manner and enacting proper urban land development policies in the following manner:

It provides planned development thus checking, controlling and regulating the activities of the private developers.

1. It makes available funds for off-site or external development.
2. It provides land for the development of physical and social infrastructure through the mechanism of planned development.
3. It also has the provision to make social housing available at low prices for economically weaker section of the society.

3. POPULATION, HOUSING, ECONOMY AND EMPLOYMENT

The true character of city can be judged by statistical data related to demographic profile in terms of the population growth, population density, literacy rate etc. The decadal study of the population growth and its characteristics are of great help in bringing out the trends of population growth, population density, literacy rate etc. and for perceiving the future of the city. Thus, the following study examines the population growth and various characteristics of population in L.P.A. Sangrur and Sangrur city.

3.1 Population Growth and Characteristics

3.1.1 Population Growth Rate of L.P.A. Sangrur

The L.P.A. Sangrur comprises of 34 villages, which include one urban settlement, i.e. Sangrur. Table no. 3.1 (a) reveals the growth trends of L.P.A Sangrur. It shows that during the decade of 1981-91, the growth rate of population was 22.94% that increased to 25.76% in the decade 1991-2001. Sangrur city has a total population of 77989 persons that is playing a multifunctional role as per 2001 census.

Table No: 3.1(a) Population Growth 1981-2001

Punjab State Growth Rate (%age)			L.P.A Sangrur Growth Rate (%age)	
	1981 – 1991	1991 – 2001	1981 -1991	1991 – 2001
Total	20.81	20.10	22.94	25.76
Urban	28.95	37.86	24.76	38.23
Rural	17.69	12.65	21.21	13.49

(Source: The Census of India: 1981, 1991 & 2001)

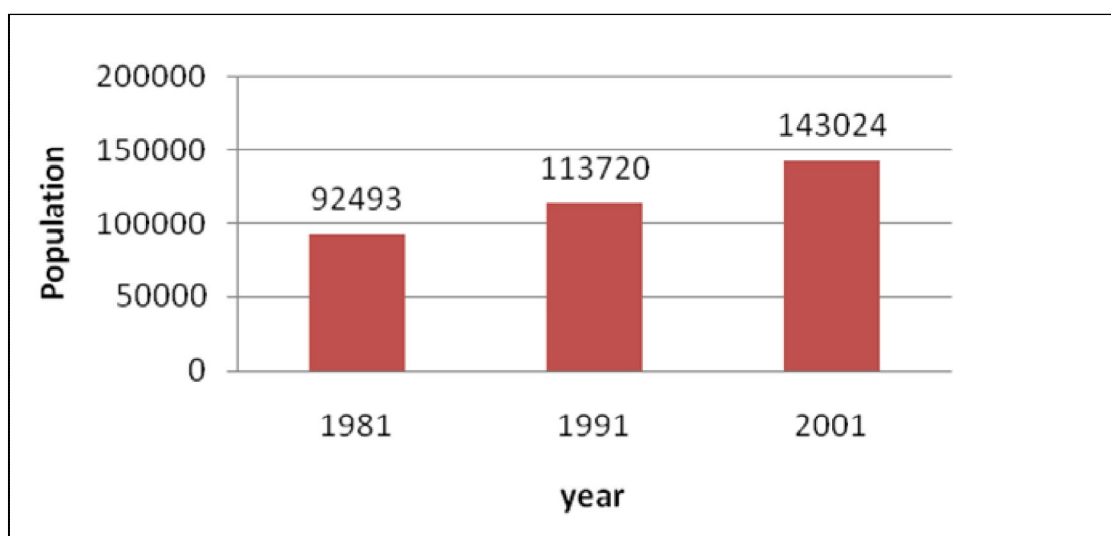
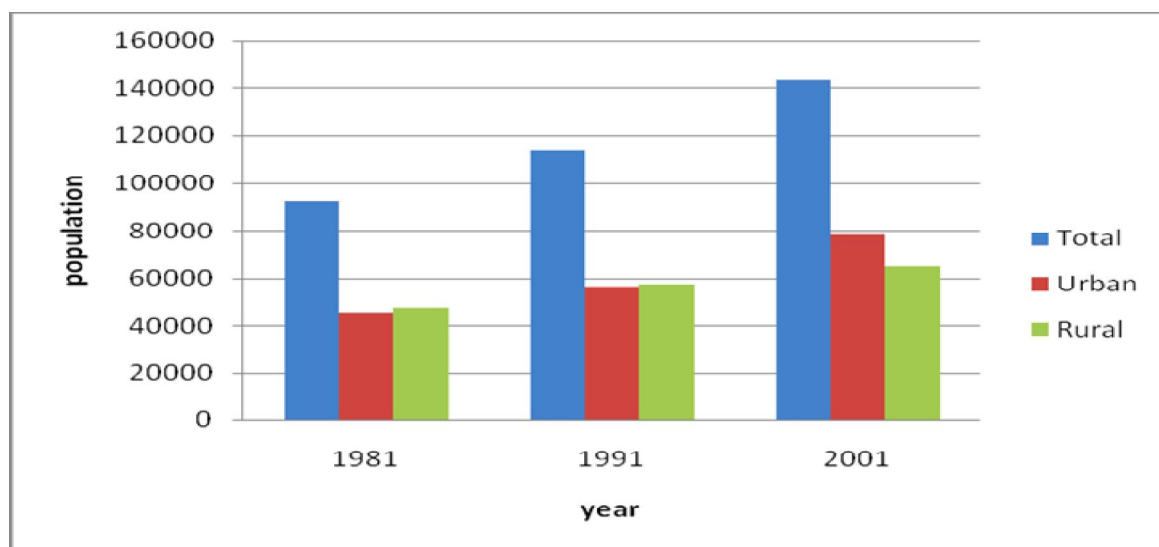


Fig: 5 Population Growth Rate of Local Planning Area Sangrur

It can be observed from the table no. 3.1 (b) that the total percentage share of population of L.P.A Sangrur in context of Punjab in the year 1981 was 0.55% which increased to 0.56% in 1991 and again increased to 0.58% in 2001. The percentage of urban population of L.P.A Sangrur to the total urban population of Punjab state was 0.97% in 1981 and declined to 0.94% in 1991 and 2001. The decline is the outcome of decreasing urban growth in L.P.A Sangrur from 1981 to 1991 and 2001. The share of rural population increased slightly from 1981 to 2001. It was 0.39% in 1981 and 0.40% in 1991 & 2001 respectively.

Table No: 3.1(b) Share of L.P.A Sangrur Population in Punjab

Year	Total			Urban Population			Rural Population		
	Punjab	L.P.A Sangrur	%age share	Punjab	L.P.A Sangrur	%age share	Punjab	L.P.A Sangrur	%age share
1981	16788915	92493	0.55	4647757	45220	0.97	12141158	47273	0.39
1991	20281969	113720	0.56	5993225	56419	0.94	14288744	57301	0.40
2001	24358999	143024	0.58	8262511	77989	0.94	16096488	65035	0.40



Source: Census of India: 1981, 1991 & 2001

Fig: 6 Share of L.P.A Sangrur Population in Punjab

- Population Growth of Sangrur City since 1901**

The growth of population in Sangrur Municipal Council from 1901 to 2001 is shown in table no. 3.1 (c). It is observed that the decadal growth rate of Sangrur city had a varying character. During the period 1941-1951, despite of large migration, deaths etc., due to the partition of the country, Sangrur city experienced a positive urban growth rate of 9.39% as compared to Punjab's urban growth rate of 20.02%. After the year 1951, the growth rate of Sangrur city rose to 51.24%, which plummeted down to 20.01% in 1971. Again, the

decade of 1971-81 witnessed an increase in the growth rate of population. During 1981-91, the growth rate plummeted down to 24.76% due to outbreak of riots in Punjab and large number of people migrated to other states. In the decade of 1991-2001, the growth rate of population rose to 38.23%.

Table No: 3.1(c) Population Growth Trends of Sangrur city in context of Punjab 1901-2001

Sr. No.	Census Year	Total Urban Population of Punjab	Growth Rate of Punjab	Total Urban Population of Sangrur City	Growth Rate of Sangrur City
1.	1901	934766	----	11,852	----
2.	1911	813224	-13.00	9041	-23.72
3.	1921	869526	6.92	10799	19.44
4.	1931	1168413	34.37	13901	28.72
5.	1941	1657415	41.85	17132	23.24
6.	1951	1989267	20.02	18741	9.39
7.	1961	2567306	29.05	28344	51.24
8.	1971	3216179	25.27	34015	20.01
9.	1981	4647757	44.51	45220	32.94
10.	1991	5993225	28.94	56419	24.76
11.	2001	8245566	37.58	77989	38.23

Source: Census of India, 2001

Table No: 3.1(d) Share of Population of Sangrur Municipal Council in Total Urban Population of Punjab.

Years	Urban Population of Punjab(Persons)	Population of Sangrur Municipal Council (Persons)	Population of Sangrur Municipal Council as %age of Total Urban Population of Punjab
1971	3216179	34015	1.06
1981	4647757	45220	0.97
1991	5993225	56419	0.94
2001	8245566	77989	0.94

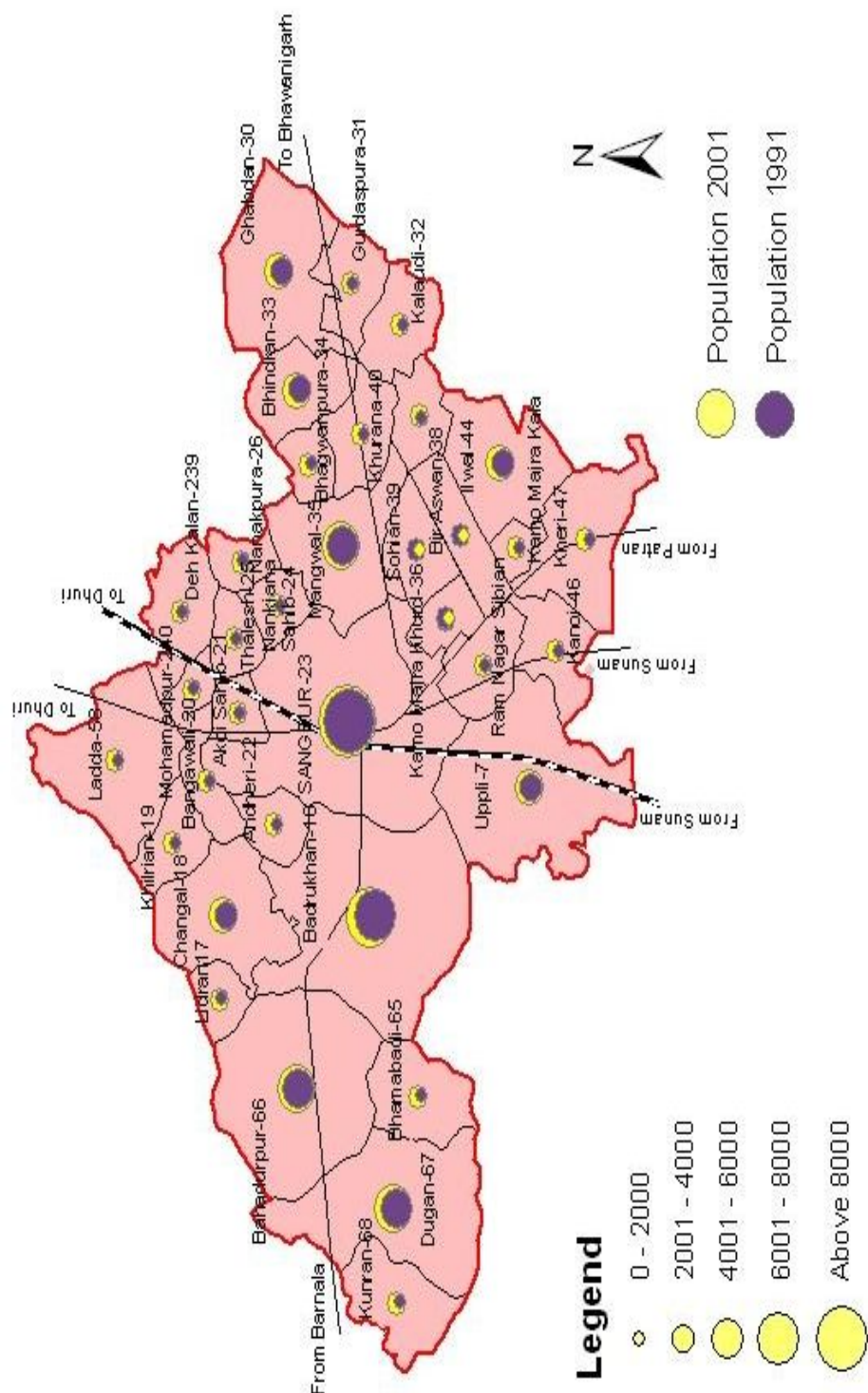
Source: Census of India, 2001

Table no. 3.1 (d) reveals the Share of Population of Sangrur M. Council limit in total urban population of Punjab. In the case of Sangrur M. Council limit, the percentage share of population has a decreasing trend from 1971 to 2001. In Sangrur M. Council limit, it was 1.06% in 1971, 0.97% in 1981, 0.94% in 1991 and again 0.94% in 2001.

• **Distribution of Population in L.P.A Sangrur**

The study of distribution of the rural population of L.P.A Sangrur for the year 1991 and 2001 reveals that there is high concentration of population in the vicinity of Sangrur-Barnala road, i.e. west direction of L.P.A Sangrur, which has the villages of larger size. The rural population is moderately concentrated in the villages lying along Sangrur-

DISTRIBUTION OF POPULATION - L.P.A. SANGRUR



Source:- Census of India 1991, 2001

Fig. 7 Distribution of Population - L.P.A. Sangrur

Patiala Road, Sangrur-Patran Road and Sangrur-Sunam railway line, with the exception of Mangwal, Bhindran, Ghabdan, Ilwal and Uppli, which are having high concentration of population. Similar trend of moderate concentration has been noticed along Sangrur-Dhuri road whereas rest of the L.P.A rural indicates low concentration of population. Positive growth rate has been noticed predominantly in all the rural settlements of L.P.A Sangrur except the villages namely Sohian, Kamo Majra Khurd and Bir Aswan.

- **Population Density L.P.A Sangrur and Sangrur City**

According to 2001 census, the density of L.P.A Sangrur was 6.44 persons per hectare. The population density of Sangrur city increased slightly during the period of 1971-2001, from 24.47 persons per hectare in 1971 to 40.34 persons per hectare in 2001. The area falling within the Municipal council limit was only 13.90 sq. km (1390 hectare) in 1971, which was increased to 19.33 sq km. (1933 hectare) by 2001.

Table No: 3.1 (e) Population Density of Sangrur City

Year	Population	City Area in hectare	Approximate Density Persons/ hectare
1971	34015	1390	24.47
1981	45220	1390	32.53
1991	56419	1390	40.58
2001	77989	1933	40.34

Source: - Census of India 1971, 1981, 1991, 2001

The density of population within the M.Cl. is not homogenous all over the city. It varies from ward to ward as given in Table No.3.1 (f).

Table No: 3.1 (f) Ward Wise Population Density of Sangrur City

Sr. No.	Ward No.	Area in Hectare	Population	Density Persons Per Hectare
1.	Ward No. 1	138.06	5034	36.46
2.	Ward No. 2	31.58	4372	138.44
3.	Ward No.3	50.11	4156	82.93
4.	Ward No.4	18.00	3202	177.88
5.	Ward No.5	140.87	5830	41.38
6.	Ward No.6	12.15	2321	191.02
7.	Ward No.7	8.10	3183	392.96
8.	Ward No.8	206.32	5161	25.01
9.	Ward No.9	7.57	2502	330.51
10.	Ward No.10	84.01	3607	42.93
11.	Ward No.11	22.83	3963	173.58
12.	Ward No.12	14.29	3277	229.32
13.	Ward No.13	244.44	4190	17.14
14.	Ward No.14	531.48	3078	5.79
15.	Ward No.15	13.97	2784	199.28
16.	Ward No.16	33.35	4100	122.93
17.	Ward No.17	10.29	2779	270.06

18.	Ward No.18	23.58	2829	119.97
19.	Ward No.19	11.99	3406	284.07
20.	Ward No.20	283.34	4864	17.16
21.	Ward No.21	46.59	3351	71.92
	Total	1933.02	77989	40.34

Source: - Census of India, 2001

Decadal census comparison of ward wise density is however not possible as ward boundaries have been changing over the years. The density gradient as per 2001 census shows that ward no. 7, 9, 12, 17 and 19 are having a gross density of more than 200 persons per hectare with the distinction of highest density of 392 persons per hectare in ward no. 7 and the lowest of 6 persons per hectare only in ward no. 14. The density has been classified into three groups as given in Table no. 10 below:-

Table No: 3.1(g) Density Gradient of M. Council Sangrur (Ward Wise) 2001

Sr. No.	Density Slab (persons/hectare)	Ward Numbers
1.	Above 200	7,9,12,17,19
2.	100-200	2,4,6,11,15,16,18
3.	Below 100	1, 3,5,8,10,13,14,20,21

Source: Census of India 2001

The density gradient shown in the table no.3.1 (g), the highest density zone of 200 persons per hectare and above falls in inner part of the city because of thickly built up areas. The wards surrounding the inner area have medium density whereas the wards falling on the periphery of the city have low density because of vast vacant areas or large industrial units in these wards. The density gradient as given above is shown in fig. 8.

• Age Structure (Sangrur Municipal Council)

The age structure of population is given by grouping different age groups (table no. 3.1-h). It helps in assessing various facilities provided as well as required by city population. In the year 2001, the maximum population, i.e. 34.07%, was in the age group of 5-19, i.e. dependent age group. The age group of 20-39 precedes the age group of 5-19 with a population of 32.65%, the age group of 60+, had population of 7.55% only. The highest number of males is in the age group of 5-19, and females are in the age group of 20-39, i.e. the working age group.

Table No: 3.1(h): Age Structure of Sangrur Municipal Council 2001

Age Group	Persons	% age	Males	Females
0-4	5891	7.55	3181	2710
5-19	26573	34.07	14516	12057
20-39	25470	32.65	13299	12171
40-59	13735	17.62	7387	6348

Ward Wise Population Density of Sangrur City

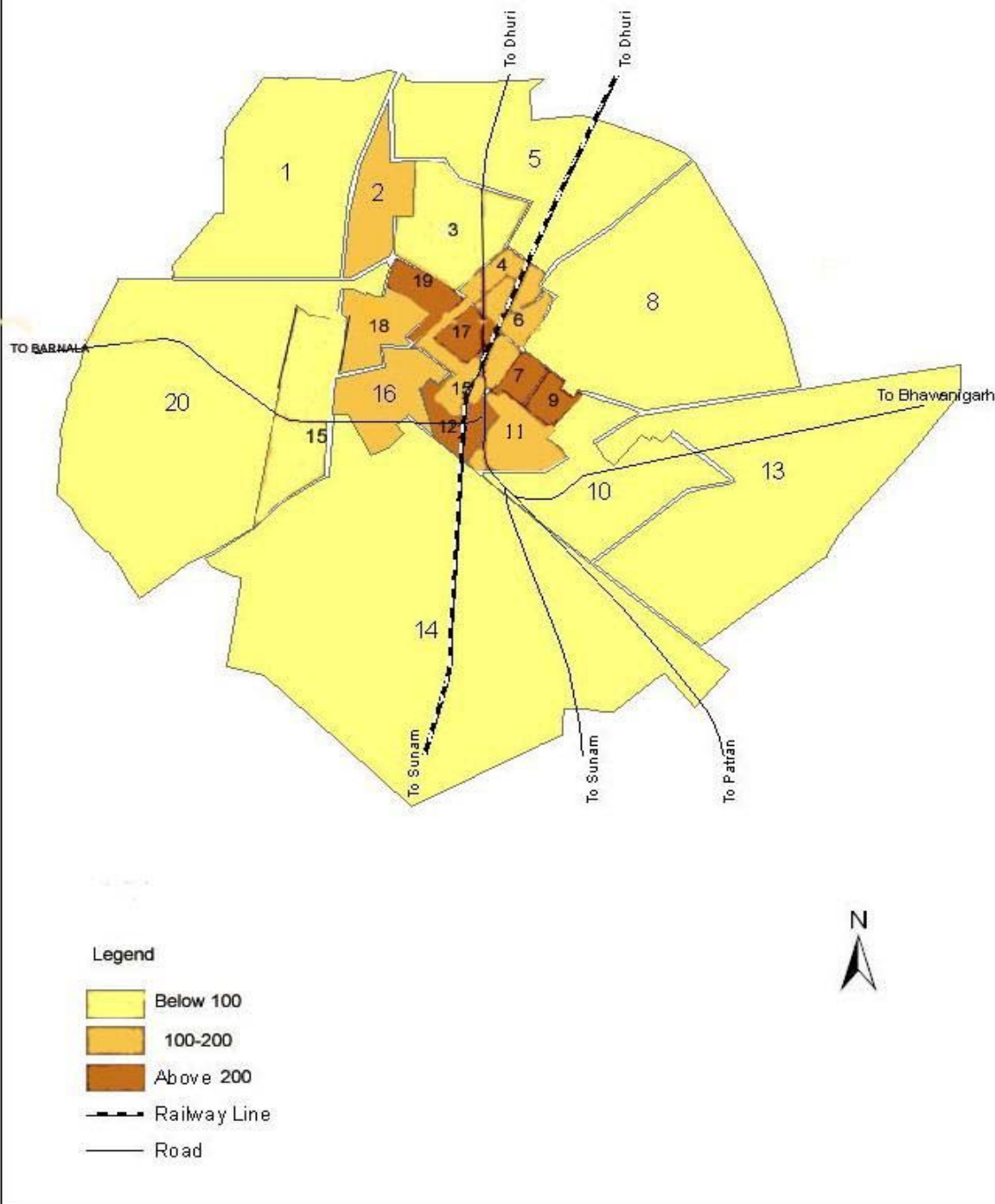


Fig: 8 Ward Wise Population Density of Sangrur City

60& above	5884	7.55	2966	2918
Age not stated	436	0.56	236	200
Total	77989	100	41585	36404

Source: Census of India, 2001

• **Literacy Rate (L.P.A Sangrur)**

The literacy rate in L.P.A. Sangrur has increased from year 1981 to 2001. In 1981, it was 39.20%, which increased to 49.63% in 1991 and further rose to 62.25% in 2001. Out of total literate persons, 56.85% were males and 43.15% were females in 2001. A considerable increase in the literacy rate of Sangrur city has been witnessed in the decade of 1981 and 2001 (table no.3.1J). The literacy rate of Sangrur Municipal council which was 53.21% in 1981, 62.93% in 1991, increased to 72.25% in 2001, i.e. more than the total literacy rate of L.P.A. Sangrur. Female literacy rate was 41.09% in 1981, in 1991 it further increased to 42.46% and reached to 43.91% in 2001, whereas males literacy rate is concerned, it shows declining trend, it was 58.91% in 1981, in 1991 it decreased to 57.54% and further declined to 56.09% in 2001. Literacy rate of L.P.A. Sangrur is low as compared to the Punjab State, i.e. 70% in 2001. However, literacy rate is approximately equal to the Punjab State in case of Sangrur city.

Table No: 3.1 (i) Literacy Rate of L.P.A Sangrur

Sr. No.	Year	Total Population	Total Literates	% age	Males		Females	
					No.	% age	No.	% age
1.	1981	92493	36256	39.20	23147	63.84	13109	36.16
2.	1991	113720	56,440	49.63	33714	59.73	22,726	40.27
3.	2001	143024	89028	62.25	50,615	56.85	38,413	43.15

Source: - District Census Handbook 1981, 1991, 2001, Sangrur

Table No: 3.1 (j) Literacy Rate of Sangrur City

Sr. No.	Year	Total Population	Total Literacy	%age	Males		Females	
					No.	%age	No.	%age
1.	1981	45220	24061	53.21	14174	58.91	9887	41.09
2.	1991	56419	35,505	62.93	20431	57.54	15074	42.46
3.	2001	77989	56,346	72.25	31604	56.09	24,742	43.91

Source: District Census Handbook 1981, 1991, 2001, Sangrur.

As per the trend, literacy rate of females increased from 40.27% in 1991 to 43.15% in 2001 in L.P.A, Sangrur that shows that more and more boys as well as girls are coming to schools and colleges. Similarly, table no. 3.1 (j) shows that the literacy rate of Sangrur town/city is increased from 62.93% in 1991 to 72.25% in 2001.

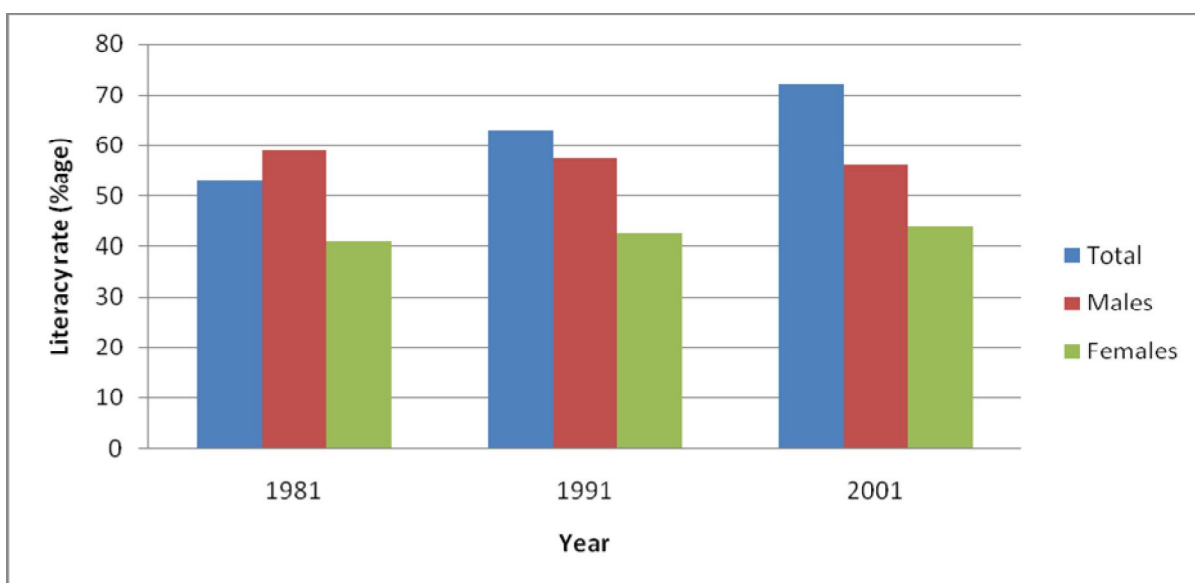


Fig: 9 Literacy Rate (%age) of Sangrur City 1981to 2001

Literacy rate of L.P.A Sangrur is low as compared to the Punjab State, i.e. 69.7% in 2001. But literacy rate is approximately equal to the Punjab State in case of Sangrur city. It means there is still a need to aware people about the education and there is need to strengthen the existing education system by way of opening the new educational institutions at different levels around the L.P.A, Sangrur taking into account the requirement of today's society.

- **Migration**

The Census of India defines the migration as:

Migrants by place of birth: Migrants by place of birth are those who are enumerated at a village/town at the time of census other than their place of birth.

Migrant by place of last residence: A person is considered as migrant by place of last residence, if the place in which he is enumerated during the census is other than his place of immediate last residence.

- **Migration at Punjab Level**

Being a prosperous state, Punjab attracts a large number of people from within India and outside India. Migration in Punjab is predominantly male sex selective and it affects the demographic profile of the state. Approximately 0.81 million people from outside Punjab and 0.02 million from outside India migrated to Punjab whereas 0.5 million out migrated from the state. Agricultural development due to the Green Revolution has worked as a pull factor for migrants from U.P, Bihar, Haryana, Orissa etc.

Table No: 3.1(k) Migrants in Punjab by Last Residence – Duration 0-9 years.

1991 Population	In migrants	Out migrants	From other countries	Net Migrants	Migration rate per 100
20,181,969	811,060	501,285	26,861	336,636	1.7

Source: Census of India, 2001

➤ Migration in Sangrur

According to Census 2001, the total population of Sangrur M. Council is 77989 persons in which 3235 persons (15%) are in-migrants coming from rural areas for higher education as well as for job purposes.

The total population of Sangrur M. Council showed an increase of 21570 persons in the decade of 1991-2001 as it was 56419 persons in 1991. The total number of migrants that came to Sangrur M. Council in the duration of 0-9 years is 3235 persons, i.e. 15% of population increase in the decade of 1991-2001.

Table No 3.1 (l): Migrants in Sangrur Municipal Council

1991 Population	2001 Population	Increase of Population (1991-01)	In migrants in the duration of 0-9 years	% of migrants to increase of population (1991-01)
56419	77989	21570	3235	15%

Source: Census of India, 2001

3.2 Housing

The Census of India defines a 'Census House' as a building or a part of a building having a separate main entrance from the road, common courtyard or staircase etc., used or recognized as a separate unit. Hence, the 'Census House' has been taken as a unit for the study of housing component in Master Plan Sangrur which not only includes residential component but also comprises of other type of buildings like shops, offices, hospitals etc. However, main focus of the study is on the residential and other uses. Housing characteristics, (stock) reflects the economic and social status of the people residing in a particular area.

The growth of residential houses and households has been found to be keeping pace with the growth of population. Housing stock from the year 1981 to 2001, (table no.3.2-a), reveals that the number of occupied residential houses in the L.P.A increased from 15530 to 26525. A growth rate of 28.93% has been observed in 1981-1991 and increase in growth of 32.47% has been witnessed in the decade of 1991-2001. The number of households in 1981 was 15671 only, which increased to 20118 in 1991, showing a growth rate of 28.38% in the decade of 1981-91. It further increased to 26894 households in 2001

and reported 33.68% of growth in 1991-2001. The household size of population of the Sangrur L.P.A shows an inverse correlation with the number of households and occupied residential houses in Sangrur L.P.A. The household size which was 5.5 in 1981, decreased to 5.4 in 1991 and it further came down to 5.3 in the year 2001. Consequently, the number of households and number of occupied residential houses increased during this decade. The fast-paced development, awareness among people of a small family and breaking up of joint families into nuclear families has resulted into the decrease in the household size of the L.P.A. The table no.3.2 (a) shows the growth pattern of houses, households and household size.

Table No: 3.2(a) Growth Pattern of Occupied Residential Houses and Number of Households in L.P.A Sangrur:

Year	Occupied Residential Houses	Growth Rate of Residential Houses %age	No. of Household	Growth Rate of Household %age	Household Size
1981	15530	-----	15671	-----	5.5
1991	20023	28.93	20118	28.38	5.4
2001	26525	32.47	26894	33.68	5.3

Source: Census of India 1981, 1991, 2001

- **Housing Characteristics**

➤ **Pattern of Use of Housing Stock**

The pattern of use of census houses in Sangrur, in the year 2001, (table no. 3.2-b), reveals that 2/3rd of houses in Sangrur are used for residential purposes including government housing (69.58%). The use of residential premises for other purposes is also widespread. Every seventh house in the city is being used as shop/office whereas every 20th house in the city is used for school, college, hotel, lodge, guest house, hospital, dispensary, factory, workshop, work shed, place of worship and other non-residential uses. Every 35th house of the city is used for both residential and other purposes. It reveals that occupation density of census houses is very high but it is a matter of concern that almost every 11th house in the city is lying vacant or unoccupied.

Table No: 3.2 (b) Pattern of Use of Census Houses - Category Wise (2001)

Sr. No.	Category	No. of Houses	%age of Total Houses
1.	Residential (including govt. housing)	28749	69.58
2.	Residential cum other use	1521	3.7
3.	Residential cum shop cum office	5405	13.1
4.	School/College	108	0.26
5.	Hotel/lodge/Guest House	38	0.09

6.	Hospital/dispensary	58	0.14
7.	Factory /workshop/worked shad.	950	2.3
8.	Religious Places	180	0.4
9.	Other non Residential uses	1247	3.02
10.	Vacant census houses	3058	7.40
	Total census houses	41314	100

Source: Census of India 2001

3.3 Economy

• State of Punjab

In Punjab, being an agrarian state, agriculture has played a pivotal role in the economic development of the state. Through, the Green Revolution in the 1960's, Punjab took a major stride in increasing its productivity of food grains, especially of wheat and rice. It contributed significantly towards strengthening India's self-sufficiency by contributing a major share in the central pool over time. During 2006-07, it contributed 75.3% wheat and 31.2% rice to the central pool. However, the growth of secondary sector, especially of manufacturing sector, is not of satisfactory level. Neighbouring states got an edge over Punjab in the growth of manufacturing sector due to location advantages and due to more conducive policy regime. Punjab has grown at a rate of 5.08% during 10th Five Year Plan as compared to 7.77% at all India level. Its secondary sector has grown at 8.40% as compared to 9.46% at all India level.

Table No.3.3 (a): Key Economic Indicators

Item	Unit	2004-05	2005-06	2006-07
GSDP at 1999-2000 prices	Rs. (Crores)	81229.39	85729.29	91148.12
Growth Rate of GSDP at 1999-00 Prices	Percent	5.2	5.54	6.32
Per Capita Income at 1999-00 Prices	(Rs)	27851	28872	30158
Percentage Share to Central Pool				
Wheat	%	55	60.9	75.3
Rice	%	36.9	32	31.2
Electricity Generated	(mk w.h)	21296	24642	23695
Per Capita Power consumption	(kw.h)	871	906	968

Source: Economic Survey of Punjab, 2007-2008

The overall economy of Punjab has witnessed a growth rate of 5.54% at constant prices (1999-2000) during 2005-06 and 6.32% during 2006-07.

The share of agriculture (proper) in GSDP has declined from 26.2 % in 1999 - 2000 to 20.65% in 2006-07. The share of primary sector, which includes agriculture and livestock, has come down from 37.53% in 1999-2000 to 31.97% in 2006-07. The share of secondary sectors has increased from 22.75% 1999-2000 to 25.90% in 2006-07, which is mainly due to increase in activity of construction sector. The share of tertiary, which comprises of services sector, has increased from 39.72% in 1999-2000 to 42.13% in 2006-07. This

growth is mainly due to increase in contribution of transport, storage & communication, trade, hotels & restaurants and banking & insurance sector. It is evident that this structural change in Punjab's economy is the main underlying reason for sustained urbanization.

- **Employment of L.P.A Sangrur:-**

The economy of Sangrur city and its L.P.A is based mainly on trade, commerce, cultivation, agriculture and agro based industry. City or district wise estimates of domestic products are not available. However, education, tourism, hospitality, real estate business and other commercial establishments, financial and banking services etc. also contribute to the economic well being of the people of the city.

- **Work Force Participation & Employment**

Table below depicts that the number of workers are increasing in Local Planning Area (L.P.A), Sangrur as the percentage of workers to the total population increased from 31.83% in 1981 to 34.35% in 2001 for Sangrur city. Workforce participation rate has slightly increased from 28.32% in 1981 to 32.30% in 2001. There are 65.64% non-workers in Local Planning Area, Sangrur and 67.69% non- workers in Sangrur city as per 2001 census. Detail of Workers and Non-workers is given in the table 3.3 (b).

Table No: 3.3 (b) Workers and Non -Workers in L.P.A, Sangrur

Year	Total Population	Workers	%age of Workers	Non-Workers	%age of Workers
1981	92493	29449	31.83	63044	68.16
1991	113720	35405	31.13	78315	68.86
2001	143024	49132	34.35	93892	65.64

Source: - District Census Handbook 1981, 1991, 2001, Sangrur

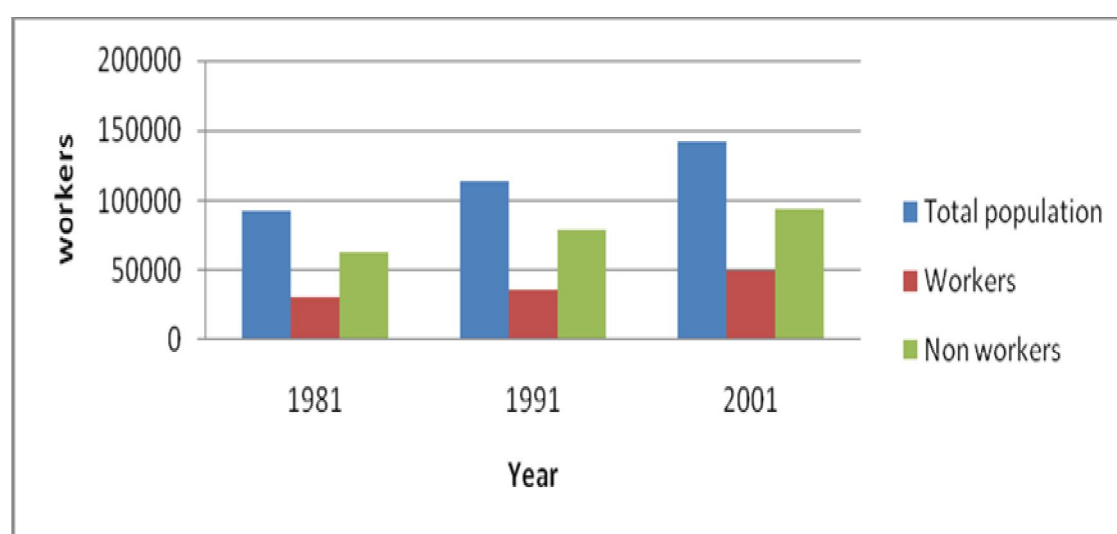
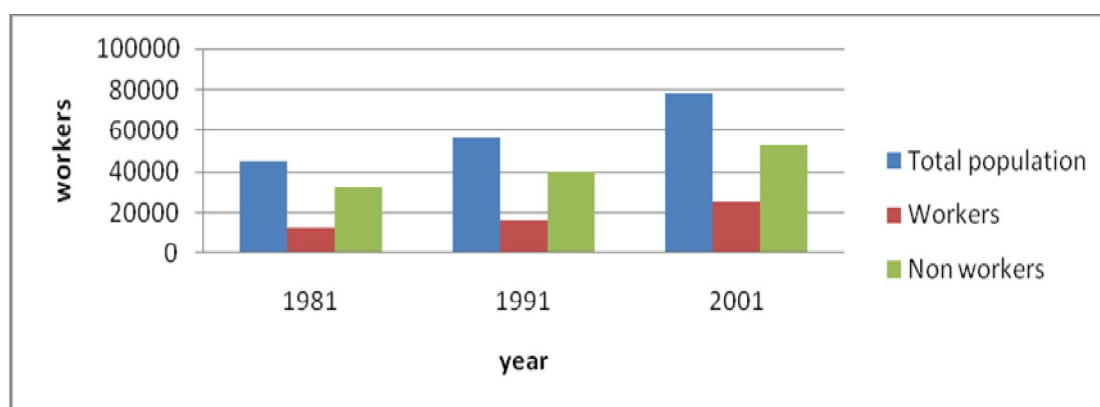


Fig: 10 Workers and Non-Workers in L.P.A Sangrur

Table No: 3.3 (c) Workers and Non -Workers in Sangrur city

Year	Total Population	Workers	%age of Workers	Non-Workers	%age of Workers
1981	45220	12807	28.32	32413	71.67
1991	56419	16353	28.98	40066	71.01
2001	77989	25192	32.30	52797	67.69

Source: - District Census Handbook 1981, 1991, 2001, Sangrur

**Fig: 11 Workers and Non-Workers in Sangrur City**

- Occupational Structure**

Table no. 3.3 (d) depicts that the agricultural labourers and cultivators have decreased due to increasing activities in trade, commerce and industrialization in L.P.A. Sangrur and in Sangrur city. Number of workers under the household industry has increased as people, for more economic returns, converting their residence into industrial use, e.g. ground floor for industrial purpose and the rest is for residential purposes in some parts of the city. The change in occupational structure has been noticed to a considerable extent as the persons engaged in primary activities, i.e. cultivators and agricultural labourers decreases from 40.75% in 1981 to 28.12% in 2001 within Local Planning Area, Sangrur whereas there has been recorded a rising and falling trends in house hold industries from 2.03% to 2.33% in 1981 and 2001, respectively. The detail of occupational Structure has been given in table 3.3 (d) below.

Table No: 3.3 (d) Occupational Structure of L.P.A Sangrur 1981-2001

Year	Total Workers	Cultivators		Agriculture Labourers		Household Industries		Others	
		No.	%age	No.	%age	No.	%age	No.	%age
1981	29449	7681	26.08	4323	14.67	600	2.03	16381	55.62
1991	35405	7577	21.40	5862	16.55	546	1.54	7656	21.62
2001	49132	8793	17.89	5027	10.23	1148	2.33	33464	68.11

Source: District Census Handbook 1981, 1991, 2001 Sangrur

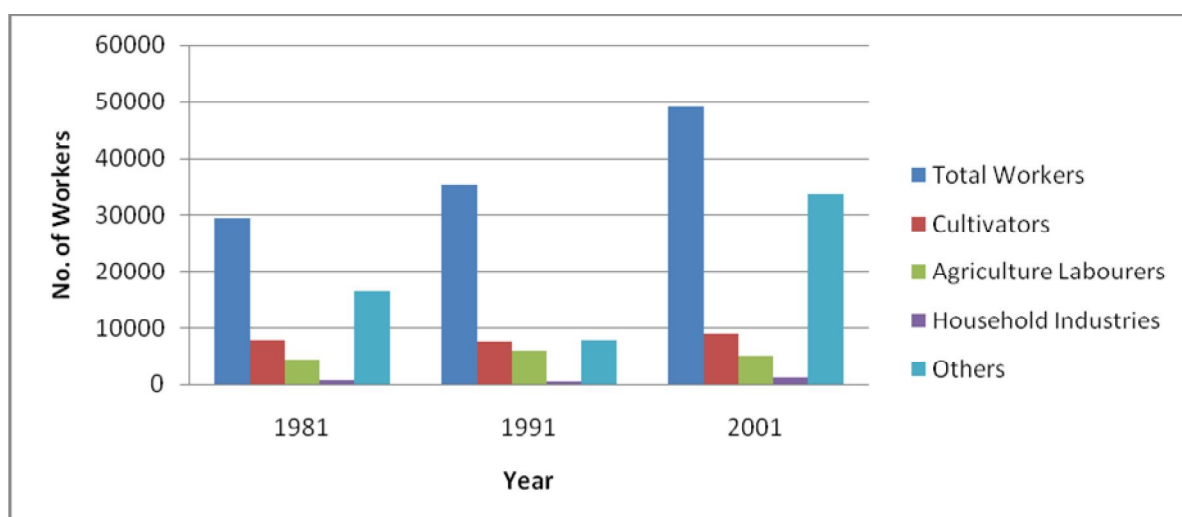


Fig: 12 Occupational Structure of L.P.A Sangrur

Likewise, in case of Sangrur city the workers engaged in primary activities increased from 2.69% to 3.56% in 1981 and 2001 respectively as given in table no. 3.3 (e).

Table No: 3.3 (e) Occupational Structure of Sangrur City

Year	Total Workers	Cultivators		Agriculture		Household Industries		Others	
		No.	%age	No.	% age	No.	% age	No.	% age
1981	12807	179	1.40	165	1.29	390	3.04	12073	94.27
1991	16353	463	2.83	785	4.80	370	2.26	14735	90.11
2001	25192	469	1.86	428	1.70	651	2.58	23644	93.86

Source: District Census Handbook 1981, 1991, 2001 Sangrur

• **Distribution of Workers according to Industrial Categories (Sangrur M.Cl. limit)**

Besides studying detail of workers, when the workers are examined on the basis of industrial categories, given by the Census of India, it reveals that in the year 2001 in Sangrur city a small proportion of main workers, i.e. 9.57%, was engaged in cultivation, agricultural labour, planting, forestry and fishing, mining and quarrying altogether. In comparison to main workers in transport, storage and communication activities that involve 1924 workers, the main workers engaged in construction activities are less in number, i.e. 936.

The percentage of city population involved in wholesale and retail trade constitutes 26.96% of main workforce, the second highest number of main workers falls in this category. The highest percentage in the workforce of Sangrur city is of those workers who are involved in activities like public administration and defence, compulsory social security, education, health and social work, other community, social and personal service activities; private households with employed persons; extra-territorial organizations and

bodies, i.e. 37.43% of main workers (refer to table no. 3.3-f).

Table No: 3.3 (f) Category Wise Distribution of Workers (2001) in Sangrur (M.Cl.)

	Category	Sangrur Municipal Council 2001	Main Workers as % of Population and Categories as % of Main Workers
A&B	Cultivators	640	2.84
	Agricultural Labourers	1086	4.81
	Forestry, Fishing, Hunting and Plantations, Allied activities	434	1.92
C	Mining and Quarrying	--	--
D	Manufacturing, Processing, Servicing and Repairs in household industry	511	2.26
Non-HHI	Manufacturing, Processing, Servicing and Repairs in Other than household industry	2503	11.09
E	Constructions	936	4.15
F	Trade and Commerce	6081	26.96
G	Transport, Storage and Communications	1924	8.53
H & I	Other Services	8443	37.43
	Total	22558	100

Source: - Census of India, 2001

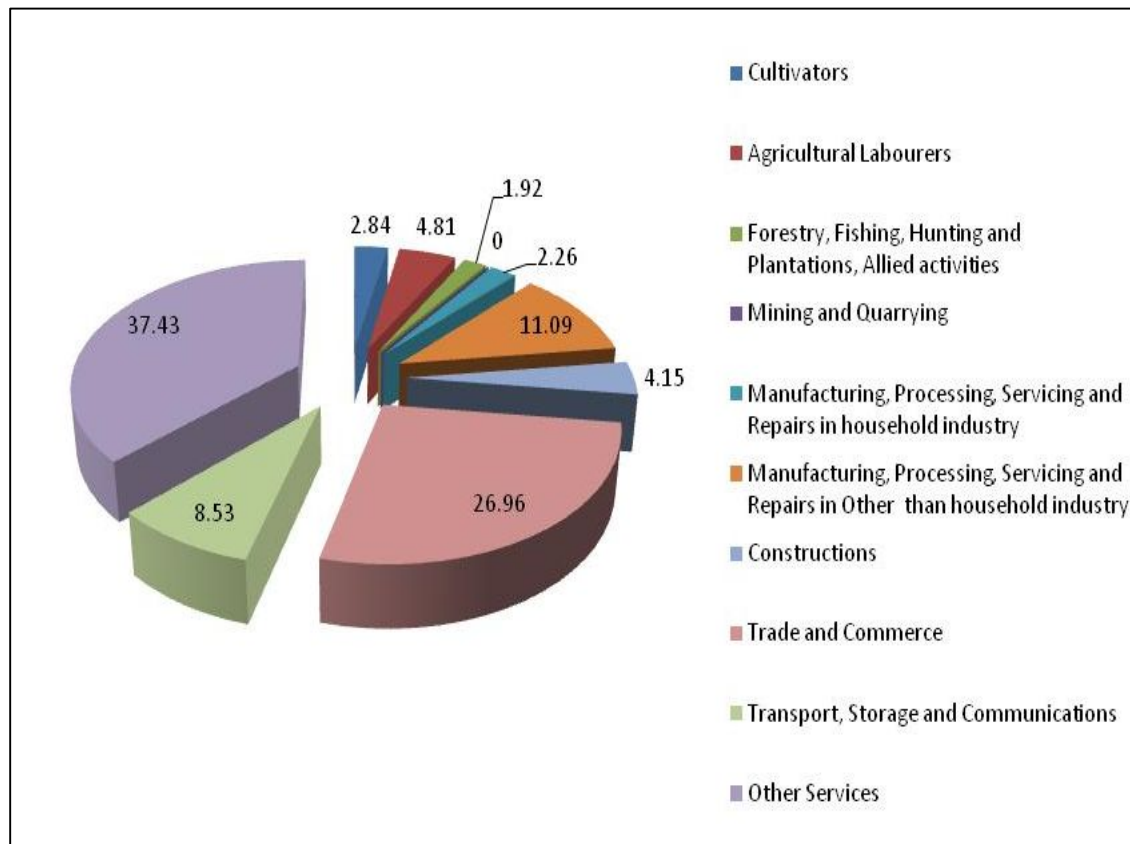


Fig. 13 Category Wise Distribution of Workers (2001) in L.P.A, Sangrur

- **Category wise distribution of workers in L.P.A Rural**

The detail of the categorical distribution of workforce in L.P.A rural is given in table no. 3.3 (g)

Table no. 3.3 (g) Category wise distribution of workers in L.P.A Rural

	Category	Sangrur L.P.A Rural	Main Workers as % of Population and Categories as % of Main Workers
A & B	Cultivators	11363	42.76
	Agricultural Labourers	7748	29.16
	Forestry, Fishing, Hunting and Plantations, Allied activities	194	0.73
C	Mining and Quarrying	--	--
D	Manufacturing, Processing, Servicing and Repairs in household industry	243	0.91
Non-HHI	Manufacturing, Processing, Servicing and Repairs in Other than household industry	1603	6.03
E	Constructions	501	1.88
F	Trade and Commerce	1255	4.72
G	Transport, Storage and Communications	676	2.54
H & I	Other Services	2991	11.25
	Total	26574	100

Source: - Census of India, 2001

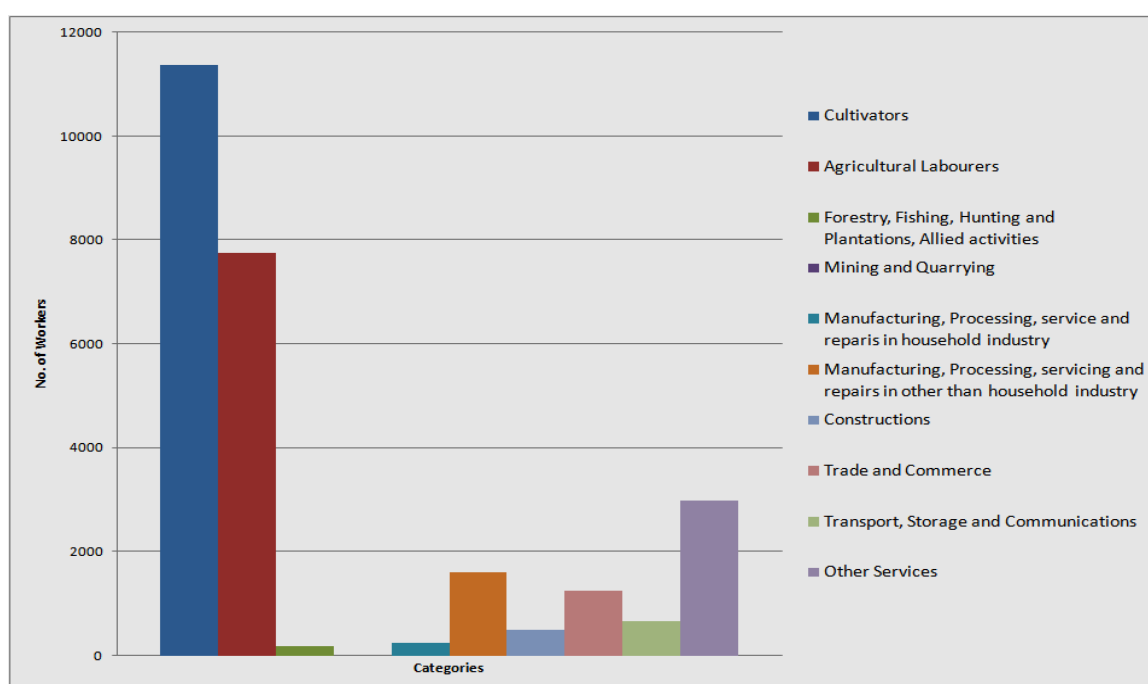


Fig. 14 Category wise distribution of workers (2001) in L.P.A Rural

- **Manufacturing Industry**

Industrially, both L.P.A Sangrur and Sangrur city are underdeveloped. A very small number of large, medium and small-scale industries have been set up in and around the whole city yet it is worth mentioning that 3014 workers, i.e. 13.35% of main workers of Sangrur city, are engaged in industrial sector, out of which 11.09% workers are engaged in non-household industries while 2.26% workers are engaged in household industry.

- **Warehousing and Wholesale Trade**

As far as this economic activity is concerned, it has been found that the wholesale trade is also concentrated in the Sangrur city. 17 acres area has been covered in Sangrur city, by warehouses. They have 129400 MT total storage capacity. From which 50100 MT capacities are of their own units and 79300 MT is hired from private parties. According to the data of the year 2008-09, 24756 MT paddy was produced by second unit. Except these, the storage capacity of Punsup is 277080 MT and the capacity of Markfed is 300287 MT and the storage capacity of FCI is 41892 MT. The total production of the warehousing of Sangrur district is 1549909 MT. The main wholesale traders are wholesale grain market, vegetable market etc. There are two big vegetable markets in Sangrur.

- **Tourism and Hospitality:**

From the tourism point of view, Sangrur city is very famous and has great historical relevance where many heritage buildings like Banasar Bagh, Gurudwara Nankiana Sahib, Kali Devi temple etc., are situated. The city has great tourism potential but the tourism is still underdeveloped here. To cater the needs of tourists as well as people of Sangrur city, 2 guest houses and 12 hotels and rest houses are located in different areas of the city. But the concentration of hotels and restaurants is more pronounced near bus stand and Patiala road.

- **Finance, Insurance and Banking**

The activities related to finance, insurance and banking are concentrated in Sangrur city. However, a few numbers of banks are found in rural areas of L.P.A. of Sangrur, the analysis of which will not be useful here. As per census 2001 figures, about 2112 persons are engaged in financial institutions and insurance companies. As per information collected from field there are about 30 banks operating in Sangrur city, which cater the service to L.P.A Sangrur besides Sangrur city.

3.4 Emerging Economic Drivers of L.P.A Sangrur

Several Economic drivers have been identified within L.P.A Sangrur, which would influence development of the Sangrur city as well as that of L.P.A. Sangrur, which comprises rich fertile agricultural land, giving boost to the economic development of this area. The boom in real estate activities during recent years (till October 2006) has also been experienced in L.P.A. Sangrur. This played an important role in physical and economic growth in Sangrur. Ekta Vihar, Sangrur Valley and Dream Land are the main residential colonies, which emerged during recent years in private sector. J.P. Nagar, Shaheed Sewa Singh Thikriwala Nagar and Captain Karam Singh Nagar are the residential colonies developed by Improvement Trust. In addition to above colonies, Sun City of Grewal Builders on Rampura Road and Vasant Vihar are other residential colonies in private sector, which are contributing towards the economic development. There is only one small shopping mall in Sangrur city namely Easy Day.

In addition, the several institutions, which came into existence in recent part in L.P.A Sangrur, played an important role in the economic development of this area as these institutions have provided large employment. Bhai Gurdas Institute of Engineering and Technology on Patiala Road and National Institute of Nursing on Patiala Road are worth mentioning here. There are several more projects under development the L.P.A Sangrur, which may act as supporting economic devices. Sangrur district Co-operative Milk Products Union (Ltd.) and Oil Depots (Indian Oil, IBP, Bharat Petroleum) at a distance of about 5 km from Sangrur would encourage, some allied activities and employment to grow around Sangrur.

4. EXISTING LAND USE AND TRANSPORT NETWORK

4.1 Preparation of Base Map

The preparation work of base map for the, L.P.A Sangrur was assigned to Punjab Remote Sensing Centre, P.A.U., Ludhiana as per the decision taken in the meeting held on dated 20th October 2007 in the committee room of P.R.S.C, Ludhiana and as per the instructions issued to Punjab Remote Sensing Centre, Ludhiana by Chief Town Planner, Punjab vide their memo no. 4827 CTP (Pb) / SP 480 dated 22-10-2007. The base map of entire L.P.A Sangrur is generated on 1:25,000 scale using Cartosat I data of 2.5m spatial resolution. The Cadastral maps of the villages falling in L.P.A were procured from the District Revenue Office by the office of District Town Planner, Sangrur and these maps have been scanned in the office of P.R.S.C, Ludhiana and registered with Cartosat-I data to demarcate village boundaries. The features like forests, roads, rails, high and low lands, canals, minors, drains and settlements etc. have also been delineated from Cartosat-I data, by the concerned agency and shown on the draft base map prepared on the basis of satellite imagery. After editing the map details, the attributes to different features were assigned. After the preparation of LPA on 1:25,000 scale using Cartosat I data, the draft base map for densely populated built up areas of Sangrur city (core areas) was prepared on 1:5000 scale using Quickbird satellite data of 0.6m spatial resolution. The Quickbird data (satellite imagery) has been received by the P.R.S.C, Ludhiana from National Remote Sensing Agency, Department of Space, GOI, Hyderabad.

4.2 Enhancement through Field Surveys-Land Use and Road Network

The draft base map for the L.P.A Sangrur and the densely built up areas (i.e. core areas) received from Punjab Remote Sensing Centre, P.A.U, Ludhiana were updated through ground truthing, conducted by the office of D.T.P Sangrur. The various land uses have been identified at the site and earmarked accordingly. Similarly, the road network, drains, distributaries and other communication zones have been verified and checked at site. After conducting field surveys, the necessary feedback was supplied to P.R.S.C Ludhiana which offer incorporating the same, ultimately, prepared an updated base map. The Office of D.T.P Sangrur again conducted second round of field verification (ground truthing) and the corrections were then supplied to P.R.S.C and the staff of D.T.P office personally assisted the concerned staff of P.R.S.C in getting them incorporated and a final land use map thus was prepared.

4.3 Existing Land Use L.P.A, Sangrur

The base map (shown in Drg no. **DTP(S) 310/09 dated 25.09.09**) prepared by Punjab Remote Sensing Centre, Ludhiana as described above shows the existing land use of L.P.A Sangrur. Based on this plan, following is the breakup of existing land use of L.P.A Sangrur:-

Table No: 4.3 Existing Land Use L.P.A, Sangrur

Land Use Type		Area in hectare	%age
Residential	Urban Residential	436.79	
	Residential Plots	341.83	
	Rural Residential	573.07	
	Internal Road Area	737.70	
	Total	2089.39	9.40
Commercial	Retail Shopping	25.50	
	General Business and Commercial District Centres	10.30	
	Whole Sale Godowns, Ware Housing Regulatory Market	82.07	
	Total	187.37	0.84
Industry	Industry	171.60	
	Total	171.60	0.77
Utilities	Water Works	5.33	
	Electric Grid	14.5	
	Sewage Disposal	0.14	
	Solid Waste		
	Communication	0.50	
	Total	20.47	0.09
Public & Semi-Public	Govt./Semi Govt./Public Offices	67.10	
	Govt. Land (Use Undetermined)	20.59	
	Education And Research	121.64	
	Medical & Health	26.47	
	Social Cultural & Religious	60.54	
	Cremation & Burial Grounds	13.72	
	Total	310.06	1.39
Transportation	Roads	454.73	
	Bridges/Flyovers	1.13	
	RoundABOUTs	0.405	
	Parking Areas	1.78	
	Railway Line & Siding	35.62	
	Railway Station	0.35	
	Bus Terminus	1.54	
	Truck Terminus	2.60	
	Total	498.15	2.24
	Play Grounds, Stadium, Sports Complex	9.99	

Recreational	Parks & Gardens (Public Open Spaces)	9.98	
	Total	19.97	0.10
Agricultural	Agriculture	18061.1	
	Kachha Road	50.222	
	Forest	268.68	
	Extractive Area	13.540	
	Water Bodies	206.85	
	Plantation & Orchards	21.77	
	Dairy and Poultry Farms	21.66	
	Vacant Land	105.47	
	Total	18749.29	84.35
Special Area	Heritage, Conservation Area and Other uses	181.88	
	Total	181.88	0.82
	Grand Total	22228.18	100.0

Source P.R.S.C. Ludhiana

4.4 Existing Land Use Sangrur City

The total area of Municipal council of Sangrur in the year 2009 was 1992.23 hectare (as per P.R.S.C). The detail of major existing land uses within the Municipal Council Limits is given in Table 4.4 as below:

Table No: 4.4 Existing Land Use, Sangrur City - 2009

Name of Land Use		Area in hectare	Percentage
Residential	Urban Residential	404.38	20.30
	Residential Plots	196.28	9.85
	Total	600.66	30.15
Commercial	Retail shopping	14.74	0.74
	General Business & Commercial District Centre	5.94	0.30
	Whole sale, Godowns, Ware-Housing Regulate	42.10	2.11
	Total	62.78	3.15
Industry	Service and Light industry	16.55	0.23
	Planned Industrial Areas	22.91	1.15
	Medium Large & Heavy	58.78	2.95
	Total	98.24	4.93
Utilities	Water Works	3.04	0.15
	Electric Grid	13.10	0.66
	Sewerage Disposal	0.15	0.01
	Communication	0.50	0.03
	Total	16.79	0.84
Public and Semi Public	Govt/Semi Govt/Public Offices	67.11	3.37
	Govt Local(Use Undetermined)	3.85	0.19
	Education and Research	29.87	0.19

	Medical and Health	11.46	0.58
	Social, Cultural & Religious	11.08	0.56
	Cremation & Burial Grounds	2.51	0.13
	Total	121.88	6.32
Transportation	Roads	139.3	6.99
	Bridges/ Flyovers	0.74	0.04
	Round About	0.40	0.02
	Parking Areas	1.78	0.09
	Railway Line & Siding	17.75	0.89
	Railway Station	0.35	0.02
	Bus Terminus	1.54	0.08
	Truck Terminus	2.60	0.13
	Total	164.46	8.25
Recreational	Play Grounds, Stadium, Sports Complex	4.30	0.22
	Parks & Gardens (Public open spaces)	9.05	0.46
	Total	13.33	0.68
Agricultural	Agriculture	735.40	36.91
	Kaccha Road	7.54	0.38
	Forest	0.98	0.05
	Water Bodies	20.25	1.02
	Plantation & Orchards	3.12	0.16
	Dairy and Poultry Forms	6.90	0.35
	Vacant Land	3.54	0.18
	Total	777.73	39.04
Special Area	Heritage, Conservation Area & other uses	132.34	6.64
	Total	132.34	6.64
	Grand Total	1992.23	100.00

Source P.R.S.C. Ludhiana

4.4.1 Residential

It is very much clear from the table no. 4.4 that the residential use has a large share of city area. Out of total Municipal area of 1992.23 hectare, about 600.66 hectare (30.15%) of area is under residential use, which includes planned and unplanned development. The gross density of the town is 40.34 persons / hectare. The core area of the city has high density (>200 persons per hectare) as compare to the periphery area (<100 persons per hectare). As far as planned residential development is concerned, there are two T.P Schemes, four Development Schemes and six colonies licensed under Punjab Apartment and Property Regulation Act 1995. Majority of these planned and regulatory schemes are located in the Northern and Eastern parts of the town while other side of the town is

having unplanned and haphazard residential development. The inner zone of the town is characterized by irregular street pattern and narrow lane.

Table No: 4.4.1 Planned Regulated Areas

Sr. No.	Name of Scheme	Area in Acres	Agency
1.	Development Scheme		Improvement Trust
	i) J.P. Nagar	9.81	
	ii) Kolan Park	7.40	
	iii) Old Jail Land (Residential/com.)	0.76	
	iv) 51.00 Acre	51.00	
2.	Town Planning		Local Govt.
	i) Area No. 1	51.86	
	ii) Area No. 2	42.95	
	Total Area	163.78	

Source: - D.T.P Office, Sangrur

In South Guru Nanak Pura, Partap Nagar, Shekhupura, Sardar Basti and in East Friends colony, Kishanpura, Dhakka Basti are the unplanned colonies and besides the coming up of private approved residential colonies, whereas, Vasant Vihar, Sun City, Sangrur Valley, Ekta Vihar are prominent residential areas on the outskirts of the city. The central part of the city is predominantly residential as shown in fig. no. 15.

4.4.2 Commercial

The Commercial use is the most important use of the urban area. It may have lesser share area wise but plays an important role in city character. In case of Sangrur city, the total area covered under commercial use is 62.78 hectare, which is 3.15% of the total developed area. The main commercial center in Sangrur, which acts as CBD of the town, is located on the side of Sadar Bazaar, Nabha Gate, Sunami Gate, Patiala Gate and Barnala Road Market.

Table No: 4.4.2 Planned Commercial Areas

Sr. No.	Name of Area	Area in Acre	Name of Development Agency
1.	J.P. Nagar (Residential/com)	9.81	Improvement Trust
2.	Burj No. 1	0.13	
3.	Burj No. 2	0.24	
4.	Old Jail Land	0.76	
5.	Police Line	0.11	
6.	Outside Sunami Gate	25.00	
7.	Extension Scheme Kaula Park	0.76	
	Total	36.81	

Source: - D.T.P Office, Sangrur

The commercial areas of city have lack of adequate parking and other Public amenities.

The Commercial area of the town is in the form of semi-organized bazaars along streets

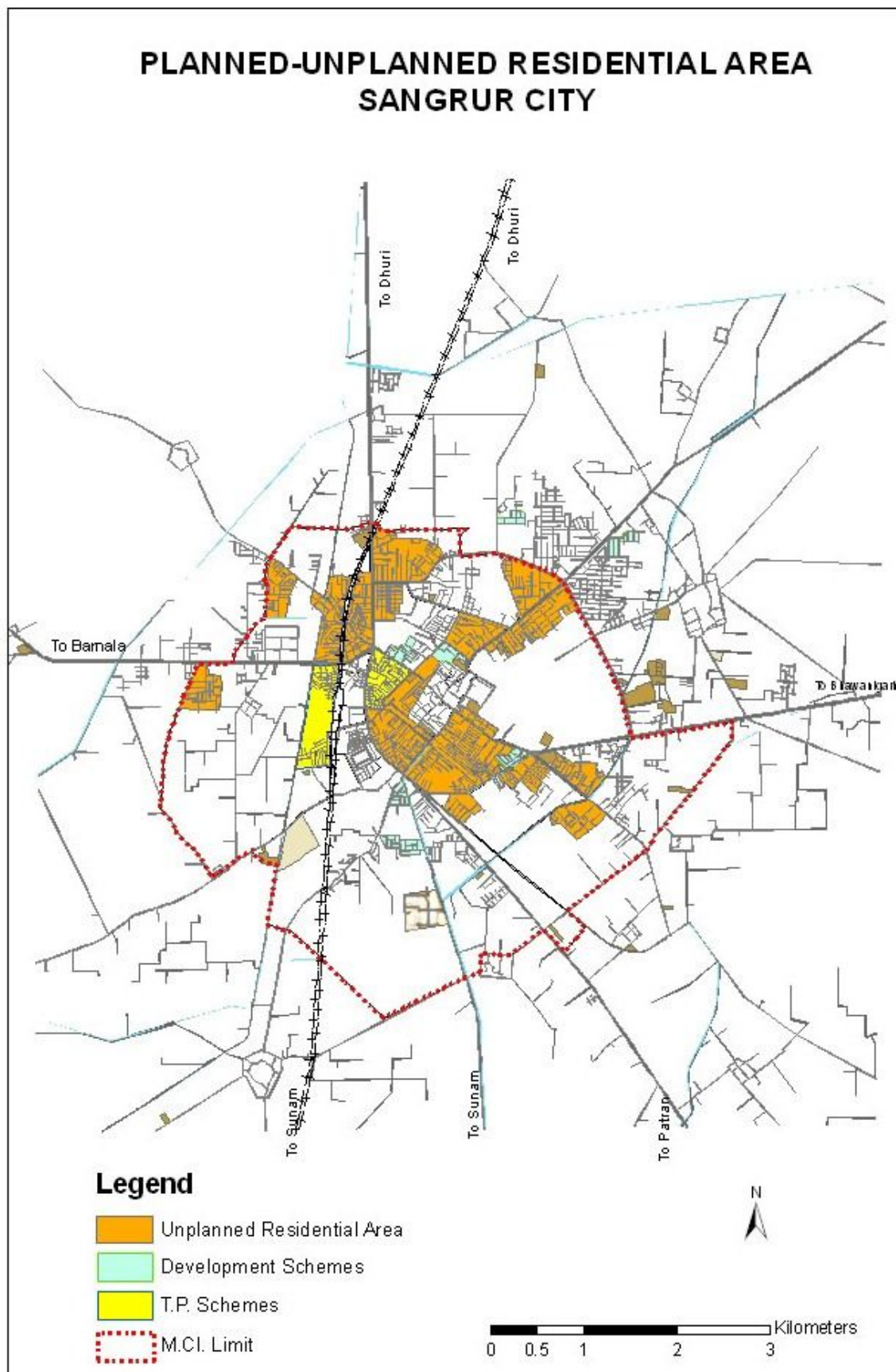


Fig.15 Planned-Unplanned Residential Area of Sangrur City

and roads. Apart from this, there are informal bazaars in the form of temporary shops near bus stand, railway station, and grain market. These activities are not of permanent nature and are using the roads or parking places, therefore, areas covered under this use are not shown separately. The detail of informal commercial sector is given in table 4.4.3 below:-

Table No: 4.4.3 Detail of Informal Commercial Sector in Sangrur City

Sr. No.	Location	Approximate No. of Rehries
1.	Near Bus Stand	30
2.	Near D.C. Complex	6
3.	Near Koula Park	18
4.	Near Civil Hospital	15
5.	Near Sabzi Mandi Sunami gate	20
6.	Near Improvement Trust Sunami Gate	12
7.	Near Motti Theatre	11
8.	Near Railway Chowk	5
9.	Near Old Court	8
10.	Other Moving Rehries	28
Total		153

Source: - D.T.P Office, Sangrur

Under commercial land uses, wholesale markets such as cloth market, medicine market and grain market are the main features of the city. Wholesale cloth market meets the requirements of adjoining areas. The wholesale grain market is located in the Southern part of the city over an area of 25 acres. There is no planned site for other wholesale trades like timber, iron etc.

4.4.3 Industrial

The ELU table depicts that the total area under industrial use is 98.24 hectare, which is 4.93% of the total Municipal area of Sangrur city. It has medium and large scale industrial units, like Punjab Agro Industry Ltd., Paper Industry, Milk Plant etc., along with many small scale registered industrial units dealing with products, like manufacturing of utensils, pharmaceuticals, cotton spinning. The latest trends are towards production of electric motors, plastic pipes, electric wires etc. Besides this, agro based industries are also concentrated in the surrounding of the city, which is the main industrial hub of the city. It is evident from existing land use plan that big industrial units are located in the city, whereas, the other planned focal point are situated in southern part of the city. Very

few small scale or service industries are seen scattered in other parts of the city.

4.4.4 Public and Semi-Public

This land use comprises areas covered under govt./semi-govt. offices, govt. lands, educational, health, socio-cultural, cremation grounds etc. as per table no. 4.4; the total area covered by this land use is about 121.88 hectare, which is 6.32% of total municipal areas. The most of public and semi-public uses area concentrated in the central part of the city, as it is clear from the Existing Land Use Plan Drg No. DTP(S) 310/09 dated: 25.9.2009, whereas, few uses of this category are also seen in the outer parts of the city.

4.4.5 Recreational

The total area under recreational use is 13.33 hectare, which is 0.68% of the total municipal area. This comprises of one City level park, known as BSNL Park, and other one is historical Banasar Garden, located in the centre of the city.

4.4.6 Traffic and Transportation

As per the table of existing land use, the total area covered by this use is 164.46 hectare that is 8.25% of the total developed area. This use comprises of roads, railway line, station, bus terminus, bridges and flyover. The percentage of area under traffic and transportation is low as compare to norms and standards. The major problems related to this aspect are missing road hierarchy, lack of parking places, traffic bottlenecks, encroachments of roads, lack of over railway bridges and under passes. The detail of existing road network and other uses relating to traffic transportation are shown in the Existing Land Use Plan Sangrur.

4.4.7 Utilities

This area comprises of water works, electric grid station (E.G.S), sewerage disposal works and communication etc. covering an area of about 16.79 hectare, which is only 0.84% of total municipal area.

4.4.8 Agricultural

There are some chunks of agricultural land falling within Municipal limits, which are still being used for agricultural purposes. This area lies near village Mangwal along Dhuri Road and Patiala Road. It is quite evident from the table no. 4.4 that agricultural land has a larger share of existing land use. Out of the total area, 777.73 hectare is under agricultural use, which is 39.04% of total area. Out of this category, about 20.25 hectare of land is under water bodies and 3.54 hectare under vacant land. The Existing Land Use Plan shows the spatial distribution of all these uses within the limits of M.Cl. Sangrur.

4.4.9 Special Areas

Special areas include other use, heritage and protected buildings which have been declared as protected monument under 'The Punjab Ancient and Historical Monuments and Archaeological Sites & Remains Act, 1964' which have been in existence for not less than 100 years. As per the table no. 4.4, the total area covered by this land use is about 132.34 hectare that is only 6.64% of the total municipal area.

4.4.10 Mixed Land Use

Like other towns/cities of the state, the mixed land use is also found in Sangrur. The mixed land use is, predominantly of residential and commercial. Normally, many of the roadside commercial developments are having the ground floor as commercial and the first floor or above are used for residential purpose.

4.5 Existing Road-Rail Network

Transport is the backbone of economy and social structure of any region. Urban Centers have been recognized as engines of economic growth, traffic and transportation have rightly been termed as wheels of such engines. Urban transport has also been considered an integral part of urban planning. Roads and streets in a city have been equated with arteries in the human being and any obstruction in the system can create numerous complications. It is also one of the most important infrastructure facilities of any city or area. The objective of studying the transport sector is to analyse and understand the existing potentials, strengths, weaknesses and constraints of the transport sector and, consequently, arrive at strategies that will form an integral part of the city's development strategy. The Road and rail sectors play significant roles in the transport sector in Sangrur and surrounding areas. The road network is studied in terms of classifications of roads, length of roads, cross section of roads (divided and undivided carriageway, footpath, shoulders etc.) surface material of roads, area of road network and major road intersections. Similar data regarding rail network has also been studied.

4.5.1 Road Network at L.P.A Level

There are two National Highways, i.e. N.H.71, coming from Delhi and diverting to Moga via Barnala and N.H.64 coming from Patiala and leading to Bathinda via Barnala. There is one State Highway (S.H.11) coming from Ludhiana to Sangrur. All the roads passing through L.P.A Sangrur, have undivided carriageways outside the Municipal Council limits. The details of length and width of major roads falling in L.P.A Sangrur are given in table no. 4.5.1.

Table No: 4.5.1 Detail of Length & Width of Major Roads in L.P.A, Sangrur

Sr. No.	Name of Road	Length in km	Width of road in feet	Width of Carriageway in Meter	Divided/undivided
National Highways					
1.	Sangrur-Barnala Barnala Railway Line To L.P.A Boudary (NH-64)			10	Undivided
	(a)From Railway Line To Municipal Council Limit	1.5	100		
	(b) Municipal Council Limit To L.P.A	10.3	100		
2.	Sangrur-Patiala Bye Pass To L.P.A Boundary (NH-64)			7	Undivided
	(a) Sangrur-Patiala Bye Pass to Municipal Council limit	1.1	90		
	(b) Municipal Council limit to L.P.A	8.7	90		
3.	Sangrur-Patran Rajwaha To L.P.A Boundary (NH-71)			7	Undivided
	(a) Rajwaha to Municipal Council limit	1	80		
	(b) Municipal Council limit to L.P.A.	5.5	80		
State Highways					
1.	Sangrur-Dhuri Fly Over to L.P.A Boundary (SH-11)			10	Undivided
	(a)Municipal Council limit to L.P.A	6.25	85		
Other Roads					
1.	Sangrur-Sunam Sunami Gate Chowk To L.P.A Boundary			10	Undivided
	(a)Sunami gate chowk to Municipal Council limit	2.1	52		
	(b)Municipal Council limit to L.P.A	2.2	52		
2.	Sangrur-Chitanwala Nankiana Sahib Gurudwara to Outer Ring Road	2.6	70	5.5+5.5	Undivided
3.	Sangrur-Sohian road from Drain to proposed Inner Ring Road			5.5	Undivided
	(a)Patiala gate to Municipal Council limit	1.6	100		
4.	Sangrur-Sohian road from proposed Inner Ring Road to proposed outer ring road			5.5	Undivided
	(a)Municipal Council limit to proposed outer ring road	3.1	32		

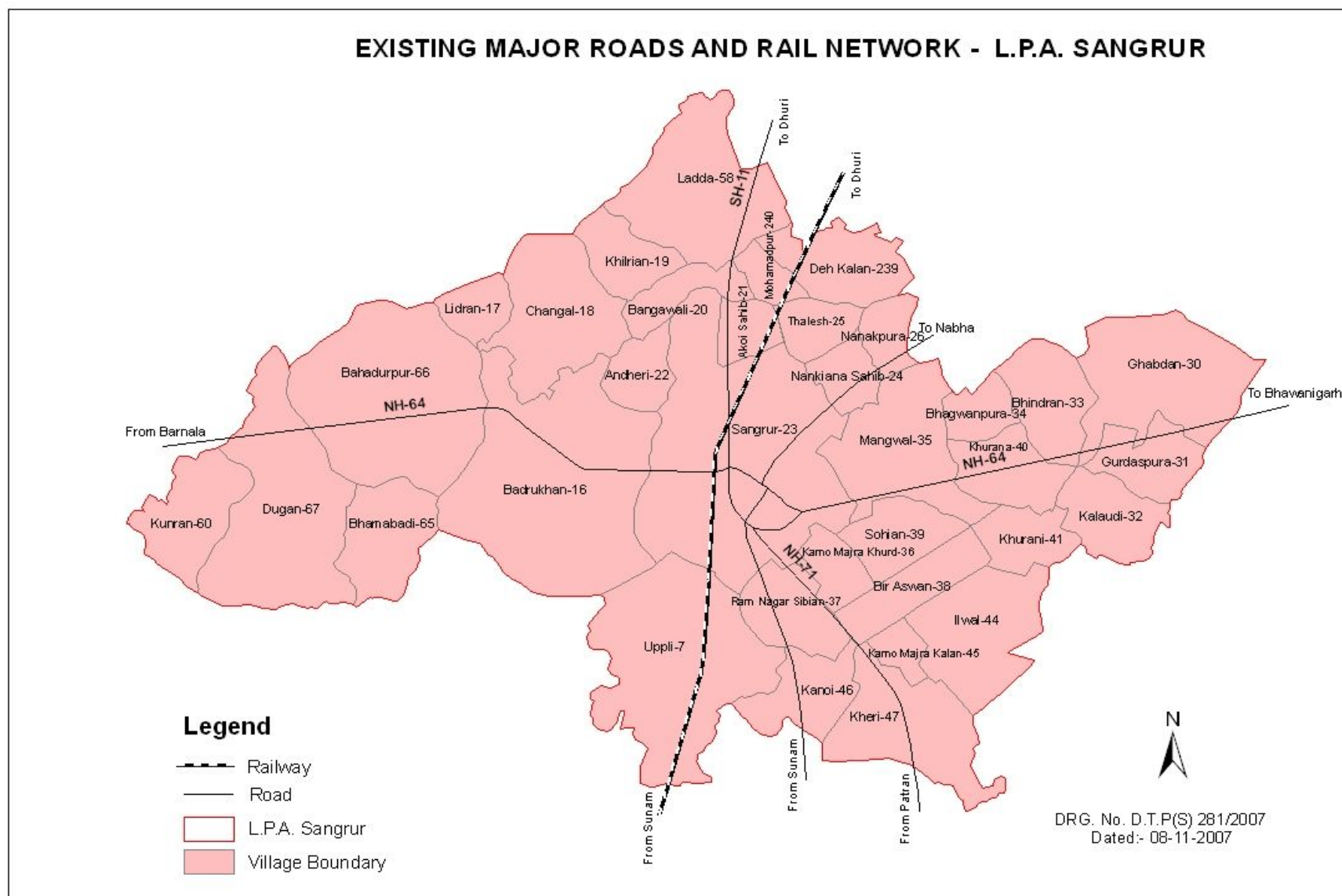
5.	Sangrur-Ubhawal Road Sheron Rajwaha To proposed Inner Ring Road	0.9	39	5.5	Undivided
6.	Sangrur-Ubhawal Road from proposed Inner Ring Road To Outer Ring Road	2.6	42	5.5	Undivided
7.	Sangrur Bye Pass from Sangrur Dhuri Road To Sangrur-patiala Road	4.1	64	7	Undivided
8.	From Dhuri-Jakhal railway line to Barnala chowk (N.H.-64) and Barnala chowk to flyover	1.1	85-100	-	undivided
9.	From Prem Sabha School to Nanakiana sahib Guruduara	2.8	86	-	undivided
10.	From Patiala Gate to Drain on Sangrur Sohian road	1.2	100	-	undivided
11.	From Patiala chowk to Sangrur Patiala Bypass	1	100	-	undivided
12.	From Sunami Gate Chowk to Drain on Sangrur -patran road(N.H-71)	1	96	-	undivided
13.	Railway chowk railway station	0.35	72	-	undivided
14.	From Barnala Chowk to Patiala chowk via Sunami Gate (N.H.-64)	3	61-66	-	undivided
15.	Sunami gate to Sunami gate chowk	0.4	77	-	undivided
16.	Bus stand to Barnala Chowk	0.5	41-77	-	undivided
	Total	64.9			undivided

Source: - Field Survey, 2009

The National Highway N.H.64 (Sangrur-Barnala) has 100 feet and Sangrur-Patiala has 90 feet width on either side of 10 meter and 7 meter wide carriageway, respectively. S.H.11 has undivided 10 meter carriageway with 85 feet width. The road network of L.P.A Sangrur is shown in the fig. no. 16.

The existence of main roads in L.P.A. Sangrur shows that this area is well served by the regional roads that provide a high level of connectivity with other parts of the state.

These roads have a total length of 64.9 km within L.P.A. out of which 23.65 km fall within the municipal council limits of Sangrur. There is very good network of rural roads existing in the L.P.A., Sangrur.



4.5.2 Road Network at City Level

The existing road network entering the city is, partially, radial in nature. The road, leading to Sangrur from Barnala side, converges at two distinct points; first at Hospital Chowk, where two roads coming from Barnala and Dhuri converges leading to city and the second point of convergence of road is at Nankiana Sahib Chowk where three roads are coming, i.e. first from Dhuri, second from Patiala and the third one from village Bhalwan. Similarly, Patran road also carries the traffic of Sunam road, which bifurcates at Mahalan Chowk. The two National Highways, i.e. NH-64 and NH-71, enter in the city from east and south-east respectively. The state highway, i.e. SH-11, enters the city from North side; several other important roads enter the city from south-west and south directions. The main National Highway entering the city as;

- Sangrur- Barnala (N.H.64)
- Sangrur- Patiala (N.H.64)
- Sangrur- Patran (N.H.71)
- Sangrur- Dhuri (S.H. 11)
- Sangrur- Sunam (other road)
- Sangrur-Nabha (via village Chhintawala)
- Sangrur- Sohian (other road)

Table No: 4.5.2 Detail of Length & Width of Major Roads in Sangrur City

Sr. No.	Name of Road	Length in km	Width of Road in feet	Width of Carriageway in Meter	Divided/ undivided
1.	Sangrur-Barnala Barnala Railway Line to Municipal Council limit	1.5	100	10	Undivided
2.	Sangrur-Patiala Bye Pass to Municipal Council limit	1.1	90	7	Undivided
3.	Sangrur-Patran Rajwaha to Municipal Council limit	1	80	7	Undivided
4.	Sangrur-Sunam Sunami Gate Chowk to Municipal Council limit	2.1	52	10	Undivided
5.	Sohian Road Patiala Gate to Municipal Council limit	1.6	100	5.5+5.5	Undivided
6.	Sangrur-Ubhawal Road Inner Ring Road to Municipal Council limit	2.6	42	5.5	Undivided

Source: - Field Survey, 2009

4.5.3 Road Intersections

While examining the road network of the city a total number of 16 road intersections have been identified within the limits of Municipal council, which remains busy throughout the

day. These road intersections are listed in the table below:

Table No: 4.5.3 Detail of Road Intersections in Sangrur City

Sr. No.	Name of Junction	Type of Junction
1.	Mahavir Chowk	Round about
2.	Railway Chowk	Round about
3.	Sunami Gate Chowk	Round about
4.	Kamal Marriage Palace Chowk	Round about
5.	Patiala Gate Chowk	Round about
6.	Patiala Bypass (T-Junction)	T Junction
7.	Nankiana Chowk	Round about
8.	Near Prem Sabha School	T-Junction
9.	Dhuri Bye Pass (T-Junction)	T-Junction
10.	Haripura To Bye Pass (T-Junction)	T-Junction
11.	Near Municipal Council Office	Round about
12.	D.C. Resi. Chowk	T- Junction
13.	Vijay Chowk (Aggarsain Chowk)	Round about
14.	Pheruman Chowk	Round about
15.	Chhota Chowk	Round about
16.	Near Bus Stand Chowk	Round about

Source: - Field Survey, 2009

There are 16 road intersections, 11 intersections are having roundabouts or signals and 5 intersections are T-Junctions. Besides these identified road intersections, there are many other such type of road intersections in the inner part of the city, which have been listed over here.

Very small rail network, existing in the city, provides a small level of connectivity over parts of the state or country. Only, one single railway line merges at Sangrur. Sangrur railway provides only two routes, which are shown in the Table 4.5.4 below:

Table No: 4.5.4 Railway Routes of Sangrur City

Sr. No.	Name of Route	Important Cities Connected
1.	Sangrur- Ludhiana	Dhuri, Malerkotla, Ahmedgarh
2.	Sangrur- Jakhhal	Sunam, Lehragaga, Jakhhal

Source: - Field Survey, 2009

4.5.4 Railway Over-Bridges & Under Passes

As it is evident from the above, city is divided into several segments by the railway lines raising the demand of railway over-bridges. Besides dividing the city into many parts, the railway lines cut the major roads at many points, which create traffic bottle-necks. At present, there is only one railway over bridge (R.O.B) in the city, i.e. Sangrur- Dhuri road near Haripura Bastian and there is no underpass.

EXISTING ROADS AND RAILWAY NETWORK SANGRUR CITY

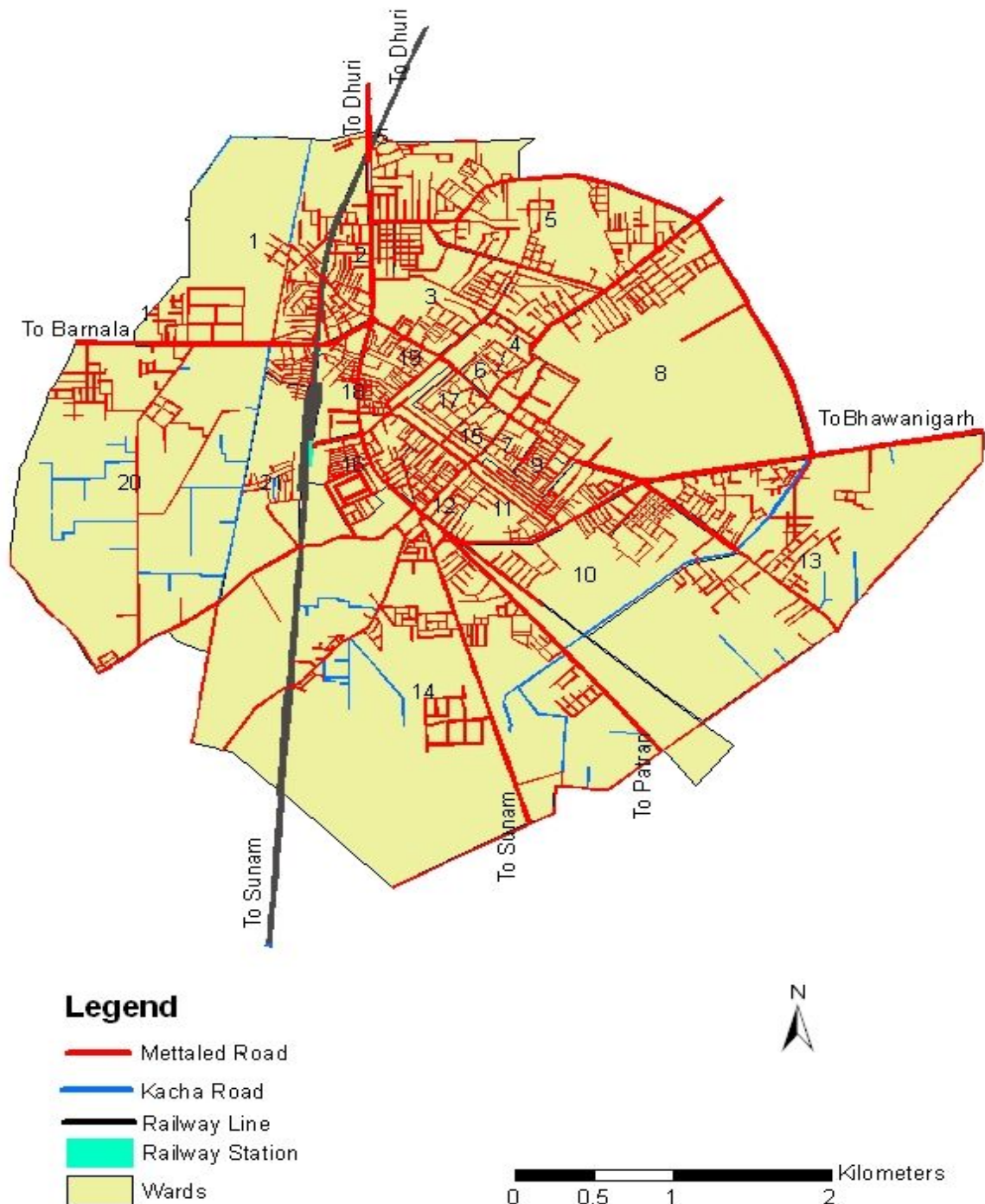


Fig. 17 Existing Roads and Rail Network of Sangrur City

4.5.5 Level Crossing

Because of single railway line passing through the city, there are a small number of level crossings of major and minor roads. A total number of 7 level crossings have been identified in Sangrur city, all are manned. All level crossings are as follows:

Table No: 4.5.5 List of Level Crossing

Sr. No.	Name of Road	Position
1.	Sangrur-Barnala	Manned
2.	Sangrur-Andheri Road	Manned
3.	Sangrur-Ubhawal Road	Manned
4.	Sangrur-Uppli	Manned
5.	Gurdaspura-Thales Road	Manned
6.	Ladda-Deh Kalan Road	Manned
7.	Akoi-Thales Road	Manned

Source: Field Survey, 2009

5. EXISTING INFRASTRUCTURE

5.1 Water Supply

Sangrur has the distinction of having one of the oldest systems of water supply in Punjab. It is now a century old. The system was made operational in October 1908. The system, completely based on ground water, is the source of drinking water.

The water was then supplied through a system of gravitation. With the city getting power supply in 1938, the shallow tube wells were replaced by deep tube wells and system of pumping/extracting water was made through new electrical motors keeping in view the growth of population in the city, 16 tube wells were installed 1945 to 1970 in order to meet the growing demand of water in the city and each with a capacity of 14.27(MLD).

- **System of Water Supply and Area Coverage**

Supply, operation and maintenance of water are the prime and basic services, provided by Municipal council of Sangrur. The state level agency, i.e. Punjab Water Supply and Sewerage Board (PWSSB), undertakes this work on behalf of the Municipal council and after completing the system, it is handled over to Municipal council.

As far as the existing water supply network concerns 90% of the population of the city is served with water supply and 10% of the population is totally uncovered under this system.

There are two systems, in one system the water is extracted from ground through tube-well and directly supplied into the main lines via pumping. While, in the second system, tube-well has an additional facility to pump water and store it into overhead, reservoir attached with it, or it can supply water directly to the water supply system by pumping. At present, a network of 16 tubewells, spread over the city area, is used by the Sangrur Municipal council to supply water. Deep tube-wells (13) are used for pumping the ground water. Deep tube-wells extract water from a depth of 500 ft. and above. Total amount of water extracts by these tube-wells is 14.27 MLD.

- **Water supply network (LPA) rural**

The water supply pattern of the villages falling in the LPA reflects that 100% of population of LPA is covered by water supply.

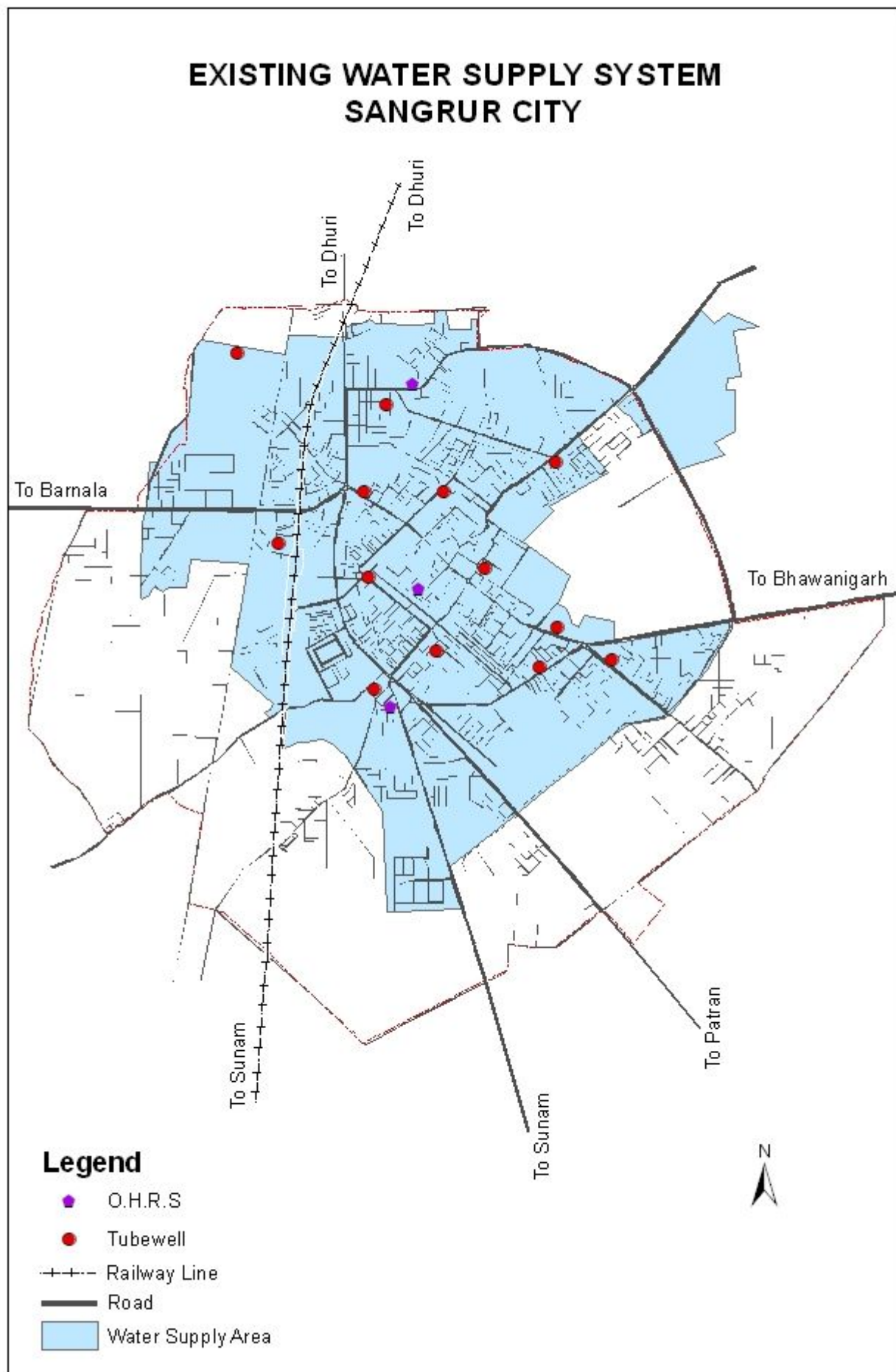


Fig: 18 Water Supply Network

5.2 Sewerage

The quality of life of a city depends upon the kind of urban amenities with which it is being provided. This includes not only potable water supply but also the kind of waste water disposal system, the city is equipped with. It is the necessity of the day to have an efficient sewerage network in all the cities and Sangrur is not an exception.

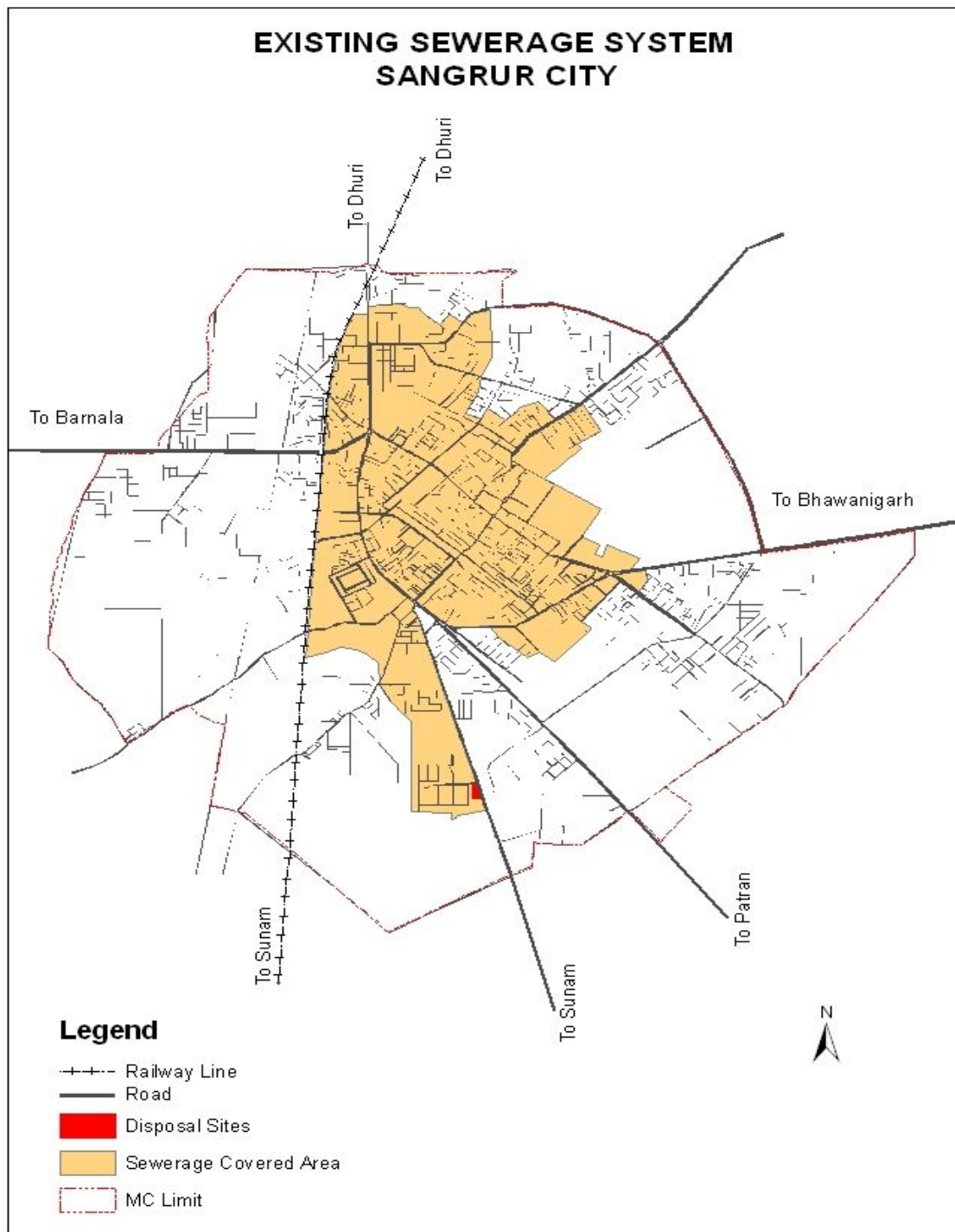


Fig: 19 Existing Sewerage System - Sangrur City

- **Area Coverage**

The sewerage system was first introduced in 1960's. Out of the total area of the city only 63% (12.55sq.km) is covered under sewerage system and remaining 37% of area is still uncovered within municipal limits.

In all, 67.32 km length of the network has been laid so far, out of which main sewer comprises of 7.92km, whereas, length of service network has been recorded as 59.40 km. It is estimated that the remaining unserved area of Municipal council (37%) would require an additional network. The length of the network has been estimated as 63.09 km out of which 7.61 km shall be the main sewer, whereas the 55.48km shall be the distribution network to cover the entire existing population and the area coverage and the additional network requirement to cover the entire city.

- **Quality of Waste Generated**

The existing level of water supply of 48 mld (million liter per day) out of which 80% is considered to be the wastage and only 20% of the water is consumed. Hence, the sewerage works out to be 38.4 mld (million litres per day).

- **Population Coverage**

The area under sewerage coverage is 5.04 sq. km that comes out to be 25.3% of the total Municipal council Limit area (19.92 sq. km), the population served with this facility is 63% of the total population i.e of 97657 persons (as per data provided by the water supply & sewerage statics, 2009). In other words, 37% of the population and 74.7% Municipal council area still does not have any access to the system, with the result; they continue to suffer because of polluted ground water and poor environment in and around their habitat.

- **Waste disposal**

At present the waste generated in Sangrur city is disposed off in Ballian drain through main pumping station having capacity of 66mld (million liters per day) located on main Sunam road.

5.3 Solid Waste Management

Solid waste is combination of unwanted and discarded materials from household, commercial and industrial operations besides street sweeping. Increase in Urban population, coupled with change in life style and economic prosperity, has lead to generation of considerable solid waste. Solid waste has emerged as the major problem in urban areas with regard to its effective managements. Solid waste, arising from human activity, has emerged as one of the major environmental issue, leading to extensive

pollution and threat to human health.

Solid waste management is the prime responsibility of Sangrur Municipal council, within the Municipal council area. Committee has been discharging duty through the infrastructure created for collection, storage, segregation, transportation, processing and disposal. The Public Health Department of the Municipal council is vested with the responsibility of day-to-day solid waste collection and disposal. The Municipal council organizes the collection and transportation through its own conservancy workers and a fleet of vehicles and dumper-placers. The Municipal council collects solid waste from all the residential area within its Municipal limits, collection facility is provided in 100% area occupied by people. The solid waste collected by Municipal council dumped in the open area on Badrukhan-Ubhawal road.

- **Type And Quantity of Waste Generate**

In Sangrur city, 250 gms lower garbage generation can be attributed to the living style and the economic/industrial character of the city. There has been no study undertaken for estimating the waste generated in Sangrur city. However, on the basis of data made available, Sangrur has been found to generate waste, which is lower than the norms followed in other cities of the country. On the average, the per capita waste, generated, is 250 gms, on daily basis as compared to average 300 to 400 gms generated in per day in other parts of the country for example north eastern states. This is due to slow development of industrial sector in the city. Municipal council has not made any arrangement of segregation of solid waste but rag pickers, on their own, segregate some of the plastic glass and other materials at the collection points and sell them to *kabaris*.

- **Disposal of Solid Waste**

The method adopted by the Sangrur Municipal council for disposal of the solid waste is through the mechanism of landfills. At present, Sangrur Municipal council uses only one site for dumping the solid waste. The site is located on Ubhwal-Badrukhan road near vicinity of L.P.A. The area immediately used for dumping solid waste is 5 acres. The average depth available at the site is 4 ft for dumping of the solid waste. The site is at the distance of 7 Km from the city centre. The landfill site is not lined and properly defined, and dumping is being done in an unscientific manner. The waste is directly dumped; there is no compaction method adopted to compress it since no bulldozer and compacters are available for this purpose.

5.4 Traffic and Transport

5.4.1 Vehicular Composition on Main Road Network

It has been noticed that there is mixed traffic in the main city road network such as heavy vehicles (truck, trailers, buses etc.) medium vehicles and light vehicles. As per traffic volume survey on main city roads, conducted by this department, there is a great variation in the composition of vehicles. The outer roads of the city have a large number of heavy vehicles; whereas, the main roads falling in the inner part of the city normally have large number of light vehicles, which include mainly two wheelers. Barnala-Patiala road has large number of heavy and light vehicles, which constitute 55% of total vehicles followed by light vehicles, which constitute 25%, and heavy vehicles have a very small share of 20 % only. The detail of composition of vehicles on different roads of the city is given in table no. 5.4.

Table No: 5.4 Vehicular Compositions on Main Roads of Sangrur City (Per Hour)

Sr. No.	Name of Road	Bus	Truck	Car/ Jeep	Tractor	Cycle/ Scooter	Rickshaw/ Auto Rickshaw	Gadda/ Rehra	Big Tralla	Total
1.	Patiala Road	35	205	708	42	804	38	5	05	1842
		1.9	11.1	38.4	2.2	43.6	2.0	0.2	0.2	100
2.	Barnala Road	26	101	398	28	882	32	8	13	1488
		1.7	6.7	26.7	1.8	59.2	2.1	0.5	0.8	100
3.	Patran Road	14	77	176	15	455	23	04	08	772
		1.8	9.9	22.7	1.94	58.93	2.97	0.5	1.03	100
4.	Dhuri Road	15	57	227	14	457	26	04	04	804
		1.8	7.0	28.2	1.7	56.8	56.8	78.7	76.0	100
5.	Sunam Road	07	28	158	08	285	09	03	03	501
		1.3	5.5	31.5	1.59	56.8	1.7	0.5	0.5	100
6.	Ubhawal Road	05	11	38	-	241	04	07	00	306
		1.6	3.5	12.4	-	78.7	1.3	2.8	-	100
7.	Nanakiana Sahib Road	03	14	107	05	457	08	06	01	601
		0.4	2.3	17.8	0.8	76.0	1.3	0.9	0.1	100

Source: - Field Survey, 2009

- **Volume Capacity Ratio on Main Road of Sangrur City**

The study of regional traffic is essential to know traffic pattern i.e local traffic as well as regional traffic. The existing bye pass is connecting only Patiala, Nabha and Dhuri roads. In the absence of any bye pass to other roads in sangrur city, the regional traffic is passing through the city, hence creating disturbance to the town, leading to the problems of traffic conflicts, delays and degradation of road environment.

The office of the District Town Planner has conducted the traffic volume survey in the month of June -2009 for the Peak hours which have been carved out from 8 A.M. to 10

A.M and 4 P.M to 6 P.M, observing the extent of problems like congestion, journey speed, pollution, load etc.

The ratio of volume and capacity (V/C) is one of the most important factors for evaluating the level of services of road network. Sangrur city has been assessed to calculate volume capacity ratio. While the capacity is measured in PCU's per lane of road width, the V/C ratio up to 1 is considered as optimum condition, if ratio exceeds 1 it indicates condition of congestion, whereas ratio less than 1 indicates under-utilization of the road capacity. As per the UDPFI Guidelines, the table of equivalent PCU factors is given in Table 5.4.1.

Table No: 5.4.1 Recommended PCU Factors for Various Types of Vehicles on Urban Roads

Sr. No.	Type of Vehicle	Equivalent PCU Factors
1.	Two wheeler Motor Cycles	0.5
2.	Car, Jeep, Van	1
3.	Rickshaw, Auto Rickshaw	1.5
4.	Bus, Trucks, Mini-bus	2.2
5.	Agricultural Tractors Traitor	4
6.	Tonga, Hand-Cart etc	2

Source: - UDPFI Guidelines

As per the standards quoted, the volume capacity ratio on the main roads of Sangrur has been calculated in Table 5.4.2 given below. According to the data given in the table, one road namely, Sangrur-Patiala Road is facing the problems of congestion. Accordingly, it becomes critical that either the existing capacity of the roads may be increased or volume of traffic on these roads be reduced to the level of available capacity. A firm strategy, which not only enhances the available road capacity but also rationalizes the flow of traffic on these roads, should be adopted to minimize congestion.

Table No: 5.4.2 Volume Capacity Ratio on Main Roads of Sangrur City

Sr. No.	Location	Name of Road	Peak Hour Volume (PCU)	Capacity (PCU)	V/C Ratio	Type of Carriageway	Classification of Road
1.	Near Milk Plant	Patiala Road	1992	1500	1.33	Two Lane (Two way)	Arterial
2.	Near Police Line	Barnala Road	1428	1500	0.95	-do-	-do-
3.	Near Drain	Patran Road	782	1500	0.52	-do-	Sub-Arterial
4.	Near ROB	Dhuri Road	776	1500	0.51	-do-	-do-
5.	Near Sibian	Sunam Road	473	2200	0.21	Three lane	Sub-Arterial
6.	Near Railway line	Ubhawal Road	265	1200	0.22	Two lane	-do-
7.	Near Petrol pump	Nankyana Sahib Road	463	1200	0.38	-do-	-do-

Source: - Field Survey – 2009

Bus Transport:-

• Bus Terminal

There is one bus terminal in Sangrur City, which is located in the centre of the city opposite to District Administration Complex. The total area of the bus stand is 6 acres, including workshop out of which only 3 acres are under operation of bus stand. The area of the bus stand is not sufficient to accommodate all the components of bus stand as per the norms given in UDPFI guidelines and also as per the standards of Delhi Master Plan 2001. The buses for all the routes originate and terminate at this bus stand leading to the congestion in central areas of city. It has been noted that preferred mode of travel of the people of the area for district stations is also the buses; accordingly, it attracts large volume of the traffic in process. In addition, terminal caters to large numbers of daily commuters who come to work and business places and in process terminal attracts large number of informal commercial activities. With large number of cycle rickshaws, taxis occupying the space around the terminal, movement of traffic in the area largely remains chaotic for most part of the day. There is proper link between the bus stand and the railway station. There is a provision of rickshaw stand for 20 rickshaws only within the stand area, which is inadequate but there is no parking space for cars, two wheelers, and auto-rickshaws etc., which are important components of bus stand. However, the location of the existing bus terminal needs a critical review.

• Bus Routes and Intercity Bus Service

As per data supplied by General Manager P.R.T.C Sangrur, total number of 764 buses operates from this bus stand daily. In addition to this, about 55 mini-buses also operate from this bus stand, which have destinations to surrounding villages or small towns. The city is well connected by bus service with the important towns and cities of the state like Patiala, Barnala, Patran, Sunam, Bhawanigarh, Dhuri, Malerkotla, Mansa, Lehra, Sirsa, Hissar, Moga, Bathinda, Ambala etc. Table no. 5.4.3 further indicates that there are 134 buses towards Patiala and 141 buses towards Sunam – Mansa roads. The route of Barnala, Bathinda has a number of 195 buses. These figures are for upside directions and the number of buses for downside directions thus the total figure of 1524 buses and 110 Mini buses, which operates from the bus stand in the year 2007 - 2008. There is connection of buses on Bhawanigarh-Patiala road, Sangrur-Barnala- Bathinda road and Sangrur-Malerkotla road.

As per information received from by General Manager, PRTC, the average number of

passengers per bus is considered to be 50 passengers per bus per trip which shows that 37000 passengers are picked up from Sangrur bus stand daily by buses and about 1200 passengers by mini buses and almost same number of passengers are dropped in bus stand daily. The detail of routes from Sangrur is given in table below:-

Table No: 5.4.3 Daily Bus Traffic Route-Wise in Sangrur

Sr. No.	Name of Route	No. of Buses in Year 2007	No. of Buses in Year 2008
1.	Sangrur - Barnala	63	65
2.	Sangrur - Sunam - Mansa	100	101
3.	Sangrur - Patiala	130	134
4.	Sangrur - Patran	28	25
5.	Sangrur - Dhuri - Malerkotla	212	213
6.	Sangrur - Bathinda	125	130
7.	Sangrur - Lehra	30	25
8.	Sangrur - Bhawanigarh - Nabha	62	63
9.	Sangrur - Moga	10	8
	Sub Total	760	764
10.	Mini Buses	55	55
	Grand Total	815	819

Source – PRTC, General Manager, Sangrur

- **Intra-City Bus Service**

There is no public transport system in Sangrur city. Due to the inefficient services and unorganized system of public transport, predominant modes used for intra-city passenger travel are personalized vehicles, cycle rickshaws, auto-rickshaws etc, which enhance problems like congestion, accident, parking as well as pollution. However, some mini-buses going to rural areas from bus stand pick up the passengers and drop at various stops in the city to facilitate the general public, hence functioning partly as city public transport also. Besides this, a large number of buses owned by private and government organizations such as-Bhai Gurdas Group of Institutions, National Institute of Nursing, Asra Group of Institutions, Golden Earth Global School, Gen.Gurnam Singh Public School, Springdale's Public School, Sangrur Public School and other schools etc. have their own fleet of buses, which carry a large number of students daily. In the absence of effective and efficient public transport system in Sangrur, the nature of city road network has lead to the enormous growth of intermediate public transport in the shape of rickshaws and auto rickshaws which have been found to be highly convenient by the users because of affordable fare and convenience in accordance to their choice of origin & destination place in the city. It has been estimated that about 15 auto rickshaws and about 100 cycle rickshaws are playing on the city roads. Looking at the existing pattern of transportation, it

has been observed that for the smaller distance and intra-city travel, auto rickshaws and cycle rickshaws are the preferred mode of travel whereas for inter city and large distance bus travel remains the popular route of travel.

5.4.2 Parking Demand and Availability

Parking remains another critical area of attention for Sangrur city. Increasing number of vehicles, narrow road network, high density in the core areas, and absence of parking space within majority of built-up spaces leading to increase in parking problems in the city. In the absence of public transport, higher use of personalized vehicles and rapid growth of intermediate public transport has led to increase in number of vehicles encroaching roads for the parking. The low sided norms of parking in the commercial, institutional buildings also make the approved projects unable to meet with the high rising demand of parking requirements. In Sangrur city, main bazaars and roads, i.e. Sadar Bazaar, Patiala Gate Bazaar, Sunami Gate Bazaar, Dhuri Gate Bazaar, Purani Anaj Mandi Street, and Gaushala Road are not having adequate parking space. At Gaushala Road and inside Sunami Gate Bazaar some parking stops are there along the road but these parking places are insufficient. The main Bazaar of the city remains jam parked throughout the day. The worst affected areas are Sunami Gate Bazaar, Dhuri Gate Bazaar, Sadar Bazaar, Patiala Gate Bazaar, Sadar Bazaar and Purani Anaj Mandi Street. The detail of required parking space of main commercial bazaars is given in Table No. 5.4.4.

Table No: 5.4.4 Detail of Required Parking Areas of Various Bazaars

Sr. No.	Name of Commercial Area	Parking available in ECS	Required Parking in ECS (as per norms)	Estimated Total Area in sq. meter
1.	Nabha Gate Bazaar	60	216	7200
2.	Sadar Bazaar	15	184	6120
3.	Patiala Gate Bazaar	80	612	20400
4.	Sunami Gate Bazaar	20	535	17850
5.	Dhuri Gate Bazaar	25	387	12920
6.	Outside Sunami Gate Bazaar	70	197	6580
7.	Outside Dhuri Gate Bazaar	80	240	8000
8.	Purani Anaj Mandi street	60	146	4860
9.	Court Road	30	73	2430
10.	Gaushala Road Bhagat Singh Chowk to Railway Chowk	110	714	23800
Total		550	3305	110160

Source: Field Survey, 2009

The above table shows that there is an existing available parking of 550 ECS which is 110160 sq meter but the requirement of parking space is 3305 ECS for all bazaars of the city.

- **Terminals**

Terminals are the nodal points of transportation network. Description about truck terminal and taxi terminal is elaborated below:

- **Truck Terminal**

In spite of development of wholesale activity in the city as well as presence of some heavy industries in Sangrur city, it has a truck terminal with area of 5 acres only, which is not sufficient to meet with the requirement. The trucks are parked along the main roads like Sunami Gate, Mehlan Road, and Barnala Road etc. that reduce the effective width of the road. Moreover, these give shabby look to the Sunami Gate and surrounding areas. The service shop attracts vehicles and encroach the road creating bottlenecks in free flow of traffic. Besides this truck terminal there are several other unions as listed in table no. 5.4.5.

Table No: 5.4.5 Truck/Transport Union

Sr. No.	Name of The Truck/Transport Union	Location
1.	Dashmesh Truck Union	Tunga Kularan Road
2.	Gobind G. Carrier	Near Kamal Palace
3.	Guru Gobind Goods Carrier	Ranbir College Road
4.	Shivam Goods Carrier	Ranbir College Road
5.	P.T.C. Goods Carrier	Ranbir College Road
6.	Swaraj Goods Carrier	opp. Phawara chowk
7.	Sangrur Delhi Goods Carrier	Ucchi Pulli Nankiana Road
8.	Tata 407 union	Railway chowk
9.	New Tata 407 union	Sunami Gate
10.	Mohan Transport	Ranjit Singh Market
11.	Swaran Transport	Near Raj High School

Sources – Field Survey (2009)

The four-wheeler unions have no space for their stands but simply operate from the office of small size room whereas the vehicles usually are parked along the roads.

- **Taxi Terminal**

Intermediate modes of transportation play significant role in all the urban settlements for the movement of passengers. At present, there is no authorized taxi stand in the town, but nearly two unauthorized taxi stands have been identified in the town, which are located opposite to the bus stand and Barnala Kainchian. The areas that have been occupied by these taxi stands are actually the parking areas of nearby commercial areas or the encroachments on portion of the road. Due to the encroachment of the parking areas by the

taxies result in the congestion of roads and traffic.

- **Goods Vehicle Movement**

There is a flow of goods vehicles on various roads of the city. The chief incoming goods in Sangrur are from various towns, which include timber from Jammu & Kashmir, sand & pebbles from Rajasthan & Chandigarh, cycle goods & other machinery from Rajpura and Ludhiana, electronic goods from Delhi etc. Sangrur itself is also the source of many goods and some of the major commodities involved in the wholesale trade are agricultural produce, fertilizers (Kissan Urea), electric transformers, plastic pipes, electric wire, copper wire, thread, refined oil and vegetable ghee, milk products, redistribution of pesticides, welding rods, agricultural implements, coolers, sanitary pipes, cattle feed and many others.

- **Good Booking Agencies**

As per the information collected by the field staff of the office of District Town Planner, Sangrur has total number of 4 goods booking agencies the detail of which is given in table 5.4.6 below. All these agencies are situated in the different parts of the city located at Uchi Pulli Nankiana Road and near Ranbir College Road. The vehicles of these agencies are mostly parked on roads and streets, thus, hindering the free flow of traffic. In addition to lack of parking facilities, other facilities such as rest rooms etc. are also not provided for the drivers. Hence, the location of these transport agencies is poor with respect to the relating activities.

Table No: 5.4.6 Detail of Goods Booking Agencies in Sangrur City

Sr. No.	Name of the Goods Booking Agency	State
1.	Delhi Punjab Goods Carrier	All India Permit
2.	Patiala Carrier	--
3.	Bharat Motor Transport	--
4.	Sangrur Delhi Goods Carrier	--

Source – Goods Booking Agencies and Truck Unions

- **Vehicular Growth**

The number of registered vehicles has been recorded 12700 in 2005 and increased to 14,225 in 2006, but the growth of vehicles decreased during 2007-08. The growth rate of vehicles is 12% during 2005-06, in 2006-07 the growth rate is -26.08% and -6.26% in 2007-08 respectively. Out of the total number of vehicles majority of vehicles are two wheelers followed by the four wheelers including cars, jeeps and tractors. The vehicular growth is shown in table no.5.4.7.

Table No: 5.4.7 Registered Vehicles Category Wise 2005-08

Year	Four Wheelers	Three Wheelers	Two Wheelers	Others	Total Vehicles	Growth Rate in %age
2005	491	47	12109	53	12700	--
2006	912	78	13131	104	14225	12%
2007	509	44	9909	53	10515	-26.08%
2008	246	35	9530	46	9857	-6.26%

Source: D.T.O., Sangrur

- **Road Accidents**

With a view to assess the safety of the road users in Sangrur, it is important to study the road accidents in the city, As per the figures made available by the police department, The total number of accidents increased from 178 in 2005 to 235 in 2006 and 266 in 2007. The number of total fatal accidents increased from 101 in 2005 to 156 in 2007. There is a great increase in non-fatal accidents in the city. Because of increase in total number of accidents, there is a need of strict regulations and enforcement mechanism.

Table No: 5.4.8 Year Wise Fatal and Non-Fatal Accidents in Sangrur City 2005-07

Year	Total Number of Accidents	Fatal	Non-fatal
2005	178	101	162
2006	235	162	283
2007 up to Nov.	266	156	320

Source: Superintendent of Police, Sangrur

- **Management of Urban Transport**

Existing scenario of urban transport management is marked by existence of multiplicity of agencies with overlapping areas of operations. In some cases, even a single component is managed by different agencies. For example, in Sangrur licensing of motorized vehicles is by D.T.O, bus transport services are provided by state road transport undertaking, rail services are under the control of Ministry of Railways, whereas, traffic rules are enforced by the state traffic police and so on. All these agencies plan their activities and operate independently without any co-ordination. The funds for development/ Management of transport are sourced independently and are spent by them, mostly not in an optimum manner.

The worst of the existing scenarios is that urban transport is not the primary function of these agencies. As it is the primary responsibility of Municipal council Sangrur to provide civil services, Police deptt. to maintain law and order, Transport department to issue licenses, railway authorities to plan for the growth of city railways to take care of rail traffic etc. In certain cases, traffic engineering and management is also in the hands of the

traffic police, an area in which they have no expertise leading to poor management system of urban transport in the city.

- **Rail Based Transport**

In addition to road traffic, railway also handles very large volume of goods and passenger traffic into Sangrur city. A total of ten pair of passenger trains pass through the city on daily basis as shown in the table below. Railways, being the economical and efficient mode of transportation, attract a large number of passengers.

Table No: 5.4.9 Detail of Passenger Trains Passing through Sangrur City

Name of Route	Incoming per day	Outgoing per day
Sangrur-Ludhiana	6	6
Sangrur-Jakhal-Jind	4	4

Source: Station Master, Railway Station, Sangrur

In addition to a large number of goods, trains are also passing through the city for transportation of raw material as well as finished goods. Railway plays an important role in the movement of goods. The data supplied by the Railway Department shows almost constant number of goods trains during past 4 years as shown in table 5.4.10 below.

Table No: 5.4.10 Number of Goods Trains Passing through Sangrur

Name of Route	2002	2004	2006
Ludhiana	120 App.	120 App.	150 App.
Jakhal- Jind	300 App.	300 App.	300 App.

Source: Station Master, Railway Station, Sangrur

5.5 Fire Prevention and Protection

The city administration provides fire prevention and protection services in Sangrur city in terms provision of a fire brigade in order to prevent the fire incidents. This Fire brigade, not only serves the city of Sangrur but it provides the fire protection facilities to the adjoining areas as well.

Table No.: 5.5 Existing Infrastructures in Fire Stations

Sr. No.	Name of facility	Norms	Existing	Surplus	Deficiency
1.	Fire station	1 fire station or sub fire station within 1 to 3 km to be provided for 2 lakh population	1	-	-

Source: Office of Fire Brigade, Sangrur

The office of the Fire Brigade is situated near the main bus stand of the city from where

fire-fighting machines easily reach the place of incidents within a few minutes, as it is centrally located. Hence, the city fire brigade caters to the fire prevention needs of the city, in a well-organized way.

5.6 Environmental Status

• Introduction

Industry and the traffic component are not only the major growth driver of the city but also major polluter of the city environment. Impact of pollution has been witnessed in the city in the form of quality of air, water; both surface and underground, noise pollution, degradation of the natural resources, low vegetation cover etc. Therefore, the appropriate strategies are put in place to tackle these problems of pollution.

• Air Pollution

Existence of large number of units, including the polluting industries, has adversely impacted the quality of air in Sangrur city. The emission, generated by industries, has also contributed to the lowering quality of the air. With a view to clearly assess and monitor the status and quality of ambient air in Sangrur, data with regard to quantity of suspended particles, SO₂ and NO₂ present in the air is being collected and analyzed by the Punjab Pollution Control Board. The data is collected for the whole year and is categorized into three distinct periods involving January to April, May to August and September to December.

Major contributors, to the air pollution have been found, are:

- (1) Vehicular exhaust due to the presence of large number of vehicles.
- (2) Absence of effective and efficient system of mass transportation.
- (3) Narrow road width (with average varying between 4.5 to 7mts.), low capacity of the roads and high intensity of traffic.
- (4) Smoke emitted by the large scale use of kerosene/diesel based power generators.
- (5) Presence of large number of intermediate public transport vehicle and use of kerosene as the fuel.
- (6) Smoke emitted by industry.
- (7) Use of rice husk by the industry

• Water Pollution

Rapidly increasing urbanisation and industrialisation of Sangrur has not only adversely affected the quality of ambient air in the city but also has affected the city's water resources. Being the recipient of city's untreated domestic and toxic industrial waste,

dumping of solid waste, dumping of ash from burnt rice husk, the quality of water has degraded considerably.

In addition to the surface and ground water pollution, air and environmental pollution has been also witnessed in some areas due to pollution in the Sunam Road Nallah. Discharge of untreated sullage, solid waste and organized material within the Sunam Road Nallah leads to constant accumulation of pollutants in it and It has been observed that area surrounding Sunam Road Nallah has bad odor creating nuisance for the residents. The highest affected areas falls within 75mts belt of the Sunam Road Nallah, that houses around 2.9% of the population, and population living in 76 to 250mts (6.09%) of this nallah is moderately affected whereas population living in next 250mts is also affected but to lower degree of pollution.

- **Ground Water Pollution**

The degradation of the quality of ground water, caused due to pollution of Sunam Road Nallah, has also been taken into consideration. The seepage of polluted water from the Nallah and the industrial waste has led to the pollution of the ground water sources.

- (1) People residing in close proximity to Nallah, passing through Sangrur and to adjoining villages, have been found to be exposed to water borne disease due to polluted ground water. The quality of water has been found to be unsuitable for supporting aquatic life.
- (2) Not only the industrial areas but also the areas having mixed land use are being, adversely, affected due to the presence of toxic pollutants like cyanide and hexavalent chromium in excessive proportion in the ground water.
- (3) The pollution of the soil and ground water has also been caused by the dumping of the industrial waste (effluents and solid waste) into the open ground leading to stagnation and leaching of pollutants in the soil.
- (4) The use of polluted ground water for agricultural purpose has also led to the degradation of the soil and presence of heavy metals into the soil and vegetable crops grown in the area.

- **Noise Pollution**

Due to over-crowding, large volume of slow moving mixed traffic, comprising pedestrians, concentration of two wheelers, three wheelers, cars, buses, trucks etc, the city is facing the problem of noise pollution. The noise causes temporary or even permanent hearing impairment, particularly to those people who remain exposed to such noise level

for longer time during the day.

The noise pollution is not limited to the traffic only but use of loud speakers by the religious institutions and during the marriages/festivals has also added to the quantum of pollution. The use of generators by residential, commercial and industrial establishment has also added to the pollution level in the city.

Noise level was found to be higher in case of commercial locations. The worst area suffering from the noise pollution has been found to be the sensitive location including hospitals and colleges where during the night time the noise level was found to be more than double the permissible limit of 10dbs.

5.7 Power Supply

A power supply scheme comprises power source development, transmission, and step down to usable voltage for area and local distribution network. Generally, power reaches the area by 220 KV high-tension overhead lines drawn on pylons. Such power line shall reach the Regional sub stations (220 KV). One such sub-station is already completed in Nadampur village, near Bhawanigarh in Sangrur. This sub-station taps the required power and converts this voltage to 66 KV electricity then flows through underground armored cables to 66 KV sub-stations for local distribution. According to below table these sub-stations provide the electricity to Sangrur.

Table No: 5.7 Grid Station in Sangrur city

Sr. No.	Areas and Location	Capacity	Location
1.	BBMB –Sangrur	220 kv	Within city
2.	Mangwal	66 kv	L.P.A
3.	Badrukhan	66 kv	L.P.A
4.	BBMB –Sangrur	66 kv	Within city

Source: P.S.E.B, Sangrur

Sangrur is presently being fed through two substations namely one is 220 kv and another is 66 kv located within the city and two 66 kv sub stations are located within L.P.A namely Mangwal and Badrukan. All grid substations are stepped down to 11 kv to meet with the requirement of the city and L.P.A of Sangrur.

5.8 Educational Facilities

Educational Facilities, certainly, impact the quality of manpower available in the urban areas. In addition, these facilities have been found to cover the economic growth and employment. In Sangrur city, in this context, has been found a number of educational institutions. These institutes meet with the educational requirement of not only the Sangrur city but also of the surrounding villages. It has large number of institutions both at the

school and college level of education. Besides this, Punjab Agriculture University opened a research centre in Sangrur city for conducting research in the development in the field of food grains. Punjab Agriculture University also has provision of technical education in the field of agriculture mechanism etc, to produce required skilled manpower to look after the agriculture section. It has also contributed immensely to educate the farmers in the use of new techniques and varieties of food grains to improve productivity and economy to the state and farmers.

In addition to this, the city has a number of renowned institutions in the field of arts, science, engineering, law, medical & education etc, like Government Ranbir College for science, arts (humanities) and commerce, Akal Degree College for Women, Bhai Gurdas Institutes of Engineering; Technology, Management and Law. Government Ranbir College; for science, arts and commerce etc was established in 19th Century. The Bhai Gurdas Institute of Engineering, Technology Management and law established in 2002-2003.

Sangrur city has large number of institutions imparting education at the school level. At present there are 14 primary and elementary schools and 4 high /secondary schools and senior secondary schools in the city.

Considering the existing population and the norms defined for educational institutions, quantitatively the numbers of institutions are adequate to fulfill the needs of education in the city. However, taking into account the regional importance of the Sangrur city to cater the demand of surrounding region, the educational facility available appears to be inadequate, as compared to the actual requirement. Further, it has been observed that despite the fact that although a large number of institutions are available but qualitatively most of the institutions have been found to be deficient for providing the basic facilities. The buildings of these institutions, in number of cases have not proper air, light and ventilation. Classrooms are inadequate to provide appropriate space to the students. A numbers of schools do not have adequate open spaces/play grounds for the students and they encroach upon the available public open spaces in the vicinity of such institutions. Space, occupied by the institution, is also on the lower side when compared with the norms prescribed by various agencies. Further, a number of institutional academies are operating from the residential houses and commercial buildings, and students face a lot of problems because of inadequacy in space. Appropriate sites for these institutions should be earmarked in the various development schemes and sites already available in the sanctioned Urban Estates and approved colonies, which are not developed so far, should

be allocated to such institutions for construction and making available basic infrastructure to the students. The new areas to be developed should have appropriate number of institutions imparting education at various levels to improve the level of education for urban and rural population. The availability of educational institutions at various levels both in the area of technical and non-technical have been detailed below in table no 5.8.

Table No: 5.8 Educational Facilities in L.P.A, Sangrur and Sangrur City

Sr. No.	Name of Facility	Norms(UDPFI)*	Existing in Numbers	surplus	Deficiency
1.	Primary and Elementary Schools.	1 for 5000 pop	25	3	-
2.	High/Secondary School and Senior Secondary School	1 for 7500 pop	8		11
3.	Degree college	1 for 10,00,000	3	3	2
4.	Specialized college I. B.Ed college II. LLB college		1 1		
5.	Technical Institution	1 for 10,00,000 pop	1		
6.	Engineering colleges	2 number to be provided in urban extension	1		

Source: D.E.O. Sangrur, Census of India 2001

***UDPFI Guidelines:- Urban Development Plans Formulation and Implementation Guidelines, Govt. of India.**

5.9 Health Care Facilities

There are some medical facilities available in Sangrur city. Sangrur city has one Government Hospital, and has some private health institutes like Sibia Health Care Center, D.P Singla Clinic (Child specialist), Dr.Renu Singla and K.G Singla Hospital, Dr.Rekhi Hospital, Dr. Rai Hospital, Jindal Hospital, Ashok Surgical Hospital etc. There is one Nursing college existing in L.P.A Sangrur. There are 3 main government health centres existing in Mangwal, Badrukhan and Akoi. In the civil hospital, there is a capacity of up to 200 beds. In Sangrur city, one Ayurvedic Dispensary is also available. There are two veterinary hospitals existing in Sangrur city and in village Badrukhan. Majority of poor people, living in slum areas, do not have access to the basic health care facilities. Due to

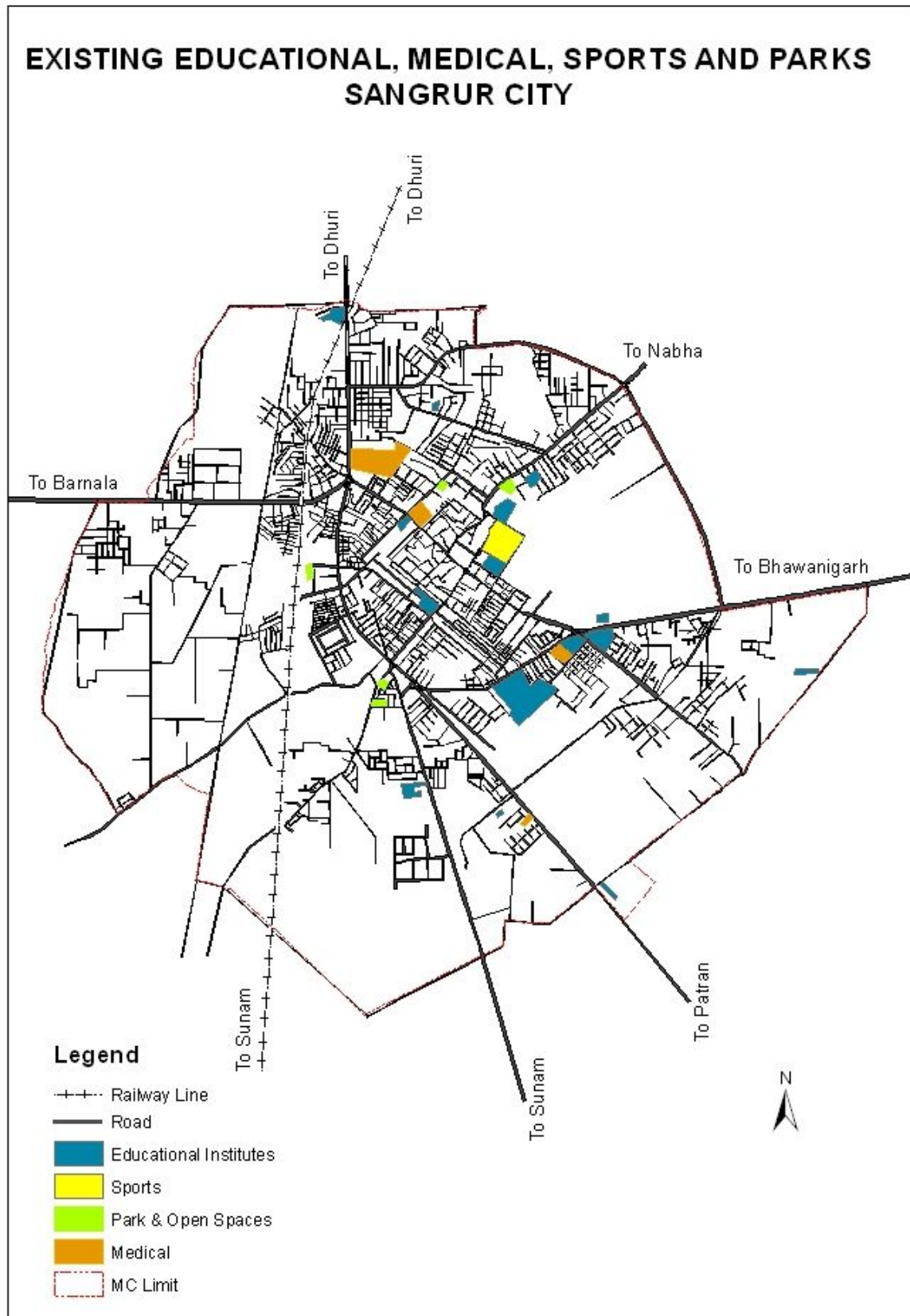


Fig: 20 Existing Educational and Medical Facilities in Sangrur City

lower number of Government health care units, existing in the city, health care becomes unaffordable for majority of the poor due to high charges by the private hospitals. Majority of slum dwellers are dependent upon unqualified medical practitioners in case of any emergency.

The table below shows the existing number of sub-health centre, primary level health centre, allopathic and Ayurvedic hospital besides the Veterinary Dispensaries/hospitals operating in the city along with their bed capacity.

Table No: 5.9 Health care facilities of L.P.A Sangrur

Sr.No.	Name of the Facilities	Norms	Existing	surplus
1.	General Hospital	1 for 2.5 lakh pop.	1	
2.	Intermediate Hospitals category A	1 for 1 lakh pop.	12	11
3.	Nursing homes, child welfare and maternity centre	1 for 0.45 – 1 lakh pop.	15	13
4.	Dispensary	1 for 0.15 lakh pop.	17	8

Source – CMO Office, Sangrur

5.10 Recreational Facilities

Recreational facilities constitute an important element of physical and social development of an individual and for that reason their provision and balanced spatial distribution at the local, sub city and city level assumes importance. It is important that the city is divided into compact and sustainable communities, and recreational facilities of appropriate order are made available to these communities to the population residing there in.

Recreational facilities can be classified into active and passive recreational facilities; provision of both these facilities has to be made in order to cater the essential needs of the individuals and communities.

• Parks and Open Spaces

Sangrur city has number of recreational facilities, as enumerated in the table no. 5.10, which cater to the demand of people living in the city. There are 3 main parks which include both small and large sized open spaces. Parks are concentrated largely in the Banasar Bagh and Kishan Bagh near Kishanpura (BSNL Park), and small sized parks in J.P Colony, Captain Karam Singh Nagar etc. Private colonies, which have been developed by colonizers and approved by the State Government, also have provision related to parks etc. The walled city has acute shortage of open spaces due to high density of built up areas. There is only one open space (Banasar Bagh) within the core area of the city.

In the absence of such facility, the children play on the streets/roads, which are major threat for their safety. Even the existing level of parks are inadequate and do not conform

to the planning norms specified for parks and open spaces. Thus, there is an urgent need to create adequate number of additional parks and open spaces in the city as per the norms besides ensuring their rational distribution in the city.

Table No: 5.10 Recreational Facilities

Sr. No.	Name of the Facilities	Existing in No.
1.	Parks	2
2.	Cinemas	1
3.	Multiplex	0
4.	Stadium	1
5.	Museum	1
6.	Swimming Pool	1
7.	Clubs	1
8.	Library	1
9.	Amusement Park	0

Source: District Gazetteer of Sangrur

In Sangrur city, there is one cinema but no multiplex. In Sangrur city, there is one club, and namely Ranbir Club, and one library.

However, keeping fast population growth and rapid physical expansion of the city into consideration it is important that adequate level of recreational facilities be provided in the city and distributed to cover the entire population of the city. It will be essential to create a well defined hierarchy of these facilities which should be followed as an integral part of planning. There is also need of maintaining the open spaces and recreational facilities.

Sports

There is only one public stadium known as 'War Hero's Stadium' in Sangrur city, which lies in the middle of the city. Besides this, there is one big stadium in Govt. Ranbir College in the city. There are two swimming pools in the city where the games of National level can be held. Small swimming pool is maintained by Golden Earth Global School, Sangrur. However, a swimming pool of state level is available in Banasar Bagh in the middle of Sangrur. There is no indoor stadium, Gymnasium Hall, or any other sports complex in the city.

5.11 Post and Telegraph

Due to the rapid advancement in the technology and policy of liberalization adopted, post and telegraph has emerged as an important medium of communication. Despite rapid progress made in different modes of communication, post and telegraph still remains the most popular option of communication for the majority of population. The provision and management of post and telegraph facility falls under the domain of department of post

and telegraph. There are eight post offices operational in the city, out of which 7 are at branch level and 1 is head post office. The Telegraph or Telephone exchange offices also exist in the city. However, demand of such offices reducing due to availability of better option of communication, which is not only faster but also cheaper. The provision of this facility should be made as per defined norms in order to cater to the needs of the majority of city population. Details of the post offices available within Sangrur city are provided in the table 5.11 given below:

Table No: 5.11 Post Offices

Sr. No.	Name of the Facility	Existing in Numbers
1.	Branch Post Office	3
2.	Sub Post Office	4
3.	Head Post Office	1

Source: - Head Post Office, Sangrur

5.12 Police Station

In order to maintain law and order in L.P.A Sangrur and Sangrur city, the police department has made an arrangement of police administration in the city to tackle the situation. There are 3 police stations, 3 police Nakas in Local Planning Area, Sangrur. Besides this the city is also equipped with the facility of police lines and District Jail. The detail of police stations and other posts is given in Table no 5.12 given below:

Table No: 5.12 Police Facilities in L.P.A, Sangrur

Sr. No.	Name of Police Station Chowki/Naka	Location	Status
1.	Thana Kotwali/city	Near Aggarsain Chowk, Sangrur	Police Station
2.	Thana Sadar	Railway Chowk Sangrur	Police Station
3.	Chowki Channo	Near Bus Stand	Chowkie
4.	Barnala Road	Mahavir Chowk	Naka
5.	Bus Stand	Main Chowk	Naka
6.	S.S.P.	Police Lines Sangrur	Naka

Source: Superintendent of Police, Sangrur

6. HERITAGE

6.1 Built Heritage

Heritage provides vital link between past and present and it has an important role in shaping the destiny of the community. These foot prints of past provide us with vital information and knowledge about the ancient culture, way of life, level of development, building architecture besides physical, social and economic edges of a society of a particular period. It becomes important that these repositories of knowledge forming irreversible links between past and present are not only carefully and thoughtfully preserved but also appropriate maintained and developed in order to ensure that they are not lost to the posterity. India is inherited with enormous wealth of built heritage. Punjab, in general and Sangrur city in particular, has also followed the footprints of the great nation and the state.

Sangrur has some places of historical importance and interest falling in Local Planning Area. Maharaja Raghbir Singh made all the main important buildings. These are as -

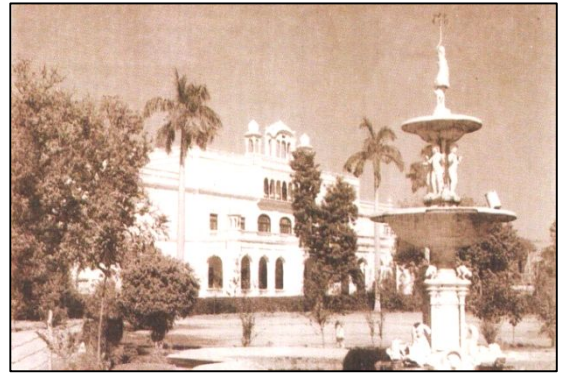
- Banasar Garden Complex
- Bamba house
- Ghanta Ghar
- Ranbir College
- Session House
- D.C. Residence
- Ranbir Club
- Raj High School
- **Banasar Garden Complex**

The Banasar Garden Complex stands within 13 acres grounds in the heart of the city and contains the Diwan Khana and attractive marble Baradari, the brief description of these is given below.

Diwan Khana

It is located within Baradari garden. It is in the middle of the palaces and is surrounded by the Lal Bagh and Banasar Garden. It has a large Red stone platform with two buildings called the Sabaz and Surkh Kothis, on either sides and on the platform there are two reservoirs with fountains and a Varandah in front.

In the centre of Diwan Khana, there is a large spacious hall, containing a masnad, a seat raised six feet above the floor. There are several buildings on the sides and upper storey, all decorated with grass and ornamental furniture on the west Entrance Gate (Deodhi) with the Jalus Khana and Tosha Khana buildings on both sides



Diwan Khana

and an upper storey called the Jalus Khana Mahal.

In 1972, District Museum, Sangrur was established by the Government in the premises of 'Diwan Khana' of Kadim Khana buildings. The museum is divided into three sections, i.e. Art Gallery, Old Arms Gallery and Pictures Gallery. The Art Gallery contains a large number of sculptures of unique articles. The old Arms Gallery has collections of old Arms such as cannon guns (Gupt gun and two swords in one sheath), weapons, dresses, etc. used/worn in the past. The pictures gallery contains paintings and photographs of archeological monuments.

Marble Baradari

In addition to walk its garden, the Bansar Bagh is also famous for its marble Baradari, it is a building of 12 doors and mini zoo, with a wooden bridge and a marble gate. Late Raja Raghbir Singh also built this place. There is a big marble water tank around it.



Marble Baradari

- **Bamba Ghar**

Raja Raghbir Singh established this Shahi foundry. In which a variety of tools / components to be used in flour mills, raw mills, diesel engines etc. were manufactured. In addition to this an ice factory, many flour mills and water works were built.



Bamba Ghar

- **Ghanta Ghar**

In the period of Jind Riyast, the Ghanta Ghar was situated at the corner of Lal Bagh. Today, this Ghanta Ghar is located on the same location whereas the Lal Bagh is completely destroyed. It is heard that after the Gadar of 1857, General Kahan Singh brought the Ghanta Ghar from Rohtak which was established here by Maharaja Ranbir Singh.



Ghanta Ghar

- **Ranbir College**

This building was constructed in the Ram Bagh by Raja Ranbir Singh. This building is founded as a Jubilee college due to the glorious memory of diamond jubilee of British Imperior Malka. Now this college is known as Ranbir College.



Ranbir College

- **Session House**

This palace was constructed in the Lal Bagh by Raja Raghbir Singh, especially for his son, Tika Balbir Singh. It is called today by the name of session house.

- **D.C. Residence**

Raja Ranbir Singh erected this building for his Grandson Gajbir Singh, which was called Gajbir Villa. Now, the D.C. Sangrur is residing in this building.



D.C Residence

- **Ranbir Club**

Maharaja Ranbir Singh established Ranbir club in Mehtab Bagh. The skating hall, which is situated in this club, is very special. In this club the kings of other Riyasts also used to come and play skating with hockey. This club has a Billiards table, which is a big asset in itself. In addition to this a Parda club for ladies is also constructed in this club.



Ranbir Club

- **Raj High School**

Maharaja Ranbir Singh made this building as a Yateem Khana on 27 Feb.1913 on the silver Jubilee of his rule, which has been converted into Raj High School now.



Raj High School

Almost all govt. owned heritage buildings have been listed including those considered by INTACH. in its study. Out of the above mentioned buildings some of them namely Diwan Khana museum and marble Baradari including tank have been declared as protected monuments under 'The Punjab Ancient & Historical Monuments and Archaeological Sites & Remains Act, 1964' which have been in existence for not less than 100 years at give in Annexure-IV. This Act provides for the preservation of ancient and historical monuments and archaeological sites and remains other than those of national importance, for the regulation of archeological excavations and for the protection of sculptures, carvings and other like objects. The important building in sangrur of historical, heritage, cultural and more of architectural importance have been shown in fig no. 21.

6.2 The Punjab Heritage and Tourism Promotion Board

In order to preserve and conserve the rich heritage and promote tourism of Punjab including Sangrur, the govt. of Punjab has constituted 'The Punjab Heritage and Tourism

Promotion Board with following aims and objectives:-

- 1) To take all necessary steps for planning, coordination and implementation of all activities, events, celebrations, projects and other matters connected therewith for the conservation, preservation, dissemination and documentation of Cultural Heritage of Punjab in all its forms and for the development of tourism in the state.
- 2) To undertake the overall comprehensive development of heritage properties in Punjab including their landscaping, renovation and setting up infrastructure such as conference centres, auditoriums, museums, libraries, hotels etc. with a view to promote tourism.
- 3) To do any and everything to promote, preserve, propagate, culture and tourism in Punjab. Without prejudice to the generality of the foregoing objects, the Board shall, in particular, have the following immediate objectives for its programmes and activities:
 - i) To coordinate with Government of India, various State Government. Organisations, NGOs and other organisations, as well as eminent individuals within India and abroad for seeking financial contributions for the fulfillment of the objectives.
 - ii) To secure the participation and involvement of the largest number of Government Organizations and widest cross section of individuals worldwide with a view to preserve the cultural heritage of Punjab and develop tourism in the State. The constitution of 'The Punjab Heritage and Tourism Promotion Board' at the State Level is as follows:-

Official Members

I CONSTITUTION

	Chief Minister, Punjab	Chairman
1)	Finance Minister, Punjab	Member
2)	Minister of State for Tourism & Cultural Affairs, Punjab	"
3)	Principal Secretary to Chief Minister, Punjab	"
4)	Secretary to Government of Punjab, Department of Housing & Urban Development	"
5)	Secretary to Government of Punjab, Department Of Tourism	"
6)	Secretary to Government of Punjab, Department of Local Government	"

- | | | |
|-----|--|---|
| 7) | Secretary to Government of Punjab, Department of Culture, Archaeology & Museums | " |
| 8) | Secretary to Government of Punjab, Department of Public Works (Building and Roads) | " |
| 9) | Principal secretary to Government of Punjab, Department of finance | " |
| 10) | Chief Town Planner, Punjab | " |
| 11) | Chief Architect, Punjab | " |
| 12) | Director Cultural Affairs, Archaeology & Museums, Punjab | " |

Fig.21 List of Heritage Buildings in Sangrur

Sr. No.	Name of monuments, buildings precincts etc.	Location	Ownership	Usage	Special features	Date
1.	Diwan Khana 	Near new building of Government girls school	State Archaeology Deptt.	District Museum, Sangrur has been established by the Government	It has a large Red stone platform, two reservoirs with fountains and a Varandah in front, in the centre; there is a large spacious hall, and a seat raised six feet above the floor	1876
2.	Baradari Garden 			Recreation	It is famous for its walk in traits, plantations, marble and a big tank around it.	18th Century
3.	Ghanta Ghar 	Near post office		As archaeological monument	General Kahan Singh brought the Ghanta Ghar from Rohtak	18 th century

4.	Bamba Ghar 	Patiala Gate	State Government	Occupied by govt. office	An ice factory, many flour mills and water works were built.	1876
5.	Session House 	In the Lal Bagh	State Government	Residence of Judge	It was palace	-
6.	Ranbir College 	Near Patiala Gate	State Government	College	This building was made in the Ram Bagh	1939

7.	Raj High School 	Near Patiala Gate	State Government	School	This building was made as a Yateem Khana.	1913
8	Ranbir Club 	In Mehtab Bagh	State Government	Sports and Restaurant	The skating hall which is situated in this club is very special.	-
9.	D.C. Residence 	On Barnala-Patiala Road near PWD Rest House	State Government	Residence	D.C. Sangrur is residing in this building.	-

7. PLANNING PROBLEMS AND ISSUES

To assess the development problems of entire city, it has been divided into seven different zones, intercepted between various roads. The problems related to unplanned residential area, commercial area, utilities, mix land use and traffic and transportations etc are discussed in these zones. (Fig. 22 and 23 respectively shows the problems and potentials for the Sangrur city.)

7.1 Area between Dhuri Road and Nabha Road Residential Area

- There are number of unauthorized residential areas in this area namely, Mansahia Colony, Radha Swami Colony, Balwant Singh Colony and Kishanpura. Due to unplanned development, roads and streets have narrow width and poor road circulation. The streets in these colonies are narrow which results in the congestion.
- Number of slums is cropping up in these areas. These areas are not provided with water supply and sewerage network. These slum dwellers are using illegal electricity connections.
- **Solid Waste Management:** - There is poor solid waste management as no site has been provided for dumping of residential waste. As a result, disposal of waste on vacant plot causes environment pollution.

Commercial Area

- Mushrooming of commercial activities on road fronts, without provision of adequate parking, is another major traffic problem in certain pockets of this zone.

Mix Land Use

- Mix land use is another major characteristic of the city development. The commercial cum residential type of activity exist in this zone. In this zone hotel, hospital, religious building and agency are located along Dhuri road. The high commercial traffic causes inconvenience to the public.

7.2 Area between Nabha Road and Patiala Road Traffic and Transportation

- **Mixed Traffic:** - Absence of service lane along Patiala road, foot paths, slow moving traffic on this road, especially cycle rickshaws, causes hindrance in free movement of heavy traffic especially buses and trucks on this road.

Residential Area

- The unplanned growth of residential area, namely, Dasmesh Nagar

etc. has narrow street pattern. These colonies lack proper connectivity with the surrounding areas. The road / street hierarchy is also missing in these colonies.

- There is one slum existing in this area, namely, Krian Pura Basti outside Nabha gate. The slum has poor housing structure and lack of basic infrastructure.

Mix Land Use:

- The hotels and marriage palaces culture has mushroomed without adequate parking facility between Nabha and Patiala road. People face another problem due to parking of vehicles on road side becomes a major hindrance in the traffic movement. This problem is acute near marriage palaces (especially during marriage season).

7.3 Area between Patiala Road and Patran Road

- **Unplanned Residential Area:** - This area includes unplanned residential area, namely, Bajan Colony, Ms. Shakti Property Colony, Lal Khoti Colony. Due to haphazard and unplanned growth of residential area in this part of the city, there is acute shortage of wide roads, open spaces etc. The road circulations in unplanned colonies do not have proper linkages and connectivity.
- **Plotted development**
- Lack of planned markets in this part of the city has resulted in haphazard growth of commercial activities on road points causing environmental and traffic problem.

Industrial Area

- Poor condition of roads
- Lack of parking facility
- Lack of treatment plants and park in this area.
- No green belt along industrial area and residential area.
- Lack of dustbins.
- No sewerage treatment plant.
- Due to absence of any truck stand in this area, trucks are parked along both sides of Patran road near oil station reducing the net effective road width.

7.4 Area between Patran Road and Ubhawal Road

- **Unplanned Residential Area** - The area includes unplanned residential area namely near Mansingh Nagar, Near Captan Karm Singh Nagar along Ubhawal Road. Due to haphazard growth of residential area in this part of city, these areas are densely developed and are devoid of area under circulation and parks.

- Slums - Maximum slum areas are located along Jakhal railway line, namely Ram Nagar Basti, Bajigar Basti, Ganga Ram Basti, Ravi Das Nagar, Baguana Basti, Babdjiwan Singh Nagar etc. Due to the absence of sewerage system, these slum areas, having unhygienic conditions. Apart from creating unhygienic conditions in an area, these slums create environmental and developmental problems.

Industrial area

- Many small scale industrial units are located in this zone in an unplanned manner.
- Scatter development in south side of zone.

7.5 Area between Ubhawal and Barnala Road

- Area is uncovered with water supply and sewerage network due to scattered development.
- There is no segregation of fast and slow moving traffic on Barnala road due to non-existence of service lane.

7.6 Area between Barnala and Dhuri Road

- Mix traffic flow in this zone due to lack of service lane.
- Improper solid waste management.
- Lack of sewerage facility.
- Mix land use along Barnala road

7.7 Old City Area

- This zone lacks planned markets resulting into haphazard growth of commercial activities along road points causing environmental and traffic problems.
- **Traffic and Transport:** There is major problem of city traffic jam in peak hours in the old city.
- **Absence of Parking:** The commercial activity has come up in the old city without proper parking and other related facilities.
- Number of encroachments has come up near bus stand reducing the net effective road width creating hindrance in the movement of vehicals.

Fig: 22 Problems and Eye Sores at Sangrur



Car parking along road side



Encroachments by hawkers



Water logging problem due to poor drainage



Dilapidated houses / slums at Sangrur



Slums in Sangrur



Scattered garbage as a Breeding Ground for diseases



Traffic problem near bus stand



Unhygienic conditions Along roads

Fig: 23 Potentials at Sangrur



Gurudwara Mustuanan sahib



Railway station



Gurdwara Nankiana Sahib



Shahi Samadhan

8. VISUALISING THE FUTURE

Visualizing future is necessary for the formulation of proposals of the Master Plan.

Population and employment forecast for the horizon year is the first step in this direction.

8.1 Population Projections 2031

Indian urbanization has shown different trends in the year 2001 as compared to past trends. As per census 2001 reduction in growth rate of urban population and also reduction in URGD (Urban Rural Growth Differential) has been observed. Hence population forecast instead of trend projection is based on the estimates of Punjab total and its share towards national urban component projected by report of technical group on population projections constituted by the National Commission on Population May 2006 entitled "Population Projections for India and States 2001-2026" has been considered. The basic assumption is that the share of Sangrur city population to Punjab Urban as observed in 2006 will approximately constant for coming years until 2026. For subsequent period upto 2031 imputed growth rate during 2021-2026 is used. L.P.A Sangrur comprises of one urban settlement, i.e. Sangrur city.

Following assumptions have been used for the population projection of this urban area:

1. By first estimating the share based on the actual shares observed in 2001; shares in future can be estimated and then the population forecast for Sangrur urban as well as Sangrur rural has been calculated.
2. For population projections of Sangrur Municipal Council share, i.e. taken in L.P.A Sangrur urban is taken.
3. The share of Sangrur towards Punjab urban (2001) and L.P.A Sangrur rural towards Punjab Rural (2001) will remain constant in future.

Table No 8.1 Population Projections of LPA Sangrur for 2031

Year	2001	2006	2011	2016	2021	2026	2031
Punjab Urban Pop '000	8263	9439	10681	11940	13185	16456	
Sangrur Municipal Council	77989	88724	100401	112236	123939	154686	184076
Share in Punjab Urban	0.94	0.94%	0.94%	0.94%	0.94%	0.94%	
Villages of urban fringe	31759	35868	40588	45372	50103	62533	70350
%age share of urban fringe	0.38	0.38	0.38	0.38	0.38	0.38	
Total Pop. (Sangrur Municipal Council + Villages of urban fringe)	109748	124592	140989	157608	174042	217219	254426

Punjab rural '000	16096	16620	16997	17172	17138	14889	
LPA Sangrur rural (Excluding fringe villages)	33276	34902	35694	36061	37045	38056	39095
%age share of Punjab rural	0.21	0.21	0.21	0.21	0.22	0.25	
LPA Sangrur Total Pop '000	143024	155204	168389	180924	193945	226036	293521

Thus, the total population of Sangrur Municipal Council and the villages of urban fringe that was 1.09 lacs in 2001 is expected to grow to 2.54 lacs by 2031.

8.2 Workforce Projections, 2031

Projections of workforce by different sectors of economy of Sangrur can be attempted by assuming that the ratio of total workforce to population, as observed in 2001, would hold good for 2031 and the sectoral distribution of the workforce as observed in 2001 would also remain unchanged. This may not be a rigorous method but provides a broad approximation considering available data. Moreover, the 2001 census data is available for Sangrur Municipal Council.

Quantitatively the above assumptions and output imply that:

- 1) The workforce participation rate in L.P.A Sangrur was 40.86% in 2001 will increase to 51.45% in 2031.
- 2) There would be a more than double increase in the categories namely non-household industry, trade and commerce, transport, storage & communication, public administration and other services and therefore these will require more land space for the future establishments.
- 3) The number of workers of Sangrur Municipal Council engaged in non-household, industry would increase from 2503 in 2001 to 6611 in 2031.
- 4) In Sangrur Municipal Council, the number of main workers engaged in household industry is also expected to more than double from 511 in 2001 to 1349 in 2031.
- 5) Other important economic activities of urban areas, namely, trade and commerce will also witness a double increase from 6081 main workers in 2001 to 16062 in 2031.
- 6) The main workers residing in L.P.A. urban are also expected to witness a two fold increase in different economic activities.

Table No: 8.2 Projected Main Workers and Employment Category Wise Constituent Areas of L.P.A, Sangrur 2031 Forecast

Data and Assumptions 2031		Sangrur M.Cl.	Main Workers as % of Sangrur M.Cl. Population and categories as % of main workers	L.P.A, Sangrur Rural	Main Workers as % of L.P.A Sangrur Population and categories as % of main workers	Total	Main Workers as % of Total Population and categories as % of main workers
	Population	184076		66703		250779	
	Total Main Workers	59583	32.36	20545	30.8	80128	31.95
	Cultivators	1691	2.84	8064	39.25	19575	24.43
	Agricultural Labourers	2868	4.81	5550	27.02	14407	17.98
A & B	Forestry, Fishing, Hunting and Plantations, Allied activities	1146	1.92	173	0.84	1026	1.28
C	Mining and Quarrying	0	0.00	0	0.00	0	0.00
D	Manufacturing, Processing, Servicing and Repairs in household industry	1349	2.26	212	1.03	1228	1.53
Non-HHI	Manufacturing, Processing, Servicing and Repairs in other than household industry	6611	11.10	1331	6.48	6699	8.36
E	Constructions	2473	4.15	426	2.08	2340	2.92
F	Trade and Commerce	16062	26.96	1372	6.68	11966	14.93
G	Transport, Storage and Communications	5083	8.53	631	3.07	4239	5.29
H & I	Other Services	22300	37.43	2786	13.56	18646	23.27

8.3 Space Norms for Social Infrastructure and Public Utilities

UDPFI norms and standards have been followed for calculating the area requirements for different social infrastructure and public utilities. However, the Punjab State Govt. Policies, issued time to time, have also been adopted, wherever these are applicable. There are three different sets of norms and standards taken into consideration, the comparative chart of these is given in Table 8.3(a) below:

Table No: 8.3(a) Comparative Statements of Norms and Standards for Social Infrastructure

Aspect	As per Zoning Regulations and Sub Divisions Clauses for Master Plan in Punjab/Govt. Policies	UDPFI Guidelines	Delhi Master Plan
Primary School	Population: 3000-4000 No. of students: 600 Area a) Old city (over 650 ppha): 0.2 ha b) Outer areas (less than 650 ppha):0.5 hec	Population: 5000 Number of students: 500 Area per school : 0.4 ha Covered area: 0.20 hec Minimum play field area: 0.20 ha	Population: 10000 Area: 2000-4000 sq m
Senior Secondary School	Population: 12000- 20000 No. of Students: 10000 Area a) Old city (over 650 ppha): 100 ha b) Outer areas (less than 650 persons/ hec): 2.5 hec	Population: 7500 Number of students: 1000 Area per school: 1.60 ha Covered area: 0.60 ha Minimum play field area: 1.00 hec	Population: 10000 Area: 6000-8000 sq m
College	Population :30,000 No. of students: 800 Area a) Old city (over 650 ppha): 2.50 ha b) Outer areas (less than 650 ppha) : 5.00 ha	Population: 1,25,000 Number of students : 1000-1500 Area per college: 4.00 ha Covered area: 1.80 ha Play field area: 1.80 ha Residential/hostel area: 0.40 ha	Population: 5,00,000 Area: As per UGC Norms
University	N.A.	New University Area: 60,000 ha	sites in urban extension to be provided at city level Area: up to 20.00 ha
Technical Education Centre	N.A.	Population: 10,00,00 Area Per centre 4.00 ha Area per technical centre: 2.10 ha Area per ITI: 1.40 ha Area per coaching centre: 0.30 ha	Population : 50,000 Area: 4000 sq m
New Engineering College	Number of students: 300 Area a) Old city: (over 650 ppha): 1.00 ha b) Outer areas (less than 650 ppha): 2.50 ha	2 Number to be provided in urban in extension Number of students: 1500-1700 Area per college: 60.00 ha	Population: 5,00,000 Area: As per AICTE norms
Medical/Pharmacy College	Area: 5 acres (Rural) Area: 2.5 acres (Distt. Headquarter Corporation Limit)	site of 15 ha each in urban extension including space for specialized general hospital.	Population: 10,00,00 Area: As per Medical Council of India/ Regulatory body.
Dispensary	Population: 5000 Area: 1.0 ha	Population: 15,000 Area: 0.08 to 0.12 ha	Population: 10,000 Area: 800-2000 sq m
Nursing Home	N.A.	Population: 45,000-1,00,000 Capacity: 25 to 30 beds Area: 0.20 to 0.30 ha	Population: 50,000 Area: 1000-2000sq m
General Hospital	Population: 50,000 Area: 2.5 ha	Population: 2,50,000 Capacity: 500 beds Area for hospital: 400 ha Area for residential accommodation: 2.00 ha Total area: 6.00 ha	Population: 5,00,000 Capacity: 501 beds and above Area: 25,000-45,000 sq m
Veterinary Hospital	N.A.	N.A.	Population:5,00,000

			Area: 2,000 sq m
Community Hall and Library	N.A.	Population: 15,000 Area: 2000 sq m	N.A.
Club	N.A.	Population: 1,00,000 Area: 10,000 sq m	Population: 5,00,000 Area: 5000 sq m
Amusement park	N.A.	N.A.	up to 10 ha
City level park	N.A.	N.A.	Population: 50,00,00 Area: 10 Acres
Neighborhood Level Park	N.A.	N.A.	Population 10,000 Area: 10,000 sq m
Golf Course	N.A.	N.A.	Population: 10,00,000 Area: 10-30 ha
Sports Centre/Stadium	N.A.	N.A.	Population: 5,00,000 Area: 3-10 ha
Post and Telegraph Office	Population: 10,000 Area: 0.1 ha	N.A.	Population: 10,00,000 Area: 2500 sq m
Religious Buildings	Population: 15,000 Area: 0.1 ha	N.A.	Population: 10,00,000 Area: 40,000 sq m
Old Age Home	N.A.	N.A.	Population: 5,00,000 Area: 1,000 sq m
Orphanage/Children Centre	N.A.	N.A.	Population: 5,00,000 Area: 1,000 sq m
Multipurpose Ground (Exhibition cum fair Ground)	N.A.	N.A.	Population: 1,00,000 Area: 20,000 sq m
Burial/ Cremation Centre	N.A.	N.A.	Population: 10,00,000 Area: 10,000 sq m
Electric sub-station	Population: 50,000 Area: 0.4 ha	N.A.	Population: 5,00,000 Area: 29,600 sq m
Police Post	N.A.	Population: 40,000-50,000 Area : 0.16 ha (area inclusive of essential residential accommodation)	Population: 1,00,000 Area: 1000 sq m
Police stations/ police division	Population: 50,000 Area: 0.8 ha	Population: 90,000 Area: 15 ha Area inclusive of essential residential accommodation 0.05 ha additional to be provided for civil defence and home guards	Population: 2,50,000 Area: 10,000 sq m
Police Line	N.A.	Population: 20,00,000 Area: 4.00 to 6.00 ha	1 for each administrative zone to be provided at city level Area: 2.0 ha
District Jail	N.A.	Population: 10,00,000 Area: 10.00 ha	Population: 25,00,000 Area: 5.0 ha
Fire Station	N.A.	1 fire or sub-station within 1 to 3 km to be provided for 2 lac population Area for fire station with essential residential accommodation: 1.00 ha Area for sub-fire station with essential residential accommodation: 0.60 ha	3 fire station for 5,00,000 population within radius of 5 to 7 km Area: 10,000 sq m

Source: UDPFI Guidelines and Delhi Master Plan

From the comparative table of norms and space standards as given above, the norms suggested by UDPFI guidelines have been found more suitable for the preparation of Master Plan Sangrur because of the following reasons:

1. The norms and standards suggested by UDPFI Guidelines, are more detailed and cover almost each physical and social infrastructure as compared to Master Plan Zoning Regulation/ Govt. policies.
2. Norms and standards suggested by UDPFI guidelines are more realistic and suit to local conditions such as prevailing development controls, availability of land, land prices etc.

3. UDPFI guidelines suggest different norms and standards for different towns like small and medium towns and hill areas, which is not available in other guidelines.
4. The norms and standards of Master Plan Zoning Regulations are not detailed and do not cover the whole of activities, hence are not being adopted.
5. Norms and standards suggested by Delhi Master Plan have not been found suitable for Local Planning Area Sangrur because these norms are of higher level, formed especially for mega city like Delhi, where development controls are very tight, population is more than 1.25 crores and the land is scarce and costly. However, it has not been possible to designate the location and extent of the above mentioned facilities in the proposed/land use plan while preparing the Sector Plans, the standards listed above and the strategies adopted for obtaining land for public purposes will be taken into account in designing land for above mentioned facilities.
6. Infrastructure Demand
7. Infrastructure is the basic requirement of urban life and its adequacy and accessibility are two important ingredients and key contributors in the up gradation and enrichment of quality urban life. Infrastructure is divided into two parts viz. Physical Infrastructure & Social Infrastructure.
8. Infrastructure has been worked out for 1,84,076 persons of L.P.A. urban by 2031.

➤ **Physical Infrastructure:-**

Physical Infrastructure includes water supply, sewerage, drainage, solid waste disposal, electricity, transportation.

Table No: 8.3 (b) Requirement for Water Supply and Sewerage for Sangrur City – 203

Year	Population	Water supply		Sewerage	
		As per standards	Requirement (lpcd)	As per standards	Requirement (lpcd)
2011	100401	135 lpcd	13,554,135	80% of water requirement	10,843,308
2016	112236	135 lpcd	15,151,860	80% of water requirement	12,121,488
2021	123939	135 lpcd	16,731,765	80% of water requirement	13,385,412
2026	154686	135 lpcd	20,882,610	80% of water requirement	16,706,088
2031	184076	135 lpcd	2,48,502,60	80% of water requirement	19,880,208

- **Solid Waste Disposal**

The production of solid waste in an urban area is a function of the socio-economic profile of the population and activities in the area. As per UDPFI guidelines, the generation of waste varies from about over a quarter to kilogram in small towns to about half a kilogram per capita in Sangrur city, which is small sized city, the waste generation will be 3/8 of kilogram per capita i.e. $\frac{3}{8} \times 184076 = 69028.5\text{kg} = 69.02$ metric ton per day.

- **Power**

According to UDPFI Guidelines and based on the estimated requirements of power supply as per the Master Plan of Delhi, the average consumption works out to 2 KV per household at the city level and includes domestic, commercial, industrial and other requirements. One electric substation of 11 KV switching station for a population of 15,000 is recommended. For Sangrur city, future requirement for power are estimated in the given table:

Table No: 8.3(c) Future Requirement of Power for L.P.A Urban

Year	2006	2011	2016	2021	2026	2031
Population	124592	140989	157608	174042	217219	254426
Required Electric Sub-Station (66 kv)	1.4	1.6	1.8	1.9	2.4	2.8

Thus, for the projected population of 254426, three electric substation of the capacity of 66 Kv are required.

➤ **Social Infrastructure and Public Services**

Social infrastructure includes facilities of education, health, police, fire protection, recreation etc.

Table No: 8.3(d) Requirement of Educational Facilities

Educational Facilities	Area Required (hect.)	Norms	Projected Requirements	Existing	Project increase in numbers
College	4	1 for 1.25 lac population	2	2	-
Sec. Schools	1.60	1 for 7500 population	34	13	21
Primary School	0.4	1 for 5000 population	51	20	31
Pre-Primary School	0.08	1 for 2500 population	102	40	62

Table No 8.3 (e): Requirement of Professional Facilities

	Norms	Area required (hec.)	Required	Existing	Projected increase
Professional Institutes	1 for 10 lac population	4	1	1	-

- **Professional Education**

L.P.A Sangrur has a number of Bhai Gurdas Group of Institutes; namely Bhai Gurdas Institutes of Engineering and Technology, Bhai Gurdas Polytechnic College, Bhai Gurdas Institutes of Management & Technology and Bhai Gurdas College of Law. So, these institutes will serve the requirement of the professional courses.

LPA Sangrur already having National Nursing College, Badrukha in its vicinity that is sufficient to support present as well as future requirements of projected population for 2031.

Table No 8.3 (f): Requirement of Medical Facilities

Medical facilities	Norms	Projected Requirements	Existing	Project increase in numbers	Projected Area Required (hec.)
Hospital	1 for 2.5 lac population (area:6 ha each and 500 beds)	1	1	-	-
Intermediate hospital (category A)	1 for 1 lac pop.(area 3.7 ha each and 200 beds, initially 100 beds)	3	12	-	-
Intermediate hospital (category B)	1 for 1 lac pop.(area:1 ha each and 80 beds, initially 50 beds)	3	15	-	-
Dispensary	1 for 0.15 lac pop.(area 0.08-0.12 ha each)	17	17	-	-

Note: Quantitative availability for most of medical facilities satisfies the norms, from accessibility point of view additional facilities shall be provided in proposed residential zones. The existing scenario of the above mentioned hospitals is as per local hierarchy and does not meet the norms as mentioned in column no. 2 above.

Table No. 8.3 (g) Per Capita Land Requirement for Police Units

	Norms	Area/Unit (in hec.)	Total Required units	Existing	Total area (in hec.)
Police Station	1 for 90,000 persons	1.5	3	1	4.5
Police Post	2 for 50,000 persons	0.16	10	2	0.8
Total					5.3

- **Fire Station**

As per norms of UPDFI Guidelines, 1 fire station or substation within 1-3 Km. is to be provided for 2 lac population. Area for fire station with essential residential accommodation is 1.00 hec. and area for sub fire station with essential residential accommodation is 0.60 hec. The requirement of additional fire stations by 2031 would be one and they require area for additional substation is 1.60 hec.

- **Recreational Facilities**

According to UDPFI Guidelines recreational facilities include parks and open spaces, amusement parks, sports centre and play ground, botanical and zoological park, water bodies and other natural features and places of tourist interest etc. The norms of UDPFI states that an area of 10sq.m-12sq.m. per person for recreational facilities is required at city level. At this norm, area required for L.P.A urban by 2031 would be 850 hec, out of which 325.32 hec is already available.

8.4 Vision L.P.A 2031

8.4.1 The Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis of L.P.A Sangrur

Master Plan is an important instrument for guiding and regulating development of towns and cities over a period and contributes to planned development. It is an instrument to workout land and infrastructure requirements for various urban and rural, uses, allocates land for various uses to result in harmonious and sustainable distribution of activities so that cities are provided with harmonious form and structure.

For the master plan, it is necessary to develop a long term (2031) vision of the city that takes into account the present strengths of the city, opportunities, weaknesses and the threats {SWOT} emanating in the region. The present population of the Sangrur municipal council & its fringe is 109748 persons (as per Census 2001) which have been envisaged as 254426 in the year 2031. The detail of SWOT is given as under:-

Strengths

- i) Its topography is relatively gradual and generally suitable for urban development.
- ii) Sangrur city is well connected to the surrounding areas by a good network of National Highway, State Highway and other roads. N.H 71 and N.H 64 passes through the city connecting it with Barnala - Dhuri and Patiala. Besides good road connecting. There is a vital rail line which connects it with Sunam and Dhuri.
- iii) Important Urban centre of Southern Punjab and of adjoining states.
- iv) It is Sub Division Headquarter and District Police Headquarter having Important administrative offices.
- v) It is having good number of education and medical facilities. Educational institutions are helpful for giving quality education to the young generation.
- vi) Diversified economic activities like agrobased industry and whole sale activity.
- vii) Rich economic, social and cultural heritage of the city.

Weaknesses

- i) Away from Developed belt, i.e. N.H.-1 corridor.
- ii) Lack of parking facilities.
- iii) Depletion of water table
- iv) Presence of slums along the railway line.
- v) Unplanned residential areas and unauthorized developments along roadsides.

Opportunities

- i) Development of ring road.
- ii) Four laning/widening and strengthening of major roads of L.P.A.
- iii) Increasing trend of shopping malls and multiplex.
- iv) Establishment of new Management School in industrial Growth Center.
- v) Coming up of new hotels and marriage palaces will contribute to the economic well being of the city and the region.

Threats

- i) Haphazard growth may result in massive environmental degradation.
- ii) Water logging problem in some parts of the city and region is another threat to building activity and agriculture sector.

Based on the outcome of discussions held in the meetings of 'Think Tank', the Vision Sangrur 2031 is articulated as follows:

“To transform Sangrur into an industrial hub focused on agro and horticulture based industries and a services centre of Malwa sub region by providing high quality physical and social infrastructure to all its citizens in an inclusive and environmentally sustainable manner.”

8.4.2 Strategies to Attain Vision 2031

Based on SWOT analysis, following strategies, as discussed in Think Tank meetings are required to be developed for achieving the above mentioned Vision 2031:-

In order to improve the connectivity there is need to propose inner ring road and outer ring road

i. Growth Management

- Promoting planned development through effective city planning.
- Rationalizing land use pattern for effective traffic management and provision of basic services and amenities.

- Making effective plan implementation and enforcement as integral part of city planning and development process.
- Conserving the cultural fabric.
- Making growth management process participatory.
- Review of master plan on regular basis.
- Improving system of approvals of building plan through use of IT and GIS.
- Making urban development self sustaining.

ii. Urban Environment

- Urban environment to be made integral and essential part of city development process.
- Environment to be made integral part of planning and decision making process.
- Effective treatment of all sewage generated within the city.
- Improving solid waste management.
- Creating / developing new and improving existing parks and open spaces.
- Promoting better water management.
- Making city free from air, water and noise pollution.
- Discouraging the growth of slums and improving existing slums.

iii. Urban Services

Water Supply

- To ensure safe, equitable, reliable, adequate and quality water supply.
- To ensure 100% coverage of the city.
- To promote rain water harvesting and recycling of water.

Sewerage and Drainage

- Total coverage of the city with sewerage and drainage system including slums.
- To promote eco-friendly decentralized treatment system.
- To minimize sewerage generation through water saving appliances.
- To promote recycling of sewage.
- To promote protection of natural water bodies.
- To promote optimum use of storm water as an alternate source of water supply.

Solid Waste Management

- To improve the solid waste management in the city using best practices.
- To use PPP model for solid waste management.
- To promote “Recycling” system of SWM.
- To make solid waste management people centric.

Traffic and Transportation

- To improve safety, mobility and efficiency of traffic within and outside the city.
- To segregate and rationalize inter and intra city traffic.
- To improve road geometry and road capacity of existing network.

- To minimize pollution caused by traffic and transportation and improve environment.
- To create new road network and to improve the existing network to promote operational efficiency of traffic.
- To provide adequate parking spaces to remove traffic bottlenecks.
- To plan and provide effective public transport services.

Social Infrastructure

- To provide adequate sites based on norms, for creating / developing various social infrastructures.
- To involve private and corporate sectors for providing/developing and maintenance of social infrastructure.
- To make optimum use of mechanism of planned development for developing adequate and quality infrastructure.
- To promote community participation in maintenance and upkeep of social infrastructure.

9. THE MASTER PLAN

9.1 Components of the Master Plan

The scope of a Master Plan confines to the broad proposals and allocation of land for various uses such as residential , industrial, commercial, recreational, public and semi-public etc. It will propose a network of roads, pattern of streets and traffic circulation systems for the present and the future. It will identify areas required to be conserved and development of areas of natural scenery and landscape together with preservation of features, structures or places of historical, architectural interest and environment value. It will include zoning regulations for regulating development within each zone. Therefore, the Master Plan is an important instrument for guiding and regulating development of a city over a period and contributes to planned development both conceptually and operationally.

9.2 Master Planning Objectives

Supporting the earlier elaborated vision is a set of development objectives with reference to the relevant strategies recommended for LPA Sangrur. Therefore, the task of preparation of Master Plan, Sangrur with the perspective year 2031 has been undertaken with the following objectives:

- i) To promote planned, environmentally sustainable and socially equitable development of the city.
- ii) To minimize haphazard, unplanned and sub-standard growth and development of the city and to achieve planned growth to create healthy environment.
- iii) To ensure safety, mobility and efficiency of inter and intra-city traffic.
- iv) To improve accessibility / connectivity with both the urban extension and the rural areas.
- v) To ensure that all development activities do not disturb the surrounding environment and to maintain land use compatibility with surrounding communities.
- vi) To examine potential future development that will detrimentally impact natural and cultural resources in the town, particularly in view of the marginal nature of much of the remaining undeveloped land.
- vii) To reflect and enhance the character and diversity of area.
- viii) To improve the image, identity and attractiveness of area.

- ix) To identify manmade and natural heritage and to make heritage conservation as an integral part of the city planning and development process
- x) To promote and preserve the culture of the city and its special characteristics.

9.3 Evaluation of Alternative City Structures

The cities are expanding in all directions resulting in large-scale urban sprawl and results in changes in the pattern of urban land use. There is a demand to constantly monitor such changes and understand the processes for taking effective and corrective measures towards a planned and healthy development of urban areas.

On the basis of studies conducted by the office of District Town Planner Sangrur, it is observed that the development activities around Sangrur are concentrated along main roads passing through the city besides the area falling in the vicinity of existing developed areas of the city. Keeping in view the present growth trend three different alternative structures could be envisaged for the future city of Sangrur. The different alternatives are as follows:

1. Compact core within a ring pattern.
2. Development along main highways.
3. Development at potential road intersections

1. Alternate –I Compact core in a ring pattern

To save the fertile and scarce land resource of the state, it has been conceived to shape the future city of Sangrur in a compact manner. Since the city has developed along the radiating routes all merging in the centre has developed in a star shape. So, there is need to think upon the concept of ring type development to deviate the traffic which is concentrated in the core mainly somehow existing bye pass is also acting as a ring to some extent but not fully covers the city. Moreover, with a view to cater future growth Alternate I is shown in figure below:

Merits

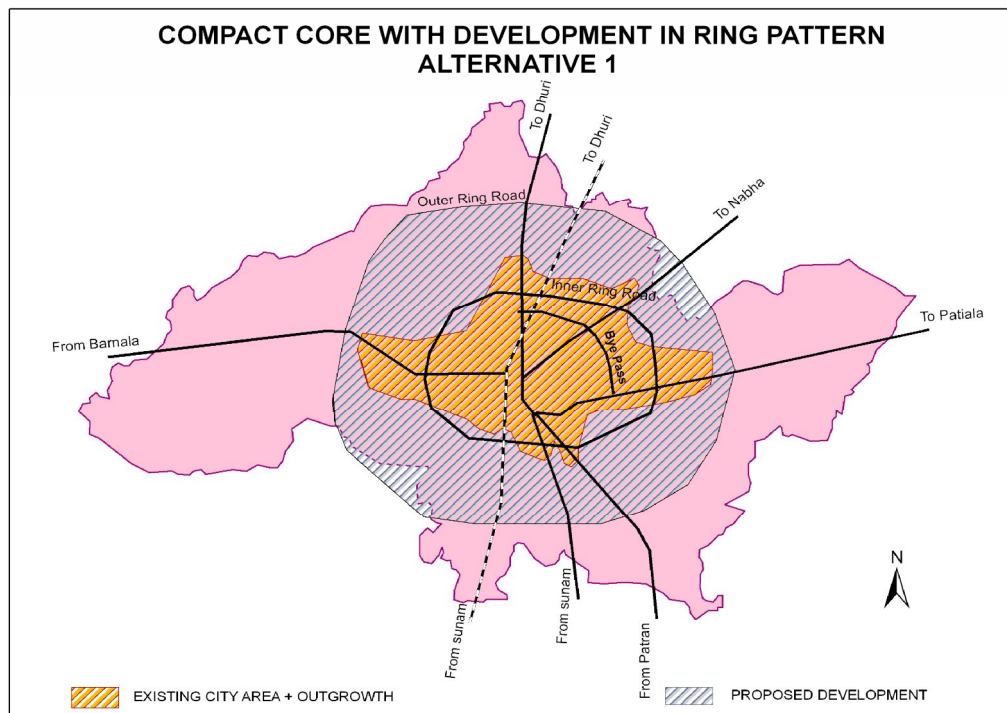
- Minimum invasion upon fertile and scarce land resources of the state.
- Relives pressure on main road.
- Reduces traffic related problems like extra travel time and congestion.
- Compact and integrated development of the city, avoiding sprawl.
- An effective, economic and efficient infrastructure development.
- Close relationship of work-place and residential areas.

Demerits

- Needs extra land to develop the ring.

- People prefer shortcuts and avoid the ring roads which are comparatively longer.

Fig:
24



Alternate I

Alternate –II Development along main Highways:

This alternative provides the opportunities to develop future city of Sangrur along the main highways passing through the city. The upcoming residential colonies on Barnala road, Dhuri road, Patran road and cluster of other development activities such as industries, grain market, hotel and marriage palaces attract the future development of the city towards the respective potential areas along main arteries besides areas all-around the existing city. The alternate –II is shown in the figure below.

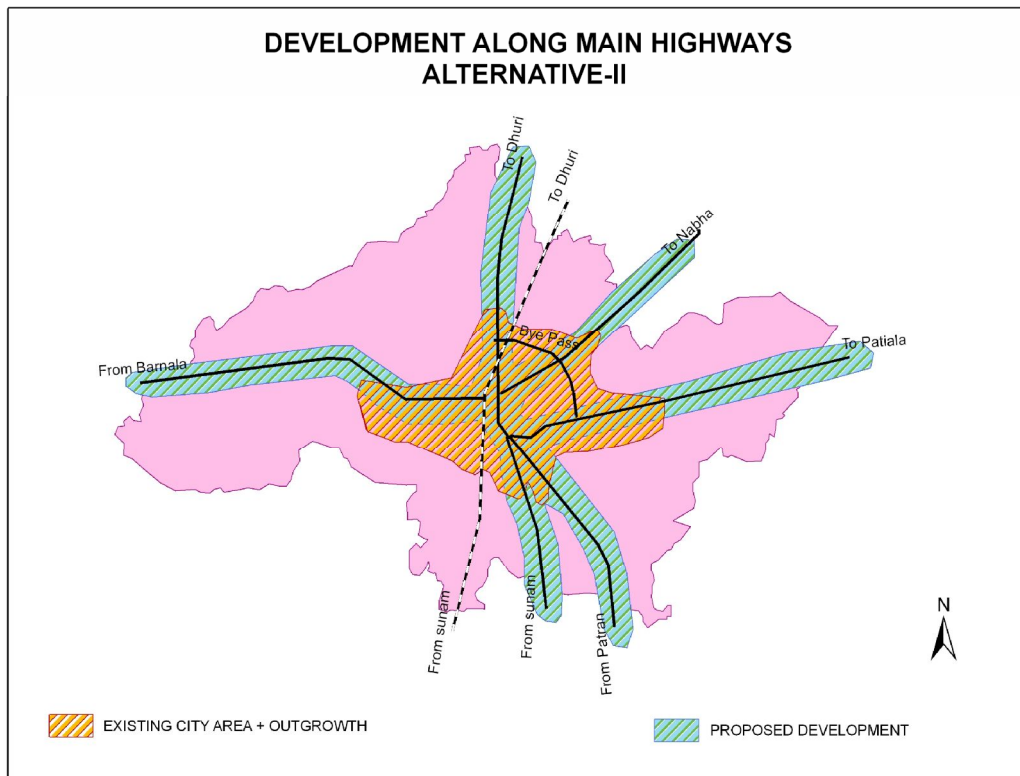
Merits:

- Maximum utilization of existing infrastructure specifically the accessibility being provided by the main highway and Rail network.
- Provides new avenues of development on basis of the existing trend of growth of the city.

Demerits:

- May invade upon large area of fertile land.
- May be difficult to provide infrastructure up to long distances
- Ribbon development around main roads would take place.

**Fig
25:**



Alternate II

Alternate –III Development at Potential intersections:

While studying the existing road network of LPA Sangrur and some proposed linkages, it is found that certain very important road junctions are coming up on all sides of sangrur city, which may prove to be potential nodal centers of development around the existing roads of Sangrur city. Besides the potentiality due to future road intersections, all these nodal centers are having their own justification and reasons to grow. The alternate –III is shown in figure below.

Merits:

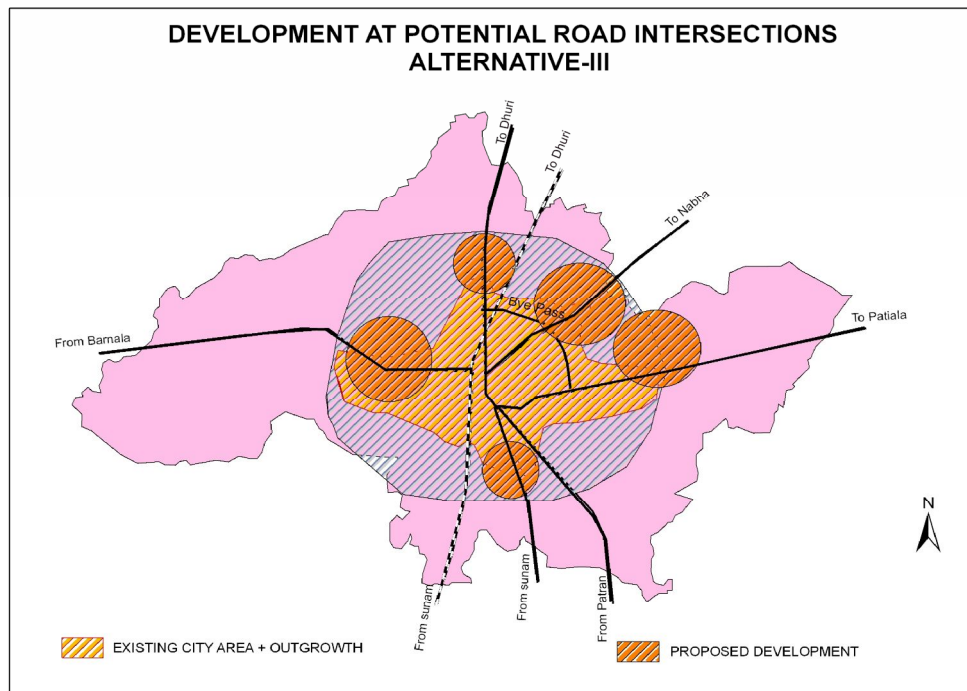
- Would provide relief to the core city.
- Would provide broader base for future expansion.
- Conducive to present trends and increasing car ownership.

Demerits:

- May be difficult to integrate the infrastructure in near future.
- May be disastrous for limited fertile land resource of the state.
- This type of leapfrogged development may not help maintain a close relationship between residence and place of work.

- All these centers may not fully develop by 2031 and the growth may appear to be a sprawl for quite some time.

Fig 26



Alternate III

Before proceeding with the detailed Master Plan, It would be useful to keep in view and consider all the above alternatives and select the optimal. The merits and demerits of the alternatives are brought out from the basic spatial planning objectives like preventing sprawl, promoting compact cities to protect fertile farmlands. Each alternative have its own merits and demerits and we have to work on combination of these alternative as per the feasibility.

9.4 Land Use Requirements

Before proceeding to prepare proposed land use plan and transport network the area required for different purposes is to be worked out on the basis of norms and standards of various organizations.

9.4.1 Residential Use

As per the data available from census of India as described in housing chapter out of total hold 20% have one room accommodation, 25% have two rooms and 20% have three rooms and 11% have four rooms per dwelling units. These household together comprise 76% of the total household. The average dwelling unit thus has 2.5 rooms. For calculating, the housing requirements following assumption have been kept in mind.

Table No: 9.4(a) Calculation of Average Plot Area in Sangrur

Sr. No.	Description	Area in Sq. m
1.	Carpet Area of Average Dwelling Unit; 1 Living Room, 2 bedrooms, 1 kitchen and other	120
2.	Built up area inclusive of walls, Verandahs etc.	144
3.	Plot area @ footprint plot ratio of 0.65	222

Table No: 9.4(b) Stage Wise Residential Area Requirements for Urban Areas 2006-2031 for Sangrur

Year	No. of Families	Net Land Required in hec. (Assumed 1 family/plot)	Gross Land Requirements in hec.
L.P.A Urban			
2006	24918	553	1106
2011	28198	626	1252
2016	31522	700	1400
2021	34808	773	1546
2026	43444	964	1928
2031	50885	1129	2259
L.P.A Sangrur			
2006	28605	635	1270
2011	31041	689	1378
2016	33678	747	1494
2021	38789	861	1722
2026	45207	1003	2006
2031	58704	1303	2606

- Assuming 1.5 dwelling unit might be accommodated in each plot.
- Assumed family size = 5
- Plot size of 222 Sq meters has also been adopted.
- 50% area is assumed under commercial shopping, roads, parks, open spaces, and public building etc.
- Projected area required for residential purpose by 2031 = 2259 hec. (5582 acres)
- Existing area under residential use = 600.66 hec.
- Proposed increase in residential use = a- b = 2259 -600.66 hec.
= 1658.34 hec.

9.4.2 Commercial Use

As per UDPFI Guidelines, the area required for commercial activities has been calculated. The classification of town according to UDPFI guidelines given in the table 9.4 (c) below:-

Table No: 9.4(c) Classification of Urban Centres

Classification	Population Range
Small Towns	Less Than 50,000

Medium Towns	50,000-500,000
Large Towns	More Than 5,00,000

Source: UDPFI Guidelines

The projected population of Sangrur city comes out to be 254426 persons. By 2031, including fringe area, Sangrur city will fall in the range of medium towns. Hence, the area requirement is calculated based on medium towns.

Table No: 9.4(d) Area for Commercial Centres

District Centre	Area per 1000 person sq. m.
Cluster centre	220
Sector centre	300
Community centre	500
District Centre	880
Total	1900 sq. m

Source: UDPFI Guidelines

As per the figures given in the table above 1900 sq.m area for different categories of commercial areas has been proposed for 1000 persons, thus 1.9 sq.m (say 2sq.m) area is required per person . The total projected population of L.P.A urban works out to 184076 persons, therefore total area required for commercial use is estimated to be 37 hec. (90 acre).

Table No: 9.4(e) Commercial Area Requirements for Urban Area of Sangrur

Sr. No.	Name of Town	Projected Population	Commercial Area Required @ 1 sq. mtr. / person in hect.
1.	Sangrur	184076	26

Source: UDPFI Guidelines

9.4.3 Industrial

The projected industrial worker as per table no.8.2 for Sangrur city is 6611 for the year 2031 and the no. of existing workers as per 2001 census is 2503.

- Existing (2001) = 2503 persons
- Projected (2031) = 6611 persons
- Proposed Industrial Density = 100 persons/ hec.

For calculating the industrial use requirements, the proposed land uses as per standards in UDPFI Guidelines are adopted as given below:

- Total existing industrial area of Sangrur = 98.24 hec.
- Industrial workers density= 25 persons/ hec.
- Existing industrial use as a percentage of city area = 4.93%

- Norms and standards for the percentage of industrial use (as per UDPFI standards) =10-12%. As the existing industrial use is 4.93% of the total city area but the industrial worker, density is 25 persons/hect. Sangrur have large oil depot of various companies and having an agro based industry such as rice shellers and saila plant. Keeping in view the agro based industrial growth and for other industries, more area is required for industrial use as per UDPFI guidelines. For calculating the urbanisable area, the residential use is assumed as 40% of total urbanisable area.
- Assumed percentage of industrial use for Sangrur city is 10% of the total area.

9.4.4 Transport Network Requirements

(a) At City Level

As it has already been discussed in detail in chapter 4 there are several roads merging at Sangrur city putting a huge traffic load on internal city roads causing traffic congestion and accidents. As per the traffic volume survey conducted by this office some of the city roads are already having the traffic volume more than the carrying capacity of these roads. In absence of detailed traffic studies regarding growth of traffic have been taken into account according to which if reliable data is not available 7.5% growth per annum should be taken for National Highways and for urban main road and whereas in case of other Rural Roads (out of urban area) rate of 6% per annum has been assumed. There are so many factors, which govern the growth of traffic volume. Thus, the long-term projections of traffic volume may not be factual therefore; projections have only been made for the year 2012. The projected vehicular growth on main city roads projected for the year of 2012 is given in table.

Table No: 9.4(f) The Projected Traffic Volume on Main City Roads of Sangrur

Sr. No.	Name of Roads	Type of Road/ Carriageway	Peak Hour Volume (PCU) (2012)	Capacity (PCU)	V/C Ratio (2012)	Classification of Roads
1.	Patiala Road	2 Lane (1 way)	2475	1500	1.65	Arterial
2.	Barnala Road	2 Lane (2 way)	1774	1500	1.183	Arterial
3.	Patran Road	2 Lane (2 way)	972	1500	0.648	Collector
4.	Dhuri Road	-do-	964	1500	0.643	-do-
5.	Sunam Road	-do-	588	2200	0.267	-do-
6.	Ubhawal Road	-do-	329	1200	0.274	-do-
7.	Nankiana Sahib	-do-	575	1200	0.479	-do-

Source: Field Survey, 2009 and UDPFI Guidelines

The table given above shows that the two roads which would have higher VC ratio by the year 2012. The projected traffic volume shows that during a short period of only 3

years, some roads will become congested if the present condition and status remains the same of these roads. The roads like Sangrur- Barnala and Sangrur- Patiala require immediate attention. The detail traffic studies are required separately for mass transit system and road improvement plan. However, on the basis of broad studies conducted, there is an ardent need to prepare Ring Road around the city connecting various radial roads for better efficient and free flow of traffic. Besides this, the roads of lower hierarchy are required to be proposed for inter-connection of Ring Road and existing main city roads.

9.4.5 Road Network at L.P.A Level

Besides the road network required at city level, there would be an urgent necessity to connect the regional roads with each other so that the regional traffic may be diverted out of city. In addition to the city road network including inner Ring Road; an additional outer ring road, which may link the regional roads, named Patiala road to Barnala road to Dhuri road and then to Patiala road is required.

In addition to the outer ring road and inner ring road, other lower hierarchy roads are required for better connectivity between proposed ring roads and existing regional roads and local roads. The norms and standards for Traffic and transportation as given in UDPFI guidelines were discussed with the Advisor Town Planner and following roads hierarchy has been adopted:

Road Hierarchy

R1: 200 feet (R.O.W)

R2: 150 feet

R3: 100 feet

R4: 80 feet

R5: 60 feet

The detail is shown in table no. 9.4(g).

Termini Required

For Sangrur city, 184076 population has been projected for the year 2031 and only one bus stand of adequate size and one Truck Terminus would be sufficient. Since no specific space, norms have been given in UDPFI Guidelines therefore area requirement have not been worked out.

Table No: 9.4(g) Detail of Length & Width of Major Proposed Roads in L.P.A, Sangrur

Sr. No.	Name of Road	Length in km	Width of road in feet	Width of Carriageway in Meter	Divided/undivided
National Highways					
1.	Sangrur-Barnala Barnala Railway Line To L.P.A Boudary (Nh-64)	11.8	R-2	10	Undivided
2.	Sangrur-Patiala Bye Pass To L.P.A Boundary (NH-64)	8.8	R-4	7	Undivided
3.	Sangrur-Patran Rajwaha To L.P.A Boundary (NH-71)	6.5	R-2	7	Undivided
State Highways					
1.	Sangrur-Dhuri Fly Over to L.P.A Boundary (SH-11)	6.25	R-2	10	Undivided
Other Roads					
1.	Sangrur-Sunam Sunami Gate Chowk To L.P.A Boundary	4.3	R-3	10	Undivided
2.	Sangrur-Chitanwala Nankiana Sahib Gurudwara to Outer Ring Road	2.6	R-3	5.5+5.5	Undivided
3.	Sangrur-Sohian road from Drain to proposed Inner Ring Road	0.8	R-3	5.5	Undivided
4.	Sangrur-Sohian road from proposed Inner Ring Road to proposed outer ring road	3.1	R-4	5.5	Undivided
5.	Sangrur-Ubhawal Road Sheron Rajwaha To proposed Inner Ring Road	0.5	R-4	5.5	Undivided
6.	Sangrur-Ubhawal Road from proposed Inner Ring Road To Outer Ring Road	2.6	R-3	5.5	Undivided
7.	Sangrur Bye Pass from Sangrur Dhuri Road To Sangrur-patiala Road	4.1	R-4	7	Undivided
8.	From Dhuri-Jakhal railway line to Barnala chowk (N.H.-64) and Barnala chowk to flyover(SH-11)	1.1	R-3	-	undivided
9.	From Prem Sabha	2.8	R-3	-	Undivided

	School to Nanakiana sahib Guruduara				
10.	From Patiala Gate to Drain on Sangrur Sohian road	1.2	R-3	-	Undivided
11.	From Patiala chowk to Sangrur Patiala Bypass	1	R-3	-	undivided
12.	From Sunami Gate Chowk to Drain on Sangrur -patran road(N.H-71)	1	R-3	-	undivided
13.	Railway chowk railway station	0.35	R-3	-	undivided
14.	From Barnala Chowk to Patiala chowk via Sunami Gate (N.H.-64)	3	R-4	-	undivided
15.	Sunami gate to Sunami gate chowk	0.4	R-4	-	undivided
16.	Bus stand to Barnala Chowk	0.5	R-4	-	undivided

Source: Field Survey, 2009 and UDPFI Guidelines

9.5 Strategy for Obtaining Land for Public Purposes:

A city typically requires 40 to 50% of its area for variety of public purposes. Where land is owned by the state as in Delhi, Chandigarh or Navi Mumbai it is easier to allocate land of public purpose. However, where private land market is active, how to ensure land for public purpose it is a major challenge in preparing Master Plans. Conventional master planning relied on the powers of compulsory acquisition of land designated in the Master Plan for public purposes. However, limitation of this approach has been painfully exposed. At the same time not addressing the question of land for public purposes may limit the utility of the Master Plan itself.

No single alternative needs to be used throughout the city. It may vary for example, in core areas vs. outlying areas. Similarly, different alternatives may be suitable for different types of public purposes. The possible alternatives for obtaining land for public purposes such as roads, educational, health, parks, water supply, sewerage, social and religious institutions, old age homes, community centers etc with their limitations are listed as below.

9.5.1 Through O.U.V.G.L Scheme

Identifying vacant government lands (including municipal land) and using it as source for providing land for public purposes. However, given the need for using government

land for generating financial resources, entire stock of government land need not be assigned to non-remunerative public purposes. In fact, government land would offer many opportunities for PPP where part of the land could be used for public purposes. For example a plot of government land could be allocated for an intercity bus terminal with a budget hotel.

- Rationalizing obsolete uses for public lands could be another way of putting public land to more relevant public purpose. Old jail or an agricultural produce market in the congested part of the city is common examples. But this requires public land at other location.
- Make specific designations on the Master Plan and then proceed with compulsory acquisition of land. Impracticability of this is too well known to be recounted here. But this may be unavoidable in certain cases particularly 'A' category public purpose.

9.5.2 Through T.D.R.

Alternative to monetary compensation could be award of Transfer of Development Rights either to remainder of the land or to a distant location. This could be in three generic cases viz.

a) Roads and Road Widening

Development rights calculated at the FAR permissible in adjoining areas may be allowed to be used in the remainder of the plot up to a limit. Development rights that cannot be so consumed can be transferred elsewhere in receiving areas. If FAR is related to width of the road, resistance to widening may get reduced.

b) Public Purposes On Open Land For Exclusive Plots

Lands required for parks and playgrounds or exclusive uses like secondary school, fire station etc. can receive TDRs in lieu of compensation. Weight related to price differentials in originating and receiving zones could be considered as an incentive.

c) Public Purposes That Require Built-Up Space But Not Necessarily Exclusive Plot

Examples of this could be Municipal vegetable market, library etc. In such cases landowner may be allowed to fully use of his development rights provided that he offers the built up space required for the public purpose.

9.5.3 Through PAPRA Act 1995

• Layout And Sub-division Regulations:

These regulations depending upon the total area of layout can provide for some

reservation for general public purpose in addition to local requirements. This is currently being used under the colonization rules operated under the PAPR Act.

9.5.4 Through Land Pooling or Town Planning (Development) Schemes

As per the provisions of section 91 (chapter XII) of Punjab Regional and Town Planning & Development (Amendment) Act, 2006, the concerned Authority for the purpose of implementation of the provision of the Master Plan or for providing amenities where the same are not available or are inadequate, frame the Town Development Scheme and land for various amenities can be earmarked as per the provisions of sub section 2(g) of section 91.

The strategic approach would relate to geographically depicting the sites required for public purpose and proposing regulatory framework for obtaining the land for public purpose whether shown on the plan or not. For this, Master Plan has to consider a wide menu. Described below is a possible menu. Admittedly all items on the menu may not be available for every city.

9.6 Planning Proposals

After going through the detailed studies, conducted by this office pertaining to L.P.A. Sangrur, and discussions held at different levels, i.e. with S.H.U.D, Chief Town Planner , Adviser Town Planning and Think Tank and suggestions received from different agencies, further based on analysis of assumptions and projected population of L.P.A Sangrur has been prepared proposed land use plans 2031, in which different land use zones have been earmarked such as Residential, Commercial, Industrial, Agricultural etc. After examining the various possibilities and taking into account, the pattern suggested in Urban Development Plan Formulation and Implementations (UDPFI) Guidelines published by Ministry of Urban Affairs and Employment, Govt. of India, New Delhi, the previously mentioned land use categories have been adopted for the proposed land use plan.

The other concerned aspects of these different land uses have been detailed out in the following section/subheads of this chapter. The issues guidelines and controls mentioned in the following sub-heads shall have to be read with land use Zoning Regulation specified for different land use in Land Use Zoning Regulations. Thereafter, the development in different land use zones would be regulated and carried out in accordance with the regulation as laid down in land use zoning regulation.

However, the land, which came under the Optimum Utilization of Vacant Govt. Lands

(OUVGL) scheme of the State Govt., the use of such lands/sites, shall be determined by the Govt., later on at any appropriate time, irrespective of their existing/proposed land use.

The site on which various projects have been approved or whose change of land use has already been permitted by competent authority/Govt., such site shall be deemed to be adjusted a sanctioned/permitted. The details of area proposed under various land uses within urbanisable limit and LPA Sangrur is as shown in table no. 9.6(a)

Table No: 9.6(a) Break-up of Major Proposed Landuse Zones of L.P.A Sangrur-2031

Land Use Type	Total LPA		Within Urbanisable Limit	
	Area in hectare	%age	Area in hectare	%age
Residential				
High Density RD-1	1467.76	6.60	1301.91	12.21
Low Density RD-3	6525.40	29.36	6010.31	56.37
Rural Settlement	517.61	2.33	254.81	2.39
Total	8510.77	38.29	7567.03	70.97*
Whole Sale & Warehousing				
Existing /Proposed Whole Sale, Godowns, Ware Housing and Regulated Market	80.40	0.36	99.52	0.93
Proposed whole Sale and Warehousing	190.55	0.86	180.65	1.69
Grain Market	10.52	0.05	10.52	0.10
Total	281.46	1.27	290.69	2.73
Mixed				
Mixed Land Use	662.41	2.98	-	-
Total	662.41	2.98	-	-
Industry				
Existing Industry	68.26	0.31	-	-
Small scale Industry	73.20	0.33	68.73	0.64
Medium and Large Scale Industry Existing / Proposed	1060.62	4.77	1325.30	12.43
Total	1202.08	5.41	1394.03	13.08
Designated Uses				
Public and Semi- Public	70.25	0.32	66.80	0.63
Education and Research Existing/ Proposed	76.98	0.35	47.50	0.45
Parks/ Open Spaces/ Play Ground	13.75	0.06	15.78	0.15
Religious	59.20	0.27	26.48	0.25
Hospital	16.35	0.07	9.65	0.09
Electric Grid / Communication	14.18	0.06	14.18	0.13
Sewage Disposal / Solid Waste Existing/ Proposed	0.15	0.00	0.15	0.00
Railway Station	0.35	0.00	0.35	0.00
Bus terminus Existing / Proposed	2.67	0.01	1.54	0.01
Truck Terminus Existing	2.60	0.01	2.60	0.02
Green Belt	12.45	0.06	5.75	0.05
Cremation Ground	11.92	0.05	7.66	0.07
Existing Road	498.15	2.24	80.51	0.76
Proposed Road	493.05	2.22	464.31	4.36
Total	1272.04	5.72	743.26	6.97

Agricultural				
Agriculture	9682.85	43.56	201.15	1.89
Forest	271.24	1.22	270.89	2.53
Water bodies	153.19	0.69	51.10	0.48
Total	10107.28	45.47	523.14	4.90
Special Area				
Others (army area)	180.15	0.81	141.50	1.33
Fort/Heritage Building	1.81	0.01	1.81	0.02
Total	181.96	0.82	143.31	1.35
Total (Area LPA Boundary)	22228.18	100.00	10661.47	100.00

Source: PRSC Ludhiana

Note:- *Residential area including internal roads.

As discussed earlier in the chapter, the existing pattern of city structure has been adopted broadly while preparing proposed land use plan of L.P.A, Sangrur, in which pattern of continuous growth of Sangrur city spreading over adjoining area has been kept in view. While formulating proposed land use plan and proposed road network of L.P.A, Sangrur as shown in Proposed Land Use Plan of L.P.A, Sangrur Drg. No. DTP(S) 345/2011 dated: 4-5-2011.

To regulate the ribbon development, mixed land use area of 653.01 hect. has been proposed upto the depth of 200mts, located on different roads outside the urbanisable area, i.e. along Patiala road, Patran road, Barnala road and Dhuri road.

9.6.1 Residential

The projected population of Sangrur city and villages falling in urban fringe works to be 254426 persons by the year 2031, which is almost double the number of 2001 census figures, therefore the rise in demand for residential areas is inevitable. In order to accommodate the growing population within the limits of proposed urbanisable area of Sangrur, the proposals have been made on the pockets which have been identified as most potential and suitable purpose. Besides this, the rural settlements falling in L.P.A Sangrur are proposed to expand around the existing residential built up areas (Abadi). The tentative alignment is shown in proposed land use plan of L.P.A.

The existing area of Sangrur city has been proposed into two residential density zones; i.e. within Municipal Council 300 persons per acre and outside Municipal Council 200 persons per acre.

Proposed Density Gradient of Sangrur L.P.A- 2031

The existing density pattern of Sangrur city (ward wise) has already been studied in the chapter 'Population Growth and Characteristics'. Density gradient for different density

zones are proposed, based on study/analyze of the existing density gradient of Sangrur city. Hence, the density pattern, which has been proposed for sangrur city for year 2010-2031, is as follows:-

- I. Within Municipal Council 300 persons per acre
- II. Outside Municipal Council 200 persons per acre

Note: For group housing stand-alone projects 60 dwelling units per acre

9.6.2 Commercial - General Business

The studies reveal that existing Central Business District (C.B.D) comprising of Sadar Bazaar, Dhuri Gate market, Sunami Gate, Patiala Gate and Nabha Gate is very congested where parking facilities are inadequate etc. are the major problems. Therefore, to serve the additional population of the city more new commercial areas are proposed to be developed in the new expansions. No new commercial area like district centre has been proposed but this may be considered by the development authorities as per actual demand and feasibility of site in accordance with permissible landuse zoning regulations. However, the existing wholesale grain market and Sabzi Mandi will continue to function on the present site whereas the fruit market will be shifted to new proposed site.

9.6.3 Informal Sector

It is felt that organized sites for informal sector are required to be created near main city functions such as Railway station, Bus stand, Hospital, Major institutions, Courts and other transport nodes etc. It is suggested that one organized well planned site for Rehri market shall be proposed in the new planned colonies and estates/schemes.

9.6.4 Industrial

Taking into account the vision of L.P.A, Sangrur to transform Sangrur as industrial hub focused on Agro, an area measuring 1394.03 hectares in the urbanisable zone is proposed for industrial zone adjoining the existing industrial focal point of the city. The proposed area is between the Ubhawal-Patran road. While preparing the existing zone the wind direction as existing industrial unit is also kept in view.

9.6.5 Warehousing and Godowns

Keeping in view the vision for L.P.A, Sangrur there is likely hood of development of many types of industries related to agro; therefore, there would be great demand of land for the wholesale and bulky material marketing like godowns, warehousing etc. A sufficient area has been proposed for godowns and warehousing, wholesale along the Sunam Road adjoining the proposed industrial land use zone. This site has the approach

from the existing Sunam road.

9.6.6 Rural and Agricultural Zones

With the intention of preserving the basic character of agriculture, the remaining of the rural area, which has not been proposed for other uses, will be retained as Rural and agricultural zone. Out of total area of 22228.18 hectares of L.P.A, Sangrur 10705.57 hectares have been retained as rural and agriculture, which is 48.17% of total L.P.A as shown in proposed land use plan Drg. No. DTP(S) 345/2011 dated: 4-5-2011.

9.6.7 Utilities

The existing utilities like Water Works, Electric Grid Stations etc. that are available within the boundaries of L.P.A, Sangrur are proposed to be retained as such. Presently, garbage disposal is situated at Sant Attar Singh Marg, which is approximately 4 km away from Sangrur city. The Kandla-Bathinda Oil Pipeline passes in L.P.A Sangrur through Kheri (HB No. 47), Kamo Majra Kalan (HB No.45), Bir Aswan (HB No. 38), Kamo Majra Khurd (HB No.36), Ramnagar Sibian (HB No. 37) and Uppli (HB No. 7), as per data supplied by the Chief Maintenance Manager Kandla-Bathinda Pipeline Maintenance and the conditions & restrictions shall be applicable as per rules/restrictions/regulations, which includes restriction of any permanent structure like building, tank, reservoir, dam or tree plantation etc. across ROW. The utilities will be coming up in LPA Sangrur as proposed and designed by the concerned departments as per actual requirements and feasibility of site. Besides this, lower level utility sites will also be made part of the colonies to be approved under PAPR Act 1995.

9.6.8 Government Public & Semi Public

As it has been already discussed in earlier part of the report, there are several categories of designated areas such as public and semi-public uses existing in the Sangrur city and L.P.A, Sangrur. All these designated areas have been proposed to be retained as such. The Government land and Government & Semi-Government offices existing in L.P.A, Sangrur will also be retained as such.

9.6.9 Recreational Areas

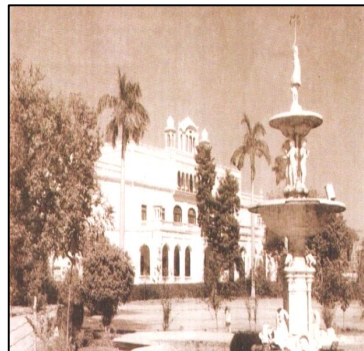
Under this category, a strip of 30 m will be proposed along the proposed Outer Ring Road to restrict area where no activity related to building will take place. Moreover green belts of 10 mts will be left along the water bodies where no roads are proposed along these. However different trees as notified by Government will be planted on these strips (Annexure-V) Existing parks, open spaces and stadiums and other recreational areas will

be retained as such.

9.6.10 Heritage Conservation

The Baradari Garden Complex stands within 13 acres grounds in the heart of the city and contains the Diwan Khana and attractive marble Baradari, both have been declared as protected monument under "The

Punjab Ancient & Historical Monuments and Archaeological sites and Remains Act, 1964" notified vide Notification No:10/46/09-4TC/968, Dated:-18/5/2009 by the Department of Cultural Affairs, Archaeology and Museums, Punjab, Chandigarh. Notification of Diwan khana and Marble Baradari including tank is attached



Diwan Khana

at Annexure-IV. The Central Government declared the area up to 100 meters from the protected limits and further beyond it up to 200 meters near or adjoining protected monument to be prohibited and regulated respectively for purposes of both mining and construction under the provisions of rule 32 of the Ancient Monuments and Archaeological sites and Remains Rules, 1959.

In order to maintain its past glory and fame and its status in the region, it is very necessary that this lavish building may be conserved and preserved in a proper way. It is therefore proposed that the area up to 100 meters from the protected site may be kept free from any type of construction and further the areas up to 200 meters may be kept as regulated areas no, high rise building should be allowed so that the dominance of this building may be maintained.



Marble Baradari

However, some other old buildings, which need to be conserved and preserved, are Ghanta Ghar, Bamba House, Session House, Ranbir College, Raj High School, Ranbir Club and D.C. Residence.

9.6.11 Traffic and Transportation

Transport network and proposed land use need to be considered in an integrated manner. For Master Plan of L.P.A Sangrur, extensive road network has been proposed taking into account the connectivity requirements. The entire network may develop in phases as per

the traffic demands. However, it is emphasized that land use proposals of Master Plan may be reviewed as the road network actually develops. The concurrent planning of urban and rural growth in L.P.A, Sangrur and the Transportation system is required to provide in an integrated, safe and efficient system for transportation of people and goods. The system is intended to meet the projected travel demands in that area. The road and rail sector occupy the significant roles in the transport sector in L.P.A, Sangrur.

Entire L.P.A, Sangrur and Sangrur City will be served by well structured and well defined road hierarchy in order to cater the traffic needs of the city population and arising from living areas to work areas and vice versa. This would include redefining of existing road network and the network to be created in the areas proposed to be brought under urbanization. Keeping in view the future shape and size of Sangrur urban area, there is a need to create/ propose an efficient network in the shape of ring and radial roads. Some of these links could be used to provide fast means of public transport system thereby reducing the reliance on private mode of transport. This would be distinctly beneficial in reducing congestion and air pollution. Some routes have been identified for this purpose, which is as follows:

- Dhuri Road
- Patiala Road because of new living areas and institutional areas
- Ubhawal, Patran, Uppli, Sunam Road because of existing work areas and living areas
- Barnala-Bhalwan road because of new living areas
- Ring Road due to providing connectivity among all the radial roads

➤ **Proposed Road Network**

The proposed road network for L.P.A, Sangrur has been developed in concurrently with the Proposed Land Use pattern as shown in the Proposed Transport Network Plan, Drg. No. DTP(S) 346/2011 dated 4-5-2011. In order to provide relief to the city roads and keeping in view the existing roads and the increased volume of traffic in future, the concept of ring radial road pattern has been followed which has also been discussed and finalized by the Think Tank (Proceedings at Annexure-VI). An inner road on some existing roads/features has been proposed. The existing roads have been adopted as radial roads. Efforts have been made to follow existing roads wherever available. The following hierarchy of roads has been proposed:

Table No: 9.6(b) Proposed Hierarchy of Road and Width in L.P.A Sangrur

Sr.no	Proposed Hierarchy	Proposed Width of Road*
1	R -1	200 feet wide
2	R -2	150 feet wide
3	R -3	100 feet wide
4	R -4	80 feet wide
5	R -5	60 feet wide

Source: DTP, Sangrur

Note:

- **The N.H-64 and N.H-71 have been proposed 60 mts. (200 ft.) as per the CTP letter no. 4839-51 CTP (Pb)/SP-107 dated 30.6.2010.**
- **The cross-sections of the roads as per hierarchy will be as attached at (Annexure - VII).**

****All these roads shall have 5mts. no construction zone after ROW.***

- **Outer Ring Road**

Looking forward for the year 2031 and keeping in view the proposed city structure of L.P.A, Sangrur, an outer ring road having a right of way of 200 feet has been proposed. This outer ring road provides connectivity among various existing radiating regional roads and proposed local roads. This outer ring road also defines the proposed land use as well as urbanisable boundary.

The proposed outer ring road starts from Dhuri near drain, interconnecting the various existing local and regional roads like Nabha road via village Bhalwan, Patiala road, Patran road, Sunam road, Jakhal Railway line, Ubhawal Road, Dhanuala road and Andheri road. The alignment of this ring road has been shown in Proposed Land Use Plan Drg. No. DTP(S) 345/2011 dated: 4-5-2011 and Proposed Transport Network Plan Drg. No. DTP(S) 346/2011 dated: 4-5-2011. The length of this proposed Outer Ring Road is approximately 38.3 Kms. and shall be final as per the feasibility at site at the time of execution. Besides this, the alignment of Sangrur Bye Pass from Patiala road (N.H.-64), crossing Sohian road, Patran road (N.H.-71), Sunam road (MDR-21), Dhuri-Jakhal railway line, Uppli link road, Ubhawal link road and then reaching Barnala road (N.H.-64), comprising a length of 11.6kms, as approved by Ministry of Road Transport and Highways, has been incorporated as such in this plan as conveyed by XEN, Central Works Division, Sangrur at Patiala as per their letter no. 2245 dated 18-10-10 and it shall be final as per the actual acquisition by the concern authority.

- **Sector Roads**

Besides inner ring road and outer ring road, many new roads having different R.O.W have been proposed to serve the new proposed urbanisable area. These proposed roads also connect the existing bye pass, other existing roads with proposed inner and outer ring roads. The proposed road network as explained above has been shown in Proposed Land Use Plan Drg. No. DTP(S) 345/2011 dated: 4-5-2011 and Proposed Transport Network Plan Drg. No. DTP(S) 346/2011 dated: 4-5-2011. It is proposed that tree plantation along the main roads such as R1, R2, R3, R4 and R5 shall be done in consultation with the landscape officers of Horticulture department and Forest Department. The selection of trees should be in such a manner that the greenery of trees and blooming of flowers may be seen throughout the year. The list of trees and typical cross-section of main roads is attached at Annexure V & VI respectively.

➤ **Proposals for Urban Roads:**

The study of existing city road network reveals that most of the existing roads are not overcrowded as these are carrying less volume of traffic than their respective capacity, except Dhuri Gate to Patiala Gate and from Bara Chowk to Sunami Gate. However, in future, some of these roads may become over-crowded due to increase in traffic volume. Although, it is very difficult to widen the existing roads in thickly built up areas of the city, but still some measures of road engineering can be adopted until widening of the roads for improving the capacity of these roads, as per the guidelines for capacity enhancement of Urban Roads in plain areas published by the Indian Road Congress. Some of the measures that could be considered for enhancement of capacity of roads are as under:

- Prohibiting on-street parking of vehicles, and simultaneously developing off -street parking facility.
- Segregating the bi-directional traffic flow through central verge/median wherever it is possible;
- Provision of segregation of slow moving vehicles such as animal drawn carts, rickshaws/tongas etc.;
- Imposing restrictions on the movement of animal drawn /other slow moving vehicles, and/or heavy commercial vehicles on these roads during selected periods, specially the peak hours;

- Reduction of roadside congestion through control of abutting land–use and roadside commercial activity;
- Provision of adequate facilities for pedestrians and cycles wherever it is possible;
- Banning certain conflicting movements at major intersections, particularly during peak hours;
- Controlling the cross traffic and side-street traffic by regulating the gaps in median;
- Improving traffic discipline such as proper land use and correct over taking through appropriate road markings, education and publicity.

The following urban roads in L.P.A, Sangrur have been identified and proposed for adopting the traffic engineering measures.

➤ **R.O.B'S AND R.U.B'S**

There is only one Railway Over Bridge in the Sangrur city on Dhuri Road. In order to ensure the smooth flow of regional and local traffic over the existing and proposed road network of L.P.A, Sangrur, more R.O.B's are proposed. The list of these in order of priority is given as below:

- I. R.O.B Barnala Road (Proposed).
- II. R.O.B on intersection of Sangrur-Jakhal Railway Line with Proposed Outer Ring Road (Proposed).
- III. R.O.B on intersection of Sangrur-Dhuri Railway Line with Proposed Outer Ring Road (Proposed).

➤ **Bus Terminal**

The bus stand is over-crowded and located in the centre of the city and. In order to provide relief to city roads, It is estimated that approx. 10 hec. site will be required. The location of bus stand was discussed in the Think Tank meeting and it was discussed to propose bus stand on Sunam Road. However, the site has not been shown in the Proposed Land Use Plan, as it will be located as per actual feasibility by the concerned department. Moreover, the zoning regulations allow the siting of bus stand in the uses proposed along this road.

10. ZONING REGULATIONS

The zoning regulations proposed for adoption in L.P.A Sangrur are as below:-

The Chief Town Planner, Punjab being the planning agency designated under section 57 of "The Punjab Regional and Town Planning and Development (Amendment) Act 2006" for the Local Planning Area, Sangrur declared under section 56(i) of the said Act, following the requirement under clause (d) of sub section 1 of section 70 of "The Punjab Regional and Town Planning and Development (Amendment) Act 2006", hereby, makes following Zoning Regulations as a part of Master Plan prepared for Local Planning Area, Sangrur.

10.1 Short Title, Scope, Extent & Commencement

Title

These regulations shall be called the Zoning Regulations for Local Planning Area, Sangrur 2010 (here in after referred to as “these Regulations”).

Scope of the Regulations

The scope of these regulations is limited to defining permissible land uses in various land use zones depicted in the proposed land use plan forming part of the Master Plan. Other aspects of “development” such as sub-division and layout of land or intensity of development measured through FAR, ground coverage, parking requirements, building design and construction etc. will be governed by other acts and regulations promulgated by Government from time to time. Competent Authorities under such regulations shall ensure that the developments permitted by them are in conformity with these regulations.

Jurisdiction

These regulations shall apply to all “development” in the Local Planning Area, Sangrur declared under section 56(i) of "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006" vide notification no. 12/14/2007-4HGI/9813 dated 17.12.2007.

Date of Coming into Force

These regulations shall come into force on the day on which the designated Planning Agency publishes the final Master Plan along with these regulations in the **Official Gazette** after obtaining the approval of the State Government under sub section (5) of section 70 of "The Punjab Regional and Town Planning and Development

(Amendment) Act 2006".

Till such approval, the authorities in considering the applications for permission for development shall have due regard to the draft proposals including these regulations.

10.2 Definitions

For the purpose of these zoning regulations, the following definitions, unless the context otherwise requires, shall apply:-

1. **“Act”** means "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006" (Punjab Act No. 11 of 1995).
2. **“Government”** means the Government of the State of Punjab.
3. **“Chief Town Planner”** means the Chief Town Planner of The Department of Town & Country Planning, Punjab or any other officer to whom his powers are delegated.
4. **“Planning Agency ”** means the Chief Town Planner Punjab designated as such under Section 57 of "The Punjab Regional and Town Planning and Development (Amendment) Act 2006" for Local Planning Area, Sangrur.
5. **“Local Planning Area”** means the Local Planning Area declared under section 56(1) of "The Punjab Regional and Town Planning and Development (Amendment) Act 2006" vide notification no. 12/14/2007-4HGI/9813 dated 17.12.2007.
6. **“Existing Landuse Plan”** means the Plan showing the different landuses existing at the time of preparation of the Existing Landuse Plan of Local Planning Area, Sangrur and as indicated on Drg No. DTP(S) 310/09 dated 25.9.2009.
7. **“Proposed Landuse Plan”** means the plan showing the proposed admissible uses of different areas and landuse zones covered in the Local Planning Area, Sangrur and as indicated on Drg. No. DTP (S) 345/2011 dated: 4-5-2011.
8. **“Non-Conforming Building or use”** means use in respect of any land or building in the Local Planning Area, the existing use of which land or building is contrary to the prescribed landuse.
9. **“Zoning Plan”** means the plan of area or part there of or supplementary layout plan, approved by the Chief Town Planner, Punjab and maintained in the office of Competent Authority, showing the permitted use of land and such other restrictions on the development of land as may be prescribed in the zoning regulations, for any part or whole of the area such as sub-division of plots, open spaces, streets,

position of protected trees and other features in respect of each plot, permitted land use, building height, coverage and restrictions with regard to the use and development of each plot in addition to such other conditions as laid down in these regulations hereafter.

10. **“Mixed Landuse”:** Mixed landuse development is to provide a variation of residential, commercial, institutional, recreational uses and 95 industries (not included in green, orange and red category as listed by Punjab Pollution Control Board (PPCB) or as amended from time to time shall be permissible subject to environmental safeguards.) in a regulated manner.
11. **“I.T. Park”:** Information Technology can be defined in various ways. Among the most common is the BEA’s (Bureau of Economics Analysis) category “Office, Computing and Accounting Machinery (OCAM) which consists primarily of computers. some researchers looks specifically at computer capital, while others consider the BEA’s broader category,”
12. **“Fashion Technology Park”:** Design when applied to fashion means art dedicated to creation of wearing apparel and life style. Fashion design is creating new clothing designs and setting or wearing them.
13. **“Knowledge Park”:** Such parks in residential land use zones can have only such activities, which are non-polluting, non-hazardous environment friendly, free from noise & vibrations having no polluting effects on air and water and causing no nuisance whatsoever. Chief Town Planner, Punjab, will determine uses in such parks.
14. **“Logistic Park”** is an integrated facility to serve as a business hub for storage, insurance and distribution purposes for the trading of manufactured products. Godown, cold storage, truck stands, railway yards, loading & unloading, booking agencies and related offices and other required amenities and facilities.
15. **“Farm House”:** Farm house means a building allowed on a holding of agricultural land, not less than 2.5 acres, for residential and agricultural activity of the land holder. The total floor area of such farm house shall not exceed 2% of the area of holding or 200 m² whichever is less.
16. **“Industry”:** This includes green, orange and red category and any other category as categorized by PPCB/Department of Industries or as amended from time to time. It excludes mining and quarrying.

17. **“House Hold Industry”:** House Hold Industry means house hold occupation/ Industry conducted only by family members/persons residing in the dwelling with or without power and not contrary to the provisions of the Water Pollution (Prevention and Control) Act 1974 Air pollution (Prevention and Control) Act 1981 and Environment (Protection) Act 1986.
18. **“Public and Semi-Public activities”:** Public and semi public activities mean governmental/semi-governmental offices, educational, medical institutions, recreational and entertainment facilities, cultural and religious institutions etc. Terms and phrases used, but not defined in these regulations, shall have the same meaning as assigned to them in Act.

10.3 Land Use Zones

The proposed land use plan incorporated in the Master Plan of LPA Sangrur depicts the following land use zones:-

10.3.1 Residential

10.3.2 Commercial

10.3.3 Industrial

10.3.4 Wholesale and Warehousing

10.3.5 Mixed Landuse

10.3.6 Rural and Agricultural

Use Provisions in Land use Zones:-

Permissible uses in the above land use zones are given below:-

10.3.1 Residential: Permissible Uses

Housing

- Plotted housing, Group housing, Farm houses
- Oldage homes, Orphanages, Homes for mentally/physically challenged children, leprosy ashram, hostels
- Service apartments, Hotels, Motels, Guest houses, Dharamshalas, Lodging houses, Serai, Rayan Baseras
- Jails, Asylums, Reformatories

Trade

- Retail trade and service shops, restaurants.
- Professional services such as those provided by lawyers, accountants, town planners, architects and others, A.T.M., Cyber Cafes
- Rehri markets
- Departmental stores, shopping malls

- Filling stations
- Gas distribution (without storage of cylinders)
- Milk chilling plant (in low density residential only)
- Gas godown / kerosene oil storage/fire cracker storage (in low density residential zone on independent plot only which shall be permissible till that time the residential or any other activity compatible to residential comes within a radius of 100 mts from the site)
- Dhobi ghats
- Household industry, Cottage industry, Atta chakki
- Repairs of household articles, cycles & scooters
- I.T.Park, Knowledge Park, Fashion Technology Park

Public, Semi-Public

- Education- schools, coaching classes, I.T.I., polytechnic, engineering college, medical college and other degree colleges, universities, professional research and training Institutions, advanced education and training like IIM or IIT.
- Health care- Clinics, health centres, dispensaries, nursing homes / nursingcare facilities health clubs, hospitals (including super specialty hospitals) (subject to notification no.17/7/5-Hg2-311/11.1.08), veterinary dispensaries and hospitals
- Art, entertainment, cultural and religious activities such as libraries, museums, clubs, marriage palaces, bhawans, sports activities including parks, gardens, play grounds, swimming pools, gymnasias, stadia, golf courses etc., amusement parks, cinemas, auditoriums, theatres, places of worship.
- Public utilities and Services- Fire station, Dhobi ghat, Police stations, Post office etc., Bus Stand, Auto Rickshaw/Taxi Stand, Telecom and Transmission Towers.
- Plant, nurseries and green houses related to nurseries, floriculture
- Cemeteries/ Cremation ground/ Graveyard/ existing Caracus sites
- Water harvesting measures

Any other use not mentioned above but sub-servient to residential use shall be allowed with special permission from Chief Town Planner, Punjab.

10.3.2 Commercial: Permissible uses

Trade

- Retail trade, business showrooms & service shop, restaurants.
- Rehri markets, Informer markets
- A.T.M., Cyber Cafes
- Super markets, Departmental stores, shopping malls, multiplex
- Trade fairs, Exhibition & Convention centres
- Filling stations
- Gas distribution (without storage of cylinders)
- Printing presses, Atta chakki
- Automobile showrooms & motor market (Garages)

Housing

- Service apartments, Hotels, Motels, Guest Houses, Dharamshalas, Lodging Houses
- Residences on upper floors only

Offices

- Offices of all types

Public Semi - Public

- Education- coaching classes, distant education, I.T. enabled services
- Health care- Clinics, health centres, dispensaries, nursing homes, hospitals
- Art, entertainment, cultural and religious activities such as libraries, museums, marriage palaces, sports activities including parks, gardens, play grounds, swimming pools, gymnasia, stadia, golf courses etc., amusement parks, cinemas, auditoriums, theatre, betting & gambling, pubs & bars, night clubs, night food streets, discotheques
- Plant, nurseries and green houses related to nurseries, floriculture
- All Public utilities and Services- Fire station, police stations, post office etc., Bus Stand, Auto Rickshaw/Taxi Stand, Telecom & Transmission Towers.
- Water harvesting measures

Any other use not mentioned above but sub-servient to commercial use shall be allowed with special permission from Chief Town Planner, Punjab.

10.3.3 Industrial: Permissible uses

All types of industries as classified by the department of industries and commerce further categorised by PPCB (Punjab Pollution Control Board) and following uses are permissible in the industrial zone:

- Junk yards, disposal works, gas works, power plant
- I.T.Parks, Knowledge Parks, Industrial Parks, Fashion & Technology Park, Film City.
- Warehouses, godown & covered storage for industries, cold stores, logistic parks, freight complex, container yards, dry port, weigh bridges
- Loading & unloading yards, truck terminals, bus terminals, railway station and siding, railway yards, helipads, metro stations
- Tempo / Taxi stand, Bus stops, Tonga stand
- *Petrol filling / service stations, fuel storage, LPG storage, storage of fire crackers
- Education- Schools, coaching classes, I.T.I., polytechnic, engineering college, medical college and other degree colleges, universities, professional research and training Institutions, advanced education and training like IIM or IIT.
- Health care- Clinics, health centres, dispensaries, nursing homes, health clubs, hospitals, including super specialty hospitals (subject to notification no.17/7/5-Hg2-311/11.1.08), veterinary dispensaries and hospitals

- Entertainment centre, multimedia centre, hotel, restaurant, showroom of mills, marriage palaces, places of worships, automobile showrooms
- Govt., Semi – Govt / Private business offices, financial institutions
- Residences for watch & ward staffs, residences for industrial workers / management
- All public utilities, police beat box, fire station, cemeteries / graveyard, caracus site (existing only), slaughter house
- Farming, quarrying

****The siting of petrol pumps shall be subject to instructions / guide lines of IRC / MORTH / TCPO / Punjab Govt. issued from time to time***

Any other use not mentioned above but sub-servient to industrial use shall be allowed with special permission from Chief Town Planner, Punjab.

10.3.4 Whole sale and Warehousing Zone: Permissible uses

- Whole sale trades with storage of all commodities including grain, fruit & vegetable market, iron and timber markets
- Residences for watch and ward staff
- Retail trade including markets for fruits & vegetables, meat & fish, super markets, informal shopping
- Department stores, Malls including Super Market, Multiplexes & Restaurants
- Showrooms of mill/factory retail outlets
- Petrol filling / service stations
- Kerosene storage/gas godown and storage of fire works
- Trade fairs, Exhibition & Convention centres
- Manufacturing of food products, furniture, repair of machinery & equipment
- Milk Chilling independent plot, Pasteurisation Plant, cold storage
- Warehousing, Rail and Air Freight terminals, Truck terminals, Bus terminals, Logistic Park Storage, Godown, Freight Complex, Container Yards
- Telecom & Transmission Towers
- Medical & Dental dispensary, Veterinary dispensary
- Places of worship
- Marriage Palaces
- Police Station, Fire station, Cemeteries, Grave yards, Cremation grounds
- Water collection, treatment & Supply
- Sewerage
- Water harvesting measures
- Plant nursery, green houses related to nursery, floriculture

Any other use not mentioned above but sub-servient to whole sale and warehousing zone shall be allowed with special permission from Chief Town Planner, Punjab.

10.3.5 Mixed Land Use Zone: Permissible uses

- All uses permissible in residential, commercial and 95 industries not included in green, orange and red category as listed by PPCB or as amended from time to

time shall be permissible outside the urbanisable limits subject to environmental safeguards.

- The mixed land use zone shall not include uses like manufacturing industries prohibited in such area by the Science, Technology and Environment Deptt. However, existing industrial units may continue as per the provisions made in section 79 of Punjab Regional & Town Planning & development Act (Amended) 2006 for a specific period.

Any other use not mentioned above but sub-servient to mixed land use zone shall be allowed with special permission from Chief Town Planner, Punjab.

10.3.6 Rural & Agricultural Zone: Permissible Uses

This zone is sub divided into two zones viz Village Abadis and 100mts around phirni and rest of the area.

Permissible uses in Village Abadis and area upto 100mts of phirni

- Residential development in the form of plotted and group housing
- Educational, Medical, Cultural, Religious and Recreational uses which commensurate with the scale of village population
- Local commercial, service industry, dhobi ghat
- Public utilities & Services including communication towers

Permissible uses in the rest of the area

- Farm houses, hostels for students, working women
- oldage homes, orphanages, jails, asylums
- Agriculture, Horticulture, Dairy, Piggery, Fishing, Poultry Farming, Mushroom growing centre, Slaughter house
- Milk collection centres, Chilling Stations and Pasteurisation plants, Rice Shellers, Processing of farm (grains, fruits and vegetables) products, Brick Kiln, Lime Kiln, Charcoal Kiln
- Petrol filling / service stations, Storage of Fuel Oils, LPG Storage Godowns, storage of Fire Crackers, wholesale trade of agricultural products only Warehousing, Godowns, Logistic park, Cold storage, Cement / Sand and Concrete mixing plant
- Railway station, sidings, bus stop, truck terminal, container yard, air freight and parking area
- Public buildings and utilities including Electric sub-stations, sewage treatment plant (STP) solid waste dump site, caracas disposal site
- Transmission and telephone lines and poles, telecommunication towers, surface drainage, water bodies including irrigation canals
- Afforestation including orchards, gardens and commercial timber, Land preservation and conservation measures such as storage, check dams, Water harvesting measures
- I.T.Park, Knowledge Park, Fashion Technology Park

- Education- schools, coaching classes, I.T.I., polytechnic, engineering college, medical college and other degree colleges, universities, professional research and training Institutions, advanced education and training like IIM or IIT.
- Health care- clinics, health centres, dispensaries, nursing homes / nursingcare facilities health clubs, hospitals(including super specialty hospitals) (subject to notification no.17/7/5-Hg2-311/11.1.08), veterinary dispensaries and hospitals
- Art, entertainment, cultural and religious activities such as libraries, museums, clubs, trade fairs, exhibition, mela grounds, camping grounds, marriage palaces, bhawans, sports activities including parks, gardens, play grounds, swimming pools, gymnasia, stadia, golf courses etc ., amusement parks, places of worship.
- Panchayat ghars, dharamshalas and any other project of Central and State Govt. agencies / Deptt. / undertaking / Local Bodies.

Any other use not mentioned above but sub-servient to rural & agricultural zone shall be allowed with special permission from Chief Town Planner, Punjab.

10.4 Designated Areas

Following areas have been, specifically, designated in the proposed land use plan.

1. Traffic and Transportation
2. Recreational Uses
3. Utilities
4. Public & semi public
5. Protected Monuments/Conservation Sites
6. Heritage Buildings and Sites
7. Other Special Areas
8. Forest Areas

10.4.1 Use Provisions in Designated Areas

Following uses are permissible in the designated areas

1. Traffic & Transportation: Permissible Uses

Rail yards, Railway station & sidings, Transport Nagar (including, Post & Telegraph offices & Telephone exchange, dhabas, labour yards, areas for loading and unloading, stores, depots, and offices of goods booking agencies, Petrol Filling station & service garages, parking spaces, public utilities and buildings broadcasting station, Bus Terminus & depot, bus stop shelter, taxi/ tonga/ rickshaw/scooter stands, parking spaces.

2. Recreational Uses: Permissible Uses

Sports Complex, Sports training centers, Swimming Pools with built up areas not exceeding 2%. Regional parks, Local Parks, Green Belts, Play Grounds, Holiday Resorts with ground coverage not exceeding 2%, Open air cinema/auditorium, Shooting ranges, with built up areas not exceeding 2%.

3. Utilities: Permissible Uses

Water supply, Sewerage system (including main pumping station and Sewage Treatment Plant {STP}), drainage, storm water, waste processing and disposal, electricity, communication systems and related installations etc.

4. Public and Semi-Public Activities: Permissible Uses

Governmental and semi-Governmental offices, Governmental administrative centres, Secretariat, Educational- Cultural and Religious institutions including theaters, auditoriums etc. Medical Health Institutions, Community Centres, Club, Orphanage, Old Age Home, Banks, Police Stations etc.

5. Protected / Conservation Sites: Permissible Uses

In exercise of the powers conferred by rule 29 & 30 of 'The Punjab Ancient And Historical Monuments And Archaeological Sites And Remains Rules, 1965' vide draft notification No. No:10/46/09-4TC/968 Dated:-18/5/2009. Department of Cultural Affairs, Archaeological Sites and Museums, Punjab had given one month's notice of its intention to declare under Rule 29(2) prohibited areas, 100 meters from the protected limits and further beyond it upto 200 meters near or adjoining protected 2 monuments located in L.P.A Sangrur declared under. 'The Punjab Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1964' to be prohibited and regulated areas respectively for purpose of both mining operation and construction. The final notification under rule 30 of the said rules has not been issued so far.

6 Heritage Buildings and Sites

Material changes to heritage buildings by way of repair, replacement, reconstitution or change of use of any part or whole of the heritage building will require prior consent of the Heritage Committee (when constituted) New construction on the heritage site shall be in conformity with the design, materials and elevation of the existing heritage structure and shall be permitted only with the consent of the Heritage Committee.

7 Other Use: Permissible Uses

All the uses related to Defence Services and any other use as decided by the Ministry of Defence. No other uses are permitted.

8 Forest Areas: Permissible Uses

This area indicates all Reserved Forests as notified by the Forest Department. No activity other than Forest is permitted in this area unless expressly allowed by the Forest Department.

10.5 Special Conditions

- The siting of Petrol Pump/Filling Stations shall be subject to fulfillment of instructions/guidelines of IRC/MORTH/TCPO / Punjab Govt. issued from time to time.
- Minimum width of access road for warehousing uses shall be 80'.
- All public and semi-public uses in residential zone shall be located on independent plots with minimum access of 80'.
- All types of industries permitted in the designated land use zone are subject to the fulfillment of conditions issued by industries department / Punjab Pollution Control Board from time to time.

10.5.1 Exceptions

- As provided under Section 79 of the Punjab Regional and Town Planning and Development (Amendment) Act 2006, after coming into operation of this Master Plan, no person shall use or permit to be used any land or carry out any development in any area otherwise than in conformity with this Master Plan.
- Provided that the competent authority may allow the continuance of any use of any land, for a period not exceeding ten years. Upon such terms and conditions as may be provided by regulations made in this behalf, for the purpose and to the extent, for and to which it was being used on the date on which this Master Plan came into operation.
- Notwithstanding the above, the uses specifically provided for in the Sector Plans shall be permissible or as may be allowed by the Chief Town Planner, Punjab after special appeal where Sector is not prepared.
- To give incentive and to encourage users to move from non-conforming land use to a land use zone where the use is in conformity with Master Plan, change in land use charges and external development charges will be waived off.
- Uses determined by the Chief Town Planner, Punjab as compatible with uses permissible shall be allowed in respective zones.
- Developments approved prior to coming into force of these Regulations shall be deemed to be in compliance with these regulations.
- The site on which various projects have been approved or whose change of landuse has already been permitted by competent authority/Govt. such sites shall be deemed to be adjusted.
- Uses of Land covered under Optimum Utilisation of Vacant Govt. Land (OUVGL) Scheme of the State Government shall be determined by the

Government at any appropriate time notwithstanding the provisions of these regulations subject to the fulfillment of other requisites like minimum area, road width and frontage etc. of the respective landuse.

- In the event of conflict in interpretation of data within the study area the information in the GIS format will be deemed as the accurate version and shall prevail.
- In case the area of a project falls partially under no construction zone along a water body, relaxation of maximum upto 5% on the total area of the project shall be allowed towards calculation of saleable area in lieu of the area falling under the no construction zone. In case, the area falling under no construction zone is less than 5% of the total area of the project then the relaxation shall be proportionately less.
- The buildings / premises for which the existing (present) land use has been retained as such in the Master Plan may continue to operate without time limit. However, in case the present use of the buildings / premises is discontinued (partially or wholly) these buildings / premises or part thereof may be put to any compatible use (except industry) with the surrounding use zone in the Master Plan provided it fulfills the other development regulations / controls as laid down in the Master Plan or as prescribed by the Govt. / Local Body from time to time.

10.6 Residential Densities

Residential zone is divided into two sub zones viz. Within Municipal Council and Outside Municipal Council are shown on the Proposed Land Plan Drg no. **DTP (S) 345/2011 dated: 4-5-2011**. The gross residential density in these zones shall be as shown in table below:

Sr. No.	Density Zone	Gross Residential Density
1	Within Municipal Council	300 persons/ hec.
2	Outside Municipal Council	200 persons/ hec.

Note: However to encourage group housing and save agricultural land, 60 dwelling units/acre shall be permissible in stand alone group housing projects irrespective of density of particular zone.

10.6.1 Implementation of These Regulations

- All authorities competent to grant permission for layout or sub-division of land or construction of building or development of land in any other form shall ensure that the permitted development is in compliance with these regulations.
- Land owners desirous of developing their land can obtain by applying to the designated authority in writing and giving details of their land along with necessary maps, a list of permissible uses.
- Similarly, land owners proposing development of certain uses on their land can obtain a certificate of “Compliance with Master Plan” from a designated authority.
- In the extended Municipal Council limits after the notification of Master Plan the stipulations in the Master Plan for area outside Master Plan shall continue to be applicable in the extended Municipal Council limits.

10.7 Development Control Regulations

Section I: Development Control Regulations

The purpose of the Development Control Regulations (DCR) is to assist developers and end users within the Local Planning Area, Sangrur to strive for a more quality and environment –friendly development.

These Development Control Regulations are applicable to new and future developments. The developers are requested to abide by the zoning and planning intentions of the Master Plan. ***However, development proposals/projects that have been granted approval (including CLU) by the Competent Authority before coming of these into operation will continue to be honoured subject to the terms and conditions of approval and shall not be affected by these controls. With existing Municipal Council limits development controls and building regulations of Municipal Council shall be applicable.***

Chapter XI of "The Punjab Regional and Town Planning and Development (Amendment) Act 2006" provides for 'Control of Development and Use of Land where Master Plan is in Operation.' The chapter lays down the procedural framework for exercising the development control. "Development" as defined by the Act means the carrying out of building, engineering, mining, quarrying or other operation in, on, over or under land or making of any structural or material changes in any building or land including that which affects the appearance of any heritage site and includes demolition of any part or whole of the building or change in use of any building or land and also

includes reclamation, redevelopment, a layout or sub-division of land. Some of the key regulations currently in force are reproduced below.

10.7.1 Residential

Area limits the development of residential project/colony shall be as declared by the Government from time to time. In case of left out pocket i.e. where on all sides the construction has already taken place, that left out area without any minimum stipulation can be developed as a residential colony.

Note:

1. The above potential zones falling in L.P.A.Sangrur are as per notification no. 17/17/2001-5HG2/PF.1 dated 20.06.2010 or as amended from time to time.
2. The minimum area of colony is as per Memo No.18/182/06-6HG2/5598 dated 17.07.2007, Memo No. 17/17/01-5HG2/7655 dated 19.09.2007 Memo No. 17/17/01-5HG2/1640 dated 18.06.09 and 17/17/2001-5H.G 2/P.F.-1/3585 dated 22.12.2010 or as amended from time to time.
3. F.A.R, height and ground coverage for individual residential plots within municipal areas, building byelaws of Municipal Council shall be applicable and outside Municipal Council, the building bye-laws of respective Development Authority shall apply. However, saleable area (residential and commercial) shall not exceed 55%.

Parking Requirements for Plotted Developments (Outside M.Cl. Limit)

Plot size*	Parking requirements
85 sq m and less (100 sq yd and less)	2 scooter parking spaces
86-168 sq m (101-200 sq yd)	1.5 car parking space within plot area
169-425 sq m (201-500 sq yd)	2 car parking space within plot area
425 sq m and more (500 sq yd and more)	3 car parking space within plot area

Note:

- i. Deviation of up to 10% of this control is allowed, if it is arising from site conditions / constraints.
- ii. The minimum width of roads within residential areas shall not be less than 12 m, if the existing road is less than 12 m, the proportionate land on both sides shall be safeguarded for widening to comply with the minimum requirement. The height of buildings on these roads shall not exceed ground plus two (G+2) storeys.
- iii. Size of the front gate on boundary wall and construction of front boundary wall is optional to meet the parking requirements.

Group Housing

1	Minimum Plot size	
	Outside Municipal Council limits	
	a) For General Category	5 acres
	b) For EWS	2.5 acres
2	Minimum road width	18m (60feet) Group housing stand alone projects, shall be permissible on minimum existing 60' wide road with condition that the promoter shall be required to leave space from his own land for widening it to 80' and the space so left shall be public space. In the planned colony, group housing

		shall not be permissible on a road less than 60' wide.
3	Minimum Frontage	20 meters within & outside Municipal Council limits
4	Permissible FAR	1:1.75
5	Permissible Height	There shall be no restriction on the height of building subject to clearance from Air Force Authority and fulfilment of other rules such as set backs, distance between buildings etc. However structural safety and fire safety requirements as per National Building Code shall be compulsory.
6	Parking Provisions	For group housing developments, the requisite parking provision is 1.5 ECS per 100 sq m of covered area. The maximum provision allowable for group housing projects is 3ECS per dwelling unit.

Note:

- i. Construction of residential houses sold by promoters on floor basis shall also be considered as group/flatted housing development & parking requirement shall be as per the norms applicable to Group Housing.
- ii. Within Municipal Council limits norms and guidelines of Local Government Deptt. Shall be applicable.

Farm House

Minimum area	2.5 acres
FAR	0.04
Group Coverage	2%
Number of storeys	2
Height	Single Storey 18'-0" Double Storey 28'-0"
Hard Surface	10%

Note:

Farm House shall only be allowed to upkeep the farm operations and it shall not be used for independent residential or any other purpose.

10.7.2 Commercial

Commercial use in residential zone located within the municipal limits shall be allowable along 80' wide roads with minimum frontage of 20m. The area requirements for such commercial developments shall be as per the Municipal Council rules and regulations.

For stand alone commercial complexes with height greater than three storeys within as well as outside the Municipal limits, the additional criteria listed in following table shall apply.

Additional criteria for stand-alone commercial complexes (more than three storeys)

1	Minimum area required	as per Municipal Council norms 1000 sq m (outside Municipal council limit)
2	Minimum frontage	20 meters
3	Maximum F.A.R	1:1.75
4	Maximum height	There shall be no restrictions on the height of building subject to clearance from Air Force Authority and fulfillment of other rules such as setbacks, distance

		between buildings etc. However, structural safety and fire safety requirements as per N.B.C shall be compulsory.
5	Maximum ground coverage	40%
6	Parking	For projects with no multiplexes, the minimum parking shall be 2ECS per 100 sq m of covered area (including circulation area) For projects with mutiplexes/cinemas/theatres, the minimum parking shall be: a) 3 ECS per 100 sq m of covered area in respect of the covered area of the multiplex component +30% of the total covered area of that component and b) 2 ECS per 100 sq m of covered area, in respect of balance commercial component and circulation area. Parking norms within the municipal limits shall be the same as that notified by the Department of Local Government. Total parking requirement shall be provided in the compulsory front set back and within the development site boundary or in the basement.
7	Basement	Multi level basement will be allowed behind the building in zoned area except in setbacks provided it is proposed for parking purposes only and satisfy the public health and structural requirements.
8	Minimum approach road width	80 feet
9	If the site area is 1 acre or more minimum 15% area is to be reserved for landscaping.	
10	For the movement of fire tender the minimum set back distance to comply with the existing norms and standers.	

Note: The E.C.S shall be counted as below:

- 23 square meters for open parking.
- 28 square meters for parking under stilts on ground floor.
- 32 square meters for parking in the basement

➤ Roads already declared as commercial shall be honoured.

Commercial at Local Level

There will be provision for small scale, single storey commercial facilities at the local level within as well as outside the Municipal limits, subject to the condition that these shall be abutting roads with a minimum width of 18 m (60') & with minimum 6 m (20') set back from road for parking purposes.

These commercial facilities are intended to serve the needs of local residents only and will not be shown separately on the Master Plan. Instead, they shall be subsumed under the predominant residential land use. Roads already declared as commercial by the Local Govt. Deptt. shall be honoured. Within the municipal council limits, building regulation of municipal council shall be applicable for regulation of building activity may be

residential, commercial or any other kind.

Outside Municipal Limits

Within residential zones located outside the municipal limits, commercial development shall be allowed subject to compliance with the following conditions:

- Minimum development plot size of 1000 sq m.
- Development plot is compact and regularly shaped.
- Minimum frontage of 20 meters (70')*.

10.7.3 Institutional:

Components	Institutional
Minimum Plot size	As prescribed by affiliating authority.
Minimum frontage	200 feet
Minimum width of approach road	60 feet (18m)
Maximum F.A.R	1:1
Maximum ground covered	40%
Parking	1 ECS per 100 square meters of the covered area if the project is covered under notification no.17/171/5-Hg2/311 dated 11.01.08.

***Note:** Other building regulations shall be governed by Zoning Plan as approved by the competent authority.

10.7.4 Industrial

Size of Plot	Site Coverage
For the first 2420 sq. yards	50% of the site
For the next 2420 sq. yards	33% of the site
In excess of 4840 sq. yards	25 % of the site
FAR	1:1.0
Parking	1 ECS per 100 square meters of the covered area.
Road width	The minimum road width for industrial unit shall be 12 m.

Note: i) The cross section of National Highways shall be as finalized by the NHAI.

- ii) 5mts no construction zone shall be left along Patiala – Sangrur – Barnala road (N.H-64), Sangrur – Patran (N.H-71) road and Malerkotla – Sangrur (S.H-11) road after leaving ROW as prescribed in Master Plan.

- **Residential component:** Residential component in the industrial plot/premises shall not exceed 5% of the area of the site and shall be within the maximum permissible covered area.
- The minimum road width for each land use shall be as specified in the Master Plan or by the Government policy/guidelines issued from time to time. However, in case the existing road width is less than the minimum specified width in the Master Plan/Government policy then the proportionate land on both sides shall be safeguarded for widening to comply with the minimum requirement. In case,

where habitation/settlement comes in alignment, in that case widening shall be on other side of habitation/settlement.

- In case the site of any project is situated within Municipal limits and the project is submitted to Municipal Council/Local Body for approval then the building byelaws of the concerned local body shall be applicable provided the land use is in conformity to Master Plan.
- Industrial / IT Park shall have minimum 10 acres area. In IT Park, IT component shall have FAR 2.0. In industrial park, for an industry component FAR shall be 1.0 and other components shall have FAR as mentioned under different uses in the Master Plan.

10.7.5 Environment Considerations:

- Minimum buffer of 15 meters green belt of broad leaf trees should be provided around the boundary of village abadies falling in the industrial zone of Master Plan. This should also be provided between residential areas and red category industries falling in industrial zone of Master Plan, boundaries of which are located within 100 m from the boundary of such areas. However, for special type of industries such as Rice Shellers / Sailsa Plant, Stone Crushers, Hot Mix Plant, the standards prescribed by the Punjab Pollution Control Board or any other agency shall apply.
- All residential colonies, commercial establishments like shopping malls, multiplexes etc shall maintain a minimum distance of 250 meters from the hazardous (maximum accident hazardous) industries notified by Director General, Factory Adviser Service Labour Institute. The distance should be measured from source of pollution/hazard in the industrial premises to the building lines as per Zoning Plan of the colony/complex.

10.7.6 Other Development Controls and Guidelines Required

- i. Expansion of village abadies: Contiguous expansion of village abadies in non-residential zones of Master Plan is permissible up to 100mts in the Master Plan. However, for the village abadies falling in residential zone of Master Plan no such limit has been earmarked as the area around them is already earmarked as residential.
- ii. The contiguous expansion of village abadies falling under agricultural zone of

Local Planning Area is also permissible to accommodate the natural growth of village abadies.

- iii. Regulation for village abadi: Special building regulation shall be prepared for the development and regulation of an area falling within the lal dora or phirni of the villages falling in the Local Planning Area.
- iv. The existing high tension lines shall be shifted along the road but outside the right of way to ensure unhindered ROW for traffic and other services for all times.
- v. Minimum 10 meters wide green strips on each side of minor, drain, canals shall be maintained and outer ring road shall have minimum 30 meters green strip on both side. Realignment of water bodies shall be permissible wherever feasible, subject to the certification by the Drainage / Engineering Department to ensure free flow of storm water. After any such realignment, the river mouth, the river bed and the green strip on either side shall be maintained at least to the minimum prescribed level.

Note : The Development controls/Guidelines/Norms & Standards revised from time to time by the Government shall have overriding effect on the Development controls mentioned in the master plan. Within existing municipal council limits, building regulation/rules of municipal council shall be applicable.

10.7.7 Transferable Development Rights

To facilitate development, it is necessary to accord top priority to the implementation of public utilities and infrastructure (such as roads, parks, green belts etc,) which will in turn encourage urbanization.

However, the respective technical agency or authority will not be able to proceed with its implementation programmes until the ownership of private land affected by these public utilities and infrastructure has been transferred to the state or to the relevant authority(s).

Acquisition of private land for this purpose can be carried out through one of the following options:

- Cash compensation can be made to affected land owners whose land is to be acquired.
- A government – approved land pooling scheme can be implemented.

- Transferable Development Rights (TDR).

Of these options, TDR is recommended because of following reasons:-

- It is relatively simple and straightforward to implement and execute.
- The requisite public infrastructure projects can be implemented quickly, thus facilitating rapid urban development.
- The most important factor is that the interests of affected land owners can be protected.

Under the TDR scheme, the affected land owner(s) shall be entitled to additional FAR for the development of his balance land parcel at a rate of 1:1. The additional FAR will not be subjected to any CLU, EDC or license / permission fees. The land owner(s) also has the option to sell it in total or in parts to a third party.

All the records of transactions administered under the TDR scheme shall be maintained by the state and / or relevant authority(s), based on the precedence set in Mumbai, Maharashtra.

The TDR scheme shall be restricted to development projects for public infrastructure and facilities which shall be announced from time to time. The additional FAR shall not be transferable from one L.P.A to another.

Detailed policy guidelines on the operation and implementation of TDR Scheme shall be prepared and announced by the competent authority in due course of time.

Annexures

Annexure-I

Notification Regarding Declaration of LPA, Sangrur

(Extract from the Punjab Govt.Gaz.(Extra) dated the 20th December 2007)

GOVERNMENT OF PUNJAB

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

(HOUSING-1 BRANCH)

Notification

The 17th December-2007

No.12/14/07-4HGI/9813- Whereas it appears to the Governor of Punjab that to meet the challenge of rapid growth of Sangrur City and to provide for a workable framework for comprehensive planned and regulated development, preparation of Statutory Master Plan of Sangrur City is very essential. Hence in order to develop Sangrur City and its surroundings in orderly manner and to prepare its Master Plan under, "The Punjab Regional and Town Planning and Development Act.1995". The Governor of Punjab is pleased to declare the Local Planning area of Sangrur City within the meaning of sub-section (1) of section 56 of the Punjab Regional and Town Planning and Development (Amendment) Act.2006. The total area proposed for Local Planning area is 22196 Hectares which includes Sangrur City and adjoining 34 villages. The schedule of boundary of Local Planning Area is as under:-

Schedule of Boundary:

North: Starting from point 'A' which is situated on Northern boundary of village Dugan (H.B.No.67) and is also the common meeting point of villages boundary of village Bhaini Mehraj (H.B.No.5), village Natt (H.B.No.50), and village Dugan (H.B.No.67), then moving towards East along the Northern boundary of village Dugan (H.B.No.67), village Bahadurpur (H.B.No.66), village Lidran (H.B.No.17) and village Changal (H.B.No.18), then moving towards North along the Western boundary of villages Khilrian (H.B.No.19) village Ladda (H.B.No.58), then moving along the Northern-Eastern boundary of village Ladda (H.B.No.58), then crossing the Sangrur-Dhuri road (S.H-11), then along the Northern-Eastern boundary of village Ladda (H.B.N-58), then moving towards East along the Northern boundary of village Deh Kalan (H.B.No-239), then crossing Sangrur-Dhuri railway line and then moving along the Northern boundary

of village Deh Kalan (H.B.No-239), village Nanakpura (H.B.No.-26), village Mangwal (H.B.No.-35), village Bhagwanpura (H.B.No-34), village Bhindran (H.B.No-33), village Ghabdan (H.B.No-30) up to point 'B' which is situated on the Northern boundary of village Ghabdan (H.B.No-30) and is also the common meeting point of villages boundary of village Laddi (H.B.No-29), village Julian (H.B.No-233) and village Ghabdan (H.B.No-30).

East: Starting from point 'B' moving towards East along the Northern-Eastern boundary of village Ghabdan (H.B.No.-30), then moving towards South along the Eastern boundary of village Ghabdan (H.B.No.-30) after crossing the Sangrur-Bhawanigarh road (N.H 64), again moving toward South along the Eastern boundary of village Ghabdan (H.B.30), village Gurdaspura (H.B.No.-31), village Kalaudi (H.B.No-32), village Khurani (H.B.No.-41), village Ilwal (H.B.No.-44) and village Kheri (H.B.No-47) up to point 'C' which is situated on the Eastern boundary of village Kheri (H.B.No.-47) and is also the common meeting point of village boundary of village Gaggarpur (H.B.No.-55), village Mehlan (H.B.No.-54) and village Kheri (H.B.No.47).

South: Starting from point 'C' moving towards West along the Southern boundary of village Kheri (H.B.No-47) after crossing the Sangrur- Patran road (N.H.71), again moving along the Southern boundary of village Kheri (H.B.No-47) and village Kanoi (H.B.No-46), then crossing the Sangrur- Sunam road, again moving along the Southern boundary of village Kanoi (H.B.No.46) and village Uppli (H.B.No-7), then crossing Dhuri- Sunam railway line, again moving along Southern boundary of village Uppli (H.B.No-7), then moving towards north along the western boundary of village Uppli (H.B.No.7) and then Southern boundary of village Badrukhan (H.B.No-16) village Bhamabadi (H.B.No-65), village Dugan (H.B.No.67) up to point 'D' which is situated on the Southern boundary of village Dugan (H.B.No-67), and is also the common meeting point of villages boundary of village Dugan (H.B.67), village Kila Bharian (H.B.No-5), and village Longowal (H.B.No-4).

West: Starting from point 'D' moving towards West along the Southern boundary of village Dugan (H.B.No.67) and village Kunran (H.B.No.68), then moving towards North along the Western boundary of village Kunran (H.B.No.68) and village Dugan (H.B.No.67), then crossing Sangrur-Barnala road (N.H-64), again moving along the Western boundary of village Dugan (H.B.No.67) up to point 'A' which is the starting point of schedule of boundary. These boundaries have been shown on Drawing No.

281/2007 dated 8th November 2007. All provisions laid down under Section 56(2) of The Punjab Regional and Town Planning and Development (Amended) Act, 2006 and all the concerned rules framed under this Act have been taken into consideration.

ARUN GOEL, I.A.S.

Place: Chandigarh
11th December, 2007

Secretary to Government of Punjab,
Housing and Urban Development Department

Annexure-II

Notification Regarding Declaration of Planning Agency

PUNJAB GOVERNMENT DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

(HOUSING BRANCH-1)

NOTIFICATION

Dated-----

No.12/14/2007-4HG1/9819 Whereas the Governor of Punjab was pleased to declare the Local Planning Area of Sangrur and its surrounding area u/s 56(1) of " The Punjab Regional and Town Planning and Development Act, 1995" vide notification No. 12/14/2007-4HG1/9813 dated 17.12.2007. Further the Governor of Punjab is pleased to designate the chief Town Planner, Punjab as Planning agency for the above Local Planning area under Section 57 of "The Punjab Regional and Town Planning and Development Act. 1995."

Dated.....

Chandigarh.

Arun Goel

Secretary to Government of Punjab,
Department of Housing & Urban Development

Annexure III

List of Town and Villages Included in Local Planning Area, Sangrur

	Name of village \Town	H.B. No	Area in hect.	Population 1991	Remarks
1.	Sangrur(Municipal Council)	-	2158	56419	This Area includes Municipal Council Sangrur and Rural.
2.	Uppli	7	1092	3102	This Area includes Municipal Council Sangrur and Rural.
3.	Sohian	39	343	1528	This Area includes Municipal Council Sangrur and Rural.
4.	KamoMajra khurd	36	189	1847	This Area includes Municipal Council Sangrur and Rural.
5.	Mangwa	35	1050	4410	This Area includes Municipal Council Sangrur and Rural.
6.	Ramnagar Sibian	37	345	1118	This Area includes Municipal Council Sangrur and Rural.
7.	Andheri	22	247	830	Rural
8.	Badrukhan	16	2084	6252	Rural
9.	Nankiana Sahib	24	85	229	Rural
10.	Akoi Sahib	21	485	1351	Rural
11.	Kunran	68	638	1706	Rural
12.	Dugan	67	1514	4610	Rural
13.	Bahadur Pur	66	1462	3639	Rural
14.	Bhama badi	65	431	844	Rural
15.	Lidran	17	221	966	Rural
16.	Changal	18	748	1942	Rural
17.	Khilrian	19	354	789	Rural
18.	Bangawali	20	283	1130	Rural
19.	Mohamadpur Alias Rasulpur	240	206	452	Rural
20.	Thalesh	25	236	978	Rural
21.	Nanakpura	26	154	211	Rural
22.	Deh kalan	239	535	805	Rural
23.	Bhagwan pura	34	220	139	Rural
24.	Khurana	40	421	1312	Rural
25.	Bhindrian	33	546	1852	Rural
26.	Ghabdan	30	1242	2635	Rural
27.	Gurdaspura	31	365	424	Rural
28.	Kalaudi	32	448	1144	Rural
29.	Khurani	41	263	608	Rural
30.	Illwal	44	839	2145	Rural
31.	Kamo Majra kl.	45	166	776	Rural
32.	Kanoi	46	492	1266	Rural
33.	Kheri	47	840	2586	Rural
34.	Bir Aswan	38	391	311	Rural
35.	Ladda	58	1103	3364	Rural
	Total		22196	113720	Rural

Annexure-IV

Notification No: 10/46/09-4TC/968, Dated:-18/5/2009 by the Department of Cultural Affairs, Archaeology and Museums, Punjab, declaring Diwan Khana and Marble Baradari including tank as protected monuments. Government of Punjab

Department of Cultural Affairs
(Tourism Branch)

Preliminary Notification

Dated:-18/5/2009

No:10/46/09-4TC/968 Government of Punjab, Department of Cultural Affairs, Archaeology and Museums, Punjab, had declared, following Monuments as Protected Monuments under the "Punjab Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1964".

Kos Minar, Bharowal, Gate of Sarai and Mosque, Fatehabad, Old Tehsil, Ajnala, Kos Minar-Norangabad in (District Amritsar). Anglo Sikh War Memorial, Sabhraon, Anglo Sikh War Memorial, Ferozeshah, Anglo Sikh War Memorial, Misriwala, Anglo Sikh War Memorial, Mudki in (District Ferozpur), Aam Khas Bagh, Sirhind, Tomb of Ustad, Vill. Talania, Sirhind, Tomb of Amr Ali, vill. Dera Meer Mian, Mosque of Bhagat Sadna Kasai, Sirhind, Jahaji Haveli, Todar Mal, Sirhind in (District Fatehgarh Sahib), Old Thana Monument, Jaito in (District Faridkot), Jhandewala Temple, Dholbaha, Exacavated Temple, Dholbaha, Mansa Devi Temple, Dholbaha, Ancient Temple, Dholbaha, Octagonal Well, Dholbaha, Samadh Takhawal, Mukerian, Mandir Hari Devi, Bhawanipur in (District Hoshiarpur), Kos Minar, Vill. Toot, Commissioner's Residence, Jalandhar, in (District Jalandhar), Moorish Mosque, Kapurthala, Hndira-Sultanpur Lodhi, Gol Kothi Kapurthala in (District Kapurthala), Mughal Sarai, Doraha, Anglo Sikh War Memorial Aliwal with approach path way, Ancestral House of Lala Lajpat Rai at Jagraon & Plot in front of house, Kos Minar, Kot Paniach, Ancestral House of Shaheed Sukhdev Thapar Ludhiana, Quila at Payal, Sarai Lashkari Khan, Teh. Khanna., in (District Ludhiana), Ancestral House of Shaheed Bhagat Singh, Khatkar Kalan, Maharaja Ranjit Singh Hill Park, Asraon in (District : Shaheed Bhagat Singh Nagar (Nawanshahar), Sheesh Mahal Patiala, Quila Mubarak Patiala, Samania Gate Patiala, Sunami Gate Patiala, Sirhindi Gate Patiala, Darshani Gate Patiala, Baradari Moti Bagh, Painted Chamber of Kali Devi Temple, Quila Beer, Bahadurgarh(only outer wall & ditch), Painted Chamber, Rani Hall, Nabha, Bhikham Shah Da Maqbra, Ancient Mound

at Ghuram, Kos Minar, Rajgarh, Kos Minar, Vill. Nausehra, Samadh Baba Maghi Dass, vill Chhintanwala, Mugal Sarai, Shambhu, Patiala, Historical Bridge on Patiala-Sanaur Road, Mandir Shri Badri Narain (Bahadurgarh), Mandir Shri Tung Nath, in (District Patiala), Tomb of Alawal Khan, Behlolpur, Tomb of Hussain Khan (Father) Behlolpur, Tomb of Nawab Bahadur Khan (Son) Behlolpur, Bauli at vill. Majha Mohewal in (District Ropar), **Diwan Khana, Sangrur, Marble Baradari including Tank, Sangrur**, Samadh and Bauli, Bagrian, Ancestral House of Shaheed Udham Singh, Sunam, Ancestral House of Akali Phoola Singh, Dehla Sheehan in (District Sangrur), Quila at Manauli, Ancient Mound at Chhat in (District Mohali) and Quila at Patti, in (District Taran Taran)

Now, the Government of Punjab Department of Cultural Affairs, Archaeology and Museums, Punjab, in exercise of powers conferred under rule 29 and 30 of the "Punjab Ancient and Historical Monuments and Archaeological Sites and Remains Rule, 1965", intends to declare under Rule 29(2) prohibited areas, 100m from the protected limits and further beyond it, up to 200m near or adjoining to the each protected monument as specified above to be regulated areas respectively, for the purpose of mining operation or construction or both. Accordingly under the Rule 29(i) of the "Punjab Ancient and Historical Monuments and Archaeological Sites and Remains Rule, 1965", one month notice of its intention is given for declaring an area as described above as prohibited and regulated areas. This notification is without prejudice to any notification issued earlier. This notification would also apply to all protected monuments already declared or to be declared in future.

Any person interested in this area specified above can file objections under Section 29 (2) to the declaration of this area around monument to be prohibited and regulated areas in writing within one month from the date of issue of this Notification.

Any objection if, received, from any persons, within the period specified, as above, will be taken into consideration by the Principal Secretary to Government of Punjab, Department of Cultural Affairs, Archaeology and Museums, Punjab, and the final notification will be issued under section 30, after dealing with such objections received if any.

Place:-Chandigarh

Dated:-5.5.2009

Principal Secretary to Govt. of Punjab,
Department of Cultural Affairs,
Archaeology & Museums, Punjab, Chd.

Endst.No. 10/46/09-4 TC/972-A

Dated, Chandigarh: 18-5-2009

A copy is forwarded to the following for information and necessary action:-

- 1) Director Cultural Affairs Punjab Chandigarh with their reference no. Pura/DCAM/2008/2310, dated 29.4.2009.
- 2) All the Deputy Commissioners (State of Punjab).
- 3) All the Divisional Commissioners (State of Punjab).
- 4) Director, Public Relations, Punjab with the request that it may be published in the leading Newspapers (In Punjabi and English) the bills of these Newspapers may be sent to the Director Cultural Affairs, Punjab for the payment.
- 5) A copy along with spare copy is being sent to the Controller, Printing and stationary with the request that this Notification may be got published in the Gazette (Ordinary) and 300 copies may be made available to this Department for official use.

Superintendent

Annexure V

List of Trees recommended for Plantation on the Main Roads within Urban Limits/Master Plan Areas

Sr. No.	Name of tree (Botanical/common)	Description
1	Alstonia scholars (Chhatim)	Tall tree with columnar shape, Evergreen, very ornamental, bears greenish-white flowers in October-December.
2	Barringtonia acuiteangula (Smudar Phal)	Medium tree with spreading habits, deciduous from April to May. Ornamental foliage and flowers in pendulous branches bears crimson flowers in April and September.
3	Bauhinia blackiana (Kachnar)	Small tree, evergreen with columnar form, highly attractive and ornamental. Proposed by layers and cuttings. Flowers deep pink from January to April and from September to November.
4	Bahuinia purpura (Kachnar)	Medium tree with columnar form, evergreen, bears purple coloured flowers in November.
5	Bahuinia variegata (Kachnar)	Medium tree with columnar form. Sheds leaves in January, February, profusely, flowering tree, highly beautiful when in February.
6	Cassia fistula (Amaltas)	Tall columnar shaped tree, leafless in April-May. Very hardy tree, looks very ornamental when in bloom. Bright yellow flowers in April-May.
7	Cassia grans (Pink Mohur)	Medium in height, with spreading habit. Highly ornamental tree. Bears deep carmine flowers in November, December.
8	Cassia javanica (Javaki-Rani)	Medium in height, leafless in April-May. It is the most beautiful flowers tree. Bears clusters of Pink flowers in May-June.
9	Cassia Marginata (Pink Mohur)	Medium in height, spreading and graceful tree, bears deep pink flowers in May and June.
10	Cedrela tuna (Tun)	Tall columnar shaped tree, leafless in Dec-January. Fairly fast growing and hardy tree with creamy white flowers in March-April.
11	Chakarassia Tabularis	Tall spreading tree, evergreen and hardy. Excellent for shade. Flowers are greenish, April-May.
12	Chorsia specio (Maxican Silk Cotton Tree).	Medium in height, pyramidal in shape, leafless from October to January, fast growing, bottle shaped green trunk. Flowers are of pink and yellow colour in October-November.
13	Delonix Regia (Gulmohar)	Tall tree with spreading crown, leafless from Jan-march. Fast growing, very ornamental crates mass colour effect with orange red flowers from April- June.
14	Ficus religious (Pipal)	Tall columnar shaped tree, leafless in February-March, very hardy and fast growing pale green in April.

Annexure VI
Proceedings of Think Tank Committee Meeting

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Annexure –VII Typical Cross-Sections of Main Roads

