

CHAPTER - I

BRIEF SUMMARY

INTRODUCTION

Roopnagar with its population of 49,159 persons is the 20th District in the State of Punjab in North West India. In order to develop Roopnagar city and its surroundings in orderly manner and recognizing the need for regulating the development of the entire influence area of Roopnagar City, Government of Punjab declared the Roopnagar Local Planning Area (LPA, Roopnagar) in May, 2008 and Amendment notification no: 12/71/06-4HGI/750 Dated 27-02-09. The Local Planning Area, Roopnagar includes 129 villages and one urban settlement i.e. Roopnagar. The Government also designated the Chief Town Planner, Department of Town and Country Planning, Punjab as the Planning Agency vide Notification No. 12/71/06-4HGI/3230 Dated 09-05-2008 to prepare the Master Plan of LPA, Roopnagar.

The total area of LPA, Roopnagar is 24265 hectare. According to Census 2001, the total population of LPA, Roopnagar is 1, 36,279 persons out of which 87,120 persons are rural and 49159 persons is urban.

Regional Setting

Roopnagar district, included in the Patiala Division of Punjab falls between north latitude 30°-32' and 31°-24' and east longitude 76°-18' and 76°-55'. Roopnagar (formely known as Ropar Town) is a district headquarter. It is 42 Kms from Chandigarh, the state capital of Punjab. The district adjoins Nawanshahar, Mohali and Fatehgarh Sahib Districts of Punjab. The district comprises of 3 Tehsils, namely Roopnagar, Anandpur Sahib and Chamkaur Sahib and includes 617 villages and 6 towns namely Roopnagar, Chamkaur Sahib, Anandpur sahib, Morinda, Kiratpur Sahib and Nangal.

Historical Background

The town of Roopnagar is of considerable antiquity. The town is said to have been founded by a Raja called Rokeshar who ruled in the 11th century and named Roopnagar after his son Rup Sen. The recent excavations carried out at Roopnagar have proved that this town was the seat of well developed Indus Valley Civilization. In proto - Historic Punjab perhaps Roopnagar is the only known excavation site which can claim the status of a small town or city. The finds in recent excavations consists of earthenware, statues, coins, etc. That proves that the city dates back to Harrappa - Mohenjo-Daro civilization which crossed Satluj River. Many of them settled at this place. In the excavations many things found belongs to Chandra Gupta, Kushan, Hoon and Mughal period. One of rare finds is a seal of Marble on which there are three letters engraved in Sindhi script. One of the finds is the statue of a woman dressing her hair. All these prove that even the people living in this town 4000 years back , were fully civilized and well cultured.

The history of Roopnagar district is in fact the war of Guru Gobind Singh Ji against Mughal tyranny, exploiters and social evils. It is here in this district at Sarsa Nangal that the great Guru parted with the family and proceeded to Chamkaur Sahib where two elder Sahibzadas laid down their lives fighting for truth and Guru Sahib left for Machhiwara on a constant struggle.

Legal Framework

The Punjab Regional and Town Planning and Development Act, (Amended) 2006, provides 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 map 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 for use for different purposes.
- (c) Indication, definition and provision of the existing and proposed highways, roads, major streets and other lines of communication.

- (d) Indication of 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.
- (e) 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 structure. The Act also provides for “Control of Development and Use of Land in Area where Master Plan is in Operation”

Population growth

The population of LPA, Roopnagar has been recorded as 1,35,947 persons as per census data (2001) with a decadal growth rate of about 22.23% during the year 1991-2001. The details are summarized in the table below

Population Growth Rate of Punjab State and LPA, Roopnagar: 1981-2001

	POPULATION			GROWTH RATE IN %	
	1981	1991	2001	1981-91	1991-2001
PUNJAB STATE *					
TOTAL	16.79	20.28	24.36	20.79	20.12
URBAN	4.65	5.99	8.25	28.82	37.73
RURAL	12.14	14.29	16.11	17.71	12.74
* POPULATION IN MILLIONS					
LPA, ROOPNAGAR					
TOTAL	84211	111222	135947	32.07	22.23
URBAN	25165	37996	49159	50.91	29.38
RURAL	59046	73226	86788	24.01	18.52

Source: Census of India, Punjab 1981, 1991, 2001,

The average gross population density of Roopnagar City is 19.66 persons per hectare. However ward wise densities vary considerably. The highest and the lowest are being 84 persons per hectare in ward no. 4 and 14 persons per hectare in ward No. 16 respectively.

Employment

The work force participation rate of LPA, Roopnagar is 36 % and that of Roopnagar City is 31.22%. The sectors providing employment in Roopnagar City are cultivators (1%), Agricultural labourers (1.61%), Household industries (1.12%) and other are (96.27%)

Existing Land Use and Transport Network

Preparation of present land use map was undertaken with the help of Punjab Remote Sensing Centre (PRSC), Ludhiana. For the core built up area Quick Bird data of 0.6m resolution was used, where as for the outer areas Cartosat I data of 2.5 m resolution was used. The maps based on satellite imageries were updated by undertaking field surveys. Out of a total LPA Roopnagar area of 24131 hectares (as calculated by PRSC) maximum proportion is occupied by 21680.377 hectares by agricultural use, 1088.849 hectare followed by residential, 238.539 hectares by industrial and 354.352 hectares by transport. In case of Roopnagarr City out of a total area of 964.92 hectares (as calculated by PRSC) 207.671 hectares are occupied by residential use, 0.376 hectares by industrial use, 43.513 hectares by public & semi public use, 114.453 hectares by transport use and 423.39 hectares by agriculture use.

The regional road network comprises of Chandigarh-Manali Road (N.H - 21), Roopnagar-Hoshiarpur road (S.H -24), Kurali-Morinda (S.H.) road and a bypass which interconnects all above roads. Other less important roads are Roopnagar-Chamkaur Sahib road, Roopnagar-Morinda road, Roopnagar-Nurpurbedi road. Although the Right of Way (ROW) of these roads outside the municipal area varies between 18ft to 180ft, the effective carriageway varies between 17ft to 74ft.

Physical Infrastructure

Water for Roopnagar City is sourced from both ground water and canal water. Quality of ground water is not satisfactory so mainly canal water is supplied. At present the water treatment plant of 1.4 mgd in an area of 1.75 acres is located in Giani Zail Singh Nagar . It supplies water to the old city . At present there are 8 nos.of OHSRS in various parts of the city in order to maintain the required water head. In order to meet the water requirement of the city , the water is also lifted from Nangal Hydrel Channel and treated in the various treatment plants.

As per data supplied by water supply and sanitation deptt. , there are 17 water supply and sewerage schemes in various parts of the city and the total length of water supply lines laid in the city is 22352 mts and the length of existing sewerage lines is 15628 mts .

The sewerage treatment plant which caters for the treatment of sewerage water of the entire city is located in Shri Har Gobind Nagar. As far as solid waste management is

concerned, the Municipal Council has been using a plot of 1.5 acres in village Katli for dumping the solid waste.

The low lying areas of the city are flood prone during monsoon due to absence of planned storm water drainage and further letting flood waters into sewers is environmentally undesirable.

Though collection and transportation of solid waste is managed by the Municipal Council, disposal is not in the form of sanitary land fill as required by the Municipal Solid Waste Rules of the Ministry of Environment and Forest. Similarly the disposal of Bio-Medical waste too is not in compliance with relevant rules.

Population forecast

The population of LPA, Roopnagar is estimated to grow to 2, 20,000 persons where as population of Roopnagar City will be 85000 by 2031.).

Infrastructure Requirements

The infrastructure requirements of this growth by 2031 would be,

- (a) **Water demand: 154 Mld (Potable 104mld and recycled 50mld)**
- (b) **Wastewater: 115 Mld**

Vision 2031

Specially constituted “Think Tank” comprising official and non-official representatives from all walks of life articulated the Vision 2031 for:

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.

Visualizing the future structure of the city involves delicate trade-offs. If urban development is freely permitted anywhere it might lead to sprawl that is difficult to service in terms of infrastructure services and may cause loss of fertile agricultural land. On the other hand if the future structure is visualized as compact city that is easier to service, it might increase the land price where development is permissible and might cause unauthorized development where

it is not. The extent of urbanization visualized is therefore not narrowly linked to land required for accommodating the projected population and economic activities by 2031. The extent of urbanization defined is based on the land requirement for various urban land uses, transport network that would be desirable and the areas that would acquire development potential on account of such transport network.

Proposed Land Use and Road Network

In the light of the above approach, proposed land use and road network plans are incorporated in the Master Plan. The land in LPA, Roopnagar 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 buffer 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 has been shown in drg. no. DDTP (R) 45/2011 dated 12.08.2011.(This drawing is superimposed on previous drawing no: DDTP (R) 09/2010 dated 15.08.2010.) It is proposed to follow up the Master Plan preparation by more detailed zonal plans.

Zoning Regulations

The Punjab Regional Town Planning & Development (Amended) Act, 2006 provides for the “Control of Development and Use of Land in Area where Master plan is in Operation”. However for control of development through parameters like sub-division of land, ground coverage, FAR, parking requirements, norms for building construction etc. have already been notified on a state wide basis by the Government. The zoning regulations included in the Master Plan are therefore confined to use of land.

CHAPTER -II

2. INTRODUCTION

Roopnagar District is one of the 20th districts in the State of Punjab in the North-West India. The district of Roopnagar is named after its district headquarters, the town of Roopnagar. Formerly known as Ropar, the town of Roopnagar is said to have been founded by a Raja called Rakeshwar, who ruled during the 11th century and named it after his son Roop Sen. The town is of considerable antiquity. Recent excavations and explorations conducted at Roopnagar indicate that the first civilized folk to settle here were the Harappans, who apparently reached the upper Satluj towards the close of third millennium B.C. Roopnagar District was carved out on 1st November, 1966 at the time of re-organization of the State. The District has rich historical and religious significance behind it.

2.1 LOCATION

Roopnagar district, included in the Patiala Division of Punjab falls between north latitude 30°-32' and 31°-24' and east longitude 76°-18' and 76°-55'. Roopnagar (formerly known as Ropar town) is a district headquarters. It is 42 Kms from Chandigarh, the state capital of Punjab. The district adjoins Nawanshahar, Mohali and Fatehgarh Sahib Districts of Punjab. The district comprises of 3 Tehsils namely Roopnagar, Anandpur Sahib and Chamkaur Sahib and includes 617 villages and 6 towns namely Roopnagar, Chamkaur Sahib, Anandpur Sahib, Morinda, Kiratpur Sahib and Nangal. All the towns except Chamkaur Sahib fall on railways line. The Satluj river passes close (2 to 5 km) to the towns of Nangal, Roopnagar and Anandpur Sahib.

2.2 Initial Steps

As a first step towards the preparation of Master Plan of Local Planning Area (LPA), Roopnagar, has been delineated and notified U/S 56(1) of "The Punjab Regional and Town Planning and Development Act (Amended), 2006" in the official gazette vide notification no.12/71/2006-4HGI/750, dated 27/02/09. The Local Planning Area, (LPA) Roopnagar includes one city and 129 villages. This Planning area spreads over an area of

24265 hectares (59960 Acre) serving a population of 1,35,947 persons. The detail of all settlements covered under the jurisdiction of LPA, Roopnagar is given in Annexure -1.

While delineating the LPA, Roopnagar the following factors mentioned in rule 22 of the Punjab Regional and Town Planning and Development (General Rules 1995) have been considered:

- Administrative boundary limits of the villages, the tehsils, the districts, and the state have been followed for better identification and management of the Local Planning Area, Roopnagar
- Geographical features of the area like Canal network and drainage .
- For better accessibility, the means of transportation and communication have been considered for better development of the area.
- The present and future growth trends and distribution of the population is another important factor considered for delineation of this area.
- Economic base and commercial activities of the city and their surrounding areas are also taken care of.
- Urban expansion trends and management of periphery areas for ecological and environmental balance have also been kept in view.

2.3 HISTORICAL BACKGROUND

The town of Roopnagar is of considerable antiquity. The town is said to have been founded by a Raja called Rokeshar who ruled in the 11th century and named Roopnagar after his son Rup Sen . The recent excavations carried out at Roopnagar have proved that this town was the seat of well developed Indus Valley Civilization. In proto - Historic Punjab perhaps Roopnagar is the only known excavation site which can claim the status of a small town or city. The finds in recent excavations consists of earthen wares, statues, coins, etc. That proves that the city dates back to Harrappa - Mohanjodaro civilization which crossed Satluj river. Many of them settled at this place. In the excavations many things found belongs to Chandra Gupta, Kushan, Hoon and Mughal period. One of rare finds is a seal of Marble on which there are three letters engraved in Sindhi script. One of the finds is the statue of a woman dressing her hair. All these

prove that even the people living in this town 4000 years back, were fully civilized and well cultured.

Many historians are of the view that when the first man descended from the mountains in the North to plains, he settled down at Roopnagar. A Mount is still preserved by the Archeology Department at Roopnagar.

S. Hari Singh Rais of Sialba conquered Roopnagar in 1763 A.D. and established his state . His son Charat Singh made Roopnagar capital of the state.

After the fall of Sirhind in 1763, Roopnagar came under the sikhs Chief Hari Singh. The most famous ruler of Roopnagar state was Raja Bhup Singh, who fought in the anglo-sikhs war of 1945. on the side of Maharaja Dalip Singh, the minor successor of Maharaja Ranjit Singh , against the British. Consequently, after the victory of the British, Roopnagar state of Raja Bhup Singh was confiscated.

The history of Roopnagar district is in fact the war of Guru Gobind Singh Ji against Mughal tyranny, exploiters and social evils. It is here in this district at Sarsa Nangal that the great Guru parted with the family and proceeded to Chamkaur Sahib where his two elder Sahibzadas laid down their lives fighting for truth and Guru Sahib left for Machhiwara on a constant struggle.

The other important historical place in this District is Kiratpur Sahib situated on the banks of the river Satluj. This town was established by 6th Guru Shri Guru Har Gobind Singh Ji after buying Land from Raja Tara Chand of Kehloor through Baba Gurditta Ji. It is said that Guru Nanak Dev Ji made a professy regarding the establishment of this place. It is here at this place that Guru Nanak Dev Ji met saint Buddan Shah in a Jungle. It is here in Sheeshmahal that Guru Hargobind Sahib stayed from Sammat 1691 till the end came. Shri Guru Har Rai Ji and Shri Guru Harikrishan Ji were also born at this place and they were blessed with Guru Gaddi at this place. It is here at Gurdwara Patalpuri Sahib that Sikhs from all over the world immerse the ashes after death. Even the Babhuti of Shri Hari Krishan Ji was

brought from Delhi and established at this place. About a half-mile away from Kiratpur Sahib the Takia of Saint Buddan Shah is situated.

Anandpur Sahib, a historical town in this district was founded by 9th Guru of Sikhs Shri Guru Teg Bahadar Ji after buying Land in Village Makowal in 1723 A.D. It is at this place that the great 9th Guru performed penance to commemorate the Gurudwara Bhaura Sahib built at Anandpur Sahib. It is also here at Anandpur Sahib that Kashmiri Pandits approached 9th Guru to save them from Mughal Tyranny. Acceding to their request on the motivation of Guru Gobind Singh Ji, Shri Guru Teg Bahadar Ji left for Delhi to make Supreme Sacrifice. At Anandpur Sahib the great 10th Guru of Sikhs Shri Guru Gobind Singh Ji spent his early age. It is here that the great Guru mastered the use of arms in Kila Anandgarh Sahib.

Further it was at Anandpur Sahib in Roopnagar District that Shri Guru Gobind Singh Ji created Khalsa in 1699 on Baisakhi Day and brought about a cultural revolution. It was the most important landmark in the history of Sikhs. The Khalsa created by Guru Gobind Singh Ji later on acquired the sovereign power of Punjab under Maharaja Ranjit Singh. The creation of Khalsa at Anandpur Sahib is the most important event not only in history of Roopnagar district, but also in the history of the Sikhs and Punjab. Gurudwara Keshgarh Sahib at Anandpur Sahib still commemorates the memory of the historical event as Guru created Khalsa at this place.

Another most important landmark historic event had been added to the history of the district, when in April 1999, 300th Birth of Khalsa was celebrated at Anandpur Sahib. Besides lacs of people from all walks of life from all over of the world, heads of important religious, social, political and administrative personalities participated in the Tercentenary functions and paid obeisance at Gurudwara Takhat Shri Keshgarh Sahib. Historic City of Anandpur Sahib has been developed as tourist center. Khalsa heritage Memorial complex is being constructed.

2.4 Physiography and Climate

The climate of Roopnagar District is characterized by general dryness (except in the south-west monsoon season), a hot summer and a bracing cold winter. The year may be divided into four seasons. The period from about middle of November to February is the cold season. This is followed by the summer season from March to about the end of June. The south-west monsoon season commences late in June and continues up to about middle of September. The period from mid September to the middle of November constitute the post-monsoon or transition season. The temperature ranges from minimum of 4° C in winter to 45° C in summer. May and June are generally hottest months and December and January are the coldest months. Relative humidity is high, averaging about 70 percent during monsoon. The average annual rainfall in district is 775.6 mm. About 78 percent of the annual rainfall is received during the period from June to September. The soils of the District vary in texture generally from loam to silty clay loam except along the Sutlej River and chos where some sandy patches may be found. Chamkaur Sahib and Kharar blocks have sodic soils. The soils of Anandpur Sahib and Roopnagar blocks are undulating.

2.5 CITIES / TOWNS IN ROOPNAGAR DISTRICT

2.5.1 Roopnagar

Roopnagar city also has the status of district headquarters with the creation of Roopnagar District on 1st Nov, 1966. Situated on the bank of river Satluj, Sirhind canal passes through the heart of the city. It was formerly known as Ropar.

The town of Roopnagar occupies a prominent place in the ancient and medieval history and has an importance in modern history too. Recent excavations suggest that Roopnagar was one of the oldest towns in the Punjab. The relics excavated from a mound, known



as Nalagarh Tibbi near the Government College reveal that the town had flourished in the past with a very advanced civilization similar to Harappa and Mohenjodaro Civilization.

The small city of Roopnagar occupies a prominent place in the modern history also. It was here under a "Peepal Tree" that a memorable meeting between Maharaja Ranjit Singh and Lord William Bentick took place on 26th October, 1831 during which various boundary issues were settled.



Near the Roopnagar Headworks there is a Tourist Bungalow and Boating Complex known as Pincassia, run by Punjab Tourism Development Corporation. The complex provides boarding and lodging facilities to the visitors and has a restaurant and beer bar.

Almost all the district offices which were scattered in different parts of the town have been concentrated in a single building known as 'Mini Secretariat'.

The city has many worth seeing sites in and around it, such as Head Works, Pincassia Boat Club, Treaty Place of Maharaja Ranjit Singh and Lord William Bentick, Site of Indus Valley Civilization, Maharaja Ranjit Singh Bagh, Gurudwara Bhatha Sahib and Gurudwara Sadabarat.

2.5.2 Anandpur Sahib

On the left bank of the Sutlej river, 40 kilometers from Roopnagar town, is situated Anandpur Sahib, the "abode of bliss". In the background is the Naina Devi range. The town of Anandpur Sahib was founded by Guru Teg Bahadur, the ninth Sikh Guru. The Guru had left Baba Bakala in the Amritsar district and purchased the land from the Raja of Bilaspur.

It was also at Anandpur Sahib that Kashmiri Pandits approached ninth Guru to save them from Mughals tyranny. Acceding their request on the motivation of Guru Gobind Singh Ji, Shri Guru Teg Bahadur Ji left for Delhi to make Supreme Sacrifice. At Anandpur

Sahib Great tenth Guru of Sikhs Guru Gobind Singh Ji spent his early age. It was here that great Guru mastered the use of arms in Kila Anandgarh Sahib.

The most important of the complex of shrines at Anandpur Sahib is Gurudwara Keshgarh Sahib, which stands on the place where the "Khalsa" was born. It is regarded as one of the five sacred "Takhts" or seats of Sikh religion. In 1699, on the Baisakhi day (13th April), Tenth Master Guru Gobind Singh Ji created Khalsa by baptizing five beloved Sikhs known as "Panj Piaras".



The Holla Mohalla of Anandpur Sahib is an outstanding festival of the Sikhs, which is celebrated with great pomp and show on the day following the Holi festival.

Guru Gobind Singh came to this town in 1674 when he was only eight years old and he spent about 25 years, the major part of his life in Anandpur Sahib. The town became the rallying point of his struggle against Mughal oppression and the surrounding areas, were scene of many a battle. It was here that the Guru introduced a new form of baptism and called baptised Sikhs as 'Khalsa' or the pure ones, giving them the common surname Singh (lion). The town has a number of Gurudwaras like Gurudwara Keshgarh Sahib, Gurudwara Manji Sahib, Gurudwara Sis Ganj, Gurudwara Bhora Sahib, Gurudwara Anandgarh Sahib and Gurudwara Mai Jito associated with the ninth and tenth Gurus of the Sikhs.



The famous Sri Dashmesh Academy and Guru Teg Bahadur Museum are also situated at Anandpur Sahib.

It is worth mentioning that the Birth Tercentenary of Khalsa was celebrated during April 1999 at Anandpur Sahib in which important dignitaries from all walks of life from



all over the world including Vice President of India, Prime Minister of India and various other political and religious leaders participated. Anandpur Sahib, the birth place of Khalsa has also been developed as a tourist center. It has also been made "White City".

2.5.3 Chamkaur Sahib

Situated on the banks of Sirhind Canal, Chamkaur Sahib is at a distance of 15 km from Morinda and 16 km from Roopnagar. Guru Gobind Singh and his two elder sons and 40 followers had come to this place from Kotla Nihang with his pursuers close on his heels. They came in the garden said to be of Raja Bidhi Chand, where now Gurudwara Damdama Sahib stands. There are several Gurudwaras at this place marking the visits and halts of Guru Gobind Singh.



Gurudwara Katalgarh Sahib also known as Gurudwara Shahidganj. Occupies a unique place among all the Gurudwaras located at Chamkaur Sahib. It is built at the site where Baba Ajit and Baba Jhujhar Singh, elder sons of Guru along with his 37 followers fell fighting against the Mughal Army.

2.5.4 Kiratpur Sahib



Situated on the bank of river Sutlej, Kiratpur Sahib is at a distance of about 10 km from Anandpur Sahib towards the south, on the Nangal-Roopnagar-Chandigarh road. It is sacred to the Sikhs and they immerse the ashes of their dead at this place. It has a

long association with most of the Sikh Gurus. Guru Nanak Dev is said to have visited this place when it was little more than a wilderness, Guru Hargobind, the sixth Guru spent the last few years of his life here. There are several Gurudwara at this place like Gurudwara Charan

Kamal, Gurudwara Baba Gurditta, Tomb of Baba Buddan Shah, Gurudwara Bavangarh, Gurudwara Pata Puri and Gurudwara Shish Mahal.

2.5.6 Morinda

Morinda is situated on the state highway connecting Chandigarh and Ludhiana and also on Sirhind -Nangal Railway line. It is at a distance of about 25 KMs from the district headquarters and 30 km from Chandigarh.



Morinda is an old town which is believed to trace its name from Mor Jats. With the lapse of time, it came to be known as Moran and then Morinda. It is also known as Baganwala (the place of Gardens), because of numerous gardens of mango trees in the area. Even though the mango growers have largely disappeared, many people of this area continue to call it Baganwala.

In the middle of the town centre is an ancient gumbad believed to be of the time of Aurangzeb. This is built of small bricks and has gates on all sides.

Gurudwara Shahid Ganj in Morinda was built in the memory of Baba Fateh Singh and Baba Zorawar Singh, the younger sons of Guru Gobind Singh.

First co-operative Sugar Mill was also set up at Morinda to consume the sugarcane, which is a major crop of the area.

2.5.7 Nangal



Situated at the feet of the Shiwalik Hills, Nangal is at a distance of 60 km from Roopnagar, the district headquarters. The City is surrounded by beautiful environment of hills, river and canals and is an important center for tourists visiting the district.

It is divided into two parts, Nangal Township and Naya Nangal. The town was named Nangal by acquiring land of three villages viz. Nangal Nikku, Hambewal and Dubheta. It gained importance with the starting of the construction of Bhakra Dam on Satluj river in November, 1955. It is flourishing township of tourist attraction due to the mighty multi purpose Bhakra Project which includes apart from Bhakra Dam, the Nangal Dam, Nangal Hydel Channel, Ganguwal and Kotla Power Houses.

Towards the north stands the beautiful township called Naya Nangal which serves mainly Fertilizer Complex of National Fertilizers Limited (NFL), a public sector undertaking of Government of India. The Nangal Fertilizer and Heavy Water Factory located here, started production in 1961 and is the single largest consumer of electricity from the Bhakra Power House.

Overlooking the Nangal like, Gurudwara Vibhour Sahib presents a majestic view. This Gurudwara is situated at a distance of 5 km from Nangal. Guru Gobind Singh is said to have mediated at this place.

There is a Dharamshala known as Shri Balbahadur Mal Kuthiala Dharamshala situated on the bank of Satluj River, which provides free accommodation to the visitors. Inside it, there is a temple of Lakshmi Narain which is run by the Sanatan Dharam Sabha, Nangal Township. Suitable facilities have been provided in various rest houses for the boarding and lodging of visitors. Punjab Tourism Development Corporation runs a Tourist Bungalow known as Kabamba.

At a distance of 4 km from Nangal Township is a temple of Shiva, known as 'Shiv Ashram' situated on the outskirts of village Mojowal on the Nangal-Bhallan road. This Ashram was founded by Swami Giangiri who first lived in a small hut near the bank of river Satluj. There are a free Ayurvedic dispensary and a dental clinic in the Ashram. Fairs are held on Shivratri, Nirjale Ekadashi Vyas Puja every year.

2.6 PLACES OF HISTORICAL, RELIGIOUS AND TOURIST INTEREST

2.6.1 Takhat Sri Keshgarh Sahib

The most important of the complex of shrines at Anandpur Sahib is Gurudwara Keshgarh Sahib, which stands on the place where the "Khalsa" was born. It is regarded as one of the five sacred "Takhts" or seats of Sikh religion. It is on the main Roopnagar-Nangal road and one has to walk up a cobbled path to reach the shrine, built on the hillock. Climbing up some steps, Darshani Deorhi has to be crossed first then comes the large open marbled quadrangle at the



end of which steps lead up to the central shrine. In the centre of the hall is a room displaying twelve weapons used by Guru Gobind Singh in battle. There is an imposing dome on the hall with a golden kalas on the top. A big serai of about 200 rooms is also attached.

It was here in 1699, on the Baisakhi day (13th April), Tenth Master Guru Gobind Singh Ji created Khalsa by baptizing five beloved Sikhs known as "Panj Piaras". At the behest of the Guru, thousands of people had assembled on the hill where now Gurudwara Keshgarh Sahib stands. The Guru appeared before the congregation with a naked sword in his hand and told that his thirsty sword demanded the life of a volunteer. A deep hush fell over the crowd. Ultimately, Daya Ram, a Khatri of Lahore came forward. The Guru took him to a tent and returned with his sword with blood. He asked for another head and Dharam Dass, a Jat from Delhi offered himself. Three more similar calls brought out Mohakam Chand, a washerman of Dwarka, Sahib Chand, a barber from Bidar and Himmat Rai, a water carrier from Jagan Nath Puri.



From the tent in which these five followers had been taken, Guru Gobind Singh brought out the five Sikhs dressed in new clothes, blue turbaned with loose long yellow shirts, a waist band

round their waists, with sorts of Knicker-bockers worn as underwears and with swords dangling by their sides. It was an inspiring sight. The Guru told the congregation that these were his Five Beloved Sikhs (Panj Payaras), and he baptized them by offering them Amrit (the nectar of immortality) he had prepared by dissolving Sugar Bubbles (Patasa) in water sanctifying the sweetened water by stirring it with double edged sword (khanda) and reciting the holy verses. The Guru himself took the Amrit from the Panj Payaras, thus removing the distinction between himself and followers. On that day, Guru Gobind Rai became Guru Gobind Singh. The Panj Payaras were enjoined to embrace the five symbols of the new Sikh faith, Kes (unshorn hair), Kangha (comb), Kara (steel bracelet), Kachha (short drawer) and Kirpan (sword). The ceremony gave followers of Guru, a new identity which was to prepare the Sikhs for their struggle against the Mughal State and influence the future of the country.

2.6.2 Gurudwara Parivar Vichhora Sahib



Gurudwara Parivar Vichhora Sahib is situated adjacent to the canal near village Nangal Sirsa, at a distance of about 14 Km from Roopnagar. It has a lofty flight of 84 steps leading upto the top. Guru Gobind Singh along with his family and followers came to this place leaving the Fort of Anandpur Sahib, He had not yet reached the bank of the Sirsa River, 15 Km to the east when he was attacked by a strong contingent under Wazir Khan, the Governor of Sirhind. When the Guru was heavily engaged, another detachment of the Mughals delivered an assault on the first batch halting on the river bank. A fierce battle took place here in which most of Guru's followers lost their lives. It is the place where Guru was separated from his family and then preceded towards Kotla Nihang along with his two elder sons and 40 followers. The Guru's mother and his two younger sons were taken by Gangu, an old domestic servant of the family to his native village, Saheri near Morinda. Mata Sunderi and Mata Sahib Devi, the wives of the Guru were taken to Delhi in the guise of rustic women. A gurudwara called Parivar Vichhora Sahib marks the site where the family of the Guru was separated. The construction of the gurudwara was started in

1963 and completed in 1975. A big fair lasting for three days is held here annually in the month of December

2.6.3 Gurudwara Bhatta Sahib

Gurudwara Bhatta Sahib is situated in the village Kotla Nihang, at the outskirts of Roopnagar town. It was built in the memory of Guru Gobind Singh. After leaving Anandpur Sahib, the Guru pursued by the enemy reached Kotla Nihang and asked the Pathans there to give him shelter. The latter, jestingly pointed out to a lime-kiln as the only fit place for him to stay. The story goes that the Guru led his horse straight to the kiln and on his approach, the fire miraculously went out. The Pathans hearing of this miracle invited the Guru to their house. The Guru gave them certain gifts (weapons) and left for Chamkaur Sahib the next day unknown to his pursuers. The Gurudwara was built at the site of the kiln by Baba Jiwan Singh in 1914.



2.7 Major Development Events

In the end of the 19th century, in 1892 the most important development event in the history of Roopnagar town was digging of Sirhind Canal from Satluj river at Ropar headworks to Doraha (Malwa). In addition to this, in 1925 Old Mandi site (Near Sub Jail Ropar) was also established. Both these events boosted the economic and physical development of the town.

Notified Area Committee upgraded to Municipal Council in 1948 and is known as Municipal Council. In 1950 Construction of Water Works (by bringing and serving the canal water) now known as old water works located near Trust office was also established.

As far as education is concerned, the first recognised D.A.V high school was established in the year-1923 to serve the people of the town. The detail of events of development milestones in Roopnagar are listed in table below:

Table 1: Detail of Development Milestones in Roopnagar

Sr. No.	Year	Events
1	1833	Treating between Maharaja Ranjit Singh & Mr. William Betting (Governor Punjab) at the edge of Satluj River.
2	1892	Laying of Sirhind Canal from Satluj river(at Ropar headworks to Dorha(Malwa))
3	1902	Khalsa High School.
4	1923	D.A.V. High School.
5	1925	Old Mandi Site(Near Sub Jail Ropar)
6	1927	First Railway line Nangal –Ropar Sirhind City.
7	1948	Gandhi Public School.
8	1948	Municipal Council Roopnagar(Class-II)
9	1948	Old Tehsil Complex.
10	1950	Construction of water works (by bringing & serving canal water)now known as old water works located near Trust Office.
11	1951	Govt. College Roopnagar.
12	1954	Construction of Bridge on Satluj river at Roopnagar city.
13	1960	First Cinema-Kalyan Takki.
14	1967	Roopnagar was declared as District Headquarter.
15	1970	I.T.I Institute Roopnagar.
16	1983	Laying of sewerage system started
17	1984	Mini Secretariat Constructed.
18	1985	New Grain Market Roopnagar.
19	1992	New Water works in Giani Zail Singh Nagar.
20	1994	Girls Polytechnic College, Roopnagar.
21	2009	Indian Institute Technology College, Roopnagar.

2.8 Institutional and Planning Events

Besides the growth of trade and commerce, the industrial sector also started concentrating and contributing towards the growth of the town. The establishments of D.A.V High School in 1923 and Govt. College

Roopnagar in 1951 were the educational institutions which played a dominant role in the region. The detail of institutional and planning events is given in table below:

Table 2: Detail of Institutional and Planning Events in Roopnagar.

Sr. No.	Year	Events
1	1902	Khalsa High School.
2	1923	D.A.V High School.
3	1948	Gandhi Public School.
4	1951	Govt. College Roopnagar.
5	1958	First Town Planning Scheme.
6	1976	First Commercial Development Scheme.
7	1984	Mini Secretariat Constructed.
8	1985	New Grain Market Roopnagar.
9	1997	Lying down of Ropar bye-pass(incomplete)
10	2001	First approved Private Colony Sun- City.
11	2008	Notification Local Planning Area, Roopnagar u/s 56(1) of PRTPD(Amendment) Act,2006.

Keeping in view the growth of Roopnagar city and in order to check unplanned development, the development scheme was prepared by Improvement Trust in 1975 under Punjab Town Improvement Act, 1922 In order to ensure and regulate the development of Roopnagar city in a planned way the enactment of Punjab Regional and Town Planning and Development (Amendment) Act, 2006, the Government of Punjab has decided to prepare Master Plans for a number of cities and towns which also includes Roopnagar city. LPA, Roopnagar has been notified under section 56 (1) of Punjab Regional and Town Planning & Development (Amendment) Act, 2006 vide notification no 12/71/2006-4HG1/3224, dated 9/5/08. and amended Notification No. 12/71/06-4 HGI/750 dated 27/2/09.

2.9 Administrative Milestones

Roopnagar city is one of the earliest declared urban settlements of Punjab. It was notified as Notified Area Committee in 1948 and then upgraded to Municipal Council Class-II in 1948. It was made District headquarters in 1967. In order to develop the city in a planned way, Improvement Trust, Roopnagar was established in 1975. The details of Administrative milestones of Roopnagar city are given in table below:-

Table 3: Details of Administrative Milestones of Roopnagar

Sr. No.	Year	Milestones
1	1948	Municipal Council Roopnagar Class-II
2	1967	District Headquarter
3	1975	Improvement Trust , Roopnagar
4	2008	Notification Local Planning Area, Roopnagar u/s 56(1) of PRTPD (Amendment) Act, 2006.

2.10 Legal Framework for Preparation & Implementation of

Master Plan

The principal legislation governing regional and town Planning is the “Punjab Regional and Town Planning and Development Act, 1995 (PRTPD)” which was enacted in the year 1995 (Punjab Act No.11 of 1995) and amended in the year 2006 and is now known as “The Punjab Regional and Town Planning and Development (Amendment) Act 2006” (Punjab Act No 11 of 2006). This is an act to make provision for better planning and regulating the development and use of land in planning areas delineated for that purpose, for preparation of Regional Plans and Master Plans and implementation thereof, for the constitution of a Regional and Town Planning and Development Board, for guiding and directing the planning and development processes in the State, for the constitution of a State Urban Planning and Development Authority, Special Urban Planning and Development Authorities and New Town Planning and Development Authorities, for the effective and planned development of planning areas and for undertaking urban development and housing programs and schemes for establishing new towns and for matters connected therewith or incidental there to.

Prior to this enactment of the Act the town planning activity within urban areas was being governed by different legislations such as The Town Improvement Act 1922, The Punjab Municipal Act 1911, The Punjab Municipal Corporation Act 1976, The Punjab Urban Estates (Development and Regulation) Act 1964 etc and for areas falling outside municipal limits in the periphery of urban centers, there was ‘The Punjab Scheduled Roads And

Controlled Areas Restriction of Unregulated Development Act 1963(Now repealed) but no comprehensive legislation was available for the overall control and development at local and regional level.

2.10.1 The Punjab Regional and Town Planning and Development

(Amendment) Act 2006 (Main Provisions of the Law)

This act provides the framework for preparing Master Plans and Regional Plans and provides for the manner in which the use of land in the area of a planning authority is 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:

- (a) To consolidate, with suitable modifications, in one place laws dealing with the different aspects of urban development.
- (b) 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.
- (c) 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.
- (d) 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.
- (e) To make the whole programme of urban development mainly a self - sustaining and self - paying process.
- (f) 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.

- (g) 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.

The main provisions of the Act related to preparation of Master Plan are described below:

- (a) Section 56(1) enables declaration of Local Planning Areas (LPA) 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.
- (b) Section 57 provides for the state Government to designate Planning Agency for area declared as Local Planning Area.
- (c) Section 58 defines scope of Planning agency and provides that;
- The designated Planning Agency will work under the overall directions and control of the State Government.
 - The state Government may assign any or all of the following functions to the Designated Planning Agency, namely to
 - Carry out survey of the regional planning area, Local Planning Area, or a site for new town, as the case may be, and prepare reports on the surveys so carried out;
 - Prepare an existing land use map and such other maps as may be necessary for the purpose of preparing regional plan and outline master plan, a new town development plan or a comprehensive master plan, as the case may be;
 - Prepare a regional plan, an outline master plan, a new town development plan or a comprehensive master plan.
 - Subject to and in accordance with the directions of the Govt., a designated planning agency shall exercise all such powers as may be necessary or expedient for the purposes of carrying out its functions under this act and also perform any other functions which are supplemental, incidental or consequential to any of the functions specified in sub section (2) or as may be prescribed.

- (d) Section 59 deals with the preparation of present land use map and fixes six months time for this purpose, which may be extended by the State Govt. from time to time.
- (e) 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 –
- Indicate broadly the manner in which the land in the area should be used.
 - Allocate areas or zones of land for use for different purposes.
 - Indicate, define and provide the existing and proposed highways, roads, major streets and other lines of communication.
 - 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.
 - 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.
- (f) 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 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.
- (g) 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
- (h) 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 the approval by the state government.

- (i) According to Section 75, the Master Plan comes into operation from the date of publication, referred to in sub section 5 of Section 70.

Chapter XI of the Act also provides for “Control of Development and Use of Land in the area where the Master Plan is in operation”.

Chapter XII, Section 91 of the Act deals with the preparation of Town Development Schemes that can play a significant role in the implementation of Master Plan 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

Chapter XIV deals with “Control and Development along Scheduled Roads”

In addition to the The Punjab Regional and Town Planning and Development (Amendment) Act 2006 there are a few acts that have no direct bearing on preparation of Master Plan but have a definite role to play in the implementation of the proposals of the Master Plan. These are briefly described below;

(A) Punjab Apartment And Property Regulation Act, 1995

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 and for matters connected therewith or incidental thereto.

- It provides planned development by checking, controlling and regulating the activities of the private developers.
- It makes funds available for planned development.
- It provides land for social and physical infrastructure through the mechanism of planned development.

- It also has the provision to make social housing available at low prices for Economically Weaker Section of the society.

(B) Punjab Town Improvement Act, 1922

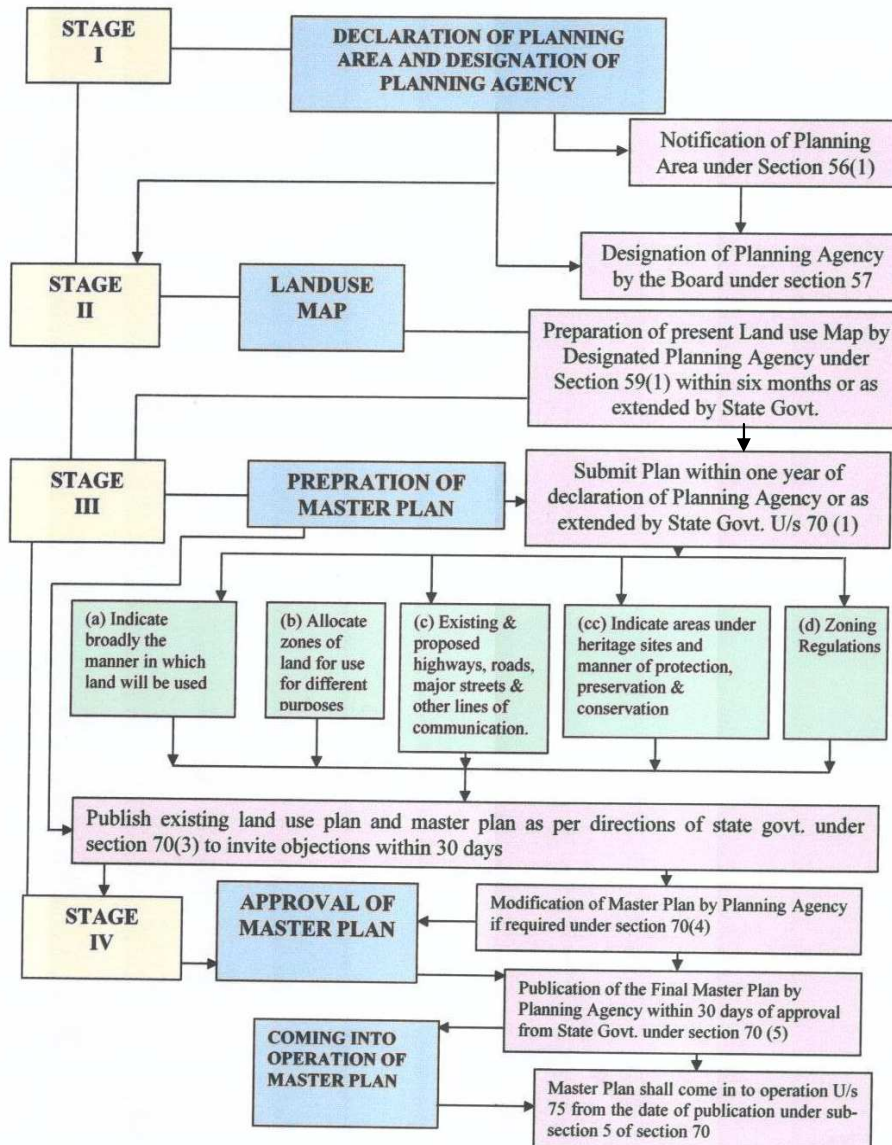
The Punjab Town Improvement Act, 1922 plays a significant role for the implementation of Master Plans in the following manner:

- It helps to provide planned development through the mechanism of Development Schemes.
- It makes land available for the development of social and physical infrastructure like schools, health, parks and playgrounds, and planned road network etc.

It also provides social housing to Economical Weaker Sections and thus helps to check the growth of slums.

The stages of preparation of Master Plan are shown in flowchart at figure below in a more elaborated way

Figure 1 : Stages of Master Plan Preparation



2.11 LOCAL PLANNING AREA ROOPNAGAR

In view of the strategic location and importance of Roopnagar, a proposal of Local Planning Area, Roopnagar was prepared for the purpose of preparation of master plan for the planned development of this town. While preparing the proposal, the following related matters mentioned in Rule 22 of the Punjab Regional and Town Planning and Development (General) Rules, 1995 were considered:-

1. Village boundaries for easy demarcation of Local Planning Area on the ground.
2. Geographic features for the disposal of rain water from rivulets;
3. Accessibility to the area from Chandigarh-Nawan Shahar road;
4. Industrialization due to the impact of Roopnagar;
5. Future economic & commercial activities of the area ;
6. Urbanization of the area during the next 20 years ; and
7. Transfer of economic activities of Chandigarh to Roopnagar after development of this urban centre.

CHAPTER III

3.1 POPULATION, HOUSING, ECONOMY AND EMPLOYMENT

3.1.1 Population Growth and Characteristics

Demographic profile of the area in terms of the population, growth rate, population density, literacy rate etc. helps in determining the social as well as the economic character of the area. The study has been done decade wise which helps in bringing out the trends of the growth rate, literacy level, sex ratio etc. of the LPA, Roopnagar & Roopnagar city. The study of population growth and characteristics plays an important role in defining the urban limits of a town/city. The following studies related to population growth and characteristics for Roopnagar city & LPA, Roopnagar have been conducted to know characteristics of LPA, Roopnagar & Roopnagar city.

3.2 POPULATION GROWTH

3.2.1 Local Planning Area, Roopnagar:

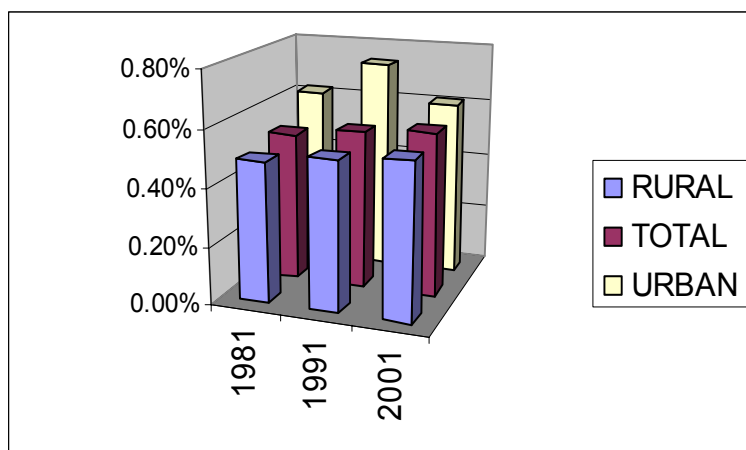
Local Planning Area, Roopnagar includes only one urban settlement i.e. Roopnagar and 129 villages. Local Planning Area experienced growth rate of 32.07% and 22.23% during the year 1981 - 1991 and 1991 - 2001 respectively. Thus showing a decline in the population growth rate during the last decade which might be due to the weakening of the economic base of the city. Roopnagar is the only one urban settlement of its LPA, with population of 49,159 persons in 2001. The growth trend of population of Punjab State and LPA, Roopnagar is given in table below:

Table 4: Population Growth Rate of Punjab State and LPA, Roopnagar: 1981-2001

	POPULATION			GROWTH RATE IN %	
	1981	1991	2001	1981-91	1991-2001
PUNJAB STATE *					
TOTAL	16.79	20.28	24.36	20.79	20.12
URBAN	4.65	5.99	8.25	28.82	37.73
RURAL	12.14	14.29	16.11	17.71	12.74
* POPULATION IN MILLIONS					
LPA, ROOPNAGAR					
TOTAL	84211	111222	135947	32.07	22.23
URBAN	25165	37996	49159	50.91	29.38
RURAL	59046	73226	86788	24.01	18.52

Source: Census of India, Punjab 1981, 1991, 2001,

Table above depicts that growth rate of total population of LPA, Roopnagar has decreased from 32.07 % during 1981- 91 to 22.23 % during 1991- 2001 decade. Similarly the growth rate of urban population i.e. of Roopnagar city of LPA, Roopnagar has also decreased from 50.91% to 29.38% and also low when compared to urban growth rate of Punjab which is about 37.73% during the last decade. But in case of rural population, the growth rate of rural population of LPA, Roopnagar is about 18.52% during 1991-2001 which is on the higher side than that of Punjab state which is about 12.74%.

Figure 2 Population Growth of LPA,Roopnagar.

Besides above, growth trends have also been analyzed in terms of share of population of LPA, Roopnagar to the State population. As far as the share of total population of

LPA, Roopnagar to total population of state is concerned it has increased from 0.50% in 1981 to 0.54 % in 1991 and then increased to 0.56% in 2001. Also the share of urban population of LPA, Roopnagar showed an increasing trend from 0.54% in 1981 to 0.63% in 1991 and has declined to 0.59% in 2001 whereas the share of rural population is constantly increasing from 0.48% in 1981 to 0.54% in 2001 during this period as shown in table below:

Table 5: Share of LPA, Roopnagar in Punjab state

YEAR	1981	1991	2001
TOTAL	0.50%	0.54%	0.56%
URBAN	0.54%	0.63%	0.59%
RURAL	0.48%	0.51%	0.54%

Source: Census of India, Punjab 1981, 1991, 2001

3.3 Roopnagar City

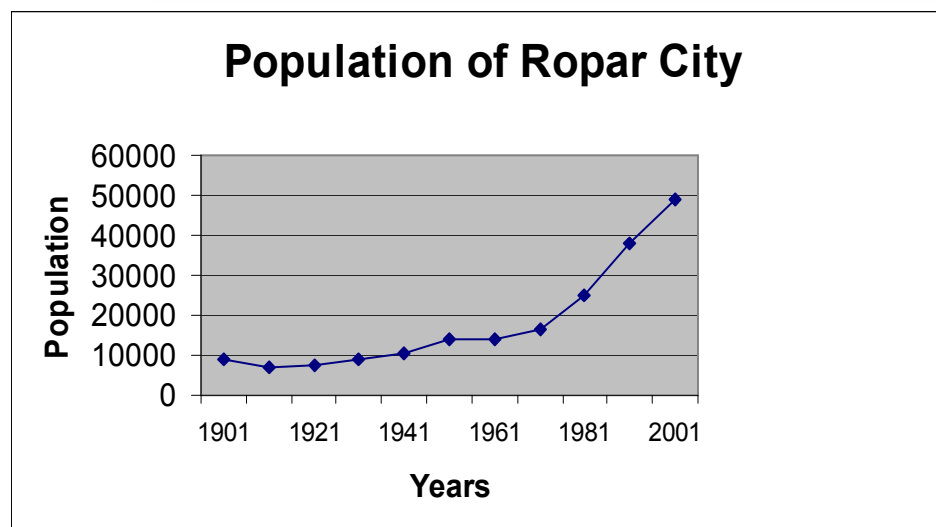
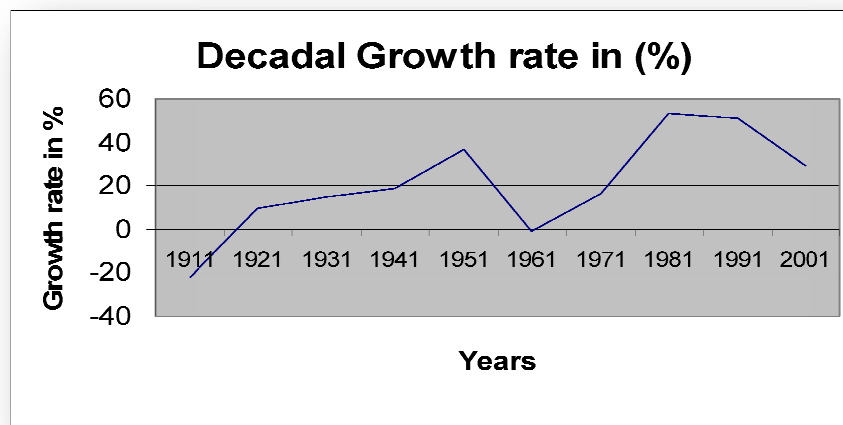
As already stated that Roopnagar (Distt. Headquarter) is the only urban settlement of LPA, Roopnagar. Its share in the total population of Punjab has increased from the year 1981 to 2001. Share of population of Roopnagar city to the total urban population of the state was 0.59% in the year 2001. Roopnagar city recorded a lowest growth rate of 9.68% during 1911-1921 and had a population of 7606 persons only in the year 1921. However, the city registered high growth rates of 52.94% and 50.98% during the decades of 1971-81 and 1981-91 respectively. Roopnagar City registered a negative growth rate of .054% in 1951-61 decade which can be attributed to out migration from the city. During the years 1971-81 & 1981-91 some important projects like DCM, SWARAJ MAZADA, RANBAXY and THERMAL POWER PLANT etc. came to city which contributed to the growth rate of city population. The detail of population growth of Roopnagar city from 1901 to 2001 is given in table below:

Table 6: Population Growth Rate Roopnagar city: 1901-2001

Years	Population Of Roopnagar City	Decadal Growth Rate in(%)
1901	8888	-
1911	6935	-21.97
1921	7606	+9.68
1931	8764	+15.22
1941	10385	+18.50
1951	14213	+36.86
1961	14136	-0.54
1971	16454	+16.39
1981	25165	+52.94
1991	37996	+50.98
2001	49159	+29.38

Source: Census of India, Punjab 1901 – 2001

Figure 3: Growth of Population of Roopnagar City: 1901-2001



The growth trends of urban population in Punjab and that of Roopnagar city are given in table below:

Table 7: Growth trends - Urban Population in Punjab and Roopnagar 1971-2001

Years	Urban Population of Punjab (Persons)	Decadal Growth Rate of Urban Population of Punjab (in Percent)	Population of Roopnagar M.C.(Persons)	Decadal Growth Rate of Population of Roopnagar City (in Percent)
1971	3216179	-	16454	-
1981	4647757	44.51	25165	52.94
1991	6038717	29.93	37996	50.98
2001	8262511	36.82	49159	29.38

Source: Census of India, Punjab, 1971 to 2001

The study of above table shows that growth rate of Roopnagar city was 52.94% and 50.98% during 1971-81 and 1981-91 decade which was higher than that of Punjab. But during the 1991- 2001 decade, the growth rates of Roopnagar city were lower than that of Punjab i.e. 36.82%. The decreasing trend in growth rate of Roopnagar city is perhaps due to closure of many industrial units.

3.4 POPULATION DENSITY

The gross population density of Roopnagar city has constantly increased during the period of 1971-1991, from 6.58 persons per hectare in 1971 to 10.07 persons per hectare in 1981, 15.20 persons per hectare in 1991, 19.66 persons per hectare in 2001. Therefore the analysis of population density is done keeping this area in view.

Table 8: Population density of Roopnagar city 1971-2001

Year	Population (Persons)	City Area (In Hectares)	Density in Persons/hectare
1971	16454	2500	6.58
1981	25165	2500	10.07
1991	37996	2500	15.20
2001	49159	2500	19.66

Source: Census of India, Punjab 1981, 1991, 2001 & Municipal Council, Roopnagar

The density of population within the municipal limits is not uniform over the city. It varies from ward to ward as given in the table below:-

Table 9: Ward-wise Population Density of the Roopnagar city-2001

Sr.No.	Ward No.	Ward-wise population	Area in acres	Density Persons/Acre
1	Ward No.1	3330	120	27.75
2	Ward No.2	3185	138	23.08
3	Ward No.3	2946	148	19.91
4	Ward No.4	2455	29	84.65
5	Ward No.5	2867	98	29.25
6	Ward No.6	3994	165	24.21
7	Ward No.7	1922	64	30.03
8	Ward No.8	2478	119	20.82
9	Ward No.9	2449	78	31.40
10	Ward No.10	3703	87	42.56
11	Ward No.11	2182	94	23.21
12	Ward No.12	2824	84	33.62
13	Ward No.13	2434	86	28.30
14	Ward No.14	3212	188	17.08
15	Ward No.15	2599	162	16.04
16	Ward No.16	2763	186	14.85
17	Ward No.17	3816	177	21.56
Total		49159	2023 [819 Hect.]	

Source: Census of India, Punjab, M.C Roopnagar, 2001

Inter census comparison of ward wise density is however not possible as ward boundaries and number of wards have been changing over the years. The density gradient as per 2001 census shows that ward no. 7,9,10 and 12 are having a gross density of more than 30 persons per acre with the distinction of highest density of 84 persons per acre in ward no.4 and the lowest only 14.85 persons per acre in ward no. 16.

3.5 Age structure

The age structure or age distribution is given by age groups. The age groups of below 19 is having 33.82% of city population and in age group of 20-39 category, population stands for 22.93 %. About 25.11 % of population falls in age group of 40-59 and whereas only 15.53 % of population lies in the group of more than 60 years. The breakup of different age group is given in table below:

Table 10: Age structure of Roopnagar city for the year 2001

Age group	Total			% of total population
	Persons	Males	Female	
All ages	49159	26057	23102	
0-9	7360	4120	3240	14.97
10-19	9265	5015	4250	18.85
20-39	11275	6045	5230	22.93
40-59	12345	6220	6125	25.11
60+	7635	4065	3570	15.53
Age not stated	1279	592	687	2.60

Source: Census of India , Punjab,1981,1991,2001

3.6 Sex Ratio

According to 1981 census, there were 845 females for every 1000 males in LPA, Roopnagar. In 1991, the sex ratio improved to 854 which showed a rising trend in sex ratio but in 2001 the sex ratio again improved to 860. In case of Roopnagar city also, the sex ratio increased from 869 in 1981 to 879 in 1991 and then increased to 886 in 2001. The sex ratio of Punjab State 2001 was 876, which is on lower side as compared to Roopnagar city.

The detail of sex ratio is given in table below:

Table 11: Sex Ratio of Roopnagar City and LPA, Roopnagar: 1981-2001

Year	Roopnagar city				Local Planning Area, Roopnagar			
	Total Population	Males	Females	Sex Ratio	Total Population	Males	Females	Sex Ratio
1981	25165	13459	11706	869	84211	45644	38567	845
1991	37996	20212	17784	879	1112220	59978	51244	854
2001	49159	26057	23102	886	135947	73243	62704	876

Source: Census of India, Punjab 1981, 1991, 2001

3.7 Caste composition

The total Scheduled Caste population in LPA, Roopnagar is 35949 persons which is 26.44 % of the total population as per 2001 census. SC population of LPA, Roopnagar

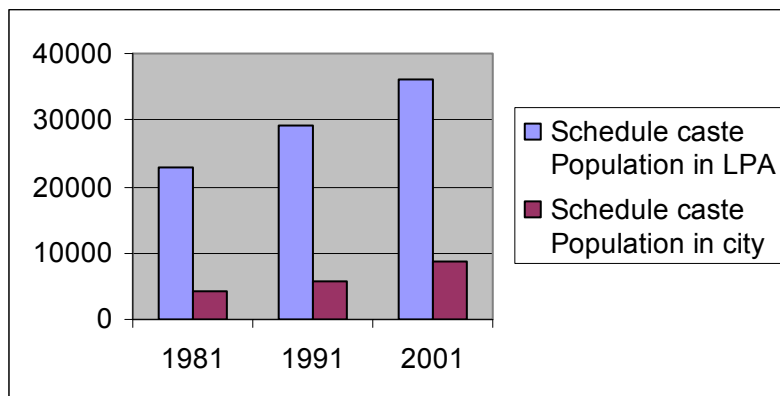
is decreased from 26.88% in 1981 to 26.44% in 2001. The percentage of SC population of Roopnagar city decreased from 17.57% in 1981 to 17.53 % in 2001. The average SC population in Punjab State is 28.85%, which shows that percentage of SC population in LPA, Roopnagar is less than that of Punjab. The detail of scheduled caste population of LPA, Roopnagar and Roopnagar city from 1981 to 2001 is given in table below:

Table 12: Schedule caste population & percentage of S.C population to total population 1981-2001

Sr. No	Year	LPA, ROOPNAGAR		ROOPNAGAR CITY	
		Schedule caste Pop./Total Pop	%age of SC Pop. to total Pop.	Schedule caste Pop./Total Pop.	%age of SC Pop. to total Pop.
1.	1981	22638/84211	26.88	4246/25165	17.57
2.	1991	29102/111222	26.16	5718/37996	15.04
3.	2001	35949/135947	26.44	8618/49159	17.53

Source: Census of India, Punjab- 2001

Figure 4: Caste Composition of LPA, Roopnagar and Roopnagar city 1981 - 2001



3.8 Literacy Rate

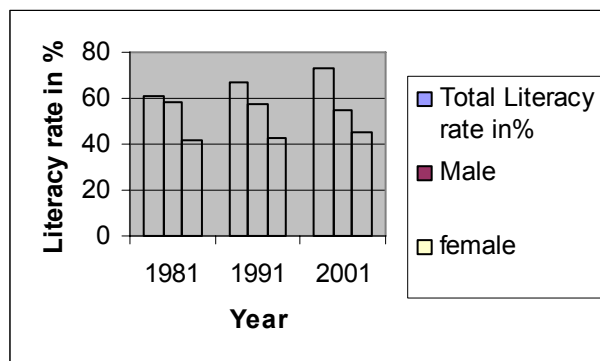
Table below depicts that the literacy rate is increasing in LPA, Roopnagar. The literacy rate in 1981 was 49.76%, which increased to 59.52% in 1991 and further rose to 69.05% in 2001. Out of total literate persons in the year 1981, 62.04% were males and 37.96% were female. As per trend literacy rate of female increased from 37.96% in 1981 to 42.99% in 2001 in LPA, Roopnagar. The literacy rate is shown in table below:

Table 13: Literacy rate of LPA, Roopnagar 1981-2001

Sr. No.	Year	Total Population	Total literates	Literacy rate (%)	Males Literacy		Females Literacy	
					Number	%age	Number	%age
1.	1981	84211	41905	49.76	25997	62.04	15908	37.96
2.	1991	111222	66197	59.52	39705	59.98	26492	40.02
3.	2001	135947	93874	69.05	53518	57.01	40356	42.99

Source: Census of India, Punjab 1981, 1991, 2001

Figure 5: Literacy Rate of LPA, Roopnagar 1981 – 2001



The study of below table shows that literacy rate in case of Roopnagar city is also on the increasing trend. It was 60.59% in 1981 whereas it increased to 73.34% in 2001. The literacy rate of females was 41.39% in 1981 and it increased to 45.11% in 2001 whereas in case of male literacy it has decreased from 58.62% to 54.89% in 2001.

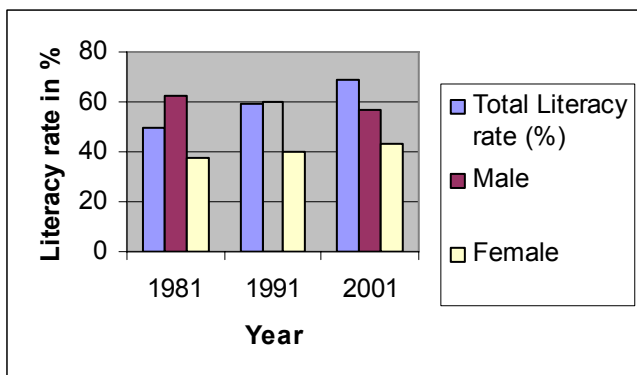
Literacy rate of LPA, Roopnagar is lower as compared to the Punjab state i.e. 70% in 2001. It means there is a still need to make aware people about the education, and there is need to strengthen the existing education system by way of opening the new educational institutions at different levels in LPA, are taking into account the requirements of the today's society.

Table 14: Literacy rate of Roopnagar City: 1981-2001

Sr. No.	Year	Total Population	Total literates	Literacy rate in %	Males Literacy		Females Literacy	
					Number	%age	Number	%age
1.	1981	25165	15249	60.59	8938	58.62	6311	41.39
2.	1991	37996	25497	67.10	14532	57.00	10965	43.00
3.	2001	46159	36052	73.34	19789	54.89	16263	45.11

Source: Census of India, Punjab 1981, 1991, 2001

Figure 6: Literacy Rate of Roopnagar City 1981 – 2001



3.9 ECONOMIC BASE

For ascertaining the economic base of District Roopnagar a study has been carried out with regard to the non-workers and workers engaged in different activities. The study is based on census data which can be relied upon for assessment of workforce. The study points out that 2001 census listed out 15350 workers and 33809 non-workers out of population of 49159 persons in Roopnagar city. They constituted 31.22% and 68.77% of the population, respectively.

3.9.1 Work force Participation & Employment

Table below depicts that the percentage of workers is increasing both in LPA, Roopnagar and Roopnagar city during the last decades. Increase in workers participation means new opportunities in trade & commerce & tertiary sector. In the case of LPA, Roopnagar the percentage of workers to the total population has been marginally increased from 29.67% in 1981 to 29.98% in 1991 and then again increased to 36.00% in 2001. However, the workforce participation rate has increased from 30.64% in 1981 to 31.22 % in 2001 in case of Roopnagar city. There are 64.00% non-workers in LPA, Roopnagar and 68.78 % non-workers in Roopnagar city as per census 2001. The detail of workers and non-workers is given in table below:

Table15: Workers and Non-workers of LPA, Roopnagar & Roopnagar city (1981–2001)

Year	LPA ROOPNAGAR					ROOPNAGAR CITY				
	Total Population	Total workers	%Age	Non workers	%Age	Total Population	Total workers	%Age	Non workers	%Age
1981	84211	24990	29.67	59221	70.33	25165	7710	30.64	17455	69.36
1991	111222	33342	29.98	77880	70.02	37996	11596	30.52	26400	69.48
2001	135947	49063	36.00	86884	64.00	49159	15350	31.22	33809	68.78

Source: Census of India, Punjab 1981, 1991, 2001

In case of Roopnagar city, the workers engaged in primary activities i.e. cultivators decreased from 2.62% to 1.0% in 1981 and 2001 respectively as given in table. The household industry after showing a decreasing trend during 1981-1991 i.e. 3.41% to 0.98% respectively again recorded an increase from 0.98% to 1.12% during 1991-2001.

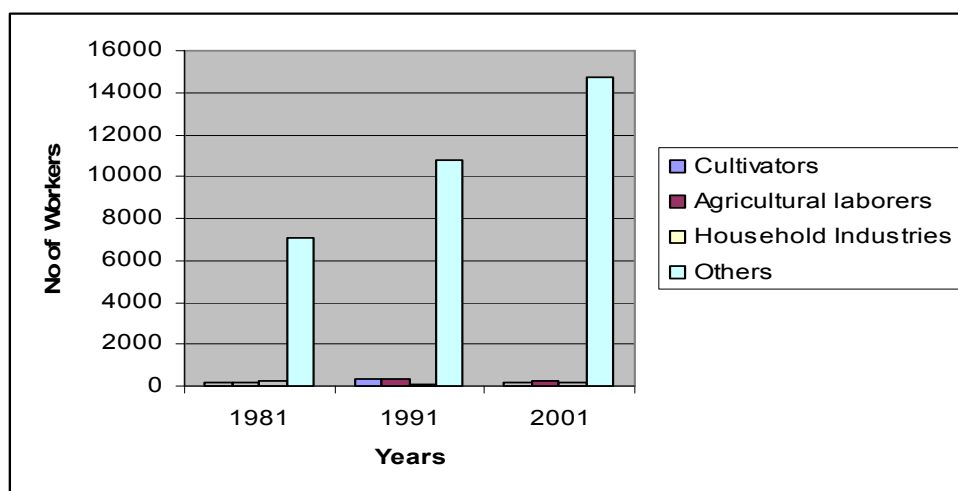
Similarly, the share of workers engaged in other activities recorded an increase from 91.54% to 93.66% in 1981 and 1991 and then increased to 96.27% in 2001.

Table 16: Occupational Structure of Roopnagar City: 1981-2001

Year	Total workers	Cultivators		Agricultural laborers		Household industries		Others	
		No	%age	No	%age	No	%age	No	%age
1981	7710	202	2.62	187	2.43	263	3.41	7058	91.54
1991	11596	325	2.80	355	3.06	113	0.98	10803	93.16
2001	15350	152	1.00	248	1.61	172	1.12	14778	96.27

Source: Census of India, Punjab 1981, 1991, 2001

Figure 7: Occupational Structure of Roopnagar City (1981 – 2001)



Source: Census of India, Punjab 1981, 1991, 2001

Table: 17: DISTRIBUTION OF MAIN WORKERS BY CATEGORY (2001)

Sr.No.	Category	No.of Males	No.of Females	Total No.of workers	%age to total workers
1.	Cultivators	129	10	139	0.94
2.	Agricultural Labourers	196	21	217	1.46
3.	Household Industry	137	30	167	1.12
4.	Others	12134	2212	14346	96.48
	Total	12596	2273	14869	100.00

Source: Census of India, Punjab 1981, 1991, 2001

Table: 18: DISTRIBUTION OF MARGINAL WORKERS BY CATEGORY (2001)

Sr.No.	Category	No.of Males	No.of Females	Total No.of workers	%age to total workers
1.	Cultivators	9	4	13	2.70
2.	Agricultural Labourers	29	2	31	6.45
3.	Household Industry	0	5	5	1.04
4.	Others	177	255	432	89.81
	Total	215	266	481	100.00

Source: Census of India, Punjab 1981, 1991, 2001

3.10 Housing and Slums

3.10.1 General

Housing is one of the basic human needs and ranks after food and clothing in terms of priority. Housing constitutes one of the most important parts of the social environment where an individual is nurtured, grows and matures as a human being, part of the society and as a citizen. Housing, in addition to making contribution to the quality of living also plays a significant role in improving the national economy and generation of employment. It does not provide merely a shelter but gives an identity to the human being besides making him better human being. Poor quality of housing or absence of appropriate shelter has considerable impact on the economy and productivity of human beings besides health and social environment. Housing has been considered to have critical role in maintaining the social health and stability and in ensuring the people a decent quality of life. Accordingly, housing has been placed high on the agenda of any national government committed to the cause of promoting human welfare. Considering the role and importance of housing in the national economy, productivity, industrial growth, employment and quality of life, a number of policies dedicated to creating affordable housing have been framed at the national level. The agenda of these policies have been focused on the ultimate goal of providing affordable housing for all.

As per Central Statistical Organization (CSO) estimate, the Housing Sector contributed 4.5% to India's Gross Domestic Product (GDP) in 2003-04 at current prices. The contribution of housing in urban areas to the GDP in 2003-04 was 3.13%. Further, the spotlight is focused on the fact that 16% of the Indian work force is engaged in Construction and Transport

Sectors. It is estimated that overall employment generation in the economy on account of additional investment in the Construction/Housing Sectors is eight times the direct employment (IIM Ahmedabad: 2005). In view of the substantial use of cement, steel, marble/ceramic tiles, electrical wiring, PVC pipes and various types of fittings, construction activity has a multiplier effect on industrial demand for these items.

Housing is not merely confined to the four-walls which make a house but also all supporting infrastructure which is required to sustain the human beings in terms of physical and social infrastructure. Accordingly, National Housing Urban Policy laid emphasis not only on providing affordable shelter but also creation of appropriate quantity and quality of essential services etc.

3.10.2 Growth of Housing in Roopnagar.

Housing is an activity, which is mainly driven by individuals to provide themselves with an appropriate shelter. With the rapid increase in population, number of houses has also recorded an increase. Besides individuals, different agencies like Improvement Trust, Roopnagar and Municipal council has also contributed to some extent to household stock in the Roopnagar city. Besides these, private colonizers have also made their share as plotted development by developing some colonies unauthorizedly and authorizedly in the city. In case of major cities of Punjab, various agencies like PUDA, Improvement Trust have framed many schemes of plotted development & multistorey houses. Although Roopnagar Improvement Trust has been contributed to the housing sector of the city. Eight development schemes have been executed by Improvement Trust Roopnagar so far. Out of these, four are of residential cum commercial nature and four are purely commercial schemes covering an area of approx. 183 acres. The detail of these schemes is given in the table below:

Table 19: Details of Development Schemes of Improvement Trust, Roopnagar

Sr. No.	Development Scheme	Location	Area (in acres)	Remarks
1	Dashmesh Nagar	Bela Road Part-1	30	Residential Cum Commercial (1989)
2	Beant Singh Aman Nagar	Bela Road Part-2	15	Residential-cum-Commercial (1991)
3	Saheed Bhagat Singh Nagar	Back side of D.C.Residence.	9	Residential-cum-Commercial (1992)
4.	Transport Nagar	Near Power Colony (PSEB)	25	Commercial (1996)
5.	Guru Nanak Market Scheme No.7	Near Ramlila Ground	0.5	Commercial (1999)
6.	Lord Krishna Market	Near Kalyan Cinema	1.5	Commercial (1986)
7.	Bhai Lalo Market	Near Kalyan Cinema	2	Commercial (1977)
8.	Giani Jail Singh Nagar	Opposite Govt. College	100	Residential-cum-Commercial (1976)
	Total		183	

Source: Improvement Trust, Roopnagar

Municipal council has also contributed to the Housing stock of the city by framing about 15 Town Planning and PUDA Schemes offering residential plots covering an area of approx. 240.004 Acres. The Town planning & PUDA schemes framed and approved by Municipal Council, Roopnagar, are tabulated as follows giving details about area and number of plots of each scheme.

Table 20: Detail of the Town Planning Schemes in Roopnagar

Sr. No.	Name of the Colony	Location	Area (in Acres)	Detail of Plots		Either fall in MC. Or not	Remarks
				Residential	Commercial		
1	Sun City	Relo Road	17.44	220	69	Yes	PUDA Approved.
2	Shivalik Enclave	Relo Road	12.87	168	53	Yes	PUDA Approved.
3	Gobind Vally	Majri Road	67.02	549	138	No	PUDA Approved.
4	Top Encalve	Relo Road	15.16	172	58	No	PUDA Approved.
5	Model Town Colony	Relo Road	25.36	245	56	No	PUDA Approved.
6	Kirti Vihar	Near Govt College Bela Road	6.0	80	18	Yes	PUDA Approved.
7	Sun City-II	Near Chotti Haveli	9.8	128	22	No.	Town Planning Approved.
8	Sun Encalve	Near Bela road	9.68	95	30	Yes	Town Planning Approved.
9	Sun Enclave-1	Near Bela Road	7.90	66	20	Yes	Town Planning Approved.
10	Satluj Enclave	Bela Road	9.36	94	52	No	Town Planning Approved.
11	Golden City	Nangal Road	4.46	58	9	No	Town Planning Approved.
12	J.J. Valley	Near Girls Polytechnic	7.194	63	17	No	Town Planning Approved.
13	Maharaja City	Morinda Road(Nearby)	9.58	91	20	No	Town Planning Approved.
14	Gillco Valley	Morinda Road	16.1	193	32	Yes	PUDA Approved.
15	Gillco Valley Ext.I	Morinda Road	22.08	218	45	Yes	PUDA Approved.

Source: Municipal Council, Roopnagar

CHAPTER- IV

4. EXISTING LAND USE AND TRANSPORT NETWORK

4.1 Existing Land Use: LPA, Roopnagar

The LPA, Roopnagar comprises 24191 hectares (241.91 sq.kms) of area as per revenue record whereas as per calculations of P.R.S.C. it works out to 24131 hectares (241.31 sq. km) variation of 0.24% only, which can be considered to be very negligible. Similar the area of municipal council Roopnagar is 2500 hectare - as per revenue record whereas as per the calculation of PRSC it works out to be 964.94 hectare (9.64 sq. km.). The areas of LPA, Roopnagar and M.C. Roopnagar as worked out by PRSC Ludhiana have been used for analysis of existing land uses and proposed land use plan. The detail of break up of existing land of LPA Roopnagar is given in table below:

Table 21: Existing Land Use LPA, Roopnagar -2010

NAME OF LANDUSE	Area in hect.	% age to the total area
Residential	1088.849	4.51
Old Built Up City (High density)	423.55	
Residential Area (Low density) including Village Abadias	665.299	
Commercial	96.601	0.40
Local /Retail Shopping Shopping Mall & Marriage Palace	62.817	
Whole Sale Market, Fruit & Vegetables and Grain Market, Godowns, Ware Housing, Cold Storage	33.784	
Industrial	238.539	0.99
Small Scale, Medium & Large Scale Industry	-	
Recreational	103.50	0.43
Parks /Play ground / Parking	10.873	
Stadium & Sports Complex	15.897	
Religious Places	76.38	
Rural and Agricultural	21680.377	89.84
Forests	4267.79	
Agricultural Area	14344.011	
Plant Fruit Nursery and Orchard	48.956	
Dairy Poultry, Stud Farm and Bee keeping etc	1.692	
Pond/Water bodies, Swampy, Waterlogged	31.45	
Brick Kilns	5.017	
Plantation	222.383	
Canal & Distributory	246.00	

NAME OF LANDUSE	Area in hect.	% age to the total area
Drain	1335.90	
Cattle Shed	2.313	
Fallow	1175.27	
Traffic and Transportation	354.352	1.47
Rail Terminal and yard & Railway Station	1.460	
Round about	0.094	
Bus Terminal and depot	1.75	
Truck Stand	13.315	
Major Roads/Other Roads	337.32	
Katcha Rasta	0.412	
Utilities & Services	22.566	0.09
Power house/Sub Station & Electric Grid	4.114	
Sewerage Disposal area	0.642	
Solid Waste dumping/ Sanitary landfill	0.071	
Water works	9.926	
Toilets	3.836	
Rest House	3.977	
Government	111.879	0.47
Government /Public Office	43.59	
Govt Land	68.289	
Public & Semi-Public	369.833	1.53
Hospital and Health institution	6.505	
Educational And Research Centre Specialised Educational institutes	341.674	
Social and Cultural	0.784	
Cremation and Burial grounds	20.87	
Reserved Area	65.298	0.27
Total	24131.44	99.99

source: PRSC, PAU, Ludhiana

LPA, Roopnagar covers the revenue estates of 129 villages and one urban centre i.e. Roopnagar. Besides this, LPA, Roopnagar is comprised of mostly agricultural land and orchards. The detail of breakup of major existing land uses is given in Table above. The existing land use has been shown in Drawing No. DDTP(R) 8/2010 dated 15.8.2010.

4.2 Existing Land Use: Roopnagar city

LPA, Roopnagar comprises 2500 hectares (as per 2001 census) 964.94 hectares (as per P.R.S.C) covering the land of 129 villages and one urban centre Roopnagar. The total area of Municipal Council of Roopnagar in the Year 2009 is 2500 hectares as per census and 964.94 hectares as per PSRC calculations.

The detail of major existing land uses within the M.C. Limits is given in table below:

Table 22: Existing Land Use Roopnagar City -2010

NAME OF LANDUSE	Area in hect.	% age to the total area
Residential	207.671	21.52
Residential Area (Medium density)	207.290	
Residential Area (Low density) including Village Abadias	0.381	
Commercial	53.499	5.54
Local /Retail Shopping Shopping Mall & Marriage Palace	29.645	
Whole Sale Market, Fruit & Vegetables and Grain Market, Godowns, Ware Housing, Cold Storage	23.844	
Industrial	0.376	0.038
Small Scale, Light and Service Industry	-	
Medium & Large Scale Industry	-	
Recreational	26.623	2.76
Parks /Play ground / Parking	5.328	
Stadium & Sports Complex	10.553	
Religious Places	10.742	
Rural and Agricultural	423.39	43.88
Agricultural Area	121.423	
Plant Fruit Nursery and Orchard	75.909	
Dairy Poultries, Stud Farm and Bee keeping etc	0.214	
Pond/Water bodies, Swampy, Waterlogged	1.093	
Canal & Distributory	24.972	
Drain	7.289	
Cattle Shed	0.150	
Fallow	192.340	
Traffic and Transportation	114.453	11.86
Rail Terminal and yard & Railway Station	1.070	
Round about	0.094	
Bus Terminal and depot	1.751	
Truck Stand	10.013	
Major Roads/Other Roads	101.525	
Utilities & Services	10.012	1.04
Power house/Sub Station & Electric Grid	3.313	
Sewerage Disposal area	0.642	
Solid Waste dumping/ Sanitary landfill	0.071	
Water works	2.562	
Toilets	3.424	
Government	75.222	7.79
Government /Public Office	40.197	
Govt Land	35.025	
Public & Semi-Public	43.513	4.51
Hospital and Health institution	4.467	
Educational And Research Centre Specialized Educational institutes	34.676	

NAME OF LANDUSE	Area in hect.	% age to the total area
Social and Cultural	3.517	
Cremation and Burial grounds	0.853	
Reserved Area	10.188	1.06
Total	964.94	99.99

Source: PRSC, PAU, Ludhiana

4.2.1 Residential

It is very much clear from table that the residential use has a larger share of city area. Out of total Municipal area of 964.94 hectares about 207.671 hectares 21.52 % of area is under residential use which includes both planned and unplanned development. The gross density of the town is 19.66 persons per hectare. As far as planned residential development is concerned there are 15 T.P Schemes and 8 Development Schemes of Improvement Trust, Roopnagar, Four commercial cum residential development schemes and 4 commercial schemes under Punjab Apartment and Property Regulation Act 1995'.

4.2.2 Commercial

The commercial use is the most important use of the urban areas. It may have lesser share in area but plays an important role in city character. In case of Roopnagar city the total area covered under commercial use is 5.54% of the total M.C area. The main commercial center in Roopnagar City which acts as CBD of the city is known as Old Bazar of the old city. The commercial areas of the city lack adequate parking and other public amenities. The commercial area of the city is in the form of semi-organized bazars along streets and roads. Apart from this there are informal bazars in the form of temporary shops like Rehri walas, farhi walas and kiosks located in the existing commercial areas and near the old bus stand, railway station, grain market, and near other important economic activities. There are more than 250 numbers of rehri / informal shops existing in the various parts of the city. These activities are not of permanent nature and are using the roads therefore areas covered under this use are not shown separately.

The Wholesale grain market covering an area of about 23.844 hectares is located on Roopnagar - Kurali road near Bhatha Sahib Gurudwara. There is no planned site marked for other wholesale trades like timber, iron market etc.

4.2.3 Industrial

As Table depicts that the total area under industrial use is 0.376 hectares which is 0.038% of the total municipal area. The city of Roopnagar has medium and large scale industrial units like Cotton ginning Mills, Oil extraction mills and other agro based industries etc along with small scale industrial units dealing with products like manufacturing of utensils, farm implements, kin now polishing, cotton ginning etc.

4.2.4 Recreational

The total area under recreational use is 26.623 hectares which is 2.76 % of the total municipal area. In Roopnagar one city level park known as Maharaja Ranjit Singh Nagar Park is located near the Mini Secretariat and other parks near the Zail Singh Nagar , Aman Nagar and near I.T.Office etc. Recreational aspect is also covered in detail in part of social infrastructure .

4.2.5 Agricultural/Rural

There are some chunks of land falling within municipal limits which are still being used for agricultural purposes. The areas on the western side between the existing developed area and the proposed bye pass are largely under agriculture and orchards. 423.39 hectares are under agricultural use which is 43.88% of total area. Out of this category about 75.909 hectares of land is under Plant, Fruit Nursery, Orchard and 24.972 hectares of land is under canal and distributory system.

4.2.6 Traffic & Transportation

The total area under traffic and transportation is 114.453 hectares which is 11.86 % of the total M.C area, which is low as compared to norms and standards. The major problems related to this aspect are missing road hierarchy, lack of parking places, traffic bottlenecks, encroachment of roads, lack of traffic signals etc. The detailed study of traffic & transportation is also covered in the part under Existing Road and Rail network of Physical infrastructure. However, table depicts that out of this use major share i.e 101.525 hectares of total municipal

area is covered under main roads followed by railways which cover an area of 1.070 hectares. The details of existing road network and other uses relating to traffic transportation are shown in Existing Land Use Plan, Roopnagar Drg No. DDTP(R)8/2010 dated 15. 8.2010.

4.3 Existing Road Network

NH-21 and SH-24 pass through the city. An alternative road 60mt wide has been proposed for which the land has been acquired, this road takes off from the National Highway in front of Police line between Transport Nagar and Power Colony. This bye pass will be connecting the National Highway to I.I.T. Roopnagar and further will merge in SH-24 (Roopnagar- Nawashahar) near DCM Factory.

There is one National Highway i.e. N.H. 21, coming from Chandigarh and diverting to Manali. Besides this, there are other 7 main roads as detailed in table below.

The work of construction of National Highway within the LPA Roopnagar is under construction and after its completion there will be a Central median for smooth flow of Traffic. The detail of widths of Right of way, carriage way and length of major roads falling within M.C. limits and outside M.C. limits in LPA, Roopnagar are given in table below:

Table 23: Detail of Width of Right of Way, Carriage way and Length of Major Roads falling within M.C. limits and outside M.C. limits in LPA, Roopnagar

Sr. No.	Name of Road	Total (K.M)	Within MC			MC to LPA, Roopnagar		
			Road Length (KM)	Right of Way (feet)	Carriage Way (feet)	Road length (K.M)	Right of Way (feet)	Carriage Way (feet)
1	Chandigarh-Manali (NH-21) Road	23	6	102	54	17	180	74
2	Roop Nagar – Hoshiarpur Road (SH-24)	17	3	52	33	14	88	33
3	Kurali-Morinda (SH)	1	-	-	-	1	18	66
4	Roopnagar-Bela road (ODR)	12	2	52	22	10	66	24
5	Roopnagar-chamkaur Sahib road (Along with Sirhind road)	11	3	23	23	8	23	23
6	Roopnagar-Morinda Road (Old)	5	-	-	-	5	88	23
7	Roopnagar-Nurpurbedi Road (ODR)	5	-	-	-	5	37	17
8	Roopnagar By Pass (Incomplete)	2.5	1	100	33	1.5	100	22

Source: Field survey 2009

The existence of main roads in LPA, Roopnagar shows that this area is well served by the regional roads, which provide a high level of connectivity with other parts of the State. The length of Major roads is 76.5 km within the LPA Roopnagar boundaries out of which about 15 Kilometers fall within the limits of Municipal Council of Roopnagar. There is very good network of rural roads in LPA, Roopnagar as well.

4.4 Existing Road Intersections

While examining the road network of the city a total number of 15 road intersections have been identified within the limits of Municipal Council, which remain busy throughout the day. These road intersections are listed in the table below:

Table 24: Detail of Road Intersections in Roopnagar City

Sr. No.	Name of Junction	Type of Junction
1	Chandigarh-Manali Road (NH-21) with Roopnagar –Hoshiarpur road (SH-24)	Y-Junction
2	Roopnagar –Hoshiarpur road (SH-24)-Roopnagar Bela road	T-Junction
3	Roopnagar –Hoshiarpur road (SH-24)-Roopnagar Nurpur Bedi road Roopnagar Morinda Road –Roopnagar	T- Junction
4	Chandigarh-Manali Road (NH-21) Roopnagar Bye -Pass	T- Junction
5	Roopnagar Morinda Road –Roopnagar Chamkaur Sahib Road	Y-Junction
6	Roopnagar Morinda Road –Roopnagar bye pass	X- Junction
7	Roopnagar –Hoshiarpur road (SH-24)-Hospital Road –Roopnagar	T-Junction
8	Roopnagar –Hoshiarpur road (SH-24)-Katali road	Y-Junction
9	Roopnagar –Hoshiarpur road (SH-24)-Trust Road Roopnagar	T- Junction
10	Roopnagar –Hoshiarpur road (SH-24)-Railway Crossing meets (NH-21)	T- Junction
11	Chandigarh- Manali Road(NH-21)-Polytechnic Road	T-Junction
12	Chandigarh- Manali Road(NH-21)-Bhatha Sahib Road	T-Junction
13	Chandigarh- Manali Road(NH-21)-Kotla Nihang Road	Y-Junction
14	Chandigarh- Manali Road(NH-21)-Hussianpur Road	T-Junction
15	Chandigarh- Manali Road(NH-21)-Roopnagar Chamkaur Sahib Road	H-Junction

Source: Field survey 2009

The table above shows that out of 15 road intersections, 9 intersections are following in T-junctions , 4 are in Y- Junctions , 1 is in X- Junction and 1 is in H- Junction category .

4.5 Utilities & Services

Utilities such as Water Works, Electric Grid Station, (E.G.S) Sewerage Disposal Works, Solid Waste Dumping site and communication etc. cover an area of about 10.012 hectares which is only 1.04% of total municipal area. Some of the utilities like E.G.S. and Communication are evenly distributed in the city as it is clear from Existing Land use Plan LPA, Roopnagar whereas disposal works and Solid waste site are located on the western side of the city along Bela Chowk to Academy road.

4.5.1 Government and Semi-Govt

This use comprises the area under Govt/Semi Govt. offices and Govt. land. The total area covered under this use is 75.222 hectares which is 7.79% of the total M.C area. The existing Govt. offices are located in the Distt. Administrative Complex apart from this various other govt. offices are housed in govt. buildings which are scattered within the city.

4.5.2 Public & Semi-Public

This Use comprises the areas covered under Education, Health, Socio-Cultural, cremation grounds etc. The total area covered by this use is about 43.513 hectares which is 4.51% of total municipal area. The most of public and semi-public uses are concentrated in the central part of the city whereas few uses of this category are also seen in the outer parts of the city.

CHAPTER –V

5. Existing Infrastructure

5.1 Physical Infrastructure

5.1.1 Public Utility and Services

At present the water treatment plant of 1.4mgd in an area of 1.75 acres is located in Giani Zail Singh Nagar . It supplies water to the old city . At present there are 8 nos.of OHSR'S in various parts of the city in order to maintain the required water head. In order to meet the water requirement of the city, the water is lifted from Nangal Hydrel Channel and treated in the various treatment plants. In order to cater for water requirement of the newly developed areas near the old city four water works have been commissioned .The newly developed colonies have their own water supply arrangements and are self sufficient as far as water requirement is concerned.

5.1.2 Distribution System

As per data supplied by water supply and sanitation deptt. , there are 17 water supply and sewerage schemes in various parts of the city and the total length of water supply lines laid in the city is 22352 mts and the length of sewerage lines is 15628 mts. In addition to this the length of water supply installed in various govt. institutions is 20101 mts. and the length of sewer lines installed in these govt. owned institutions is 16025 mts.

5.1.3 Solid Waste Management

The sewerage treatment plant which caters for the treatment of sewerage water of the entire city is located in Shri Har Gobind Nagar. As far as solid waste management is concerned, the Municipal Council has been using a plot of 1.5acres in village Katli for dumping the solid waste.

5.1.4 Surface Water

During rainy days, there are several pockets which are low lying and are flooded due to excessive rains. The low lying areas in Roopnagar are located in villages namely Bada Phool, Nanowal , Rattanpur , Chupki , Khizarpur , Tapprian Ramgarh , Boothgarh , Bada Surtapur , Gharispur and the low lying areas of Distt. Nawan Shahar are Asron and Arazi Dariya Bramda Rail .

5.2 Social Infrastructure

5.2.1 Educational Facilities

Educational facilities have a formative effect on the mind, character or physical ability of an individual. These facilities include the institutions by which society, through schools, colleges, universities and other institutions accumulates knowledge, values and skills. These facilities help in pacing the economic development and employment of the urban areas and its hinterland. Roopnagar is the educational hub in its Local Planning Area, which serves not only the Roopnagar city but also its surrounding villages. There are quite a large number of institutes in Roopnagar city and LPA, Roopnagar which cater to the educational requirement of Roopnagar city as well as its surrounding villages. These institutes include Degree Colleges, Polytechnic College, Nursing Colleges, Rayat and Bahra Institutes, I.T.Is, I.I.T, Technical institutes affiliated to Punjab Technical University and other institutions. Govt. College of Roopnagar is the most oldest and famous institute of the city situated at Roopnagar. A B.Ed degree college also operates from its premises. In addition to these there is one Polytechnic college Roopnagar, One Management College, two Computer centres and three schools (Khalsa High School, D.A.V.High School, Gandhi Public School, located in different parts of the city which are fulfilling both technical and non technical educational requirements of Roopnagar city and LPA Roopnagar. These institutes are adequate as compared to the Norms and Standard prescribed in the UDPFI guidelines.

Besides the higher level of educational institutions which are catering to the needs in the fields of higher education, Roopnagar city and its Local Planning Area has number of schools at primary & secondary level which imparts education at school level. Presently there

are 102 primary and elementary schools and 27 high/higher secondary schools functioning in the rest of LPA, Roopnagar, whereas 20 primary and elementary and 15 High/ Higher/ Secondary schools are working in Roopnagar city.

Considering the existing population and norms & standards defined for educational institutions, quantitatively the number of institutions is adequate to cater the needs of the education of the city but qualitatively most of the institutions have been found to be deficient in the basic amenities and facilities. The condition of buildings of these institutions in a number of cases has been found to be poor. The classrooms are inadequate to provide appropriate space to the students and accordingly remain crowded. Number of classrooms is also on the lower side. Number of schools does not have adequate open spaces in the vicinity of such institutions. Space occupied by these institutions is also on the lower side when compared with the norms prescribed by various agencies. The situation remains critical particularly in case of educational institutions located within the old city area. Further number of institutions and academies has been found to be operating from residential houses and commercial buildings indicating shortage of space for educational institutions. As far the slum localities are concerned, most of them don't have primary level schools. This leads to lower level of literacy in slum areas which further decreases the skills and productivity of slum dwellers which keeps them in vicious circle of poverty. This calls for providing appropriate numbers of schools in these areas so that slum dwellers have better quality of life and enjoy good health. In view of this, it will be important that educational institutions operating in residential and commercial areas are shifted to appropriate sites earmarked for educational purposes. In addition educational institutions having less areas or absence of play areas etc. are provided with more land in order to meet the basic needs of the students. The new areas to be developed should have appropriate number of institutions imparting education at various levels. The following table shows the availability of educational facilities in Roopnagar and LPA, Roopnagar

Table 25: Educational facilities in LPA, Roopnagar and Roopnagar city

Sr. No.	Name of Facility	Existing in Numbers	
		Roopnagar city	Rest of LPA, Roopnagar
1	Primary & Elementary schools	20	102
2	High/Secondary Schools & Senior Secondary Schools	15	27
3	Colleges (Degree)	1	-
4	Technical Institutions	2	2
5	B. Ed Colleges	-	2
6	Homeopathy College	-	-
7	Nursing and Paramedical College	-	1
8	Management College	-	1
	Total	38	135

Source: DEO, Roopnagar and Census of India, Punjab 2001

5.2.2. Health Care

A health care provider is an organization that delivers proper care system in a systematic way to an individual in need of health care services. As per information available from census 2001 and field survey there are 97 units of medical facilities of different types providing health services to the residents of Roopnagar city, LPA as well as to the persons from outside the LPA. Out of these units there are 6 hospitals, 4 in Roopnagar city and two in different villages in LPA with a total bed capacity of 168. Total number of Sub Health Centers, Primary Health Centers and Dispensaries has been counted to be 33 in LPA Roopnagar out of which 3 are working in Roopnagar City and the remaining 30 are working in villages falling in LPA, Roopnagar. Besides these, there are 18 small clinics and 11 Nursing homes providing medical facilities to the inhabitants of Roopnagar city. Also about 25 private doctors and RMPS are looking after the health of the citizens of Roopnagar city. In addition to this, there are 4 Ayurvedic dispensaries in the LPA, Roopnagar In order to take care of animals and pets there are 8 Veterinary Hospitals and 14 Veterinary Dispensaries working in rest of LPA, Roopnagar

The details of different medical facilities available in Roopnagar city and Local Planning Area, Roopnagar is given in table below:

Table 26: Medical Facilities in LPA Roopnagar

Sr. No.	Name of the Facility	Existing in Numbers	
		Roopnagar City	Rest of LPA, Roopnagar
1	Sub Health Centre and Primary Health Centre /Dispensary	3	30
2	Hospitals	1+3 Pvt (100)	2 (25 Beds each)
3	Ayurvedic Dispensary	2	2
4	Ayurvedic Hospital	1	1
5	Homeopathic Dispensary	-	1
6	Homeopathic Hospital	-	-
7	Veterinary Dispensary	-	14
8	Veterinary Hospital	-	8
9	Nursing Homes	11	-
10	Small Clinics	18	-
	Total	39	58

Source: CMO, Roopnagar and Census of India, Punjab 2001

The study of health care system also reveals that due to lower number of govt. health care units in the city, health care becomes unaffordable for majority of the poor due to high charges of private hospitals. The numbers of beds available at Roopnagar are inadequate to meet the current level needs. In order to provide appropriate level of health care in the city, it will be important that sufficient number of sites should be created at the time of the zoning stage. Moreover spatial distribution of health care units with a proper hierarchy would be critical to serve the entire population.

5.2.3 Sports and 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. Accordingly, it would be important that city is divided into compact and sustainable communities and recreational facilities of appropriate order are made available to these communities residing therein. Recreational facilities have been found to exist in the shape of parks and open spaces, cinemas, stadiums, museums, sports related activities, clubs, library and amusement parks etc. Recreational facilities have also been divided into active and passive recreational facilities.

Provision of both these facilities has to be made in order to cater to the essential needs of the individuals and communities.

5.2.4 Parks and Open Spaces

As per the field studies conducted by the Deputy District Town Planner, Roopnagar and the data collected from Municipal Council, Roopnagar, there is one city level park known as Maharaja Ranjit Singh Park near Mini Secretariat. Besides this, there are seven neighborhood parks in the city. The most parts of the city are virtually lacking the parks and open spaces. The number of parks, location and area under these parks is given in table below:

Table27: Name, Location and Area under Parks, Roopnagar city:

Sr. No.	Name of Park	Location	Area in hectares
1	Maharaja Ranjit Singh Park	near Mini Secretariate	4.00
2	Park	Near Jail Singh Nagar	0.50
3	Park	Near I.T.Office	1.00
4	Park	Malhotra Colony	1.75
5.	Park	Malhotra Colony Part 2	2.00
6.	Park Beant Singh	Aman Nagar	2.00
7.	Park	Sr. Bhagat Singh Nagar	1.50
	Total area		12.75

Sources: M.C Roopnagar and Field study

All the above parks cover an area of about 12.75 hectares. Major parts of the Roopnagar city have been developed in unplanned way, so most of these do not have parks and open spaces. Similarly old parts of the city also lack parks and open spaces. So the existing land for parks and open spaces is inadequate and don't match the planning norms and standards. Thus there is need to create additional parks and properly locating these all over the city.

5.2.5 Cinemas & Multiplexes

There are 2 cinemas in the city catering to the entertainment needs of the residents. These are located near Bhai Lalu Market and J.R. Theater near Dana Mandi, Roopnagar. Besides this, no new cinema or multiplexes are coming up due to slow development of the city. Almost all the Cinemas have adequate space for parking but the location in older parts and on narrow streets/roads are causing traffic problems.

5.2.6 Other Recreational facilities

In addition to the above there are 4 libraries/reading rooms, one stadium and one indoor Badminton stadium and swimming pool in the Roopnagar city which provide recreational facilities to the general public. However, any well organized cultural or drama club has not been noticed in the city thus city is lacking the facility of good theater. There is no Art Gallery etc. in the city for recreational purposes.

CHAPTER- VI

6. VISUALISING THE FUTURE

6.1 Population Projections 2031

The population is the basic human factor for which planning is done. The requirements of different types of infrastructure for Roopnagar city and for surrounding villages of LPA, Roopnagar in 2031 would be based on the projected population for that year and also migration of population that seeks livelihood in the city. For the purpose of population projections, following two methods have been applied:

1. Ratio method or sharing pattern method
2. Extrapolation method: Extrapolation of the past trends and assuming that the trend will continue in future.

In addition to this, the government policies and the opportunities affecting the growth of Roopnagar city and rural areas of LPA, Roopnagar have also been kept in mind.

The following table gives the detail of decadal growth rate of population of Roopnagar city, population of rural areas and total population of LPA, Roopnagar:

Table 28: Growth Rate of Population of Roopnagar city, Rural Area and LPA, Roopnagar – 1981, 1991, 2001

Year	Roopnagar City		Rural		Total	
	Population	Growth rate (in percent)	Population	Growth rate (in percent)	Population	Growth rate (in percent)
1981	25165	-	59046	-	84211	-
1991	37996	50.99	73226	24.01	111222	32.07
2001	49159	29.38	87120	18.97	135947	22.23

(Source: Census of India, Punjab, 1981, 1991, 2001)

6.2 Population Projection by Ratio Method or Sharing Pattern Method

In order to achieve more realistic picture of projected population it has been decided to follow the share of urban and rural population of LPA, Roopnagar to the total urban and rural population of Punjab state. Report of the technical group on Population projections constituted by the National Commission on Population entitled "POPULATION PROJECTIONS FOR INDIA AND STATES 2026" has provided projection of Punjab urban, Punjab rural and their share in the total population of the state up to year 2026 as represented in table below:

Table 29: Projected Population of Punjab Total, Punjab Urban and Punjab Rural 2001-2026

Year	2001	2006	2011	2016	2021	2026
Punjab Total	24359	26059	27678	29112	30323	31345
Punjab Urban	8263	9439	10681	11940	13185	16456
Percentage Urban	33.92	36.22	38.59	41.01	43.48	52.50
Growth rate of Punjab Urban in %	-	14.23	13.16	11.79	10.43	24.81
Punjab Rural	16096	16620	16997	17172	17138	14889
Percentage Rural	66.08	63.78	61.41	58.99	56.52	47.50
Growth rate of Punjab rural in %	-	3.28	2.26	1.03	-0.20	-13.14

(Population in Thousands)

The percentage share of Roopnagar city and rural population of LPA, Roopnagar to total urban and rural population respectively of Punjab is calculated and is given in table below:

Table 30: Percentage share of Roopnagar city and Rural Population of LPA, Roopnagar to Total Urban and Rural Population of Punjab 1981-2001

Percentage share of Roopnagar city to the Total Urban Population of Punjab			Percentage share of Rural Population of LPA, Roopnagar to Total Rural Population of Punjab		
1981	1991	2001	1981	1991	2001
0.54	0.63	0.59	0.48	0.51	0.54

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

For projecting the urban population i.e. of Roopnagar city, the percentage of urban population (Roopnagar city) is derived from the total urban population of Punjab in year 2001 which comes out as 0.59%. This figure of 0.59% has been used constantly for projecting the urban population for Roopnagar city for the year 2006, 2011, 2016, 2021, 2026 and 2031. Besides this, the floating population of about 5% has also been added to the projected population.

Similarly, for projecting the rural population of LPA, Roopnagar, the percentage share of LPA, Roopnagar's rural population has been derived from total rural population of Punjab in the year 2001 which comes out as 0.54% and the same has been used constantly for projecting rural population up to the year 2031. The Projected population of Roopnagar city and LPA, Roopnagar rural is given in the table below:

Table 31 Urban and Rural Areas and LPA, Roopnagar

Year	Roopnagar City			Rural Areas		LPA, Roopnagar	
	Projected Population	Total Projected Population including 5% of total as floating Population	Growth Rate (in percent)	Projected Population	Growth rate (in percent)	Projected Population	Growth Rate (in percent)
2006	55000	57750	-	94500	-	150000	-
2011	61000	65000	12.55	111000	17.46	164000	9.33
2016	67000	70500	8.46	127500	14.86	178000	8.53
2021	73000	76600	8.65	144000	12.94	192000	7.86
2026	79000	83000	8.35	160500	11.46	206000	7.29
2031	85000	89000	7.23	177000	10.28	220000	6.80

6.3 Population Projection by Extrapolation Method:

Apart from above method, another method is extrapolation of past trends and assuming that the trend will continue in future. The average growth rate of Roopnagar city for past two decades 1981-1991 and 1991 -2001 comes out 40.14% whereas for rural areas it is about 21.46% for past. For calculating the projected population of Roopnagar city, the average growth rate of 40% is assumed for 2011 - 2031. For rural areas, taking into account the trend of growth of LPA, Roopnagar rural, overall growth pattern and Projection of rural areas of Punjab, the growth rate for the decade 2011 - 2031 is assumed as 23% .The above future rates of growth for Roopnagar city and rural areas of LPA, Roopnagar have been projected on certain assumptions given next to table below. The projected population of Roopnagar city, rural areas of LPA, Roopnagar and LPA, Roopnagar up to year 2031 is given in table below:

Table 32: Projected Population for Roopnagar City, Rural Areas of LPA, Roopnagar and LPA, Roopnagar

Year	Roopnagar City		Rural Areas		LPA, Roopnagar
	Population	Growth Rate in % age	Population	Growth rate in %age	
2011	69000	-	107600	-	178000
2021	96600	40	132500	23	231400
2031	135240	40	163000	23	300420

(Source: Census of India, Punjab 1971, 1981, 1991, 2001)

The following table gives the comparative picture of projected population for Roopnagar city, rural areas and LPA, Roopnagar for 2031 by two methods:

Table 33: Comparison of Projected Population of Roopnagar City, Rural Areas, LPA, Roopnagar by Two Methods with base year 2001.

Method	Roopnagar City Projected Population	Rural Areas Projected Population	LPA, Roopnagar Projected Population
Method 1	85000	177000	220000
Method 2	135240	163000	300420

6.4 Workforce Projections

For calculating the workforce projection of MC, Roopnagar:

(i) Roopnagar town

Category wise Employment data is available for Roopnagar town To estimate category wise employment, for the year 2031 certain assumptions have been made as:

- Employment Pattern of Roopnagar town will be same as observed in 2001
- Employment pattern of other towns will be similar to District Urban – (excluding Roopnagar Municipal Council.)

Table No.33a: Existing Total Workers and Employment Category Wise of Constituent Areas of LPA Roopnagar

Data and assumptions 2001		Roopnagar(M Council) 2001	Total Workers as % of Population and categories as % of Total workers
Population		49159	
Total workers		15350	
A	Cultivators	139	0.9
B	Agriculture Hunting Forestry	217	1.4
C	Household Industry	167	1.2
D	Others	14346	93.5
E	Marginal Workers	481	3

Table No.34: Employment Forecast for LPA Roopnagar, 2031

Data and assumptions 2031			Forecast
			Roopnagar (M. Council)
Population			85000
A	Main workers		25559
	Cultivators		237
	Agriculture Hunting Forestry		369
	Household Industry		316
	Others		24637
B	Marginal Workers		791
	Total workers		26350

6.5 Population Density

6.5.1 Existing Land Use Plan:

The area under 129 villages is 1092.83 hectares (2699.29 acres) and the population in the year 2001 was 87120. The density comes to 32 persons per acre.

The area in the city limits is 207.671 hectares (512.94 acres) and the population was 49159 in the year 2001. The density comes to 95 persons per acre.

6.5.2 Proposed Land Use Plan:

The proposed land use area under LPA under residential use is 2298.031 hectares (5676.13 acres) and the population projected in the year 2031 is 2,20,000 . The density comes to 38 persons per acre.

The proposed land use area in the city limit is 538.649 hectares (1330.46 acres) and the population projected till 2031 is 85,000 . The density comes to 63 persons per acre.

6.6 Infrastructural Proposal

6.6.1 Water Supply and Distribution

Within the Roopnagar LPA, there is already water service available to serve existing developments in the built-up areas and villages. However, that will not be able to support the various developments planned for the entire LPA. In order to realise the proposals put forth in the master plan, a centralized water supply and distribution system will be needed.

6.6.2 Water Demand Projection

Projection of future demand for water is a very crucial step needed in order to determine water resource allocation.

6.6.3 Water demand assumptions

The following assumptions have been adopted to derive the water demand requirement for the Roopnagar LPA:

- *Unit water demand:*

Land Use	Unit Water Demand*
Residential	250 lpcd
Rural Settlements	100 lpcd
Industrial	45 cum/ha/d
Commercial, Institutional, Utilities	45 cum/ha/d
Roads	5 cum/ha/d
Green Area	60 cum/ha/d

* lpcd = litre per capita per day.

* cum/ha/d = cubic metre per hectare per day.

- *Fire fighting demand:*

Fire demand in kilolitres per day is worked out using the formula $100\sqrt{p}$, where p = population in thousands.

- *Water transmission and distribution losses:*

The total water loss of 15% comprises 5% of transmission loss and 10% of distribution loss.

- *Workforce consumption:*

This has been incorporated into the respective unit demand.

- *Recycled water:*

This will be used mainly for irrigation purposes.

- *Green area:*

10% of each plot's area is to be set aside as green area. This applies for residential, commercial, industrial, institutional and utility uses. Recycled water will be used for watering the green and for gardening.

- *Water demand for agriculture land:*

This has been excluded for the projection of water demand .

6.6.4 Water demand estimation

The estimated water demand requirement for the LPA by Year 2031 is 154 MLD. This comprises 104 MLD of potable water and 50 MLD of recycled water.

Since the sewage treatment plant for Roopnagar can only generate about 80 MLD of recycled water.

Table 35: Projected water demand (Year 2031*)

Potable	Recycled	Total
104	50	154

6.7 Proposed Water Supply and Distribution System

The proposed water supply and distribution network have been designed in accordance with international standards, modified where appropriate to conform to local conditions in India.

The network is based on the grid-iron system, where all arterial and secondary mains are looped and interconnected to eliminate dead ends. This system will facilitate water circulation and prevent it from stagnating, so that it will not develop tastes and odours.

Specifically, two independent supply and distribution systems have been proposed: One is for potable water and the other, recycled water.

6.7.1 Potable water supply and distribution

To achieve sustainable development, various water sources have to be tapped upon, including:

- Surface water;
- Ground water; and
- Rainwater.

Among these, surface water will be the main source of potable water because of its availability and reliability. Ground water and rainwater collected act to supplement any shortages in supply.

As the service corridor within the typical road sections does not include water supply lines, dedicated reserves are needed. The proposed potable water supply main is shown in Figure

Each of the proposed water works will serve users located within its respective water distribution zone. Clear water will be channeled to these users via the potable water distribution main

6.7.2 Recycled water supply and distribution

As stated earlier, a separate system has been proposed for the supply and distribution of recycled water. Sewage generated from the LPA will be collected and sent to the sewage treatment plant STP 7 for treatment up to the tertiary level. This will meet the requirements for the purpose of irrigation.

6.8 Surface Water Drainage

The proposed surface drainage system for the Roopnagar LPA is based on projections up to Year 2031. It is designed to adhere to the existing terrain as much as possible, with existing rivers and canals serving as discharge outlet points. By channeling storm water and surface

runoff from the roads and various development plots into the existing rivers, the risk of flooding is mitigated, especially during the wet season between July and September every year. According to the Metrological Department, the amount of annual rainfall in the GMR varies between 900 mm to 1,000 mm. The wet season is typically from July to September every year.

6.9 Land Use Requirements

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

Table No.36: Stage Wise Residential Area Requirements for Roopnagar L.P.A (2011-2031)

Town	Year	No. of Families	Net Land Required in hectare (Assumed 1 family plot)	Gross Land in hectares
Roopnagar M.C	2011	12200	271	542
	2016	13400	298	596
	2021	14600	324	648
	2026	15800	351	702
	2031	17000	378	756
Roopnagar Rural	2011	22200	493	986
	2016	25500	567	1134
	2021	28800	640	1280
	2026	32100	713	1426
	2031	35400	787	1574
Total	2011	30000	667	1334
	2016	32800	729	1458
	2021	35600	791	1582
	2026	41200	915	1830
	2031	44000	978	1956

Note: Assumed family size = 5

50% area is assumed under convenient shopping, roads, parks & open spaces and public buildings etc.

Assumed 1 family per plot

Table No.37: Area of Commercial Centers

Name of Centre	Area per 1000 persons (sq.m.)	Number of shops
Cluster Centre	220	1 for 110 persons
Sector Centre	300	1 for 200 persons
Community Centre	500	1 for 200 persons
District Centre	880	1 for 300 persons
Total	1900	

As per the figures given in the table above 1900 sq. mts. area for different categories of commercial areas has been proposed for 1000 persons thus 1.9 sq. mts (say 2 Sq. mts.) area is required per person.

Table No.38: Commercial Area Requirements for Urban Areas of LPA Roopnagar

Sr .No	Name of Town	Projected Population (2031)	Commercial Area Required@ 2 sq. m. per person (In Hectares)
1	Roopnagar M.C	85000	17 ha
	Total		17 ha

Informal trade

Table No.39: Norms for service markets and organized informal bazaars

Sub Town level (DC/CC)		Community level(LCS/CC)
Population	About 5 lakhs	About 1,00,000
	Service market	
Area (Ha.)	6.0	0.2
Activities permitted	Service and repair activities like auto work shops, fruit and vegetables, general merchandise, hardware and building materials, gas godowns etc.	Service and repair activities like auto work shops, fruit and vegetables, general merchandise, hardware and building materials, kabari etc.
	Informal bazaar	
Area (Ha.)	5.0	0.1
Activities permitted	Informal shops, weekly markets, organized eating places, handicraft bazaar, used book/furniture/building materials bazaar, cycle and rickshaw repair, kabari etc.	Informal shops, weekly markets, handicraft bazaar, cycle and rickshaw repair, kabari etc.

Note: Utilities, public conveniences shall be provided as per requirements

Table No.40: Planning Norms

S. No.	Use zones/use premises	No. of informal shops/units
1.	Retail trade: Metropolitan town centre, district centre, community centre, convenience shopping centre	3 to 4 units per 10 formal shops(to be provided in informal bazaar/service market components)
2.	Government and commercial offices	5 to 6 units per 1000 employees
3.	Wholesale trade and freight complexes	3 to 4 units per 10 formal shops
4.	Hospital	3 to 4 units per 100 beds
5.	Bus terminal	1 unit for 2 bus bay
6.	Schools Primary Secondary/ Senior secondary/integrated	3 to 4 units 5 to 6 units
7.	Parks District parks Neighbourhood parks	8 to 10 units at each major entry 2 to 3 units
8.	Residential	5 unit/1000 population
9.	Industrial	5 to 6 units per 1000 employees

Industrial

A total projected industrial worker for L.P.A. Roopnagar is 5270 for the year- 2031. The projected industrial workers have been calculated taking 20% of total workers (which is 33% of Population).

The efforts have been made to work out the actual requirements of industrial area for urban settlements falling in LPA Roopnagar as follows:

Table No.41: Projected Urbanisable Area Requirements for Roopnagar Municipal Areas-2031

S. No	Town	Year	Gross Residential Land required	Urbanisable area required*	Industrial use requirement **
1	Roopnagar	2011	542	1355	108.4
		2016	596		1490 119.2
		2021	648	1620	129.6
		2026	702	1755	140.4
		2031	756	1890	151.2

Note:

- For calculating the Urbanisable area the residential use is assumed as 40% of the total urbanisable area for Roopnagar town.
- ** Industrial use = 8% (assumed) for Roopnagar town of total urbanisable area as per UDPFI standards.
- The proposals have been marked keeping its regional and location importance into consideration of Roopnagar and these will not only act as an independent self sustaining town/town but will also act as a regional focus centre to serve the higher level infrastructure to the surrounding settlement in the near vicinity.
- The area of M.C. Roopnagar is 2500 hectares. Keeping its potential of development like industrial, institutional and wholesale into consideration urbanisable area of Roopnagar is marked.

Land required for social infrastructure:-

The land requirement of social infrastructure for Health Care, Police, and Fire, Education and Recreational facilities for Roopnagar urban is calculated as below:

Table No.42: Land Requirement for Educational Facilities (for 100000 populations)-LPA Roopnagar

	Norms	No. of units	Area/unit (in ha.)	Total area (in ha)
College	100000	2	4	8
Secondary School	7500	29	1.6	46.4
Primary School	5000	44	0.4	17.6
Pre-primary school	2500	88	0.08	7.04
Total				79.04 ha.

Table No.43: Land Requirement for Higher Educational Facilities (LPA Roopnagar)

Sr.no	Category	Norms and standards (UDPFI)		Requirement	
		Population/Unit	Area (ha)	No.	Area (ha)
1	Technical education				
(i)	Technical education centre (A)	10 lakh	4	-	-
(ii)	Technical centre (B)	10 lakh	4	-	-
2	Professional education				
(i)	New Engineering college	1 sites to be provided in urban extension	60	1	60
(ii)	New medical college	1 sites to be provided in urban extension	15	1	15
	Total				75

Total area required for educational facilities =154.04 hectares

Keeping Roopnagar's regional importance into consideration, higher level educational facilities like technical and professional colleges are proposed in Roopnagar. It will not only serve Roopnagar but its adjoining towns.

Table No.44: Land Requirement for Medical Facilities (for 250,000 persons) (LPA Roopnagar)

Medical Facility	Norms		Requirements	
	Population	Area/unit (in hecets.)	No. of units	Total area (in hecets.)
Intermediate (Category-A)	100000	2.7	-	-
Intermediate (Category-B)	100000	0.6	-	-
Dispensary	15000	0.1	15	1.5
Total				1.5 ha

- Total area required for medical facilities =1.5 ha
- Total area under institutions = 154.04 ha

Land Requirement for Police. (For 100,000 persons)

Table No.45: Land Requirement for Police. (For 100,000 persons) (LPA Roopnagar)

	Norms	No. of units	Area/unit (in ha.)	Total area (in ha.)
Police station	100000	2	1.5	3
Police Post	50000	4	0.16	0.64
Total				3.64

Table No.46: Land Requirement for Fire Station

Type	Norms	No. of units	Area/unit (in hectares)	Total area (in hectares)
Fire/Sub Fire station	200000	1	1	1

- Total area required for Roopnagar L.P.A. =1 ha

6.10 THE STRENGTH, WEAKNESS, OPPORTUNITIES, THREATS (SWOT) ANALYSIS OF LPA

The present strengths, the opportunities likely to be presented by the surrounding region, the present weaknesses of Roopnagar city and the threats emanating in the region have been deliberated in the meetings. The following Strengths, Weaknesses, Opportunities and Threats for Local Planning Area Roopnagar have emerged:-

Strengths and opportunities:

The strengths and opportunities are the factors which allow positive change or present development options or alternatives. The following are the strengths and opportunities in the context of vision and strategies for Local Planning Area, Roopnagar.

- I. Proximity to State Capital Chandigarh.
- II. Accessibility: Well connected to surrounding region through NH-21(Chandigarh –Manali road), SH-24 (Roopnagar- Hoshiarpur road) and Kurali- Morinda road.
- III. Regional level educational infrastructure – Degree colleges, Polytechnic colleges, Nursing colleges, Rayat and Bahra institutes are sufficient catalyst to propel the economy.
- IV. Industrial hub – The city of Roopnagar has number of medium and large scale industrial units like Cotton ginning Mills, Oil extraction mills and other agro based industries etc along with small scale industrial units dealing with products like manufacturing of utensils, farm implements, kin now polishing, cotton ginning etc.
- V. Employment potential – Good employment generation due to industries, trade and commerce.
- VI. Regional level commercial centre – Old Bazar in the city and grain market are the regional level commercial facilities not only serving the town but the surrounding region also.
- VII. Health Infrastructure – Roopnagar has 97 units of medical facilities of different types providing health services to the residents of Roopnagar city, LPA as well as to the persons from outside the LPA.
- VIII. Religious pilgrimage – Kiratpur sahib Gurudwara located in city and Anandpur Sahib in Roopnagar District is historical town etc.

Weaknesses and Threats:

- I. Concentration of commercial activities in congested area of the old part of city with narrow lanes, no parking spaces etc are creating major traffic and environmental problems.
- II. Nearness to Satlej River acts as hindrance to the growth of the city due to the flooding factor.
- III. Undulating topography of the city is one of the obstructions in the laying of roads and infrastructure.
- IV. Traffic hazardous – choked road intersections, mixed and through traffic, inadequate road circulation, encroachment of roads, inadequate parking spaces, lack of flyovers, ROB's / underpasses etc with limited recreational / open spaces renders the city unfit for comfortable living.
- V. Inadequate storm water drainage – no system for rain water harvesting and no system available for scientific disposal of solid waste – a potential threat to living environment.
- VI. Exorbitant urban land prices. Poor cannot afford good housing accommodation, which causes proliferation of slums and squatters. It also hinders the pace of development of the city, as people like to settle in the nearby small towns where land prices are lower as compared to Roopnagar city.

6.11 VISION 2031

The Vision Roopnagar 2031 is proposed to be

To make LPA Roopnagar an economically vibrant city with quality infrastructure and housing for all its citizens in environmentally sustainable manner achieved through effective partnership between the public, private and community sector.

Various components of the vision and strategies to attain them particularly in the context of Master Plan are outlined below:

6.12 STRATEGIES

Strategies developed for various planning elements of the VISION 2031 are tabulated as below:

Table No. 47: Strategies for Vision 2031

VISION 2031	Strategies
To develop Roopnagar city as financial capital, commercially and industrially vibrant eco-friendly city of state of Punjab providing assured employment and quality living to all its existing and future residents.	<ul style="list-style-type: none"> <input type="checkbox"/> Through better urban governance. <input type="checkbox"/> Allocation of sufficient land for industrial and commercial activity to provide a comprehensive range of retail and wholesale commercial services and provision for light and service industries such as IT Parks, Knowledge City etc. <input type="checkbox"/> To ensure minimal environmental impact on the residents. Clustering concept to be adopted. Polluting industries to be kept away from the residential areas. <input type="checkbox"/> Higher order of economic productivity, operational efficiency. <input type="checkbox"/> Rationalized land use pattern. <input type="checkbox"/> Reduced vehicular and industrial pollution through introduction of CNG based transport, by increasing green cover, ban on pressure horns and by planning non-polluted and eco-friendly economic activities, introducing mass public transport system, keeping industrial locations properly segregated through the concept of buffer zones from non-industrial areas and by allocating land for polluting industry away from the living areas. <input type="checkbox"/> Assured safety of residents and commuters.
To provide variety and range of housing types for working and living communities within LPA, Roopnagar.	<ul style="list-style-type: none"> <input type="checkbox"/> Promoting the concept of PPP, provision of adequate good quality housing by promoting planned development through effective city planning to provide safe, clean environment with adequate level of amenities. <input type="checkbox"/> Making urban development policy liberal, incentive oriented and user friendly.

	<input type="checkbox"/> Promoting social (low cost) housing for Economically Weaker Sections for the eradication of slum dwellings.
To plan LPA as an integrated and single unit with strong forward as well as backward linkages.	<input type="checkbox"/> Plan should relate and respect the surrounding region. <input type="checkbox"/> Attempt to plan in totality and must confirm to the surroundings of Local Planning Area, Roopnagar.
To provide efficient Transportation System	<input type="checkbox"/> To create new road network and to improve the existing network. <input type="checkbox"/> To promote operational efficiency of traffic by introducing a Ring Road, an Air link, Elevated Roads, Flyovers, ROB's, Underpasses, Subways, New sector roads, bus and truck terminus, provision of pedestrian paths, segregated lanes for slow moving traffic, minimizing use of private transport and to promote public transport.
To provide state of the art, infrastructure like education, health, religious, recreational etc.	<input type="checkbox"/> Social infrastructure shall be made available in the following manner: <ul style="list-style-type: none"> ▪ Through utilization of vacant govt. /M.C./Panchayat/Wakf Board lands etc. ▪ By encouraging planned development as provided in PAPR Act, 1995, Town Development Schemes, Development Schemes of Improvement Trust. ▪ By introducing Land Pooling Policy, transfer of Development Rights concept may also be developed. ▪ Acquisition of land through Land Acquisition Act, 1894 may also be carried out for the provision of projects which are of State / national importance.
To provide utilities that will satisfy the needs of the residents of Local Planning Area.	<input type="checkbox"/> To ensure 100% coverage of the city in terms of Water Supply, Sewerage System etc. <input type="checkbox"/> To minimize the ground water consumption by promoting water

	<p>conservation.</p> <ul style="list-style-type: none"> <input type="checkbox"/> To promote rain water harvesting and recycling of water. <input type="checkbox"/> To promote eco-friendly decentralized treatment system. <input type="checkbox"/> To minimize sewerage generation through water saving appliances. <input type="checkbox"/> To promote recycling of sewage.
To safeguard and enhance the premium land value along the major highways and high visibility locations.	<ul style="list-style-type: none"> <input type="checkbox"/> Through introducing special development controls along major roads. <input type="checkbox"/> By providing premium land use zones.
Decongestion of core areas.	<ul style="list-style-type: none"> <input type="checkbox"/> Development of modern retail, hotel and commercial facilities such as retail malls, entertainment and shopping in peri urban areas and along the major transport routes. <input type="checkbox"/> TDR policy may be framed and made applicable for this purpose.
To streamline the energy of young population.	<ul style="list-style-type: none"> <input type="checkbox"/> Special emphasis should be made to create a conducive environment for sports through a range of Stadiums, Sports Complexes, Country Clubs, Golf Courses, parks etc.
To promote Rain Water Harvesting.	<ul style="list-style-type: none"> <input type="checkbox"/> Optimal use of rain water for irrigating the parks and roadside plantation in new colonies / development <input type="checkbox"/> To promote protection of natural water bodies for collection of rain water. <input type="checkbox"/> To promote optimum use of storm water as an alternative source of water supply. <input type="checkbox"/> Make Rain Water harvesting systems compulsory for each parcel of land and the water so stored may be used for car washing, kitchen gardens, construction works etc. <input type="checkbox"/> Major parks / open spaces to be made available for providing rain water harvesting systems so that the storm water of road network etc may be used for recharging of underground water.
To promote an eco-friendly Solid Waste Management system	<ul style="list-style-type: none"> <input type="checkbox"/> Minimize the generation of solid waste by using re-usable items.

	<input type="checkbox"/> Promote recycling of solid waste. <input type="checkbox"/> Installation of Solid Waste Processing Plants to reduce the waste for disposal and at the same time for generating energy from the solid waste. <input type="checkbox"/> Small processing plants at the Neighborhood level may be preferred.
To introduce the concept of Mixed Land use for the localities which through the history of growth of town had remained under mixed use and the nature of use is such which does not include obnoxious, hazardous or highly polluting activities and from where it is difficult to shift the mixed use to other areas specified for that particular land use.	<input type="checkbox"/> Co-existence of houses and shops and houses with industries to be allowed subject to certain Development Controls that should ensure the protection of living environment of mixed land use zones.

CHAPTER VII

7. THE MASTER PLAN

7.1 Components of the Master Plan

Master Plan is an important instrument for guiding and regulating development of a town over a period of time and contributing to planned development both conceptually and operationally. Master Plan has been considered as one of the most effective mechanism to promote planned growth of the urban centres. It lays down the road map, agenda and framework within which the town growth is envisioned.

Under the Punjab Regional & Town Planning & Development Act, 1995, master plan of a Local Planning Area 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 for different purpose;
- c) Indicate, define and provide the existing and proposed highways, roads, major streets and other lines of communication.
- d) 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;
- e) Include regulations (hereinafter called "Zoning Regulations") to regulate within each Zone the location, height, number of storey's and size of buildings and other structures, open spaces and the use of buildings, structures and land.

7.2 Master Plan Objectives

The Master Plan objectives represent policy and planning guidelines for identifying and evaluating the development alternatives by more clearly defining the future needs of the area. The overall focus and objective of the Master Plan is growth management.

The following objectives have guided the development of the Master Plan of for Roopnagar:

- To control haphazard, unplanned and sub-standard growth and development of the town and to achieve planned growth to create healthy environment.
- Identify appropriate locations for commercial and business development opportunities that advance long-term economic interest in the area and are consistent with the land use planning and development objectives of local authorities/government.
- To ensure safety, mobility and efficiency of traffic within the town through the mechanism of rationalizing the land use pattern defined in the Master Plan.
- To preserve natural resources and eco system and maintain a safe and secure operating environment.
- To improve the capacity of the existing road net work through redesigned, improved road geometry and removal of encroachments.
- To protect and preserve open space and make land available for public purposes.
- To optimize the use of available land resource through well defined development norms and to minimize diversion of valuable agricultural land for non-agricultural purposes.
- 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.
- To rationalize the distribution of physical and social infrastructure in order to ensure appropriate quality of life to all the residents of the town.
- To ensure safety, mobility and efficiency of inter and intra-town traffic.

7.3 Evaluation of Alternative Town Structures:

7.3.1 Evaluation of Existing Structure

Evaluation of existing town structures helps in deriving alternative town structures. Different alternative town structures are made based upon the existing town scenario to adopt the future town structure.

A careful study of this map brings out the following:

- Work Areas
- Living Areas (Planned)
- Living Areas (Unplanned)
- Slum Areas

Work Areas

Grain Market is the major work place of Roopnagar town, covering an area of about 23.844 hectares is located on Roopnagar - Kurali road near Bhatha Sahib Gurudwara. The city of Roopnagar has medium and large scale industrial units like Cotton ginning Mills, Oil extraction mills and other agro based industries etc along with small scale industrial units dealing with products like manufacturing of utensils, farm implements, kin now polishing, cotton ginning etc. The Wholesale grain market

Living Areas

The main living areas which are developed by various agencies like PUDA and Municipal Council and Improvement trust. There are 15 T.P Schemes and 8 Development Schemes of Improvement Trust, Roopnagar, Four commercial cum residential development schemes and 4 commercial schemes under Punjab Apartment and Property Regulation Act 1995'.

Slum Areas

There are number of slums areas situated along major roads and the railway track passing through the city.

7.3.2 Alternative town structures -2031

Unchecked, unplanned and haphazard growth of areas is the eyesore of any town. Cities and towns are expanding in all directions resulting in large-scale urban sprawl and results in changes in the pattern of urban land use. It is the need of the hour to take steps to control the unplanned growth and plan for sustainable and healthy development of urban areas.

Keeping in view the present growth trend three different alternative structures could be envisaged for the future town of Roopnagar. The different alternatives are as follows:

1. Compact core with expansion along main Axes
2. Development along main highways
3. Development at potential road intersections

1. Alternate –I: Compact core with expansion along main Axis:

This alternative is based on the trend of residential colonies and commercial development along the main axis such as Bela road, Relo road and Morinda road. Compact core with expansion along main axis minimizes the conversion of agriculture land into urban use and it

follows the present growth trend of the town. These developments give the base to think upon this alternative to propose the future town along main axis.

Merits:

- Compact and integrated development of the town, avoiding sprawl
- An effective, economic and efficient infrastructure development
- Minimum invasion upon fertile and scarce land resource of the state.
- Close relationship of work-place and residential areas

Demerits:

- Improving core town infrastructure to cope with increased population may be difficult.
- It may put extra pressure on main road.
- It may create a feeling of congestion and more load on existing infrastructures

2. Alternate –II: Development along main Highways:

This alternative provides the opportunities to develop future town of Roopnagar along the main highways passing through the town. The upcoming residential colonies on Morinda road, Relo road and Bela road and cluster of other development activities such as Industries on Nwanshahr road and other developments like Grain Market , hotel and marriage palaces attract the future development of the town towards the respective potential areas along main arteries besides areas all- around the existing town.

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 town.

Demerits:

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

3. Alternate –III Development at Potential intersections:

While studying the existing road network of LPA Roopnagar and some proposed linkages, it is found that certain very important road junctions are coming up on all sides of Roopnagar city which may prove to be potential nodal centers of development around the existing Roopnagar town. Besides the potentiality due to future road intersections, all these nodal centers are having their own justification and reasons to grow.

Merits:

- Would provide relief to the core town
- 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.

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 alternatives as per the feasibility.

7.4 Strategies to obtain land for public purposes

The possible alternatives for obtaining land for public purposes such as roads, educational, health, parks, water supply, sewerage, social and religious institutes, old age homes, community centers etc with their limitations are listed as below:

Alternative	Land Acquisition through 1894 Act	TDR	Development of land through PAPR Act 1995, TDS under PRTPD Act 2006 and Development Schemes under PTI Act, 1922	Land Pooling	Govt / Panchayat / Waqf Board lands
Plan Proposal	Land designated for public purposes	Land designated for public purposes	Land designated for public purposes	Land designated for public purposes	Land designated for public purposes
Regulation	No separate regulatory provision necessary	Regulation about use of TDR on receiving plots is necessary	Certain proportion (about 40%) of land is dedicated for public purposes.	This requires a separate legal process to be followed of reconstitution of plots along with evaluation of compensation and betterment as provided in Chapter XII of the 1995 Act.	No separate regulatory provision necessary
Means of securing land	Compulsory acquisition by paying monetary compensation	Monetary compensation substituted by Transfer of Development Rights (TDR)	Availability of land through layout plan provisions		Land can be made available through transfer of ownership from one department to another. No monetary compensation is involved.
Limitations	<input type="checkbox"/> Lack of finances for compensation <input type="checkbox"/> Landowners' resistance <input type="checkbox"/> Iniquitous distribution of costs and benefits. Cost borne by those who lose land and benefits enjoyed by surrounding landowners	<input type="checkbox"/> Landowners' acceptance depends upon market for TDRs <input type="checkbox"/> But where real estate prices are high particularly where land price is several times the construction cost, chances of success are high. <input type="checkbox"/> Could also be used for heritage conservation. <input type="checkbox"/> New concept difficult to be implemented.	<input type="checkbox"/> This is the method currently relied upon where minimum area for colony is set at 10 – 75 acres, as in case of PAPRA. <input type="checkbox"/> This is to be market driven and present response is said to be not so encouraging.	<input type="checkbox"/> Comprehensive Land Pooling Policy is required to be framed. <input type="checkbox"/> Difficulty in pooling of land of large number of owners. <input type="checkbox"/> Time consuming and complicated process <input type="checkbox"/> Equitable distribution of costs and benefits to different share holders. <input type="checkbox"/> New concept difficult to be implemented.	<input type="checkbox"/> Locational disadvantages in certain cases. <input type="checkbox"/> Minimum area requirement may not be fulfilled <input type="checkbox"/> Source of revenue for Panchayat Bodies / Waqf Board gets depleted.

No single alternative may be applied on the entire area of the LPA. Different alternatives have to be used depending upon the nature, size, location and necessity of the project. In case of projects linked with defence / security needs of the country or the projects where large chunks of land are required for the timely implementation of the project only the method of land acquisition through the 1894 Act has to be used. The land required for new Master Plan roads or for widening of existing roads may be obtained largely by allowing the development rights of road land being allowed to be used on the remainder of the land. The second option could be to get the land through land pooling scheme. The area for other roads which are not shown in the Master Plan but are to be shown later in Zonal Plans could be similarly obtained. For other public purposes like parks, community centres, schools, dispensaries, play grounds etc the land may be obtained through colonization under PAPRA 1995 or through the development of Town Development Schemes under the Punjab Regional and Town Planning and Development (Amendment) Act 2006. The government / Panchayat lands may be another option for the development of such public uses. However, there are certain public purposes like police stations, fire stations etc that must be at specific locations and are to be developed in a time bound manner. These need specific designation in the sector (zonal) plan. Such lands may be obtained without monetary compensation and for this, it would be necessary to create market for TDR, certain parts in the sector plan like commercial centres and pockets reserved for group housing may be allowed to exceed base FAR by buying Development Rights from elsewhere in the same sector.

7.5 Proposed Land Use Plan L.P.A.Roopnagar

After going through the detailed study conducted by the office of D.D.T.P. Roopnagar pertaining to LPA Roopnagar and discussions held with different level i.e. with Chief Town Planner and Senior Town Planner and further based on analysis, assumptions and projected population of L.P.A.Roopnagar. The proposed Land Use Plan 2031 has been prepared, in which different land use zones have been earmarked such as residential, commercial, industrial, rural and agricultural etc.

After examining the various possibilities and taking into account, the pattern suggested in Urban Development Plans Formulation & Implementation Guidelines published by Ministry of Home Affairs and Employment, Govt. of India, New Delhi, the aforesaid 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 sub head:

Table 48: Break up of Major Proposed Land Uses LPA Roopnagar 2031

NAME OF LANDUSE	Area in hect.	% age to the total area	%age of Urbanisable area
Residential	2866.50	11.88	41.04
Abadies	646.50		
Residential Area	2220.00		
Commercial	1567.55	6.49	22.4
Commercial	42.08		
Whole Sale Market, Fruit & Vegetables and Grain Market, Godowns, Ware Housing, Cold Storage	32.01		
Commercial Mix	1493.46		
Industrial	439.13	1.82	6.3
Small Scale, Light and Service Industry			
Medium & Large Scale Industry			
Recreational	388.63	1.61	5.6
Parks /Play ground / Parking	3.20		
Stadium & Sports Complex	308.06		
Religious Places	77.37		
Traffic and Transportation	828.01	3.43	11.9
Rail Terminal and yard & Railway Station	1.46		
Bus Terminal and depot	1.75		
Truck Stand	29.67		
Major Roads/Other Roads	662.71		
Proposed Road 60' Wide	4.13		
Proposed Road 80' Wide	21.33		
Proposed Road 100' Wide	62.46		
Proposed Road 200' Wide	44.50		
Utilities & Services	4.82	0.02	0.1
Power house/Sub Station & Electric Grid	4.11		
Sewerage Disposal area	0.64		
Solid Waste dumping/ Sanitary landfill	0.07		
Government	94.64	0.39	1.4
Government /Public Office	54.29		
Govt Land	40.35		
Public & Semi-Public	730.91	3.03	10.5
Hospital and Health institution	6.34		
Educational And Research Centre Specialised Educational institutes	700.64		
Social and Cultural	4.89		
Cremation and Burial grounds	19.04		
Reserved Area	64.08	0.26	0.7

NAME OF LANDUSE	Area in hect.	% age to the total area	%age of Urbanisable area
URBANISABLE AREA	6984.27		100
Rural and Agricultural	17147.22	71.06	
Agricultural Area	11250.55		
Pond/Water bodies, Swampy, Waterlogged	28.33		
Canal & Distributory	268.59		
Drain	1246.22		
Green Buffer	152.34		
Forest	4201.19		
TOTAL	24131.49	99.99	

Source: PRSC, PAU, Ludhiana

The proposed land use plan has been shown in Drg. No. DDTP(R) 9/2010 , dated 15.10.2010.

7.5.1 Residential

Keeping in view the trend of growth of residential areas and to meet with the demand of future growth some potential pockets have been identified suitable for residential purposes. At LPA level a total area of 2866.50 hectares (including urban and rural) has been proposed for residential use which is 11.88 % of total LPA area as given above Table.

So in order to accommodate the projected population, residential areas are earmarked at various sites considering future potential nodes in the Roopnagar. Residential areas are mainly developed along Roopnagar- Morinda road, Roopnagar- Bela road, Roopnagar- Chamkaur Sabih road and a part along Chandigarh road.

7.5.2 Commercial

The area under existing commercial land use is 150.10 hectares which includes the commercial area within the city and LPA. In the proposed land use an area of 1567.55 hectares has been earmarked for commercial use.

Commercial Mix

The mixed land use zone is proposed on both sides of identified roads up to a depth of 200 meters from the boundary of road (i.e. proposed right of way). Mixed Landuse will be permissible along the road front upto a depth of 200 meters except the abadi deh of the village.

The mixed land use has been proposed on the following roads as shown on the proposed Land use Plan.

- Chandigarh –Manali road (N.H-21)
- Roopnagar-Bela road
- Roopnagar- Chamkaur Sahib Road
- Roopnagar-Morinda road
- Roopnagar Bypass
- Nangal-Roopnagar Bypass

7.5.3 Industrial

With a view to provide fillip/boost to the economy of the town and to promote industrial activity in the region, a sizeable area of the order of 1.82 % of total LPA area has been proposed for the industrialization.

Industrial zone has been proposed along Roopnagar- Hoshiarpur road and along Chandigarh road. Present industrial growth trend and wind direction aspects are kept into consideration while planning industrial zones.

Industrial zone proposed along Roopnagar- Hoshiarpur road covers partially revenue esates of village Bana, Taunsa, Relmajra and Asron. Other pocket earmarked along Chandigarh road covers partially the revenue estates of village Mathahari.

Incentives for shifting of exiting industries:

Industries existing within the non designated industrial zone, which are in operation as on date of Master Plan notification, shift outside this zone to any of the designated industrial zone within the state of Punjab and generate at least the same number of jobs at the new location, will enjoy the following benefits:

- 1 No CLU, EDU or Licence Fee on the present site if used for plotted residential purposes provided the industry shifts within three years of the notification of the Master Plan. If used for any permissible land use other than plotted residential, the difference between CLU, EDC and Licence Fee of the new land use and plotted residential has to be paid. In case that particular land is put to a land use for which CLU, EDC or Licence Fee is less than the plotted residential, the difference between these fees / charges for the plotted residential and proposed land use shall not be payable by the Government / Urban Development Authority.

- 2 If the industry shifts in the subsequent two years of the above mentioned period of three years, it will enjoy 50% discount on CLU, EDC and Licence Fee on the present site if used for plotted residential purposes. If used for any permissible land use other than plotted residential, the difference between the CLU, EDC and Licence Fee of the new land use and that of 50% of plotted residential has to be paid. In case that particular land is put to land use for which CLU, EDC or Licence Fee is less than the plotted residential, the difference between these fees / charges for the plotted residential and proposed land use shall not be payable by the Government / Urban development Authority.
- 3 No CLU, EDC or Licence fee on the new industrial site if the industry shifts within five years of the notification of the Master Plan.
- 4 After shifting to the new location, the type of such industry may change.

The Prescribed distance for residential development in the non designated industrial from existing red industries shall be as prescribed by the Department of Environment, Government of Punjab or Punjab Pollution Control Board.

Note:

- I. No industry in the Master Plan shall be permitted on a road having less than 40' ROW. In case, the existing road is less than 40' wide, it shall be widened to 40' by taking equal strip of land from both sides of the road.*
- II. A minimum buffer of 15 meters of broad leaf shall be provided for segregating industrial zone from the residential zone. The provision of buffer strip shall be made by the owner of Land use which comes later.*
- III. The standards prescribed by Punjab Pollution Control Board from time to time would have to be met by all industrial units in addition to other specific conditions in terms of plot size, ground coverage, F.A.R., height, parking norms etc.*
- IV. The existing industrial units falling under red category (as classified by Punjab Pollution Control Board) located in non-designated areas need to relocate to designated areas themselves within period of 10 years from date of publication of this Master Plan.*

7.5.4 Recreational

Parks and open spaces are the part of approved residential colonies/projects. So it is to be provided as per norms and standards from time to time as applicable in PUDA approved colonies and other govt. approved projects.

7.5.5 Agricultural and Rural

An area of 17147.22 hectares has been proposed for rural and agricultural use.

Green buffer

The proposed area of the Local Planning Area Roopnagar under Green belts is 152.34 hectares.

- ***Forest***

The proposed area of the Local Planning Area Roopnagar under Forest is 4201.19 hectare.

7.5.6 Traffic and Transportation

Traffic and Transportation is defines both existing and future patterns, typology of growth and development of the town. Traffic and Transportation Proposals aims at rationalizing the existing road network, creating a well defined hierarchy of roads, creating over-bridges, rationalizing the inter and intra town traffic, creating adequate parking spaces, developing well defined interface between different land uses, improving efficiencies in traffic movement within the town, minimizing delays etc in order to improve the operational efficiency.

In the light of the above approach, proposed land use and road network plans are incorporated in the Master Plan. The land in LPA, Roopnagar 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 buffer along existing Bye pass. However specific designations for public purposes like schools, hospitals, playground etc have not been earmarked. The major proposed road network has been proposed has been shown in drg. no. DDTP (R) 45/2011 dated 12.08.2011.(This drawing is superimposed on previous drawing no: DDTP (R) 09/2010 dated 15.08.2010.) It is proposed to follow up the Master Plan preparation by more detailed zonal plans.

7.5.7 Proposed Road Network

The proposed Traffic and Transportation Plan of Roopnagar L.P.A is based on a well-defined road network of appropriate hierarchy in order to cater to the traffic needs of the urban centers and population living and working there. It includes redefining, strengthening and augmenting the existing road network and additional linkages to be created in order to rationalize the traffic and transportation within the town and areas proposed to be brought under urbanization. Keeping in view the future shape and size of Roopnagar urbanisable area, there is need for creating an efficient and effective system of transportation.

The existing network of radial roads passing through L.P.A has been retained and it is proposed for improvement/widening/strengthening. While demarcating the internal road network within L.P.A, efforts have been made to make optimum use of available road infrastructure and land available along the irrigation channels in order to minimize the cost of development and to ensure easy availability of land for the proposed road network. In order to meet the future demand of traffic and transportation for the Roopnagar Municipal Council and the LPA, following hierarchy of roads has been proposed:

Table No.49: Proposed Road Hierarchy, L.P.A. Roopnagar

Category of Road	Right Of Way(feet)	No Construction Zone	Description
R-1	200	5 mts	Roopnagar Bypass
R-2	100	5 mts	Other Major roads
R-3	80	5 mts	Other Minor Roads
R-4	60	Nil	Link Roads

Note: - No Construction zone should be beyond the proposed road widening.

Table No.50: Existing Road Hierarchy, L.P.A. Roopnagar

Category of Road	Right Of Way(feet)	Non Construction Zone	Description
NH-I	200	5 mts	Chandigarh-Manali Road
SH	88	5 mts	1.Roopnagar-Hoshiarpur road(SH-24) 2.Kurali- Morinda
MDR	88 23	5 mts	1.Roopnagar—Morinda road(old) 2.Roopnagar-Chamkaur Sahib road
ODR	66	5 mts	1.Roopnagar-Bela road 2.Roopnagar-Nurpurbedi road

Note: - No Construction zone should be beyond the proposed road widening.

All these roads shall have 5mts no construction zones on both sides after ROW as per notification no.: 8/2/2001-4HGI/3112 dated 27th September 2010 and as per amended from time to time.

National highway

Chandigarh-Manali road (NH-21) passes through the city. For the smooth flow of traffic Central verge is being constructed on National Highway-21.

State Highway

Roopnagar- Hoshiarpur road (SH-24) with ROW varying from 52feet -88 feet passes through the city.

Major District roads

Major District roads passing through the city are Morinda-kurali road and Roopnagar - Nurpur Bedi road.

Other District road

It covers roads namely Roopnagar- Bela road, Roopnagar-Chamkaur Sahib road, Roopnagar-Morinda road, road connecting LPA boundary and NH-21 passing through the revenue estate of villages Solkhian, Khabra and Singh and other District road connecting LPA boundary and

NH-21 passing through the revenue estate of villages Rangilpur, Gandhon Kalan, Raipur Patti and Mianpur.

R1: Presently Roopnagar Bypass has width of 100 feet, which has been proposed to be widened to 200 feet (RI).

R2: Other Major roads

Road along SYL and Nangal Roopnagar Bypass have been proposed as second hierarchy roads (R-2) (100' wide).

R3: Other minor roads

The lower hierarchy roads of R-3 (80' wide) which covers road starting from Roopanagar Bypass moving through the revenue estates of villages Bara Phool, Nunowal, Rattanpur, Chhota Surtapur, Chhota phool and Budha Bhora and touches finally Roopnagar-Bela road.

R-4 category has been proposed to provide accessibility upto interior areas.

All the existing link roads are to be widened **proportionate on both sides** to 60 feet. The proposed road network as explained above has been shown in DRG No. DTP (R) 11/2010 Dated 15/10/2010.

Note: **Road widening will be done proportionate on both sides.**

Proposed ROB/ Flyover

One rail over bridge is under construction over Nangal- Kurali railway line and N.H.-21.

7.5.8 Utilities and Services

The area under Utilities and Services Use within LPA is 4.82 hectares.

7.5.9 Government

The area under Government Use within LPA is 94.64 hectares.

7.5.10 Public & Semi Public Use

The proposed area under Public and Semi Public Use within LPA is 730.91 hectares.

- ***Sports and leisure***

The existing sports infrastructure covers an area of 26.45 hectares. In the proposed land use plan an area of 308.06 hectares has been earmarked for sports and leisure.

CHAPTER VIII

8-A ZONING REGULATIONS

8.0 Section – I: Zoning Regulations

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 declared under Section 56 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 the Master Plan prepared for the Local Planning Area.

The zoning regulations proposed under this Master Plan are primarily concerned with the control of land use. The proposed land use plan includes following land use zones:

- Residential
- Commercial
- Mixed land use
- Industrial
- Recreational
- Rural and Agricultural

In addition specific designated uses have been shown in respect of proposed traffic and transportation, utilities, governmental and public and semi-public facilities etc.

As explained earlier since sub – division of land, design and construction of buildings is being controlled through well-established building byelaws / regulations by the concerned authorities. The zoning regulations under the Master Plan are seen as the guiding parameters for these agencies to ensure that the development permitted by them is in conformity with the Master Plan.

Use and development of land to be in conformity with Master Plan:

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.

8.0.1 Short Title, Scope, Extent & Commencement

1. Title

These regulations shall be called the Zoning Regulations for Local Planning Area Roopnagar 2009 (herein after referred to as “these regulations”).

2. Scope of the regulations

The scope of these regulations is limited to defining permissible land use activities 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.

3. Jurisdiction

These regulations shall apply to all “development” in the Local Planning Area Roopnagar declared under Section 56 of “The Punjab Regional and Town Planning and Development (Amendment) Act, 2006” vide Notification No. 12/71/2006-4HG1/3224 dated 9.5.2008 and amended Notification No. 12/71/06-4 HGI/750 dated 27/2/09.

4. Date of coming in to 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 considering the application for permission for development shall give due regard to the draft proposals including these regulations.

8.0.2 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 Roopnagar.
- 5 **Competent Authority**: Competent Authority shall mean any person or authority appointed by the stage government, by notification to exercise and perform all or any of the powers and functions of the competent authority as per section 2 (m) of the "Punjab Regional and Town Planning and Development (Amendment) Act, 2006.
- 6 **“Existing Land use Plan”**: means the plan showing the different land use existing at the time of preparation of the Existing Land Use Plan of Local Planning Area, Roopnagar and as indicated on Drawing No. DTP (R) 8/2010 dated 15.08.2010 or as amended and notified from time to time.
- 7 **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. 12/71/2006-4HG1/3224 dated 9.5.2008 and amended Notification No. 12/71/06-4 HGI/750 dated 27/2/09 published in the Punjab Govt. Gazette.
- 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 land use in the Master Plan and its zoning regulations.
- 9 **“Proposed Land use Plan”**: means the plan showing the proposed / admissible uses for different areas and land use zones covered in the Local Planning Area, Roopnagar and as indicated on drg. no. DDTP (R) 45/2011 dated 12.08.2011.(This drawing is superimposed on previous drawing no: DDTP (R) 09/2010 dated 15.08.2010.) or as amended and notified from time to time.
- 10 **“Zoning Plan”**: means the plan of an area or part thereof 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 lands, 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.
- 11 **"Mixed land use"**: means the multiple use of land (except orange & red category industry) is allowed to co-exist subject to fulfillment of environmental safeguards.
- 12 **“High Technology Park/I.T. Park”**: This will largely be high technology, value added kind of industrial development in the form of science park, Business Park and R & D parks. The target industries include IT parks and bio-technology industries.
- 13 **“Fashion Technology Park”**: Means where knowledge based infrastructure to inspire the global fashion community catching all segments of designing, manufacturing, marketing, R & D, logistics, broad forecasting are all under one roof.

- 14 **“Knowledge Park”**: A platform for interaction and provision of clustering opportunities to all the Organizations, Institutions, Hotels, Restaurants, Hospitals. Real Estate Agency clubs, Business Parks with main objective of facilitation of better technology for public and private sector.
- 15 **“Logistic Park”**: A Logistic Park is an area within which all activities related to transport, logistics and distribution of goods for both national and international transits are carried out by various operators on a commercial basis.
- 16 **“Farm House”**: means a building allowed on a minimum holding of 2.5 acre agricultural land for residential and agricultural activity of the land holder.
- 17 **“Atta Chakki”**: is categorized as service industry where:
- Grinding of only food grains is carried out through the process of crushing under the load and rotational movement of two plates or blocks.
 - The maximum electric load does not exceed 20 kW.
 - The Atta Chakki shall be used for grinding food grains supplied by the consumers only and no sale / purchase of food grains / flour shall be carried out by the Atta Chakki owner at commercial level.
 - The Atta Chakki shall only be permitted on roads having minimum 40 feet ROW.
- 18 **“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.
- 19 **“Industry”**: means a specific branch of manufacture and trade which 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.
- 20 **“Cottage Industry”**: Industrial units employing less than 10 workers, not creating excessive traffic and not omitting fumes, noise and effluents injurious to the existing sewers 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.
- 21 **“Public and semi-public activities”**: means governmental / semi-governmental offices, educational / cultural, religious and medical / health institutions, community centers etc. excluding privately run establishments.

Terms and phrases used, but not defined in these regulations, shall have the same meaning as assigned to them in Act.

8.0.3 Land use zones

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

- Residential
- Commercial

- Mixed land use
- Industrial
- Recreational
- Rural and Agricultural

Besides this the following designated land uses have also been depicted on the proposed land use plan:

- Traffic & Transportation
- Utilities
- Government
- Public, Semi-Public

8.0.4 Land use classes

For the purposes of these regulations various land uses are grouped into following land use classes:

Sr. No.	Land use Class	Use Class Code
1	Housing	A
2	Trade and Commerce	B
3	Manufacturing	C
4	Transport, Storage and Warehousing	D
5	Offices	E
6	Education, Training and Research Institutes	F
7	Healthcare facilities	G
8	Recreation, Entertainment	H
9	Public utilities and services	I
10	Agriculture, forestry and fishing	J

8.0.5 Use provisions in land use zones

Following table describe the land use classes and their further sub – classes permitted in various land use zones. The *shaded cells* in the table indicate that the use is generally permissible. A *number* in the cell indicates the conditions listed at the end of the table subject to which the use is permissible.

LAND USE ZONES AND PERMISSIBLE LAND USES								
Use class			Land use zones					
Sub code	Description		Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
A	Housing							

LAND USE ZONES AND PERMISSIBLE LAND USES							
Use class	Description	Land use zones					
Sub code		Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
A-1	Residential houses in the form of plotted development, group housing, farm houses for customary residence including household industry, EWS Housing				1		2
A-2	Old age homes, Orphanages, Hostels for students, working women etc.						
A-3	Service apartments, Hotels including Star Hotels, Motels, Guest Houses, Dharamshalas, Lodging Houses				3		
A-4	Jails, asylums, reformatories and the like						
A-5	Residences for watch and ward staff, residences for industrial workers/ management						
A-6	Housing not classified above						
B	Trade and Commerce						
B-1	Retail trade including markets for fruits and vegetables, meat and fish; super markets						
B-2	Department stores, cash n carry stores, Malls including super market, retail trade, restaurants and multiplexes						
B-3	Personal and community services like laundry, hair dressing, beauty parlors, tailoring, coaching classes, cyber cafes, Atta Chakki, Repair of Household Appliances, Bank Branches, ATM						
B-4	Wholesale trade with storage of commodities	4					4
B-5	Filling Station **						
B-6	Kerosene Storage/Gas Godown	13					
B-7	Gas Distribution (without storage of cylinders)	13					
B-8	Trade Fares, Exhibition and Conventional centers						
B-9	Showroom of Mills/ Factory Retail Outlets						
B-10	Trade not classified above						
C	Manufacturing (NIC Section C) *						
C-1	Manufacture of food products (NIC Division 10)	10		9			
C-2	Manufacture of beverages (NIC Division 11)						
C-3	Manufacture of textiles (NIC Division 13)						
C-4	Manufacture of wearing apparel (NIC Division 14)			9			
C-5	Manufacture of leather and related products (NIC Division 15)						
C-6	Manufacture of wood and products of wood and cork, except furniture; (NIC Division 16)			9			
C-7	Manufacture of paper and paper products (NIC Division 17)						
C-8	Printing and reproduction of recorded media (NIC Division 18)	14					
C-9	Manufacture of coke and refined petroleum products (NIC Division 19)						
C-10	Manufacture of chemicals and chemical products (NIC Division 20)						
C-11	Manufacture of pharmaceuticals, medicinal chemical and botanical products (NIC Division 21)						
C-12	Manufacture of rubber and plastics products (NIC Division 22)						

LAND USE ZONES AND PERMISSIBLE LAND USES							
Use class	Description	Land use zones					
Sub code		Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
C-13	Manufacture of other non-metallic mineral products (NIC Division 23)						5
C-14	Manufacture of basic metals (NIC Division 24)						
C-15	Manufacture of fabricated metal products, except machinery and equipment (NIC Division 25)						
C-16	Manufacture of computer, electronic and optical products (NIC Division 26)						
C-17	Manufacture of electrical equipment (NIC Division 27)						
C-18	Manufacture of machinery and equipment n.e.c.(NIC Division 28)						
C-19	Manufacture of motor vehicles, trailers and semi-trailers (NIC Division 29)						
C-20	Manufacture of other transport equipment (NIC Division 30)						
C-21	Manufacture of furniture (NIC Division 31)	15					
C-22	Other manufacturing (NIC 32)						
C-23	Repair of machinery and equipment (NIC Division 33)						
C-24	Milk Chilling(independent plot), Pasteurization plant, Cold Storage, Fruit Ripening Centre	11					
C-25	Rice Shellers, Processing of Farm Products, Brick Kilns, Lime/ Charcoal Kilns						
C-26	Cottage Industry,Household industry,Atta chakki, Repair of Household Articles, Cycles and scooters						
C-27	I.T. Park, Knowledge Park, Industrial park, Super Mega Mixed Use Integrated Park, Fashion & Technology Park and Film City	16	16				
C-28	Cement, Sand and Concrete Mixing Plant(Batching plant), Bitumen, Sand, Concrete Mixing Plant(Hot Mix Plant)						
C-29	Manufacturing and Storage of Fire Works						
D	Transport Storage and Warehousing						
D-1	Warehousing and storage activities for transportation (NIC Division 52) and Loading & unloading yard						6
D-2	Rail and Air Freight Terminals						
D-3	Truck Terminals						
D-4	Bus Terminals, Auto-Rickshaw/ Taxi Stand						
D-5	Warehousing, Logistic Park, Storage & Godowns, Freight complex, Container Yards						
E	Offices						
E-1	Publishing of books, periodicals and other publishing activities (NIC Group 581) Software publishing (NIC Group 582)			9			
E-2	Motion picture, video and television programme production, sound recording and music publishing activities (NIC Division 59)						
E-3	Broadcasting and programming activities (NIC Division 60)						
E-4	Telecommunications (NIC Group 61), Govt./ Semi-Govt. / Private Business offices						
E-5	Computer programming, consultancy and related activities (NIC Division 62)						
E-6	Information service activities (NIC Division 63)						
E-7	Finance, Banking and insurance (NIC Section K)						

LAND USE ZONES AND PERMISSIBLE LAND USES							
Use class	Description	Land use zones					
Sub code		Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
E-8	Real estate activities (NIC Section L)						
E-9	Professional, scientific and technical activities (NIC Section M)						
E-10	Administrative and support services (NIC Section N)						
E-11	Public administration and defence; compulsory social security (NIC Section O)						
E-12	Professional Services like Lawyers, Accountants, Architects, Chartered engineers						
F	Educational, Training and Research Institutes						
F-1	Pre-Primary Schools, Play schools Kinder Garden						
F-2	Primary Schools,						
F-3	Secondary Schools, Colleges, Vocational Training Institutes,						
F-4	Research and Training Centre's, Universities, Centre's of Advanced Education and training like IIM or IIT, Medical Institute						
F-5	Educational, Training and Research Institutes not classified above						
G	Health care facilities						
G-1	Medical and Dental Clinics and Dispensaries	8	8	8	8		
G-2	Hospitals (NIC Group 861) and Health Center	8	8	8	8		8
G-3	Nursing care facilities (NIC Group 871)	8	8	8			
G-4	Residential care activities for mental retardation, mental health and substance abuse (NIC Group 872)						
G-5	Residential care activities for the elderly and disabled (NIC Group 873)						
G-6	Veterinary services						
G-7	Health care facilities not classified above.						
H	Arts, entertainment, recreation, cultural and religious activities						
H-1	Arts, entertainment and recreation (NIC Section R) and Multimedia						
H-2	Libraries, archives, museums and other cultural activities (NIC Division 91)						
H-3	Gambling and betting activities (NIC Division 92)e.g. Race Course						
H-4	Sports activities and amusement and recreation activities (NIC Division 93) tot-lots, playgrounds, stadia, golf courses etc.						
H-5	Places of worship						
H-6	Marriage Palaces						
H-7	Arts, entertainment and recreation activities not classified above						
I	Public Utilities and Services						
I-1	Electricity, gas, steam and air conditioning supply (NIC Section D)						
I-2	Water collection, treatment and supply (NIC Division 36)						
I-3	Sewerage (NIC Division 37)						
I-4	Waste collection, treatment and disposal activities; materials recovery (NIC Division 38) and Carcass Disposal Site	7					
I-5	Postal and courier activities (NIC Division 53)						
I-6	Police station						

LAND USE ZONES AND PERMISSIBLE LAND USES							
Use class		Land use zones					
Sub code	Description	Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
I-7	Fire Station						
I-8	Public utilities and Services not classified above						
I-9	Cemeteries, Graveyards, Cremation grounds						
I-10	Telecommunication Towers / Antenna						
J	Agriculture, forestry and fishing (NIC Section A)						
J-1	Crop and animal production, hunting and related service activities (NIC Division 01)	12					
J-2	Land Conservation and Preservation measures such as Storage, Check Dams and other water harvesting measures						
J-3	Fishing and aquaculture, Dairy, Piggery, Poultry farming, mushroom growing Centre and slaughter houses. (NIC Division 03),						
J-4	Quarrying of stone, sand and clay (NIC Group 081)						
J-5	Plant Nursery and Greenhouses related to Nursery, Floriculture						
Notes:							
NIC	National Industrial Classification (All Economic Activities) 2008, Central Statistical Organization, Ministry of Statistics and Programme Implementation, Government of India, www.mospi.nic.in						
A	Shaded areas indicate that the use class is permissible in the zone						
B	Shaded area with number / notation indicates the conditions attached						
	EWS Housing only						1
	Only farm houses permissible						2
	Guest Houses and Star hotels only						3
	Wholesale trade in agricultural commodities only provided it is minimum 200 m away from village abadies / residential areas						4
	Only Manufacture of bricks, earthen pots, country tiles etc.						5
	Warehousing for agricultural commodities only.						6
	Permissible till time the residential or any other activity compatible to residential zone occurs within a radius of 500 meters from the site, after which NOC / permission issued to the applicant shall cease to exist and the activity shall relocate itself to another suitable site / zone.						7
	Subject to fulfillment of conditions of Pb. Govt. Notification No. 17/17/5-Hg2/311 dated 11.01.08 and instructions issued from time to time						8
	Only Green Industries						9
	Only bakery						10
	Outside M. C. limits with the condition that it is located minimum 100mtr away from the lal lakir/ phirni or a village abadi. In case, a cold store is to be set up within a distance of 100mtr from already approved residential area (other than being a village abadi) or an approved residential colony is to be set within 100mtr of an existing cold store, then the owner of land use which comes later shall be bound to provide a minimum of 15mtr wide green buffer of broad leaves trees to the site in which approved residential area or cold store is located.						11
	Except animal production.						12
	Only for retail sale/ distribution without storage of Gas cylinders/kerosene oil barrels.						13
	Provided that the site abuts on atleast 60 feet wide existing/proposed road of master plan						14
	Independent saw mill activity is permissible till the time residential or any other activity compatible to residential zone occurs within a radius of 100mtrs from the site, after which NOC/ Permission issued to the applicant shall cease to exist and activity shall relocate itself to another suitable site/zone						15

LAND USE ZONES AND PERMISSIBLE LAND USES								
Use class			Land use zones					
Sub code	Description		Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
	only I. T. park and knowledge park							16
* All types of industries permitted in the designated land use zone are subject to the fulfillment of requirements of different departments								
** The siting of petrol pumps shall be subject to instruction / guidelines of IRC/ MORTH/TCPO/Punjab govt. issued from time to time.								
C	Minimum area required for Educational and Health care facilities shall be as prescribed by government or the accrediting authorities from time to time							
	All developments will be subject to Environmental Clearance wherever required.							
	Minimum width of the access road for all public places and involving “Assembly” occupancy shall be 60 feet.							

The activities / uses not mentioned in the above table but found compatible for a particular land use zone shall also be permissible with permission of the competent authority.

8.0.6 Designated uses

Following uses have been specifically designated in the proposed land use plan:

- Traffic and Transportation
- Utilities
- Public and semi-public facilities

8.0.7 Use provisions in designated areas

Following uses are permissible in the designated areas mentioned above:

i) Traffic and Transportation: Permissible uses

Rail yards, Railway Station and sidings, Transport Nagar (including Post and Telegraph Offices and Telephone Exchange, Dhabas, Labor Yards, Areas for loading and unloading, Stores, Depots and Offices of goods booking agencies, Petrol Filling Station and Service Garages, Parking Spaces, public utilities and buildings), Bus Terminus and Depot, Bus Stop Shelter, Taxi / Tonga / Rickshaw / Scooter Stands, Parking Spaces.

ii) Utilities: Permissible uses

Water Supply, Drainage, Storm Water, Waste Processing and disposal, Electricity, Communication Systems and related installations etc.

iii) Public and semi Public facilities: Permissible uses

Governmental and semi-Governmental offices, Governmental Administrative Centre's, Secretariat, Educational – Cultural and Religious Institutions including Theatres,

Auditoriums etc., Medical Health Institutions, Community Centre's, Club, Orphanage, Old Age Home, Bank, Police Station etc.

8.0.8 Special Conditions

- The siting of Petrol Pump / Filling Station shall be subject to instructions/guidelines of IRC/MORTH/TCPO /Punjab Govt. issued from time to time.
- Minimum width of access road for warehousing uses shall be 60 feet.
- All public and semi-public uses in residential zone shall be located on independent plots with minimum access of 60 feet.
- All types of industries permitted in the industrial/ mixed land use zone are subject to the fulfillment of conditions issued by industries department / Punjab Pollution Control Board from time to time.

8.0.9 Residential Densities

Residential zone is divided into two sub-zones as shown on proposed land use plan drg. no. DDTP (R) 45/2011 dated 12.08.2011.(This drawing is superimposed on previous drawing no: DDTP (R) 09/2010 dated 15.08.2010.) The maximum average residential density of different sub-zones which given as under:

Table 9: Proposed Residential Density for LPA, Roopnagar 2031

Density zone	Proposed Residential density
High Density Zone (RD1)	Not more than 300 persons per acre
Low Density Zone (RD2)	Not more than 200 persons per acre

In case of standalone group housing projects/chunk sites reserved for group housing purpose, maximum average residential density @ 60 dwelling units per acre shall be permissible irrespective of the density zone prescribed in the Master Plan. The areas zoned for residential use are not derived from affordable densities but are based on potential for growth. A large proportion of the areas of these density zones particularly on the periphery may remain undeveloped by 2031.

8.0.10 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.

- The land owners proposing development of certain uses on their land shall obtain a certificate of “Compliance with Master Plan” from a designated authority.

8.1 Section – II: Development Control regulations

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

These Development Control Regulations are applicable to new and future developments and developers shall have 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 these into operation will continue to be honored subject to the terms and conditions of approval and shall not be affected by these controls.

The F.A.R height, ground coverage, parking areas, set back, width of road and frontage of site etc. regarding residential, commercial, institutional, industrial or any other use for areas existing within M.Cl. limits shall be governed by Municipal bye-laws.

Some of the key regulations currently in force are reproduced below.

8.1.1 Residential

Minimum area and development of a residential colony within Master Plan Roopnagar shall be as per the provisions of PAPR Act, 1995 and guidelines issued by govt. from time to time:

a) Minimum Plot size

Category	Minimum Plot size
Residential Plotted	5 acres
Group Housing	
General	2 acres independent
EWS	2.5 acres

Note:

- Minimum area of colony within M.Cl. limits shall be as per Local Govt. norms.*
- The lowest hierarchy street within residential zone of Master Plan shall be minimum 35 feet wide or as prescribed in the guidelines issued by govt. from time to time.*
- The saleable area of any plotted residential colony shall be as per the provisions of PAPR Act, 1995 or as amended from time to time.*

8.1.1.1 Group Housing (outside M.C. limits)

Minimum Plot size	
a) For General Category	2 acres
b) For EWS	2.5 acres
2.1.1.1.1 Minimum Road width	2.1.1.1.2 For group housing stand-alone projects, minimum width of approach road is 60' but the promoter is 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.
Minimum Frontage	20 meters
Permissible FAR	1:1.75
Permissible 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.
Parking provisions	For group housing developments, the requisite parking provision is 1.5 ECS per 100 sq. m of covered area subject to maximum of 3 ECS per dwelling unit.

Note:

1. Construction of residential houses sold by promoters on floor basis shall also be considered as Group / Flatted housing developments and parking requirements shall be as per the norms applicable to the group housing.
2. For group housing within M.C. limits norms of local government shall be applicable.

8.1.1.2 Farm House

Minimum agricultural land holding	2.5 acres*
FAR	0.04
Ground Coverage	2%
Number of storey's	2
Height	Single Storey 18'-0" Double Storey 28'-0"
Hard Surface	10%

*Area other than under the built up farm house shall be exclusively used for agricultural and its allied activities

8.1.2 Commercial

At local level

There shall be provisions for small scale, double storey commercial subject to the condition that abutting road shall have a minimum width of 60 feet with minimum 20 feet front setback from road for parking purposes. However the area requirements for low rise commercial

developments within M.C. limits shall be as per the local body/Municipal council's rules and regulations.

Stand-Alone Commercial Complexes

For stand-alone commercial complexes with height more than double storeys, the additional criteria listed in following table shall apply.

Criteria for stand – alone commercial complexes (more than double storeys)

Item	Permissible Norms / Standards
Minimum Plot size	1000 sq. m
Minimum Road width	80 feet
Minimum Frontage	20 m
FAR	1:1.75
Maximum Ground coverage	40%
Parking	For projects with no multiplexes, the minimum parking shall be 2 ECS per 100 sq m of covered area (including circulation area)
	For projects with multiplexes/cinemas/theatres, the minimum parking shall be: b) 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 c) 2 ECS per 100 sq. m of covered area, in respect of balance commercial component and circulation area
	Total parking requirement shall be provided in the compulsory front set back and within the development site boundary or in the basement.
	If the site area is one acre or above, minimum 15% of the total area is to be reserved for landscaping purposes
Landscaping	The minimum setback distance is to comply with the existing norms and standards.

Note:

1. The ground coverage, F.A.R., Height of the building and parking norms shall be as provided in the local body/municipal building byelaws, if the project is located within M.C. limit of the town.
2. The ECS 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.

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 are subsumed under the predominant residential land use.

8.1.3 No Construction Zone along major roads

All properties within the jurisdiction of LPA Roopnagar that abuts **Major District roads (Scheduled Roads), intercity roads and other proposed roads of category R1 & R)** shall have access through service lanes and shall have no construction zone as below irrespective of the Land use shown in the proposed land use plan drg. no. DDTP (R) 45/2011 dated 12.08.2011.(This drawing is superimposed on previous drawing no: DDTP (R) 09/2010 dated 15.08.2010.)

Sr. No	Category of road	Proposed Right of way of road (in feet) outside M.C limit	No construction zone on both sides of R.O.W. within and outside M.C. limits (in mts.)
1.	Chandigarh-Manali (NH-21) Road	180	5
2.	Roop Nagar – Hoshiarpur Road (SH-24)	88	5
3.	Kurali-Morinda (SH)	18	5
4.	Roopnagar-Bela road (ODR)	66	5
5.	Roopnagar- chamkaur Sahib road (Along with Sirhind road)	23	5
6.	Roopnagar- Morinda Road (Old)	88	5
7.	Roopnagar- Nurpurbedi Road (ODR)	37	5
8.	Roopnagar Bypass	200	5
9.	Roopnagar Nangal Bypass	100	5
10.	Road along SYL	100	5
11.	Road connecting Roopnagar Bypass and Bela road.	80	5

Note:

Where widening of existing road is proposed, the land shall be taken proportionately equally from both sides of existing roads.

8.1.4 Institutional Buildings

The development controls for institutional buildings are tabulated as follows:

Item	Permissible Norms / Standards
Plot size	Area and size shall be as per the affiliation authority norms or 5000 sq.mt as prescribed by Punjab government policy, whichever is more.
Frontage	200 feet
FAR	1:1
Ground Coverage	40%
Road width	The minimum road in front of institutional developments should be 60 feet or as proposed in the master plan. The only exceptions are nursery and primary schools.
Parking provisions	For institutional developments, the requisite parking provision is 1 ECS per 100 sq m of covered area if the project is covered under notification no.17/17/5-Hg2-311 dated 11.01.08.

Note: Other building regulations shall be governed by the zoning plan approved by the competent authority.

8.1.5 Industrial

Permissible ground coverage, floor area ratio, height, parking etc. shall be as per the norms/ building bye-laws for industries of Punjab State Industries and Export Corporation

Permissible Ground coverage	
For the first 2420 sq. yds.	50% of the site
For the next 2420 sq. yds.	33% of the site
In excess of 4840 sq. yds.	25% of the site
FAR	1:1.0
Parking	1 ECS / 100 sq. m of covered area
Road width	The minimum road width for industrial unit shall be 40 feet.
Height	There shall be no restrictions on 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.

Note:

1. 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.
2. No new industry in the Master Plan shall be permitted on a road having less than 40'-0" ROW or as specified in the master plan. However, in case the existing road width is less than the minimum specified width as per Master Plan or 40'-0" wide then the proportionate land on both sides shall be safeguarded for widening to comply with the minimum requirement. In case of industries existing before the final notification of the master plan, if the road width is less than 40 feet then the owner of the site/ industry shall give a self-declaration for leaving the required strip of land from his ownership as and when required by the concerned authority.
3. Industrial / IT Park shall have minimum 10 acres area. In IT Park, IT component shall have FAR 2. In industrial park, for an industry component FAR shall be 1 and other components shall have FAR as mentioned under different uses in the Master Plan.

8.1.6 Environmental considerations

1. Minimum buffer of 15 meters green belt of broad leaf trees should be provided around the boundary of village abadies falling in industrial zone of Master Plan. A buffer strip of 15 meters of broad leaf trees shall 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. It is clarified that 15 meter buffer shall be provided by the owner of the project who comes later.

2. 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 the competent authority. The distance shall be measured from source of pollution / hazard in the industrial premises to the building lines as per zoning plan of the colony / complex. However for specified type of industry like Rice Sheller / sella plants, stone crushers, hot mix plants, brick kilns etc. standards prescribed by PPCB or any other agency shall apply.
3. Gap of at least 100' should be left between the railway boundary and the nearest private buildings so as to avoid smoke and noise nuisance to these adjacent buildings. Wherever it is not possible to leave a road width (minimum 20') may be left between the railway boundary and the nearest adjacent buildings, the standards prescribed by the Railway Board conveyed by Divisional Supdt. Northern Railway, Ferozepur to the Secretary Local Self Govt. Punjab vide their letter dated 22.09.71

8.1.7 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 the extent shown in the Master Plan.
- 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 5 meters wide green strips on each side of minor drain shall be maintained and other major water bodies shall have minimum 30 meters green strips on each 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. In these green strips, golf course, sports and recreational activities shall be permissible but no construction would be allowed. The supporting facilities for these activities shall be constructed outside the green strips.

8.1.8 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 programs 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).

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.

8.2 Section III: Exceptions

1. Uses determined by the Chief Town Planner, Punjab as compatible with uses permissible shall be allowed in respective zones.
2. Development / projects approved prior to coming in to force of these regulations shall be deemed to be in compliance with these Regulations.
3. 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 as sanctioned/ permitted.
4. Use of land covered under Optimum Utilization of Vacant Government Land (OUVGL) Scheme or any other project of the State / Central Government shall be determined by the Government at any appropriate time notwithstanding the provisions of this Master Plan.
5. 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 will prevail.
6. In case the area of a project falls partially under no construction zone along a water body, relaxation of maximum up to 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.
7. 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.
8. Within the existing M.C. limits the buildings rules notified by the local Govt. shall be applicable. i.e. The F.A.R., height, ground coverage ,parking requirements, set backs, width of and frontage of site etc. regarding residential, commercial, institutional, industrial or any other use for areas existing within M.C. limits shall be governed by municipal rules/bye –laws.
9. Any change in the above said development controls notified or to be notified in future by the concerned development authority shall have overriding effect on the development controls mentioned above.

ANNEXURE -I

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29.4.09

Dated: 27/2/09

GOVERNMENT OF PUNJAB
Department of Housing and Urban Development
(Housing Branch-I)

Notification

No. 12/71/6-4HGE/750

In continuation of Notification No. 12/71/2006-4HGI/5224 date 9.5.08 the Governor of Punjab is pleased to alter the boundaries of Local Planning Area, Roopnagar within the meaning of Sub Section 7 of Sector 56 read with the sub section 1 of section 56 of Punjab Regional and Town Planning and Development (Amendment) Act, 2006. The Total area of proposed Local Planning Area Roopnagar is 24265 (Hectres) (59969 Acres.) Which includes Roopnagar city, adjoining 129 villages and one Town The Schedule of boundaries of Local Planning Area Roopnagar is as under.

Schedule of Boundary of Local Planning Area, Roopnagar

NORTH:

EAST:

SOUTH:

Starting from point 'A' which is formed at the intersection of northern boundary of village Garh Bagga (H.B.No.522) with the Noorpur Bedi-Roopnagar road, then moving towards East along the North-eastern boundary of village Garh Bagga (H.B.No.522) along river Satluj and moving along the North-eastern boundary of village Alampur (H.B.No.33) then moving along northern and eastern boundaries of village Malikpur (H.B.No.35) crossing the Nangal-Roopnagar railway line upto the point 'B' which is formed at the intersection of Nangal-Roopnagar road with North-eastern boundary of village Malikpur (H.B.No.35)

From point 'B' moving towards South cutting across Bhakara canal and then moving along the North-eastern boundary of village Malikpur (H.B.No.35) and South-eastern boundaries of village Lakhal (H.B.No.349) then moving along the Eastern boundaries of village Bairampur (H.B.No.350), village Dargah Shah Khaladinwalid (H.B. No. 351), village Khalidpur (H.B.No.352), village Majri (H.B.No.353), village Kotla Nihang (H.B.No. 150) and village Phoolpur Garewal (H.B. No. 181) then crossing the Sugh Rao Nadi and moving along North-eastern boundaries of village Thana (H.B.No.190), village Mianpur (H.B. No. 194), village Akalgarh Urf Burjwala (H.B.No. 202) and moving along the Eastern boundary of village Ranigarh alias Dekwala (H.B. No. 203) crossing the Budki Rao Nadi and then moving along Eastern boundaries of village Chararian (H.B.No.204), village Kalal Majra (H.B.No.205), village kishanpura (H.B.No.207) and then moving along common boundary of District S.A.S Nagar and District Roopnagar crossing Roopnagar-Sirhind railway line and Siswan Nadi upto the point 'C' which is formed at the intersection of Roop Nagar-Kharar road with South-eastern boundary of village Charheri (H.B.No. 120) and common boundaries of Distt. S.A.S.Nagar & Distt. Roopnagar..

From point 'C' moving towards South-west along the common boundary of Distt. Roopnagar & Distt. S.A.S.Nagar and South-western boundaries of village Charheri (H.B.No.120), village Bhagowal (H.B.No.119) and Eastern boundaries of village Behdali (H.B. No. 116), village Dhianpura (H.B. No. 115) Intersecting the Kurali-Sirhind Railway line and Kurali Morinda road then moving towards southern - Western Boundary of Village Dhianpura (H. B.-115) crossing Kurali - Morinda road and then Kurali-Sirhind Railway line and then further moving along South-western boundaries of village Behdali (H.B.No.116), village Paprali (H.B.No.117), village Sota (H.B.No. 224), village Mugal Majri (H.B.No.223) and village Goslan (H.B.No.225) crossing the Siswan Nadi and then moving along Western boundaries of village Goslan (H.B.No.225), village Khatri (H.B.No.216), village Solkhan (H.B.No.217), village Asmanpur (H.B.

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No. 218) and village Behrampur H.B. No. 219) crossing Roop Nagar-Morinda road and Bhakra Canal then moving along the South-western boundaries of village Pathreri Rajputan (H.B.No. 170) and village Sangatpur (H.B.No.171) and then moving along Southern boundaries of village Chhota Bande Mehal (H.B.No.172) and village Mansuha Kalan (H.B.No.53) upto the point 'D' which is formed at intersection of the Roopnagar-Chamkaur Sahib road (running along Sirhind Canal) and Southern boundary of village Mansuha Kalan (H.B.No.53).

WEST:

From point 'D' moving towards West cutting across Ropar - Chamkaur Sahib road along the Southern boundary of Vill. Kamalpur (H.B.No.60) and cutting across Siswan Nadi, then moving along Southern boundary of Vill. Kheri Salabatpur (H.B.No.66), then cutting across Ropar-Chamkaur Sahib road and Sirhind Canal, then moving along Western boundaries of Vill. Kheri Salabatpur (H.B.No.66), Vill. Bhalian (H.B.No.65), Vill. Suleman Shikoh (H.B.No.69), cutting across Ropar-Bela road and moving along Western boundaries of Vill. Kulian (H.B.No.95), Vill. Garhi (H.B.No.85), Vill. Khizarpur (H.B.No.86) and cutting across Satluj River and moving towards the common meeting point of District boundaries of District. Roopnagar and District Nawan Shehar and then moving towards West along the common boundaries of Distt. Roopnagar & Distt. Nawan Shehar entering Nawan Shehar Distt. and moving towards North crossing River Satluj along the Western boundaries of village Arazi Darya Baramad Bela (H.B.No.420), village Rel Majra (H.B.No. 419), village Taunsa (H.B.No.417), village Bana (H.B.No. 416), village Fatehpur (H.B.No. 415) upto the common meeting point of village Taunsa (H.B.No.417), village Bana (H.B.No.416), village Fatehpur (H.B.No.415) and village Nangal (H.B.No.414) and then moving towards West along the Southern boundaries of village Nangal (H.B.No. 414) village Bir Sarkar alias Bela (H.B.No. 424) and Village Ramgarh (H.B.No.208) and then moving towards North along the western boundaries of village Ramgarh (H.B.No.208), village Jagtewal (H.B.No. 207) crossing Ropar-Nawan Shehar Road and Bist Doab Canal then moving towards East along the Northern boundary of village Jagtewal (H.B.No.207), village Jamait Garh (H.B.No.209) upto the common meeting point of village Jamait Garh (H.B.No.209) village Raipur (H.B.No.413) and village Majra Jattan (H.B.No.412) and then moving along the Northern-western boundary of village Majra Jattan (H.B.No.412) upto the meeting point of District boundaries of District Nawan Shehar and District Roopnagar and then moving towards East along North-eastern boundary of village Majra Jattan (H.B.No.412) village Raipur (H.B.No.413) Village Bana (H.B.No.416) and village Taunsa (H.B.No.417) then moving towards East along the North-western boundary of village Garh Bagga (H.B.No. 522) upto point 'A' which is the starting point.

The boundary of Local Planning Area of Roopnagar is specifically shown on the drawing no. DDTP(R) 01/09, dated 21.01.2009. All the provisions laid down u/s 56(2) of "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006 and all the concerned rules framed under this Act have been taken into consideration.

(ARUN GOEL, I.A.S.)
Secretary to Govt. of Punjab,
Housing & Urban Development,

Chandigarh,
Dated: 25/2/09

LIST OF VILLAGES FALLING IN LOCAL PLANNING AREA , ROOPNAGAR

Sr.No.	Name of Villages	H.B. No.	Area in Hectares.	Population(2001)
	District Roopnagar			
1.	Malikpur	35	365	1805
2.	Alampur	33	121	425
3.	Tapal Majra	36	73	47
4.	Mianpur Rainan (B.C.)	37	31	(b.c.)
5.	Mianpur Bandalian (B.C.)	38	28	(b.c.)
6.	Khawaspur	39	175	1196
7.	Katli	40	229	495
8.	Sada Barat	41	159	(M.C.)
9.	Hussainpur	42	113	801
10.	Nanakpur alias Sharfabad	43	47	418
11.	Arazi Ropar	46	39	6
12.	Abhepur Beli.	47	42	32
13.	Ladhal	34 ^o	199	285
14.	Bairampur	350	119	384
15.	Dargah Shah khalid bin walid	351	212	305
16.	Khalidpur	352	175	146
17.	Majra	353	168	948
18.	Phoolpur Garewal	181	111	524
19.	Kotla Nihang	180	374	4311
20.	Thauna	190	165	1093
21.	Simtari Jhalian	182	158	607
22.	Manak Majra	189	110	498
23.	Akalgarh urf Burjwala	202	200	621
24.	Ramgarh alias Dekwala	203	166	523
25.	Chararian	204	245	390
26.	Kalal Majra	205	150	689
27.	Fatehgarh	126	114	536
28.	Atalgarh	208	77	200
29.	Lohari	209	106	831
30.	Santpur alias Chupki	212	59	161
31.	Bhago Majra	210	154	834
32.	Mathahari	124	84	299
33.	Adhrere	122	131	1025
34.	Bhagwantpur	214	153	893
35.	Brahman Majra	213	176	602

	Raipur Patti Gandhon (B.C.)	193	60	(b.c.)
37.	Raje Majra	192	222	594
38.	Gandhon Kalan	191	77	628
39.	Rangilpur	188	101	770
40.	Lakhmipur	186	113	613
41.	Bheora	183	121	623
42.	Sukhrampur	179	M.C	-
43.	Paprala	184	102	819
44.	Gandhon khurd	187	60	210
45.	Gurpura	185	53	22
46.	Chhoti Railon	178	81	633
47.	Rasulpur	177	80	463
48.	Salaura	176	105	385
49.	Bari Railon	50	145	570
50.	Samrala	51	142	267
51.	Shampur	49	140	1959
52.	Haveli Chhoti	48	101	726
53.	Haveli Bari	45	334	(M.C.)
54.	Gurdaspur	75	119	440
55.	Khairabad	52	118	782
56.	Chhoti Phool	74	164	896
57.	Bara Phool	76	525	487
58.	Nunowal	77	103	23
59.	Gobindpur	174	52	362
60.	Bara	175	73	453
61.	Sangatpur	171	113	200
62.	Bara Bande Mehal	173	101	502
63.	Mansuha Kalan	53	241	1109
64.	Mansuha Khurd	54	111	242
65.	Budha Bhora	73	134	411
66.	Rautan	56	78	46
67.	Mahlan	58	126	853
68.	Bhauwal	55	72	321
69.	Chhoti Jhallian	59	86	478
70.	Chhota Bande Mehal	172	49	175
71.	Mianpur	194	281	1881
72.	Pathreri Rajputan	170	142	213
73.	Pathar Majra	220	112	215
74.	Behrampur	219	309	1846
75.	Soikhian	217	215	1591
76.	Asmanpur	218	73	290
77.	Singh	215	106	898
78.	Khalra	216	219	1195
79.	Goshan	225	143	740
80.	Sihon Majra	222	164	675
81.	Chaklan	211	115	314

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	Total	224	362	1450
	Bhagowal	119	100	490
	Behdala	118	63	(b.c.)
	Behdali	116	187	1154
	Paprali	117	204	1441
	Dhianpura	115	156	859
87	Charheri	120	57	442
88	Ban Majra	123	95	940
89.	Mugal Majri	223	136	523
90.	Haripur alias Ror Majra	221	101	272
91.	Kishanpura	207	138	603
92	Chintgarh	130	186	858
93	Garh Bagga	522	1552	1593
94	Roopnagar	44	542	49159
95.	District Nawan Shehar			
	Majra Jattan	412	603	1325
96	Raipur	413	545	756
97	Nangal	414	183	434
98	Fatehpur	415	204	1166
99	Bana	416	641	1857
100	Taunsa	417	798	2731
101	Aaron	418	640	2212
102	Relmajra	419	1428	6904
103	Arazi Darya Baramad Bela	420	620	67
104	Bir Sarkar alias Bela	424	189	138
105	Jagtewal	207	74	354
106	Ramgarh	208	101	415
107	Jamiatgarh	209	122	789
108	Taprian Gharispor	78	96	385
109	Bara Surtapur	71	239	539
110	Chhota Surtenpur	72	113	230
111	Taprian Boothgrah	80	46	56
112	Taprian Ramgarh	79	144	163
113.	Rattan pur	87	76	134
114.	Chupki	88	41	138
115.	Khizarpur	86	209	147
116.	Ranga	81	68	149
117.	Garhi	85	151	577
118.	Baman	84	65	298
119.	Kulian	95	102	295
120.				

121	Assa pur	83	95.	327
122	Khalilpur	82	65	88
123	Majudin pur	70	130	338
124	Suleman Shikoh	69	156	517
125	Bhalian	65	188	1198
126	Bhaini	57	143	654
127.	ChhotaChaunta	68	185	263
128	Bara Chaunta	67	185	387
129	Khari Salabtpur	66	253	699
130	Kamalpur	60	379.	583
	Total		24265 (59960acres, apprx.)	1,35,947

ANNEXURE-II

Growth Rate Of Villages Of LPA Roopnagar 1991-2001

Sr. No:	Name of Villages	H.B. No.	.Population (1991)	Population(2001)	Growth Rate 1991-2001(%age)
	District Roopnagar				
1)	Malikpur	35	1729	1805	4.39
2)	Alampur	33	331	425	28.40
3)	Tapal Majra	36	43	47	9.30
4)	Mianpur Rainan (B.C.)	37	(b.c.)	(b.c.)	-
5)	Mianpur Bandalian (B.C.)	38	(b.c.)	(b.c.)	-
6)	Khawaspur	39	1127	1196	6.12
7)	Katli	40	451	495	9.75
8)	Sada Barat	41	33	(M.C.)	-
9)	Hussainpur	42	580	801	38.10
10)	Nanakpur alias Sharfabad	43	299	418	39.80
11)	Arazi Roopnagar	46	(b.c.)	6	-
12)	Abhepur Beli.	47	15	32	113.3
13)	Ladhal	349	226	285	26.10
14)	Bairampur	350	285	384	34.73
15)	Dargah Shah khalid bin walid	351	215	305	41.86
16)	Khalidpur	352	96	146	52.08
17)	Majri	353	641	948	47.89
18)	Phoolpur Garewal	181	484	524	8.26
19)	Kotla Nihang	180	3619	4311	19.12
20)	Thauna	190	976	1093	11.99
21)	Simbal Jhalian	182	468	607	29.70
22)	Manak Majra	189	460	498	8.26
23)	Akalgarh urf Burjwala	202	585	621	6.15
24)	Ramgarh alias Dekwala	203	500	523	4.6
25)	Chararian	204	372	390	5.40
26)	Kalal Majra	205	702	689	-1.85

27)	Fatehgarh	126	443	536	20.99
28)	Atalgarh	208	177	200	12.99
29)	Lohari	209	730	831	13.83
30)	Santpur alias Chupki	212	166	161	-3.01
31)	Bhago Majra	210	738	834	13
32)	Mathahari	124	82	299	264.63
33)	Adhrera	122	788	1025	30.07
34)	Bhagwantpur	214	747	893	19.54
35)	Brahman Majra	213	594	602	1.34
36)	Raipur Patti Gandhon (B.C.)	193	(b.c.)	(b.c.)	-
37)	Raje Majra	192	566	594	4.94
38)	Gandhon Kalan	191	588	628	6.80
39)	Rangilpur	188	666	770	15.61
40)	Lakhmipur	186	517	613	18.56
41)	Bheora	183	567	623	9.87
42)	Sukhrampur	179	Merged in	M. C. Ropar	-
43)	Paprala	184	739	819	10.82
44)	Gandhon khurd	187	183	210	14.75
45)	Gurpura	185	26	22	-15.38
46)	Chhoti Railon	178	391	633	61.89
47)	Rasulpur	177	359	463	28.96
48)	Salaura	176	326	385	18.09
49)	Bari Railon	50	445	570	28.08
50)	Samrala	51	252	267	5.95
51)	Shampura	49	1283	1959	52.68
52)	Haveli Chhoti	48	606	726	19.80
53)	Haveli Bari	45	(M.C.)	(M.C.)	-
54)	Gurdaspur	75	365	440	20.54
55)	Khairabad	52	646	782	21.05
56)	Chhota Phool	74	836	896	7.17
57)	Bara Phool	76	189	487	157.67
58)	Nunowal	77	23	23	0.0
59)	Gobindpur	174	311	362	16.39
60)	Bara	175	387	453	17.05
61)	Sangatpur	171	178	200	12.35

62)	Bara Bande Mehal	173	483	502	3.93
63)	Mansuha Kalan	53	953	1109	16.36
64)	Mansuha Khurd	54	210	242	15.23
65)	Budha Bhora	73	349	411	17.76
66)	Rautan	56	44	46	4.54
67)	Mahlan	58	806	853	5.83
68)	Bhauwal	55	311	321	3.21
69)	Chhoti Jhallian	59	482	478	-0.82
70)	Chhota Bande Mehal	172	146	175	19.86
71)	Mianpur	194	1709	1881	10.06
72)	Pathreri Rajputan	170	168	213	26.78
73)	Pathar Majra	220	181	215	18.78
74)	Behrampur	219	1706	1846	8.20
75)	Solkhian	217	1237	1591	28.61
76)	Asmanpur	218	315	290	-7.93
77)	Singh	215	641	898	40.09
78)	Khabra	216	1103	1195	8.34
79)	Goslan	225	731	740	1.23
80)	Sihon Majra	222	715	675	-5.59
81)	Chaklan	211	301	314	4.32
82)	Sotal	224	1584	1450	-8.46
83)	Bhagowal	119	399	490	22.80
84)	Behdala	118	(b.c.)	(b.c.)	-
85)	Behdali	116	1097	1154	5.19
86)	Paprali	117	1290	1441	11.70
87)	Dhianpura	115	790	859	8.73
88)	Charheri	120	426	442	3.75
89)	Ban Majra	123	766	940	19.59
90)	Mugal Majri	223	440	523	18.86
91)	Haripur alias Ror Majra	221	270	272	0.74
92)	Kishanpura	207	546	603	10.44
93)	Chintgarh	130	830	858	3.37
94)	Garh Bagga	522	1254	1593	27.03
95)	Roopnagar	urban	37996	49159	29.38
96)	Assarpur	83	345	327	-4.8
97)	Khalilpur	82	60	88	46.66
98)	Majudin pur	70	304	338	11.18

99)	Suleman Shikoh	69	475	517	8.84
100)	Bhalian	65	1069	1198	12.06
101)	Bhaini	57	589	654	11.03
102)	ChhotaChaunta	68	223	263	17.93
103)	Bara Chaunta	67	205	387	88.78
104)	Khari Salabtpur	66	765	699	-8.62
105)	Kamalpur	60	576	583	1.21
	District Nawan Shehar				
106)	Taprian Gharispur	78	234	385	64.53
107)	Bara Surtapur	71	529	539	1.89
108)	Chhota Surtenpur	72	226	230	1.77
109)	Taprian Boothgrah	80	66	56	-15.15
110)	Taprian Ramgarh	79	128	163	27.34
111)	Rattan pur	87	51	134	162.74
112)	Chupki	88	68	138	102.94
113)	Khizarpur	86	176	147	-16.47
114)	Ranga	81	94	149	58.51
115)	Garhi	85	452	577	27.65
116)	Baman	84	239	298	24.68
117)	Kulian	95	220	295	34.09
118)	Majra Jattan	412	1118	1325	18.51
119)	Raipur	413	679	756	11.34
120)	Nangal	414	319	434	36.05
121)	Fatehpur	415	929	1166	25.51
122)	Bana	416	1139	1857	63.04
123)	Taunsa	417	1706	2731	60.08
124)	Asron	418	2291	2212	-3.45
125)	Relmajra	419	4801	6904	43.80
126)	Arazi Darya Baramad Bela	420	313	67	-78.59
127)	Bir Sarkar alias Bela	424	121	138	14.05
128)	Jagtewal	207	275	354	28.72
129)	Ramgarh	208	335	415	23.88
130)	Jamiatgarh	209	564	789	39.89
	Total		111222	1,35,947	

ANNEXURE III

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 scholaris (Chhatim)	Tall tree with columnar shape, Evergreen, very ornamental, bears greenish-white flowers in October- December.
2.	Barringtonia acuitangula (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. Propagated by layers and cuttings. Flowers deep pink from January to April and from September to November.
4.	Bauhinia purpurea (Kachnar)	Medium tree, with columnar form, evergreen, bears purple coloured flowers in November.
5.	Bauhinia variegata (Kachnar)	Medium tree with columnar form. Sheds leaves in January-February, profusely flowering tree, highly beautiful when in bloom, bears pink, white and purple coloured flowers in February, March, April
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 grandis (Pink Mohur)	Medium in height, with spreading habit. Highly ornamental tree. Bears deep carmine flowers in November, December.
8.	Cassia javanica (Java-ki-Rani)	Medium in height, leafless in April-May. It is the most beautiful flowering 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, white in April-May.
12.	Chorisia speciosa (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 creates mass colour effect with orange red flowers from April to June.
14.	Ficus religiosa (Pipal)	Tall columnar shaped tree, leafless in February-March, very hardy and fast growing, flowers pale green in April.

15.	<i>Ficus infectoria</i> (Pilkhan)	Tall spreading, fast growing and hardy tree, leafless in March, good for shade, need protection from cattle, green yellow flowers in Nov., Dec.
16.	<i>Hetrophragma roxburghii</i> (Marour Phaly)	Tall columnar tree, ever green, flowers are of pale, yellow brown colour in March.
17.	<i>Jacranda mimosaefolia</i> (Jakaranada or Neely-Gulmohar)	Medium in height, leafless when in bloom, good for parks and houses, fern like bipinnate leaves, bears flowers of violet-blue colour in April-May.
18.	<i>Kigelia pinnata</i> (Jhar Phanoos)	Tall and spreading tree, evergreen hardy and fast growing flowers are of crimson, yellow and brown colour in April-May.
19.	<i>Lagerstroemia fros-reginae</i> (Queen's flower)	Medium sized tree, columnar shape, very pretty, leafless in winter (December-February). Purple and pinkish blooms in April-May and July-August.
20.	<i>Lagerstroemia thorelli</i> (Pride of India)	Medium in height, columnar in shape, beautiful tree, leafless from Dec-Feb, flowers of mauve colour from June to December
21.	<i>Lagerstroemia rosea</i>	Medium in height, columnar tree, very pretty. Leafless in winter (December-Feb.) with deep pink flowers from April to September
22.	<i>Pongamia Glabra</i> (Karanj)	Tall spreading and fast growing tree, leafless in March. Bears mauve coloured flowers in April, May.
23.	<i>Pterospermum acerifolium</i> (Kanak Champa)	Tall columnar tree, ever green, handsome, bears sweet scented flowers of creamy white colour in March-April.
24.	<i>Putranjiva Roxburghii</i> (Jiva Pota)	Medium in height, pyramidal shaped, ever green, handsome and very graceful tree, good for shade and beautiful form. Flowers are of pale yellowish colour in March-April.
25.	<i>Saraca Indica</i> (Sita Ashok)	Height medium, spreading tree, ever green, very hardy, foliage glossy and ornamental. Highly flow growing takes 30 years to become a good tree. Bears highly attractive scarlet coloured flowers in large compact clusters in Feb. – March.
26.	<i>Schleichera Frijuga</i> (Kusum)	Tall columnar shaped tree, evergreen, good for shade, leaves become red in March, April and again in July,-Sept. Flowers are of green colour in Feb-March.
27.	<i>Sweitnia</i> (Mahogany)	Evergreen, shady, attractive foliage, very hardy, tall tree with columnar shape, blooms in April, tree is slow growing and very good for avenues.
28.	<i>Tabeuia Rosea</i>	Small in height, golumnar in shape, dedciduous from December to February,Scanty foliage, flower colour is purple pink in Februar-March.
29.	<i>Terminalia Arjuna</i> (Arjan)	Tall, columnar shaped tree, sheds leves in March. Very Hardy tree, flowers of pale-yellowish white colour appear in September-October.
30.	<i>Terminalia Chebula</i> (Bahera)	Tall, Columnar shaped tree, leafless in March, Pale-yellow flowers all the year round.

ANNEXURE-IV

SPACE NORMS AND STANDARDS

Aspect	As per zoning regulations and sub-division clauses for Master Plan in Punjab/Govt. Policies	UDPFI Guidelines	Delhi Master Plan
Primary school	Population: 3,000-4,000 No. of students: 600 Area a) Old city (over 650 ppha): 0.2 ha b) Outer areas (less than 650 ppha): 0.5 ha	Population: 5,000 Number of students: 500 Area per school: 0.4 ha Covered area: 0.20 ha Minimum play field area: 0.20 ha	Population: 10,000 Area: 2000-4000 sq m
Senior Secondary School	Population: 12,000-20,000 No. of students: 1000 Area a) Old city (over 650 ppha): 1.00 ha b) Outer areas (less than 650 ppha): 2.5 ha	Population: 7,500 Number of students: 1000 Area per school: 1.60 ha Covered area: 0.60 ha Minimum play field area: 1.00 ha	Population: 10,000 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: 60.00ha	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 ITE: 1.40 ha Area per coaching centre: 0.30 ha	Population: 5,00,000 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 extension Number of students: 1500-1700 Area per college: 60.00ha	Population: 5,00,000 Area: As per AICTE norms
Medical/Pharmacy College	Area: 5 acres (Rural) Area: 2.5 acres (Distt Headquarter Corporation Limit)	2 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: 5,000 Area: 0.1ha	Population: 15,000 Area: 0.08 to 0.12 ha	Population: 10,000 Area: 800-2000 sq m
Primary Health Center			
Resting Home	N.A	Population: 15,000-1,00,000 Capacity: 25 to 30 beds	Population: 50,000 Area: 1000-2000sq m

Aspect	As per zoning regulations and sub-division clauses for Master Plan in Punjab/Govt. Policies	UDPF1 Guidelines	Delhi Master Plan
General Hospital	Population :50,000 Area:2.5 ha	Population: 2,50,000 Capacity:500 beds Area for hospital :400 ha Area for rest accommodation :2.00ha Total area :6.00ha	Population:5,00,000 Capacity :501 beds and above Area :25,000-45,000sq m.
Veterinary Hospital	N.A.	N.A.	Population :5,00,000 Area:2,000sq m
Community Hall and Library	N.A.	Population :15,000 Area :2,000 sq m	N.A.
Amusement park	N.A.	Population :1,00,000 Area :10,000sq m.	Population:5,00,000 Area:5000sq m
City level park	N.A.	N.A.	Up to 10 ha
Neighborhood level	N.A.	N.A.	Population :5,00,000 Area 10acres
Golf Course	N.A.	N.A.	Population 10,000 Area 10,000 sq m
Sports	N.A.	N.A.	Population :10,00,000 Area :10-30 ha
Stadium	N.A.	N.A.	Population :5,00,000 Area :3-10 ha
Post and Telegraph	Population :10,000 Area :0.1 ha	N.A.	Population :10,00,000 Area :2,500 sq m
Religious Building	Population :15,000 Area :0.1 ha	N.A.	Population :10,00,000 Area :40,000 sq m
Nursing Home	N.A.	N.A.	Population :5,00,000 Area :1,000 sq m
Crèche/ Children Centre	N.A.	N.A.	Population :5,00,000 Area :1,000 sq m
Purpose Ground (Exhibition cum fair)	N.A.	N.A.	Population :1,00,000 Area :20,000 sq m
Open Space/Crematorium	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 station/police	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	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
	N.A.	Population :10,00,000 Area :10,000 ha	Population :25,00,000 Area :10 ha
	N.A.	1 fire or sub station within 1 to 3 km to be provided for 2 lakh	3 Fire Station for 5,00,000 population

Aspect	As per zoning regulations and sub-division clauses for Master Plan in Punjab/Govt. Policies	UDPF Guidelines	Delhi Master Plan
		population Area for fire station with essential residential accommodation :1.00 ha Area for sub-fire station with essential residential accommodation :0.60 ha	within radius of 5 to 7 km Area: 10,000 sq m

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 Roopnagar because of the following reasons:

- The norms and standards suggested by UDPFI Guidelines are more detailed and cover almost each physical and social infrastructure as compared to Present Master Plan Zoning Regulation /Govt. policies
- 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.
- UDPFI Guidelines suggest different norms and standards for different category of towns like small and medium towns, large cities and hill areas which is not available in other guidelines.
- The Norms and standards of Present Master Plan Zoning regulation are not detailed and do not cover the whole of activities, hence are not being adopted.
- Norms and standards suggested by Delhi Master Plan have not been found suitable for LPA, Roopnagar 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.

Note:

The norms and space standards as suggested by Punjab Govt. policies from time to time shall have the overriding effect on the norms and standards of UDPFI Guidelines adopted for the preparation of Master Plan, Roopnagar

For the aspects which are not covered under UDPFI Guidelines the norms and standards as suggested by Master Plan zoning Regulations shall be adopted and where these zoning regulations are also silent, only in that case, the norms and standards suggested by Delhi Master Plan shall be followed