

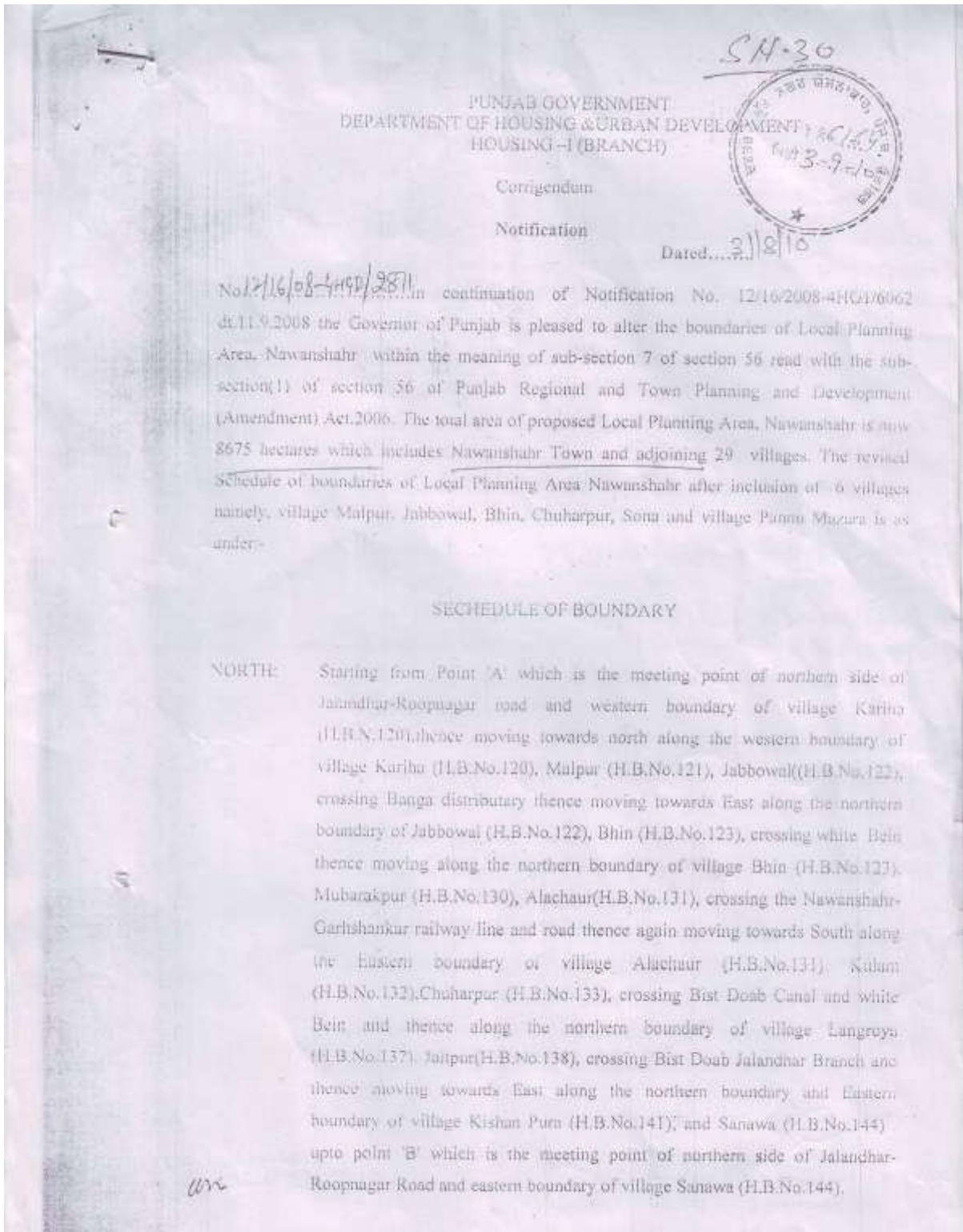
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1. INTRODUCTION

1.1 Initial Steps

As a first step towards the preparation of master plan, Local Planning Area (LPA) Nawanshahr, 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. 12/16/2008-4HG1/6062 dated 11.09.2008 and Notification No. 12/16/08-4HG1/2871 dated 31-08-2010 (shown at annexure I and II). The LPA of Nawanshahr includes Nawanshahr M.C. along with 29 villages of district Shaheed Bhagat Singh Nagar. The total area of LPA is 8675 hectares (86.75 sq kms). The detail of areas and population of LPA Nawanshahr has been detailed out in Annexure III while the schedule of boundary has been detailed out in Drawing No. DTP (J) 15/2010 dated 30-04-2010.

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

- a) Boundaries of municipal council Nawanshahr, Revenue Boundaries of villages and permanent features have been kept in mind for proper identification of land falling in LPA.
- b) Geographical and location aspects have also been taken into account.
- c) Major road pattern of the town especially the development potential on Nawanshahr-Chandigarh road, Nawanshahr – Rahon Road and railway linkages i.e. Nawanshahr - Jalandhar, Nawanshahr-Garhshankar and Nawanshahr Rahon railway line have taken into consideration to make the planning area more accessible for proper development.
- d) To study and analyze the present population and population increase due to designation of Nawanshahr town as District headquarter so that projected population can be adjusted in planned manner in the near future.
- e) To enhance the industrial development, the trend of existing industrial development, expected industrial development have also been studied and analyzed and have been taken into consideration.
- f) To strengthen the economic base and commercial activities of Nawanshahr, the need for planned development of this area has been kept into consideration
- g) To make the periphery of the town manageable in a proper manner, the extents of the town and its expansion have also been considered.
- h) For the planned and balanced development of this area, the ecological and environmental considerations have been taken care off.

- i) State and Regional level planned and development aspects have also been considered so as to control the pressure on existing infrastructure and amenities of this newly created district headquarter.

1.2 Regional Setting

LPA Nawanshahr lies between $31^{\circ}-05'$ and $31^{\circ}-15'$ north latitude and $75^{\circ}-45'$ and $76^{\circ}-30'$ east longitude in Doaba Region of South Western Punjab. It is surrounded by Ludhiana District on the south, Rupnagar District on the south and east, Hoshiarpur District on the north and the Kapurthala District on the north western side and the River Satluj forms its southern boundary.

The Headquarter of the district administration is located in Nawanshahr town. Jaijon Doaba line of the Northern Railway passes through this town which is 58 Km from Jalandhar city. It is directly connected by road with Chandigarh (98 km), Phillaur (45 km) and Phagwara (37 km).

Figure 1: LPA Nawanshahr with respect to Punjab State and surrounding region



1.3 Physiography and Climate

The surface of S.B.S Nagar District (of which LPA Nawanshahr is a part) is part of Indo-Gangetic plain, which was formed by deposition of alluvium brought by rivers originating in Himalayas. S.B.S Nagar District falls in the Basin of Satluj River which makes the southern boundary of the district. Satluj River does not directly drain the district but indirectly receives waters draining through S.B.S Nagar District. Eastern Bein or White Bein crosses through the northern part of the district. This White Bein used to overflow during rainy season. Bist Doab Canal is a major canal serving the district within the territory of S.B.S Nagar District. Bist Doab canal has been bifurcated into two canals namely Nawanshahr branch which runs westward and Nawanshahr branch which flows north-westward. Bist Doab Canal is a major source of irrigation in S.B.S Nagar District through various distributaries.

Climatically this area has a very hot. During the month of June, the mercury sometimes rises to 48° C. The dust storms are regular feature in summer. The winter season is mostly dry with minimum temperature touching to 0° C. The average annual rainfall in the district is 843.7 mm. About 70 per cent of the annual rainfall is received during the period from July to September, July being considered as the rainiest month. The prevailing wind direction of this region is North-West to South-East. The driest part of the year is the summer season when the relative humidity is 30 per cent or less.

1.4 Historical Background

The Nawanshahr town saw its development in three different eras. The first one is Mughal period, in which the town was founded by **Nausher Khan**, an Afghan in the time of Ala-ud-din Khilji (1295-1316 AD). According to another version, it got its name Nawanshahr (meaning 'New City') because people shifted from the old town of Rahon to avoid ravages of Sutlej River. There is a 'Baradari' built by Mohammad Sadiq, originally a Hindu Umat Khatri from Pastun, District Sialkot (Pakistan), who settled here and got into quarrel with local Bhuchar Khatri. His original name was Bhikari Mal.

After that the British period came in which many development milestones were achieved. The Notified Municipal Committee was set up in 1911 and focus was put on educational structure. In the post independence period the educational structure was further strengthened by establishing a number of educational institutions.

Now with the enactment of Punjab Regional and Town Planning and Development (Amendment) Act, 2006, Government of Punjab has decided to prepare Master Plans for all cities and towns of Punjab which also includes Nawanshahr town. For this purpose LPA Nawanshahr has been notified under section 56 (1) of Punjab Regional and Town Planning &

Development (Amendment) Act, 2006 vide Notification No. 12/16/2008-4HG1/6062 dated 11.09.2008 and Notification No. 12/16/08-4HG1/2871 dated 31-08-2010.

1.5 Major Development Events

The major events in the development of Nawanshahr are listed as below:

Table 1: Detail of Development Milestones in Nawanshahr

1	1293-1316 AD	The town founded by Navsher khan
2	1895	Arya Pritinidhi Sabha established
3	1911	Notified M.C
4	1911	Doaba Arya Senior Secondary School established
5	1920	Khalsa Educational Society formed
6	1953	R.K Arya Senior Secondary School established
7	1954	Sanatan Dharam Educational Board established
8	1959	Bim Girl College established
9	1959	Bhagwanh Laroie Memorial Girl College established
10	1974	Civil Hospital established

Planning and Administrative Mile Stones

Table 2: Detail of Institutional and Planning Events in Nawanshahr

1	1867	Municipal committee formed
2	1911	Notified M.C
3	1924	Small Town Committee
4	1951	Made Class II Municipality
5	1995	Nawanshahr declared as a District headquarter
6	2008	L.P.A Nawanshahr declared and name of the district changed as Shaheed Bhagat Singh Nagar

1.6 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). It has been amended in the year 2006 and is now it is known as “The Punjab Regional and Town Planning and Development (Amendment) Act 2006” (Punjab Act No 11 of 2006).

Prior to the enactment of this 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 and for control of development along scheduled roads, 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.

The Punjab Regional and Town Planning and Development (Amendment) Act 2006

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.

Main provisions of the law

- **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.
- **Section 57** provides for the state Government to designate Planning Agency for area declared as Local Planning Area.
- **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.
- **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.

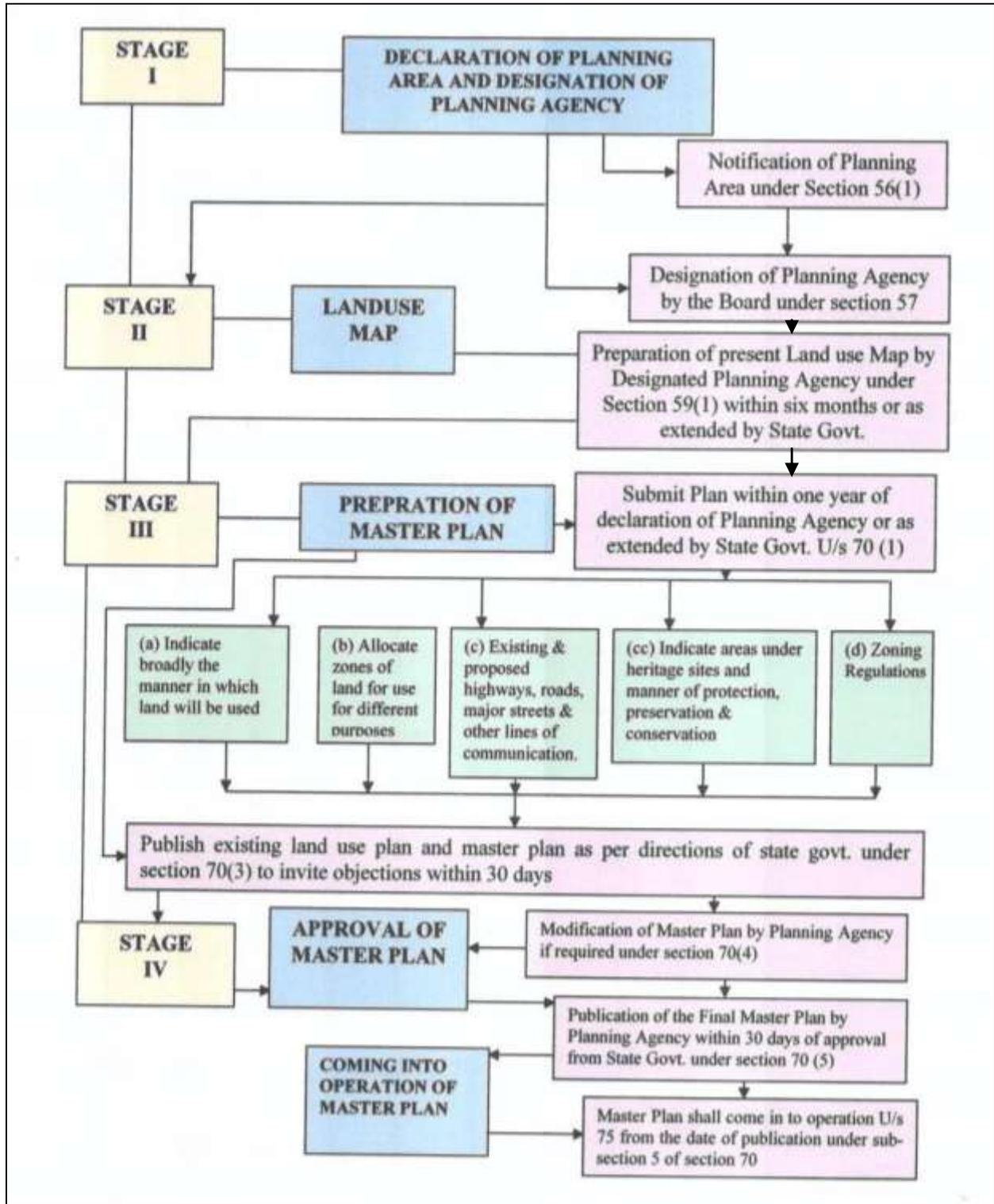
- **Section 70(1)** states that the planning agency shall not later than one year after declaration of planning area and after the designation of that agency for that area shall prepare and submit to the state government a master plan for its approval. The Master Plan so prepared shall –
 - Indicate 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.
- **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.
- **Under Section 70(4)**, the state government after considering the objections and in consultation with the Board may direct the designated planning agency to modify the master plan or approve it as such
- **Under Section 70 (5)**, the Designated Planning Agency after approval of the state government shall publish the final master plan in the official gazette after carrying out the modification if any under intimation to the state government within a period of 30 days from the date of according the approval by the state government.
- **Under Section 75**, the Master Plan comes into operation from the date of publication, referred in to sub section 5 of Section 70.

The entire process is shown in the form of flowchart (see figure 2)

- **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

Figure 2 : Stages of Master Plan Preparation



2. POPULATION, HOUSING, ECONOMY AND EMPLOYMENT

Population

2.1 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, Nawanshahr and Nawanshahr town.

2.1.1 Local Planning Area, Nawanshahr:

The Local Planning Area Nawanshahr includes one town namely, Nawanshahr along with 29 villages of district Shaheed Bhagat Singh Nagar. Local Planning Area experienced growth rate of 15.40% and 9.35% 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 weak economic base of the town and out migration to other countries. LPA Nawanshahr has a population of 82326 persons in 2001. The growth trend of population of Punjab State and LPA, Nawanshahr is given in table below:

Table3: Population Growth Rate of Punjab State and LPA, Nawanshahr: 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, Nawanshahr					
Total	65242	75288	82326	15.40	9.35
Urban	26726	29955	31967	12.08	6.72
Rural	38516	45333	50359	17.69	11.09

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

Figure 3: Population Growth Rate of Punjab State and LPA, Nawanshahr: 1981-2001

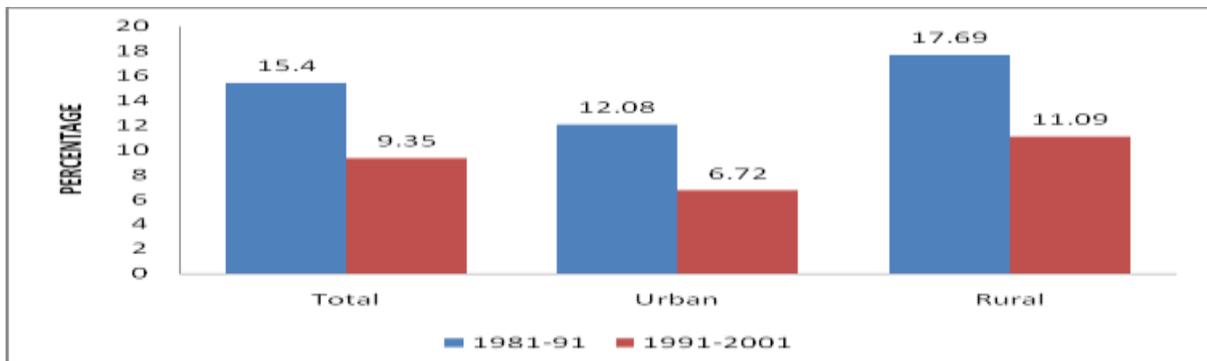


Table above depicts that the growth rate of population of Nawanshahr town has decreased from 12.08% during 1981- 91 to 6.72 % during 1991- 2001 decade which is very low when

compared to urban growth rate of Punjab which is about 37.73% during the last decade. This is because of out migration of population to other countries and incentives for industrial growth in surrounding areas like Balachaur (Kandi areas) which hinders the development and growth of LPA Nawanshahr. But in case of rural population, the growth rate of rural population of LPA, Nawanshahr is about 11.09% during 1991-2001 which is slightly less than to the rural growth rate of Punjab state (12.74%).

From 1981 to 2001, Nawanshahr grew almost 1.2 times in population (from 65242 to 82326) but did not increase in physical size. Most of town growth was haphazard and unplanned, resulting in highly uneconomical use of agricultural land for urban purpose.

2.1.2 Nawanshahr Town

As per table given below Nawanshahr town recorded a negative growth rate of -20.67% during 1901-1911. However, the town registered high growth rates of 62.70% and 25% during the decades of 1931-41 and 1941-51 respectively. However due to sudden influx of refugees from West Pakistan, around 3000 more people descended in new town Nawanshahr. These high growth rates show that the town occupied an important position in the region before partition of the country. Town registered a low growth rate of 9.75% during 1951-61 decade which can be attributed to out migration from the town due to partition.

During 1961-71, the growth rate increase to 24.33% because of normalized social and economic conditions and jumped to 52.48% during 1971-81 due to coming up of number of agro-based industrial units and focal point. However during the last two decades of 1981-91 and 1991-2001, the growth rates i.e. 12.08% and 6.71% are on decline which is perhaps due to the out migration of the population to the foreign countries thus increasing the NRI count in this area. The detail of population growth of Nawanshahr town from 1901 to 2001 is given in table below:

Table 4: Population Growth Rate Nawanshahr town: 1901-2001

Year	Population of Nawanshahr Municipal Council (persons)	Decadal growth rate of population of Nawanshahr (percent)
1901	5641	-
1911	4475	-20.67
1921	5316	18.79
1931	6315	18.79
1941	10275	62.70
1951	12844	25.00
1961	14097	9.75
1971	17527	24.33
1981	26726	52.48
1991	29955	12.08
2001	31967	6.71

Source: Census of India, Punjab 1901 – 2001

Figure 4: Decadal growth rate of population of Nawanshahr

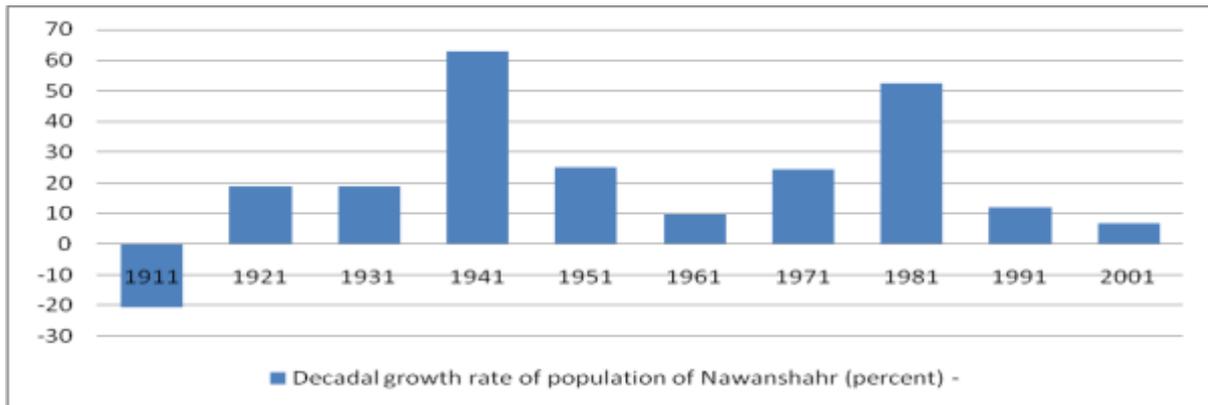
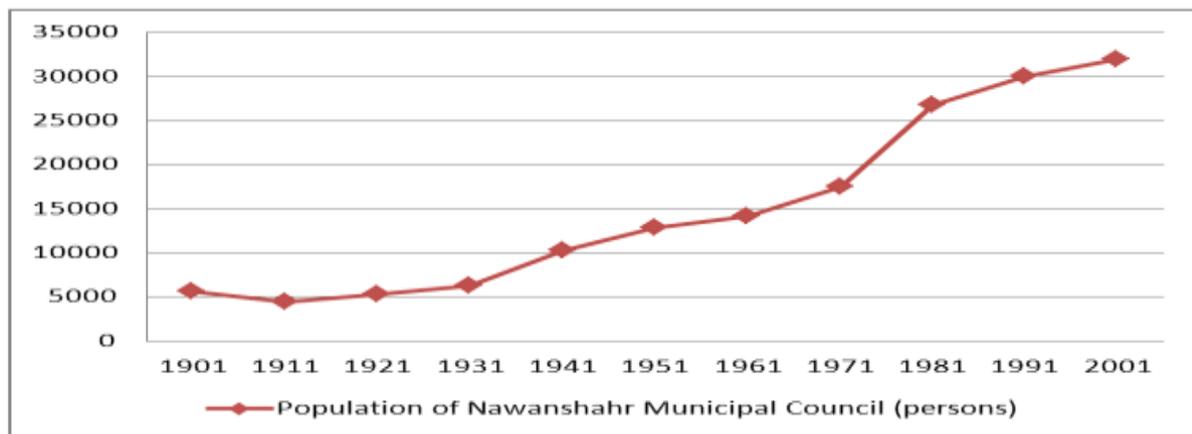


Figure 5: Population of Nawanshahr town



2.1.3 Population Growth in the Context of Punjab State

Table 5: Growth Trends – Urban Population in Punjab and Nawanshahr town

Year	Urban population of Punjab (persons)	Population of Nawanshahr M.C. (persons)	Population of Nawanshahr M.C. as percent of total urban population of Punjab	Decadal growth rate of urban population of Punjab (percent)	Decadal growth rate of population of Nawanshahr (percent)
1901	934766	5641	0.60	-	-
1911	813224	4475	0.55	-13.00	-20.67
1921	869526	5316	0.61	6.92	18.79
1931	1168413	6315	0.54	34.37	18.79
1941	1657414	10275	0.61	41.85	62.70
1951	1989267	12844	0.64	20.02	25.00
1961	2567306	14097	0.54	29.06	9.75
1971	3216179	17527	0.54	25.27	24.33
1981	4647757	26726	0.57	44.51	52.48
1991	5993220	29955	0.49	28.95	12.08
2001	8245566	31967	0.38	37.58	6.71

Source: Census of India 1901-2001

It is evident from the above table that growth rate of Nawanshahr town is less than Punjab state in the last two decades; while in decade of 1971-1981 the urban growth rate is comparatively higher than the whole Punjab state.

Population Density

2.1.4 Population Distribution in Nawanshahr town:

The population density of the town within municipal limits has been tabulated below:

Table 6: Population density (within Municipal Limit)

Year	Population	Area (In hectares)	Gross Population Density (Persons / hectare)
1981	26726	1412	19
1991	29955	1412	21.2
2001	31967	1412	22.6
2011	44000*	1412	31.2

*Population Projected

(Source: M.C. Nawanshahr, Census of India, 1981, 1991, 2001)

Population density of M.C. Nawanshahr has increased from 19 persons per hectare in 1981 to 22.6 persons per hectare in 2001 and further increase to 31.2 persons per hectare in 2011. This is because of various reasons like the Nawanshahr declared as a district headquarter, in-migration caused by the growth of industrial and trade & commerce sectors leads to increase the urbanization process in the town.

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

Table 7 : Ward wise Population Density of Nawanshahr town: 2001

ward no.	Estimated Population*	Area (haect.)	Density
1	1589	135	11.7
2	1978	11	177.6
3	2145	9	227.6
4	1665	29	57.2
5	1787	159	11.3
6	1730	20	87.8
7	1604	75	21.5
8	1832	36	50.9
9	2172	194	11.2
10	1887	240	7.9
11	1792	6	298.8
12	2106	13	163.9
13	2072	100	20.7
14	2036	196	10.4
15	1815	10	176.5
16	1855	34	54.1
17	1902	146	13.1
Total	31967	1412	

* Population estimated as per No. of Voters in each ward

Source: M.C. Nawanshahr

The density gradient as per 2001 census shows that wards no. 2, 3, 11, 12 and 15 are having a gross density of more than 150 persons per hectare where the density of ward no. 1, 5, 7, 9, 10, 13, 14 and 17 is falls to lower than 50 persons per hectare.

The density has been classified into three groups as shown in table no. 8:

Table 8: Density Gradient of M. C. Nawanshahr (ward wise): 2001

Sr. No.	Density Slab (Persons/hectare)	Zone	Ward Numbers
1	More than 150	High density zone	2, 3, 11, 12, 15
2	50- 150	Medium density zone	4, 6, 8, 16
3	Less than 50	Low density zone	1, 5, 7, 9, 10, 13, 14, 17

Old built up residential areas of the town falls under the high and medium density zone as shown on the thematic plan because of which the density is high in those areas. Other than this, most of the wards of the town falls in the low density zone which shows that the town is having scattered built-up area.

2.1.5 Population Distribution in LPA, Nawanshahr:

As per the figures of 2001 census, Nawanshahr is the only one urban settlement of L.P.A having a population of 31,967. Out of rural settlements Langroya and Saloh are the largest villages having a population of 4198 and 4118 respectively as shown on thematic plan. The Population distribution of villages of the year 1981 – 2001 is shown in Annexure III

2.2 Sex Ratio

According to 1981 census, there were 863 females for every 1000 males in Local Planning Area of Nawanshahr. In 2001, the sex ratio was 918 which show the sex ratio has increased from 1981 to 2001. It is pertinent to mention here that the sex ratio of Punjab state is 876 in 2001, while area falling under LPA Nawanshahr experiences high sex rate as compared to whole state.

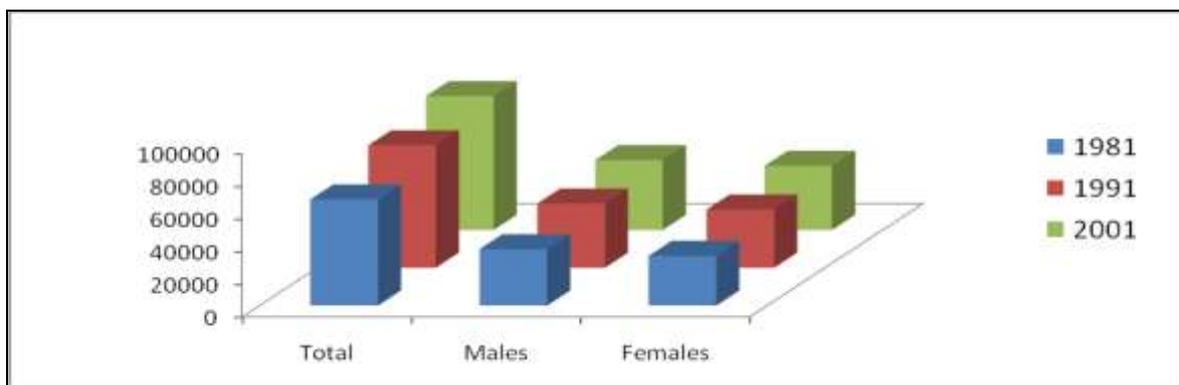
Table 9: Sex ratio

Year	Total	Males	Females	Sex ratio
1981	65242	34662	30580	863
1991	75288	39507	35781	905
2001	82326	42906	39420	918

(Source: District Census Handbook, Nawanshahr)

The above table depicts that the sex ratio in the area is increasing. The paucity of females has been attributed to the practice of female infanticide in the past. This legacy of the past is still having its impact felt on the sex ratio of the Local Planning Area of Nawanshahr.

Figure6: Sex Ratio of Nawanshahr



2.3 Caste Composition

Table 10: Scheduled Caste population & %age of SC Population to total Population

Year	Total Population	SC Population	%age of SC Pop to Total Pop
1981	65242	12534	19.21
1991	75288	28554	37.92
2001	82326	33327	40.48

(Source: District Census Handbook, Nawanshahr)

The total SC population in the LPA Nawanshahr is 33327 persons which is 40.48% of the total population in 2001. Whereas the average SC population in Punjab state 28.85% of total population, which shows that the percentage of SC population in LPA is more than that of Punjab state.

2.4 Literacy

Table 11: Literacy Rate LPA Nawanshahr

Year	Total Population	Total literates	%age of total pop	Males		Females		Literacy Rate (in %age)
				Number	%age	Number	%age	
1981	65242	31403	48.13	18869	60.08	12534	39.92	48.13
1991	75288	43776	58.14	25266	57.72	18510	42.28	58.14
2001	82326	56768	68.95	31356	55.24	25412	44.76	68.95

(Source: District Census Handbook, Nawanshahr)

Above table depicts that the literacy rate is increasing. According to 2001 census the total literacy rate of Local Planning Area is 68.95%. Out of the total literate population 55% are male and 45% are females. In comparison with 1981 and 1991 the male literacy rate is declining while female literacy rate is increasing gradually. In 1991 male literates were 58% and female were 42% whereas in 1981 male literates were 60% and female were just 40% respectively.

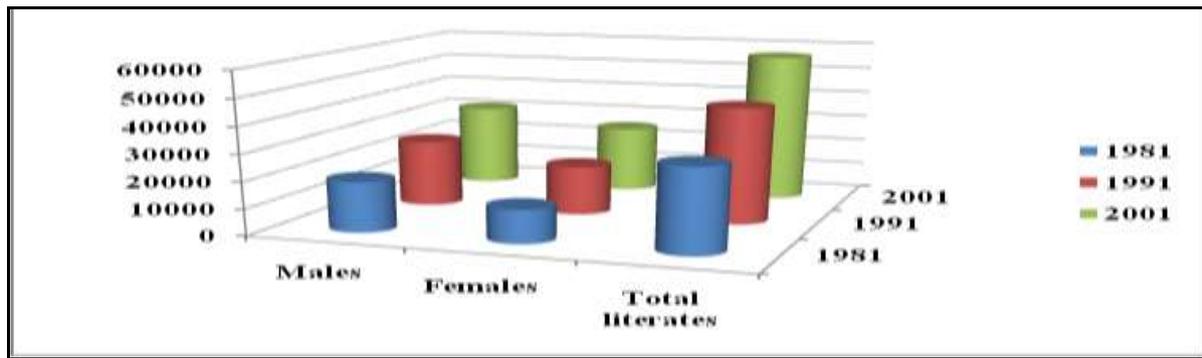
Literacy rate is of LPA Nawanshahr is relatively equal in comparison with Punjab state i.e. 70 % in 2001 because of NRI count in the area and moreover varied government programmes for female education as compared to male education.

Table12: Literacy rate of Nawanshahr Town: 1981-2001

Sr. No.	Year	Total Population	Total literates	Literacy rate in %	Males Literacy		Females Literacy	
					Number	%age	Number	%age
1.	1981	26726	15023	56.21	8779	58.44	6244	41.56
2.	1991	29955	19645	65.58	10970	55.84	8675	44.16
3.	2001	31967	23626	73.9	12894	54.58	10732	45.42

Source: Census of India, 1981, 1991, 2001

Figure 7 : Literacy Rate, LPA Nawanshahr



Literacy rate of Nawanshahr town is higher as compared to the Punjab state i.e. 70% in 2001. This shows that the existing education system in the Nawanshahr town is very strong and there is no much need to focus on this part.

Housing

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. Under the housing chapter, following studies undertaken to ascertain the housing characteristics and type of housing required in the town.

2.5 Growth of Housing in Nawanshahr

Housing is an activity, which is mainly driven by individuals to provide them with an appropriate shelter. With the rapid increase in population, number of houses has also recorded an increase. There are no development schemes which have been executed by Improvement Trust, Nawanshahr, Municipal council, Nawanshahr and PUDA so far, also private developers have not developed any approved colony but some unauthorized colonies have been developed in different parts of the town.

The growth of residential houses and households has been found to be keeping pace with the growth of population in the Nawanshahr town. As per the Census figures the total number of census houses are 11569 and as given in table no. 13, number of residential houses increased from 5142 to 5986 during the year 1991-2001 registering a growth rate of above 16.4%. This growth rate is less as compared to the growth rate of households during this decade which is 18.75%. This shows the uncomfortable position of housing stock in the town. The table also indicates that the household size has been decreasing from 6.1 in 1981 to 5.2 in 2001.

Table 13: Growth of houses, households & household size in Nawanshahr town

Year	Occupied Residential Houses	%Age growth Rate of Residential houses	No. of households	%Age growth Rate of Households	Population	Household size
1981	-	-	4358	-	26726	6.1
1991	5142	-	5194	19.18	29955	5.8
2001	5986	16.4	6168	18.75	31967	5.2

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

2.5.1 Predominant Use of Materials in the Housing Stock

1. Material of Roof

It has been observed that the majority of the housing stock has a permanent roof, which constitutes around 96% of the total housing stock (Refer table below). As against this only 4% of the housing stock has temporary roofing which includes materials like grass, thatch, bamboo, wood, mud, plastic, polythene, slates, GI sheets and stones. This indicates that the economic conditions prevailing in the town are much better. It has also been observed that among the predominant material used for roof approximately 68% of the housing stock has cement concrete whereas about 12.6% houses have the brick and 16% houses have the tile as the predominant material of roofing.

Table 14: Census houses by predominant material of roof in Nawanshahr town - 2001

Material	Grass, Thatch, Bamboo, Wood, Mud etc.	Plastic, polythene	Tiles	Slate	G.I., Metal, Asbestos, sheets	Brick	Stone	Concrete	Any other material	Total
No. of houses	105	82	1,852	26	194	1,456	10	7,832	12	11569
%Age of total	0.91	0.71	16.01	0.22	1.68	12.59	0.09	67.70	0.10	100

Source: Census of India, Punjab 2001

2. Material of Wall

Majority of housing stock i.e. 92% houses in Nawanshahr town has used burnt brick, while only 5% has used the mud, unburnt bricks, plastic, grass, thatch, wood, stone for the construction of walls. Only 3% of the total housing stock used concrete as material for wall. Despite the fact majority of housing stock i.e. 92% of the total housing stock is fairly placed as far as material of wall is concerned. There are still 578 census houses where other than burnt bricks and concrete are used as material of wall which is not safe for construction (Refer table no. 15)

Table 15: Census houses by predominant material of wall in Nawanshahr town: 2001

Material	Grass, Thatch,	Plastic,	Mud,	Wood	G.I., Metal,	Burnt brick	Stone	Concrete	Any other
No. of houses	45	70	305	17	131	10,629	6	363	3
% Age of total	0.39	0.61	2.64	0.15	1.13	91.87	0.05	3.14	0.03

Source: Census of India, Punjab 2001

3. Material of Floor

As per the figures recorded in 2001 census as many as about 78.23% of total census houses have used cement, stone or mosaic floor type for their flooring whereas another 14.78% used bricks pushing the figure to 93.01%, While the remaining houses used mud or other material for flooring (Refer table below).

Table 16: Census houses by predominant material of floor in Nawanshahr town: 2001

Material	Mud	Wood, Bamboo	Brick	Stone	Cement	Mosaic, Floor tiles	Any other Material	Total
No. of houses	773	23	1,710	795	7,157	1,099	12	11,569
% Age of total	6.68	0.20	14.78	6.87	61.86	9.50	0.10	100

Source: Census of India, Punjab 2001

4. Type of Housing Structure

As per the census figures of 2001, 94.62% of the total houses have permanent and 2.46% semi-permanent structures. Only 1.46% of the total houses i.e. 95 have temporary structures, out of which only 1.4% are non-serviceable structures (Refer table below).

Table 17: Residential houses by their type of structure in Nawanshahr town: 2001

Type of Structure	Permanent	Semi-permanent	Temporary			Total
			Total	Serviceable	Non-serviceable	
No. Of houses	5836	152	90	4	86	6168
% Age of total	94.62	2.46	1.46	0.06	1.40	100

Source: Census of India, Punjab 2001

5. Housing Condition

As per the census figures of 2001, there are total 11569 houses, out of which 5986 are purely residential and 415 are for residence cum other use. Out of total census houses 67.72% of the houses are in good condition while 29.89% and 2.39% respectively are in livable and dilapidated condition. Above figure shows that housing condition in Nawanshahr town is at satisfactory level (Refer table below).

Table 18: Census houses by their condition in Nawanshahr town: 2001

Housing condition	Good	Livable	Dilapidated	Total
No. of houses	7835	3458	276	11569
% Age of total	67.72	29.89	2.39	100

Source: Census of India, Punjab 2001

6. Households by Number of Dwelling Rooms

The figures of 2001 census indicates that out of the total households of Nawanshahr town about 80% are living in the houses having two rooms or more whereas about 18.66% are living in one room set and a few remaining households are having no exclusive room. Thus maximum number of households' i.e. 98.51 % is having at least minimum one dwelling room which shows that town has better housing condition and houseless population is on the very low side. Only 1.49% of the total households are in category of no exclusive room (Refer table below).

Table 19: Households by number of dwelling rooms in Nawanshahr town: 2001

Number of rooms	No exclusive Room	One Room	Two Rooms	Three Rooms	Four Rooms	Five Rooms	Six rooms and above	Total
Households	97	1214	1846	1419	871	402	387	6168
% Age of total	1.49	18.66	29.93	23.02	14.12	6.51	6.27	100

Source: Census of India, Punjab 2001

7. Households by Source of Drinking Water

As per the census 2001 about 67.92% of the total households have source of the drinking water from tap and 31.08% are dependent on hand pump in case of Nawanshahr town. Thus major portion of the town population i.e. 99% have tap water or water from hand pump and 1% of the total households are dependent on other sources (Refer table below).

Table 20: Households by source of drinking water in Nawanshahr town: 2001

Source of Drinking water	Tap	Hand pump	Tube well	Well	Tank, Pond, Lake	River, Canal	Spring	Any other	Total
Households	4189	1917	32	4	4	0	11	11	6168
% Age of total	67.92	31.08	0.52	0.06	0.05	0	0.18	0.18	100

Source: Census of India, Punjab 2001

8. Households by Source of Lighting

96.45% of the total households of the Nawanshahr town get light from the electricity, while 3.18% are dependent on Kerosene oil and only 0.18% of the total households are not having light and remaining have the light facility from other sources (Refer table below).

Table 21: Households by source of lighting Nawanshahr town: 2001

Source of Lighting	Electricity	Kerosene	Solar energy	Other oil	Any other	No lighting	Total
Households	5949	196	2	9	1	11	6168
% Age of total	96.45	3.18	0.03	0.14	0.02	0.18	100

Source: Census of India, Punjab 2001

9. Availability of Bathroom, Type of Latrine and Type of Drainage Facility

As indicated in census 2001 about 90.24% of the total households have Bathroom facility within the house, 59.53% and 10.03% of the total households have water closet and pit latrine respectively while 12.63% of the total households still do not have latrine facility and remaining 17.81% have latrine facility from other latrine. Also in case of drainage for wastewater 38.47% of the total households have closed drainage while 55.51% are having open drainage. Besides this 6.02% of total households do not have drainage facility.

Table 22: Households by type of latrine & drainage connectivity

	Total no. of households	No. of household having bathroom facility within the house	Type of latrine within the house				Drainage connectivity for waste water outlet		
			Pit Latrine	Water Closet	Other Latrine	No Latrine	Closed Drainage	Open Drainage	No drainage
Households	6168	5,874	619	3672	1098	779	2,374	3,424	371
%Age of total	100	95.23	10.03	59.53	17.81	12.63	38.47	55.51	6.02

Source: Census of India, Punjab 2001

2.6 Housing Demand and Supply

The studies and analysis of housing stock in Nawanshahr town reflects that the position regarding housing stock is not satisfactory as the number of occupied residential houses 5986 is less than number of households 6168 in year 2001. Besides this the qualitative aspect of these residential houses has been found quite well. Out of total houses available in the town about 96% have pucca roof, about 92% have pucca walls and 78% houses have pucca floors, which clearly indicate that majority of Nawanshahr residents have good quality of houses. Future requirement of housing will be discussed while working out the requirements of physical infrastructure.

Slums in Nawanshahr

Slums represent multiple human deprivations in urban settlements and majority of urban poor seems to reside in the slums and squatter settlements. Generally these settlements do not have any basic civic amenities, and people live under unhygienic and unsanitary conditions. The Census of India (2001) defines slums as, “all areas notified as slums by the state/local government under any Act; and all areas recognized as slums by state/local government, which have not been formally notified as slum under any Act and a compact area of about 300 population or about 60-70 households or poorly-built congested tenements in unhygienic

environment, usually with inadequate and lack of any proper sanitary and drinking water facilities.”

2.7 General Characteristics of Slums in Nawanshahr Town:

According to Municipal Council, Nawanshahr, 16 localities have been identified as slum areas in the Nawanshahr town. The slums are developed along all around the town. It is due to the migration of the laborers from all around. It is noted that in a large no. of slums, people have built pucca houses and the facilities provided as per the acceptable standards in the slums. Majority of the slums are located on the provided land. The slums have to be found to be in unplanned manner. In general there are most of the deficiencies in the improvement or in upgradation of slums. The improvement of slums is the joint responsibility of the Government of India as well as the State Government.

The slum wise detail as name of the slum, location, area, population is given in the table below:

Table 23: Detail of Identified Slum Areas in Nawanshahr Town

S.no.	Name of Slum Area	Location	Area in Acre	Population
1	Railway road, Pandora muhalla area	Pandoran mohalla	40	2109
2	Ravidas nagar	Bakarkhana road	30	1687
3	Arya samaj road	Mahalon road	40	2180
4	Geeta bhavan road	Kothi road	20	1330
5	Rahon road, Chandigarh road, Garhshankar road	Rahon road, Chandigarh road, Garhshankar road	60	2899
6	Nai abadi	Basti Ibrahim	30	1652
7	Railway station,	Balmik mohalla road, Ambedkar nagar	20	850
8	Mahalon road area	Mahalon road	35	1680
9	Saloh road area	Saloh road	20	820
10	Kulam road area	Kulam road, Tara ice factory, Main road tower, Umatan mohalla	15	609
11	Mandi road area	Kariam road	20	810
12	Abadi behind Pandora mohalla	Pandoran mohalla	15	600
13	Abadi along Railway line	Railway line	20	810
14	Lajpat nagar	Mota singh Nagar	20	900
15	Dasmesh nagar	Dasmesh nagar	15	606
16	Nayyar vihar colony	Nayyar vihar colony	25	1300
	Total		455	20842

Source: MC Nawanshahr

2.8 Distribution and Location of Slum Areas

The study of location wise pattern of slum areas reveals that these are located along Rahon road, Chandigarh road, Garhshankar road, Mahalon road, Saloh road, Railway road etc. This shows that the slums in the town are developed mainly along major roads and railway tracks. As per table above, about 20842 persons i.e. 65.27% of total population of Nawanshahr town

resides in slum areas comprising of 4150 households i.e. 67.28% of total households of the town.

2.9 Level of Facilities Available In Slum Areas – Nawanshahr Town

The information regarding level of facilities in slum areas supplied by Municipal Council Nawanshahr shows that Almost 95% of slum areas are being served both water supply and sewerage and also have street lights and pucca streets. This information reveals that most parts of the slum areas are better off, having water supply, sewerage, Pucca Street and street light facilities.

2.10 Ownership Pattern

All slum areas have developed on private land. It covered about 455 acres area of the town. The existence of all the slum areas on the private land can help in finding appropriate solution for the upliftment of these with the involvement of the slum dwellers and also by providing higher incentives, subsidies and by asking them to contribute part of the cost of the structure. On their part, parastatal agencies can be asked to waive off all the charges and fees levied for construction, sanction of the building plans etc.

Economy and Employment

2.11 State of Punjab

Punjab being an agrarian state, agriculture has played a pivotal role in the economic development of the state. Through green revolution in the 60's, Punjab took a major stride in increasing its productivity of food grains, especially of wheat and rice. It contributed significantly towards strengthening India's self-sufficiency by contributing a major share in the central pool over time. During 2006-07, it contributed 75.3% wheat and 31.2% rice to the central pool. However, the growth of secondary sector especially of manufacturing sector is not of satisfactory level. Punjab has grown at a rate of 5.08% during 10th Five Year Plan as compared to 7.77% at all India level. Its secondary sector has grown at 8.40% as compared to 9.46% at all India level.

2.12 LPA, Nawanshahr

Economic data as available for the state is not available for district or the town. The trends of economic growth have therefore to be judged on the basis of employment data. The economy of LPA, Nawanshahr is based mainly on trade, commerce, agriculture and agro based industry. To some extent real estate business, other commercial establishments, financial and banking services etc. also contribute to the economy of the town.

2.13 Work force Participation & Employment

Table below depicts that the percentage of workers is increasing both in LPA, Nawanshahr and Nawanshahr town during the last decades. Increase in workers participation means new opportunities in trade & commerce & tertiary sector. In the case of LPA, Nawanshahr the percentage of workers to the total population has been increased from 17.1% in 1981 to 39.9% in 2001. However, the workforce participation rate has increased from 29.22% in 1981 to 31.86 % in 2001 in case of Nawanshahr town. There are 60.08% non-workers in LPA, Nawanshahr and 63.47 % non-workers in Nawanshahr town as per census 2001. The detail of workers and non-workers is given in table below:

Table 24: Workers and Non-workers of LPA, Nawanshahr & Nawanshahr town (1981–2001)

Year	LPA, NAWANSHAHR				NAWANSHAHR TOWN			
	Total Population	Total workers	%Age	Non workers	Total Population	Total workers	%Age	Non workers
1981	65242	11162	17.1	54080	26726	-	-	-
1991	75288	21521	26.3	53767	29955	8848	29.53	21107
2001	82326	32858	39.9	49468	31967	11676	36.53	20291

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

2.14 Occupational Structure

The change in occupational structure has been noticed to a considerable extent in primary sector i.e. cultivators and agricultural labourers have been decreased from 36.6% in 1981 to 12.4% in 2001 within LPA, Nawanshahr. The percentage of workers working in household industrial sector has recorded a decrease from 2.8% in 1981 to 2.5% in 2001. The notable change during 1991-2001 is seen in the percentage of workers engaged in other activities, which jumped from 47.37% to 70.8% in this period but in the year 1981 percentage under this sector was 20.8%. The detail of occupational structure of LPA, Nawanshahr has been given in table given below:

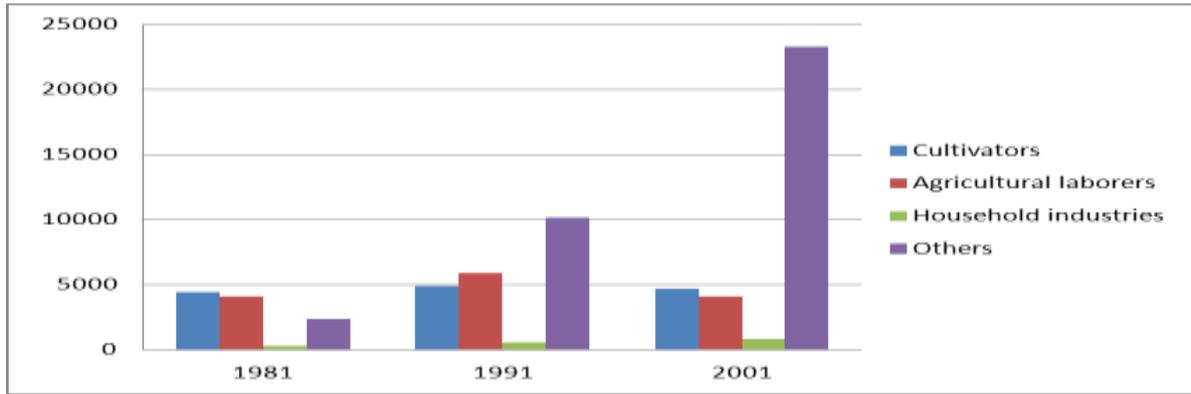
Table 25: Occupational Structure of LPA, Nawanshahr 1981-2001

Year	Total workers	Cultivators		Agricultural laborers		Household industries		Others	
		No.	%age	No.	%age	No.	%age	No.	%age
1981	11162	4434	39.7	4089	36.6	314	2.8	2325	20.8
1991	21521	4881	22.68	5881	27.32	564	2.62	10195	47.37
2001	32858	4662	14.3	4090	12.4	827	2.5	23279	70.8

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

This trend shows that the labour of LPA Nawanshahr is shifted from primary sector to tertiary sector during 1981-2001.

Figure 8: Occupational Structure of LPA, Nawanshahr (1981 -2001)



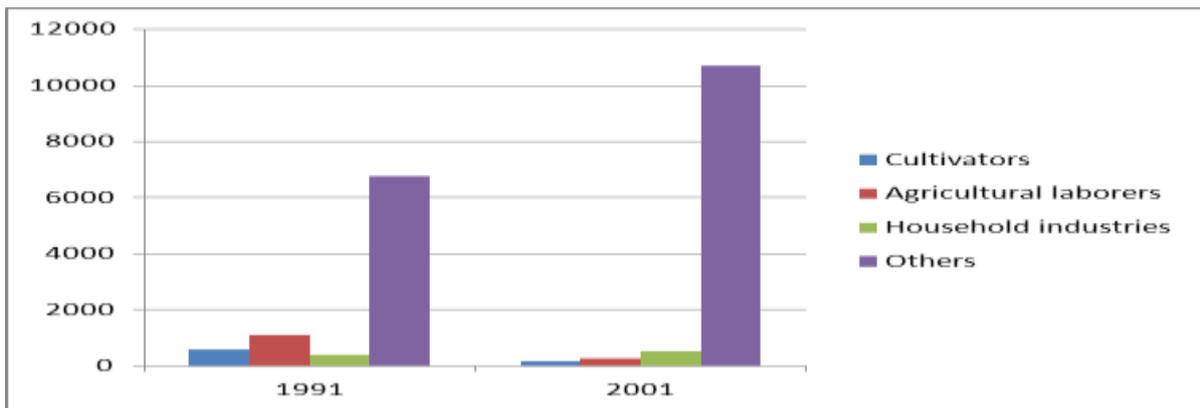
In case of Nawanshahr town, the workers engaged in primary activities i.e. cultivators and agricultural decreased from 6.6% to 1.52% in 1991 and 2001 respectively as given in table 26. The household industry also showing a minor decreasing trend during 1991-2001 i.e. 4.4% to 4.36%. Similarly, the share of workers engaged in other activities recorded increase from 76.7% to 91.74% in 1991 and 2001. This shows the same trend as of LPA Nawanshahr which implies that the urbanization is increasing in the town resulting in the change of landuse of the town to commercial, industrial or other non-agricultural uses.

Table 26: Occupational Structure of Nawanshahr Town: 1981-2001

Year	Total workers	Cultivators		Agricultural laborers		Household industries		Others	
		No.	%age	No.	%age	No.	%age	No.	%age
1981	-	-	-	-	-	-	-	-	-
1991	8848	584	6.6	1088	12.3	393	4.4	6783	76.7
2001	11676	177	1.52	278	2.38	509	4.36	10712	91.74

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

Figure 9: Occupational Structure of Nawanshahr Town (1981 – 2001)

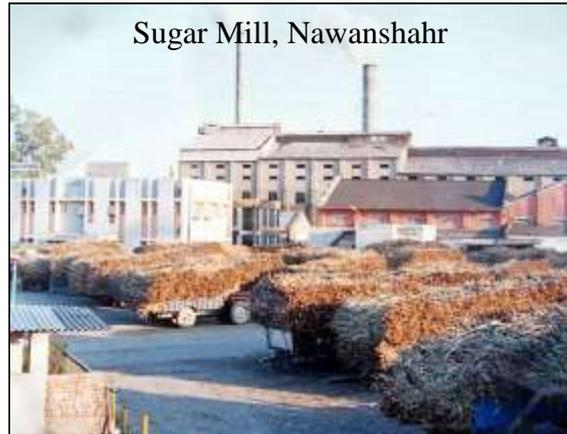


2.15 Manufacturing Industry

Industries have been found to be the prime movers of the physical and economic growth of the urban areas. Town has varied types of industries such as sugar mill, rice sheller's, cold storages, ice factory, brick kilns etc. situated at distinct locations all over the town.

2.15.1 Industrial Growth

There is only one large scale industry and 289 small scale industries operational in Nawanshahr LPA. Large scale industrial units constitute only 0.34% of the total industrial units existing in the town whereas share of small scale industries have been found to be of the order of 99.66%. From the table given below, it is evident that there has been no establishment of large scale industrial units since 2005.



The trend of the Small Scale Industrial Units has been far different as compared to the Large Scale Industrial Units. Talking in the absolute terms, it may be said that starting from 615 in 2005 it has reduced to 289 in 2008, thus showing sharp decline in industrial growth which is because of various reasons like out migration of population resulting in closing of no. of small scale industrial units, ineffective industrial policy and not having a connectivity through N.H. or S.H. which means that the linkages are not so good as far as the industrial towns are concerned. The percentage growth rate of the Large and Small Scale Industrial Units has been tabulated in the following table:

Table 27: Growth of Large & Small Scale Industrial Units in Nawanshahr

Year	Large Scale Industries		Small Scale Industries	
	Number of Units	%age Growth	Number of Units	%age Growth
2005	1	-	615	-
2006	1	-	574	-6.67
2007	1	-	289	-49.65
2008	1	-	289	-

(Source: GM, DIC, Nawanshahr)

Figure 10 Number of small scale industries

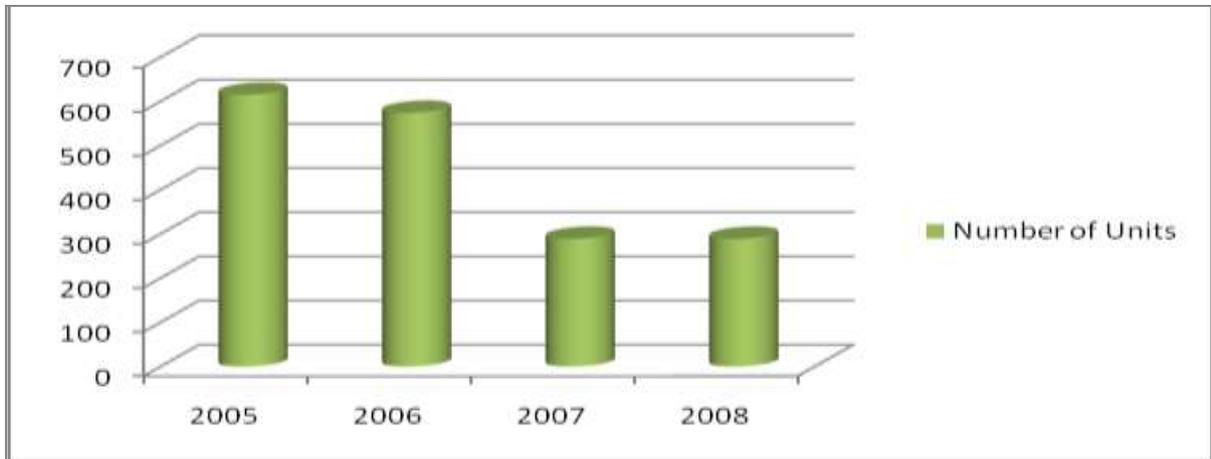
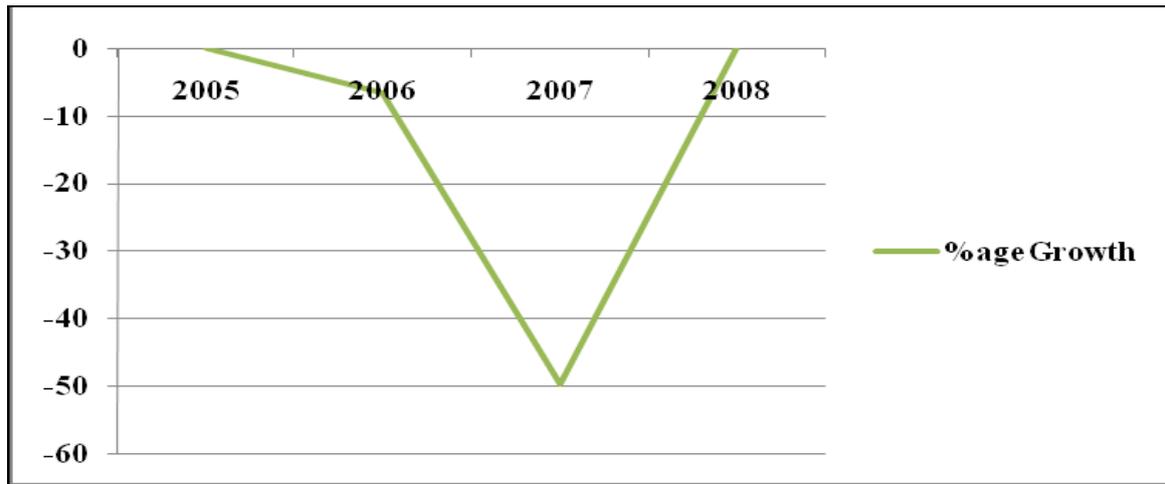


Figure 11 Growth of small scale industries



It is evident from the above table that the trend of the percentage growth rate has decreased abruptly over the period from 2005-08. The trend of the Small Scale Industrial Units has been decreasing from 2005 to 2008. Although the increase in the percentage growth is slow over these four years.

2.15.2 Employment

Keeping in view the trends prevailing in the Industrial Units, small scale industrial units have been found to be not only largest in number but also generator of major proportion of employment in the town. Out of the total industrial employment of 1524 workers in the year 2008, the share of small scale industry was found to be 91% as compared to 7% in large scale industry. Thus the small scale industries share was found to be almost 13 times as that of large scale industries in term of employment. The growth rate of employment of small scale units in the year 2005-06 is 1.2% which declined to -24.46% in the year 2006-07 and further slightly increased to -0.33%. Whereas the growth rate of employment of large scale units is uniform. The details of employment generated along with the growth rate and %age of total employment generated are given in table below:

Table 28: Employment in Small & Large Industrial Sector

Year	Small Scale Industries			Large Scale Industries			Total Employment
	Employment	%age Growth	%age of total employment	Employment	%age Growth	%age of total Employment	
2005	2000	-	92.81	155	-	7.19	2155
2006	2024	1.2	92.89	155	0	7.11	2179
2007	1529	-24.46	90.79	155	0	9.21	1684
2008	1524	-0.33	90.77	155	0	9.23	1679

(Source: GM, DIC, Nawanshahr)

Figure 12: Employment in Industries

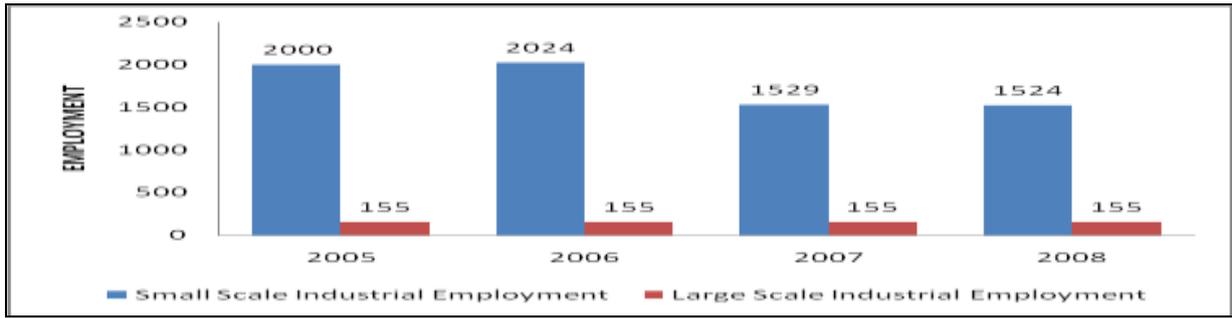
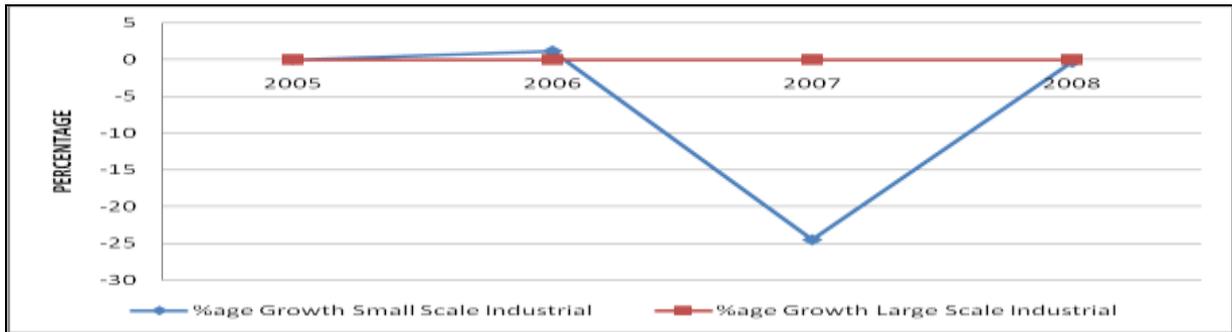


Figure 13: Percentage growth rate of various industries in Nawanshahr



2.15.3 Investment & Production

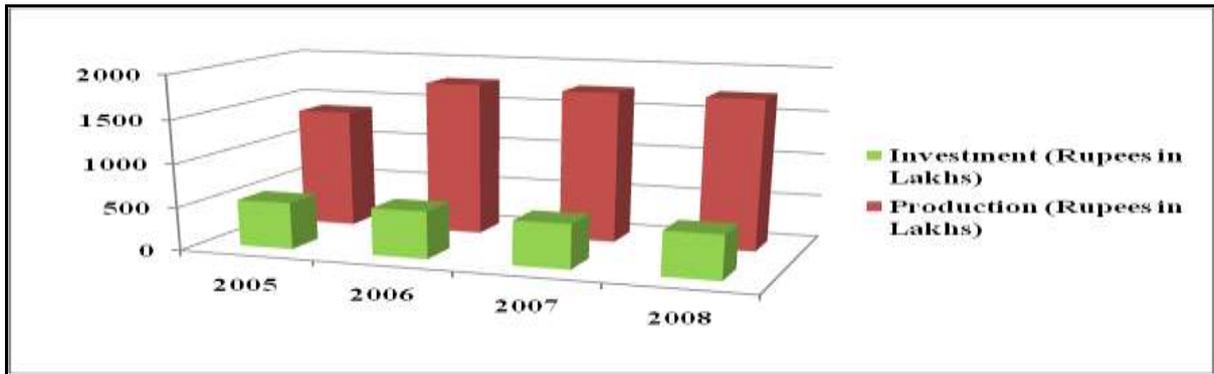
The contribution made by the Industrial Units in the Employment generation, industrial production and investment is very negligible. The growth of small scale industrial units during the time from 2005-08 has been negative whereas the number of large scale industries has remained 1 throughout this period. Looking at the investment and the production generated by these units, it can be observed that contribution of these units to the economy of the town and the State has been negligible. It has been observed that during the year 2005 the total investment made in this sector was found to be Rs 541.13 lakhs which has been decelerating on annual basis till 2008. The total investment recorded during the year 2008 was just of the order of Rs. 509.05 lakhs. During the same period, the production also experienced same trend from Rs. 1378.80 lakhs (2005) to Rs 1736.70 lakhs (2008). Similar to the trend of the investment, the production has been of the same order since during this period. From these facts it could be concluded that the industrial base of the LPA Nawanshahr is very weak which needs a boost. Table indicates the trends of investment & production in the small scale industrial units during 2005-2008.

Table 29: Small Scale Industrial Investment and Production

Year	Investment (Rupees in Lakhs)	Production (Rupees in Lakhs)
2005	541.13	1378.80
2006	546.49	1774.60
2007	512.14	1741.60
2008	509.05	1736.70

(Source: GM, DIC, Nawanshahr)

Figure 14: Investment and Production in Industries



2.15.4 Industrial Focal Point

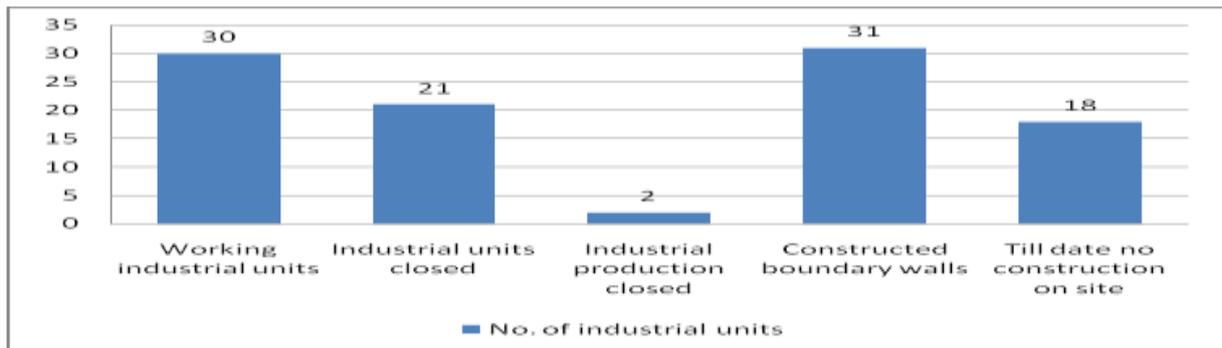
There exists only one Industrial Focal Point at Nawanshahr situated on Nawanshahr – Banga Road spread in an area of about 50 acres. It was established in 1978-79 and since then only 30 units are in working condition. There are 110 industrial plots of variable plot sizes ranging between 500 square yards to 5000 square yards. The detail of industrial units in focal point is tabulated is as follows:

Table 30 : Detail of industrial units in Focal Point, Nawanshahr

Sr. No.	Status	No. of industrial units
1	Working industrial units	30
2	Industrial units closed	21
3	Industrial production closed	2
4	Constructed boundary walls	31
5	Till date no construction on site	18

(Source: GM, DIC, Nawanshahr)

Figure 15: Breakup of various industrial units in focal point



In order to minimize the problem caused by the location of polluting industrial units within the residential areas and to improve the environment within the town, it becomes important that all the polluting industrial units should be shifted out of the residential areas and located in the defined industrial zones. The shifting of the small scale industry would require a well defined strategy based on providing incentives/disincentives. In addition, large scale industrial development would be required to be taken up around Nawanshahr in order to shift the polluting industrial units from the residential areas. Such a development should be based

on creating built up space where number of small scale industrial units could be housed in a single building rather than providing a plotted development.

Besides the planned industrial areas, prominent industrial clusters of rice shellers have come up along Nawanshahr – Phillaur Road and include the revenue estate of the village Bhangal Kalan etc.

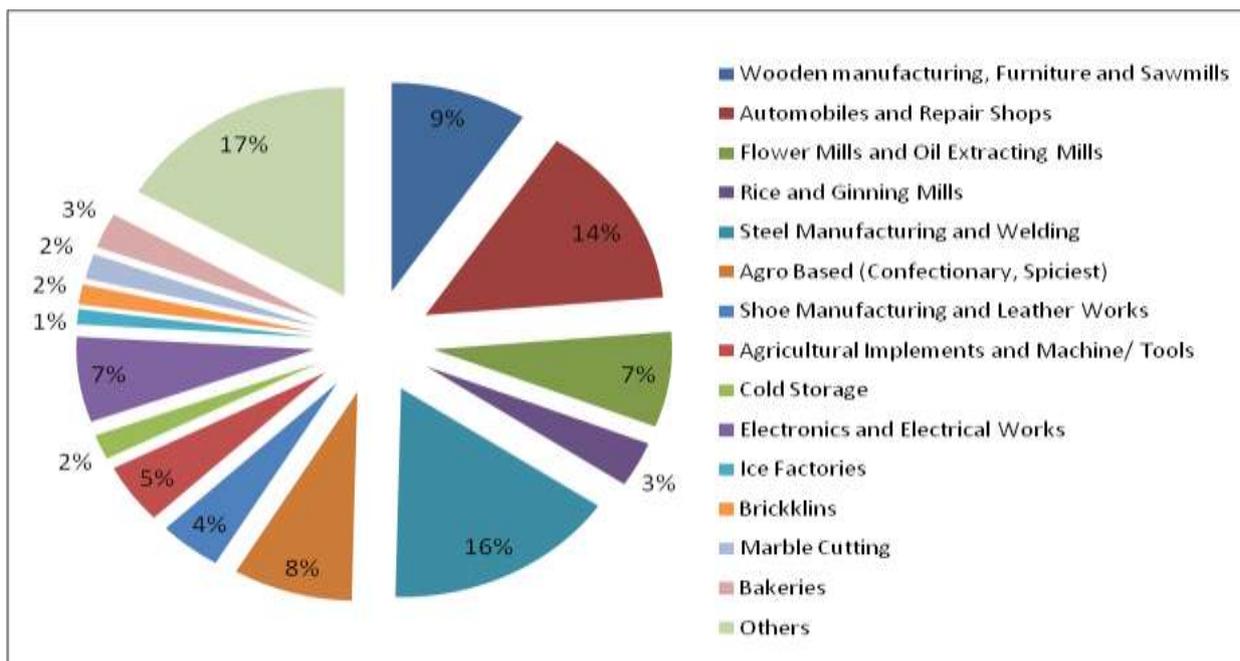
In practical terms, these areas are deficient in terms of services and endanger the environment. The redevelopment for the widening of roads, laying of utility services, development of open spaces and parking etc in these areas should be taken up with the participation of owner / entrepreneur in a systematic manner.

Table 31: Detail of Industries in Nawanshahr

S.No.	Type of Industries	Number
1	Wooden manufacturing, Furniture and Sawmills	24
2	Automobiles and Repair Shops	37
3	Flower Mills and Oil Extracting Mills	19
4	Rice and Ginning Mills	9
5	Steel Manufacturing and Welding	41
6	Agro Based (Confectionary, Spiciest)	21
7	Shoe Manufacturing and Leather Works	11
8	Agricultural Implements and Machine/ Tools	12
9	Cold Storage	5
10	Electronics and Electrical Works	17
11	Ice Factories	3
12	Brickklins	4
13	Marble Cutting	5
14	Bakeries	7
15	Others	43

(Source: GM, DIC, Nawanshahr)

Figure 16: Details of Industries in Nawanshahr



The table shows that the majority of the industries in the LPA are Agro based or allied industries which suggest that this area has good potential for setting up of more agro based industries.

2.15.5 Key Issues:

With a view to rationalize the growth and development of industries in Nawanshahr and to provide a supportive and enabling environment which would attract higher investment, generate more employment and improve productivity of the industrial units, following key issues have been identified:-

- a) The infrastructure and services within the existing Industrial Establishments needs to be upgraded in order to improve the environment and productivity of the existing units.
- b) Open spaces present within the industrial establishments should be developed / landscaped. Large scale plantation of trees should be taken up along the road berms and the open spaces.
- c) Approach to the existing industrial establishments needs to be appropriately upgraded to facilitate the movement of traffic within and outside these units.
- d) All polluting industries operating from the residential areas needs to be shifted on priority to the defined industrial zones.
- e) All polluting industries should be provided with Effluent Treatment Plants in order to treat the toxic industrial waste. The treated industrial waste should be recycled to be used by the industrial units in order to minimize pollution of the ground water or surface water sources.
- f) All polluting industries should be located and segregated from the residential areas by creating appropriate green buffer so as to maintain the healthy living environment.
- g) Multiplicity of agencies operating within the domain of industrial development should be eliminated and a nodal agency for growth and development of industrial establishments in Nawanshahr should be designated.

2.16 Key Economic Indicators

Several economic indicators/drivers have been identified within LPA, Nawanshahr which will put a reasonable impact upon the development of Nawanshahr town as well as that of LPA, Nawanshahr. These are listed as follows:

- Locational Advantage: Located on Phagwara Chandigarh state highway and on Rahon Garhshankar road.
- District Headquarter and Important urban centre of Doaba region
- Strong Regional linkage: Good connection through rail and road with neighboring towns/cities and states.

- Regional Level Infrastructure: Degree College, Polytechnic College and Nursing Schools & Colleges.
- Industrial Base: A no. of agro based industrial units, focal point and wooden, steel agricultural implements units.
- Regional Level Commercial Centre: old bazaars, Fruit and Vegetable market, Grain market.
- Health Infrastructure: Hospitals, PHC's, CHC's and Nursing homes.
- Rich Fertile Agricultural Land: A potential for agro based industries, trade and commerce development.
- Demography - High percentage of literacy rate in the town offers a valuable skill manpower resource.
- Nawanshahr is called a hub of NRI belt which offers good potential for development of the town.
- New traffic improvement investment – Coming up of new Mohali - Phagwara Expressway

All the above identified economic drivers will boost the economic and physical development of the area, provide employment opportunities and change physical face of the town as well as LPA, Nawanshahr.

3. EXISTING LAND USE

3.1 Preparation of base map

The work of preparation of base map for the LPA, Nawanshahr was assigned to Punjab Remote Sensing Centre (PRSC) P.A.U, Ludhiana by the Chief Town Planner, Punjab. The base map of whole Planning Area Nawanshahr is generated on 1:10,000 scale using Cartosat I data of **2.5m spatial resolutions**. The Cadastral maps of the villages falling in LPA, Nawanshahr were procured from the State Revenue department by the office of District Town Planner, Jalandhar and these maps have been scanned in the office of PRSC, Ludhiana and registered with Cartosat I data to demarcate village boundaries. The features like roads, rails, high and low lands, drains and settlements etc. have also delineated from Cartosat I data, by the concerned agency and shown on the base map prepared on basis of satellite imagery. After editing the map details the attributes to different features were assigned. After the preparation of LPA, Nawanshahr on 1:10,000 scales using Cartosat I data, the base map for densely populated urban areas of Nawanshahr town (core areas) was prepared on 1:5000 scale using quickbird satellite data of **0.6 mtr. spatial resolution**. The quickbird data (satellite imagery) has been received by the PRSC, Ludhiana from National Remote Sensing Agency, Hyderabad.

3.2 Enhancement through field surveys

The base map for the LPA, Nawanshahr and the densely built up areas (i.e. core areas) received from Punjab Remote Sensing Centre, P.A.U., Ludhiana were updated through ground truthing field survey by the office of D.T.P Jalandhar. The various land uses have been identified at the site and earmarked accordingly. Similarly the road network, drains, distributaries and other communication zones have been verified and checked at site. After conducting field surveys, the necessary feedback was supplied to P.R.S.C Ludhiana, which had ultimately been incorporated and an updated base map was prepared by P.R.S.C, P.A.U Ludhiana.

3.3 Existing Land Use: LPA, Nawanshahr

The LPA, Nawanshahr comprises 8675 hectares (86.75 sq. km) of area out of which the area of Municipal Council Nawanshahr is 1412 hectare (14.12 sq. km) as shown on Existing Land Use Plan, Nawanshahr Drg No. DTP (J) 32/2010 dated 03.09.2010. LPA, Nawanshahr covers the revenue estates of 29 villages includes the area of one urban centre i.e. Nawanshahr. Besides this, LPA, Nawanshahr is comprised of mostly agricultural. The detail of breakup of existing land of LPA Nawanshahr is given in table no: 32:

Table 32 : Existing Land Use LPA, Nawanshahr-2009

NAME OF LANDUSE	Area in hect.	% age to the total area
Residential	813.4	9.4
Commercial	71.46	0.8
Industrial	29.26	0.3
Recreational	2.56	0.0
Rural and Agricultural	7393.36	85.2
Traffic and Transportation	254.64	2.9
Utilities & Services	7.52	0.1
Government	13	0.1
Public & Semi-Public	89.9	1.0
Total	8675.11	100.0

Source: M.C. Nawanshahr

It is clear from the above table that the 85% of the area in the LPA Nawanshahr is under agricultural use which can be used for the future development.

3.4 Existing Land Use: Nawanshahr town

LPA, Nawanshahr comprises 8675.11 hectares covering the land of 29 villages including Nawanshahr town. The total area of Municipal Council of Nawanshahr in the Year 2009 is 1412 hectares. The detail of major existing land uses within the M.C. Limits is given in table below:

Table 33: Existing Land Use Nawanshahr Town -2009

NAME OF LANDUSE	Area in Hect.	% age to the total M.C. area	Urbanisable area	% age to the total urbanisable area
Residential	301.28	21.3	301.28	60.7
Commercial	47.50	3.4	47.50	9.6
Local /Retail Shopping Mall & Marriage Palace	22.36	-	-	-
Whole Sale Market, Fruit & Vegetables and Grain Market, Godowns, Ware Housing, Cold Storage	25.15	-	-	-
Industrial	24.68	1.7	24.68	5.0
Small Scale, Light and Service Industry	0.00	-	-	-
Medium & Large Scale Industry	0.00	-	-	-
Recreational	1.89	0.1	1.89	0.4
Parks /Open spaces / Green Belt	1.52	-	-	-
Stadium & Sports Complex	0.36	-	-	-
Rural and Agricultural	915.87	64.9	-	-
Agricultural Area	580.33	-	-	-
Plant Fruit Nursery and Orchard	7.97	-	-	-
Dairy Poultries, Stud Farm and Bee keeping etc	0.61	-	-	-
Pond/Water bodies, Swampy, Waterlogged	0.57	-	-	-
Brick Kilns	1.04	-	-	-
Extractive Area	0.00	-	-	-
Canal & Distributory	4.47	-	-	-
Drain	4.30	-	-	-
Vacant Land	316.58	-	-	-
Traffic and Transportation	38.59	2.7	38.59	7.8
Rail Terminal and yard	0.00	-	-	-

Rail Circulation	0.00	-	-	-
Bus Terminal and depot	4.17	-	-	-
Truck Terminal	0.99	-	-	-
Major Roads/Other Roads	33.42	-	-	-
Utilities & Services	3.26	0.2	3.26	0.7
Power house/Sub Station	0.83	-	-	-
Sewerage Disposal area	0.70	-	-	-
Solid Waste dumping/ Sanitary landfill	0.60	-	-	-
Water works	1.13	-	-	-
Government	25.83	1.8	25.83	5.2
Government /Public Office	9.94	-	-	-
Govt. Land	15.89	-	-	-
Public & Semi-Public	53.10	3.8	53.10	10.7
Hospital and Health institution	3.72	-	-	-
Educational And Research Centre Specialized Educational institutes	32.39	-	-	-
Social , Cultural and Religious	14.66	-	-	-
Post offices	0.33	-	-	-
Cremation and Burial grounds	2.00	-	-	-
Total	1412.00	100.0	496.13	100.0

Source: M.C. Nawanshahr

3.4.1 Residential

It is very much clear from table that the residential use has a larger share of town area comparing to other uses. Out of the total Municipal area of 1412 hectares about 301.28 hectares 21.3 % of the total M.C. area is under residential use which includes both planned and unplanned development. The percentage of residential use to the total developed area is 60.7%. The gross density of the town is 31.2persons/hectare. The population density is high in inner areas (>150 persons/hectare) as compared to outer areas (< 50 persons/hectare). In addition to old town localities, some new unauthorized colonies are coming up in the town.

3.4.2 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 town character. In case of Nawanshahr town the total area covered under commercial use is 3.4% of the total M.C area and 9.6% of the total developed area. Besides the commercial areas along major roads, fruit and vegetable market are the other commercial areas located in the town. The commercial areas of the town lack adequate parking and other public amenities. The commercial area of the town is in the form of semi-organized bazaars along streets and roads. Apart from this there are informal bazaars in the form of temporary shops like Rehri walas, farhi walas and kiosks located in the existing commercial areas and near the bus stand, railway station, grain market, and near other important economic activities. 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 11.48 hectares is located in the southern part of the town along the Rahon road.

3.4.3 Industrial

As table depicts that the total area under industrial use is 24.68 hectares which is 1.7% of the total M.C. and 5% of the total developed area. The town of Nawanshahr has one large scale industrial unit i.e. Sugar mill along with small scale industrial units dealing with products like manufacturing of utensils, farm implements, kinnow polishing, cotton ginning etc. It is evident from Existing Land Use plan that majority of industrial units are located to the west of the town on Jalandhar road including the only planned industrial area i.e. Industrial Focal Point (outside M.C. limits of the town) whereas a number of small scale or service industries are spread around Rahon and Phillaur Roads.

3.4.4 Recreational

The total area under recreational use is just 1.89 hectares which is 0.1 % of the total municipal area and 0.4% of the total developed area. Recreational aspect is also covered in detail in part of social infrastructure of Chapter 4. Mostly the town lacks the recreational facilities. There are no organized parks and open spaces in the town for recreational purposes except one i.e. Baradari garden.

3.4.5 Traffic & Transportation

The total area under traffic and transportation is 38.59 hectares which is 2.7% of the total M.C area and 7.8% of the total developed area, which is quite 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 Chapter 5. The details of existing road network and other uses relating to traffic transportation are shown in Existing Land Use Plan, Nawanshahr Drg No. DTP (J) 32/2010 dated 03.09.2010

3.4.6 Utilities & Services

Utilities such as Water Works, Electric Grid Station, (E.G.S) Sewerage Disposal Works, Solid Waste Dump site etc. cover an area of about 3.26 hectares which is only 0.2% of total M.C. area and 0.7% of the total developable area. Utilities like E.G.S. are evenly distributed in the town. Solid waste site is located on the Musapur road as it is clear from Existing Land Use Plan, Nawanshahr Drg. No. DTP (J) 32/2010 dated 03.09.2010

3.4.7 Government

This use comprises the area under Govt. /Semi Govt. office, Govt. land and reserved land. The total area covered under this use is 25.83 hectares which is 1.8% of the total M.C area.

3.4.8 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 53.10 hectares which is 3.8% of total municipal area and 10.7% of total developed area. The most of public and semi-public uses are concentrated in the central part of the town whereas few uses of this category are also seen in the outer parts of the town.

3.4.9 Agricultural / Rural

There are some chunks of land falling within municipal limits which are still being used for agricultural purposes. 915.87 hectares area is under agricultural use which is 64.9% of total M.C. area which shows that the most of the area under the M.C. limit is not developed. Availability of such large areas under agriculture use means there is sufficient land available for urban growth at cheaper rates and it also implies good potential for the scope of development of agro based industries. The Existing Land Use Plan of Nawanshahr, Drg. No. DTP (J) 32/2010 dated 03.09.2010 shows the spatial distribution of all the uses under agriculture within and outside the limits of municipal council, Nawanshahr.

3.5 Environmental Status

The intensity of the pollution in terms of air, water and noise is evaluated in order to clearly understand the level and causes of pollution existing within the town so that appropriate strategies are put in place to tackle the problem of pollution. Though there is no scientific data collection by Punjab Pollution Control Board in Nawanshahr. The present analysis of environment in Nawanshahr is based upon Primary observations and residents views.

3.5.1 Air Pollution

Major contributors to the air pollution are:-

- Vehicular exhaust due to the presence of large number of vehicles and higher use of personalized vehicles.
- Narrow road width, low capacity of the roads and high intensity of traffic.
- Use of low grade fuel (by adding kerosene/diesel in petrol by auto rickshaws)
- Presence of large number of intermediate public transport vehicles and use of kerosene as the fuel.

- Smoke emitted by various Industries

3.6 Heritage & Conservation in LPA Nawanshahr

The basic objectives of urban and regional planning are very clearly related to those of conservation of historic towns, area and monuments. Land use plans, Master Plan, Zoning Regulations and building bye-laws etc. help in achieving these objectives. Town planning for existing old areas in cities needs care of the architectural fabric in urban areas. Therefore conservation needs to be an integral part of the town planning process, i.e. of land use plans, building regulations and development policies.

LPA Nawanshahr does not have any place/site of archeological, historical or artistic interest.

4. EXISTING INFRASTRUCTURE

Physical Infrastructure

4.1 Water supply

In Nawanshahr 92% of the total area is served with water supply facility. There are 8 tube wells and 3 water tanks overheads serving the whole town having the total capacity of 7.35 MLD out of which the OHR's has the total storage capacity of 2.05 MLD. The water is supplied by gravity- through overhead reservoirs. The Water supply system of Nawanshahr town is dependent mainly on ground water, which is available at 60 feet below the ground level and suitable for drinking purpose.

4.1.1 Water Connections

The town at present has 6351 registered water connections to different category of users. The table indicates that during the year 2004-2008, a growth of 9.97% has been recorded in number of water connections. It has been observed that larger proportions of the connections fall under the category of domestic use which constitute about 98.43% whereas commercial water connections constitute only 1.57% of the total water connections. It is worth mentioning here that besides the above number of registered connections there are many unregistered illegal water connections that avail the facility of getting water from the existing network putting burden on the supply network.

Table 34: Detail of water supply connections in Nawanshahr from 2002-2008

Years	Water supply		
	Domestic	Commercial	Total
2004	5685	90	5775
2005	5880	92	5972
2006	6087	95	6182
2007	6184	99	6283
2008	6251	100	6351

Source: Municipal Council, Nawanshahr

Table 35: Existing Water supply

Category	Amount of Water supplied/ Day	Registered connections	Population	Water supply in LPCD
Municipal Council Area	7.35 MLD	6351	29400	250

Source: PWSSB

4.1.2 Water demand & Supply

The estimated population as per PWSSB for the year 2001 which is served by piped water system is 29, 400 which is 92% of total population. This gives gross per capita supply of 250 lpcd. As per as the norms prescribed, the amount of water supplied is 135 lpcd. Accordingly,

the amount of water supplied is higher than the prescribed norms. The duration of water supply is 3 times a day and the total duration work out is 3 hours on daily basis.

4.2 Sewerage Network

Municipal Council of Nawanshahr with association of Punjab Water Supply & Sewerage Board (PWSSB since 1977) provides the facility of sewerage network to the areas falling within the municipal council. The sewerage includes the waste generated from domestic, industrial, commercial and institutional units etc. operating in the town. At present, 85.93% of the population could be provided with the sewerage facility whereas the remaining 14% of the population is still to be provided with this facility.

Key Issues

- The disposal of untreated sullage into the open land thus causing environmental problems and many health problems to the residents of the surrounding localities.
- The second challenging problem is that about 14% part of the town lacks this facility.
- Immediate need for a sewerage treatment plant to treat and dispose the sewerage.

4.3 Storm Water Drainage

Following the analogy of sewerage network, the town has high degree of deficiency in the storm water network also. Besides the fact of inadequate sewerage system, no storm water drain exists in the town. In the absence of storm water system, the rain water is largely discharged into the sewer network. This results in heavy loading of the sewerage network, ultimately leading to choking of the pipes, overflow of the sullage and backflow of the sewage. This calls for the urgency of having a separate storm water network to be put in the place for the whole town to dispose off the rainwater effectively.

4.4 Solid Waste Management

Solid waste is a combination of unwanted and discarded materials from households, commercial and industrial operations besides street sweeping. Solid waste management is the prime responsibility of Nawanshahr Municipal Council within its boundaries. The Municipal Council organizes the collection and transportation through its own conservancy workers and tractor trolleys. Municipal Council collects solid waste from all the residential areas within its limits and then transports it to the dumping site. The process of solid waste management can be broadly classified into following stages:-

- i. Primary and secondary collection
- ii. Waste Storage & segregation.
- iii. Waste transportation
- iv. Disposal of Waste.

The solid waste is first collected from the points where it is generated and taken to the collection centers defined by the Municipal Council. After the garbage is dumped at the identified places it is transported by the Municipal Council to the dumping site for final disposal. At present Nawanshahr municipal council uses only one site for dumping the solid waste. The site is located on Musapur road. The area used for dumping is 2 acres but at present the site is overfilled and the M.C. has not having the land for future disposal. There are about 125 persons deployed by the municipal council for this purpose.

Table 36: Details of Waste Dumping Site

Sr. No.	Site	Land area (acres)	Capacity (in metric tons)	Remarks
1.	Musapur road	2	Maximum 200 mt. may be filled within site	The site is overfilled

Source: M.C. Nawanshahr

4.5 Traffic and Transportation

Transportation is an integral part of any city/town that is totally responsible for the existence and prevailing characteristics of the city. Without transportation, the functional differentiation of the city/town into areas of specialized land uses could not have occurred, and without transportation, the functionality of the town cannot be achieved or in other words it acts as the spinal cord of the city/town

4.5.1 Existing Road-Rail Network

Road and Rail play a significant role in the transport sector in Nawanshahr and surrounding areas. The road network is studied in terms of classification of roads, length of roads, cross section of roads, area of road network and major road intersections. Similar data regarding rail network and Railway crossings is also studied.

4.5.2 Road network at Local Planning Area, Nawanshahr level

There are two scheduled roads i.e. Phagwara - Chandigarh Road (also an M.D.R) and Nawanshahr – Rahon road passing through the town. All the roads passing through Local Planning Area, Nawanshahr have undivided carriageways outside the M.C. limits. The details of width of ROW, carriageway and length of major roads falling within and outside M.C. limit are given in the table 37:

Table 37: Detail of Major Roads falling within M.C. limits and outside M.C. limits in LPA, Nawanshahr

Sr. No.	Name of Road	Total	Within MC			MC to LPA, Nawanshahr		
			Road Length (km)	Right of Way (ft.)	Carriage Way (ft.)	Road length (km)	Right of Way(ft.)	Carriage Way (ft.)
1	Nawanshahr-Banga Road	7.2	2.8	100	56	4.4	113	33
2	Nawanshahr-Chandigarh Road	8.4	4.4	100	56	4.0	113	33
3	Nawanshahr-Rahon Road	4.9	2.4	78	32	2.5	78	24
4	Nawanshahr-Phillaur Road	5.1	3.9	70	24	1.2	70	24
5	Nawanshahr – Garhshankar Road	5.2	1.6	74	24	3.6	74	24
6	Nawanshahr-Kulam road (link Road)	4.2	1.4	22	-	2.8	22	-

Source: PWD central works, Nawanshahr
Field survey 2008

This is very much evident from the above table that the Right of Way of all the roads varies from 22 ft. to 100 ft. while the carriageway varies from 22 ft. to 56 ft. Despite the adequate width of M.D.R's and other roads, the right of way varies at certain points due to encroachments. Therefore, the efficiency of these sufficiently wide carriageways decreases due to these encroachments.

Existence of main roads in LPA, Nawanshahr shows that this area is well served by the regional roads, which provide a high level of road connectivity with other parts of the State. The length of these roads is 35 km within LPA, Nawanshahr boundaries out of which about 16.5 Kilometers fall within the limits of Municipal Council of Nawanshahr. There is very good network of rural roads in LPA, Nawanshahr.

4.5.3 Road Network at town level

In Nawanshahr all the major roads converge literally at one point thus making junctions which results in choking of traffic. The Rahon road and Kulam road meet Nawanshahr – Chandigarh road at one point and Garhshankar road meets Nawanshahr – Chandigarh road making T-junction at about 200mtr. from above junction.

The important roads entering the town are listed below:

- Nawanshahr –Phagwara Road (M.D.R & Scheduled road no. 36)
- Nawanshahr –Chandigarh Road (M.D.R & Scheduled road no. 36)
- Nawanshahr – Rahon Road (Scheduled road no. 35)
- Nawanshahr –Garhshankar Road
- Nawanshahr –Phillaur Road
- Nawanshahr –Kulam Road

As per the existing positions of these roads, it becomes clear that the town have wide road network. The inner town road network has irregular alignments, inadequate width and frequent intersections leading to serious capacity constraints.

4.5.4 Road Intersections

While examining the road network of the town a total number of 7 road intersections have been identified within the limits of Municipal Council, Nawanshahr which remains busy throughout the day. These road intersections are listed in the table below:

Table 38: Detail of Road Intersections in Nawanshahr Town

Sr. No.	Name of Junction	Type of Junction
1	Phagwara-Chandigarh and Garhshankar road	T-Junction
2	Phagwara-Chandigarh and Kulam road	T-Junction
3	Phagwara-Chandigarh and Rahon road	Y-Junction
4	Rahon road- Railway road	T-Junction
5	Phagwara-Chandigarh and Barnala Kalan road	Y-Junction
6	Rahon-Saloh road	Y-Junction
7	Rahon road-Saloh road-Begampur road	Cross Junction

Source: Field survey 2008

Besides these identified road intersections there are many other intersections in the inner part of the town, which have not been listed over here as these are very minor intersections. The position of above listed road intersections has been shown on the thematic plan.

4.5.5 Vehicular Growth

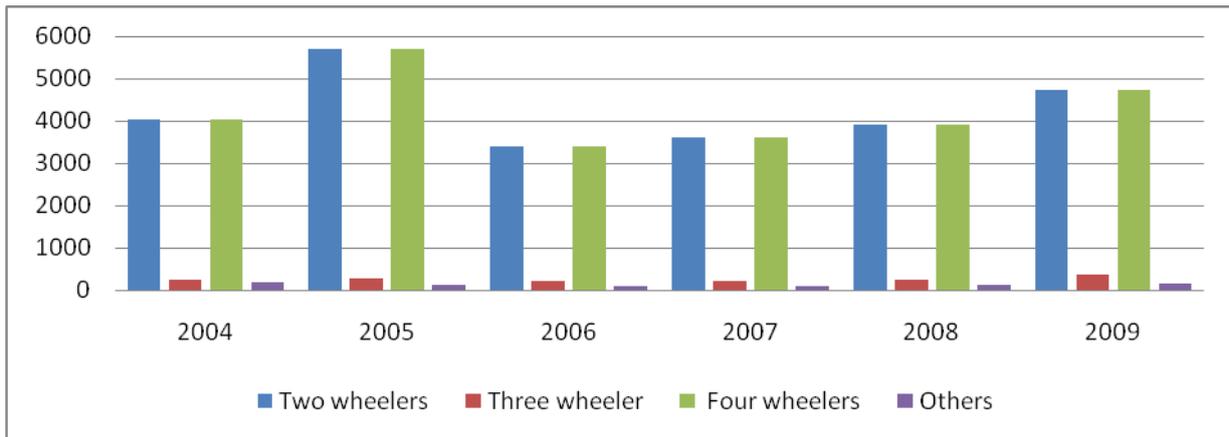
The number of vehicles increased from 7240 to 9042 during 2004 and 2005, thus registering a growth rate of 24.88%. But from the year 2005 to 2006, the numbers of vehicles have highly decreased in Nawanshahr town. This phenomenon continues in the next year i.e. after increasing in the next year 2007 it slightly decrease in 2008 and then again increase in the year 2009. This is perhaps due to registration of vehicles in other offices of the district. Out of the total number of vehicles majority of vehicles are the two wheelers followed by the other vehicles including cars, jeeps and tractors. There is an increase in personalized vehicles ownership that leads to the growth of vehicles in the town. Table below indicates the pattern of growth of registered vehicles category wise in the town on annual basis.

Table 39: Registered vehicles category wise 2004-09

Year	Two wheelers	Three wheeler	Four wheelers	Others	Total registered vehicles	Growth rate %
2004	4025	245	4025	168	7240	-
2005	5705	266	5705	130	9042	24.88
2006	3392	197	3392	98	6654	-26.41
2007	3594	203	3594	105	7225	8.58
2008	3910	252	3910	123	7178	-0.65
2009	4722	375	4722	144	8644	20.42

Source: District Transport Office, Nawanshahr

Figure 17 : Vehicular Growth, Nawanshahr Town 2004 – 2009



4.5.6 Vehicle composition on main road network

It has been noticed that there is mixed traffic running on the main town road network such as heavy vehicles (Trucks, Trailers, Buses etc.), medium vehicles, light vehicles, three wheelers, two wheelers, cycles, carts etc. As per the observation the outer roads of the town are having a large number of heavy vehicles whereas the main roads falling in the inner part of the town normally have large number of light vehicles and two wheelers.

4.5.7 Road Accidents

With a view to assess the safety of the road users in Nawanshahr it is important to study the road accidents in the town. As per the figures made available by the Police deptt., the total no. of accidents increased from 143 in 2005 to 151 in 2007 and then decrease to 137 in 2008 and increase to 144 in 2009. So despite the increase in vehicular population, the number of accidents has by and large remained at the same level but the number of fatal accidents is more than the non-fatal accidents. So there is a need of strict regulations and enforcement mechanism of these regulations. The accident prone areas in the town are mostly the road junctions likely as Phagwara-Chandigarh and Garhshankar road T-junction, Phagwara-Chandigarh and Kulam road T-junction, Phagwara-Chandigarh and Rahon road Y-junction, Rahon - Railway road T-junction, Phagwara-Chandigarh and Barnala Kalan road Y-junction and Rahon – Saloh road Y-junction. The table below shows the no. of accidents from 2003 to 2008.

Table 40: Year wise Fatal and Non-Fatal accidents in Nawanshahr town 2005-09

Year	Total No. of accidents	Fatal	Non Fatal
2005	143	85	58
2006	139	61	78
2007	151	92	59
2008	137	87	50
2009	144	86	58

Source: Senior Supdt. of Police, Nawanshahr

4.5.8 Terminals

4.5.8.1 Bus Terminal and Frequency of bus Service

There is one Bus Terminal in Nawanshahr town which is situated on Garhshankar-Nawanshahr road near Ambedkar Chowk having an area of 12 acres which is not sufficient to accommodate all the components as per the norms given in UDPFI Guidelines. Since bus terminal lie at the center of the town it creates congestion in the areas surrounding it and the main road passing



in front of it. With large number of cycle rickshaws, auto rickshaws, taxies occupying the space around the bus terminal, movement of traffic in the area largely remains chaotic for most part of the day.

4.5.8.2 Bus Routes and Intercity Bus Service

As per data supplied by General Manager PRTC Nawanshahr, total number of 440 buses operates from this bus stand daily and 150 mini buses are also operating. The town is well connected by bus service with the important towns and cities of the state. The maximum numbers of buses which are coming and going from the bus stand are about 1, 58,400 per year and near about 54000 mini buses per year are entering and going from the bus stand.

As informed by General Manager, Punjab Roadways Transport Corporation, about 65, 44,000 passengers are picked up from Nawanshahr bus stand yearly by buses and minibuses. The detail of yearly bus traffic route wise in Nawanshahr is given in table below:

Table 41: Yearly Bus traffic route-wise in Nawanshahr 2007-09

Sr. no.	Year	Per day	No. of Routes	No. of Buses		
				Incoming	Outgoing	Total
1	2007	420	17	210	210	151200
2	2008	440	17	220	220	158400
3	2009	440	17	220	220	158400

Source: Punjab Roadways Transport Corporation, Nawanshahr

Table 42: Yearly Mini-Bus traffic route-wise in Nawanshahr 2007-09

Sr. no.	Year	Per day	No. of Routes	No. of Buses		
				Incoming	Outgoing	Total
1	2007	140	16	70	70	50400
2	2008	150	16	75	75	54000
3	2009	150	16	75	75	54000

Source: Punjab Roadways Transport Corporation, Nawanshahr

Table 43: Yearly Number of Passengers

Sr. no.	Year	Passengers/Year
1	2007	63,00,000
2	2008	65,44,000
3	2009	65,44,000

Source: Punjab Roadways Transport Corporation, Nawanshahr

4.5.8.3 Intra city bus service

There is no public transport system in Nawanshahr town. Due to the inefficient services and unorganized system of public transport, predominant modes used for intra city passenger travel are personalized vehicles, cycle rickshaws, auto-rickshaws etc. which exaggerate the problems like congestion, accidents, parking as well as pollution. However some mini buses going to rural areas from bus stand pick up the passengers and drop at various stops in the town to facilitate the general public, hence functioning partly as public transport. Preferred mode of transport in the town has been witnessed as use of auto rickshaws which have been found to be highly convenient by the users because of affordable fare and convenience of getting on and getting down at any place in the town. Looking at the existing pattern of transportation it has been observed that for the smaller distance and intra city travel, auto rickshaws & cycle rickshaws are the preferred mode of travel whereas for inter-city and longer distance bus travel remains the popular mode of travel

4.5.8.4 Truck Terminal

In spite of development of small and medium industries in the town and wholesale activities consisting of grain market, vegetable markets, godowns, whole sale trade etc. Nawanshahr have one authorized truck terminal located on Rahon road. Beside this trucks are parked along the main roads i.e. Rahon road, Phillaur road, Phagwara road, Garhshankar road and on vacant spaces. Besides giving shabby look to the area parking along the roads also cause traffic problems. Various workshops have been developed along Nawanshahr – Rahon road, Nawanshahr – Phagwara road and to some extent at Nawanshahr – Garhshankar road. These workshops attract vehicles which lead to encroach the road creating bottlenecks in free flow of traffic.

4.5.9 Parking demand and availability

Parking remains another critical area for the Nawanshahr town. In case of Nawanshahr town the main Bazaars and roads of the town i.e. Nawanshahr-Chandigarh road, Nawanshahr-Rahon road, Nawanshahr-Phillaur road and Station road are totally devoid of parking spaces. On all roads due to lack of parking space, the vehicles



remain parked right on the road thus creating traffic congestion and problems. Similar is the case on all the main commercial streets in the town where the parking problem is there due to commercial activities on those roads.

4.5.10 Rail Based Transport

In addition to road traffic, railway also has a reasonable volume of goods and passenger traffic into Nawanshahr town. Nawanshahr town has a rail network connecting the town with Jalandhar, Rahon and Garhshankar. There are three railway lines entering in the town one from north-west side i.e. Jalandhar and 2nd from north side i.e. Garhshankar and third from southern side i.e. Rahon. In all 6 pairs of passenger trains pass through the town on daily basis which caters to the traffic on Nawanshahr – Jalandhar, Nawanshahr- Jaijon railway line. Besides long distance travelling, railway also caters to daily commuting passengers which mainly comprises of govt. employees, industrial and agricultural workers. Railway being the economical and efficient mode of transportation, largely catering to the intercity long distance traffic would continue to attract large volume of passenger traffic.

Table 44: Detail of passenger trains passing through Nawanshahr town

Name of route	Incoming	Outgoing
Nawanshahr – Jalandhar	3	3
Nawanshahr- Jaijon	3	3

Source: Station Supdt. Railway, Nawanshahr

In addition to 6 pairs of Passenger trains large number of goods trains i.e. near about 40 -50 trains per year are also passing through the town for transportation of raw material and finished goods. Railway plays an important role in the movement of goods.

4.5.10.1 Railway Crossings

Because of railway line passing through the town there are two level crossings on various roads. A total number of 2 level crossings have been identified in Nawanshahr town which are manned i.e. on Phagwara – Nawanshahr road and Nawanshahr – Phillaur road.

Social Infrastructure

4.6 Educational Facilities

Nawanshahr is the educational hub in its Local Planning Area, which serves not only the Nawanshahr town but also its surrounding villages. There are numbers of colleges/institutes in Nawanshahr town which cater to the educational requirement of Nawanshahr town as well as its surrounding villages. These institutes mostly include ITI, Degree Colleges, and veterinary & nursing institutes. For getting the study of medical and engineering, students have to go to nearby cities like Ludhiana, Jalandhar, and Phagwara etc.

Besides the higher level of institutions Nawanshahr town and its Local Planning Area has number of schools of primary & secondary/ Higher Secondary level which imparts education at school level. Presently there are 30 primary, 9 middle schools and 29 high/higher secondary schools functioning in the rest of LPA, Nawanshahr, whereas 10 primary, 9 middle and 14 High/ Higher/ Secondary schools are working in Nawanshahr town.



Considering the existing population and norms & standards defined for educational institutions, quantitatively the number of institutions is not adequate to cater the needs of the education of the town and qualitatively also most of the institutions have been found to be deficient in the basic amenities and facilities.

As far the slum localities are concerned, most of them don't have primary level schools. This leads to lack of literacy in slum areas which further decreases the skills and productivity of slum dwellers which keeps them in the vicious circle of poverty. This calls for providing appropriate numbers of schools in these areas so that slum dwellers have better education to have good quality of life and enjoy good health.

The following table shows the availability of educational facilities in Nawanshahr town and LPA, Nawanshahr

Table 45: Educational facilities in LPA, Nawanshahr and Nawanshahr town

Sr. No.	Name of Facility	Existing in Numbers	
		Nawanshahr town	LPA, Nawanshahr
1	Primary & Elementary schools	10	30
2	Middle schools	9	9
3	High/Secondary Schools & Senior Sec. Schools	14	9
4	Colleges (Degree)	4	-
5	Veterinary Institute	3	-
6	ITI	1	
	Total	41	48

Source: Census of India, Punjab 2001

4.7 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. There are 70 units of medical facilities of different types providing health services to the residents of Nawanshahr town, LPA as well as to the persons from outside the LPA. Out of these units there is 1 hospital in Nawanshahr

town, 3 Primary Health Centers, CHC in LPA, Nawanshahr and Nawanshahr town and 16 Nursing homes providing medical facilities to the inhabitants of Nawanshahr town. Also about 160 private doctors and RMPS are looking after the health of the citizens of Nawanshahr town and 320 chemists are providing the health facilities to the people of Nawanshahr and its surroundings villages.

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

Table 46: Medical Facilities in LPA, Nawanshahr

Sr. No.	Name of the Facility	Existing numbers
1	Civil hospitals	1
2	Dispensary	47
3	PHC	3
4	CHC	3
5	Private practitioners	79
6	RMP	81
7	Chemists	320
8	Nursing homes	16

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

4.8 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. 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.

4.9 Parks and Open Spaces

As per the record of the M.C. Nawanshahr there are only two parks in the town located in Pandora mohalla and Ravi mohalla. Baradari garden is the famous garden of the town located on Rahon road. The most parts of the town are virtually lacking the parks and open spaces. All the above parks cover an area of about 1.52 hectares. Major parts of the Nawanshahr town have been developed in unplanned way, so most of these do not have parks and open spaces. Similarly old parts of the town 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.

4.10 Cinemas & Multiplexes

There are 2 cinemas in the town catering to the entertainment needs of the residents. Besides this, no new cinema or multiplexes are coming up due to slow development of the town.

4.11 Other Recreational facilities

In addition to the above there are 1 public library/reading room and one stadium in Nawanshahr town which provide recreational facilities to the general public. However, any well-organized cultural or drama club has not been noticed in the town thus town is lacking the facility of good theater. There is no museum, no Art Gallery etc. in the town for recreational purposes.

4.12 Sports

There is only one public indoor stadium in Nawanshahr town, which lies on Chandigarh road. Besides this, there are two playgrounds one each in I.T.I and R.K. Arya College in the town. The sports facilities available in town are not according to norms & standards.

However, looking at the growing population it is important that adequate level of recreational facilities are to be created in the town and distributed to cover the entire population of the town.

4.13 Post and Telegraph

Due to advancement in the technology and policy of liberalization adopted, post and telegraph has emerged as an important medium of communication. There are in all 15 post offices operating in the town. These facilities serve considerable proportion of population both at the town and LPA level. Their provision should be made as per defined norms in order to cater to the needs of vast majority of town population.

5. VISUALISING THE FUTURE

5.1 Population Projections

The population is the basic human factor for which planning is done. The requirements of different types of infrastructure for Nawanshahr town and for surrounding villages of LPA, Nawanshahr in 2031 would be based on the projected population for that year and also migration of population that seeks livelihood in the town. 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 Nawanshahr town and rural areas of LPA, Nawanshahr have also been kept in mind. The following table gives the detail of decadal growth rate of population of Nawanshahr town, population of rural areas and total population of LPA, Nawanshahr:

Table 47: Growth of Population of LPA, Nawanshahr (Total, urban & Rural)

Year	Nawanshahr Town		Rural		Total	
	Population	Growth rate (in percent)	Population	Growth rate (in percent)	Population	Growth rate (in percent)
1981	26726	-	38516	-	65242	-
1991	29955	12.08	45333	17.69	75288	15.40
2001	31967	6.72	50359	11.09	82326	9.35

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

Method 1: 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, Nawanshahr 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 upto year 2026 as represented in table below:

Table 48: 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 Nawanshahr town and rural population of LPA, Nawanshahr to total urban and rural population respectively of Punjab is calculated and is given in table below:

Table 49: Percentage share of Nawanshahr town and Rural Population of LPA, Nawanshahr

Percentage share of Nawanshahr town to the Total Urban Population of Punjab			Percentage share of Rural Population of LPA, Nawanshahr to Total Rural Population of Punjab		
1981	1991	2001	1981	1991	2001
0.57	0.49	0.39	0.31	0.31	0.31

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

For projecting the urban population i.e. of Nawanshahr town, the percentage of urban population (Nawanshahr town) is derived from the total urban population of Punjab in year 2001 which comes out as 0.39%. This figure of 0.39% has been used constantly for projecting the urban population for Nawanshahr town for the year 2006, 2011, 2016, 2021, and 2026. For calculating the projected population of 2031, the growth rate of previous five years is taken. Besides this, the floating population of about 5% has also been added to the projected population.

Similarly, for projecting the rural population of LPA, Nawanshahr, the percentage share of LPA, Nawanshahr's rural population has been derived from total rural population of Punjab in the year 2001 which comes out as 0.31% and the same has been used constantly for projecting rural population upto the year 2016. Thereafter growth rate of 2011 – 16 i.e. 1.03% has been taken for calculating the projected population of LPA, Nawanshahr rural for the year 2021, 2026 and 2031 because the growth rate of Punjab rural during the year 2016 - 2021 and 2021 – 2026 is negative. The Projected population of Nawanshahr town and LPA, Nawanshahr rural is given in the table 50:

Table 50: Projected Population and Growth Rate of LPA, Nawanshahr

Year	Nawanshahr Town			Rural Areas		LPA, Nawanshahr	
	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)
2001	32187	33796	-	49898	-	83694	-
2006	36812	38653	14.37	51522	3.26	90175	7.74
2011	41656	43739	13.16	52691	2.27	96429	6.94
2016	46566	48894	11.79	53233	1.03	102128	5.91
2021	51422	53993	10.43	53782	1.03	107774	5.53
2026	64178	67387	24.81	54335	1.03	121723	12.94
2031	80101	84106	24.81	54895	1.03	139001	14.19

(Source: Computed values)

Method 2: 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 Nawanshahr town for past two decades 1971-1981, 1981-1991 and 1991 – 2001 comes out around 24% whereas for rural areas it is about 14.39% for past two decades 1981-1991 and 1991-2001. For calculating the projected population of Nawanshahr town, the average growth rate of 30% is assumed for 2001 - 2011 and 2011-2021 years and 35% for the year 2021 – 2031. For rural areas, taking into account the trend of growth of LPA, Nawanshahr rural, overall growth pattern and Projection of rural areas of Punjab, the growth rate for the decade 2001 – 2011 is assumed as 14% and then further for the decade 2011 – 2021 it is assumed as 9% and then again taking into account decreasing trend for the decade 2021 – 2031 it is assumed as 7%. The above future rates of growth for Nawanshahr town and rural areas of LPA, Nawanshahr have been projected on certain assumptions given next to table below. The projected population of Nawanshahr town, including rural areas of LPA, Nawanshahr and LPA, Nawanshahr up to year 2031 is given in table below:

Table 51: Projected Population for LPA, Nawanshahr

Year	Nawanshahr Town		Rural Areas		LPA, Nawanshahr
	Population	Average Growth Rate in % age	Population	Average Growth rate in %age	
2011	44000	30	58000	14	101400
2021	58000	30	63000	9	120000
2031	78000	35	67000	7	145000

(Source: Computed values)

Assumptions for Population Projection

1. Nawanshahr town is the District Headquarter of the Shaheed Bhagat Singh Nagar District.
2. The growth rate for calculating population projection of the next decades (2011-2021 and 2021 – 2031) is taken as 30% and 35% as the upcoming new development of industrial and trade sector will boost up because of the industrial policy of Punjab.
3. Nawanshahr has the strong linkages with Chandigarh, Jalandhar, Phagwara and it also connects with Jammu which makes it a transit point for goods transport helping to boost the economy of the region by acting as a major infrastructure development for industrial sector and also helpful for the development of the town.
4. The development of the 4 lane Mohali-Phagwara expressway will also contribute a lot to boost the economy of the region in the future.
5. The region has a hub of NRI's which plays a major role in the development of the town.

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

Table 52: Comparison of Projected Population of LPA, Nawanshahr

Method	Nawanshahr Town Projected Population	Rural Areas Projected Population	LPA, Nawanshahr Projected Population
Method 1	84000	55000	139000
Method 2	77000	67000	144000

Out of the above two methods, Population Projected by Method No.1 is adopted for the plan formulation, as there will be development of trade commerce, industrial sector in planned manner and in anticipation of new govt. policies likely to be framed by the Govt. to develop this region. Despite general trend of reduced population growth rate, Nawanshahr town is likely to retain its share of urban population. The Projected Population of Nawanshahr town therefore has been taken as around 84,000 persons for the year 2031.

5.2 Workforce Projections

For calculating the workforce projection, LPA, Nawanshahr is divided into two parts:

1. Nawanshahr town
2. Villages in LPA, Nawanshahr (Rest of LPA, Nawanshahr)

Employment data category wise is not available for Nawanshahr town and including LPA. To estimate the 2031 employment data category wise for rest of LPA, percentage of main workers to population for the year 2031 forecast (which is based on %age of 2001) for the year 2031 for the above said constituents are calculated as given in tables below:

Table 53: Workforce projections for LPA Nawanshahr

Year	LPA, NAWANSHAHR		
	Total Population	Total workers	%Age
1981	65242	11162	17.1
1991	75288	21521	28.6
2001	82326	32858	39.9
2011	96429	38572	40.0
2021	107774	43110	40.0
2031	139000	55600	40.0

(Source: Computed values)

Table 54: Workforce projections for Nawanshahr town

NAWANSHAHR TOWN			
Year	Total Population	Total workers	%Age
1991	29955	8848	29.5
2001	31967	11676	36.5
2011	43739	15978	36.5
2021	53993	19724	36.5
2031	84000	30724	36.5

(Source: Computed values)

5.3 Infrastructural requirements

5.3.1 Water Requirements

General: In true sense, the term water demand refers to the estimated quantity of water required for a town to fulfill water needs of the people residing in the town. The estimated water demand includes per capita consumption, system losses, industrial and commercial consumption, firefighting demand etc. The water demand is broadly classified as domestic and non-domestic water demand.

Rate of water supply:

Domestic water demand

The Indian Codal Precisions recommended a minimum water supply of 135 lpcd for cities and the same has been adopted for Nawanshahr. The residential area in Nawanshahr is expected to have a much higher demand due to better life style adopted by the residents. However, considering the availability of water and the norms followed by the PWSSB, supply of 135 lpcd for domestic purpose will be adopted for requirement purpose.

Industrial water demand

Bulk supply to industrial establishment will be considered as per specific requirement of each industry. However, the figures of 135 lpcd include water requirements for commercial, institutional and minor industries.

Unaccounted for water (UFW)

As per Central Public Health and Environmental Engineering Organization (COPHEEO) manual, a maximum provision of 15% towards losses, unaccounted water shall be made.

Estimation of Water Demand

The net water demand comprises consumption of domestic and non domestic purposes. Non domestic uses include consumption by Institutions (Colleges, Schools and Hospitals), Commercial Establishments, Industries, Public Parks, Hotels, Tourist places etc. Gross water demand@135lpcd comprises net water demand and unaccounted water non-physical @ 15% losses.

Table 55: Projected Gross water Demand for Nawanshahr Town 2031

Service Head	Existing/Desired level	Service levels and requirements			
	Indicator	Unit	By year 2011	By year 2021	By year 2031
Daily Supply	Per capita supply (LPCD)	MLD	6.8	8.4	13.0
Treatment	Treatment capacity against supply	MLD	6.8	8.4	13.0
Metering system			7955	9818	15291

(Source: Computed values)

The water requirements for the rural settlements (village abadis) have not been projected since this aspect is independently handled by the department of Public Health.

5.3.2 Sewerage requirements

Per capita waste water flow

The rate of waste water flow depends upon the rate of water supply to community and the rate of ground water infiltration.

The entire spent water of community should normally contribute to the total flow in a sewer. However, the actual dry weather flow quantities usually are slightly less than the per capita water consumption. Since some water is lost in evaporation, seepage into ground, leakage etc. Generally, 80% of the water supply may be expected to reach the sewers unless there is data available to the contrary.

Projected waste water flows

Considering 80% of the water supplied to the consumers reaching the sewer the projected waste water flows has been calculated.

Table 56: Projected Gross Waste Water Flows of Nawanshahr town 2031

Service Head	Existing/Desired level	Service levels and requirements			
	Indicator	Unit	By year 2011	By year 2021	By year 2031
Waste water flow	Per capita supply (LPCD)	MLD	5.4	6.7	10.4
Treatment	Treatment capacity against supply	MLD	5.4	6.7	10.4

(Source: Computed values)

5.3.3 Solid waste generation

The production of solid waste in an urban area is a function of the socio economic profile of the population and activities in the area. As per UDPFI guidelines, the generating of waste varies from about over a quarter of a kilogram in small towns to about half a kilogram per capita in large and metro cities. For Nawanshahr town which is medium sized town the waste generation is assumed 3/8 of kilogram per capita and total waste generation will be $3/8 \times 348000 = 31538 \text{ kg} = 31.5 \text{ metric tons per day}$.

5.4 Constitution of Think Tank

As per the D O letter dated 2-12-2008 of Chief Secretary, Govt. of Punjab, addressed to all the Deputy Commissioners of the Punjab state, circulated vide Chief Town Planner's Endst. No. 9526-45 CTP (Pb) /sp 135 dated 10-12-08, there is a proposal to set up a 'think tank' under the chairmanship of Deputy Commissioner concerned for each town/town to envisage a vision 2031 for that town/city.

Based on the instructions contained in the above referred letter, the 'Think Tank' for visualizing the future of the Nawanshahr town (vision 2031) was constituted by Deputy Commissioner Nawanshahr. The **Think Tank** comprised various members from various sectors. On the basis of discussions held in the 'Think Tank' meetings, a SWOT analysis of the town/LPA has been prepared and accordingly a Vision for the town has been finalized. The meetings of the Think Tank committee were held on dated 17/09/2009 and 27/08/2010.

5.5 The Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis

The present strengths, the opportunities likely to be presented by the town itself and the surrounding region, the present weaknesses of Nawanshahr town and the threats emanating in the region have been outlined. The following Strengths, Weaknesses, Opportunities and Threats for LPA, Nawanshahr have been identified:

5.5.1 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 LPA, Nawanshahr.

- Road connectivity – Located on Jalandhar Banga Chandigarh road and on Rahon Garhshankar road.
- Important urban centre of Doaba region and district Headquarter
- High per capita income of the people
- No threat of competition from any major city in the region.

- Regional linkages - It is well connected to surrounding towns/cities as Chandigarh, Jalandhar, Pathankot, Rahon, Ludhiana of the state and with other states like Jammu through road network
- Proposal of new Mohali - Phagwara Expressway will make the region more accessible in future.
- Rail connectivity - Presence of Railway line in the town making it more accessible is also helpful in the economic development of the town because of goods transport railway yard.
- Industrial Sector - Wooden, steel, agro based industries etc. are there in the town boosting the economy of the town
- Employment Potential - Good employment generation due to industries, trade and commerce.
- Regional level Commercial centre - Grain market and vegetable market
- Health Infrastructure - Hospitals, PHC's, CHC's and Nursing homes to cater the medical needs of the region.
- Agricultural products - A vast fertile hinterland producing various crops like wheat, rice etc. is a potential source for the economic development of the town especially for the development of agro based industries.
- Availability of land - A vast tracts of land are available at cheaper rates for the expansion of the town
- Demography - High percentage of literacy rate in the town offers a valuable skill manpower resource for the economic development of the region.
- Nawanshahr is called a hub of NRI's which is the potential of the town is, helping in the economic and social development of the town.

5.5.2 Weaknesses and Threats:

- Weak regional linkages: The town is not connected with any N.H. or S.H. only M.D.R is passing through the town.
- Locational disadvantages: Economic Subsidies in the nearby surrounding areas i.e. Kandi areas.
- Urban Growth and Land Management: Most of the urban development is unplanned and haphazard in the town. No planned scheme of PUDA, Improvement Trust and Local body.

- There are 16 slums with at least 65% population of the town which create hindrance to the planned development of town.
- Concentration of commercial activities in congested areas of the old part of the town with narrow streets, no parking spaces etc. are creating major traffic and environmental problems.
- Lack of urban basic services: Only 86% of the town served by water supply and sewerage networks whereas remaining area/population is still devoid of these basic facilities. Absence of sewerage treatment plant and storm water drainage and disposal of solid waste unscientifically – a potential threat to living environment.
- Poor road geometry, narrow streets, encroachment of roads, lack of parking spaces, lack of recreational facilities like open spaces, parks, stadiums renders the town unfit for comfortable living.
- Educational Infrastructure is not sufficient for the town and for its surrounding areas because of which students have to go to other towns for getting quality and higher education.
- Poor industrial base: Closure of some existing industries in Industrial focal point, sharp decline in the number of small scale industries and lack of new investment in industrial sector are posing threats for further development/growth of the town.
- Water logging problem in some parts of the town and region is another threat to building activity and agriculture sector.

5.6 Vision- 2031

The year 2031 is taken the vision year for the master plan so as to tally the data as per the census year. Therefore based on the outcome of discussions held in the meetings of ‘Think Tank’, the Vision Nawanshahr 2031 is articulated as follows:

“To transform ‘NAWANSHAHR TOWN’ into an administrative, economic and service centre of Doaba sub region by providing high quality physical and social infrastructure to all its citizens in an inclusive and environmentally sustainable manner.”

5.6.1 Strategies to attain Vision 2031

In order to achieve the objectives and goals enshrined in the vision statement, mission statements for various focused areas have been detailed below:

Growth management

- Promoting planned development through effective town planning.
- Rationalizing land use pattern for effective traffic management and provision of basic services and amenities.
- Making effective plan implementation and enforcement as integral part of town planning and development process.
- Strengthening the economic base of the town through provisions of more areas for industrial development especially the development of agro based industries.
- Conserving the cultural fabric.
- Making growth management process participatory.
- Review of master plan on regular basis.
- Improving system of approvals of building plan through use of IT and GIS.
- Making urban development self-sustaining.

Urban Environment

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

Urban Services:

• Water supply

- To ensure safe, equitable, reliable, adequate and quality water supply
- To ensure 100% coverage of the town

• Sewerage and Drainage

- Total coverage of the town with sewerage and drainage system including slums.
- To promote eco-friendly decentralized treatment system.
- To minimize sewerage generation through water saving appliances
- To promote recycling of sewage
- To promote protection of natural water bodies

- To promote optimum use of storm water as an alternate source of water supply.
- **Solid waste management**
- To improve the solid waste management in the town using best practices.
- To use PPP model for Solid waste management.
- To promote “Recycling” system of SWM.
- To make solid waste management people centric
- **Storm water disposal**
- To introduce the storm water disposal system in the entire town
- To improve the capacity of the water bodies existing within the town
- To improve the natural water drainage channels by de silting and stopping the sewage water from entering the channels.

Traffic and Transportation

- To improve safety, mobility and efficiency of traffic within and outside the town
- To segregate and rationalize the inter and intra town traffic
- To improve road geometry and road capacity of existing network
- To minimize pollution caused by traffic and transportation and improve environment.
- To create new road network and to improve the existing network to promote operational efficiency of traffic.
- To provide adequate parking spaces to remove traffic bottlenecks.
- To plan and provide effective public transport services

Social Infrastructure

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

6 THE MASTER PLAN NAWANSHAHR - 2031

6.1 Components of the Master Plan

The scope of a master plan is limited to the broad proposals and allocation of land for various uses such as residential, industrial, commercial, recreational, public and semi-public etc. It proposes a network of major roads to have better traffic circulation systems for the present and the future. It will include zoning regulations for regulating development within each zone. Therefore, the Master Plan is an important instrument for guiding and regulating development of a town over a period of time and contributing to planned development both conceptually and operationally. Master Plan of LPA, Nawanshahr – 2031 comprises following components as described below:

1. Existing Land use Plan
2. Proposed Land use Plan
3. Zoning Regulations & Development Controls

6.2 Master Plan Objectives

The long term vision and the mission statements would require spatial land use planning, infrastructure planning, financing and implementation, effective management and operation of infrastructure services, and regulating and enforcing plan proposals. The objective of the Master Plan is to create enabling spatial Land Use Planning framework to achieve the Vision of LPA, Nawanshahr. More specifically, the following are the objectives:

- To make Nawanshahr town as the most vibrant administrative and economic center to promote the balanced regional growth.
- To make land allocation in an environmentally friendly manner.
- To provide better quality of life by minimizing haphazard, unplanned and sub – standard growth and development within LPA and to promote planned growth in order to maintain healthy living environment.
- To effectively manage the traffic and transportation within the town through the mechanism of rationalizing the landuse pattern defined in the Master Plan.
- To make land available for public purposes.
- To minimize travel within the town by creating self-contained and self-sufficient communities
- Adequate parking spaces to be created in the town as an integral part of commercial, industrial and institutional planning and development process.
- To strengthen the basic infrastructure favourable for Agro based industries.

- To rationalize the distribution of physical and social infrastructure in order to have better reach and to ensure appropriate quality of life to all the residents of the town.
- To optimize the use of available land resource through well-defined development norms.

6.3 Evaluation of Existing Structure

Understanding of existing town structure is prerequisite to visualize future structure for accommodating projected growth. The structure of the town can be appreciated by noting the relationship between living and work areas in terms of their connectivity with each other. A thematic map of LPA, Nawanshahr shows such a structure as it exists at present. A careful study of this map brings out the following facts of the existing structure:

- The Central part of town where main bazaars are located is the main work area of the town where most of the people are engaged in trade and commerce. The second work area is the Rahon Road, Phillaur road and Phagwara road where the concentration of various activities like grain market, many industrial units and godowns, focal point, sugar mill, shops, workshops are located. The other work areas that are mainly commercial units are located along Nawanshahr – Chandigarh Road on South east side of the town.
- The main living areas are spread all over the town except for Grain market and the areas under godowns on the South–West side. Most of the old living areas are developed in a grid iron pattern but the other residential areas (except very small planned pockets) have developed in unplanned and haphazard manner. It becomes clear from the thematic map that all the living areas have good connectivity with the work areas.
- There is no doubt about potentiality of Nawanshahr because of railway line link but at the same time town has been fragmented into two segments which have poor connectivity with each other. This fragmentation is an unavoidable feature of the town.
- The town has a linear type of development structure as the town grows along the major roads like Chandigarh road, Rahon road etc. Because of the potential of the Nawanshahr – Chandigarh road most of the residential development is coming along this road in a linear pattern.

6.4 Proposed town structure -2031

Cities grow organically depending upon the availability of land and potential for growth, sometimes leap frogging the natural as well as manmade barriers. On the basis of studies conducted by the office of District Town Planner Jalandhar, it is observed that most of the development activities around Nawanshahr are concentrated in the areas located in the vicinity of existing developed areas and also along the main roads. Keeping in view, the

present growth trend and the future size of the town, only the following town structure has been envisaged as most suitable for the development of future town of Nawanshahr:

COMPACT CORE WITH EXPANSION ON ALL SIDES IN THE VICINITY OF THE EXISTING DEVELOPED AREAS.

The pattern of this town structure has the following merits and demerits:

Merits:

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

Demerits:

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

6.5 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.

Land required for main land uses:

The land requirements for different uses for the projected population of Nawanshahr and the villages falling in fringe area of Nawanshahr town have been worked out on the basis of norms given in UDPFI. The assessment of the urbanisable area is normally based on the proposed residential area which is considered to be 40% of total proposed urbanisable area of cities like Nawanshahr as per the norms given in UDPFI. Though the residential area requirements for urban area of LPA, Nawanshahr as per UDPFI guidelines works to 678 hectares, but the proposed road network would open up many new areas for urban uses. Therefore keeping in view the proposed road network particularly the Ring Road, the new proposed areas are required to be put under different uses out of which major share is to be covered by residential use.

6.5.1 Residential use:

As per the data available from census of India as described in table 19 in Housing Chapter, out of total house holds about 19% have one room, 30% have two rooms and 23% have three rooms per dwelling unit. For the purpose of working out the requirements for residential use, the average of these three categories (which comes to be two rooms accommodation) has

been taken. For calculating the housing requirements, following assumptions have been kept in view:

Table 57: Calculation of average plot area in Nawanshahr Town

Sr. No.	Description	Area in sq.m
1	Carpet area of average dwelling unit. 1 Living Room, 2 Bed Rooms, 1 Kitchen and other sub units etc.	120
2	Built up area inclusive of walls, verandahs etc.	144
3	Plot area @ footprint to plot ratio of 0.65	222

Table 58: Stage Wise Residential Area Requirements for Nawanshahr Town (2011-2031)

Year	Projected Population	No. of Families	Net Land Required in Hectares (Assumed 1 family per plot)	Gross Land Required in Hectares
2006	38653	7028	156	312
2011	43739	7953	177	354
2016	48894	8890	197	394
2021	53993	9817	218	436
2026	67387	12252	272	544
2031	84000	15292	339	678

(Source: Computed values)

Note:

- The number of households in the above table has been calculated on the basis of the assumed family size of 5.5 members per family for the year of 2031. It is further assumed one family per plot.
- Keeping in view the present character of the town and also future, it is assumed that most of the residential development will be in the shape of plotted development.
- The gross residential area has been calculated by adding 50% more area to net residential area for provision of roads, parks, convenient shopping area, health, educational and utilities etc.
- The proposed residential area includes the requirements of the all the sections of the society. It also includes the housing needs of the urban poor.

6.5.2 Commercial Use

The area requirements for commercial activities have been calculated as per UDPFI guidelines. The classification of towns given by UDFPI guidelines, the towns having population up to 1,00,000 persons qualify in the category of small size town. The projected population of Nawanshahr town for 2031 has been worked out to be about 84,000 which is just close to the category of 1 lac size, thus it is quite convincing that Nawanshahr town would remain a small size town in the future to come. Therefore, the norms applicable to a small size town have been adopted for calculating area requirements for commercial use as per table below:

Table 59: Area of Commercial Centers

Name of Centre	Area in sq. mts per 1000 persons	Number of shops
Cluster Centre	220	1 for 110 persons
Sector Centre	300	1 for 200 persons
Community Centre	500	1 for 200 persons
Total	1020	

(Source: UDPFI Guidelines)

As per the figures given in the table above, 1020 sq. mts. area for different categories of commercial areas has been proposed for 1000 persons thus 1.02 sq. mts area is required per person. Therefore keeping in view the projected population of 84000 persons for Nawanshahr town and the urban fringe, the total area required for commercial activities of the town has been worked out as below:

Table 60: Commercial area requirements of Nawanshahr town

Name of Town	Projected Population	Commercial Area Required@ 1.02 sq. mtrs. per person
Nawanshahr town	84000	8.6 hectares

6.5.3 Industrial

For calculating the industrial use requirements the proposed land use structure standards cited in UDPFI guidelines are considered,

- Total existing industrial area of Nawanshahr town. 28.81 Hectare
(Including Industrial Focal Point)
- Industrial workers (2001) 11676
- Industrial workers density 400 persons/hectare
- Existing industrial use as a percentage 5%
of town area. (Includes Industrial Focal Point)
- Norms and standards for percentage of 10-12%
Industrial use (as per UDPFI standards)

As the existing industrial use is 5% of the total town area but the industrial workers density is 400 persons/ hectare which is very high as compared to norms and standards. Thus, workers projected on the basis of the figures of workers of 2001 census may not be sufficient. In order to accommodate such uncertainty and taking into account the vision of making Nawanshahr a hub for Agro based industries and for accommodating ancillary units for large scale units existing in kandi canal area and District Nawanshahr, more areas are required for industrial use. As per above narration, 10 - 12% of the total urbanisable area is assumed to be required for industrial use in LPA, Nawanshahr which needs bigger chunks of areas for industries at

potential sites. Besides this, the efforts have been made to work out the actual requirements of industrial area for Nawanshahr town as follows:

Table 61: Projected Urbanisable Area Requirements for Nawanshahr Town - 2031

Town	Year	Gross Residential Land required	Urbanisable area required*	Industrial use requirement **
Nawanshahr	2011	354	885	106
	2016	394	985	118
	2021	436	1090	131
	2026	544	1360	163
	2031	678	1695	203

Note:

*For calculating the Urbanisable area the residential use is assumed as 40% of the total urbanisable area.

**Assumed % age of industrial use is 12% for Nawanshahr town and urbanisable area as per UDPFI standards.

6.5.4 Recreational facilities

As per PAPR Act 1995, about 45 % of the area of a colony is to be left for non-saleable purposes out of which 10 % is to be left for public buildings. It has been found that normally 28-30% area is under circulation i.e. roads, pavements etc. Assuming the figure at 28-30% for roads, the remaining 5-6% has been considered for recreational, sports etc. By this formula if we have one hectare area of a colony then 600sq.mt. is supposed to be provided for this category. Keeping in view the average size of plots as 222 sq.mts., about 25 plots can be adjusted in one hectare area (assuming 55% saleable area), which would accommodate about 25 families taking average size of one family as 5.5 members a total of 137.5 say 137 persons are estimated to live in one hectare. Therefore, by this calculation about 4 sq.mt. recreational area works as share of each person. However at town level approx. 2 sq.mt. per capita area is to be added for town level open spaces. Thus total 6 sq.mt. per capita area is required at town level for recreational facilities.

$$\begin{aligned} \text{Total area required at town level} &= 84,000 \times 6 \text{ sq. mts.} \\ &= 50.4 \text{ hec} \end{aligned}$$

6.5.5 Road Network and Termini Required

6.5.5.1 Network Required at Town level

In absence of detailed traffic studies regarding growth of traffic during the past years, the IRC standards for calculating the vehicular traffic have been taken into account. According to which if reliable data is not available 7.5% growth per annum should be taken for national highways. In case of urban roads, growth rate of 7.5% is assumed whereas in case of other rural roads (out of urban area) rate of 6% per annum has been assumed. Since there are many

factors which govern the growth of traffic volume thus the long term projections of traffic volume may not be factual, but taking into account above growth rate for projections, it is estimated that major roads of the town will be overloaded. The detailed traffic studies are required separately for mass transit system and road improvement plan. However on the basis of broad studies conducted, and for long term planning there is an urgent need for outer Ring Road along with bye pass connecting various radial roads for better, efficient and free flow of traffic at the regional level. Besides this, the roads of lower hierarchy are required to be proposed for inter connection of ring road with the existing main town roads.

6.5.5.2 Road Network at Local Planning Area, Nawanshahr Level:

Besides the road network required at town level, there would be an ardent necessity to connect the regional roads with each other so that the regional traffic may be diverted out of town. In addition to the town road network, an additional outer ring road is also which may link the regional roads such as Chandigarh road, Rahon road, Garhshankar road and Phillaur road.

In addition to the outer ring road, many other lower hierarchy roads are required for better connectivity between proposed ring road, the existing bye pass and regional roads. Besides interlinking ring and radial roads, these lower hierarchy links provide access to interior areas and increase the scope of potentialities of these left out pockets.

6.5.5.3 Terminals Required:

For the town like Nawanshahr for which 84,000 populations has been projected for the year 2031, only one Bus Stand and one Truck Terminus of adequate size would be sufficient as per the UDPFI standards. At present these terminals are not suitably located in the town. Both the terminals are located within the town creating problems in the town. So, there is a need to shift these terminals outside the town area.

However an area of 15-20 hectares for Bus Stand and 25-35 hectares for Truck Terminus would be sufficient to accommodate all the components required as per the UDPFI standards.

6.5.6 Land required for social infrastructure

The land requirement of social infrastructure for Health, Police, Fire, Education and Recreational facilities for Nawanshahr town and LPA has been shown in annexure IV

6.6 Space Norms and Standards

6.6.1 Social Infrastructure and Public Utilities:

Basically UDPFI norms and standards have been followed for calculating the area requirements for different social infrastructure and public utilities however the Punjab State Govt. policies issued from time to time have also been adopted wherever these are

applicable. There are three different sets of norms and standards taken into consideration, the comparative chart of these is given in Annexure VII.

6.7 Strategy for obtaining Land for public purposes

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

With this background a wide menu of strategies to obtain land for public purposes is examined in this part. The land required for public purpose can be divided into four-fold classification as illustrated in diagram below.

	A Specific Location	B Flexible Location
A. Positive impact on land prices	AA Arterial Road network	AB Parks, play grounds, schools etc.
B. Negative impact on land price or environmental impact invoking NIMBY response.	BA Sewage Pumping Stations and treatment plants	BB Solid waste disposal sites

(In many cases necessity of a particular activity at the town scale is recognized e.g. solid waste disposal site or a slaughterhouse. But they are locally undesirable and invoke “Not in My Backyard” response.)

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

6.7.1 Through O.U.V.G.L. Scheme:

Identifying vacant government land (including municipal land) and using it as source for providing land for public purposes. However given the need for using government land for generating financial resources, entire stock of government land need not be assigned to non-remunerative public purposes. In fact government land would offer many opportunities for

PPP where part of the land could be used for public purpose. For example a plot of government land could be allocated for an intercity bus terminal with a budget hotel.

Rationalizing obsolete uses of public lands could be another way of putting public land to more relevant public purpose. But this requires public land at other location.

Make specific designations on the master plan and then proceed with compulsory acquisition of land. Impracticability of this is too well known to be recounted here. But this may be unavoidable in certain cases – particularly 'A' category public purpose.

6.7.2 Through T.D.R.:

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

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

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

Public purposes that require built-up space but not necessarily exclusive plot: Examples of this could be municipal vegetable market, library etc. In such cases landowner may be allowed to fully use his development rights provided that he offers the built up space required for the public purpose.

6.7.3 Through PAPR Act 1995

Layout and Sub-division Regulations: These regulations depending upon the total area of layout can provide for some reservation for general public purpose in addition to local requirements. This is currently being used under the colonization rules operated under the PAPRA Act.

6.7.4 Through Land Pooling or Town Planning (Development) Schemes:

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

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

Table 62: Strategy for Obtaining Land for Public Purpose

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	Lack of finances for compensation	Lack of finances for compensation	This is to be market driven and present response is said to be not so encouraging.	Comprehensive Land Pooling Policy is required to be framed.	Locational disadvantages in certain cases.
	Landowners' resistance	Landowners' resistance		Difficulty in pooling of land of large number of owners.	Minimum area requirement may not be fulfilled
	Iniquitous distribution of costs and benefits. Cost borne by those who lose land and benefits enjoyed by surrounding landowners	Iniquitous distribution of costs and benefits. Cost borne by those who lose land and benefits enjoyed by surrounding landowners			Time consuming and complicated process

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
		But where real estate prices are high particularly where land price is several times the construction cost, chances of success are high.		Equitable distribution of costs and benefits to different shareholders.	
		New concept difficult to be implemented.		New concept difficult to be implemented.	
		Could also be used for heritage conservation.			

Given the details included in the Master Plan, it is not possible to specify which of the above techniques will be used for obtaining land for public purpose. This would be addressed in the detail zone plans.

6.8 Proposed Land Use Plan - 2031

After going through the detailed studies conducted by the office of DTP Jalandhar pertaining to LPA, Nawanshahr and discussions held at different levels i.e. with Govt., Chief Town Planner and Think Tank and further based on analysis, assumptions and projected population of LPA, Nawanshahr, the Proposed Land Use Plan 2031 has been prepared.

As discussed earlier in the chapter the existing pattern of town structure i.e. compact core with expansion on all sides has been broadly adopted while preparing proposed land use plan of LPA, Nawanshahr, in which pattern of continuous growth of Nawanshahr town spreading over adjoining area has been kept in view. Draft master plan of LPA Nawashahr bearing drawing no. DTP (J) 41/2010 Dated 04/10/2010 was prepared and published for public objections under section 70(3) of the Punjab Regional and Town Planning and Development (Amendment) Act, 2006. The publication invited four public objections which were considered in the 23rd meeting of Punjab Regional and Town Planning and Development Board held on 23/09/2011. After careful consideration of the objections by the board, Master Plan Nawashahr was approved with minor changes suggested by the board members.

As per the decision of the aforesaid meeting, the previous drawing no. 41/2010 dated 04/10/2010 has been amended and proposed landuse plan (2010-2031) bearing drawing no. DTP (J) 18/2011 Dated 18/10/2011 has been prepared. The details of proposed areas are given in table below:

Table 63 : Break-up of Major Proposed Landuses LPA, Nawanshahr-2031

Sr. No.	Proposed Landuse	Developable Area*		Total LPA, Nawanshahr	
		Area in Hact.	%age	Area in Hact.	%age
1	Residential	4576.10	75.67	4576.10	52.75
2	Commercial	71.50	1.18	71.50	0.82
3	Industrial Mix	229.00	3.79	229.00	2.64
4	Industrial (includes warehousing)	366.00	6.05	366.00	4.22
5	Rural and Agricultural	0.00	0.00	2904.00	33.48
6	Designated Areas				
	i) Traffic & Transportation	650.60	10.76	650.60	7.50
	ii) Utilities	7.50	0.12	7.50	0.09
	iii) Government	13.00	0.21	13.00	0.15
	iv) Recreational Areas	2.60	0.04	2.60	0.03
	v) Public, Semi-Public	89.90	1.49	89.90	1.04
	Total	6047.14	100.00	8675.11	100.00

*Developable Area excludes the area proposed to be retained as predominantly 'Rural and Agricultural'

It would be observed that the area requirements calculated earlier are considerably less than the areas allocated in the proposed land use plan. It needs to be appreciated that farmland incrementally acquires potential for physical growth as the road network and other infrastructure develops. Consequently all the fringe areas are neither converted to urban use nor are they developed at the same density at any given point in time. The proposed land use plan apart from the area requirement based on the norms, takes cognizance of this fact. As a result some of the fringe areas may not be converted to urban use till 2031.

6.8.1 Residential:

The projected population of Nawanshahr town works to be around 84,000 persons by the year 2031 which is little less than three times than the number of 2001 census figures, therefore the rise in demand for residential areas is inevitable. In order to accommodate the projected population within the limits of proposed urbanisable area of Nawanshahr, the proposals have been made on the pockets which have been identified as most potential and suitable for residential purpose. Besides this, the rural settlements falling in LPA, Nawanshahr are proposed to expand around its existing built up areas (Abadis) upto about 200 meters as shown on Proposed Land Use Plan Drg. No. DTP (J) 18/2011 Dated 18/10/2011.

The total residential area proposed is 4576.10 hectares i.e. 75.67% of total urbanisable area and 52.75% of total LPA, Nawanshahr area as given in table no.63.

Proposed Density Gradient LPA, Nawanshahr – 2009-2031

Residential zone is divided into two sub-zones as shown on proposed landuse plan drawing no. DTP (J) 18/2011 dated 18/10/2011. The maximum average residential density of different sub-zones is given as under:

Table 64: Proposed Net Residential Density Gradient for LPA, Nawanshahr 2031

Density zone	Proposed Residential density
Area within MC limits (RD1)	Not more than 300 persons per acre
Outside MC limits and within urbanizable limits (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. 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.

6.8.2 Mixed land use zones

The co-existence of residential with commercial and residential with industrial activities is a common character of our cities. This character is more prevalent in inner zone of the town. This character of land use generally called “Mixed Land use” has developed over a period of time necessitated by the socio-economic habits of the people. This juxtaposed character of land uses have compact built form, narrow street circulation and low rise-high density development accommodating a mixture of land uses in a single building. The economic role played by these areas cannot be ignored. Hence an attempt is made in the present Master Plan to make these areas continue to play an active economic role and the strategy is to provide suitable framework for allowing mixed use activities appropriate to the character of the areas with greater flexibility in terms of permitting a variety of uses like commercial (retail shops), household and green category industry or outlets for specialized services etc. along with residential use.

6.8.2.1 Mixed Use in Residential Areas- Need for differentiated approach:

The need for differentiated approach to mixed use policy arises due to the fact that Nawanshahr being a center of economic and industrial activity has a large diversity in the typology of residential areas. There are unauthorized unplanned residential areas within and outside the urban limits of the town. There are also regularized unauthorized colonies as well as slums and jhuggi jhompris, cluster in various parts of Nawanshahr.

Moreover, the extent of non-residential activity, as being necessary or desirable by the residents themselves, varies from area to area based on the socio economic status of the residents as well as the past pattern of development in the area. While certain colonies may need non-residential activity as an integral part of their livelihood, some others may wish to preserve the residential character of their colonies and neighborhood.

6.8.2.2 Mixed Land use along major roads

The areas along all the major roads i.e. Banga road, Chandigarh road, Rahon road, Garhshankar road and Phillaur road upto the depth of 200 mts. or as shown on proposed landuse plan Drg. No. DTP (J) 18/2011 Dated 18/10/2011 is marked as mixed landuse zone where all the activities as permissible in Residential, Commercial, Industrial (except Red and orange category industries), Institutional use zones shall be allowable. The area under the Mixed Zone is 229 hectares i.e. 3.97% of total developed area and 2.64% of total LPA area.

6.8.2.3 Governing Principles for Mixed Land Use

The principles governing the mixed land use in old built up residential area shall be:-

- Mixed use means the provision for non-residential activity in residential premises.
- The proposal aims to balance the socio-economic need for such activity and minimize the environmental impact of the said activity on residential areas.
- Mixed use allows access to commercial activity and industrial activity (as permitted by Punjab Pollution Control Board in non-industrial zone (except approved residential areas) in the proximity of the residences and reduces the need for commuting across zones in the town i.e. walk to work principle. However, at the same time, it needs to be regulated in order to manage and to mitigate the associated adverse impact related to congestion, increased traffic and increased pressure on civic amenities.
- Mixed use shall not be permitted in approved Town Planning Schemes, residential development schemes developed by Improvement Trust Nawanshahr, residential Urban Estates set up by Punjab Urban Planning and Development Authority (now GLADA), Government housing, Institutional / staff houses of public and private agencies and buildings and residential colonies developed by private developers after due approval of competent authority. **However, the streets / roads declared as commercial by Department of Local body before the final approval of this Master Plan may continue to be treated as commercial streets irrespective of the fact that whether they form a part of Town Planning / Development Scheme etc.**
- The mixed use shall not be permissible in the streets / roads having width less than 10 meters. However the existing mixed use in the streets having width less than 10 meters may continue (excluding obnoxious, hazardous, inflammable, non-compatible and polluting substance or process) without any further extension / expansion. These streets should be declared as pedestrian mixed use streets and should not be open to motorized transport. However, this need to be debated and the inhabitants of the area are provided

with workable alternatives of mobility. The Municipal Council may evolve a package after consensus on the issue.

Note:

However, the commercial activity existing in commercial mix use streets / localities at the time of final approval of this Master Plan may continue to exist without any further extension / expansion. But in case of approval of new commercial activity / any addition to the existing commercial activity, the condition of minimum road width of 10 meters shall apply.

6.8.2.4 Identification of mixed use in the existing urban areas in future:

The identification of mixed use areas / streets in both the urbanized as well as urbanisable areas of Nawanshahr in future would be as follows:

In already urbanized areas / urban areas, mixed use (except industrial use) shall be permissible in the following areas:

- i) On all streets / roads already declared commercial by the department of Local Government Punjab subject to the decision of case / cases pending in Honourable Court if any.
- ii) Streets / areas where commercial use was allowed in the previous Master Plan of Nawanshahr shall continue to the extent as permissible in the previous Master Plan, Nawanshahr.

Future identification and notification of mixed use streets / areas falling in (i) and ii) above shall be based on the criteria and procedure prescribed below and given vide publicity by the concerned local body / authority / any other Competent Authority.

6.8.2.5 Mixed use Areas / streets in Urbanisable areas in future

The mixed land use in future shall be permissible in the following areas:

- Roads and localities earmarked in the Master Plan as mixed use streets and areas where abutting road shall have ROW 18 meters or above. However, in old built up area of the town the minimum road width shall be 10 meters.
- The layout plan in newly developed urban extension shall earmark such stretches / plots and notify them under the mixed use category at the time of grant of permission for layout plan, provided provision of adequate parking as per norms specified is provided . However in such cases 50% of such area shall be counted towards the commercial area subject to the overall limit of commercial component permitted.

The notification / declaration of mixed use areas / streets by the government would necessitate compliance to the following terms and conditions:

- The layout plan / scheme for such areas / streets shall be subject to the prior approval of the local body / GLADA.
- The layout plan / scheme for such areas / streets should indicate provision for circulation, parking, and open spaces as per building byelaws and other planning norms applicable from time to time.
- Common parking areas shall be provided as per norms considering the additional load of traffic and parking consequent upon declaration of area/street as mixed use.
- The plot owners / allottee on these areas / streets will have to pay land use conversion and other fees/ charges at the rates fixed by the government for that particular category of land use at the time of approval of their building plans from the local body / GLADA or any other concerned agency.
- Any other condition that may be prescribed by the government from time to time.
- Permission for mixed use can be cancelled or revoked by the concerned local body / Government in case of violation of any of the conditions under which such mixed use was permitted or considering the larger interest of the locality / community / town.

6.8.2.6 General Terms and Conditions Governing Mixed Use in Individual Plots

Mixed land use shall be permitted subject to the following terms and conditions:

- No encroachment shall be permitted on the streets or public land.
- Development controls/norms as applicable for the particular residential use will be applicable, even if the plot / dwelling unit is put to mixed use.
- Where service road is available or provided by the concerned authority the mixed use premises shall have approach from such service road and not directly from the main road.
- The parking as per prescribed norms by the State Govt. / concerned development authority from time to time shall be applicable within the premises. The present parking norms are as under:

Commercial -	2 ECS / 100 square meters covered area
Industrial -	1 ECS / 100 square meters or fraction thereof
Institutional -	2 ECS / 100 square meters

- However, in case the project is approved by Municipal Council / Local Body then the parking norms as prescribed by the local body shall be applicable provided that the land use proposals of the Master Plan are adhered to.

- If no parking space is available on the said street, parking should be made available by the applicant or trader association either by acquiring additional area for construction or by creating multilevel parking. Development of such parking facilities shall be done by either the applicant solely or traders association of that area or by the local body subject to the payment of the cost by the beneficiaries.
- The existing obnoxious, hazardous, inflammable, non-compatible and polluting industries shall have to move out to the designated industrial zone within a period of ten years from the publication of notification of the Master Plan.
- However, in case of voluntary shifting of this industry before the specified period, to designated industrial zones, the owner shall be eligible to put his/her plot, so vacated, to any other compatible use (including commercial use) subject to the provision of building bye laws and Master Plan conditions applicable for that particular land use in that particular area by paying conversion charged as fixed by the Local Body / government from time to time besides providing incentive as may be decided by the government.
- The conversion of land use shall be subject to the payment of defined charges.

6.8.2.7 Mixed use premises and payment of charges

In case of residential premises already under mixed use or intended to be put to mixed use in mixed land use as earmarked in the Master Plan Nawanshahr, the owner / allottee of the dwelling unit/plot shall be liable to pay such fee and charges on the rate fixed by the State Government from time to time.

No modification to the building for using residential premises for non residential activities under mixed use zone shall be permitted unless owners/ allottee has obtained sanction of revised building plans and has paid necessary fee and charges to the concerned authority.

6.8.3 Commercial:

General Business

The studies reveal that the existing commercial areas in the town are very congested where the lack of parking facilities and narrow approach etc. are the major problems. Therefore to serve the additional population of the town more new commercial areas are required to be developed in the new expansions. The existing wholesale grain market and vegetable market will function as such on the present site.

Informal Sector

It is felt that organized sites for informal sector are required to be created near the main town functions such as Railway Station, Bus stand, Hospital, Major institutions, Courts and other

transport nodes etc. It is suggested that the organized well planned sites for rehri markets shall be proposed in the new planned colonies.

Policy for existing areas

With a view to make informal sector, an integral part of the planning process and keeping in view the National Policy on Urban Street vendors, the following provisions are proposed to be made for the informal sector:

- The location/concentration of present stationary informal units shall be considered on case to case basis and steps for relocation/improvement shall be taken. It should be ensured that such activities do not spill over on the road network in the right of way. The Govt. /concerned local agency would coordinate to achieve the objective.
- The areas of informal sector shall have suitable public conveniences and solid waste disposal arrangements.
- Formulation of guidelines for schemes would include ‘Hawking’ and ‘No Hawking’ zones. Specific areas would be earmarked for stationary and mobile street vendors by the concerned local authority.
- The local authorities would take up new design of stalls, push-carts and mobile vans of various sizes and with cleaning facilities, giving due consideration to urban design requirement of specific area, where informal shopping is being permitted.
- No informal unit should be permitted along/near the intersection in order to avoid traffic congestion and accidents.

Planning norms for informal trade

As already stated informal sector is proposed to be made an integral part of planning process. Accordingly, the informal sector trade would be incorporated in the planned development in various use zones. The provision of informal sector trade units should be ensured at the time of sanction of building plans/layout plans as per the norms given in the table below:

Table 65: Planning Norms for Informal Sectors

Sr. No.	Use zones/use premises	No. of informal shops/units
i	Retail trade:	
	Metropolitan city 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)
ii	Government and commercial offices	5 to 6 units per 1000 employees
iii	Wholesale trade and freight complexes	3 to 4 units per 10 formal shops
iv	Hospital	3 to 4 units per 100 beds
v	Bus terminal	1 unit for 2 bus bay
vi	Schools	
	Primary Secondary/	3to 4 units
	Senior secondary/integrated	5 to 6 units
vii	Parks	
	District parks	8 to 10 units at each major entry

	Neighborhood parks	2 to 3 units
viii	Residential	5 unit/1000 population
ix	Industrial	5 to 6 units per 1000 employees

6.8.4 Industrial

At present area under Industrial use is 24.68 hectares which is proposed to be increased to 366 hectares i.e. 6.05% of total developed area and 4.22% of total LPA. To provide more economic opportunities to the existing and future population of the town and depending upon the requirements of the town four pockets of industrial zones are proposed in the town. One existing industrial areas i.e. focal point on Phagwara road marked as an industrial zone in the master plan and other three new zones are proposed at Nawanshahr-Phagwara road, Nawanshahr-Rahon road and Nawanshahr - Chandigarh road outside the M.C. limit of the town. While proposing this zone, the wind direction is also kept in view. These zones will promote the establishment of small/medium/large scale industrial units by providing developed plots supported by required infrastructure. Development of the industrial area will be governed by the guidelines defined in the master plan.

Incentives for shifting of existing 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 or within the designated industrial zone of the master plan and generate at least the same number of jobs at the new location, will enjoy the following benefits:

- 1) No CLU, EDC or License 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 License 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 License 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 License 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 License 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 License 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 License 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 zone 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'-0" ROW. In case, the existing road is less than 40'-0" width, then it shall be widened to 40'-0" by taking equal strip of land from both sides of the road.
- ii. A minimum buffer of 15 meters of broad leaf trees 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 industrial areas need to relocate to designated areas themselves within period of 10 years from date of publication of this Master Plan.

Exception

In case of Nawanshahr town industrial clusters (one is industrial focal point and Sugar Mill on Banga road and an other on Karyam road) available in the town on which economic growth of the town is dependent. These industries units not only provide employment but also generate income through processing of agriculture/ food products. Hence industrial units located at Karyam road, Nawashahr proposed to be accommodated (as per the decision of the 23rd meeting of the Punjab Regional and Town Planning and Development Board held on 23-09-2011) with following controls:

- No new industry shall be permissible in this zone.
- The further expansion of these units shall only be permissible within their existing premises only (the premises existing at the time of final approval of the master plan) and no new area shall be allowable to be added to the existing industrial premises for further expansion of the units.

6.8.5 Rural and Agricultural Zone:

With the intention of preserving the basic character of agriculture, the remaining of the rural area, which has not been proposed for other uses, will be retained as Rural and agricultural zone. Out of total area of 8675.11 hectares of LPA, Nawanshahr 2904 hectares have been retained as rural and agriculture, which is 33.48% of total LPA as shown in proposed land use plan Drg. No. DTP (J) 18/2011 Dated 18/10/2011.

6.8.6 Traffic and Transportation

Transport network and proposed land use need to be considered in an integrated manner. For Master Plan of LPA Nawanshahr, extensive road network has been proposed taking into account the connectivity requirements. The entire network may develop in phases as the traffic demand builds. However, it is emphasized that landuse proposals of Master Plan may be reviewed as the road network actually develops.

Entire LPA, Nawanshahr and Nawanshahr Town will be served by well-structured and well defined road hierarchy in order to cater the traffic needs of the town population and arising from living areas to work areas and vice versa. This would include redefining of existing road network and the network to be created in the areas proposed to be brought under urbanization. Keeping in view the future shape and size of Nawanshahr urban area, there is a need to create/ propose an efficient network in the shape of ring and radial roads. This would be distinctly beneficial in reducing congestion and air pollution.

Proposed Road Network:

The proposed road network for LPA, Nawanshahr has been developed concurrently with the proposed land use pattern as shown in the Plan, Drg. No. DTP (J) 18/2011 Dated 18/10/2011 covering an area of 650.6 hectares i.e. 10.76% of total developable area and 7.50% of total LPA. In order to provide relief to the town roads and keeping in view the existing roads and the increased volume of traffic in future, the concept of ring radial road pattern has been followed.

Ring Roads

Looking forward for the year 2031 and keeping in view the proposed town structure of LPA, Nawanshahr, Outer ring road on northern side of the town, having a right of way of 200 feet (R1) has been proposed for bypassing the traffic and to provides connectivity among Banga road, Garhshankar road and Chandigarh road and to the existing town roads. Also to interconnect all the major roads and to reduce congestion on the southern side of the town, ring road having width of 200 feet has been proposed to divert regional traffic coming from Machhiwara town via Rahon to Jammu/ Pathankot side.

While proposing these roads, the existing physical features and revenue boundaries of the villages and existing roads have been taken care of. The alignment of all these proposed roads has been shown in proposed land use plan Drg. No. DTP (J) 18/2011 Dated 18/10/2011.

Existing Roads:

To provide link with the proposed ring roads so that to make the various settlements of LPA Nawanshahr more accessible and to provide smooth and comfortable journey to them, various link roads have been proposed to be widened to 60', 80' and 100'. The roads proposed for widening have been shown on Drg. No. DTP (J) 18/2011 Dated 18/10/2011.

It is proposed that tree plantation along the main roads may be done in consultation with the landscape Architects, Horticulture department and Forest Department. The selection of trees should be in such a manner that the greenery of trees and blooming of flowers may be seen throughout the year. The list of trees is attached at Annexure VI.

Proposals for Urban Roads:

The study of existing town road network reveals that although for now most of the existing roads are not overcrowded but in future, some of these roads may become overcrowded due to increase in traffic volume. Although, there is little scope of improvement of Right Of Way (R.O.W.) but still some measures of road engineering can be adopted for improving the capacity of these roads, as per the guidelines for capacity enhancement of Urban Roads in plain areas published by the Indian Road Congress. Some of the measures that could be considered for enhancement of capacity of roads are as under:

- Prohibiting on–street parking of vehicles, and simultaneously developing off–street parking facility;
- Segregating the bi-directional traffic flow through central verge/median wherever it is possible;
- Provision of segregation of slow moving vehicles such as animal drawn carts, rickshaws/ tongas etc.;

- Imposing restrictions on the movement of animal drawn /other slow moving vehicles, and/ or heavy commercial vehicles on these roads during selected periods, specially the peak hours;
- Reduction of roadside congestion through control of abutting land–use and roadside commercial activity;
- Provision of adequate facilities for pedestrians and cycles wherever it is possible;
- Banning certain conflicting movements at major intersections, particularly during peak hours;
- Controlling the cross traffic and side–street traffic by regulating the gaps in medias; and
- Improving traffic discipline such as proper lane use and correct over taking, through appropriate road markings, education and publicity.

The following urban roads in LPA, Nawanshahr have been identified and proposed for adopting the traffic engineering measures inside the town area.

Proposed roads for capacity enhancement in Urban Areas -2031

- Nawanshahr -Banga Road
- Nawanshahr –Chandigarh Road
- Nawanshahr – Rahon Road
- Nawanshahr –Garhshankar Road
- Nawanshahr –Phillaur Road

R.O.B’s and R.U.B’s

At present there are two Railway over bridges presently there in the town. In order to ensure the smooth flow of regional and local traffic over the proposed road network of LPA, Nawanshahr more R O.B’s and R.U.B's are proposed. The list of these in order of priority is given as below:

R.O.B. on Ring road over Nawanshahr Jalandhar railway line	(Proposed)
R.O.B. on Bypass road over Nawanshahr Garhshankar railway line	(Proposed)
R.O.B. on Ring road over Nawanshahr – Rahon railway line	(Proposed)

Designated Areas

Terminals

Bus Terminal:

The Existing bus stand having an area of 12 acres is located in the center of the town and at present is overcrowded. In order to provide relief to town roads the site for new bus stand for

inter-city traffic is proposed outside the town on north side of the town near the intersection of Garhshankar and proposed ring road after carrying out detailed studies and surveys. However, the existing site for bus stand is proposed to be partly used for local bus stand, workshop and part of site can be used for commercial purposes and the fund so raised may be used for the construction of the new bus stand.

Truck Terminal:

As already stated in the chapter related to Traffic and Transportation study, there is one truck stand functioning in the town having an area of 2.86 acre but due to its location it creates problems to the town traffic. So site for truck stand having area of 20-25 acre is proposed to the south of the town near the junction of Rahon road and proposed ring road after carrying out detailed studies and surveys.

6.8.7 Utilities

The existing utilities like water works, Electric Grid stations, etc. which are available within the boundaries of LPA, Nawanshahr are proposed to be retained as such. However, no additional sites for water works and electric grid stations are being proposed in the master plan. As far as the existing site of garbage disposal is concerned, this is fully utilized and a new site is needed for the future as per the rules quoted in the solid waste management rules. The location and area of the site may be finalized after conducting detailed surveys and studies in consultation with the concerned department. The environmental considerations are very important to be observed while selecting the location of the garbage disposal site.

6.8.8 Government, Public & Semi-public

As it has already been discussed in earlier part of the report, there are several categories of designated areas such as Public & Semi-public uses existing in the Nawanshahr town and LPA, Nawanshahr. All these designated areas have been proposed to be retained as such. Also Govt. and semi Govt. offices existing in the, Nawanshahr town will be merged at one place i.e. at the existing location of Mini-Secretariat.

6.8.9 Recreational Areas

Different trees as notified by Govt. will be planted on the strips along the Ring road and Bypass. Existing parks, open spaces and stadiums and other recreational areas will be retained as such. Other recreational areas will be carved out in the planned colonies under PAPRA Act 1995.

6.8.10 Heritage Conservation

There is no heritage building or Prescient in LPA, Nawanshahr declared as protected monument under the “The Punjab Ancient & Historical Monuments and Archaeological sites

and Remains Act, 1964". This act provides for the Preservation of Ancient and Historical Monuments and Archeological sites and Remains other than those of national importance, for the regulations of Archeological excavation and for the protection of sculpture carvings and other like objects which are in existence for not less than 100 years. Study regarding identification of such buildings in the town has been conducted but sufficient record regarding this subject could not be found.

6.8.11 Environment

Creation of a sustainable physical and social environment for improving quality of life is the vision of the plan. The unplanned and haphazard urbanization in Nawanshahr is putting enormous pressures on the physical environment with increasing adverse impact in terms of pollution. To overcome this problem following measures should be taken in future.

- **Air**

The air quality in the town, in terms of pollution levels is a matter of concern, and has been responsible for a number of respiratory diseases, heart ailments, eye irritation etc. The three main sources of air pollution in Nawanshahr are vehicular emission, industrial emissions and from other sources such as diesel generator sets and domestic cooking etc.

Apart from the issue of pollution on account of industries, the major area of planning and intervention would relate to transport planning. With the phenomenal growth in the number of vehicles, the oil based emission in the air has increased beyond permissible limits. The most significant aspect in the context of congestion and pollution, relates to the growth in personalized transport as compare to the availability of public transport. Private vehicles in Nawanshahr creates tremendous pressure on road space, parking and creates pollution directly and through congestion.

Public transportation planning must, therefore, drive the future policy. So far public transport is largely seen as the transport mode for the poorer sections of the community, who cannot afford to own / use personal transport. An important element of policy should now also have to aim to make public transport a mode for personal vehicle owners and users through a mix of incentives and disincentives.

The other elements which would need carefully thought out policy measures relates to the operation of existing industries, both in terms of pollution control in designated industrial areas, and relocation of non- conforming industries.

To control ambient air quality of Nawanshahr, it may be made mandatory that all commercial vehicles (like trucks local buses, taxis / auto rickshaws and tempos etc) are **converted into CNG**. But before that CNG needs to be made available in Local Planning Area, Nawanshahr.

- **Noise**

Noise is emerging as a major pollutant and irritant as well as a constant source of disturbance and health hazards. Against a permissible level of 50-60 dB (A), the sound level in Indian cities often exceeds 80 dB (A). Faulty and leaking silencers, over use of pressure horns and vehicles plying on roads accentuate noise level, besides the noise from commercial and industrial activities, unabated use of sound amplifiers, generator sets and fire- crackers etc also causes noise pollution.

The Noise Pollution (Regulation & Control) Rules 2000 specify the noise levels in the industrial area, commercial area, residential area and silence zone. It also specifies banning of all noise creating activities between 10 PM to 6 AM, which may be adhered to by the concerned agencies.

By proper land use planning, a buffer can be created between location of public, semi-public and commercial activities along major transport routes and residential zones. Green buffer of thin leaved trees, land formations, mounds embankment, etc along major roads could also provide effective barriers to transmission of noise. The characteristics of trees to be planted are given in Annexure VII. It is also necessary to improve monitoring and implementation of the Noise Pollution, (Level) Rules 2000 and, to notify certain areas as 'No Horn Zones'. The design and surface material of roads and pavements should also ensure reduction of noise. Working in night shifts for household industries or non-conforming industries in the residential areas should be prohibited. Pressure horns on vehicles should be strictly prohibited.

- **Disaster Management**

Disaster Management is one of the important aspects in today's context. The region of Nawanshahr falls in seismic zone 4. In order to safeguard the LPA Nawanshahr following measures have been suggested:

1. Disaster Management Plan for the area should be immediately prepared.
2. All building plan approval should be permitted where structural designs have been submitted with the building applications.
3. The concerned local body should carry out surveys to identify the vulnerable buildings / areas in the town especially the core area of the town.
4. Special training programs for preparing earthquake resistant designs should be conducted for engineers / architects etc.

5. The concerned local body responsible for sanctioning of building plans should have technically well trained staff to scrutinize the building plans.
6. The implementation of approved building design should be ensured at site through site inspections at three stages of construction activity i.e., when the building is at plinth level, door level and roof level.
7. Public awareness campaign through electronic / print media and through seminars /workshops should also be taken up by the local body.

7 SPECIAL AND DETAILED CONTROLS

7.1 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. **The Development controls/Guidelines/Norms & Standards revised from time to time by the Government shall have overriding effect on the Development controls mentioned in the master plan.**

7.1.1 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.

7.1.2 Short Title, Scope, Extent & Commencement

1. Title

These regulations shall be called the Zoning Regulations for Local Planning Area Nawanshahr (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 Nawanshahr declared under Section 56 of the Punjab Regional and Town Planning and Development (Amendment) Act, 2006 vide Notification No. 12/16/2008-4HG1/6062 dated 11.09.2008 and amended Notification No. 12/16/08-4HG1/2871 dated 31-08-2010

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.

7.1.3 Definitions

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

- a) “**Act**” means The Punjab Regional and Town Planning and Development (Amendment) Act, 2006 (Punjab Act No.11 of 1995).
- b) “**Government**” means the Government of the State of Punjab.
- c) “**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.

- d) **“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 Nawanshahr.
- e) **“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, Nawanshahr and as indicated on Drawing No. DTP (J) 32/2010 dated 03.09.2010
- f) **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. 12/16/2008-4HG1/6062 dated 11.09.2008 and amended vide Notification No. 12/16/08-4HG1/2871 dated 31-08-2010 published in the Punjab Govt. Gazette.
- g) **“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.
- h) **“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, Nawanshahr and as indicated on Drawing No. DTP (J) 18/2011 Dated 18/10/2011.
- i) **“Sector Plan” (Zonal Plan)** means the detailed plan of a sector as delineated in the Master Plan and approved by the Chief Town Planner, Punjab showing all or any of the following:-
- Major road network, green belts/buffers, water bodies or other restrictions imposed on the development.
 - Area temporarily or permanently prohibited for the building operation.
 - Permissible land uses
 - Any other detail provided in the layout plan.
- j) **“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.
- k) **"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.
- l) **“Farm House”** means a building allowed on a holding of agricultural land for residential and agricultural activity of the land holder.

m) “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 12 m ROW.

n) “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.

o) “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.

p) “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.

q) “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.

7.1.4 Land use zones

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

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

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

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

7.1.5 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

7.1.6 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	Description	Land use zones					
Sub code		Residential	Commercial	Mixed land use	Industrial	Recreational	Rural and Agricultural
A	Housing						
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						

LAND USE ZONES AND PERMISSIBLE LAND USES						
Use class	Description	Land use zones				
Sub code		Residential	Commercial	Mixed land use	Industrial	Recreational
B-2	Department 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					
B-5	Filling Station **					
B-6	Kerosene Storage/Gas Godown					
B-7	Gas Distribution (without storage of cylinders)					
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)					
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)					
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)					
C-7	Manufacture of paper and paper products (NIC Division 17)					
C-8	Printing and reproduction of recorded media (NIC Division 18)					
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)					
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	11				
C-25	Rice Shellers, Processing of Farm Products, Brick Kilns, Lime/ Charcoal Kilns					
C-26	Cottage Industry, Repair of Household Articles, Cycles and scooters					
C-27	I.T. Parks, Knowledge Park					
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					

LAND USE ZONES AND PERMISSIBLE LAND USES						
Use class Sub code	Description	Land use zones				
		Residential	Commercial	Mixed land use	Industrial	Recreational
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)					
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				
G-2	Hospitals (NIC Group 861) and Health Center	8				8
G-3	Nursing care facilities (NIC Group 871)	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					

LAND USE ZONES AND PERMISSIBLE LAND USES						
Use class	Description	Land use zones				
Sub code		Residential	Commercial	Mixed land use	Industrial	Recreational
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					
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 (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					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
* 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 18 m.					

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.

7.1.7 Designated uses

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

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

7.1.8 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.

7.1.9 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 80 feet.
- All public and semi-public uses in residential zone shall be located on independent plots with minimum access of 18 meters.

7.1.10 Residential Densities

Residential zone is divided into two sub-zones as shown on proposed landuse plan drawing no. DTP (J) 18/2011 dated 18/10/2011. The maximum average residential density of different sub-zones which given as under:

Table 66: Proposed Net Residential Density Gradient for LPA, Nawanshahr 2031

Density zone	Proposed Residential density
Area within MC limits (RD1)	Not more than 300 persons per acre
Outside MC limits and within urbanizable limits (RD2)	Not more than 200 persons per acre

In case of stand alone 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. 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.

7.1.11 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.

7.2 Section – II: Development Control regulations

The purpose of the Development Control Regulations (DCR) is to assist 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.*

7.2.1 Residential

a) Minimum plot size

Category	Low Potential Zone (I & II)	Low Potential Zone III
Residential Plotted	10 acres	10 acres
Group Housing		
a) General	5 acres independent	5 acres independent
b) EWS	2.5 acres	2.5 acres

Note:

1. Any area if decided by the Govt. from time to time shall be developed as colony for residential purposes.
2. In case of left out pocket, i.e., where on all sides the construction has already taken place that left out area without any minimum stipulation can be developed as a residential colony.
3. Within Municipal Limits any area of land can be developed as a colony.

Parking requirements for plotted developments are shown in following table:

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

Note:

1. Deviation of up to 10% of this control is allowed, if it is arising from site conditions / constraints.
2. The minimum width of roads within residential areas shall not be less than 12 m, if the existing road is less than 12 m, the proportionate land on both sides shall be safeguarded for widening to comply with the minimum requirement. The height of buildings on these roads shall not exceed ground plus two (G+2) storey's.
3. Size of the front gate on boundary wall and construction of front boundary wall is optional to meet the parking requirements.
4. Any decision or changes decided by the Govt. at later stage shall be applicable.

7.2.1.1 Group Housing

Minimum Plot size	
• Within MC limits	4000 square meters
• Outside MC limits	
a) For General Category	5 acres
b) For EWS	2.5 acres
Minimum Road width	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. The maximum provision allowable for group housing projects is 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. Any decision or changes at later date taken by the Govt. shall be applicable.

7.2.1.2 Farm House

Minimum area	2.5 acres
FAR	0.04
Ground Coverage	0.2%
Number of storey's	2
Height	Single Storey 18'-0" Double Storey 28'-0"
Hard Surface	10%

Note:

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

7.2.2 Commercial

At local level

There will be provisions for small scale, double storey commercial facilities at the local level within as well as outside the Municipal limits, subject to the condition that abutting road shall have a minimum width of 18 m with minimum 6 m 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's rules and regulations.

Stand-Alone Commercial Complexes

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

Criteria for stand – alone commercial complexes (more than three 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.
For movement of fire tender	

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. Any decision or changes decided by the Govt. at later stage shall be applicable.
3. 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 Draft Master Plan. Instead, they are subsumed under the predominant residential land use.

7.2.3 No Construction Zone along major roads

All properties within the jurisdiction of LPA Nawanshahr, that abut **Major District roads (Scheduled Roads) and proposed ring roads – R1 & R2 (width 150’ and above)** shall have access through service lanes and shall have no construction zone as below irrespective of the landuse shown in the proposed land use plan Drawing No. DTP (J) 18/2011 Dated 18/10/2011.

Sr. No.	Category of Road	Proposed Right of way of the road (in mtr.) Outside M.C. Limits	No construction zone on both sides of the R.O.W.
MAJOR DISTRICT ROADS (SCHEDULED ROADS)			
1	Nawanshahr – Phagwara road	45	5
2	Nawanshahr – Chandigarh road	45	5
3	Nawanshahr – Rahon road	45	5

7.2.4 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.
Frontage	200 feet
FAR	1:1
Ground Coverage	40%
Road width	The minimum road in front of institutional developments should be 18 m. 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

Note:

1. Other building regulations shall be governed by the zoning plan approved by the competent authority.
2. Any decision or changes decided by the Govt. at later stage shall be applicable.

7.2.5 Sports and Recreational use

The proposed development parameters for this zone are listed as follows:

Item	Sports activities	Recreational activities
Minimum size	As per the specification of the concerned authority	
Maximum FAR	1:0.02	1:0.05

Maximum Ground Coverage	1%	3%
Maximum number of storey's	2	2
Maximum height	28 feet	28 feet
Maximum hard surface area	5%	10%

Examples of sports and recreational facilities that can be allowed within this zone include:

• Sports Stadium	• Indoor Stadium	• Swimming Complex
• Golf Course	• Lifestyle Sports Hub	• Amusement Park
• Open Air Theatre	• Theme Park	• Other leisure and recreational spaces

Ancillary commercial uses (for instance Banking and Finance Outlets) may be allowed within this zone to cater to the needs of future users. However, this shall be limited to a maximum of 5% of the total Ground Floor Area. Pure commercial uses such as shopping malls, cinema halls, multiplexes and the like are not allowed in this zone.

14.2.7 Industrial

Site 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 12 m.
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. The minimum road width for each land use shall be as specified in the Master Plan or by the Government policy / guidelines issued from time to time. However, in case the existing road width is less than the minimum specified width in the Master Plan / Government policy then the proportionate land on both sides shall be safeguarded for widening to comply with the minimum requirement. In case, where habitation / settlement come in alignment, in that case widening shall be on other side of habitation / settlement.
2. **In case the site of any project is situated within Municipal limits and the project is submitted to Municipal Council / Local Body for approval then the building byelaws of the concerned local body shall be applicable provided the land use is in conformity to Master Plan.**
3. 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.
4. 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.

7.2.6 Environmental considerations

1. All the textile / dying and electroplating units shall set up treatment plants individually or collectively to achieve zero liquid discharge.
2. 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.
3. 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 should 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.

7.2.7 Other development controls and guidelines required

1. 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.
2. 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.
3. 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.
4. 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.
5. Minimum 10 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.

7.3 Section III: Exceptions

1. Notwithstanding the above, the uses specifically provided in the Sector/ Zonal Plans shall be permissible or as may be allowed by the Chief Town Planner, Punjab.
2. Uses determined by the Chief Town Planner, Punjab as compatible with uses permissible shall be allowed in respective zones.
3. 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.
4. Development / projects approved prior to coming in to force of these regulations shall be deemed to be in compliance with these Regulations.
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 upto 5% on the total area of the project shall be allowed towards calculation of saleable area in lieu of the area falling under the no construction zone. In case, the area falling under no construction zone is less than 5% of the total area of the project then the relaxation shall be proportionately less.
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. The lands which come under the optimum utilization of vacant Govt. Lands (OUVGL) scheme of the state Govt., the use of such lands/sites shall be determined by the Govt. later on at any appropriate time, irrespective of their existing / proposed landuse.

9. The sites 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.
10. Within the existing M.C. limits the buildings rules notified by the local Govt. shall be applicable.

Annexure-I

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
(HOUSING BRANCH-1)

Notification

The 11th September, 2008

No. 12/16/2008-4HGI/6062.—Whereas it appears to the Governor of Punjab that to meet the challenge of rapid growth of Nawanshahr Town and to provide a workable frame work for comprehensive planned and regulated development, preparation of Statutory Master Plan of Nawanshahr Town is very essential. Hence in order to develop Nawanshahr Town and its surroundings in orderly manner and to prepare its Master Plan under, "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006", to regulate the Development in and around Nawanshahr Town State Government intends to declare the Local Planning Area of Nawanshahr Town within the meaning of sub-section (I) of Section 56 of "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006." The total area of proposed Local Planning Area is 7035 Hectares (17376.45 Acs.) including Nawanshahr Town Urban Settlement and adjoining 11 partly and 12 full villages. The Schedule of Boundary of Local Planning Area is as under :—

SCHEDULE OF BOUNDARY

North :—Starting from Point 'A' which is the meeting point of Northern side of Jalandhar-Roopnagar Road and Northern boundary of village Kariha (H.B. No. 120), then moving towards east along the northern boundaries of villages Kariha (H.B. No. 120), Mahalon (H.B. No. 124), Mubarkpur (H.B. No. 130) and Alachaur (H.B. No. 131), then crossing the Nawanshahr-Garhshankar Railway line and road, Then moving Southern along the Northern boundaries of village Alachaur (H.B. No. 131), Kulam (H.B. No. 132), Barnala Kalan (H.B. No. 135), Jethumazara (H.B. No. 136), Langroya (H.B. No. 137), Jaitpur (H.B. No. 138), Kishan Pura (H.B. No. 141) and Sanawa (H.B. No. 144), up to Point 'B' which is the meeting point of Northern side of Jalandhar-Roopnagar Road and Northern Boundary of village Sanawa (H.B. No. 144).

East :—Thence moving southern crossing the Jalandhar-Roopnagar Road along the Southern Boundaries of Village Sanawa (H.B. No. 144), Sujawalpur (H.B. No. 154), Langroya (H.B. No. 137), Barnala Kalan (H.B. No. 135), Saloh (H.B. No. 162), Jafferpur (H.B. No. 163), up to Point 'C' which is the meeting point of Eastern Side of Nawanshahr-Rahon Road and Southern boundary of Vill. Jafferpur (H.B. No. 163).

South :—Thence moving West crossing the Nawanshahr-Rahon Road along the Southern boundaries of Vill. Jafferpur (H.B. No. 163), Hiala (H.B. No. 165), then crossing the Nawanshahr-Rahon Railway Line and road along the southern boundaries of Hiala (H.B. No. 165), Hussian Chak (H.B. No. 166) and Kariam (H.B. No. 118), up to point 'D' which is the meeting point of Northern side of Nawanshahr-Phillaur Road and Southern boundaries of Vill. Kariam (H.B. No. 118).

West :—Thence moving West crossing the Nawanshahr-Phillaur Road along the Western boundaries of villages Kariam (H.B. No. 118), Bhagal Kalan (H.B. No. 125), Amargarh (H.B. No. 119), Kariha (H.B. No. 120). Thence crossing the Nawanshahr-Jalandhar Railway Line and Road up to Point 'A' which is the starting point.

The boundaries of Local Planning Area around Nawanshahr Town have been specifically shown on the Drg. No. DTP(J) 12/2007 DTP(J), dated 30th November, 2007.

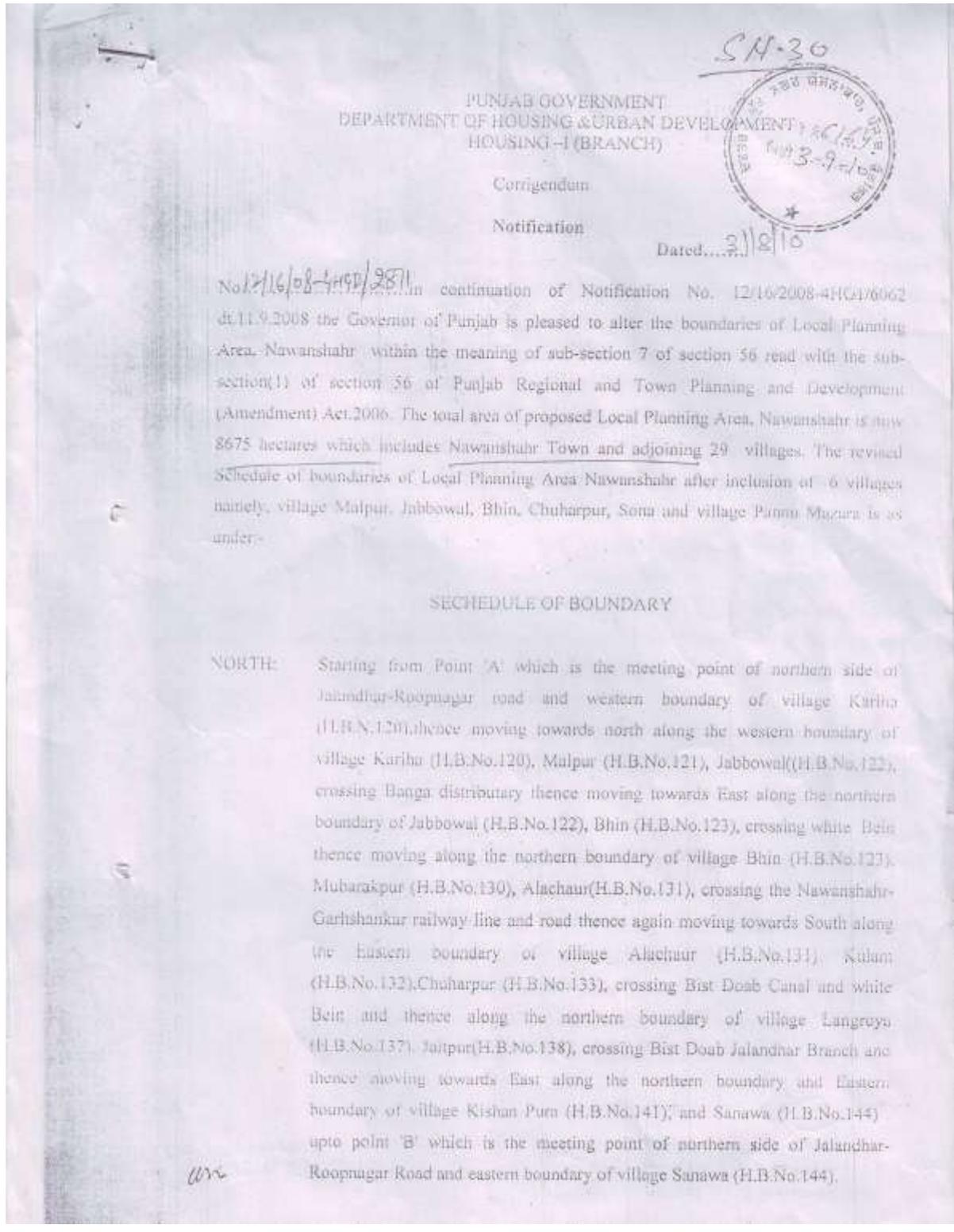
All the provisions laid down the w/s 56(2) of the "The Punjab Regional and Town Planning and Development (Amendment) Act, 2006" and all the concerned rules framed have been taken into consideration.

ARUN GOEL, I.A.S.,

Chandigarh :
The 8th September, 2008.

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

ANNEXURE II



EAST: Starting from point 'B' and moving towards South crossing Jalandhar Roopnagar Road and Bist Doab Jalandhar Branch and then again moving along the eastern boundary and Southern boundary of village Sanawa (H.B.No.144) Sujawalpur (H.B.No.154), Langroya (H.B.No.137), Barnala Kalan (H.B.No.135), Pannu Mazara (H.B.No.161), Saloh (H.B.No.162), and Jafferpur (H.B.No.163), upto the Point 'C' which is the meeting point of Eastern side of Nawanshahr - Rahon road and Southern boundary of village Jafferpur (H.B.No.163).

SOUTH: Starting point 'C' and moving towards west crossing the Nawanshahr - Rahon Road along the southern boundary of village Jafferpur (H.B.No.163), Hiala (H.B.No.165), crossing the Nawanshahr-Rahon Railway line and Banga distributary, thence moving towards west along the southern boundary of village Hiala(H.B.No.165), Hussain Chak(H.B.No.166), and village Kariam (H.B.No.118) upto point 'D' which is the meeting point of southern side of Nawanshahr - Phillaur Road and western boundary of village Kariam (H.B.No.118).

WEST: Starting from point 'D' and moving towards North crossing the Nawanshahr- Phillaur Road along the western boundary of village Kariam (H.B.No.118), Amaregarh(H.B.No.119), Kariha(H.B.No.120), while crossing minor and Nawanshahr-Jalandhar Railway line thence again moving along the western boundary of village Kariha (H.B.No.120), crossing Jalandhar-Nawanshahr road upto Point 'A' which is the starting point.

The boundary of Local Planning Area, Nawanshahr Town has been specifically shown on the revised Drg.No.DTP(J)15/2010 Dated 30.04.2010

All the provisions laid down u/s 56(2) of the " The Punjab Regional and Town Planning and Development(Amendment) Act,2006" and all the concerned rules framed have been taken into consideration.

W

Chandigarh
Dated 23/8/10.

Dr.S.S.Sandhu, I.A.S.
Secretary to Govt. of Punjab
Department of Housing & Urban Development.

No. 12/16/2008-4HG1/

Dated, Chandigarh, the

A copy along with spare copy is forwarded to the Controller, Printing & Stationery, Punjab, Chandigarh with the request that this notification may be published in the official gazette (Extra ordinary) and 100 copies of the printed notification may be sent to the Government for record.

sdl
JOINT SECRETARY

DEPARTMENT OF HOUSING & URBAN DEVELOPMENT

Endst. No. 12/16/2008-4HG1/ 2873 Dated, Chandigarh, the: 31/8/10
✓ copy is forwarded to the Chief Town Planner, Punjab, Chandigarh w.r.t. his letter No. 6278-CTP(PB)/ SN-30 dated 13-08-2010 for information & necessary action.

[Signature]
JOINT SECRETARY

DEPARTMENT OF HOUSING & URBAN DEVELOPMENT

Endst. No. 12/16/2008-4HG1/

Dated, Chandigarh, the:

A copy is forwarded to the Chief Administrator, PUDA, S.A.S. Nagar for information & necessary action.

JOINT SECRETARY

DEPARTMENT OF HOUSING & URBAN DEVELOPMENT

Endst. No. 12/16/2008-4HG1/

Dated, Chandigarh, the:

A copy is forwarded to the Additional Chief Administrator, PUDA, Jalandhar for information & necessary action.

JOINT SECRETARY

DEPARTMENT OF HOUSING & URBAN DEVELOPMENT

Endst. No. 12/16/2008-4HG1/

Dated, Chandigarh, the:

A copy is forwarded to the Deputy Commissioner, Jalandhar for information & necessary action.

JOINT SECRETARY

DEPARTMENT OF HOUSING & URBAN DEVELOPMENT

Endst. No. 12/16/2008-4HG1/

Dated, Chandigarh, the:

A copy is forwarded to the Director Information Technology, Punjab with a request that this notification may kindly be published on the website of Government of Punjab.

28/8/10
JOINT SECRETARY

DEPARTMENT OF HOUSING & URBAN DEVELOPMENT

ANNEXURE III

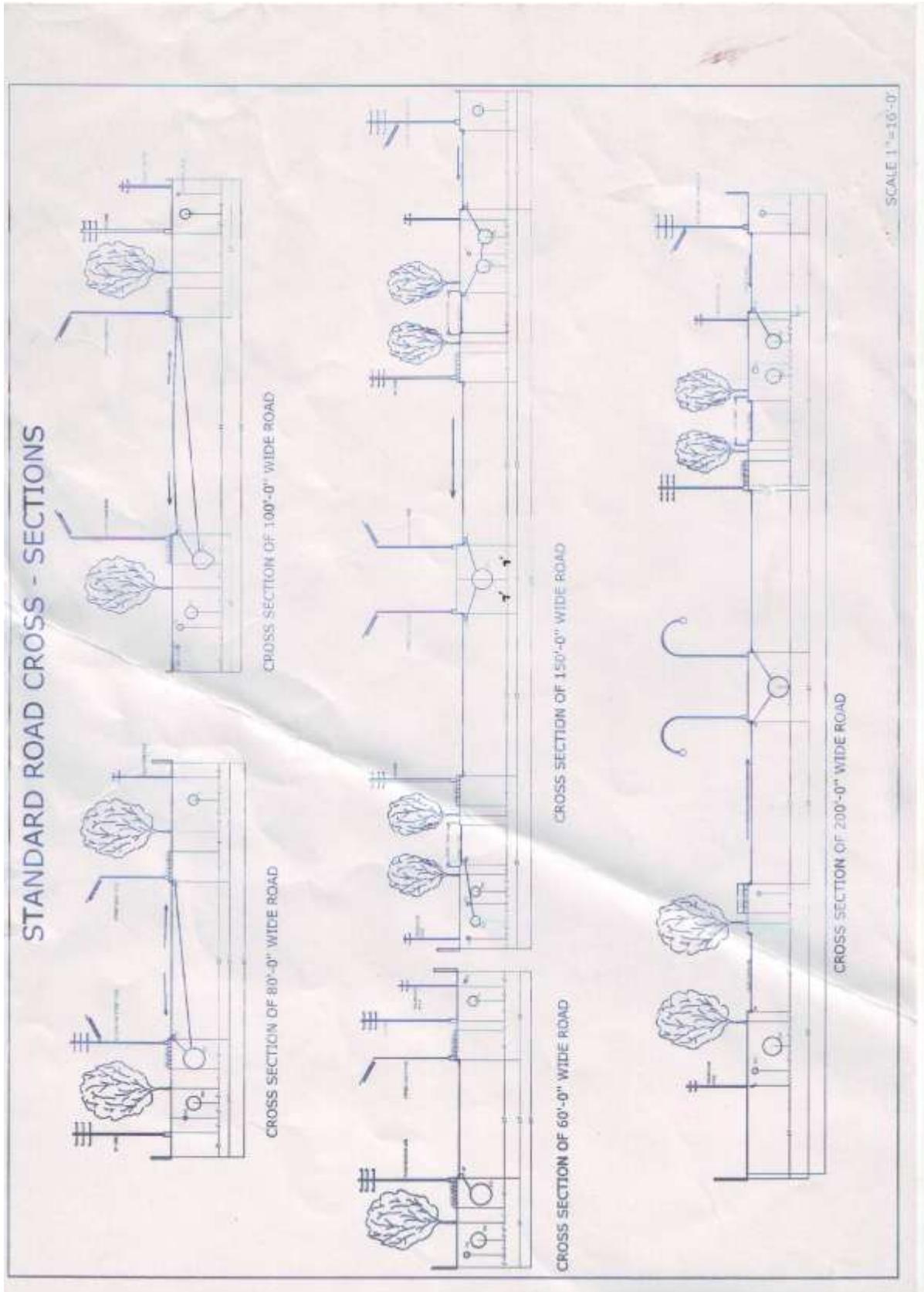
**LIST OF SETTLEMENTS FALLING WITHIN LOCAL PLANNING AREA,
NAWANSHAHR.**

Sr. No.	Name of Village	H.B.No.	Population	Population	Population	Area in Hectares.
			1981	1991	2001	
1	Nawanshahr	M.C.	26726	29955	31967	1412
2	Kariam	118	2405	3057	3173	551
3	Mahalon	124	1887	2720	2574	803
4	Bhangal Kalan	125	1605	1829	1914	302
5	Durgapur	127	595	738	1991	37
6	Gujjarpur Kalan	128	734	753	884	143
7	Mahdipur	129	771	1050	1285	124
8	Mubarkpur	130	1323	1598	1823	184
9	Alachaur	131	1020	1239	1342	140
10	Kulam	132	901	1129	1269	221
11	Barnala Kalan	135	2100	2253	2394	385
12	Jethu Mazara	136	1133	1321	1427	112
13	Saloh	162	2563	3270	4118	208
14	Jafferpur	163	830	850	944	154
15	Begampur	164	794	1091	1186	123
16	Hiala	165	1519	1677	1632	234
17	Langroya	137	3254	3813	4198	559
18	Jait pur	138	0	0	0	51
19	Kishan Pura	141	1060	1163	1266	82
20	Sanawa	144	1027	1231	1299	155
21	Sujawal Pur	154	897	989	1096	131
22	Kariha	120	2225	2439	2579	631
23	Amargarh	119	1333	1385	1454	194
24	Hussain Chak	166	401	419	443	99
25	Malpur	121	1658	1688	1832	135
26	Jabbowal	122	1474	1813	2004	301
27	Bhin	123	1246	1438	1605	490
28	Chuharpur	133	1174	1366	1460	193
29	Sona	134	1452	1685	1720	359
30	Pannu Mazara	161	1135	1329	1447	162
	TOTAL		65242	75288	82326	8675

ANNEXURE IV

Requirements for social infrastructure

ANNEXURE V



ANNEXURE VI

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 (Smudhar 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 and 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 and 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 December – January. Fairly fast growing and hardy tree with creamy white flowers in March – April.
11	Chakassia Tabularis	Tall spreading tree, evergreen and hardy. Excellent for shade. Flowers are greenish, white in April – May.
12	Chorisia Speciosa (Mexican Silk Cotton Tree)	Medium in height, pyramidal in shape, leafless from October to January, fast growing and 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 January – March. Fast growing, very ornamental creates mass 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	Ficus Infectoria (Pilkhan)	Tall spreading, fast growing and hardy tree, leafless in March, good for shade, need protection from cattle, green yellow flowers in November and December.
16	Hetrophragma Roxburghii (Marour Phaly)	Tall columnar tree, evergreen, flowers are of pale, yellow brown colour in March.
17	Jacranda Mimosaefolia (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	Kigelia Pinnata (Jhar Phanoos)	Tall and spreading tree, evergreen hardy. Fast growing flowers are of crimson, yellow and brown colour in April – May.

19	Lagerstroemia Frosreginae (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	Lagerstroemia Thorelli (Pride of India)	Medium in height, columnar in shape, beautiful tree, leafless from December – February, flowers of mauve colour from June to December.
21	Lagerstroemia Rosea	Medium in height, columnar tree, very pretty. Leafless in winter (December – February) with deep pink flowers from April to September.
22	Pongamia Glabra (Karanj)	Tall spreading and fast growing tree, leafless in March. Bears mauve colour coloured flowers in April – May.
23	Pterospermum acerifolium (Kanak Champa)	Tall columnar tree, ever green, handsome, bear's sweet scented flowers of creamy white colour in March – April.
24	Putranjiva Roxburghii (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	Saraca Indica (Sita Ashok)	Height medium, spreading tree, evergreen, 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 February and March.
26	Schleichera Frijuga (Kusum)	Tall columnar shaped tree, evergreen, good for shade, leaves become red in March and April and again in July and September. Flowers are of green colour in February and March.
27	Sweitnia (Mahogany)	Evergreen, shady, attractive foliage, very hardy, tall tree with columnar shape, blooms in April and tree is slowing growing and very good for avenues.
28	Tabeuia Rosea	Small in height, columnar in shape, deciduous from December to February, scanty foliage and flower colour is purple – pink in February to March.
29	Terminalia Arjuna (Arjan)	Tall, columnar shaped tree sheds leaves in March. Very hardy tree, flowers of pale – yellowish white colour appear in September to October.
30	Terminalia Chebula (Bahera)	Tall, columnar shaped tree, leafless in March, pale – yellow flowers all the year round.

ANNEXURE VII

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 650ppha):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:1.80ha 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 ITI: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 650ppha):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			
Nursing Home	N.A.	Population :45,000-1,00,000 Capacity:25 to 30 beds Area:0.20 to 0.30 ha	Population :50,000 Area:1000-2000sq m

Aspect	As per zoning regulations and sub-division clauses for Master Plan in Punjab/Govt. Policies	UDPFI 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 resi. 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.
Club	N.A.	Population :1,00,000 Area :10,000sq m.	Population:5,00,000 Area:5000sq m
Amusement park	N.A.	N.A.	Up to 10 ha
City level park	N.A.	N.A.	Population :5,00,000 Area 10acres
Neighborhood level park	N.A.	N.A.	Population 10,000 Area:10,000 sq m
Golf Course	N.A.	N.A.	Population :10,00,000 Area :10-30 ha
Sports Centre/Stadium	N.A.	N.A.	Population :5,00,000 Area :3-10 ha
Post and Telegraph Office	Population :10,000 Area :0.1 ha	N.A.	Population :10,00,000 Area :2,500 sq m
Religious Building	Population :15,000 Area :0.1 ha	N.A.	Population :10,00,000 Area :40,000 sq m
Old Age Home	N.A.	N.A.	Population :5,00,000 Area :1,000 sq m
Orphanage/ Children Centre	N.A.	N.A.	Population :5,00,000 Area :1,000 sq m
Multipurpose Ground (Exhibition cum fair Ground)	N.A.	N.A.	Population :1,00,000 Area :20,000 sq m
Burial/ Cremation Centre	N.A.	N.A.	Population :10,00,000 Area :10,000 sq m
Electric sub-station	Population :50,000 Area : 0.4 ha	N.A.	Population :5,00,000 Area :29,600 sq m
Police Post	N.A.	Population :40,000-50,000 Area :0.16 ha (area inclusive of essential residential accommodation)	Population :1,00,000 Area :1000 sq m
Police station/police Division	Population:50,000 Area:0.8 ha	Population:90,000 Area:15 ha Area inclusive of essential residential accommodation 0.05 ha additional to be provided for civil Defence and home guards	Population :2,50,000 Area :10,000 sq m
Police Line	N.A.	Population:20,00,000 Area:4.00 to 6.00 ha	1 for each administrative zone to be provided at city level Area:2.0 ha
District jail	N.A.	Population :10,00,000 Area :10.00 ha	Population :25,00,000 Area :5.0 ha
Fire Station	N.A.	1 fire or sub-station within 1 to 3 km to be provided for 2 lakh population	3 Fire Station for 5,00,000 population within radius of 5 to 7

Aspect	As per zoning regulations and sub-division clauses for Master Plan in Punjab/Govt. Policies	UDPFI Guidelines	Delhi Master Plan
		Area for fire station with essential residential accommodation :1.00 ha Area for sub-fire station with essential residential accommodation :0.60 ha	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 Nawanshahr 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, Nawanshahr 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, Nawanshahr.

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.

Traffic and Transportation

The norms and standards for Traffic and transportation as given in UDPFI Guidelines were discussed with higher authorities, following roads hierarchy has been adopted;

Road hierarchy

- **R-1** **200 feet wide**
- **R-2** **150 feet wide**
- **R-3** **100 feet wide**
- **R-4** **80 feet wide**

Footpath

The width of footpaths is listed as below;

- Minimum width 1.5 m
- Adjoining shopping frontage At least 3.5 m
- Longer shopping Frontage Minimum 4.5 m

Width should be increased by 1m in business/ shopping areas

Cycle Track

The minimum width of cycle tracks should be 2m. Each additional lane, where required, should be one meter. The capacity of cycle tracks recommended is as below:

Width of Cycle Tracks	Width in meters	Capacity (Cycle /hr.)	
		One way	Two way
Two lanes	3	250-600	50-250
Three lanes	4	>600	250-600
Four lanes	5		>600

Parking

- Group housing 2 ECS per 100 square meters covered area on all floors subject to maximum 3 ECS per dwelling unit.
- Commercial 2 ECS per 100 square meters covered area
- Institutional/ Hotel/ Hospital/Multi-media 1 ECS per 100 square meters of the covered area (if the project is covered under notification no. 17/171/5-Hg 2/311 dated 11 /01/08, otherwise the parking norms meant for commercial uses i.e. 2 ECS /100sq meters covered area shall apply.)

Note:

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

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