Remarks:

- Jallowkhana as it stands today narrates a tale of gross vandalism and neglect. The change of ownership around the complex has resulted in the major holding transferred to people who in order to avail the potential advantages have modified and have developed mixed-use (residential cum commercial) around the remaining part of the historic complex, which is grossly inappropriate.
- Lack of care has resulted in vandalism of the property, which has been robbed not only of its material, but also the historic context.
- The present condition of Jallowkhana is in dilapidated condition, with its wall broken on most of the sides. The vacant space around Jallowkhana is being used for dumping garbage by the people living in the surrounding areas. Outer walls of Jallowkhana are used for sun baking of cowdung cakes.
- There are no facilities in the precinct.

MATA BHADERKALI TEMPLE, SHEIKHUPURA

Sh. Thakur Dass Mehra built this temple on 13th of Falgun 1885. Pandit Dhani Ram Ji installed the idol of Mata Bhaderkali here. Formerly there used to be a small temple, but now it has become a center of pilgrimage for lacs of devotees. Every year a Mela is celebrated for two days. On the day that preceeds the "Nirjala Ekadasi", a huge procession is taken out from Shalimar Garden (Kapurthala) to the temple at Sheikhpura. A "Night Vigil" or Jagrata is held on the same night and "Havan" is performed on the dawn of the next day (Nirjala Ekadasi). A Kavi Darbar is also held on the "Ekadasi" night.

MAZAR OF MIR NASIR AHMED

The Mazar of Mir Nasir Ahmed, stands amidst number of trees. Mir Nasir Ahmed, a descendant of the legendary Tansen, founded the Kapurthala Gharana, or the School of Music. He was brought to Kapurthala by Kanwar Bikrama Singh in 1858. Today, this monument is a pilgrimage site for classical musicians, while the adjoining land is used as a graveyard. A festival is held in the month of October every year under the chairmanship of Deputy Commissioner, Kapurthala.

Fig. No. 62: **The Mir's Mazar**

6.3 TOURIST PLACES AROUND KAPURTHALA TOWN

GURUDWARA BER SAHIB

The Gurudwara Ber Sahib is situated on the banks of the holy Bein in the small town of Sultanpur Lodhi. This is where Guru Nanak Sahib entered the Bein rivulet, also known as the Babe di Nadi, and remained in its waters for three days, where from he reappeared as an enlightened Guru. His first words were, "There is no Hindu, no Muslim". This Gurudwara is a major destination for Sikhs and a great centre of tourism.

Fig. 63: Gurudwara Ber Sahib

Fig. 64: Inside view of the Gurudwara Ber Sahib

THE VILLA BUONA VISTA

The Villa Buona Vista popularly known as "Villa Kothi"built in 1899 is a beautiful building, which was once the hunting lodge of the Maharaja. It is located on the banks of the river Bein, and was designed by J.O.S. Elmore. It now houses the private residence of Brigadier Sukhjit Singh, the grandson of Maharaja Jagatjit Singh.

Fig. No. 65: The Villa Buona Vista

Fig. No.66: Inside view of the Villa Buona Vista

KANJLI WETLAND

The Kanjli Lake derives its name from village Kanjli located nearby. The lake was created by the construction of the barrage in 1870 by the Maharaja of Kapurthala. The construction of

barrage across the stream converted the area into a reservoir with marshy margin, which resulted in the formation of a wetland. The wetland extends in an area of about 50 acres and is habitat to about 40-50 bird species. Apart from it, the area attracts migratory birds. The area was declared as a wetland of national importance in the year 1992 because of the rich and bio-diversity it supported. The wetland serves as habitat to many species of flora and fauna and attracts an appreciable population of birds.

Fig. No. 67: Kanjli Wetland

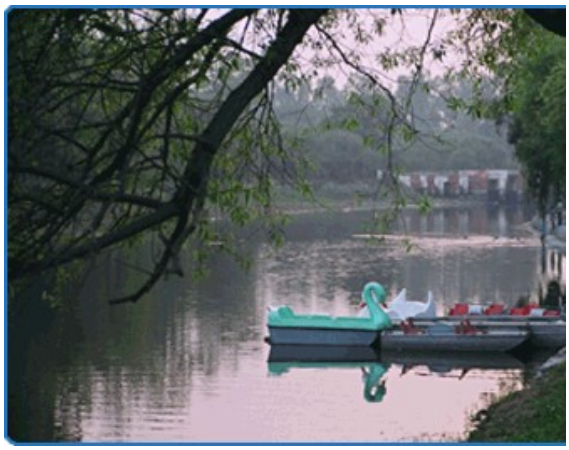

Fig. No.68: Boating facilities at Kanjli

The Kanjli Lake extends for a length of 2-2.5 km and the width varies from 200-500 feet. The maximum recorded depth of water is 40 feet, while at some points the depth lies in a range of 20-30 feet. The lake covers an area of about 20 acres.

The Kanjli Wetland is located in district Kapurthala about 4 km from the town of Kapurthala. The Kali Bein, which is an offshoot of the river Beas, feeds the Kanjli Lake. The wetland lies upstream of Harike Wetland at a distance of about 50 km. It has been declared as a wetland of National importance. At Kanjli, Baisakhi Mela is held every year. It has been declared as a tourist spot by government. The place has the scenic beauty of lake & the entire infrastructure provides for a memorable fishing and boating holiday for the tourists.

Remarks:

- Major issue at Kanjli Lake is lack of drinking water facility for the visitors. There is no Information Centre despite its national importance. The park on the other side of the lake is lying abundant for many years. The approach road to wetland is not in a proper shape. There is a lack of sign boards too. A foul smell in the vicinity of the wetland fails to make a pleasant impact on visitors during rainy season when it is generally cleaned.
- Water looks much polluted and the lake completely loses its visual appearance after the cleaning in rainy season.

- Boating facility is available, but the condition of the boats is not so good which fails to attract the visitors for boating. The store room for the boats and other things is in pathetic condition.
- The old bridge on the Bein is broken and is lying there reducing the scenic beauty of the site.
- Baisakhi Mela, which used to be here annually, is not being held since past two years.
- In spite of all these adversities, some construction work is going on in its vicinity to improve infrastructure facilities. One among them is a restaurant coming up in the park area. A new park is coming up in the adjacent area.

PUSHPA GUJRAL SCIENCE CITY, KAPURTHALA- JALANDHAR ROAD

The biggest project of its kind in Northern India, the Science City has been set up in 72 acres of land in the of heart of Punjab, on Jalandhar- Kapurthala Road. It is intended to inculcate the scientific aptitude & temperament, to fire the imagination and creativity, foster the spirit of enquiry and exploration among the masses, especially in the young minds.

Fig no.69: Encountering the Galaxian view

Fig no.70: Voyage through the Virtual Universe

The subject areas covered include physical, applied, natural and social sciences, engineering, technology, agriculture, health sciences, energy, industries, human evolution and civilization, the environment, ecosystems, Dinosaur Park as well as frontier areas like space, nuclear science, information technology, robotics and bio-technology.

Pushpa Gujral Science City (PGSC) offers a blend of education, curiosity and fun to ensure longer and repeated visits. The project is aimed at cultivating an interest in science through open-ended exploration away from text books and black boards, with a scientific approach to problem solving. The project has something for everyone, regardless of age, education, profession or social strata and is intended to make science accessible to people who are not part of the formal education system.

The total cost of the Science City Project is Rs.100 crores. It is a joint project of the Government of India and Government of Punjab. Government of India is contributing Rs.70 crore for capital expenses (Buildings and Exhibits) where as Punjab Government is providing Rs.30 cores in terms of land and other infrastructural facilities. The foundation stone of the Science City was laid down on October 17, 1997. The first phase of Science City was inaugurated on March 19, 2005.

PGSC, in its second phase will have several galleries namely Cosmos, How Things Work, Life through the Ages, Amazing Living Machine, Science of Cricket and Living Earth to present memorable, knowledge-based and excitable experience. In addition to these galleries, a state level Energy Education and Awareness Park is also being developed.

Other Places of Interest

The town has many other places to visit. These include the War Memorial (Opp. Moorish Mosque), the Irwin Jubliee Memorial Hospital, the Circuit House, Kamra Bagh, Bagghi Khana, Bhoot Bangla ,Sri Sat Narain Mandir (Sri Sat Narain Bazar), Prachin Shiv Mandir (Mall Road), Sri Laxmi Narain Mandir (Laxmi Nagar), Brahm Kund Mandir (Behind Shalimar Garden), Baba Pir Chowdhary (Jalandhar Road), Hanuman Mandir (Amritsar Road), Mandir Janki Dass (Near Jallowkhana Chowk), Jain Mandir (Amritsar Road) and Sheetla Mata Mandir (Jallowkhana Chowk).

6.4 RESTORATION AND CONSERVATION

Though Kapurthala town has plenty of heritage buildings having rich architectural and cultural values, the upkeeping of these monuments has been neglected so far by the local government. Some are:

- The burning example is **Nihal Palace**, popularly known as the Jallowkhana, built in 1833 for queens. A shopping complex has replaced the palace after the demolition of the old building. The palace now remains with walls from only two sides. The site is facing the brunt of the rapid construction work coming up in its vicinity.

Fig. No. 73: Nihal Palace

- The **Durbar Hall**, which was once used as the Court of the King, was declared unsafe by the government. Still the monument houses the SSP Office, the District Courts Complex and some other offices of the District Kapurthala. Likewise, Jubilee Hall, which one housed the offices of ministers from where all orders were released, is also a victim of anthropological activities because of it being used nowadays as College, popularly called as Randhir College.
- The famous **Gol Kothi**, once used to be the residence of mahamantris (prime ministers) of the erstwhile princely state of Kapurthala, is in a dilapidated condition today. The wall of the backside rooms has already caved in and the remaining portion of the building is in pitiable condition due to lack of any repair work.

Fig. No.74 : Gol Kothi

- The **Baradari** building situated in the **Shalimar Garden** was made by Maharaja Fateh Singh of Kapurthala almost four hundred years back. Facing the apathy of the district administration, this historical monument is on the verge of collapse.
- The **tomb (maqbara) of Mian Mir Nasir Ahmed**, a famous singer of *dhrupad*, on the Pir Choudhary Marg is just about to vanish, as the plaster on most of its walls has been peeled off by the vagaries of weather. There is no sign of floor in the remnants of the building.

- Though the restoration work of some buildings has been done or are in the process of being done, like War Memorial, Durbar Hall, Kamra Palace, Moorish Mosque, etc. by the INTACH, but the efforts are not enough. Lack of any long- term plan to preserve the old buildings of historical value is the major reason behind their poor condition. Commercialization of the precinct of these buildings and palaces has only worsened the situation.
- Apart from these heritage places, the Kanjli Wetland too has been affected by the interferences of the developmental activities. The area has rich biodiversity and is famous for the arrival of migratory birds during winter. It has developed as a major tourist spot, but the development activities have become a threat for it. The area is shrinking with pollution occuring in the Kali Bein. The gradual shortage of water in its flow is threatening the very existence of the Kanjli Lake and Wetland, along with hundreds of flora and fauna species that it is sustaining. The efforts done by Baba Seechewal, a well known environmentlist of the region, to conserve and protect the Bein are commendable and shows that the efforts of individuals too can change the ecological and environmental scenario, even if the government is not taking too much initiatives.

The conservation of the entire heritage and ecological sites in and around the town is necessary, as it is significant for the existing as well as the future growth of the Kapurthala town. Any change in their state can decelerate the growth and development work of the town as its base is mainly tourism and administration.

6.5 TOURISM DEVELOPMENT

Kapurthala town and the adjoining LPA areas have the necessary base to flourish its tourism potential. However, the tourism development has not happened in that level because of some hindrances. These are:

1. Civic amenities at most of the sites are missing, thus discouraging large influx of tourists to them.
2. Numbers of hotels and restaurants as well as their standard in Kapurthala town is not upto the mark. The reason cited for this is its close proximity to Jalandhar, which has many good hotels.
3. There is no organized travel mode to interconnect different tourist sites and buildings of the town and in the LPA. This is hampering a cohesive tourism development of the area. Absence of City Buses too is not good for the town's tourism potential.

4. There is absence of any tourist circuit connecting Kapurthala with some major tourist destinations of the region like, Amritsar, Jalandhar, etc. This devoids the chances of getting tourist of other destinations.
5. Agenices responsible for the heritage conservation and tourism development, i.e. MC, ASI, INTACH, Waqf Board, etc. are working individually. There is no combined effort from these agencies to improve the situation, creating duplicity of the work and sometimes working just opposite to each other.

CHAPTER 7
ENVIRONMENTAL STATUS

7.0 ENVIRONMENT

Environmental problems faced by the inhabitants of Punjab, its causes and pressures can easily be traced back directly or indirectly, to the pattern of development of the urban areas. The forces and processes that constitute urban activity have far-reaching and long-term effects not only on its immediate boundaries, but also on the entire region in which they are positioned.

In a very broad sense, the urban environment consists of resources, human and other processes in the town, that convert these resources into various other useable products and services and effects of these processes, which may be negative or positive. With the inevitable danger of overlap and generalization, following three dimensions have been identified in urban environments, i.e., Natural Environment, Built Environment, and Socio-Economic Environment.

7.1 POLLUTION: GENERATION AND CONSEQUENCES

7.1.1 AIR POLLUTION

One of the major areas of environmental concern within Kapurthala town is air pollution, which is caused due to various anthropogenic activities. Huge volume of traffic, frequent jams on narrow streets, absence of public transport, use of kerosene as the fuel, etc., leads to air pollution in the atmosphere along the roads/chowks such as Bus Stand, Shiv Mandir Chowk, Kachahri Chowk, Fountain Chowk, Mall Road, Old Vegetable Mandi and Sat Narayan Chowk to Shalimar Bagh, etc.

As far as wind direction is concerned various small and medium scale industrial units releases its intensive air pollutants towards downwind direction into the atmosphere, which affects adversely the environment of the surrounding residential areas. From planning point of view neither any sufficient buffer zone nor any landscape elements are provided there to reduce the impact of air pollutants.

Ambient Air Quality: - Existence of large number of units including the polluting industries has adversely impacted the quality of air in the Kapurthala town. Emissions generated by vehicles and fuel burnt by industries have also contributed to the lowering of air quality. Due to heavy congestion in major areas of Kapurthala town especially Bus Stand, Shiv Mandir

Chowk, Kachahri Chowk, Fountain Chowk, Mall Road, Old vegetable Mandi and Sat Narayan Chowk to Shalimar Bagh etc. are facing intolerable impact from air pollutants i.e., SO2 and NOx, SPM and RSPM. Frequent use of kerosene oil as a fuel, instead of diesel or petrol especially by auto rickshaw raises adverse impact on the quality of air pollutants in the heavily traffic congested area of the Kapurthala town.

7.1.2 SURFACE WATER RESOURCES & WATER POLLUTION

In terms of surface water resources, two rivers i.e., river Beas and Sutlej are considered in its catchment area covering up to the Kapurthala LPA. Within Kapurthala LPA, it includes one stream (Kali Bein), one wetland (Kanjli Wetland), one distributory (Jalandhar Distributory), one drain (Wadala Drain) and lower stretch of Kali Bein. Among these, Wadala drain and lower stretch of Kali Bein carry high volume of pollutants, especially during rainy season, in the form of domestic refuges, small quantity of untreated sewage effluents, solid waste, biomedical waste, weeds, shrubs, heavy silts, mud, and other waste materials. Due to unhygienic condition and poor sanitation activities in drain it favours vigorous spread of mosquitoes and also water borne diseases.

River:

There are two rivers i.e., river Beas and Sutlej, flowing in its catchment area covering up to the Kapurthala LPA. River Beas is flowing from North East to South West direction while river Sutlej is flowing from South East to South West direction.

Upstream characteristics of these rivers have been studied by PPCB in Dec 2000 under the Govt. of India Scheme called as MINAR (Monitoring of India National Aquatic Resources). All parameters of surface water characteristics are within the permissible limits prescribed by BIS (ISI) except BOD and total Coliform. BOD and total coliform level for river Beas is higher than the standards prescribed by BIS for tolerant limit of class A category (surface water). In the case of river Sutlej, only total coliform is higher than the standards prescribed by BIS for tolerant limit of class A category (surface water). The detailed water characteristics are summarized in table no. 47.

Table 47: Status of Water Characteristics of River Beas and Sutlej

S.No.	Parameter	Beas	Sutlej
1	Temperature °C	16	16
2	pH	7.8	7.7
3	Conductivity (µmho)	342	378
4	Nitrogen (NO2 + NO3)	1.4	1.0
5	DO (mg/l)	7.8	7.7
6	BOD (mg/l)	4.2	1.8
7	COD (mg/l)	14.4	6.4
8	Cl- (mg/l)	23.0	20

S.No.	Parameter	Beas	Sutlej
9	SO4	16	14
10	Na	14.6	4.2
11	Fecal Coliform	500	170
12	Turbidity (NTU)	24	22
13	Total Coliform	5000	500
14	TDS	302	340

Source: PPCB, Dec 2000

Kanjli Wetland: - This Lake is fresh water permanent feature. It supports diversity of aquatic, mesophytic and terrestrial flora and fauna including some important species of plants and animals. It also supports diverse kinds of food chains and food webs, helps in water recharging and discharging, improves water quality, reduces flooding, etc.

Fig. No. 75:- Adulteration of nutrients into Kali Bein

Fig. No.76:- Negative impact of religious activity along Kali Bein

Excessive use of chemical fertilizers and pesticides in the crop fields by the farmers in surroundings of the lake, resulting to draining out of nutrients into the lake during rainy season is one of the important factors of eutrophic condition, which ultimately deteriorates the characteristics of the water. Illegal practices of deforestation along the Kali Bein, causing failure in checking of the agricultural and domestic runoff in upstream side especially during the rainy season, cause deterioration of the water characteristics of the lake too as it is feeded by Kali Bein only.

The Punjab Pollution Control Board has already undertaken monitoring of water quality of Kanjli Wetland during 1991-92, 1992-93 and 1996-97, which shows that the water of this wetland generally conforms to class "B" as per designated best use. It however deteriorated to Class 'D' during December.

Kapurthala Distributory: - In the past time, Kapurthala Distributory was functioning to fulfill the irrigational requirements of the farmers within the LPA and also outside of the LPA. At present, this distributory is abandoned and not functioning within the LPA limits.

Kali Bein: - Kali Bein enters from the northern side in the Kapurthala LPA and leaves it at south - western side in Hussainpur census town. Along its course, it covers many villages within the LPA i.e., Kanjli, Sheikhupur, Bhagwanpur, Jhugian, Jahal Babri, Lodhi Bhulana, Jalal Bholana, Rasulpur Chisti, Hussainpur, Nawanpind, Bhawanipur, Kapurthala Rural (village), etc.

Kali Bein is a permanent rivulet. Throughout its length, Kali Bein is recharging the ground water and acting as a discharging drain by taking away excessive rainwater from sensitive crops like wheat, potato, etc. It also serves as an important source of water for agriculture. At the same time, it also helps in flood management. Since the ground water table in adjoining areas is stable as compared to rest of the State, the Bein is playing a vital role in hydrology. Polluted water from some towns and industries enters into the Kali Bein. Besides, non-point pollution of farm chemicals from the catchment areas is another problem.

Fig. No.78:-Kali Bein flowing with full capacity during Rainy season.

Lower Stretch of Kali Bein:- In Kapurthala LPA, Lower stretch of Kali Bein originates from the main channel of Kali Bein near Kanjli village in North East direction of the LPA carrying very lean flow even during the rainy season. After flowing a distance of 6.96 km in the downstream direction, it finally merges with main channel of the Kali Bein near Shiekhupur village (refer map). Along its course, it crosses villages Kanjli and Shiekhupur etc.

During rainy season channel is containing excessive weeds, shrubs, polythene bags, plastics, other domestic refuges, solid waste, heavy silts, mud, cow dung, etc. Along the channel, residential areas of LPA villages and few parts of Kapurthala town faces objectionable odour and nuisance. Dense mosquito zone upto 1000 meters of distance from the channel is prevailing along the channel.

Wadala Drain: - Wadala Drain enters the Kapurthala LPA, from the eastern side and after flowing for some distance, it merges with the lower stretch of Kali Bein near Kapurthala Municipal Council. Along its course it crosses many villages within the LPA i.e., Mainwan, Daburji, Kadupur, Seenpur, etc.

This drain is also containing excess of weeds, shrubs, polythene bags, plastics, small quantity of sewage, other domestic refuges, solid waste, biomedical waste and also containing heavy silt, mud, cow dung, etc. Residential areas of LPA villages and Kapurthala town falling along the drain face objectionable odour and nuisance. Dense mosquito zone upto 1000 meters of distance from the drain is prevailing along its channel.

In the village areas, just 100 meters away from the drain, the ground water characteristics of private hand pumps are deteriorated. Colour, odour, taste and presence of fine suspended particles are the cause of objection for their potable use. Colour of water is yellowish, odour is objectionable and suspended particles can be visualized even by naked eyes.

Fig. No.79:- Untreated Sewage in Wadala Drain at Kartarpur Road.

Fig. No.80:- Wadala Drain used as Dumping Site at the bridge of Fattu Dhinga Road.

The effected villagers also claim that people of the surrounding villages along the drain are suffering from various diseases such as gastroenteritis, jaundice, diarrhoea/dysentery and malaria. There is also a lack of awareness regarding safe drinking water consumption.

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Fig. No. 82:-Sewerage Treatment Plant near Kusht Ashram

Affected Zone:- On the basis of broad primary survey/observation, various affected zones such as health affected zone, odour zone and mosquito zone have been calculated for the drains passing along the Wadala Drain and lower stretch of Kali Bein. This is further supported by the Focussed Group Discussion (FGD) with the people of affected villages. Various affected zones for the drains in terms of their % age of area and population affected within the LPA are summarized in the table no. 57.

On the basis of above calculation and observations, it is felt that there is requirement of regular cleaning and desiltation of the Wadala Drain and Lower Streatch of Kali Bein and further policy decisions to relocate the industrial zones on the right path. Besides, buffer zones, green areas are required to be provided all along the drains.

Table 48: Health affected Zone, Odour Zone & Mosquito Zone of Wadala Drain and lower stretch of Kali Bein

Health Affected Zones			
Health Affected Zones	**Distance from the Source (m)**	**% of Area affected**	**% of Population affected**
High effected zone	Upto 1000	33.24	33.25
Odour Zones			
Odour Zone	**Distance from the Source (m)**	**% of Area affected**	**% of Population affected**
High Odour	25	0.83	0.83
Moderate Odour	26 to 75	1.62	1.62
Low Odour	76 to 125	1.62	1.62
Mosquito Zones			
Mosquito Zone	**Distance from the Source (m)**	**% of Area affected**	**% of Population affected**
High affected	Upto 100	3.31	3.15
Moderate affected	101-500	13.24	13.25
Low affected	501- 1000	16.57	16.58

Source: SAI Team, August 2009

Note: - Percentage of area and population is based on the total area and population of the Kapurthala M.Cl. Mosquito zone is calculated only for those areas, which are affected by drain (downstream within Kapurthala M.Cl).

Ground Water Pollution: - Degradation of the characteristics of ground water in areas along the Wadala Drain and lower stretch of Kali Bein is caused due to pollution of Wadala Drain especially during rainy season. Seepage of stagnated water from the drain has led to the pollution of the ground water aquifers.

Accordingly, the ground water characteristics in the town are also not good. Ground water in most of the town area and in rural residential areas has become unfit for drinking. In comparison to deep water aquifer, shallow water is seriously affected. The town accordingly faces a severe water pollution problem. In the process, majority of the residents of Kapurthala especially along the Wadala drain, lower stretch of Kali Bein and that of other adjoining

villages are forced to consume contaminated vegetables and drink unsafe water, thus exposing themselves to the risk of water-borne diseases. Major issues emerging from the ground water pollution have been listed below:-

i) Excessive pumping has lead to contamination of ground water. People residing in abadies in close proximity to Wadala Drain, lower stretch of Kali Bein and other adjoining villages have been found to be exposed to water borne diseases due to polluted ground water.

ii) Considerable level of ground water pollution have been found to exist upto a depth of 100 ft. along the 1000 meter belt on either side of Wadala Drain and lower stretch of Kali Bein, especially in the urban areas and outside of the town areas (downstream). The characteristic of water has been found to be unsuitable for supporting aquatic life especially during the rainy season.

iii) Hand pumps and shallow tube wells drawing water from first aquifer are found to be susceptible to ground water pollution in areas along the Wadala Drain, lower stretch of Kali Bein and areas close to the industrial units.

iv) Pollution of the soil and ground water has also been caused by the dumping of the industrial wastes (effluents and solid waste) into the open ground leading to stagnation and the generation of the leachate.

v) The use of polluted ground water for agricultural purposes has also led to the degradation of the soil and presence of heavy metals into soil and vegetable crops grown in the area.

7.1.3 NOISE POLLUTION

Increasing urbanization, overcrowding, industrialization and high density of traffic and transportation comprising pedestrians, market goers, concentration of two wheelers, three wheelers, cars, buses, trucks, etc in Kapurthala town has resulted to increased noise levels in the environment leading to noise pollution. Construction work also plays an important role in causing noise pollution.

The noise has already reached a level, high enough to cause annoyance capable of creating temporary to permanent hearing impairment, particularly to those people who remain exposed to such noise level for longer time during the day. Street vendors and shopkeepers doing business along both sides of road have been found to be most vulnerable to this hazard. Besides, educational institutes, hospitals, etc. which are parts of silence zone are also highly affected.

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

Key Issues for Pollution Management

Following are the main issues for pollution control:

- Insufficiency in periodic monitoring and assessment of ambient air quality, ambient noise level, surface and ground water characteristics at various points of industrial, residential and other sensitive zones.
- Excessive exhaust from fuel-fired construction equipments and DG sets.
- Excessive vehicular exhausts from traffic and transportation.
- Fugitive dust generated due to shifting of construction materials (cement, sand, bricks and gravel) and from concrete preparation unit while material charging.
- Long term excess withdrawal of ground water cause depletion of ground water table and local hydro geological impacts.
- Higher mineralization due to long term withdrawal of ground water.
- Minor importance on maintenance of traffic units, industrial units and construction equipments causing noise level above the permissible limits.

7. 2 FLORA-FAUNA & VEGETATION COVER

7.2.1 FLORA

The existing vegetation comprises mainly of Shisham or Tali, Kikar / Babul, Mesquite, Eucalyptus hybrid, Mango, Mulberry, Jaman, Siris, Neem and Drek. However, there is also a sprinkling of other species like Bar or Borh, Papal, Dhak Palah or Chhachra, Khazur and Ber.

Shisham provides valuable timber for furniture whereas kikar-wood is used for manufacturing various agricultural implements and its bark is used for tanning leather. The requirements of a tannery at Kapurthala are fully met by the local areas. Eucalyptus is used for paper pulp. Other species like Mango, Jaman, Mulberry, Drek, etc., are used for making packing cases, plywood and sports goods. The following varieties of flora are found in Kapurthala LPA:-

Trees and Shrubs species in LPA:- Various types of trees and shrubs species within LPA of Kapurthala are *Dalbergia Sissoo (Shisham), Acacia Arabica (Kikar/Babul), Prosopic Juliflora (Mesquite), Mysore-sgum (Eucalyptus hybrid), Mangifera Indical (Mango), Morus Alba (Mulberry), Syzygium Cumini (Jaman), Albizzia Lebbeck (Siris), Azadirachta Indica (Neem), Melis Azedarach (Drek), Ficus Bengalensis (Bar or Borh), Ficus Religiosa (Papal), Butea Monosperma (Dhak Palah or Chhachra), Date (Khazur), Ziziphus Mauritiana (Ber) etc.*

Grasses: - The varieties of grasses that are found in Kapurthala LPA include Sarkanda, Kahi, Dibh, Khabal, Jhau, Broom Sticks and Dila.

7.2.2 FAUNA

The different varieties of fauna found in the Kapurthala LPA are detailed below:

(1) Fish :- The different varieties of fish available are *Catla Catla (Catla or Thaila), Channa Marulius (Saul), Channa Punctatus (Daulla), Channa Striatus (Karrar), Cirrhinus Mrigala (Mirgal or Naraini), Cirrhinus Reba (Sunni), Heteropneustes Fossilis (Lakhi or Seengdi), Labeo Rohita (Rohu Dhambra), Labeo Data (Bata), Mystus Seenghala (Singhari or Shingari), Notopterus Chitala (Parri), Notopterus Notopterus (Moh), Rita Rita (Khagga), Wallago Attu (Malli), etc.*

(2) Reptiles: - Tortoise (Kachhua) and small Crocodiles (Magarmach) are found in small streams or ponds. Goh, Karait and many varieties of Cobras are also found.

(3) Birds: - The birds found in the area are of two types-Resident Birds and Migratory Birds.

Resident Birds:- House crow, Indian large Cormorant, Little Cormorant, Indian Shag, Indian Darter or Snake Bird, Large Indian Parakeets, Rose-ringed Parakeets, Shikra, Sparrow-Hawk, Red-headed Merlin, Indian Common Night Jar, Green Pigeon, Blue Rock Pigeon, Rufous Turtle Dove, Ring Dove, Spotted Dove, Common Peafowl, Bush Quail, Indian Button Quail, Common Quail, Rain Quail, Black Partridge, Grey Partridge, Common Coot, Purple Moorhen, Lapwing Pee-wit, Wood Cock, Common or Faintailed Snipe, Weaver Bird, Red Munia, Indian Robin, Shama, Koel, Spotted Munia, Field Kingfisher, Small Blue Kingfisher, Common Sparrow, Painted Shipe, Flower Pecker, Town Eagle and Black-winged Kite.

Migratory Birds:- Comb Duck or Nutta, various species of Goose, Demosile Crane, Ruddy Sheldrake, Gadwall, Wigeon, Common Teal, Pintail, Shoveller, Poachard or Sun bird, White eyed Poachard, Tufted Poachard, Large whistling Teal, Cotton Teal and Mallard.

(4) Mammals:- The mammals found in the area are Jungle Cat, Large Indian Civet, Common Indian Mongoose, Indian Jackal, Fruit Bat, Indian Porcupine Squirrel, Rats and Mice, Wild Boar, Black Buck, Hog Dear, Common Indian Hare, Barking Deer, Spotted Deer, Black Buck, Hog Deer, Wild Boar and Common Peafowl.

Key Issues for Flora, Fauna and Vegetation Cover

- The Kapurthala town requires appropriate level of habitat for the flora and fauna available in the area in order to preserve and conserve such varieties.
- The town area is covered with crops, grass, trees, industries, tourist places, structures and various objects. During construction, the grasses and the shrubs are cleared for accommodating the different facilities. This causes negative impact within the town.
- Industrial area is moderately populated in floral species, including agricultural crops and commercial plantations.
- Dust generation during operation of industrial units cause negative impact on these species in immediate vicinity, which also cause secondary impacts on terrestrial and avi-fauna.
- The diversity and density of faunal species within the town area is degrading continuously. There are no wildlife sanctuaries or ecosystems within or around the town area.
- As per the guidelines of MoEF, atleast 33 % of total area of any given region must be covered with green area. But, the Kapurthala town does not fulfill the required green belt area.

7.3 RAIN WATER HARVESTING:

Ground water exploitation has been going on regular basis in the Kapurthala LPA for meeting the basic needs of drinking and other human activities. In the process, the groundwater potential is getting reduced due to higher order of urbanization, industrialization and water intensive agricultural practices. All these activities adversely impact the groundwater hydrology. Due to increase in water demand more dependence on ground water use, over exploitation of ground water, increase in run-off has led to fall in water levels, reduction in open soil surface area, reduction in infiltration and deterioration in water quality.

In Punjab, the Department of Soil & Water Conservation started the work of rainwater harvesting in the year 1986-87 on the pattern of famous Sukhomajri Project. The First Earthen Rainwater Harvesting structure was constructed in village Perch in Ropar district having a catchment area of only 8 hectares. Over the time, more than 250 water harvesting structures of different kind have been constructed in Ropar, Nawanshahr.

EXISTING STATUS: -

In Kapurthala town and its LPA concept of Rain Water Harvesting System has not been adopted satisfactorily due to the lack of vision, negligence and unawareness among the Governmental system and people. Secondly, the concept of Groundwater Recharge Technology has also not been adopted in the new private building constructions to raise the level of declined water table. As per official discussion with concerned authorities of Improvement Trust, they quoted that a few Government Buildings in the town have adopted the Groundwater Recharge Technology but still this practice is not adopted frequently in the new building codes till date. It should be made mandatory in large buildings to adopt this technology. It should be made a part of Building Bye Laws and Development Control Regulations.

Key Issues

Following are the key issues for water body conservation in Kapurthala town:

- Insufficiency of water harvesting system in town and recharge pits and check dams.
- Lack of awareness among the residents regarding water conservation.
- Lack of appropriate structures for ground water recharge.
- Leaching of lechates from dumps of municipal solid waste and contamination of the ground water table.
- Encroachment of village ponds.

7.4 DISASTER MITIGATION AND MANAGEMENT ISSUES

Disasters have always co-existed with civilization. With technological advancement, development initiatives have resulted in the creation of lot of infrastructure and permanent assets. Gradually material development detached man from nature on one hand, and increased vulnerability of the human population, on the other. The progressive increase in loss of life, property and deleterious effect on environment due to disaster moved the international community to look at disaster management in a new perspective, which transcends international barriers, anticipates possible threats and enables tacking of disaster from the pre-stage. Disaster can be classified as natural, industrial and manmade disasters. Natural disaster includes earthquake, flood, cyclone, landslide, tsunami, and drought. Industrial disaster includes fire, chemical hazard. Manmade disaster includes road, rail accidents, etc. A study of various disasters becomes necessary here in the light of the fact that Kapurthala town has many prominent heritage buildings, apart from having important government offices, public and semi public facilties, RCF, a large Defence area and a dense and widely spread residential area.

EXISTING STATUS

Earthquake: - The whole of Kapurthala district falls in seismic zone IV. Thus it is situated in a region, which is liable to slight to moderate damage due to earthquakes. The Great Himalayan Boundary Fault Zone, which stretches from Assam to Kashmir and has been the scene of some of the great Indian earthquakes, runs from the north of this district. It has also experienced occasionally the fringe effect of the earthquakes originating in the Karakoram and Hindukush region.

The records show that Kapurthala and the surrounding areas came under seismic intensity VIII on the Modified Mercalli Scale of 1931 during the Kangra earthquake of 4 April 1905. But, considering the active seismic status of the Himalayan boundary fault system and seismo-tectonic study of the region, recurrence of an earthquake of intensity up to VIII M. M. cannot be ruled out in future. This fact is corroborated by the Seismic Zoning Map of India prepared under the auspices of India Standards Institution where Kapurthala District, including Kapurthala town, has been placed in zone IV corresponding to intensity VIII M. M. This intensity therefore, can be taken as optimum for designing engineering structures in the town and district.

Flood: - Major Floods occurred in 1988 that affected Sultanpur Lodhi and in 1990 and 1995 (Source: Report-Conservation of Historical Built and Natural Heritage of Kapurthala region).

Due to inadequate flood protection works on the banks of river Kali Bein, vast agricultural lands and villages located nearby, are likely to be affected during the floods. Accordingly adequate flood protection measures needs to be put in place in order to minimize loss of life and property due to natural and manmade floods.

Fire Hazard: - Fast growing town like Kapurthala are threatened by fire hazards, due to the following main reasons.

- Non- implementation of fire safety norms as part of building byelaws.
- Illegal and loose electric connections.
- Sub-standard wiring and over loading of electricity system.
- Illegal storage and hazardous commercial activities.
- Inadequate availability of special fire fighting equipments.

Key Issues

- High risk due to location in the Seismic Zone IV.
- Inadequate infrastructure to mitigate the disasters.
- Large area prone to flooding.
- Inadequate availability of special fire fighting equipments.
- Non- implementation of fire safety norms as part of building byelaws.
- Illegal storage and hazardous commercial activities.
- Sub-standard wiring and over loading of electricity system.
- Lack of facilities in terms of arrangement of signal, signage, special breaker and design.

CHAPTER 8

FINANCIAL STATUS

8.1 FINANCIAL STATUS OF MUNICIPAL COUNCIL, KAPURTHALA

The municipal finances of the Municipal Council have been reviewed for the last five years, commencing from the financial year 2003-04 to 2007-08. The items of both receipts and expenditure are classified under revenue and capital accounts as per their sources and uses.

As per table 49 and figure 33, the revenue income of Municipal Council has grown to a level of Rs. 1019.7 lakhs in FY 2007-08 from Rs 740.93 lakhs during FY 2003-04, registering a CAGR of 8.31 percent, while revenue expenditure increased at a CAGR of 9.36 percent. It projects a moderate financial condition of Municipal Council. Municipal Council has consistently maintained a revenue surplus of an average 6.41 percent of its revenue income. However, the pressure of capital expenses on the revenue account is increasing year after year. This situation demands expenditure control measures and planned capital investments on the part of Municipal Council.

Table 49: M. Cl. Financial Status at a Glance

Item	2003-04	2004-05	2005-06	2006-07	2007-08	CAGR
Revenue Account	**Rs in Lakhs**					
Opening balance	20	16.68	20	20	20	
Income	740.93	763.17	1070.13	1040.95	1019.7	8.31
Expenditure	430.58	441.81	552.93	549.16	616	9.36
Surplus/ Deficit	330.35	338.04	537.2	511.79	423.7	6.41
% of Revenue Income	44.58	44.29	50.19	49.16	41.55	46%
Capital Account						
Income	87.24	166.29	157.86	582.70	0.00	88.33
Expenditure	303.84	299.09	460.31	554.27	404	7.38
Surplus/Deficit	(216.6)	(132.8)	(302.45)	28.43	(404)	16.86

Source: Municipal Council, Kapurthala

The capital income of Municipal Council comprises loans, Grants and internal transfers from revenue to capital account for utilization towards asset creation. (Ref. table 49). It is observed that external sources in form grants contributing in the capital income during the review period. The capital account of Municipal Council goes on increasing at a CAGR of 16.86% during review period.

The following sections provide an in-depth review of the revenue account, in order to assess the Municipal fiscal status and to provide a base for determining the potential of each of the sources and the ability of Municipal Council to sustain the extent of planned investments identified under the Master Plan.

REVENUE ACCOUNT

The revenue account comprises two components - revenue income and revenue expenditure. Revenue income comprises internal resources in the form of tax and non-tax items. External resources constitute of shared taxes/transfers and revenue grants from the State and Central Government.

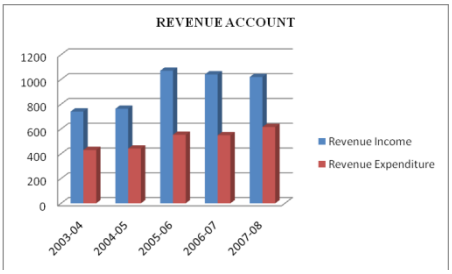


Fig No. 83: Revenue Account of M.Cl

Revenue expenditure comprises expenditure incurred on salaries; operation & maintenance cost; contributions and donations; and debt servicing.

Revenue Income

The revenue sources of Municipal council can be broadly categorized into own sources, Taxes, Water & Sewerage Service charges etc. The source wise income generated during the review period is shown in Table 50 and figure 84.

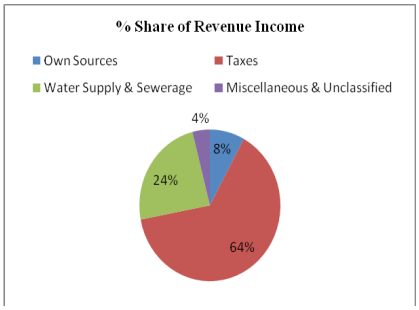


Fig.No.84: Revenue Income of M.Cl

Table 50: Source-wise Revenue income of M. Cl

Financial year	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	CAGR	%Share
Own sources	25.55	26.97	87.71	126.75	126.22	49	8
Taxes	453.72	494.79	691.13	643.65	657.59	9.72	64
Water supply & sewerage	203.45	172.16	288.92	224.24	218	1.74	24
Miscellaneous & Unclassified	58.21	69.25	2.37	46.31	17.89	(25.54)	4
Total	**740.93**	**763.17**	**1070.13**	**1040.95**	**1019.7**		

Source: Municipal Council, Kapurthala

Own sources

Own sources income includes income from Revenue fees (slaughter house fees, copying fees etc), Revenue Service account, income from renewal charges of leese shops etc. Income from own sources is 8% of the revenue income which shows that sources are not sufficient to cover the expenses of council so it depends highly on external resources for its operations. (Ref. table 50)

Taxes

The major source of income for M.Cl is taxes. It is increasing at a rate of 9.72% and contributing about 64% of total revenue income.

Table 51: M.Cl's Income from Taxes

Financial Year	2003-04	2004-05	2005-06	2006-07	2007-08	CAGR	% Share
House Tax	55.63	51.14	63.88	64.08	90	12.7	11.04
Octroi	377.97	424.98	458.76	401.32	528	8.7	74.50
Additional Excise Duty	20.00	18.59	168.41	178.14	39	18.17	14.42
Show Tax	0.12	0.08	0.08	0.11	0.12	0	0.02
Advertisement Tax	0.00	0.00	0.00	0.00	0.47	0	0.02
Total	453.72	494.79	691.13	643.65	657.59	9.72	

Source: Municipal Council, Kapurthala

- **House Tax**

In FY 2003-2004 the income from house tax was Rs. 55.63 lakhs which increase to Rs 90 lakhs in FY 2007-2008 registering a CAGR of 12.7 percent. (Refer Table 51)

- **Octroi**

Another source of income for Municipal Council is octroi registering a CAGR of just 8.7 percent. The reason being that Punjab govt. has abolished octroi on all the goods except on petrol, diesel and electricity. This income mainly comes from petrol, diesel and electricity and in lieu of that Government makes provisions of compensation by giving Grants against loss of octroi. The compensation is provided on the basis of collection of octroi of last five years.

Water Supply and Sewerage services

It is observed that taxes from water supply and sewerage services, contributing 24 percent of total revenue income during review period.

Non-Tax Revenue (Miscellaneous & Unclassified)

Non-tax sources include all non-tax revenues such as fees and charges levied. These sources include income from building license fee, development charges, trade license fee, births and death certificate, income from municipal properties and other fees and fines. The non-tax income of Municipal Council accounts for about 4 percent of its revenue income and but it goes on reducing a CAGR of 25.54 percent.

REVENUE EXPENDITURE

The revenue expenditure of Municipal Council has been analyzed, based on expenditure heads. These have been broadly classified into three categories. First is Establishment expenditure and second is Contingency and third is a Water Supply & Sewerage department. (Refer Fig. 85)

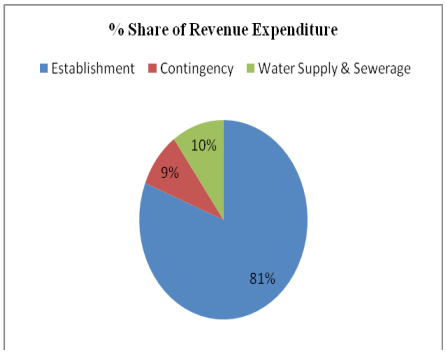


Fig No. 85: Revenue Expenditure of M. Cl

The application of funds by account head is presented in Table 52, which indicates that the overall revenue expenditure registered a CAGR of 9.36 percent against the CAGR of revenue income 8.31 per cent.

Table 52: Application of Funds by Head of Account of M. Cl.

Financial Year	2003-04	2004-05	2005-06	2006-07	2007-08	% share	CAGR
	Rupees In Lakhs						
Establishment	343.15	353.16	446.14	438.64	502.46	81.00	10.00
Contingency	45.13	46.95	48.10	53.26	47.00	9.28	1.02
WSAS	42.30	41.70	58.69	57.26	66.54	10.28	12.00
Total	430.58	441.81	552.93	549.16	616.00		9.36

Source: Municipal Council, Kapurthala

CAPITAL ACCOUNT

In general, the capital income of Municipal Council comprises of loans, grants and contributions and transfers from revenue surplus. Capital grants contribute the major part in Capital Income with 96 percent of the capital receipts during the review period and loans for the rest i.e. 4 percent.

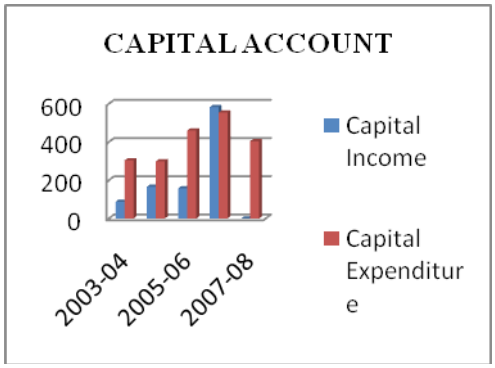


Fig no 86: Capital Account of M. Cl

Table 53: Details of Capital Account of M. Cl

	2003-04	2004-05	2005-06	2006-07	2007-08	% Share	CAGR
Capital Income	Rs in Lakhs					Cap. Inc.	
Capital Grants	87.24	124.63	157.86	582.70	0.00	96	(100)
Loans	0.00	41.66	0.00	0.00	0.00	4	0
Total	87.24	166.29	157.86	582.70	0.00		(100)
Capital Expenditure							
WSAS Department	122 .30	127.07	167.19	168.92	172.50	37.4	9.0
Development of roads	27.59	24.97	43.74	43.90	11.00	7.47	-20.5
Land Scaping	11.50	4.69	14.99	15.94	13	3	3.1
Construction of streets & Drains	26.46	29.45	53.54	65.45	28.49	10.06	1.9
Additional Street Lights	21.99	12.68	15.79	40.40	24	6	2.2
Slum Improvement	4.85	9.24	9.72	11.86	10.00	2.25	19.8
Others	89.15	90.99	155.34	207.8	147.01	34	13.3
Total	303.84	299.09	460.31	554.27	404.00		7.38

Source: Municipal Council, Kapurthala

The figures presented in Table 53, indicate that about 49 percent of Municipal Council's capital expenditure during the review period is met from its capital receipts. The rest is contributed by the revenue/municipal surpluses.

On an average, over the past five years, the majority of capital expenditure has been directed towards public works. Major investments have been in the water supply sector, which accounted for 37.4 percent of the total investment.

In the overall municipal finance system, it is observed that Municipal Council has generated 64% of total revenue income through Taxes (Octroi, Excise duty etc) and 96% of total capital income comes from Capital Grants during last five years and maximum expenditure is incurred on general administration i.e. 80% of total revenue expenditure and 38% of total capital expenditure is incurred on Water Supply & Sewerage department.

8.2 FINANCIAL STATUS OF IMPROVEMENT TRUST

The finances of the Improvement Trust have been reviewed for the last five years, commencing from the financial year 2003-04 to 2007-08. The items of both receipts and expenditure are classified under revenue and capital accounts as per their sources and uses.
The revenue income of Improvement Trust had reduced to a level of Rs. 112.24 lakhs in FY 2007-08 from Rs 134.31 lakhs during FY 2003-04, registering a decreasing CAGR of 4.38 percent, while revenue expenditure increased at a CAGR of 18.49 percent (Ref. table 54). It projects a not a good financial condition of Improvement trust. Revenue account is registering a reducing revenue surplus at CAGR of 12.47. However, the pressure of capital expenses on the revenue account is increasing year after year. This situation demands expenditure control measures and planned capital investments on the part of Improvement Trust. (Refer Fig. 87)

Table 54: Improvement Trust Financial Status at a Glance

Item	2003-04	2004-05	2005-06	2006-07	2007-08	CAGR
Revenue Account	**Rs in Lakhs**					
Opening balance	0.66	0.09	0.71	1.17	2.35	
Income	134.31	78.69	18.53	90.36	112.24	(4.38)
Expenditure	25.56	67.1	118.68	67.61	50.39	18.49
Surplus	109.41	11.68	(99.44)	23.92	64.2	(12.47)
% of Revenue Income	81	15	(536)	26.4	57	(8.41)
Capital Account						
Income	192.59	149.59	243.57	429.15	238.67	5.5
Expenditure	259	90.57	97.35	137.58	26.7	(43.3)
Surplus/ Deficit	(66.41)	59.02	146.22	291.57	211.97	0

Source: Improvement Trust, Kapurthala

The capital income of Improvement Trust comprises loans, Grants and internal transfers from revenue to capital account for utilization towards asset creation.

It is observed that external sources in form grants contributing in the capital income during the review period.The following sections provide an in-depth review of the revenue account, in order to assess the fiscal status to provide a base for determining the potential of each of the sources and the ability of Improvement Trust to sustain the extent of planned investments identified under the Master Plan.

REVENUE ACCOUNT

The revenue account comprises two components - revenue income and revenue expenditure. Revenue income comprises internal resources in the form of tax and non-tax items. External resources constitute of shared taxes/transfers and revenue grants from the State and Central Government. Revenue expenditure comprises expenditure incurred on salaries; operation & maintenance cost; contributions and donations; and debt servicing.

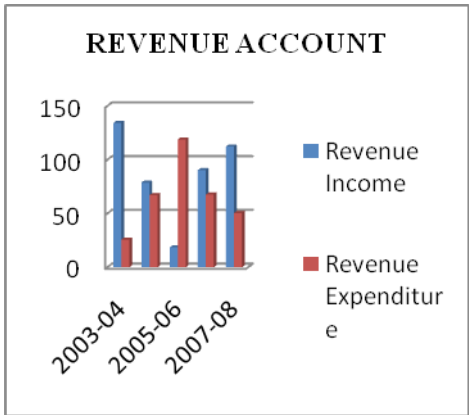


Fig No. 87: Revenue Account of Improvement Trust

REVENUE INCOME

The revenue sources of Improvement Trust can be broadly categorized into interest, deposits etc. The source wise income generated during the review period (Refer table no.55)

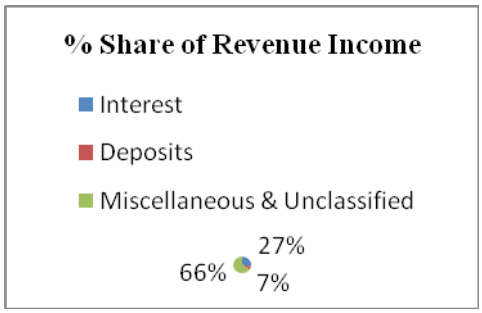


Fig No. 88: Revenue Income of Improvement Trust

Table 55: Source-wise Revenue income of Improvement Trust

Financial year	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	CAGR	%Share
Interest	1.99	0.20	1.52	26.96	86.68	157	27
Deposits	4.59	2.10	1.94	13.87	11.13	25	7
Miscellaneous & Unclassified	127.75	76.39	15.07	49.53	14.43	(42)	66
Total	134.31	78.69	18.53	90.36	112.24	**(4.38)**	

Source: Improvement Trust, Kapurthala

Interest

Incomes from interest from securities have registered a CAGR of 157% with a contribution of 27% of total revenue income.

Non Tax Revenue (Miscellaneous & Unclassified)

Non-tax sources include all non-tax revenues such as fees and charges levied. These sources include income from recovery of advances, suspense account etc. The non-tax income of Improvement Trust contributes 66 percent of its total revenue income and but it goes on reducing at a CAGR of 42 percent.

REVENUE EXPENDITURE

The revenue expenditure of Improvement Trust has been analyzed, based on expenditure heads. These have been broadly classified into three categories.

- Establishment expenditure
- Contingency

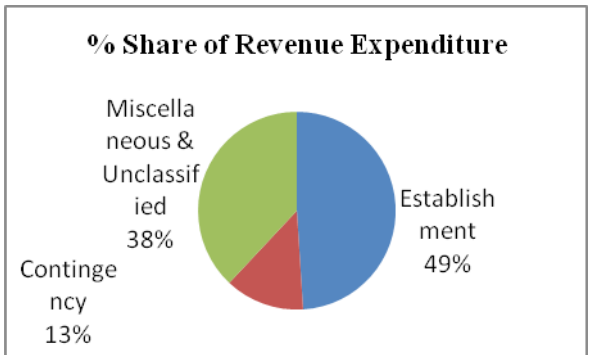


Fig No. 89: Revenue Expenditure of Improvement Trust

- Miscellaneous category

The application of funds by account head is presented in Table 56, which indicates that the overall revenue expenditure registers an increasing CAGR of 18.49 percent against a reducing CAGR of Expenditure 4.38 percent of revenue income.

Table 56: Application of funds by head of Account of Improvement Trust

Financial Year	2003-04	2004-05	2005-06	2006-07	2007-08	% share	CAGR
	Rupees In Lakhs						
Establishment	19.79	22.81	29.04	47.17	42.43	49	21
Contingency	5.29	7.21	9.00	14.13	6.69	13	6
Others	0.48	37.08	80.64	6.31	1.27	38	28
Total	25.56	67.1	118.68	67.61	50.39	100	18.49

Source: Improvement Trust, Kapurthala

CAPITAL ACCOUNT

In general, the capital income of Municipal council comprises of loans, grants and contributions and transfers from revenue surplus. A Sale proceeds contributes the major part in Capital income with 92 percent of total capital receipts during the review period, and Loans for the rest.

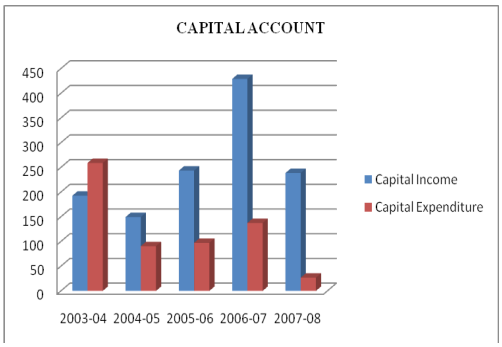


Fig No.90: Capital Account of Improvement Trust

Table 57: Details of Capital Account of Improvement Trust

Head	2003-04	2004-05	2005-06	2006-07	2007-08	% Share	CAGR
Capital Income	**Rs in Lakhs**					**Cap. Inc.**	
Capital Grants	0.00	0.00	0.00	0.00	0.00	**0**	0
Loans	100	0.00	0.00	0.00	0.00	8	(100)
Sale Proceeds	92.59	149.59	243.57	429.15	238.67	92	27
Total	192.59	149.59	243.57	429.15	238.67		5.50
Capital Expenditure							
Development works	251.09	86.76	64.52	93.42	15.55	84	(50.11)
Sale of Trust Land	1.02	1.60	3.30	5.14	0.00	2	(100)
Refund of Earnest Money	0.00	0.21	14.58	0.10	1.83	3	0
Income Tax	0.00	0.00	0.10	26.83	8.27	6	0
Others	0.00	2.00	14.85	12.09	1.05	5	0
Total	259	90.57	97.35	137.58	26.7		(43.33)

Source: Improvement Trust, Kapurthala

The figure shown in Table 57 indicates that the capital expenditure has been fulfilled by capital income during review period. On an average, over the past five years, the majority of capital expenditure has been directed towards Development works, which accounted for 84 percent of the total investment.

In the overall finance system, it is observed that Improvement Trust has generated 65% of revenue income from its Miscellaneous Sources(Fees & Fines, Recovery of Advances etc) and 92% of total income comes from Sale Proceeds during the review period which means pressure of capital expenses on revenue account is increasing year after year. And maximum expenditure is incurred on development works i.e. 84% and 28% of total revenue expenditure is incurred on general administration.

CHAPTER 9

VISUALIZING THE FUTURE

9.0 PROJECTIONS AND REQUIREMENTS FOR LPA

As study part of Kapurthala Local planning is done based upon which SWOT has been worked out in terms of strengths, weakness, opportunities and threats. Further all the issues related to different sectors have been worked out.

Now it becomes important to project the future population which would be the basic for working out the land use and infrastructure requirements. The population is the prime factor of the judgment for the development plan, since it defines the quantum of the existing extents for the development and future requirement by the needed projections. The past population trends and the future growth pattern of the population defines the needs and the extents of the Infrastructure development and development of the habitat.

9.1 POPULATION PROJECTION

The prime objective of any Master Plan is to assess the present situation and accordingly, project the future population to be come up in the next decades, and thus calculating the requirement of physical and social infrastructure in order to cater to that much population. To arrive at a conclusive projection figure, five methods of population projections have been used for the Kapurthala town as well as the whole LPA. The methods used for projecting population are:

1. Arithmetic Progression Method.
2. Geometric Progression Method.
3. Incremental Increase Method.
4. Graphical Projection Method.
5. Exponential Method.

The projected figures came from these five projection methods are as follows:

Table 58: Population Projection for Kapurthala M.Cl. (2001-2031)

Sl. No.	Projection Method	2001	2011	2021	2031	Average CAGR
1	Arithmetic Progression	85686	99774	113862	127950	1.35
2	**Geometric Progression**	**85686**	**111408**	**144851**	**188334**	**2.66**
3	Incremental Increase	85686	104764	128833	157892	2.06
4	Graphical Projection	85686	115000	145000	195000	2.78
5	Exponential	85686	120720	170077	239615	3.49

After calculating the projection figures for all five methods, Compound Annual Growth Rate (CAGR) of the decadal increase in population registered in all five methods has been calculated, and lastly an average is taken out. The logic behind taking CAGR of a decadal population is to determine the annualized population growth rate in that decade, which gives the growth rate at which the population is considered to be have been grown consistently. Thus, the average CAGRs came for all five methods have been compared with the average of the CAGR for the population increase registered in the previous decades of 1971 to 2001for the town.

While comparing both past and future CAGRs, it was found that the average CAGR of Geometric Progression (2.66) as well as Graphical Progression (2.78) come nearer to the average CAGR of 2001 (3.00). But the projections of Graphical Progression Method are generally rough and simple, and don't give a balanced picture. So Geometric Progression Method, which provides a moderate increase in population, is selected for the final projection.

For villages of Kapurthala LPA, Exponential Method has been taken as its average CAGR is closest to that of the previous decades. Moreover, the villages have more potential to grow in size as well as population because of their untapped resources.

Thus, the conclusive projection figures for Kapurthala town as well as the LPA are as follows:

Table 59: Population Projection for Kapurthala LPA

Sl. No.	Settlement	2001	2011	2021	2031	Increase 2001-2031
1	Municipal Council	85686	111408	144851	188334	120%
2	LPA Villages	48894	69143	97778	138271	183%
3	Local Planning Area	134580	180551	242629	326605	143%

Thus, based upon the projected future population for Kapurthala Local Planning Area, the existing condition in all sectors like social infrastructure, physical infrastructure, traffic and transportation has been studied, and accordingly analyzed. Thus the future requirements for the Kapurthala LPA sector wise have been worked out.

9.2 PHYSICAL INFRASTRUCTURE

Physical Infrastructure refers to the technical structures that support the society, like Water supply lines and Over Head Supply Reservoirs (OHSR), sewerage system, solid waste management, storm water drainage, traffic and transportation, telecommunication, etc. In other way, they facilitate the production of goods and services.

9.2.1 WATER SUPPLY

Regarding water supply, the existing figures have been taken, along with the standards assigned for them in the Urban Development Plans Formulation and Implementation (UDPFI) Guidelines. Accordingly the future projections and requirements have been calculated. For calculating the demand of future years, the data of previous assigned year is taken as the existing figure, and accordingly requirement has been calculated. The per capita water supply of 2009, i.e. 140 litres, has been taken into consideration. The present supply thus comes out to be 14.8 MLD. Accordingly, the demand comes out to be 15.0 MLD for 2011 and 25.4 MLD for 2031, thus having a requirement of 0.2 and 5.9 MLD, respectively.

Table 60: Water Supply requirements for Kapurthala LPA 2031

Service head	Existing/ desired level			Service Levels, Demand and Requirement							
				Unit	Existing (2008)	By Year 2011		By Year 2021		By Year 2031	
	Indicator	Current level	Desired level			Demand	Requirement	Demand	Requirement	Demand	Requirement
Daily Supply	Per-capita supply (lpcd)	140	135	MLD	14.8	15.0	0.2	19.6	4.5	25.4	5.9
Treatment	Treatment capacity against supply (%)	100	100	MLD	14.8	15.0	0.2	19.6	4.5	25.4	5.9
Distribution Network	Distribution Network length against road length (%)	109	85.0	KM	139.0	90.9	-48.1	118.2	27.3	153.7	14.7
Elevated Storage capacity	Elevated Storage capacity w.r.t Supply (%)	49.2	33.0	ML	7.3	5.0	-2.3	6.5	-	8.4	1.1
Refurbishment of old distribution network				KM							
Metering System/ Installation of water meters				Nos	16220	20256	4036	26337	6081	34243	7906

Regarding water treatment, there is no as such Water Treatment Plant existing in the town. But the water is treated right at the tubewell point through Chlorination Dozer System. Thus the amount of treated water in existing conditions is same to that of the supply, i.e. 14.8 MLD. The rest figures too are same to that of water supply. While comparing the length of water supply with that of the road length, the network boasts of a healthy state, i.e. 109% in comparison to the standard of 85%. By 2031, 153.7 KM of water supply system will be

required. The demand in case of Overhead storage Reservoir (OHSR) is of 8.4 MLD for 2031, where as current level is 7.3MLD. Lastly, in case of Water Meters, 16220 meters are installed till 2009, while 34243 meters in total will be required for the population of 131876, thus showing a total requirement of 18023 for the period of 2009 to 2031.

Thus, the water supply situation in case of Kapurthala town shows a normal demand in case of OHSR (or elevated storage capacity) and distribution network for the year 2031. But there is a major spurt in the demand of water supply as well as water treatment, apart from the installation of water meters.

9.2.2 SEWERAGE

With respect to the increase in population of the town, the requirement in sewerage sector has been calculated in different sectors of sewerage system.

Table 61: Projections and Requirements of different aspects of Sewerage System

Service head	Existing/ desired level			Service Levels, Demand and Requirement							
						By Year 2011		By Year 2021		By Year 2031	
	Indicator	Current level	Desired level	Unit	Existing (2009)	Demand	Requirement	Demand	Requirement	Demand	Requirement
System Coverage/ Collection System	Collection Length against Road Length (%)	56.5	100	KM	72.31	106.95	34.64	139.06	32.11	180.8	41.74
Treatment	Treatment capacity against supply (%)	100.0	100	MLD	25.00	12.03	-	15.64	-	20.34	-
Intermediate pumping stations, Pumping machinery & Transmission mains				ML			0.00				

In coverage aspect, the existing length of sewerage system is 72.31 KM, thus making a figure of 56.5% with respect to the road length in the town in comparison to the desired level of 100%. This shows that almost half of the town is still to be covered by sewerage system, and thus urges to improve the length of sewerage system existing within the town. By 2031, 180.80 KM length of sewerage system will be required thus showing a need of 108. 49 KM of additional line to be laid down by then. In case of treatment of sewage, Kapurthala is the only town among all the 6 study towns which has a Sewerage Treatment Plant (STP). The

STP treats the whole sewage generated as it is of 25 MLD capacity, and thus is sufficient for the sewage generated till 2031.

The future scenario of this sector too is normal. Though there is a need of installation of more than double sewerage system by 2031, the treatment capacity is enough for that time period. However, proper maintenance of STP is very essential so that its capacity doesn't go down much with the passage of time and can handle the sewage generated.

9.2.3 SOLID WASTE MANAGEMENT

Regarding solid waste management, all aspects have been taken in to consideration, like the total amount of waste generated, system of waste collection and number of vehicles used for that purpose.

Table 62: Projections and Requirements of different aspects of Solid Waste Management System

Service head	Existing/ desired level			Service Levels, Demand and Gaps							
						By Year 2011		By Year 2021		By Year 2031	
	Indicator	Current level	Desired level	Unit	Existing (2009)	Demand	Requirement	Demand	Requirement	Demand	Requirement
Waste generation	Per-capita waste generation (gpcd)	236	250.0	MT	25.00	27.85	2.85	36.21	8.36	47.08	10.87
Waste Collection	Collection performance (%)	100.0	100.0		25.00	27.85	2.85	36.21	8.36	47.08	10.87
Vehicle utilisation	Trips per Vehicle per day	5	2.50								
Primary collection	No. of Hand carts			Nos	0.00	66	66	85	20	111	26
	Dust Bins				25000						
Secondary collection	Container bins			Nos	24.0	46	22	60	14	78	18
	Dual loaded dumper placers			Nos	1.00	15	14	20	5	26	6
	Tractor Trolleys				4.00						
Waste transportation	Vehicle Capacity			MT	5.00	11	6	14	3	19	4
Disposal	Composting yard			Acre	12.0	13.37	1.37	17.38	4.01	22.60	5.22
Slums/ Sanitation/ Public conveniences	Slum popl. per seat of Public convenience	90.00		Seat	0	263	263	342	79	444	103

The waste generation in future in 2031 will be 47.08 metric tonnes taking a standard of 250 gram per capital daily of solid waste generation. The present situation is 236 grams daily for one person and 25 MT for the town. The same situation exists for the waste collection as the

total waste generated is collected. The average no. of trips per vehicle is 5. With regard to primary waste collection, 25000 dust bins have been provided to the citizens of Kapurthala, from which waste is directly collected by tractor trolleys and dumper placers. So there is no existence of hand carts for primary collection, and thus by 2031, 111hand carts will be required by the municipal council. In the case of secondary stage of data collection, 24 container bins are present with the council. By 2031, total 78 bins will be needed, making an addition of 54 bins. For the vehicles used for waste collection, there is no any proposal to increase the existing 4 tractor trolleys, while there is huge increase proposed in the no. of dumper placers to be used by 2031. By that time, additional 25 dumper placers should be operational against the existing 1 dumper placer. Accordingly, the capacity of the vehicles used in average comes out to be 5 MT per vehicle for all trips in a day. By the end of planning period, the capacity has to be increased to 19 MT, either by increasing the no. of vehicles or trips. The area of the composting yard presently is 12 acres. By 2031, 22.6 acres of land would be required, which is calculated by multiplying the existing availability of composting yard per MT of the waste with the solid waste expected to be generated by 2031. Lastly, for slum dwellers, it is figured out that one public convenience would be needed on each 90 slum dwellers. Though no such existing data is available, but by 2031, on 444 slum dwellers, a public convenience would be required.

Thus, there is significant increase in almost all aspects of solid waste collection and disposal system. Specially, introduction of hand carts and public conveniences for slum people are two new things to be introduced. Also, the vehicles used for solid waste collection and disposal in the second stage are proposed to be fully of dumper nature, as they are more efficient for this.

9.2.4 STORM WATER DRAINAGE NETWORK

Table 63: Projections and Requirements of different aspects of Drainage System

Service head	Existing/ desired level			Service Levels, Demand and Gaps							
						By Year 2011		By Year 2021		By Year 2031	
	Indicator	Current level	Desired level	Unit	Existing (2009)	Demand	Requirement	Demand	Requirement	Demand	Requirement
Network reach	Road length covered with drains (%)	85.94	100.0	KM	110.0	106.95	0.00	139.06	29.06	180.80	41.74
Network – type	Kutcha open (%)		100.0	KM							
	Pucca open (%)	85.94	0.00	KM	110.0						
	Pucca closed (%)		100.0	KM	0.00	106.95	106.95	139.06	32.11	180.80	41.74
	Total network length			KM	**110.0**	106.95		139.06		180.80	
Conversion	Pucca Open to Pucca Closed Drains (%)						106.95		3.05		
New Formation	New Pucca closed drains			KM					29.06		41.74

The town is having a good system of storm water drainage, specially in the old town area which is of old times. Moreover, being a princely state, the old town area is located on a higher ground and thus whatever storm water is generated, flows out according to the gradient of the slope. Almost 86% of the town roads have storm water drains along them, thus making the figure of 110 km of storm water lines. The total length of drain required by 2031 comes out to be 180.80 km. It is proposed that whatever drains will come up will be pucca closed drains only. Presently all the drains are of pucca open nature, which is proposed to be converted to closed ones by 2011. Rest 41.74 km of drains proposed by 2031 will be pucca closed drains.

9.2.5 TRAFFIC AND TRANSPORTATION AND STREET LIGHTS

The traffic and transportation provides the connectivity between the different landuses/parts of an area, and thus are vital to know for the future scenario of that area. The total municipal road length comes out to be 128 km, with per capita availability of 1.32 m against the standard of 0.96 m. The demand of road length according to the standards is projected as 181 km by 2031. The average road width is 7 m with respect to all types of roads available within the town, which is according to the desired level. These roads are divided into 4 types, with

bituminous roads forming the major share, i.e. 75.52 km out of 128 km. The other three are concrete (23.04 km), earthen (28.16 km) and WBM (1.28 km) roads. The projections are made taking the viewpoint that only two types of roads should be built with more share to bituminous roads (85% of total roads), and the rest 15% to concrete roads. Accordingly, 153.68 km of roads is to be built under bituminous roads and 27.12 km under concrete. As the concrete roads existing are already more than the required, only 4.08 km more of concrete roads will be required by 2031. In case of bituminous roads, additional 78.16 km would be required. In total, 153.68 km of bituminous roads have to be constructed by 2031. While other two types of roads has to be upgraded to bituminous and concrete roads, the remaining required length of these two will be fulfilled by constructing new roads.

With regard to the street lights, the average spacing between two lamp poles comes out to be 27.65 m, which is calculated by dividing the total length of roads by the total no. of street lights. By 2031, 6027 street lights will be required in comparison to 4629 presently, taking the standard spacing of 30 m between the two poles. Also, the share under different types of lights will be changed with priority given to high power lamps, followed by tubelights. There will be replacement of 1430 tubelights with high power lamps by 2011, while new installation of tube lights is proposed for 2021 and 2031. On the other hand, new installation is proposed for high power lamps and high mast lamps for all three time periods, i.e. 2009-2011, 2011-2021 and 2021-2031. By 2031, 739 more tubelights and 2782 more high power lamps will be required. There is also nominal increase in case of high mast lamps. There is also a proposal for junction improvement of 7 junctions by 2031.

Thus, there is a need of increase of roads by 43 kms, with most to be come up as bituminous roads, either through upgradation or new construction. In case of street lights too, more high power lamps are proposed, with a substantial share to tubelights too.

Table 64: Projections and Requirements of different aspects of Traffic and Transportation

Service head	Existing/ desired level			Service Levels, Demand and Gaps							
						By Year 2011		By Year 2021		By Year 2031	
	Indicator	Current level	Desired level	Unit	Existing (2007)	Demand	Requirement	Demand	Requirement	Demand	Requirement
Degree of Connectivity	Per-capita road length (mt)	1.32	0.96	KM	128	107	-	139	11	181	42
Road width	Average road width (mt)	7.00	7.00								
Road surface	Concrete (%)	18.00	15.00	KM	23.04	16.04	0.00	20.86	0.00	27.12	4.08

	BT (%)	59.00	85.00	KM	75.52	90.91	15.39	118.2	27.29	153.68	35.48
	WBM (%)	1.00	0.00	KM	1.28	-		-			
	Earthen (%)	22.00	0.00	KM	28.16	-		-			
Total municipal road length				**KM**	**128.00**						
Up-gradation	WBM to CC			KM							
	WBM to BT			KM		1.28	1.28				
	Earthen to BT			KM		28.16	28.16				
New formation	CC			KM		16.04	0.00	20.86	0.00	27.12	4.08
	BT			KM		90.91	15.39	118.2	27.29	153.68	35.48
Improvements to identified major roads	Widening & Strengthening, utility shifting, beautification										
	ROBs/ Flyovers			LS							
Street lighting	Spacing between lamp poles (mt)	27.65	30.00	Nos	4629	3565	0	4635	6	6027	1392
	Tube lights (%)	54.00	30.00	Nos	2500	1070	0	1391	321	1808	418
	Lamps			Nos	0	2492	2492	3240	748	4213	973
	MVL	0.00	0.10	Nos		4		5	1	6	1
	SVL										
Street lighting	MH Lamps										
	Halogen Lamps										
Replacements	Tube lights with high power lamps			Nos			1430				
New installations	Tube lights			Nos			0		321		418
	High Power Lamps			Nos			1061		748		973
	High mast lamps			Nos			4		1		1
Traffic Mgmt	Junction improvement					1	1	2	1	4	2

9.3 SOCIAL INFRASTRUCTURE

9.3.1 EDUCATION

Education sector basically caters to the young age group of the population and the projections made here are based on the norms and standards set up in UDPFI guidelines, just like the norms of different aspects of physical infrastructure.

In case of Senior Secondary Schools, which also includes Secondary Schools, the demand comes out as 25 in M.Cl, which is already fulfilled. There is need of 10 additional senior

secondary or secondary schools, and the present 8 schools are insufficient enough to cater to the combined population of all the villages projected for 2031.

Coming to higher level college education, UDPFI sets a standard of one college per 125000 population. As already the town has 3 colleges, there is no need of establishment of a new college but for villages needs additional of 1 college till 2031. A polytechnic/Nursing college/Industrial Training Institute (ITI) is assigned for every 10 lakh population. As the town has already a Govt. Polytechnic as well as a Nursing College, so no need arises for a new technical institute. The town has two Technical Training Centres for teachers too, required generally for a population of 10 lakhs. Thus, there is also no need of any Technical Training Centre. In case of villages, required one college institution for higher studies as per the population projected for 2031 and as per UDPFI standard.

9.3.2 HEALTH CARE FACILITIES:

In terms of health institutions, a General Hospital of 300-500 beds capacity would be required by 2021, taking into consideration its standard of being on 250000 population. Though there is a Civil Hospital in the town, but it is of 250 beds capacity only. Either it can be upgraded to the level of General Hospital, or a new Hospital can be proposed. Polyclinics too, including Community Health Centres or Primary Health Centres, have the same criteria of 1 lakh population, and would be required in 2 no. against the existing 1. 4 nursing homes would be needed for the projected 1.9 lakh population of the town by 2031. Moreover, 13 dispensaries would be required by the end of the planning period, against the existing 5 ones. Apart from it, a Veterinary Hospital too is present in the town for which no any standard is provided.

Coming to the village level, 1General Hospital of 300-500 beds capacity,1 intermediate hospitals of 100-300 beds capacity, 1 intermediate hospitals (B), 1 Polyclinics too, including Community Health Centres or Primary Health Centres,3 nursing home and 9 dispensaries projected to be in need by 2031. Already there are 7 dispensaries in villages, including the ayurvedic and homeopathic ones, so no need of additional dispensaries. There are already 3 veterinary hospitals in the villages.

9.3.3 SOCIO CULTURAL FACILITIES

According to the UDPFI standards, 38 Community Rooms would be required by the planning year 2031. Presently there is no facility of this level in the town. There is 1 Community Hall and 2 libraries in the town. 13 such halls would be required by 2031. A Recreational Club too is required per 1 lakh population, amounting to 2 such Clubs by the end of the planning year.

A Music, Dance and Drama Centre too is proposed for a population of 1 lakh. Like Recreational Club, 2 such centres would be in need. This shall be reflected in the process of planning the zonal plan of Kapurthala town.

9.3.4 UTILITIES SERVICES

Police Station:

The gross requirement by the year 2031 is 2 Police Stations against the existing 4 and 5 Police Posts *(Chowkis)*. For villages, 2 Police Stations and 3 police post is needed by 2031. All the other requirements will be met by the police facilities available in the town.

Fire Station:

A Fire Station or Sub Fire Station is required per 2 lakh population within a distance of 1-3 km from the other one as per UDPFI. As the town already has 1 fire station, so the requirement is met till 2031. For villages, one Fire Station or Sub Fire Station is needed by 2031. This shall be reflected in the process of planning the zonal plan of Kapurthala town.

9.4 PARTICIPATORY APPROACH

9.4.1 CONSULTATIVE MEETINGS

Meetings have been held with different departments and officials of Kapurthala on January 21 and March 5, 2009 to source their views on the existing development scenario of the town and surrounding areas, and their suggestions regarding the pattern of development that should guide the future growth of the area. (Refer Fig. 91, 92 and 93) The Think Tank and the Stake Holders are the major forums, which have been used for ensuring the preparation of Master Plan in a more participatory manner. Participants in the meeting included DC, Kapurthala, Baba Balbir Singh Seechewal, Brigadier Sukhjit Singh, DTP, Kapurthala and prominent citizens, besides officials of the different departments including representatives who have been assigned the task of preparing the Master Plan of Kapurthala by the state government. Major recommendations emerging from the deliberations are:

- The development along Kapurthala- Jalandhar Road needs to be properly addressed considering the location of major institutions in the area.
- Considering the proposal of location of Industrial Estate and IT Park on Kapurthala-Subhanpur Road, the development of the area needs to be rationalised while preparing the Master Plan.
- Historical and religious importance of Sultanpur Lodhi and its close interaction with Kapurthala need to be appropriately reflected while preparing the Master Plan.

- Toursim should be made integral part of Master Plan preparation considering the close proximity of Kapurthala with Science City, Kanjli Wetlands, historical and cultural places of Kapurthala, Sultanpur Lodhi, Goindwal Sahib, Tarn Taran, Amritsar and Wagha Border.
- State of art health related facilities based on prescribed norms and standards should be provided in the Master Plan.
- Social infrastructure including old age home and good quality educational institutions should be created under the Master Plan.
- The Building Bylaws needs to be reviewed in the core area for decongesting the old areas.
- Public awareness about the planned development needs to be created in order to make planning process public driven. Coordination among the various govt. departments should be promoted to rationalise the development process.
- Issue of environment and preserving water bodies should be given highest priority while preparing the Master Plan, and should be made integral part of planning and development process, to achieve the required level of sustainability.
- Man-made and natural heritage involving historical, cultural buildings and wetlands should be properly maintained and conserved in the Master Plan.
- Issue of managing waste, including industrial, solid and medical, should be appropriately addressed in the Master Plan.
- Objective of making Kapurthala free from slums, should be made integral part of the Master Plan.

Figs No. 91& 92: Meeting with Think Tank and Stake Holders at D. C. Office, Kapurthala

Fig No. 93: Meeting with Deputy DTP, Kapurthala

9.5 SWOT ANALYSIS

The growth and development of Kapurthala can be largely attributed to its princely status and large number of heritage buildings created in the town. With Phagwara emerging as the major industrial and trade hub in the post independence period, Kapurthala became second in economic importance in the district. However with the setting up of RCF in 1986 in Hussainpur at Sultanpur Lodhi Road, and with the coming up of some prominent institutions on Jalandhar Road, i.e. Pushpa Gujral Science City, Sardar Swaran Singh National Insitute of Renewable Energy Resources and Punjab Technical University, the growth momentum has accelerated over a period of time. With the coming up of new developments like Jail, Industrial Focal Point, IT Park, Site for Transport Department, Urban Estate, new DAC, etc., the town is likely to regain its lost glory.

Based on the various meetings held with stake holders, analytical studies made, analysis carried out and identification of major problems, a SWOT Analysis, in terms of identifying strength, enumerating weaknesses, quantifying Opportunities and defining Threats have been made both for the Kapurthala and the LPA, in order to lay down the agenda for preparing the Master Plan for the Kapurthala LPA.

STRENGTHS

1) Kapurthala is the district headquarters, so it has all the administrative facilities and importance. The status of Kapurthala as a District Headquarter has been the reason for the development up till now.
2) Kapurthala is emerging as a major educational hub with Punjab Technical University, Engineering College, Rice Research Institute of Punjab Agricultural University,

Industrial Training Institute, Nursingh College and many other private educational institutions.

3) Important medical institutions like Civil Hospital, Irwin Jubilee Memorial Hospital, etc.
4) Presence of large number of Rice Shellers and other Small Scale Industries.
5) Functional road network within the town and with all the important places around or nearby it.
6) Numerous sites and places are present of historical, cultural and religious importance.
7) Kanjli Wetlands on Kali Bein. It has developed as a major picnic spot.
8) Rail Coach Factory in Hussainpur on Sultanpur Lodhi Road. This is in fact, the largest industrial establishment in the district.
9) Major institutions coming up on Jalandhar Road, namely Pushpa Gujral Science City, Sardar Swaran Singh National Institute of Renewable Energy (SSS-NIRE), etc. Science City has emerged as a good modern knowledge spot.
10) Jail, Industrial Focal Point and IT Park are coming on Kapurthala-Subhanpur Road which will boost up the economy.

WEAKNESSES

1) Unplanned growth with narrow streets in old town area. Mushrooming of residential colonies with mixed landuse, leading to uneconomical use of land with remarkable loss of fertile land in the peripheral areas.
2) Without adequate facilities, the unplanned commercial activitiesare present along the roads and residential areas.
3) Heritage tourist spots are in a state of total disrepair, e.g. Gol Kothi, Peeli Kothi, Nihal Palace, etc.
4) Inadequate accommodation for tourists, both religious and cultural. Major reason being availability of abundant hotels in the nearby Jalandhar city.
5) Again, proximity to Jalandhar (a big commercial centre and a big magnet for Kapurthala town) prevents the development of big shopping complexes in Kapurthala.
6) Absence of other recreational centres, like restaurants, multiplexes, parks, etc.
7) Approach road from Jalandhar to Kapurthala does not facilitate mass influx of tourists.
8) Through traffic from outside the town create additional burden on town roads.
9) Inadequate parking space in commercial areas.
10) Railway crossings on major roads lead to traffic problem.
11) Govt/Semi Govt. offices are located at scattered places, far from each other.

12) 5% population unserved by piped water supply.
13) 35% unserved population under sewerage facility.
14) 35% unserved area under storm water drainage of the old town.
15) No segregation of waste at primary level.
16) Street lighting is inadequate in Kapurthala town.

OPPORTUNITIES

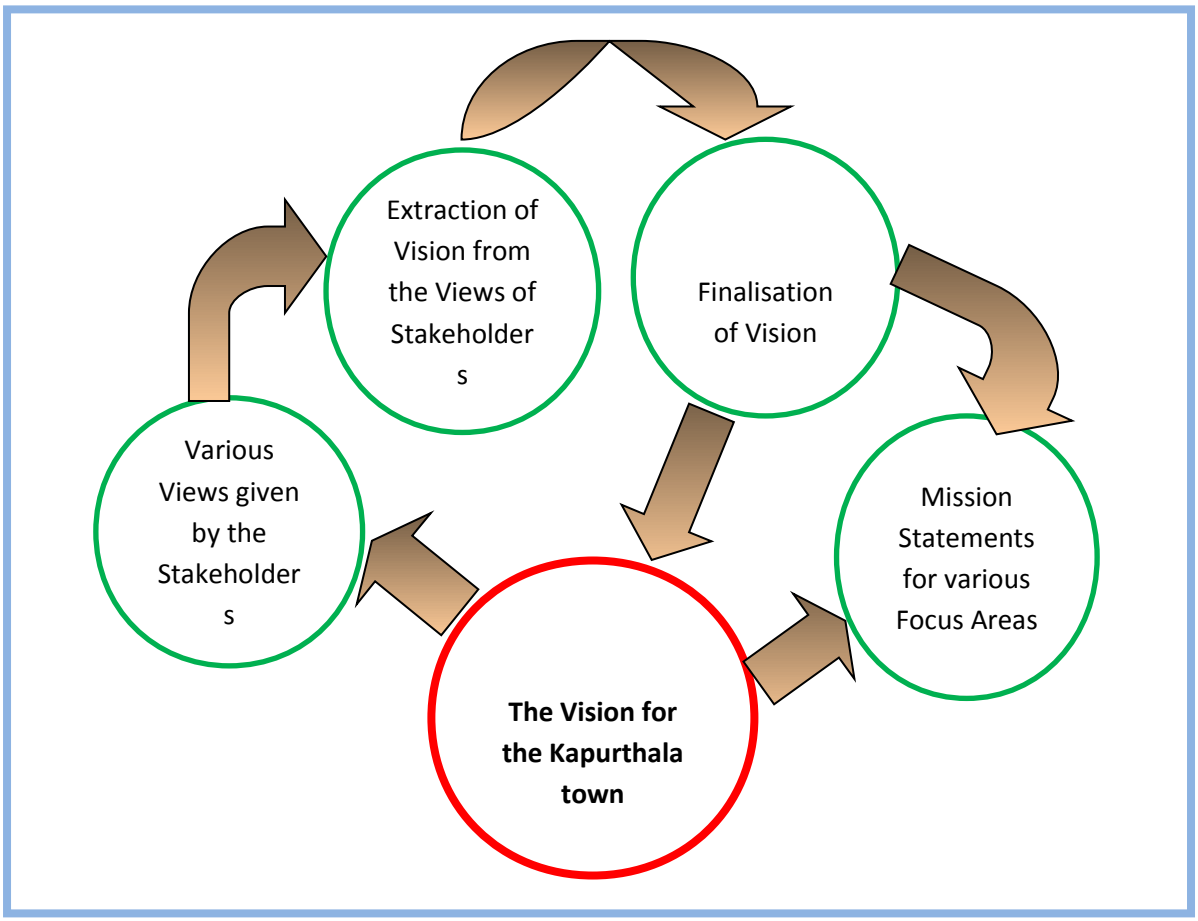
1) Immense possibilities to be developed as a tourist centre of heritage, religious and ecological importance.
2) Development of Ring Road can bring a lot of development in the peripheral areas.
3) Construction of District Administrative Complex at Nurpur Dona can bring many facilties there.
4) Establishment of Industrial Focal Point and IT Park in Jhal Thikriwal Village on Subhanpur Road may boost up the industrial scenario and the employment status of the region.
5) The Urban Estate coming up in the town can bring a lot of planned township kind of development with all facilities centered in one area.
6) Real Estate development can take a boom because of all these, with construction of new shopping malls and multiplexes.
7) Construction of Parking Lots at appropriate places can solve the parking problem.
8) Signages can place at several places to provide right directions and distance to the prominent places within and around the town.

THREATS

1) Construction around Kanjli Wetlands may hamper the ecology and beauty of the area.
2) Present trend of commercial development along major roads may create parking problems.
3) Continue anthropoligal intervention in the old and dilapidated historical buildings may shorten their life.

9.6 VISION-2031

Vision and Mission



Based on the outcome of discussions held with various stakeholders, intellectuals, non-government organizations, community based organizations, professionals, elected members and officials of the urban local body, professionals from the town and country planning department, detailed study and analysis made of the existing and historical growth and development mechanism, it has been observed that Kapurthala as an administrative and heritage town has enormous potential for rapid economic and physical growth. Considering basic creativity of Punjabi Entrepreneurship coupled with availability of high order of technical and professional manpower in and around the town. Kapurthala has high degree of potential to emerge as a tourist as well as knowledge town, apart from having industrial as well as institutional potentials in and around it, provided required level of support systems, quality infrastructure, user friendly policy options, state of art developmental and institutional mechanisms are put in place. In order to make Kapurthala grow and emerge as humane, productive, sustainable, eco-friendly pollution free and vibrant urban centre, the future of the town is envisioned as:

VISION:

- Kapurthala to be the developed as the heritage and knowledge hub of the state providing for joy of tourism, state of art development, assured employment and quality living to all its existing and future residents, irrespective of the caste, creed, gender, economic and social status including poorest of poor.
- The quality living in the town to be achieved through
    - Ensured higher order of better urban governance.
    - High degree of operational efficiency.
    - Higher order of economic productivity.
    - Ensured environmental sustainability.
    - Reduced vehicular and industrial pollution.
    - Rationalized land use pattern.
    - Decongested core areas.
    - Assured quality of higher order of infrastructure and services.
    - Improving traffic and transportation.
    - Assured safety of residents and communities.
- Kapurthala to be culturally, socially and economically vibrant where
    - Every individual has gainful employment
    - Where each family has access to all basic amenities of life and
    - Where each community is self-contained and self-sustained, and
- Kapurthala to be
    - Heritage town.
    - Knowledge hub involving IT industry.
    - Tourism hub of the state.
    - A role model of planned development.
    - A role model of good governance.

MISSION STATEMENT FOR FOCUSED AREAS:

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

a) Growth management

- Promoting planned development through effective city planning.

- Rationalizing land use pattern for effective traffic management and provision of basic services and amenities.
- Making effective plan implementation and enforcement as integral part of town planning and development process.
- Conserving the cultural fabric.
- Making growth management process participatory.
- Review of master plan on regular basis.
- Improving system of approvals of building plan through use of IT and GIS.
- Making urban development self sustaining.

b) Heritage and Tourism

- To make heritage and tourism as integral part of town development process.
- To evolve specific plans and policies of conservation, preservation and development of heritage sites.
- To explore the tourism potential places of Kapurthala LPA and surrounding areas.
- To place the major heritage and cultural places of Kapurthala within the regional tourist circuit of the state.

c) Industry

- To leverage the existing potential of the Rail Coach Factory (RCF) by setting up industrial estate in close vicinity for ancillary units.
- To leverage on the existing institutional network including PTU, Science City and National Institute of Non Renewable Energy Resources.
- Providing necessary incentives to attract industries.

d) 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.

e) Urban Services:

i) Water supply

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

ii) 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.

iii) 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.

iv) 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.

v) Traffic and Transportation

- To improve safety, mobility and efficiency of traffic within and out side 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

vi) 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.

vii) Urban Governance

- To make urban local body a role model for good governance.
- To create appropriate and effective mechanism for grievance redressal
- To improve and strengthen the urban local body in terms of structure and quality manpower and resources.
- To create appropriate mechanism for promoting higher interface between ULB and communities on regular basis at ward and ULB levels.
- Adopting best practices and systems for improving, transparency, grievance redressal and accountability.
- To improve service delivery at minimum cost.
- To effectively involve NGOs /CBO.

f) Urban Poor

- Improving accessibility to basic services
- Providing better living environment and option.
- Creating enough employment opportunities for improving financial status.
- Providing adequate opportunities for creating affordable shelter duly supported by basic services.
- Empowering poor to be integral part of development process.
- Poverty alleviation programme to be made more focused and poor centric.

CHAPTER-10
THE MASTER PLAN

10.1 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 will propose a network of roads and pattern of streets and traffic circulation systems for the present and the future. It will identify areas required to be preserved and conserved and development of areas of natural scenery and landscape together with preservation of features, structures or places of historical, architectural interest and environment valve. 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 Kapurthala comprises four main componenets as follows:

- Proposed land use
- Transport network
- Heritage Conservation
- Zonning Regulations

10.2 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 and Land Use Planning framework to achieve the Vision of LPA Kapurthala. More specifically following are the objectives:

- To make Kapurthala town as the most vibrant economic centre to promote the balanced regional growth.
- To make land allocation in an environmentally sustainable manner.
- To minimize haphazard, unplanned and sub-standard growth and development of the town and to achieve planned growth to create healthy 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 instituitional planning and development process.
- To strengthen the basic infrastructure favorable for industries.
- To rationalize the distribution of physical and social infrastructure in order to ensure approprialte quality of life to all the residents of the town.
- To identify man-made and natural heritage and to make heritage consrvationa as integral part of the town planning and development process.

10.3 SPACE NORMS AND STANDARDS

PLANNING NORMS FOR EDUCATIONAL INSTITUTIONS

For ascertaining the need and requirement of various levels and categories of educational institutions in the context of the town, planning norms have been worked based on the basis of population in order to ensure that educational facilities of desired quantity and quality are available uniformly to the entire population including their spatial distribution. Further, the norms have been defined in terms of areas to the provided under each unit. The level of facilities to be provided have been categorized into general-purpose education at the school level, undergraduate and post graduate level besides technical and professional institutions and universities. Based on above, the norms for educational institutions have been detailed as under:

Table 65: Norms for Education facilities

S.N	Category	Population	Units	Strength of student	Area in Hects.			Remarks
					Built up	Play Field Area	Total	
A.	**GENERAL EDUCATION -TILL 10+2**							
i	Pre-Primary, Nursery School	2500	1	-	-	-	0.08	Location close to park with minimum of vehicular traffic
ii	Primary School (class 1-5)	5000	1	500	0.20	0.20	0.40	Location close to park with minimum of vehicular traffic. Minimum play area of 18 m X 36m to be ensured.
iii	Nursery-cum-Primary School (up to class 5)	5000	1	750	0.25	0.25	0.50	As above
iv	Senior Secondary School (class 6-12)	7500	1	1000	0.60	1.00	1.60	Minimum play field area of 68 m X 126 m to be ensured.
v	Integrated School without hostel facility (class 1-12)	90,000-1,00,000	1	1500	0.70+ 0.40 as hostel area	2.50+ parking area of 0.30	3.90	Minimum play field area of 68 m X 126 m to be ensured.
vi	Integrated School with hostel facility (class 1-12)	90,000-1,00,000	1	1000	0.70	2.50+ parking area of 0.30	3.50	Minimum play field area of 68 m X 126 m to be ensured.
vii	School for handicapped	45,000	1	400	0.20	0.30	0.50	
B	**HIGHER**							

	EDUCATION							
i	College	1,00,000	1	1000 -1500	1.80 +0.40 for residential/hostel	1.80 + Parking Area 0.50	4.50	
ii	University	20,00,000	1	-	-	-	60.00	
iii	University Campus	10,00,000	1	-	-	-	10.00	
C	**TECHNICAL EDUCATION**							
i	ITI + Polytechnic	10,00,00	1	400+500	-	-	ITI (1.60) Poly (2.40)	
ii	Engineering College	5,00,000	1	1500-1700	-	-	6.00	
iii	Architecture College	10,00,000	1	250	-	-	2.00	
iv	Management Institutes	5,00,000	1	240	-	-	2.00	
v	Medical College	10,00,000	1	500	-	-	15.00	Includes space for specialize general Hospitalize

Notes:

- One creche for a population of 25,000 in an area of 0.05 hectare shall be provided. This could be made integral part of any category of educational institutions with addition of the area of the crèche.
- Number of units in each category shall be based on the population prescribed above. In case the population for the area works out to be merely 50% norms specified above, in such cases individual sites in that category shall be provided. Additional sites shall be provided in case balance population exceeds 50% of the standards prescribed above.
- In case of higher student capacity, the built up and open area shall be increased proportionately.
- In order to economize on the land and optimize the infrastructure, educational institutions could be run on double shift basis.
- The open space shall be designed in order to ensure that they are also made available to the community as play area in the time when it is not being used by the institution.
- Adequate area for plantation shall also be earmarked in order to improve the quality of environments and area under tree cover.

- Adequate arrangement for parking and buses, vehicles of students/staff shall be made.
- Unless specified in the zoning plan and building bye-laws, the ground coverage, FAR, height and various categories of buildings shall be as under:

Table 66: School standards

Category	Maximum Ground Coverage	Maximum permissible height (m)	FAR
i) Nursery School	40%	8	0.75
ii) Primary School	40%	8	0.75
iii) Higher Sec. School	33%	15	1
iv) Colleges	335	15	1
v) Uni/Tech/Prof. Inst.	25%	20	1

Basement should be allowed under the built up area up to the maximum extent of ground coverage. It shall be used for parking, services, storage etc. It shall not be used for habitable purposes. No classes or other student's activities shall be held in the basement. Basement area shall not be counted towards FAR.

In case of large institutions, area for academics, residential, sports and cultural activities, parks and landscape shall be clearly defined. The area under academics shall not exceed 45%, residential 25%, sports and cultural activities 15% and parks and landscape 15%.

NORMS FOR THE HEALTH CARE FACILITIES

Health care facilities shall be provided and distributed in such a manner that it covers the entire area and the population in order to make the facility available to every resident of the town irrespective of his location or place of residence. It must cover all the activity area including commercial, industrial, institutional etc. well defined hierarchy will be essential to meet both the basic and specialized needs of the health care. Adequate arrangements would be critical to provide for greater role of private sector in healthcare by making available required proportion of site for the sector. The healthcare facility of various grades to be provided in the town/city shall be based on the following norms:

Table 67: Norms for Health Facilties

S.No.	Category	Population	Unit	Area (Hectares)	Remarks
1	Nursing Home	7,500	1	0.10	Capacity of 5-10 beds
2	Dispensary	15,000	1	0.12-0.15	For outdoor treatment only
3	Health Centre	50,000	1	0.4	Capacity of 25-30 beds
4	Poly Clinic	1,00,000	1	0.4	with some observation beds
5	Intermediate Hospital (category B)	1,00,000	1	0.1 i)for hospital 0.6 ii)for residential 0.4	capacity of 80 beds with initial provision of 50 including 20 maternity beds
6	Intermediate Hospital (category A)	1,00,000	1	3.70 i)for hospital 2.70 ii)for residential 1.0	capacity of 200 beds with initial provision of 100 beds
7	General Hospital	2,50,000	1	6.00 i)for hospital 4.00 ii)for residential 2.00	capacity of 500 beds with initial provision of 300 beds
8	Multi Specialty Hospital	1,00,000	1	9.00 i)for hospital 6.00 ii)for residential 3.00	capacity of 200 beds with initial provision of 100 beds
9	Specialty Hospital	1,00,000	1	3.70 i)for hospital 2.70 ii)for residential 1.00	capacity of 200 beds with initial provision of 100 beds

Note:

- In case of specific requirements for medical facilities other than those indicated above, additional sites may be provided for catering to specialize needs of healthcare.
- All Medical colleges shall also include provision of medical hospital of 500 beds as integral part of the complex.
- Additional sites may be provided in case of Regional/National level healthcare institutes which are to be located as part of the town.

The height, ground coverage, FAR, setbacks for various sites shall be as defined in the building bye-laws, zoning plans and development control regulations.

I NORMS FOR FIRE STATION

Table 68: Fire station norms

S. No.	CATEGORY	POPULATION PER UNIT	MINIMUM AREA
1	Fire station with essential residential accommodation	1 for every 2,00,000	1 Hectare.
2	Sub-Fire station with essential residential accommodation	1 for every 2,00,000	0.6 Hectare.

- One Fire Station/Sub-Fire station to be provided within distance of 1-3 kms covering a population of 2,00,000
- Fire Station needs to be co-ordination with water supply system to provide for fire hydrants/water tanks.
- Fire services to be fully equipped to deal with fire accidents in the multi storyed buildings.

II NORMS FOR SECURITY - POLICE, CIVIL DEFENCE AND HOME GUARD

Table 69: Norms for Security

S.N.	CATEGORY	POPULATION PER UNIT	MINIMUM AREA	REMARKS
1	Police Station	90,000	1.50 Hectare.	* In case of civil defence and home guard additional area of 0.05 hectare to be provided. ** Area includes essential residential accommodation
2	Police Post	40,000-50,000	0.16 Hectare.	*Area includes essential residential accommodation ** To be provided where area is not served by Police Station
3	District Office and Battalion	10,00,000	4.80 Hectares *(for District. Office =0.80 for Battalion =4.00 Hcts.)	
4	Police Lines	20,00,000	4.00-6.00 Hectares	
5	District Jail	10,00,000	10.00 Hectares	
6	Civil Defence & Home Guards	10,00,000	2.00 Hectares	

III SOCIAL CULTURAL FACILITIES

Table 70: Socio Cultural Norms

S.N.	CATEGORY	POPULATION PER UNIT	MINIMUM AREA
1	Community Room	5,000	1000 sqm (0.1 Hct)
2	Community Centre	15,000	2500 sqm (0.25 Hect).
3	Re-creational Club	1,00,000	10000 sqm. (1.0 Hct)
4	Music Dance, Drama Centre	1,00,000	1500 sqm. (0.15 Hct)
5	Meditation & Spiritual Centre	1,00,000	5000 sqm. (0.5 Hct)
6	Socio Cultural Centre	10,00,000	150000 sqm. (15.00 Hct)
7	Religious Sites (Mandir, Gurudwaras & Churches)	15,000 (3 sites provided in each sector)	1000 sqm. (0.10 Hct)

IV SPORTS ACTIVITIES

Table 71: Standards for sports facilties

S.N.	CATEGORY	POPULATION PER UNIT	MINIMUM AREA
1	Residential unit play area	5,000	0.5 Hct
2	Neighbourhood play area	15,000	1.50 Hcts
3	District sport centre	1,00,000	.8.0 Hcts
4	Divisional sports centre/City sports centre	10,00,000	20.00 Hcts.

V POSTAL FACILITIES

Table 72: Standards for Postal facilities

S.N.	CATEGORY	POPULATION PER UNIT	MINIMUM AREA	REMARKS
1	Post office counter without delivery	15,000	85 sqm.	To be provided in shopping centre
2	Head Post Office with delivery office	2,50,000	750 sqm.	
3	Head Post Office & Administrative Office	5,00,000	2500 sqm.	

VI TELEPHOENE & TELEGRAPHS

Table 73: Standards for Telephone and telegraph

S.N.	CATEGORY	POPULATION PER UNIT	MINIMUM AREA	REMARKS
1	Telephone Exchange for 40,000 lines	4,00,000	4.00 Htcs.	
2	Telegraph Booking Counter	1,00,000	200 sqm.	To be provided as part of the commercial area
3	Telegraph Booking & Delivery Office	5,00,000	1700 sqm.	To be provided as part of the commercial area

NORMS FOR THE COMMERCIAL AREAS

Table 74: Commercial Area Norms

Category	Population	Unit	Area (In Sq. Mts.)	No of units	Norms for shops	Area/ 1000 Persons (In Sq. Mts.)
Convenient Shopping	5,000	1	1500	37	1 for 110 Persons	220
Local shopping	15,000	1	4600	77	1 for 200 Persons	300
Community Centre	1,00,000	1	50,000	475	1 for 200 Persons	500
District Centre	5,00,000	1	75,000	1,620 (Both & Informal	1 for 300 Persons	880
Local Wholesale Market	10,00,000	1	1,00,000	--	--	--
Weekly Markets	1,00,000	1-2	4,000	300-400 Shops	--	--
Organized informal eating space	1,00,000	1	2,000			

Hierarchy to be followed for Commercial Centre

- Formal Shopping
- Convenient Shopping to be provided at cluster level
- Local shopping to be provided at sector level
- Community Centre to be provided for a group of sectors
- District Centre to be provided at the level of group of community centres
- Sub City Centre to be provided at the level of sub city
- City Centre to be provided at city level
- Local Wholesale Market to be provided at city level
- Informal shopping
- Weekly Markets to be provided for group of sectors
- Organized informal eating space to be provided at the traffic nodes

NOTE:

Above hierarchy of commercial areas to be provided depending upon the size of the city.

- In case of small towns, shopping at housing cluster, sector and community levels shall be provided.
- In case of medium towns, shopping at housing cluster, sector, community & district levels shall be provided.
- In case of large towns/cities, shopping at housing cluster, sector, community, district, sub – city & city levels shall be provided.
- All shopping areas are to be provided with adequate parking as per the prescribed norms.
- All shopping areas are to be provided with adequate parking as per the prescribed norms.

10.4 STRATEGY FOR OBTAINING LAND FOR PUBLIC PURPOSES

A city typically requires 40 to 50% of its area for variety of public purposes. Where land is owned by the state as in Delhi, Chandigarh or Navi Mumbai it is easier to allocate land of public purposes. However where private land market is active, how to ensure land for public purpose it is a major challenge in preparing Master Plans. Conventional master planning relied on the powers of compulsory acquisition of land designated in the master plan for public purposes. However, 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 chapter. 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 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 city scale is recognised 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 city. It may vary for example, in core areas v/s 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.

10.4.1 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.

Rationalising obsolete uses of public lands could be another way of putting public land to more relevant public purpose. Old jail or an agricultural produce market in the congested part of the city is common examples. But this requires public land at other location.

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

10.4.2 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.

10.4.3 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 colonisation rules operated under the PAPRA Act.

10.4.4 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 75: 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 the method currently relied upon where minimum area for colony is set at 10 acres, as in case of PAPRA.	Comprehensive Land Pooling Policy is required to be framed.	Locational disadvantages in certain cases.
	Landowners' resistance	Landowners' resistance	This is to be market driven and present response is said to be not so encouraging.	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.	Source of revenue for Panchayat Bodies / Waqf Board gets depleted.
		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 share holders.	

		Could also be used for heritage conservation.		New concept difficult to be implemented.	
		New concept difficult to be implemented.			

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 address in the detail zone plans.

10.5 BASIC CONSIDERATION FOR PROPOSALS

While preparing the proposed Master Plan of Kapurthala, 2031, detailed study and critical analysis has been made of the notified Kapurthala Local Planning Area in terms of the demographic profile, economic status, social stratification, physical growth, heritage and available physical & social infrastructures in the planning area. Analysis has also been made of the existing land use plan, besides making the study for identification of the existing problems and future growth potential of the town. Based on the studies carried out and analysis made, basic considerations for formulating the Master Plan of Kapurthala revolve around:

- Leveraging the administrative status of the Kapurthala town as the District Head Quarter.
- Leveraging on the proximity and high degree of connectivity between Jalandhar (next metropolis of the state) and Kapurthala.
- Leveraging on the presence of institutes of national and state importance, including Science City, Punjab Technical University, National Institute of Renewable Energy and Sainik School.
- Leveraging on the Railway Coach Factory (RCF).
- Leveraging on the industrial growth and new industrial estate, including IT Park.
- Leveraging on the built and natural heritage for promoting tourism.

- Leveraging on the high degree of rail and road connectivity with the adjoining settlements.
- Leveraging on the agriculture based industries, including rice shellers.
- Leveraging on proposed direct connectivity of Kapurthala town with NH 1 and integration of the Kapurthala and Jalandhar traffic and transportation networks.

Based on the above, the Proposed Landuse Plan of Kapurthala has been worked out on the following broad parameters:

- Adopting a strategy of compact development based on phasing in order to optimize the available land resource and minimizing the cost of infrastructure.
- Rationalizing the existing land use pattern through a well defined system of land uses, zoning regulations and development controls.
- Rationalizing the physical growth and development along the major traffic and transportation network.
- Rationalizing the traffic and transportation network in order to minimize the conflict between inter and intra city traffic.
- Promoting future growth of the town based on the principle of allocation of land uses and principle of clustering.
- Integrating the development of urban and rural settlements for minimizing migration and promoting the economic and physical development of the rural settlements.
- Adopting a well defined density pattern of residential areas for equitable distribution of population and basic support infrastructure.
- Decongesting the core area of the town by dispersal of activities.
- Minimizing haphazard and unplanned growth through a well defined land use pattern.
- Minimizing concentration of public amenities and services and promoting equitable distribution in the planning area through well defined norms.

- Rationalising the location of transportation nodes including existing bus terminus to minimize the traffic congestion.
- Developing the residential areas through a well defined self contained and self sustaining neighbourhoods.
- Providing adequate open and recreational spaces within the planning area.
- Creating adequate parking spaces within the town based on the prescribed norms.
- Creating a well defined hierarchy of transporation network.
- Creating a well defined hierarchy of commercial spaces.

10.6 PROPOSALS

10.6.1 PROPOSED LAND USE PLAN 2010-2031

On the basis of studies made and analysis carried out of the existing land use plan and population projections made for Kapurthala Local Planning Area, Proposed Landuse Plan of Kapurthala 2031 has been prepared and indicated in the Drawing No. DDTP (K) 16/2010 dated 16/12/2010 of the Department of Town and Country Planning, Punjab. The proposed landuse plan is based on the existing landuse plan of Kapurthala Planning Area bearing Drawing No. DDTP (K) 13/2009 dated 09/11/2009 of the Department of Town and Country Planning, Punjab. The proposed land use structure is based upon the computation of land requirement in different sectors based on the defined norms and the existing/proposed growth pattern envisioned for the Kapurthala LPA. The proposed land use plan has been prepared after examining various possibilities and options of landuse planning, traffic and transportation network, heritage, population distribution and location of public amenities and infrastructure.

The proposed land use requirements for the Kapurthala LPA, based on the proposed density for the area defined by the municipal council limits and area outside M.Cl limits, has been worked out for the targeted year of 2031. Based on an overall density of 100 persons per ha (pph) for the urbanisable area and 25 pph for the remaining LPA, the gross land requirement works out to be 1883 ha for urban area and 1956 ha for the rural areas. (refer Table 76)

Table 76: Projected Population and Density in Kapurthala LPA

	Projected Population for 2031	Proposed Density (PPH)	Urbanisable Area Requirement for 2031 (Ha)	Remarks
M.Cl.	188334	100	1883	The available land within Municipal limits shall be used for urbanization.
LPA Villages (Excluding M. Cl.)	48894	25	1956	The area around the existing village abadies will be used for housing the additional population.

However, while working out the detailed land use plan, variations in the land uses have been made based on the existing development and future growth of the area and to regulate the development along the major road network and the periphery of the town, besides meeting any contingent situation arising out of rapid development of the LPA.

In addition to above, details of areas have been worked out under different land uses in order to quantify the total area required and the additional area required to be developed for meeting the needs of future growth and development of the projected population based on the prescribed norms. Proposed land use distribution for the year 2031 has been given below:

Table 77: Proposed Landuse Distribution for Kapurthala LPA

Landuse	% Distribution of Proposed Landuse	Total Area Required (Ha) for Proposed Landuse by 2031*	Existing landuse (Ha)*	Additional Area Requirement (Ha) by 2031*
Residential	45	847.35	424	423.35
Commercial	6	112.98	103	9.98
Industrial	8	150.64	60	90.64
Recreational	7	131.81	25	106.81
Govt. Land	9	169.47	158	11.47
Utilities and Services	1	18.83	10	8.83
Public/Semi Public	11	207.13	198	9.13
Traffic and Transportation	13	244.79	182	62.79
Total Urbanisable Area	**100**	**1883**	**1160**	723
Rural and Agricultural	-	9215	9938	-
Total LPA Area	-	**11098**	**11098**	

***The existing, proposed landuses and additional area requirement are related to the existing municipal area of Kapurthala.**

While working out the Proposed Landuse Plan, the urban estate developed by PUDA, the sites provided for the focal points and the mandi townships developed by Punjab Mandi Board have been made integral part of the proposals besides projects already approved by the State Government, including Industrial Estate and IT Park. In addition, sites already approved for different projects have also been retained in the proposed land use plan.

Kapurthala Urban Area 2031

The Kapurthala LPA extends to an area of 11,098 ha as defined in the existing landuse plan bearing Drawing No. DDTP (K) 13/2009 dated 09/11/2009 of the Department of Town and

Country Planning, Punjab. The total municipal area is of the order of 1,947 ha. The urbanizable area for the target year 2031 has been enlarged to 1,883 ha to accommodate the projected population of Kapurthala town, i.e. 1,88,334 by 2031, and the physical growth which is likely to take place due to the potential generated by the new road network, existing institutional network, and economic opportunities generated by the town due to close proximity with Jalandhar and proposed industrial development.

While proposing the land use, the urbanizable area has been extended taking into consideration the pattern and direction of development along major transport corridors. The proposed urbanizable area extends beyond the municipal council limits in order to accommodate the future population and physical development. While preparing the proposed land use plan for the local planning area, care has been taken to redefine the land uses in terms of residential, commercial, institutional etc.

Residential Zone

Based on the residential component at 45% of the total urbanisable area, total residential area to accommodate the projected population of 1,88,334 has been worked out to be 847.35 hectares. The area available at present under residential zone is of the order of 424 hectares. Accordingly, additional residential area to the tune of 423.35 hectares would be required to accommodate the total population. However, as explained above, the actual area provided under the residential category in the Draft Master Plan has been kept on the higher side considering the existing/ proposed pattern of growth, and compatibility of land uses besides meeting the demand of unforeseen development due to location of Kapurthala in close proximity to Jalandhar and location of institutions of national and international repute. While preparing the proposed Landuse Plan, care has been taken to accommodate already existing residential area within the Kapurthala LPA. However, residential area has been rationalized keeping in view the existing distribution of population in the town and the density pattern to be achieved in the Master Plan. The entire residential component in the LPA is proposed to be developed on two distinct density patterns i.e. residential area within the existing municipal limits and the residential area between the existing municipal and urbanizable limits as detailed below:

Table 78: Net Residential Density categories

Sr. No.	Zone	Net D
1	Residential area falling within existing municipal limits	300 perso
2	Residential area falling between existing municipal limits and urbanisable limits within the LPA	200 perso

The residential area within the existing municipal limits shall have a density of 300 persons per acre, whereas residential area falling outside existing municipal limits but within the urbanisable limits of the LPA shall have a density of 200 persons per acre. Residential component outside the urbanisable limits shall be restricted to the area around the existing rural settlements and upto a distance of 50-100 metres around the village phirnis in order to accommodate the natural growth of population in the rural settlements. In this zone, the residential development has been permitted only to accommodate the natural growth and expansion of the rural settlements in the shape of a belt varying from 50 to 100 meters around the abadi area depending upon the size and population of rural settlements. This zone has been placed in the second category of residential development with density limited to 200 persons per acre in order to preserve the basic rural character of low density low rise. It is also proposed that all the villages falling outside the proposed urbanisable limit and within LPA boundary shall also be developed in a planned manner.

Considering the acute shortage of agricultural land in the state of Punjab and to preserve the valuable agricultural land, a uniform density of 200 persons per acre has been adopted for the residential component. However, in order to achieve this density, different strategies have been proposed in the Master Plan. The town core area, which is highly congested and has high population density, is proposed to be decongested. This decongestion is proposed to be achieved by providing different affordable options of housing to the population shifted out of the core area. In addition, core area will be decongested by shifting trade and commerce activities of the higher order taking place within the residential area. The area available shall be used for widening the road network and for creating open spaces.

The area presently developed as low density area shall be upgraded to achieve the defined density pattern of 200 Persons per Acre. All the residential areas shall be provided with socio-economic and physical infrastructure based on the norms defined in the Master Plan. All these areas shall also have basic amenities and adequate open spaces to ensure appropriate quality of life. Areas which are deficient in terms of infrastructure and services shall be upgraded to the desired level by framing development schemes and undertaking detailed planned development of the areas.

However, in order to preserve the basic rural character of the area outside urbanizable limits, it is proposed to have a gross residential density of 10 Persons Per Acre. The residential component outside the urbanizable limits shall be permitted in the 50-100 meter belt defined outside the village phirni in order to meet the land requirement of housing of the population going to be added in next two decades in these rural settlements. Residential density in this belt shall however be much higher. All rural settlements have been placed in the category of

low-density residential development and include the rural settlements like Aujla Banwali, Aujla Jogi, Madho Jhanda, Kapurthala Rural, Kokalpur, Kanjli, Dhawankhan Nishan, etc.
While achieving the target of affordable housing for all, the housing needs for all income groups have been assessed. Further, the existing spatial distribution of housing areas and the housing profile have also been critically looked into. Since the town has been growing horizontally, most of the residential development has come up in the category of plotted development. But in order to protect the valuable agricultural land, it is proposed to promote compact development in the shape of flatted development in the new urbanisable area. In order to encourage flatted residential development and to preserve the valuable agricultural land, residential density @ 60 dwelling units per acre shall be permissible for standalone group housing projects.

The housing strategy worked out to provide affordable housing to all include the active participation of public, private, corporate and cooperative sectors. For development of new residential areas, it is proposed to actively involve private and cooperative sector in the residential activities by granting liberal permissions and by adopting single window clearing system.

Looking at the pattern of residential development, it has been observed that the most of the development is haphazard and unplanned. The area available under roads is minimal with absence of open spaces in such development. Even the sites for basic amenities are missing. This has resulted in high degree of congestion and absence of basic amenities in the residential zones. In order to rationalize the growth and minimize the mushrooming of unauthorized colonies in the LPA, care will have to be taken to provide sufficient land at affordable cost to all categories of present and future residents of the town. Development and integration of existing unauthorized colonies need to be reviewed based on a well defined policy which should inter alia consider provision of basic essentials to the residents and ensuring adequate quality of life. Further, all the residential colonies shall be developed on the principle of self contained and self sufficient in basic day to day needs of the residents with provision of all basic amenities, services, infrastructure, etc. on the prescribed norms.

Housing for Economically Weaker Section

While proposing new residential area, housing for the economical weaker section has been included as an essential ingredient of the Master Plan considering that more than 90% of the housing shortage falls in the category of LIG and EWS housing, it will be critical to provide

adequate land for them at the most affordable price. In order to create sufficient housing stock and to provide affordable shelter to economically weaker section of the society, it is proposed to increase the quantum of reservations already existing in the PAPRA. The reservation for EWS housing would be available in all residential development permitted in the state as defined in the policy framework evolved by the state government. In addition, existing slums would also require detailed study and analysis before taking decision with regard to their upgradation, relocation or redevelopment.

Commercial Zone

Kapurthala is a class II town and does not have major commercial activity. The commercial area is proposed to be provided @ 6%, i.e. of the total urbanisable area. This does not include the commercial area, which will become available in the planning of residential areas. Existing needs of the population are being largely met by the commercial activities located as part of the residential areas. Most of the commercial activity at present is concentrated in the core area of the town and along the major road network passing through the town. Accordingly, in the proposed land use plan, existing pattern of development of the town in the shape of mixed land use is proposed to be retained and further promoted and developed. This pattern of mixed land use would help in not only dispersal of the economic activities in the various parts of the town leading to better living and working relationship but also help in rational development of commercial area. However, these areas will be upgraded in terms of required infrastructure of parking, etc. based on the parking norms. The new commercial areas are proposed to be developed through a well defined system of zoning regulations and development control regulations provided in the Master Plan, which would take care of the needs of commercial area development including parking etc. In order to meet the demand and fill the gap of major commercial centre, a higher order new commercial centre on Ring Road adjacent to the District Administrative Complex (DAC) is proposed to be developed. The area made available by the shifting of the existing Bus Stand to a new site on the Ring Road will also be used for commercial purposes in order to meet the needs of the area besides providing for adequate parking. In the proposed residential area, commercial component shall be provided as per the norms and standards specified in the Development Control Regulations and Zoning Regulations in order to make all residential areas self contained and self sufficient in terms of basic day to day needs. In addition, the wholesale and fruit and vegetable market already set up by the Punjab Mandi Board on the road leading to Sultanpur

Lodhi is proposed to be upgraded by providing additional area in order to meet the future requirement of the town.

Mixed Zone

Looking at the existing pattern of the growth and development, it has been observed that major road network connecting Kapurthala with Jalandhar, Sultanpur Lodhi and Nakodar has attracted lot of haphazard, unplanned and unregulated growth in the shape of ribbon development. The development of the Kapurthala can be attributed to the location of Rail Coach Factory (RCF) along the Sultanpur Lodhi Road and due to the location of Punjab Technical University, Science City and National Institute of Renewable Energy, besides the Urban Estate developed by PUDA, along the Jalandhar Road. Despite the availability of legal framework prohibiting/restricting the growth and development along the major road network, such development has become integral part of Indian urban growth and development scenario. This pattern of development has promoted numerous problems in terms of infrastructure, quality of development and for the smooth movement of the traffic and transportation. Apart from these roads, the Nakodar Road, which is a Scheduled Road, too provides ample opportunities for growth and development in the future. Apart from these existing roads, mixed landuse is also thought to come up along the proposed Ring Road. So, in order to rationalize the growth and to ensure provision of adequate parking and other supportive infrastructure, it is proposed to permit mixed landuse development along these roads, i.e. Sultanpur Lodhi Road, Nakodar Road and Ring Road. It is also proposed along the Subhanpur Road and the village road of Jhal Thikriwala linked with Ring Road. The mixed landuse zone proposed along the Ring Road will also cover the mixed landuse expected to come up along Jalandhar Road. While the mixed use is proposed to come up on the side opposite to RCF along Sultanpur Lodhi Road and on the outer side of the Ring Road, the Nakodar Road is envisioned to experience mixed landuse in future on both of its side. The mixed landuse proposed is extending beyond the limit of the Ring Road upto the LPA boundary and is 300 metres on Nakodar Road and 500 m on Sultanpur Lodhi Road, while the whole outer side of the Ring Road is proposed under mixed use with width 300 metres. However, the mixed landuse belt defined above includes the area required for widening of the road and statutory no construction zone required to be provided along the road under the provisions of PRTPA-1995. In the area zoned for mixed landuse, all kinds of landuses, which are compatible, shall be permitted. However, the uses, which are not compatible, shall not be permitted in this area. No polluting industries will be permitted in this zone. The proposed mixed landuse will not only ensure dispersal of the economic activities in the various parts of

the areas but would also help in rational development of area along the major roads/corridors. In addition, it will also promote better living-working relationship minimizing travel demand in the town and thus making it more energy efficient and environmental friendly. The area will be developed through a well-defined system of zoning regulations and development control regulations provided in the Master Plan, which would take care of the critical needs of infrastructure/services including parking, etc.

Industrial cum Warehousing Zone

Kapurthala as a town has limited number of small scale industries which is reflected in percentage share of industrial use in the Existing Land use. The industrial use constitutes only 5% of total developed area excluding the area under the Rail Coach Factory. Therefore, in order to provide more economic opportunities to the existing and future population of the town, more area is proposed to be added to the already existing town. A few industrial pockets have been identified in the Proposed Landuse Plan as shown in the Drawing No. DDTP (K) 16/2010 dated 16/12/2010 in order to cater to the future requirement of industrial growth and development. One of the pocket is marked on the east of Sultanpur Lodhi Road as an extension of the RCF, in order to provide space for meeting the additional land requirement of expansion of RCF, shifting of industries from within the town and setting up of ancillary units. The second pocket is located in Jhal Thikriwal village, where industrial department has decided to set up an Industrial Focal Point in an area of 279 acres. The Industrial Focal Point also includes an IT Park (48 acres), which will help in attracting IT Industries to the town. Keeping in view the strategic location of the industrial area near to Ring Road and Subhanpur Road with access to GT Road too, it has been extended to the villages of Jhal Thikriwala, Theh Kanjla and Dham to provide more opportunities for economic development. In order to provide high degree of accessibility to these industrial areas, it has been proposed to upgrade the road leading to Sultanpur Lodhi, whereas the Industrial Focal Point will be served by the proposed Ring Road, the widened village road of Jhal Thikriwala and Subhanpur Road, which will provide connectivity with other parts of the town and the adjoining settlements. Accordingly, industrial zone in the Master Plan has been proposed as an extension of the Rail Coach Factory (RCF).

Number of godowns are existing within and outside the town owing to the presence of numerous rice shellers. Accordingly, all these godowns and rice shellers are proposed to be shifted outside the town and accommodated in the industrial cum warehousing zone located on the eastern side of Sultanpur Lodhi Road. The shifting of warehousing (godowns) and rice shellers outside the town will help in decongesting it besides minimizing number of problems caused by the location of such activities. The core of the town will primarily be made residential supported by basic infrastructure and services required for residential activities.

In order to promote quality environment, it is proposed to have a 15 meters wide green belt of broad leaf trees to be developed within the industrial zone where it coincides with the existing village settlement area. Further, all industrial units would also be required to plant trees in the setbacks provided within the plots. Green belts would also be created as integral part of planning of industrial areas and areas separating the residential and industrial zones.

Logistics Park

Warehousing and transportation are the two basic support systems to promote industries. Considering the future trends of growth and development and to make Kapurthala as one of the vibrant node for economic development, a logistic park cum container depot has been proposed. The proposed Logistics Park would include facilities for cold storage, material handling, parking etc. Considering the needs and importance of the proposed park and its traffic implications, the said park has been located strategically with high degree of rail and road connectivity. Accordingly, the proposed park has been located on Sultanpur Lodhi Road as integral part of the industrial cum warehousing zone. The Logistics Park has been provided with high degree of accessibility by railway line from one side and Ring Road from the other side. The linking of Logistics Park with the Ring Road will facilitate the incoming and outgoing goods traffic without interfering with the intracity traffic. The area proposed for the park is of the order of 84 ha. The location of the park is indicated on the proposed landuse plan bearing Drawing No. DDTP (K) 16/2010 dated 16/12/2010.

Recreational Zone

Considering the fact that Kapurthala has the distinction of housing a national level Kanjli Wetlands along with a religious rivulet Kali Bein connected with the first Sikh Guru, Guru Nanak Dev Ji, accordingly a recreational zone is proposed between its two streams on the north western side of the town as indicated in the proposed Landuse Plan. The proposed recreational zone will have regional level parks along with entertainment and picnic facilities. Afforestation too will be done in a selected manner. The recreational zone will be primarily focusing on preserving the eco fragility of the area and promoting sustainability of the wetland. A detailed and comprehensive development plan for this zone should be prepared for its rational development. The area will have uses, which will retain the basic character of the area with minimum of built up area requirement. The development will also include the flora and fauna to be put up in the area in order to attract migrant birds and modulate the

micro climate in the region. The area shall also be used as major tourist centre in order to attract tourists and promote the economy of the Kapurthala LPA.

Creation of Leisure Valley

In addition to the recreational zone defined above, it is also proposed to create a Leisure Valley along the Wadala Drain, which crisscrosses the town from east to west ultimately meeting the Kali Bein. A 15 m belt on either side has been identified as the area proposed to be developed as the Leisure Valley. Part of the belt along the drain would also be used for creating a link between the Ring Road and the Hamira Road. The belt is proposed to be developed as a recreational area through a detailed scheme evolved for landscaping of the area. The channel is proposed to be aligned, paved and to carry the clean water after treating the pollutants. In addition, walkways are proposed to be planned within the belt along it. The Leisure Valley will meet the day to day requirement of leisure of the residents of Kapurthala LPA, whereas the Kanjli Wetland would cater to the regional level requirement of leisure. In addition, Kamra Bagh and Shalimar Bagh are also proposed to be developed as major open and recreational spaces. Detailed projects for the development of these gardens shall be prepared to restore their old glory. All these open and recreational spaces shall be integrated in a manner in order to provide adequate opportunities of recreation to all these residents of the LPA.

Government and Public/Semi-Public Zone

This zone is primarily meant for accommodating education & health related institutions and Government offices. Public/Semi-Public use including District Administrative Complex (DAC) has been proposed in north east side of the town adjacent to proposed Commerical Centre. Since the town is administrative headquarter of district, large number of district level offices are located in the town. However, most of these offices are scattered within the town and operating from old and dilapidated buildings. Due to their scattered location, it causes enormous harassment to the people visiting these offices for work. In addition, it also causes considerable lack of coordination among various agencies and line deparments of the state government. Accordingly, in order to promote better governance, higher order of interaction and better coordination, it is proposed to bring all state government offices under one roof by constructing a District Administrative Complex (DAC). The complex is proposed to be developed along the junction of Ring Road and Wadala Drain in village Nurpur Dona. The

site has already been identified and it is suggested that its construction and completion should be done on priority in order to usher a new era of governance in the town.

Kapurthala has the distinction of housing some of the very famous educational institutes like, Agriculture Research Centre and Rice Research Centre, apart from having Science City, Institute of Renewable Energy and PTU in its vicinity. It has also the first Sainik School of the country, besides housing the Training Centre of Punjab Armed Police and District Jail. It also has one of the oldest College in the state, namely Randhir College, set up by the rulers of the erstwhile Kapurthala State.

In addition, a new jail for the districts of Kapurthala as well as Jalandhar District has been proposed to be constructed in Kapurthala. The new jail is under construction in Jhal Thikriwal village.

An extension in area of Punjab Armed Police (PAP) has also been proposed for In Service Training Centre (ISTC) and RB Batallion with chunks of land marked around the existing PAP Training Centre site.

In addition, education and health related facilities are to be provided as integral part of planning of residential areas proposed in the Master Plan of Kapurthala. These facilities shall be provided on the norms and standards specified in the Master Plan in order to ensure their equitable distribution and making various residential sectors self contained and self sufficient in these basic needs.

Heritage Conservation

Being the capital of the erstwhile princely state, Kapurthala has the disntinction of housing large number of buildings having immense heritage and architectural values. The importance of these buildings have their genesis in their architectural design, impact of French architecture,quality of construction, use of materials and their architecture vocabulary. These buildings despite being highly valuable are under gross misuse/abuse and neglect. In order to make these buildings as integral part of the town growth and development, they are proposed to be preserved and conserved. Despite the historicity and immense value, these buildings have not been declared as protected monuments. INTACH on its part has made numerous studies of these buildings including Moorish Mosque and Durbar Hall and has suggested strategies for their conservation and preservation. Accordingly, it is proposed in the Master Plan to protect these monuments and also to regulated development in the area surrounding these buildings. It is suggested that heritage regulations need to be framed on priority in order

to conserve and preserve these buildings and area around. A twin strategy involving passive and proactive consrervation is proposed for these heritage buildings.

Passive Conservation: In this mechanism, the monument is proposed to be conserved without putting it to any other use and developing the surrounding area in the shape of landscape. The area is used for recreation, whereas the monument is available for visiting by the people.

Proactive Conservation: In this mechanism the monument is conserved and used for a compatible purpose which not only preserves and conserves the monument but also does a value addition. The existing use of the monument is replaced by a new use keeping in view its design, location, structure and suitability. The resrouces generated through the changed use are used for not only its maintenance and upkeeing but also for its development.

Based on the above strategies, monuments have been identified for passive and proactive conservation based on the specific conservation norms.

Table 79: Passive and Pro-active Conservation List of Kapurthala town

Passive Conservation	Proactive Conservation
Panch Mandir	Shalimar Garden
Moorish Mosque	Durbar Hall (District Courts)
State Gurudwara	Bagghi Khana
The Jubilee Hall	Jagatjit Club
State Guest House	Jagatjit Singh Palace (Sainik School)
Ghanta Ghar	Jallowkhana
War Memorial	Sadar Bazar
Kamra Bagh	Kanjli Wetland
Dargarh Pir Chowdhary.	Elysee Palace
	Buona Vista

Source: Primary Survey, SAI Team, Aug 2009

In addition, it is proposed to leverage the existing heritage of Kapurthala for promoting tourism. Heritage Walks are proposed to be introduced in the town in order to make heritage as integral part of town growth and development and its culture. Heritage Circuit has been identified connecting Shalimar Bagh, Panch Mandir, Sadar Bazaar, Durbar Hall, Bagghi Khana, Moorish Mosque, War Memorial, State Gurudwara, Kamra Bagh, Jagatjit Club, Sainik School and Dargarh Pir Choudhary. Besides heritage walk, it is proposed to create a regional tourist circuit involving Kapurthala, Goindwal Sahib, Tarn Tarn, Amritsar, Kanjli Lake, Sultanpur Lodhi and Harike Pattan. In order to promote knowledge based tourism, it is proposed to leverage the strength of Pushpa Gujral Science City and National Institute of Renewable Energy.

Rural and Agricultural Zone

With the objective of preserving the valuable agricultural land and maintaining its basic rural character, non-urbanisable area falling within Local Planning Area has been proposed as rural/agricultural zone. This zone comprises of pockets on the west and east of the Ring Road and north east of the Ring Road along Wadala Drain. The area is proposed to be preserved as agricultural area. However, area around rural settlement in the shape of belt of 50-100 m around the abadi deh area will be permitted to be used for meeting the shelter and other related needs of the population likely to be added by 2031. The pattern of development shall be restricted to low density low rise. In order to promote productivity and value addition in the agro-products, agro based knowledge centers and marketing centers may be set up. Emphasis shall be given on promoting agro-based industry in the zone in order to create better employment opportunity for minimizing migration to the urban centers. The zone will also be used for the production of day-to-day food related needs of the residents of urban centers in order to promote the urban rural continuum and to minimise the needs of transportation of basic goods from other areas. Regional level recreational spaces can also be located in this area having large area requirement with very small built up areas. However, the rural settlements forming part of the urban areas shall be developed in a manner in order to integrate them with the surrounding urban development. The panchayat land of the villages coming up within the urban areas shall only be used for providing basic infrastructure and amenities including water supply, anganwaris, open spaces, parks, health care institutions etc. However, the land shall not be permitted to be used for any commercial purpose.

10.6.2 PROPOSED TRAFFIC AND TRANSPORTATION PLAN

The future vision of the Kapurthala town and LPA can be realized and made realistic only if the land uses proposed in the plan are effectively integrated through a well defined/ planned network of roads. Accordingly effective and efficient transport network serving land use pattern has been used as the basis for leveraging the future growth and development of the town.

The existing traffic and transportation network comprises of a radial pattern with 7 roads radiating in different directions providing connectivity of Kapurthala with the adjoining settlement including Jalandhar, Kartarpur, Hamira, Subhanpur, Fattu Dhinga, Sultanpur Lodhi and Nakodar. Kapurthala also has the distinction of being served through 4 Scheduled Roads including Kapurthala- Jalandhar, Kapurthala-Sultanpur Lodhi, Kapurthala-Nakodar and Kapurthala-Hamira. Considering the existing radial pattern, the best option of

rationalising the traffic and transportation in such a settlement is to have a system of rings superimposed on the radials. Accordingly, the draft master plan proposes a network of ring and radials pattern of roads to serve every part of Kapurthala LPA in order to achieve high degree of connectivity. The draft master plan also proposes widening of existing roads besides creating new linkages for efficient transportation in the area. The traffic and transportation network comprises of well defined hierarchy of roads of 8 categories.

No city can afford to absolve unlimited influx of automobile on its roads. Accordingly, it is important to plan and rationalize traffic and transportation system within any town/city to minimize the number of vehicles coming on the roads. The increase in number of vehicles in a town or city needs to be regulated effectively on the basis of a well defined short and long term policies for traffic and transportation. The policy option would include to develop an effective bus based mass transport system, creation of urban transport institutions, use of alternative fuels for minimization of pollution level, setting up of traffic engineering and planning units, vehicle registration licensing and fuel pricing etc. In addition, it would also require rationalization of inter and intra city traffic in order to minimize number of vehicles on the road.

The vehicular growth in the town is increasing at a faster pace leading to high degree of traffic congestion on the road. The number of vehicles registered during the last eight years has recorded an increase of 100%. However, during the same time the existing road conditions has remained unchaged leading to creation of traffic problems in the town.

The reconnaissance survey carried out at the critical points in the town having high volume of traffic indicates that all roads leading towards town have similar traffic problems. Existence of mixed landuse including residential and commercial along the roads, like Fattu Dhinga Road, Jalandhar Road, Sultanpur Road, etc. is the major cause of traffic problem in the town. In addition, all roads within LPA have been encroached upon largely by shops and informal sector leading to reduction in road widths and ultimately creating problems in traffic movement, especially during peak hours.

The survey also clearly indicates that road conditions in the town ranges from moderate to worse. At many places the quality of surface and condition of major roads passing through the town is very bad due to large scale encroachment and poor maintenance leading to the development of potholes and reduction in effective width of the road.

Further it has been observed that majority of the problems are due to large scale mixing of inter and intra city traffic. In the absence of a bypass or Ring Road, all traffic going to

Sultanpur Lodhi, Jalandhar, Subhanpur, Fattu Dhinga, Kartarpur and Hamira are invariably required to pass through the town. Location of the bus stand on Fattu Dhinga Road right in the heart of the town further complicates the movements of the traffic due to plying of the large number of incoming and outgoing buses from Kapurthala. In addition, the railway line from Jalandhar to Sultanpur Lodhi also passes through the south east part of the LPA and with the pattern of growth proposed is likely to emerge as one of the major constraints in the smooth flow of the traffic. Thus, the traffic and transportation proposals need to be framed in a manner that it leads to rational growth and development of the town. An integrated approach to development of traffic and transportation would include providing over bridges, relocating bus terminal, creating truck terminal and widening of existing roads besides creating new links to improve the transportation in the town and LPA.

Development of Roads

For improving and rationalizing the transportation network in the town it will be critical not only to strengthen the existing roads but also creating new linkages and providing missing links within the existing network. In addition, in order to rationalize the traffic and transportation within the town and the Kapurthala LPA, a well defined hierarchy of roads has been proposed in the Master Plan as indicated in the Proposed Landuse Plan bearing drawing no. DDTP (K) 16/2010 dated 16/12/2010 and Traffic and Transportation Plan. The proposed hierarchy of roads includes:

Table 80: Proposed Road Hierarchy of Kapurthala LPA

Category of Road	Description	Right of Way (Meters)	Remarks
R1	• Ring Road	60	• High speed and high capacity road. • Dual Carriage Way • Catering to intercity/regional traffic • Minimum Openings • Controlled access. • Service Lane & Cycle tracks • No Building Zone of 5 mt to be provided on either side of the road reservation
R2	• Kapurthala-Jalandhar Road • New Road proposed adjacent to Jalandhar Road • Kapurthala-Hamira Road • Kapurthala-Sultanpur Lodhi Road • Kapurthala-Nakodar Road	45	• High speed and high capacity road. • Dual Carriage Way • Inter and intra city traffic • Highly controlled accesses by providing service road • Minimum Openings • Well defined Road Junctions • Service Lanes & Cycle Tracks • No Building Zone of 5 mt to be provided on either side of the road reservation

R3	• Kapurthala-Kartarpur Road • Kapurthala-Fattu Dhinga Road • Kapurthala-Subhanpur Road • Kanjli Road	30	• Medium speed and medium capacity road. • Road will carry both inter and intra city traffic • Dual Carriage Way • Well defined Road Junctions • Cycle Tracks
R4	• Circular Road • Markfed Road • Boolpur Road • Village Khalu Road • New Roads proposed to join Sultanpur Lodhi Road to Fattu Dhinga Road, and Ring Road to Hamira Road • Proposed widened road joining Sultanpur Lodhi Road first with Fattu Dhinga Road and then with Kanjli Road, and village road of Jhal Thikriwala	25	• Road will carry both inter and intra-city traffic • Footpaths. • Provision of adequate parking where road frontage used for urbanization.
R5	Roads other than R4 carrying city traffic within residential areas and Other Roads proposed to be up-gradated.	18	• Distributor roads carrying intra-city traffic provided with footpaths
R6	Roads providing access to individual houses	12	• Providing accessibility at the local level
R7	Cycle Tracks	2-5	• Specially catering to cyclists
R8	Pavement/ Footpath for Pedestrian Movement	1.5-2.5	• Exclusive for pedestrian movement

*Subject to the provisions of road width specified above and the DCR, no road in the LPA will have a width less than 12 mts.

** No-building zone along the Scheduled Roads, as defined above shall be subjected to the notification issued by the state govt. under the PRTPA-1995.

*** Refer plan no. 3 (Proposed Traffic and Transportation Plan)**

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

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:

Table 81: Norms and Standards of Cycle Tracks

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

Upgradation and Strengthening of Existing Roads in LPA

In order to achieve better road linkages with in LPA, up-gradation and strengthening has been proposed of the major existing road network. Roads leading to Fattu Dhinga, Subhanpur (Kanjli Road) and Nakodar are proposed to be upgraded. Apart from these, a road in the northern side is proposed to be built on the existing streets and roads. So this portion is also proposed to be upgraded. Most of the portion to be upgraded will run along the Wadala Drain. It will be an important link for the citizens of the town as it will provide direct connectivity with proposed DAC and Commercial Centre. It will start from proposed Ring Road in east, will run along the Wadala Drain and finally meet the Hamira road. In addition, it is proposed to upgrade the Jalandhar-Kapurthala section to the level of R2 having a width ranging between 45 m. The section has been maintained on the pattern suggested in the Jalandhar Master Plan.

Another road section proposed to be widened will provide better connectivity between Sultanpur Lodhi, Fattu Dhinga and Kanjli Roads. The road will move on the existing sections of Markfed Road, Jallow Khana Road, Shamshan Ghat Road and Police Lines Road while running from Sultanpur Lodhi Road to Fattu Dhinga Road, and then to Kanjli Road. The road is proposed to be widened to 25 m (R4 category) to provide a better connectivity to the inner town areas.

Within the town, roads like Fattu Dhinga Road, the Mall Road, Sadar Bazar Road, Amrit Bazar Road, etc. too are proposed to be made free from encroachment as these roads have experienced considerable development along them in the recent years.

Proposed Ring Road

In order to rationalise the movement of inter and intra city traffic and to provide inter connectivity between different radial roads, a Ring Road has been proposed with width of 60 m. The proposed Ring Road not only rationalizes the traffic but also provides high degree of accessibility to the different parts of the town and LPA. Alignment of the Ring Road has been evolved keeping in view different projects, which have already come up, and new projects like DAC and Commercial Centre, and Logistics Park and Industrial Zone proposed along Sultanpur Lodhi Road, which have been approved and are expected to generate lot of traffic. Alignment has also been evolved considering the future industrial growth expected to come up to serve RCF and other industries, which is likely to take place in the town, so that the traffic meant for the industrial zone does not create any problem for the town traffic. Further Ring Road is also to cater the needs of regional traffic, which at present passes through the town. The alignment of the Ring Road also takes into account large recreational area of

Kanjli Wetland, which is proposed to be developed as major recreational and tourist attraction centre. Ring Road will also provide high degree of accessibility to Industrial Focal Point and IT Park in the village Jhal Thikriwal. The total alignment of the Ring Road has been evolved with twin objective, i.e. minimising the length of the road in order to cut down the cost and to provide high degree to different parts of the town, besides rationalizing the inter and intra city traffic. Thus the Ring Road delimits the urbanisable area of the Kapurthala town. The Ring Road is also envisioned to work as a connector between the Industrial Zone and the Logistics Park in the soouth, with Industrial Focal Point in the north and DAC and Commercial Centre in the east.

It will be prudent to consider the option of linking the major traffic and transportation network of Jalandhar Master Plan with the Kapurthala Master Plan. The growth of Kapurthala has been largely overshadowed by the presence of Jalandhar in close proximity. Accordingly, it is important that Kapurthala should be made independent of the influence of Jalandhar. Major factor hampering the growth of Kapurthala has been absence of direct connectivity to the National Highway-1 (G T Road), which makes all the traffic meant for Kapurthala to pass through congested areas of Jalandhar. Despite the presence of large number of institutions of national and state importance, the growth and development of Kapurthala has not adopted the upward trajectory only because of lack of direct accessibility. Accordingly, in order to leverage the growth and development of Kapurthala, it is proposed to provide direct accessibility to Kapurthala from G.T Road by linking the Ring Roads of Kapurthala and Jalandhar Master Plans.

Proposed New Road

A new road is proposed to connect the Sultanpur Lodhi Road with Fattu Dhinga Road. The road will connect the existing road section running along the Grain Market leading to Khalu Village to the road section of Markfed Circular Road running along the STP. The new road will have ROW of 25 m, with the same width proposed for the road sections along the Grain Market and of the Markfed Circular Road.

Another road is proposed adjacent to Jalandhar Road connecting it with Ring Road. The road will lead towards Sultanpur Lodhi side and will meant for the traffic plying between Jalandhar and Sultanpur Lodhi. The construction of this road will thus save the traffic moving between Jalandhar and Sultanpur Lodhi from the need of using two ROBs built near to each other on Jalandhar Road and Ring Road.

Proposed Over-bridges

All intersections involving major roads and railway lines create obstruction in the free flow of traffic and thus causing congestion and pollution. Over bridges are seen as a solution to this. As Ring Road is proposed for the LPA, which crosses the major roads and railway lines, accordingly it is proposed to construct 2 Railway Over Bridges (ROBs) at their intersections for the smooth and uninterrupted flow of traffic. The ROBs identified are on the junction of Jalandhar-Kapurthala Railway Line and the Ring Road in the eastern part of the LPA and the junction between the railway line and the Ring Road near Sheikhupur. The priority for construction of ROBs shall be as under:

1. ROB on Kapurthala-Jalandhar Railway Line and Ring Road towards east.
2. ROB on Kapurthala-Sultanpur Lodhi Railway Line and Ring Road towards south near Sheikhupur.

Junction Improvement

Junctions of the Ring Road with the major radial roads leading to Hamira, Kartarpur, Subhanpur, Fattu Dhinga and Nakodar shall be properly designed and provided with traffic lights including the free flow of left side traffic.

In addition to inadequacy of road network in the Kapurthala town, it has also been observed that majority of road junctions have not been properly planned, designed and constructed. This has led to creation of traffic bottlenecks at major junctions of the town besides causing delays and inconvenience to the road users. Delay in movement leads to creation of considerable pollution due to emission of smoke by the vehicles adversely impacting the quality of life in the town. The congestion at few junctions has also led to large number of accidents. In order to rationalize the flow of traffic and minimize conflicts at the junctions carrying large volume of traffic, it is proposed to improve the road geometry at following junctions, which have recorded high rate of accidents. These junctions are in addition to major junctions of radial roads connecting with other towns and cities and the proposed Ring Road as detailed above.

1. Sat Narain Chowk
2. Shiv Mandir Chowk
3. Kachahri Chowk.
4. Samadh Baba Jhote Shah (Jalandhar Road) Chowk.
5. Chahal/ Ramneek Chowk.
6. Masjid Chowk.
7. Subhash Chowk.

8. Kottu Chowk.
9. Charbatti Chowk.
10. D.C Chowk
11. Near Bypass Chowk.

Proposed Bus Terminal

As per study made and analysis carried out of the existing location of Bus stand in Kapurthala on Jalandhar-Fattu Dhinga Road, it has been observed that location of Bus stand at core of the town is largely responsible for creating traffic congestion in the central area. Thus considering the future growth of the town and increase in the volume of the traffic on Jalandhar road, it has been proposed to shift the existing Bus stand to the intersection of Ring Road and Jalandhar Road outside the municipal limits. The relocation of the bus stand to new site will help in minimizing traffic congestion in the core areas since regional buses need not have to cross through the town.

Proposed Truck Terminal

Trade and commerce of a town is largely sustained by the transportation network in order to support the movement of the goods or produced materials. The major economic activity being agriculture in the town, there is a need of fast transportation of the goods from and to the local market and the surrounding villages. Also there is a need for efficient transportation of the goods from surrounding villages to existing grain market.

In the absence of regulated space for parking and a truck stand, at present the trucks are parked here and there in the town on major roads. To provide them a permanent and formal parking space, a Transport Nagar/Truck Terminal has been proposed within the Industry and warehousing zone on Sultanpur Lodhi Road. However, the exact location of the Truck Stand will be as decided by the Site Selection Board and the concerned development agency.The Transport Nagar suggested will have parking lots for trucks, rest rooms for drivers, repair shops, etc. The proposed truck stand will also take care of the movement of the goods traffic generated by the logistic park. The exact location of the Truck Stand will be as decided by the Site Selection Board and the concerned development agency.

Proposed Parking Lot

With ever increasing urban population and increasing trends of vehicle ownership due to improving economic status, the vehicular population in the Kapurthala has been found to increase at a rapid pace. The volume of road and open space for them has not increased in that proportion. In the absence of such spaces most of the vehicles are parked on the roads leading to traffic congestion and problems of movement of vehicles. Accordingly, in order to rationalize the movement of traffic in the town and to achieve the desired level of efficiency, in addition to creating new linkages/widening of existing roads, it will be critical to provide adequate parking spaces in the town.

In order to meet the basic requirements of parking, it is proposed to use the space made available by the shifting of Bus Stand for commercial purpose with adequate provision of parking made as integral part of the planning and designing of the commercial area. With the shifting of the Bus Stand from the core of the town will also help in reducing the demand for parking in the core of the town. Adequate parking shall also be provided as development of the commercial area in different parts of the town.

In addition, parking spaces would also be created through the system of development control regulations which provide for creating adequate parking spaces on defined norms for each industrial/commercial/institutional use as integral part of development of such landuses. Further, auto and rickshaw parking lots/stands near the proposed Bus Stand site and on major roads have been proposed.

The proposals of traffic and transportation ,as detailed above, aims at rationalizing the existing road network, creating a well defined hierarchy of roads, redesigning the critical areas including road junctions, creating over-bridges, rationalizing the inter and intra city traffic, creating adequate parking spaces, ensuring distribution and collection of traffic from various parts of the town both in terms of existing and proposed development, promoting well defined interface between different landuses, improving efficiencies in traffic movement within the town, minimizing delays, etc. The proposed traffic and transportation plan aims at improving the operational efficiency and productivity of the town and creating appropriate environment by minimizing vehicular pollution. The proposed traffic and transportation plan defined in the proposed landuse plan will form the basis for promoting the rational and planned growth of the Kapurthala town and the LPA area.

The proposed network will also help in redefining the town into different development zones which can be planned on the basis of self contained and self sufficient neighborhood principles with convenience as the major objective. This would also help in promoting communities and interlinking them to the basic framework of the town. In addition, it will also help in redesigning the basic infrastructure and services essential for basic sustenance of the people and the town.

CHAPTER-11

DEVELOPMENT CONTROLS & ZONING REGULATIONS

11.1 SECTION I: DEVELOPMENT CONTROL REGULATIONS

The purpose of the Development Control Regulations (DCR) is to assist all stakeholders including developers and end – users within the Local Planning Area, Kapurthala to strive for a sustainable better quality and environment – friendly development.

These Development Control Regulations are applicable to the entire set of existing and proposed developments that are going to come up within the Local Planning Area. The developers are required to comply with the provisions of Zoning and Landuse Plans defined in the Master Plan. However, Development Schemes/ Projects, which have already been approved by the Competent Authority shall continue to be governed by the terms and conditions stipulated for their approvals.

Chapter XI of the Punjab Regional and Town Planning and Development Act, 1995 (Amended 2006) provides for 'Control of Development and Use of Land where Master Plan is in Operation.' The Chapter lays down the procedural framework for exercising the development control. "Development" in the said act has been defined as:

> *Carrying out of building, engineering, mining, quarrying or other operation in, on, over or under land or making of any structural or material changes in any building or land including that which affects the appearance of any heritage site and includes demolition of any part or whole of the building or change in use of any building or land and also includes reclamation, redevelopment, a layout or sub-division of land.*

In order to achieve the basic objectives of planned and orderly development within the planning area following regulations have been stipulated:

11.1.1 RESIDENTIAL

The norms for residential plotted development and the group housing to be developed in the Kapurthala Local Planning Area shall be as defined below

Category	**Minimum Area of colony***
Group Housing **	
Outside Existing Municipal limits	
a) For General	5 Acres (standalone/ independent)
b) For EWS	2.5 Acres

* Minimum area for a colony including plotted and group housing shall be as notified by the State Government/Competent Authority from time to time.

** The Norms for Group Housing shall be as defined in the Para 11.1.1.2 below

Note:

- Maximum area under residential and commercial use in residential colony shall not exceed 55% subject to the condition that commercial component shall not exceed 5% of total area.
- Maximum area under institutional / public buildings shall be restricted to 10% of total area
- Minimum area under parks/open spaces, roads & parking lot shall not be less than 35% of total area.
- Minimum road width within residential areas shall not be less than 40 feet (12mts). If the existing road is less than 40 feet (12mts), then land on both sides of the road shall be reserved for future expansion for widening to comply with the minimum requirement of 40 feet (12mts). The number of storeys in the buildings on these roads shall not exceed three storeys (G+ 2 storeys).

Note: - Provision of Floor Area Ratio, Height, Ground Coverage, Parking, Setbacks etc. for individual residential plots within the existing Municipal Corporation/Council areas shall be governed by Municipal Building Byelaws. However, in case of area falling outside Municipal limits, the Building Byelaws of respective Development Authority/PUDA shall apply.

11.1.1.1 Parking Requirements for Plotted Developments

Provision for parking in the plotted development shall be governed by following norms:

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

*The provision for parking within the existing Municipal Corporation/Municipal Council limit's areas shall be as per the respective Building Byelaws.

* Variations up to 10% may be permitted by the Competent Authority based on conditions / constraints arising from site.

11.1.1.2 Group Housing

Provision of Group Housing within the Local Planning Area excluding Municipal Corporation/Municipal Council areas shall be subjected to following norms:

1	**Minimum Plot size***	
	Outside Existing MCl limits a) For General Category b) For EWS	5 acres 2.5 acres
2	**Minimum Road Width**	For group housing stand alone projects, minimum width of approach road shall be 60'. However, the promoter is required to leave space from his own land for widening the road to 80' and the space so left shall be deemed to be public space meant for road widening. In case of approved colonies, no group housing shall be permitted on a road width less than 60'.
3	**Minimum Frontage**	20 meters
4	**Permissible FAR**	1.75
5	**Permissible Height**	There shall be no restriction on the height of building subject to clearance from Air Force Authorities and fulfillment of other rules such as setbacks, distance between buildings, etc. However, structural safety and fire safety requirements shall be as per the National Building Codes.
6	**Parking Provisions**	For group housing, parking norms shall not be less than 1.5 ECS per 100 sq m of covered area. The maximum provision allowable for group housing projects will be 3 ECS per dwelling unit.

* Minimum area for a colony including plotted and group housing shall be as notified by the State Government/Competent Authority from time to time.

However, in case of area falling within existing Municipal Corporation/Municipal Council limits, the norms shall be as specified in the Municipal Building Byelaws.

Note:

- Construction of residential houses sold by promoters on floor basis shall also be considered as group/flatted housing development and provision of parking to be made shall be as per the norms applicable to group housing.
- Size of front gate and construction of front boundary wall and construction of front boundary wall is optional to meet the parking requirements.
- All projects for which CLU has been granted prior to the approval of this Master Plan shall stand adjusted of the proposed land use in master plan subject to necessary environmental safeguards, road networks etc. defined in the Master Plan.

11.1.1.3 Farm House

Provision of farm houses shall be governed by following planning area and coverage norms:

Minimum area	2.5 acres
FAR	0.04
Ground Coverage	2% or 200 sq mts which ever is less
Number of storeys	Not to exceed 2
Height	In case of Single Storey building not to exceed 18'-0" In case of Double Storey building not to exceed 28'-0"
Hard Surface	Not to exceed 10%

11.1.2 COMMERCIAL

Commercial uses in residential zones located within and outside the Municipal Limits shall be permitted on roads having minimum width of 80 feet. Area requirements for such commercial developments within the existing Municipal Corporation/Municipal Council limits shall be as per the Municipal Building Byelaws/ Development Controls and Zoning Regulations as the case may be. The projects, schemes already approved and streets/ roads already declared/notified as commercial by the state govt., falling within the existing Municipal Corporation/Municipal Council limits on the date of notification of the Master Plan shall continue to be regulated by the respective provisions, conditions, rules and regulations of approval of such projects, schemes and streets/roads.

In case of standalone commercial complexes with height greater than three storeys falling outside existing Municipal limits, the provisions realted to area, height, F.A.R. etc. of such buildings shall be governed and regulated by following norms:

Additional Criteria for Standalone Commercial Complexes Outside Existing Municipal Corporation/ Municipal Council Limits (having more than three storeys)*

1	**Minimum Area Required**	1000 sq.mts or as may be notified by the Competent Authority from time to time
2	**Minimum Frontage**	20 meters
3	**Maximum F.A.R.**	1.75
4	**Maximum Height**	There shall be no restrictions on the height of building subject to clearance from Air Force Authority and fulfillment of other rules such as setbacks, distance between buildings etc. However, structural safety and fire safety requirements shall be as defined in the National Building code.
5	**Maximum Ground Coverage**	40%
6	**Parking**	For projects without multiplexes, the parking shall be provided @ 2 ECS per 100 sq m of total covered area
		For projects with multiplexes/cinemas/theatres, the parking norms shall be: a) @ 3 ECS per 100 sq m of covered area. The covered area shall be calculated on the basis of total covered area of the multiplex component + 30% of the said component and b) @ 2 ECS per 100 sq m of covered area, in respect of balance commercial component including circulation area

		Parking norms within the Municipal Limits shall be as notified by the Department of Local Government.
7	**Basement**	Multi level basement will be allowed below and within the building envelope. No parking shall be permitted within the setback lines. Parking beyond the built up area on ground floor shall be provided at ground level with provision of mechanical ventilation made in case of more than one basement. Parking shall satisfy the public health and structural requirements.
8	**Minimum Approach Road Width**	80 feet
9	**Landscape**	If the case of sites having area one acre or more, minimum 15% of the site shall be landscaped.
10	**For Movement of Fire Tender**	Subject to prescribed norms and standards, minimum setback on all sides shall be 6 mts.

*However, subject to the provision of minimum road width specified above, the provisions of minimum frontage,F.A.R, height, ground coverage, parking, basement etc. for the sites falling within the existing Municipal Corporation/ Municipal Council limits shall be governed by the respective Municipal Building Byelaws.

Note:

Total parking requirement defined above shall be provided within the plot area including basements, stilts and available open spaces etc.

For the purpose of calculating the area under parking, norms for one E.C.S. shall be as defined below:

- 23 square meters in case of open parking at ground level.
- 28 square meters for parking under stilts.
- 32 square meters for parking in the basement.

11.1.2.1 Commercial at local level

Adequate provision shall be made for convenient shopping in the shape of small scale, single storied commercial facilities or commercial on ground floor at the local level within as well as outside the Municipal limits, to meet the local requirements subject to the condition that such sites shall be located on the roads having minimum width of 18 m (60 feet) and provided with a minimum setback of 6mts from road reservation for parking.These commercial facilities are intended to serve the needs of local residents only and shall form part of the predominant residential land use defined in the Master Plan.

11.1.2.2 Vehicular access

No property located on National Highway shall have a direct access from such roads. Vehicular access to all such properties (within and outside the Municipal Limits) that abut National Highways shall be through a service lane having a minimum width of 6 meter (20

feet). The setbacks in case of these properties shall be as defined by the Competent Authority from time to time.

11.1.3 INSTITUTIONAL

Minimum area and size in case of institutional buildings shall be as per the affiliating authority norms with minimum frontage of 20 meters and road width of 60 feet, (except in case of nursery and primary schools) F.A.R., Ground Coverage, Height, etc. of the building shall be as defined in the approved Zoning plan. Zoning plan of the site shall be approved from the Competent Authority.

11.1.4 INDUSTRIAL

The norms for the site coverage, parking and FAR for the industrial sites shall be as defined below:

Size of Plot	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
Parking	@ 1 ECS per 100 sq. mtr. of covered area*

* The area of 1 ECS shall be as defined in the Para 10.1.2 above.

Note:

- **FAR Permitted:** Industrial / I.T. Park shall have minimum 10 acres of area. In an I.T. park, I.T. component shall have F.A.R. 2. In case of Industrial Park, for industrial F.A.R permitted for an industrial component shall be 1 and other components shall have F.A.R as mentioned for different land uses in Master Plan. In industrial park, only green and orange industries shall be permitted.
- **Residential Component**: Residential component in the industrial plot / premises shall not exceed 5% of the area of the site and shall form part of the maximum permissible covered area.
- **Height:** There shall be no restrictions on height of the 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 shall be as defined in the N.B.C. (National Building code).
- **Road width**: The minimum road width within the industrial unit shall not be less than 40 feet. In case, the existing road is less than 40'-0" in width, then it shall be widened to 40'-0" by taking equal strip of land from both sides of the road.

- The construction activity along the Scheduled Roads and Bye-passes passing through Local Planning Area, Amritsar shall be subject to the provisions of Section 143 of the Punjab Regional and Town Planning and Development Act, 1995 as amended from time to time.
- 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.
- **Existing Industries:**

The existing industries falling within conforming/non-conforming uses shall be governed by following regulations:

i) All industries existing in clusters located in residential/commercial area as shown on Proposed Landuse Plan, which are existing on the date of notification of Master Plan stands adjusted but shall be allowed to expand within existing premises only subject to the norms and conditions specified by the Punjab Pollution Control Board.

ii) Industries falling in the red category other than those falling in clusters as mentioned in (i) above shall not be permitted within the residential plots and would be required to shift to the designated industrial zone within a period of 10 years from date of publication of Master Plan.

iii) All industrial units falling in residential area shall be permitted to change the nature of industries that are knowledge based and involve the use of IT and ITES for which permission should be granted liberally subject to the condition that location does not cause any congestion and traffic problems.

- **Incentives for shifting of existing industries falling within non-conforming zones: (whether located individually or falling under the clusters as earmarked on the proposed landuse plan):**

In case of industries falling in the red category, which are in operation as on date of Master Plan notification and are located in the non-conforming landuse zone, if such industries shift outside this zone to any of the designated industrial zone within the Local Planning Area of Amritsar or any other of State of Punjab and generate at least the same number of jobs at the new location, will be provided with following benefits:

1) No CLU, EDC or Licence Fee on the existing industrial site shall be charged 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 for which the prescribed CLU, EDC and Licence Fee are higher, then the difference between CLU, EDC and Licence Fee of the proposed land use and plotted residential has to be paid. In case that particular land is put to a land use for which CLU, EDC or Licence Fee is less than the plotted residential, the difference between these fees / charges for the plotted residential and proposed land use shall not be payable by the Government / Urban Development Authority.

2) If the industry shifts in the subsequent two years of the above mentioned period of three years, it will enjoy only 50% reduction on CLU, EDC and Licence Fee on the present site if used for plotted residential purposes. If used for any permissible land use other than plotted residential, the difference between the CLU, EDC and Licence Fee of the new land use and that of 50% of plotted residential has to be paid. In case that particular land is put to land use for which CLU, EDC or Licence Fee is less than the plotted residential, the difference between these fees / charges for the plotted residential and proposed land use shall not be payable by the Government / Urban development Authority.

3) No CLU, EDC or Licence fee on the new industrial site shall be payable if the industry shifts within five years of the notification of the Master Plan.

However, considering the role and importance of local craft and cottage industries, the decision for relocation/shifting shall be based on detailed study of such industries including assessment of their value, issues faced by them and threats they impose on the city environment subject to the condition that no such polluting industry shall be permitted to operate from the residential areas.

11.1.5 ENVIRONMENTAL CONSIDERATIONS:

- All the textile / dying and electroplating units with in industrial zone shall be required to set up treatment plants individually or collectively to achieve zero liquid discharge and meet all the requirements laid down by Punjab Pollution Control Board.
- Minimum green buffer of 15 meters depth in the shape of a belt comprising of broad leaf trees shall be provided around the boundary of village abadies. Also between residential areas and air polluting industries falling in industrial zone of Master Plan located within 100 meters, shall be provided with a green buffer of min. of 15 meters/max 50 meters depth all along the industrial/residential zone. The provision of buffer strip shall be made by the owner of landuse, which comes later.
- All residential colonies, commercial establishments like shopping malls, multiplexes etc shall maintain a minimum distance of 250 meters from the hazardous (maximum accident hazardous) industries notified by Director General, Factory Advisor Service Labor Institute. The distance should be measured from source of pollution / hazard in the industrial premises to the building lines as per zoning plan of the colony / complex. However for specified type of industries such as rice shellers/sela plant, brick kilns, stone crushers, hot mix plants etc. standards prescribed by PPCB and concerned dept. shall be followed.

11.1.6 SAFETY

Fire

Fire services have to play pivotal role and be fully prepared in protecting people from fire hazards, building collapse, road accidents and other unforeseen emergency etc. At present, there is only one fire station in town.

Planning norms and standards for safety/ fire facilities

Sr. No.	Category	Population/unit (approx.)	Plot area
1	Fire post	3-4 Km radius	2000 sq. mt.
2	Fire station	5-7 Kin radius	1.0 Ha.
3	Disaster management centre	1 in each administrative zone	1.0 Ha. along with suitable open area (2 ha.) for soft parking, temporary shelter, parade ground etc.
4	Fire training institute/ college	City level (one site in urban extension)	3.0 Ha.

Development Controls for Safety/Fire Facilities

As per Zoning Plan/Building Byelaws of the local body/any other concerned agency or as per Govt. instructions issued from time to time.

Guidelines for locating Fire Stations & other Fire Fighting Facilities in Urban Extension:

i) Fire station should be so located that the fire tenders are able to reach any disaster site immediately within minutes.

ii) Fire station shall be located on corner plots as far possible and main roads with minimum two entries.

iii) In new layouts, concept of underground pipelines for fire hydrants on periphery, exclusively for firefighting services shall be considered.

iv) Fire stations are permitted in all land use zone/sectors except in Recreational use zone.

v) Necessary provisions for laying underground/over ground fire fighting measures, water lines, hydrants etc. may be kept wherever provision of fire station is not possible.

vi) The concerned agencies shall take approval from Fire Department for firefighting measures while laying the service for an area.

Disaster Management Centre

According to the Indian Seismic Zone Map, Kapurthala is placed in Seismic Zone IV, which means high damage risk zone. Such natural and manmade disasters neither can be prevented nor predicted. However, with the technological advancement to some extent mechanism can be developed to mitigate the after effects of the disaster. Areas of vulnerability can be identified and necessary measures can be proposed by the concerned agencies. The concerned local bodies should keep updating the building byelaws to safe guard against disasters and ensure effective and impartial enforcement. Following policies and strategies for disaster management are proposed:

1. Pre-Disaster Preparedness

(i) a) Micro-zonation surveys should be referred for land use planning and be considered while preparing the sectors/Zonal Plans and Layout Plans.

- Seismic micro-zonation for selected areas having high growth rates shall be taken up on priority.
- On the basis of vulnerability studies and hazard identification, which includes soil conditions, probable intensity of earthquake, physiographic conditions of the area, fault traces, etc., local level land use zoning and planning shall be undertaken.

(b) Building byelaws shall incorporate the aspects of Multi Hazard Safety, and Retrofitting.

- Priority shall be given to public buildings (such as hospitals, educational, institutional, power stations, infrastructure, heritage monuments, lifeline structures and those which are likely to attract large congregation) for their ability to withstand earthquake of the defined intensity.
- Suitable action should be taken for retrofitting and strengthening of structures identified as vulnerable as per earthquake manuals and National building code. A techno-legal regime has to be adopted for provision Multi Hazard Safety aspects.

(ii) Kapurthala Fire Services being the nodal agency for disaster management shall identify vulnerable areas such as areas with high density and poor accessibility in the town and propose suitable measures. Proposed Disaster Management Centres should be established in every zone/sector to deal with the disasters, including bio-chemical and nuclear disasters.

(iii) Sensitize people, particularly school children, about after effects of disaster.

(iv) Make people aware through media campaigns and advertisements about emergency procedures and location of emergency shelters etc.

2. Post Disaster Management

(i) It has been observed that any disaster is generally followed by break down of communication lines and disruption of essential services. Therefore, the key communication centers shall be protected from natural disasters i.e. flood, fire and earthquake etc. and services restoration shall be taken up on top most priority. Necessary setup shall be created in each of the concerned department for such eventualities.

(ii) Standard type designs and layout shall be prepared by the local bodies and made available to the people so that crucial time is not lost in approval of layout plans and building plans after disaster.

Disaster Management Centers have been proposed to serve people in the case of disaster and provide emergency shelters.

11.1.7 OTHER DEVELOPMENT CONTROLS AND GUIDELINES

- Regulation for village abadis: Special Building regulations 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.
- All Panchayat land of villages falling in Local Planning Area shall be used exclusively for public and semi-public uses including utilities, services, physical and social infrastructure, parks, open spaces, community facilities etc. and not for any other purpose.
  - 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.
  - The minor drains shall have minimum 10 meters wide (or as may be specified by the state govt. from time to time) green strips on either side of drains.Other major water bodies shall have minimum 30 meters (or as may be specified by the state govt. from time to time) green strips on each side. Realignment of water bodies shall be permissible wherever feasible, subject to the certification by the Engineering Department to ensure free flow of storm water.
    - Contiguous expansion of village *abadies* in non-residential zones of Master Plan is permissible up to the extent shown in the Proposed Land Use Plan. However, for the village abadi falling in the residential zone of Master Plan, no such restrictions shall be applicable.

11.1.8 TRANSFERABLE DEVELOPMENT RIGHTS

To facilitate development, it is necessary to accord top priority to the implementation of public utilities and infrastructure (such as roads, parks, green belts etc.) which will in turn encourage planned development/regulated urbanization. However, the respective technical agency or authority will not be able to proceed with its implementation programmes until the ownership of private land affected by these public utilities and infrastructure has been transferred to the state or to the relevant authority(s).Acquisition of private land for this purpose can be carried out through one of the following options:

- Cash compensation to be paid to to affected land owners whose land is to be acquired

or

- A land pooling scheme can be formulated and implemented.

Of these options, use of mechanism of TDR (Transfer of Development Rights) is recommended due to the reasons specified below:

- It is relatively simple and direct mechanism to implement and execute.
    - The requisite public infrastructure projects can be implemented quickly, thus facilitating rapid urban development.
- The interests of affected land owners are protected.

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

The Competent Authority on priority shall finalize detailed policy guidelines on the operation and implementation of TDR Scheme.

SECTION II – ZONING REGULATIONS

In view of the above, the Zoning Regulations proposed under this Master Plan are essentially concerned with the control of land use. The proposed land use plan includes following land use zones

- Residential
- Commercial
- Mixed
- Institutional (Government/Public and Semi Public)
- Industrial
- Recreational
- Warehousing and Godowns/ Logistic hub
- Rural and Agricultural

In addition specific area/network designations have been indicated in respect of proposed arterial road network, existing rail network, transport terminals etc.

As defined earlier since, sub-division of land and design and construction of buildings is being controlled by well established regulations and concerned Competent Authorities, Zoning Regulations under the Master Plan are seen as the reference point for these agencies to ensure that the development permitted by them is within the framework of the Master Plan.

11.3 THE ZONING REGULATIONS PROPOSED FOR ADOPTION IN LPA KAPURTHALA ARE PRESENTED BELOW:

Zoning Regulations

Chief Town Planner, Punjab being the Planning Agency designated under section 57 of the Punjab Regional and Town Planning and Development Act 1995 as amended in 2006 for the Local Planning Area, Kapurthala declared under section 56 of the said Act, following the requirement under clause (d) of sub section 1 of section 70 of the said act hereby makes following Zoning Regulations as a part of the Master Plan prepared for the Local Planning Area, Kapurthala.

11.3.1 SHORT TITLE, SCOPE, EXTENT & COMMENCEMENT

11.3.1.1 Title

These Regulations shall be called the Zoning Regulations for Local Planning Area, Kapurthala 2009 (hereinafter referred to as "Regulations").

11.3.1.2 Scope of the Regulations

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

11.3.1.3 Jurisdiction

These Regulations shall apply to all "development" in the Local Planning Area, Kapurthala declared under section 56 of the Punjab Regional and Town Planning and Development Act 1995 *vide* notification no 12/9/2008 – 4 HGI/2736 dated 16th October 2009.

11.3.1.4 Date of Coming into Force

These Regulations shall come into force on the day on which the Designated Planning Agency publishes the final Master Plan along with these regulations in the *Official Gazette* after obtaining the approval of the State Government under sub section (5) of section 70 of the "Punjab Regional and Town Planning and Development Act 1995".

Till such approval, the Authorities while considering the application for permission of development shall have due regard to the draft proposals and provisions made in these Regulations.

11.3.2 DEFINITIONS

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

1. **"Act"** means the Punjab Regional and Town Planning and Development Act, 1995 (Punjab Act No. 11 of 1995) as amended from time to time.
2. **"Government"** Means the Government of the State of Punjab.
3. **"Chief Town Planner"** Means the Chief Town Planner of the Department of Town & Country Planning, Punjab or any other officer to whom his powers are delegated.
4. **"Planning Agency "** means the Chief Town Planner Punjab designated as such under Section 57 of the Punjab Regional and Town Planning and Development

Act1995 (Punjab Act No. 11 of 1995) as amended from time to time for Local Planning Area Kapurthala.

5. **"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, Kapurthala and as indicated on Drawing No.D.D.T.P(K)13/2009 dated:09/11/2009.
6. **"Local Planning Area"** means the Local Planning Area Declared under section 56(1`) of the Punjab regional and town Planning and Development Act, 1995 (Punjab Act No. 11 of 1995) as amended from time to time vide notification no. 12/9/2008 – 4 HGI/2736 dated 16th October 2009.
7. **"Non- Conforming Building or Use"** means building/use in respect of any land or building in the Local Planning Area, the existing use of which land or building is not in conformity/contrary to the prescribed land use.
8. **"Proposed Landuse Plan"** means the plan showing the proposed any admissible uses of different areas and Land use zones covered in the Local Planning Area, Kapurthala and as indicating on Drawing No. DDTP (K) 16/2010 dated 16/12/2010.
9. **"Sector Plan"** means the detailed plan of a part of Master Plan as delineated in the Master Plan and approved by the Chief Town Planner, Punjab showing all or any of the following:-
    a) Layout of plots, streets, roads Public open spaces, parking areas etc.
    b) Area temporarily or permanently prohibited for the building operation.
    c) Uses Permitted in respect of each or a group of plots into which the land may be shown to be divided.
    d) Any other detail provided in the Lay-pout plan.
10. "**Zoning Plan"** means the plan of area or part thereof or supplementary layout plan approval by the Chief Town Planner 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 respects 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 condition as laid down in these regulations hereafter.

11. **"Knowledge Park":** An area having all such uses and activities but does not include commercial/industrial activities and which makes value addition to the society but are absolutely non –polluting, non hazardous and Environment friendly, free from noise& vibrations, having no polluting effects on air and water and causing no nuisance whatsoever. Uses permitted in such parks will be as determined by Chief Town Planner, Punjab from time to time.
12. **"Farm House**" Farm house means a building allowed on a holding of agricultural land for residential and agricultural related activity of the land holder shall be governed by the regulations made specified in Para 11.1.1.3.. The total floor area of such farm house shall not exceed 2 percent of the area of holding or 200sq.m.whichever is less.
13. **"Atta Chakki":** Atta Chakki is categorized as service industry where:
    - Grinding of only food grains is carried out through the process of crushing under the load rotational movement of two plates or blocks and where 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 be carried out by the Atta Chakki owner at commercial level.
    - The Atta Chakki shall only be permitted on roads having minimum right of way of 13.5m.
14. "**House Hold Industry"** House Hold Industry means house hold occupation/industry conducted only by family members/persons residing in the dwelling with or without power and not contrary to the provisions of the Water Pollution (Prevention and Control) Act 1974 Air pollution (prevention and Control) Act 1981 and Environment (Protection) Act 1986.
15. **"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 Environments (Protection) Act 1986.
16. **"Micro, Small and Medium Enterprises engaged in manufacture or production of goods"** have the meaning assigned to them in clause (a) of sub-section (1) of

section 7 of Micro, Small and Medium Enterprises Development Act 2006 of Government of India

17. **Large Industries:** Large Industries are the industries in which the investment in fixed assets in plant and machinery is more than Rupees 10 crores or as defined from time to time.
18. **Public and Semi Public activities:** Public and semi public activities means governmental/ semi governmental offices, educational, medical instituions, recreational and entertainment facilities, cultural and religious institutions etc.
19. **"Mixed Landuse"** means the multiple use of land is allowed to co-exist such as residential, commercial, institutional etc.

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

11.3.2 LAND USE ZONES

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

- Residential
- Institutional
- Industrial
- Warehousing and Godowns/ Logistic hub
- Rural and Agricultural

11.3.3 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 & 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

11.3.4 USE PROVISIONS IN LAND USE ZONES

Following table describes 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, while the blank cells are meant with the impermissibility of the landuse in the respective landuse zone. A number in the cell indicates the conditions listed at the end of the table subject to which the use is permissible.

LAND USE ZONES AND PERMISSIBLE LAND USES						
USE CLASS		**LAND USE ZONES**				
Sub Code	**Description**	**Residential**	**Commercial**	**Industrial**	**Warehousing**	**AgriculturalRural and**
A	**Housing**					
A1	Residential houses in the form of plotted development, group housing, farm houses for customary residence including household industry, EWS housing			**1**		**2**
A2	Old age homes, Orphanages, Hostels for students, working women etc.					**3**
A3	Service apartments, Hotels including Star Hotels, Motels, Guest Houses, Dharamshalas, Lodging Houses			**4**		
A4	Jails, asylums, reformatories and the like					
A5	Residences for watch and ward staff, residences for industrial workers/ management					
A6	Housing not classified above					
B	**Trade and Commerce**					
B1	Retail trade including markets for fruits and vegetables, meat and fish; super markets,informal shopping					
B2	Department stores, Malls including super market, retail trade, restaurants and multiplexes					
B3	Personal and community services like laundry, hair dressing, beauty parlors, tailoring, coaching classes, cyber cafes, Atta Chakki, Repair of Household Appliances, Bank Branches, ATM					
B4	Wholesale trade with storage of commodities					**5**
B5	Filling Station **					
B6	Kerosene Storage/Gas Godown and storage of fire works	**8**				
B7	Gas Distribution (without storage of cylinders)					
B8	Trade Fares, Exhibition and Conventional centers					
B9	Showroom of Mills/ Factory Retail Outlets,Auto Showrooms and Auto Workshops					
B10	Trade not classified above					
C	**Manufacturing (NIC-2008, Section C) ***					
C1	Manufacture of Food Products (NIC Division 10)					
C2	Manufacture of Beverages (NIC Division 11)					
C3	Manufacture of Textiles (NIC Division 13)					

LAND USE ZONES AND PERMISSIBLE LAND USES						
USE CLASS		**LAND USE ZONES**				
Sub Code	**Description**	**Residential**	**Commercial**	**Industrial**	**Warehousing**	**AgriculturalRural and**
C4	Manufacture of Wearing Apparel (NIC Division 14)					
C5	Manufacture of leather and related products (NIC Division 15)					
C6	Manufacture of wood and products of wood and cork, except furniture; (NIC Division 16)					
C7	Manufacture of paper and paper products (NIC Division 17)					
C8	Printing and Reproduction of Recorded Media (NIC Division 18)					
C9	Manufacture of coke and refined petroleum products (NIC Division 19)					
C10	Manufacture of chemicals and chemical products (NIC Division 20)					
C11	Manufacture of pharmaceuticals, medicinal chemical and botanical products (NIC Division 21)					
C12	Manufacture of rubber and plastics products (NIC Division 22)					
C13	Manufacture of other non-metallic mineral products (NIC Division 23)					**6**
C14	Manufacture of Basic Metals (NIC Division 24)					
C15	Manufacture of fabricated metal products, except machinery and equipment (NIC Division 25)					
C16	Manufacture of computer, electronic and optical products (NIC Division 26)					
C17	Manufacture of electrical equipment (NIC Division 27)					
C18	Manufacture of machinery and equipment n.e.c.(NIC Division 28)					
C19	Manufacture of motor vehicles, trailers and semi-trailers (NIC Division 29)					
C20	Manufacture of other transport equipment (NIC Division 30)					
C21	Manufacture of furniture (NIC Division 31)					
C22	Other manufacturing (NIC 32)					
C23	Repair of Machinery and E quipment (NIC Division 33)					
C24	Milk Chilling(independent plot), Pastuerization plant, Cold Storage					
C25	Rice Shellers, Processing of Farm Products, Brick Kilns, Lime/ Charcoal Kilns					
C27	Cottage Industry, Repair of Household Articles, Cycles and scooters repair					
C28	I.T. Parks, Knowledge Park & Industrial Park	**10**				
C29	Cement, Sand and Concrete Mixing Plant(Batching plant), Bitumen, Sand, Concrete Mixing Plant(Hot Mix Plant)					
D	**Transport Storage and Warehousing**					
D1	Warehousing and storage activities for transportation (NIC					**7**

LAND USE ZONES AND PERMISSIBLE LAND USES						
USE CLASS		**LAND USE ZONES**				
Sub Code	**Description**	**Residential**	**Commercial**	**Industrial**	**Warehousing**	**AgriculturalRural and**
	Division 52) and Loading & unloading yard					
D2	Rail and Air Freight Terminals					
D3	Truck Terminals					
D4	Bus Terminals, Auto-Rickshaw/ Taxi Stand					
D5	Warehousing, Logistic Park, Storage & Godowns, Freight complex, Container Yards					
E	**Offices**					
E1	Publishing of books, periodicals and other publishing activities (NIC Group 581) Software publishing (NIC Group 582)					
E2	Motion picture, video and television programme production, sound recording and music publishing activities (NIC Division 59)					
E3	Broadcasting and programming activities (NIC Division 60)					
E4	Telecommunications (NIC Group 61), Govt/ Semi-Govt / Private Business offices					
E5	Computer programming, consultancy and related activities (NIC Division 62)					
E6	Information service activities (NIC Division 63)					
E7	Finance, Banking and insurance (NIC Section K)					
E8	Real estate activities (NIC Section L)					
E9	Professional, scientific and technical activities (NIC Section M)					
E10	Administrative and support services (NIC Section N)					
E11	Public administration and defence; compulsory social security (NIC Section O)					
E12	Professional Services like Lawyers, Accountants, Architects, Charted engineers					
F	**Educational, Training and Research Institutes**					
F1	Pre-Primary Schools, Play schools Kinder Garten					
F2	Primary Schools,					
F3	Secondary Schools, Colleges, Vocational Training Institutes,					
F4	Research and Training Centres, Universities, Centres of Advanced Education and training like IIM or IIT					
F5	Educational, Training and Research Institutes not classified above					
G	**Health care facilities**					
G1	Medical and Dental Clinics and Dispensaries	**9**				
G2	Hospitals (NIC Group 861) and Health Center	**9**				
G3	Nursing care facilities (NIC Group 871)	**9**				
G4	Residential care activities for mental retardation, mental health and substance abuse (NIC Group 872)					

LAND USE ZONES AND PERMISSIBLE LAND USES						
USE CLASS		**LAND USE ZONES**				
Sub Code	**Description**	**Residential**	**Commercial**	**Industrial**	**Warehousing**	**AgriculturalRural and**
G5	Residential care activities for the elderly and disabled (NIC Group 873)					
G6	Veterinary services					
G7	Health care facilities not classified above.					
H	**Arts, entertainment, recreation, cultural and religious activities**					
H1	Arts, entertainment and recreation (NIC Section R) and Multimedia					
H2	Libraries, archives, museums and other cultural activities (NIC Division 91)					
H3	Gambling and betting activities (NIC Division 92)e.g. Race Course					
H4	Sports activities and amusement and recreation activities (NIC Division 93),activities of membership organisations (clubs etc.) (NIC division 94),tot-lots, playgrounds, stadia, golf courses etc.					
H5	Places of worship					
H6	Marriage Palaces					
H7	Arts, entertainment and recreation activities not classified above					
I	**Public Utilities and Services**					
I-1	Electricity, gas, steam and air conditioning supply (NIC Section D),Telecom tower/antina					
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	**8**				
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					
J	**Agriculture, forestry and fishing (NIC Section A)**					
J1	Crop and animal production, hunting and related service activities (NIC Division 01)					
J2	Land Conservation and Preservation measures such as Storage, Check Dams and other water harvesting measures					
J3	Fishing and aquaculture (NIC Division 03)					
J4	Quarrying of stone, sand and clay (NIC Group 081)					
J5	Plant Nursery and Greenhouses related to Nursery, Floriculture					

Notes:			
NIC	National Industrial Classification (All Economic Activities) 2008, Central Statistical Organisation, Ministry of Statistics and Programme Implementation, Government of India		
A	Shaded areas indicate that the use class is permissible in the zone		
B	Shaded area with number /notation indicates the conditions attached		
	Only EWS housing		1
	Only Farm HoPermissible Uses		**2**
	Old Age homes and Orphanages only		**3**
	Hotel, Motel and Guest houses		**4**
	Wholesale trade in agricultural commodities only		**5**
	Only Manufacture of bricks, earthen pots, country tiles etc.		**6**
	Warehousing for agricultural commodities only.		**7**
	Only in Low Density Residential Zone		**8**
	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		9
	Only Knowledge Parks as defined at Sr. No. 11 above		**10**
	Except Milk chilling		**11**
* 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.		
	Storage and manufacturing of firecrackers shall not be permitted in any habitable zone. However, it will be permitted in the rural and agricultural zone subject to the stipulation made for storage and manufacturing of firecrackers. Sale of firecrackers shall be permitted in the different zones subject to obtaining license from the competent authority and fulfilling the conditions for sale of firecrackers		
	The activities not mentioned in the table above but found compatible for particular land use zone shall be permissible with the approval of competant authority.		

11.3.5 DESIGNATED AREAS

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

- Mixed Landuse
- Traffic and Transportation
- Utilities
- Public & semi public
- Recreational
- Heritage Zone/Protected Monuments/Conservation Sites
- Other Special Areas
- Prohibited Areas
- Forest Areas

USE PROVISIONS IN DESIGNATED AREAS

Following uses are permissible in the designated areas mentioned above.

- **Mixed Landuse**: **Permissible Uses**

All types of public utilities and public buildings, regional level entertainment places, residential use (plotted/flatted), commercial uses like Shopping Malls, Multiplexes, Information Technology Software Parks, Institutes, Hotels, Motels, Hospitals, Clinics, Amusement Parks, Rides, Water Sports, Green Houses, Nurseries, Mela Grounds, Warehouses, Marriage Palaces, Bus Terminals, Truck Terminals, Check Barriers, Weigh Bridges, Buffer Zones, Electric Grid Stations, Residences for Watch & Ward Staff, Petrol Pumps and Filling Stations.

The following four broad types of mixed use shall be permissible in residential premises:

a) **Commercial Activity: Permissible Uses**

Vegetables, fruits, flowers,Bakery items,Confectionary items,Karyana, General store, Dairy product, Stationery, Books, Gifts, Book binding, Photostat, Fax, SID, PCO, Cyber café, Call phone, Booths, LPG booking office,Showroom without LPG cylinders, Atta Chakki, Meat, Poultry and Fish shop, Pan shop, Barbershop, Hair dressing saloon, Beauty parlour, Laundry, Dry cleaning, Ironing, Sweet shop,Tea stall without sitting arrangement, Chemistshop, Clinic, Dispensary, Pathology lab, Optical shop, Tailoring shop, Electrical,Electronic repair shop, and Photo studio, Cable TV,DTH Operation, Hosiery, Readymade, Garments, Cloth shop, ATM, Cycle Repair Shop, Ration shop & Kerosene Shop under PDS.

b) Industrial Activity: Permissible Uses

All industrial uses except those of red category shall be permitted in this zone.

c) Other Activity: Permissible Uses

The following public and semi-public activities shall also be permitted in the residential plots abutting roads of minimum ROW 13.5 mts. or above, whether or not the road is notified as mixed use street except in approved residential colonies.

Primary/Sr. Secondary school (including nursery/Montessori school, creche), Nursing home,Clinic, dispensary, pathology lab and diagnostic center, Bank, Fitness center (including gymnasium, yoga/meditation centre),Coaching centre, tuition centre other than those imparting structured courses leading directly to the award of a degree or diploma

Note:

The single/stand alone projects having depth more than the proposed mixed landuse shall be considered for approval irrespective of the prescribed depth

d) Professional Activity: Permissible Uses

Subject to the general terms and conditions professional activity is permissible in plotted development and group housing under the following specific conditions:

i) Professional activities shall mean those activities involving services based on professional skills namely Doctor, Lawyer, Architect, Chartered Accountant, Company Secretary, Cost and Works Accountant, Engineer, Town Planner, Media Professionals and Documentary Film Maker.

ii) In group housing, and plotted development with multiple dwelling units, professional activity shall be permitted on ground floor, subject to maximum of 25% of the permissible or sanctioned FAR, whichever is less. .

- **Traffic & Transportation: Permissible Uses**

Rail yards, Railway station & sidings, Transport Nagar (including, Post & Telegraph offices & Telephone exchange, Dhabas, Labour yards, Areas for loading and unloading, Stores, Depots, and Offices of goods booking agencies, Petrol Filling Station & Service garages, Parking spaces, public utilities and buildings) Bus Terminus & depot, Bus stop shelter, Taxi/ Tonga/ Rickshaw/Scooter Stands, parking spaces.

- **Utilities and Services: Permissible Uses**

Water supply, drainage, storm water, wastes processing, and disposal, electricity, communication systems and related installations etc.

- **Public and Semi-Public Activities: Permissible Uses**

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

- **Recreational: Permissible Uses**

Green Belt (Forest, Agriculture use, Vegetation belt, Wild life sanctuary, Bird sanctuary, Biodiversity Park, Fire Post, Amenity Structure (List given in note), Agro forestry, Floriculture farm etc), Regional Park (Zoological Garden, Botanical Garden, Orchard, Plant Nursery, Picnic Hut, Shooting Range etc), City Park (Aqua park/water sports park, Amphitheatre, Open Playground,), District Park (Theme Park, Recreational club, National Memorial, Open-air food court, Children Park, Area for water –harvesting, Archaeological park, Specialized Park etc.) Local Parks, Sports Stadium/Complex, Cricket Stadium,

Sports Training Centres, Open Air Auditorium, Holidays Resorts with ground coverage not exceeding 2%, Public Institutional Libraries, Swimming Pools with built up areas not exceeding 2%, Music, Dance & Drama Training Centre, Yoga, Meditation, Spiritual & Religious Centre, Recreational Club, Banquet Hall, Open Air Theatre, Auditorium, Museum, Exhibition-cum-Fair Ground, Museum, Exhibition Centre & Art Gallery, Auditorium & Open Air Theatre, Cultural & Information Centre, Social & Cultural Institute, International Convention Centre, Planetarium.

Note:

1. The following amenity structures are permissible in the above use premises except in Central Vista and Heritage areas: Toilet blocks, Pump Room, Electric Room, Guard Room and Equipment Room.
2. Interpretation Centre and Administrative office is permissible only in Heritage Areas.

- **Heritage Zone /Protected Monuments/ Conservation Sites: Permissible Uses**

The use includes Protected Monuments/ Heritage Buildings or Conservation Sites as notified by the Competent Authority and shown on the Master Plan. The uses to be permitted in the zone/area shall be as notified by the Competent Auhtority from time to time, the provisions of relevant laws governing the conservation/preservation of such monuments/sites and the Heritage Regulations framed for such buildings/sites by the Competent Authority. Monuments/Sites/Buildings, which are subsequently notified by the Competent Auhtority as Heritage Buildings/Protected Monuments/Conservation Sites shall also be governed by the above provisions. No use other than the uses notified by the Competent Auhtority shall be permitted in the zone/area identified in this category.

- **Others Special Areas: Permissible Uses**

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

- **Prohibited Areas: Permissible Uses**

The areas around the Protected Monument up to the distance of 100 meters from the protected limits as describe in the notification no. S.O.1764 Dated 16th June, 1992 issued by the Department of Culture, Archaeological Survey of India are to be prohibited areas and beyond it up to 200 meters regulated areas for the purposes of both mining operation and construction.

- **Forest Areas: Permissible Uses**

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

11.3.6 SPECIAL CONDITIONS

The siting of Petrol Pump/Filling Stations 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.

11.3.7 EXCEPTIONS

- Any use not listed above under a specific zone will not be permissible in the respective zone.
- Notwithstanding the above, the uses specifically provided for in the Sector Zoning Plans shall be permissible or as may be allowed by the Chief Town Planner, Punjab.
- Uses determined by the Chief Town Planner, Punjab as compatible with Permissible Uses shall be allowed in respective zones.
- Uses of land covered under Optimum Utilisation of Vacant Government Land (OUVGL) Scheme of the State Government shall be determined by the Government at any appropriate time not withstanding the provisions of these Regulations.
- Development Projects approved prior to coming into force of these Regulations shall be deemed to be in compliance with these Regulations.
- In case of any ambiguity/clarification regarding the interpretation of the Land Use Plan, the Master copy of drawing based on GIS shall be referred.

11.3.8 RESIDENTIAL DENSITIES

The entire residential zone defined for Kapurthala LPA has been defined in the Proposed Landuse Plan Drawing No. DDTP (K) 16/2010 dated 16/12/2010. The residential zone has been divided into 2 sub zones, i.e. area falling within the existing municipal limits and area falling between existing municipal limits and urbanisable limits. A differential density pattern of 300 persons and 200 persons per acre has been proposed as defined in the para 10.6 of the report containing the proposals regarding the Residential Zone. (refer page 147)

11.3.9 IMPLEMENTATION OF THESE REGULATIONS

- All authorities competent to grant permission for layout or sub-division of land or construction of building or development of land in any other form shall ensure that the permitted development is in compliance with these Regulations.
- Land owners desirous of developing their land can obtain, by applying to the designated authority in writing and giving details of their land along with necessary maps, a list of Permissible Uses.
- Similarly land owners proposing development of certain uses on their land can obtain a certificate of "Compliance with Master Plan" from a designated authority