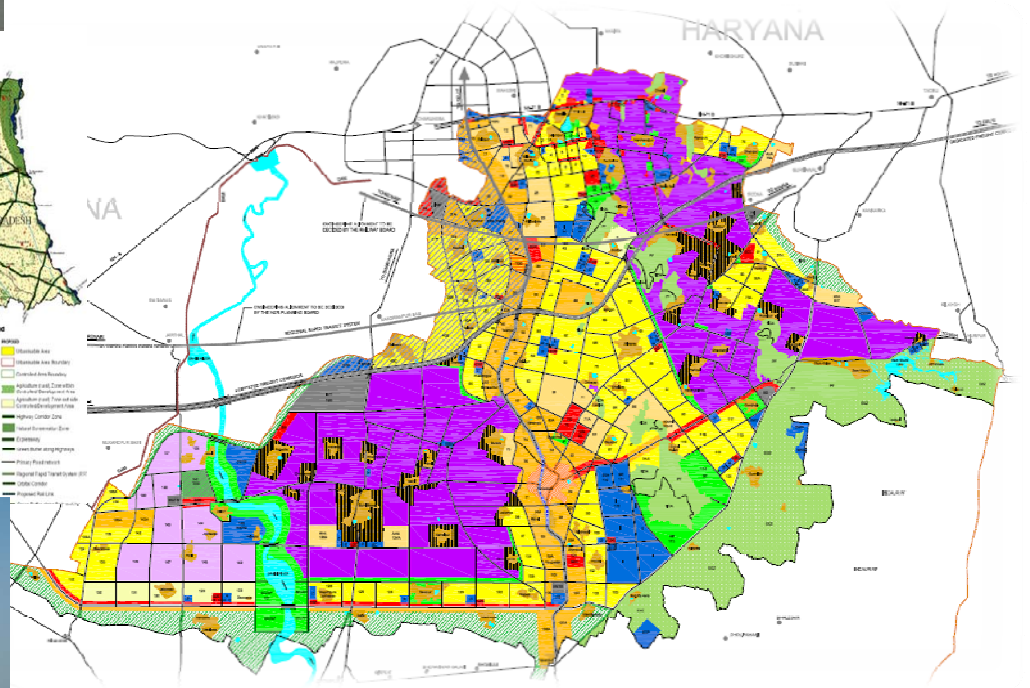
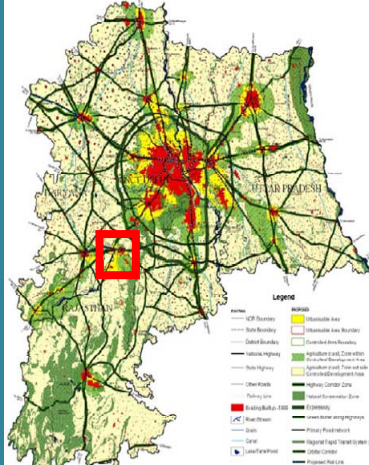




Government of Rajasthan



GREATER BHIWADI MASTER PLAN-2031

TOWN PLANNING DEPARTMENT, RAJASTHAN



Government of Rajasthan

GREATER BHIWADI MASTER PLAN-2031

**PREPARED UNDER
RAJASTHAN URBAN IMPROVEMENT TRUST ACT, 1959**

TOWN PLANNING DEPARTMENT, RAJASTHAN

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FOREWORD

Greater Bhiwadi (Bhiwadi-Tapookara-Khushkhera Complex), one of the priority towns identified in the Regional Plan-2021 of National Capital Region, is located at the eastern boundary of Rajasthan in north-eastern part of Alwar district. The complex is strategically situated at a distance of about 5 Km from NH-8 connecting Bhiwadi with Delhi and Jaipur. Greater Bhiwadi Complex comprises of 99 revenue villages spreads over an area of about 250 Sq. Km. Bhiwadi, Tapookara, Chaupanki, Kahrani and Khushkhera are major industrial nodes in the Complex.

Bhiwadi was a small rural settlement with a meagre population of 1624 persons in 1971. With the decision of Rajasthan Government to develop Bhiwadi as an industrial centre due to its proximity to Delhi and other locational advantages, Bhiwadi started developing as an industrial township and has successfully established itself on industrial map of the country. Fast growth of Bhiwadi brought a set of urban problems including lack of housing, particularly for industrial employees, and other infrastructure facilities and amenities. Bhiwadi, by virtue of its location along NH-8 and Delhi-Jaipur development corridor which is seen as a future megalopolis, has been identified as investment region of Delhi-Mumbai Industrial Corridor (DMIC) and made part of national level planning and development efforts. To realize the envisaged goal of making Greater Bhiwadi 'the gateway to industrialization in Rajasthan', it becomes imperative to make the city equally livable also, equipped with state of the art residential, recreational and business environment.

The Master Plan-2031 for Greater Bhiwadi Complex has been prepared to meet the existing challenges in terms of fast growth and gaps in infrastructure facilities on one hand, and aspirations of various stakeholders, competitive future in terms of attractiveness for investment in view of the fast changing urban landscape within and its surroundings at regional level. Therefore, the Master Plan has been envisaged to be a catalyst to help achieve the set goals.

I take this opportunity, on behalf of planning team, to express my gratitude to Sh. Shanti Kumar Dhariwal, Hon'able Minister, Home, Law & Justice, Parliamentary Affairs, Urban Development, Housing and Local Self Government, Rajasthan, Sh. G. S. Sandhu, Principal Secretary, Department of Urban Development, Housing and Local Self Government, Rajasthan, Sh. Kunji Lal Meena, Former District Collector and Chairman, UIT, Bhiwadi, Sh. Ashutosh Pednekar, District Collector and Chairman, UIT, Bhiwadi, for their constant

support, guidance and valuable suggestions without which it would have not been possible to complete the task of preparation of Master Plan. My special thanks to Sh. Deepak Nandi, Secretary, UIT, Bhiwadi for his valuable suggestions and cooperation at all levels which has resulted in timely completion of the Master Plan.

I am highly thankful to Sh. R. K. Sharma, Retd. CTP, Govt. of Rajasthan, Sh. D. S. Meshram, Retd. Chief Planner, TCPO, Govt. of India, Sh. A. M. Purohit, Retd. Chief Engineer, Rajasthan Housing Board and Sh. J. N. Burman, Joint Director, NCR Planning Board who as members of the Hearing Committee made significant contribution through giving patient hearing to every person who had submitted objection/suggestion on Draft Master Plan.

I am, particularly indebted to Sh. Hemant Murdia, Retd. CTP (NCR), Sh. Pradeep Kumar Pandey, Retd. CTP, Government of Rajasthan, for their sincere efforts throughout the exercise of Greater Bhiwadi Master Plan- 2031 preparation. I wish to record my special thanks to Sh. R. K. Vijayvargia, DTP, Sh. Subhash Sharma, DTP, NCR and Sh. S. L. Sethi Ex-DTP, (NCR) along with their team, for their relentless efforts to make the venture successful.

I also wish to extend our sincere thanks to all the Government Officials at Bhiwadi, Tijara, Kotkasim, Alwar and Jaipur, particularly from UIT, RIICO, RHB, JVVNL who provided with various data/documents. Our special thanks are also for ADM and BDO of Tijara and Kotkasim Tehsils for their keen interest and proactive participation and help extended to the Consultants.

My sincere gratitude to all officials of NCR Planning Board, New Delhi for constant guidance and help for finalization of Master Plan of Greater Bhiwadi.

Development of any city depends on the expectations and aspirations of its residents. Any plan which is being prepared for the benefit of the general public cannot be completed and implemented without their cooperation. I would like to thank the citizens of Greater Bhiwadi for their valuable objections and suggestion towards finalization of the Draft Master Plan.

(H. S. Sancheti)
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Chapter 1

INTRODUCTION

1. INTRODUCTION

1.1 BACKGROUND

Greater Bhiwadi (Bhiwadi-Tapookara-Khushkhera Complex), is a fast developing industrial township located at the north-eastern boundary of Rajasthan in north-eastern part of Alwar district. Bhiwadi is situated at a distance of 5 Km from Dharuhera on NH-8. The NCR Regional Plan 2021 has proposed Bhiwadi to be developed as a major Regional Centre. Greater Bhiwadi Complex is comprised of 99 revenue villages with an area of about 250 Sq. Km. Bhiwadi, Tapookara, Khushkhera and Chaupanki are major industrial nodes in the complex hence are relatively developed. Bhiwadi, the only town had been notified as census town in 1991 and was recognised under Class-III category in 2001. The Greater Bhiwadi Complex is spread over both sides of the Bhiwadi-Alwar road. Bhiwadi located on northern most part of Greater Bhiwadi complex is 55 Km away from the Indira Gandhi International Airport, 200 Km from State Capital Jaipur, 90 Km from Alwar, 40 Km from Gurgaon, and 60 Km from Faridabad.

Bhiwadi was a small rural settlement with a meagre population of 1624 persons in 1971. With the decision of Rajasthan Government to develop Bhiwadi as an industrial centre, due to its proximity to Delhi and other locational advantages, Bhiwadi started developing as an industrial township and registered its presence on the industrial map of the country. Rajasthan State Industrial Development and Investment Corporation (RIICO), since 1975, has been instrumental in the development of Bhiwadi as its preferred Industrial Area. Bhiwadi had grown to a size of 15000 population in 1991 when for the first time it was declared a Census Town which further grown to a size of 33877 in 2001.

In view of the approaching terminal year of existing Master Plan, geographical growth of Bhiwadi beyond urbanisable limit, RIICO led fast expansion of industrial base and identification of Greater Bhiwadi Complex as Regional Centre in the Regional Plan of NCR, State Government decided to extend the urban area limit to include notified 99 revenue villages and prepare Master Plan for the horizon year 2021, coterminous to NCR Regional Plan. But on request of NCRPB, the horizon has been extended to 2031 as Sub-regional Plan for Rajasthan Sub-region is also is being prepared for 2031.

Therefore, with a view to improve the quality of life of residents of Bhiwadi-Tapookara-Khushkhera (Greater Bhiwadi) Complex in Alwar District (Rajasthan Sub Region of National Capital Region), the Office of Chief Town Planner (NCR), Government of Rajasthan intended to prepare the Master Plan for the same and appointed **M/s Egis India Consulting Engineers Pvt. Ltd. (Formerly BCEOM India Pvt. Ltd.)**, Faridabad, in Joint Venture with **Groupe SCE India Pvt. Limited**, Bangalore for the “**Preparation of Master Plan for Bhiwadi-Tapookara-Khushkhera (Greater Bhiwadi) Complex**”.

1.2 NEED FOR THE MASTER PLAN

As mentioned earlier, the need for the preparation of Master Plan for Greater Bhiwadi Complex is twofold. One, preparation of master plan for all identified priority towns/regional centres stipulated in the NCR Regional Plan as part of the responsibility of the State Government/NCR Cell (as mentioned in Section 19.2 (i) Management Structure). Two, the critical stage of development, the Greater Bhiwadi Complex has attained, called for immediate attention in terms of guided and controlled development. Hence, the Master Plan has been prepared in the light of NCR Regional Plan as per the Rajasthan Urban Improvement Act, 1959.

Three of the eleven Regional Centres/Priority Towns fall under the Rajasthan Sub-Region of NCR. NCR Plan-2021 envisaged developing these Regional Centres for advanced industrial, economic and commercial purposes, along with a high concentration of administrative and higher-order service functions. This would enable the regional Centres/Priority Towns to exert a dynamic influence on attraction of investment and to bring about high-standards of living and working environment. In order to realize the objectives of NCR Plan 2021, it is imperative to have a Master Plan in place, to guide and accelerate the development of the identified Priority Towns.

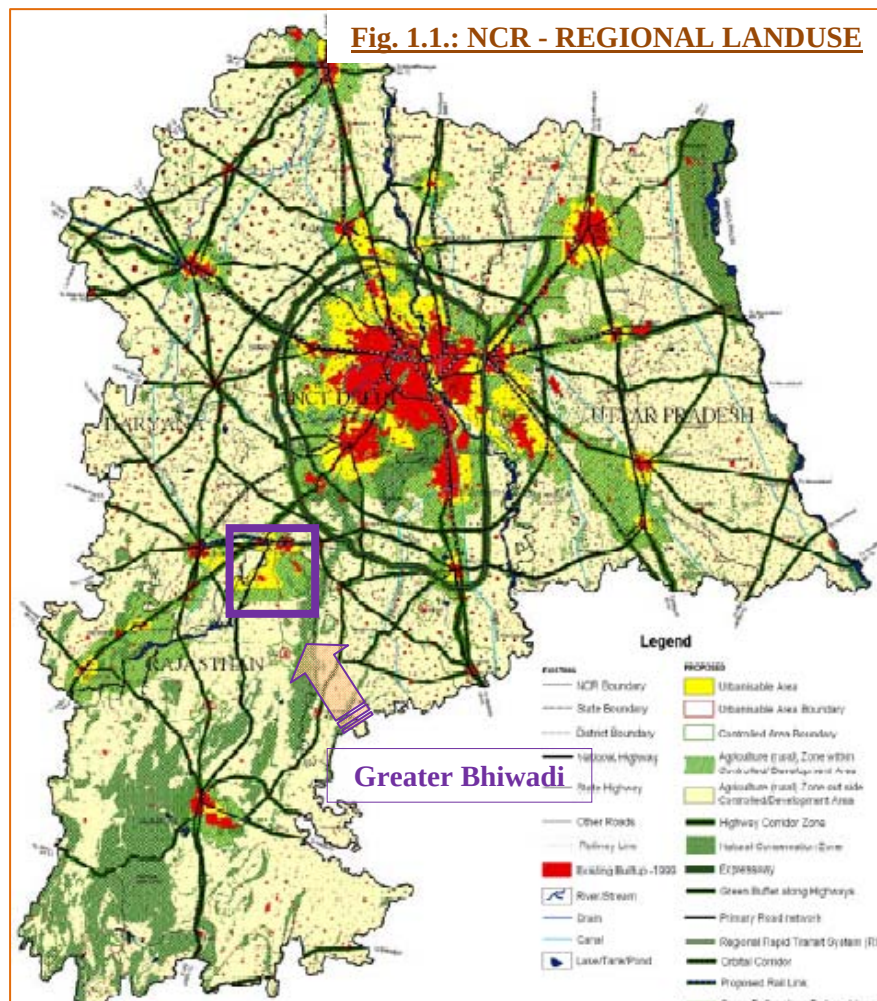
1.3 OBJECTIVES OF THE MASTER PLAN

The main objectives of the Greater Bhiwadi Master Plan are as follows:

- To prepare a Master Plan for the horizon year 2031 for ensuring good quality of life of the residents of the Bhiwadi-Tapookara-Khushkhera Complex;
- To capitalize upon the opportunities created by changes occurring in the global economic scene and in the National Capital Region;
- To make the area competitive for attracting investment by providing high quality infrastructure.

1.4 REGIONAL PLAN-2021 (NATIONAL CAPITAL REGION)

Bhiwadi-Tapookara-Khushkhera Complex is one of the three identified Regional Centres/Priority Towns in Rajasthan Sub-Region of NCR. Rajasthan Sub-region comprises of Alwar district which has a share of 23.32% of the total area of NCR. Alwar and Shahjahanpur-Neemrana-Behror Complex are other two Regional Centres. Greater Bhiwadi Complex being an important Priority Town of the NCR and for reciprocal relationships, it is of utmost importance that the Master Plan for Greater Bhiwadi Complex is prepared dovetailing the development objectives, policies and strategies defined in the NCR Regional Plan 2021. Therefore, it is imperative to review the development policies and strategies of NCR Regional Plan-2021.



1.4.1 Aims and Objectives of NCR Regional Plan 2021

The aims and objectives of the Regional Plan 2021 actually flow from the Regional Plan 2001 and their effectuation. In view of the unprecedented growth of Delhi during the decades 1970s and 80s, the Regional Plan 2001, which was notified in January 1989, laid down development policies aimed at:

- i) Relieving the capital city from additional pressures,
- ii) Avoid adding new pressures on the capital, and
- iii) Development of settlements in NCR to enable them to play their assigned roles.

Thus, the objective of Regional Plan has been to achieve a balanced and harmonious development of the region, leading to dispersal of economic activities and deflecting future in-migrants to Delhi. In order to achieve these objectives, the Regional Plan proposed three policy zones namely- NCT of Delhi, Delhi Metropolitan Area (DMA) excluding NCT-Delhi and Rest of NCR.

Delhi, against the assigned population of 112 lakhs, actually grown to 138 lakhs (2001 Census), thereby overshooting even the estimated population of 132 lakhs. While, the second policy zone of DMA Towns could not attained the assigned population except Faridabad and Ghaziabad-Loni, the third policy zone comprising priority towns/complexes recorded slowest growth rate showing no inducement.

1.4.2 Policies for Future Development: Regional Plan 2021

It is obvious from the above that the policy to contain the population of Delhi and deflecting population outside to NCR had met very little success. Also the induced growth envisaged for the priority towns in the Rest of NCR had not taken place. Accordingly, the policy of restricted growth of Delhi had been reviewed and the Regional Plan-2021 proposed “to harness the spread of the development impulse and agglomeration economies generated by Delhi for harmonized, balanced and environmentally sustainable spatio-economic development of the NCR with effective cooperation of the participating States”.

Therefore, the Regional Plan-2021 aims “to promote growth and balanced development of the National Capital Region” as per Section 10, sub section (2) of the Act, 1985.

The above aim is sought to be achieved through:

- i) Providing suitable economic base for future growth by identification and development of regional settlements capable of absorbing the economic development impulse of NCT-Delhi.
- ii) To provide efficient and economic rail and road based transportation networks (including mass transport systems) well integrated with the landuse patterns, to support balanced regional development in such identified settlements.
- iii) To minimize the adverse environmental impact that may occur in the process of development of the National Capital Region.
- iv) To develop selected urban settlements with urban infrastructural facilities such as transport, power, communication, drinking water, sewerage, drainage etc. comparable with NCT-Delhi.
- v) To provide a rational landuse pattern in order to protect and preserve good agricultural land and utilize productive land for urban uses.
- vi) To promote sustainable development in the region to improve quality of life.
- vii) To improve the efficiency of existing methods of resource mobilization and adopt innovative methods of resource mobilization and facilitate, attract and guide private investment in desired direction.

Keeping the above objectives in view, the Regional Plan-2021 has proposed the development of NCR through four policy zones namely- (i) NCT-Delhi, (ii) Central National Capital Region (CNCR), (iii) Highway Corridor Zone and **(iv) Rest of the NCR.**

In rest of the NCR, the basic policy of Regional Plan-2001 for accelerated development of both urban and rural areas will continue. Infrastructure has to be substantially upgraded at local and regional level (both by State and Central Governments) in order to induce the growth in these areas, specifically in the identified settlements i.e. Metro Centres and **Regional Centres.**

1.4.3 Strategies for Development of Settlement System

Strategies for Development of Settlement System would be to harness the growth impulse of Delhi and to integrate the urban and rural functions in the region. These would be attained by means of a more balanced and mutually reinforcing system of central places and bringing a series of necessary functions to the actual reach of the rural population.

1.4.4 Proposed Hierarchy of Settlement

Keeping in view the changing demographic scenario of the region a six-tier hierarchy, as against four-tier in Regional Plan-2001, has been proposed in the Regional Plan-2021 (Table 1.1).

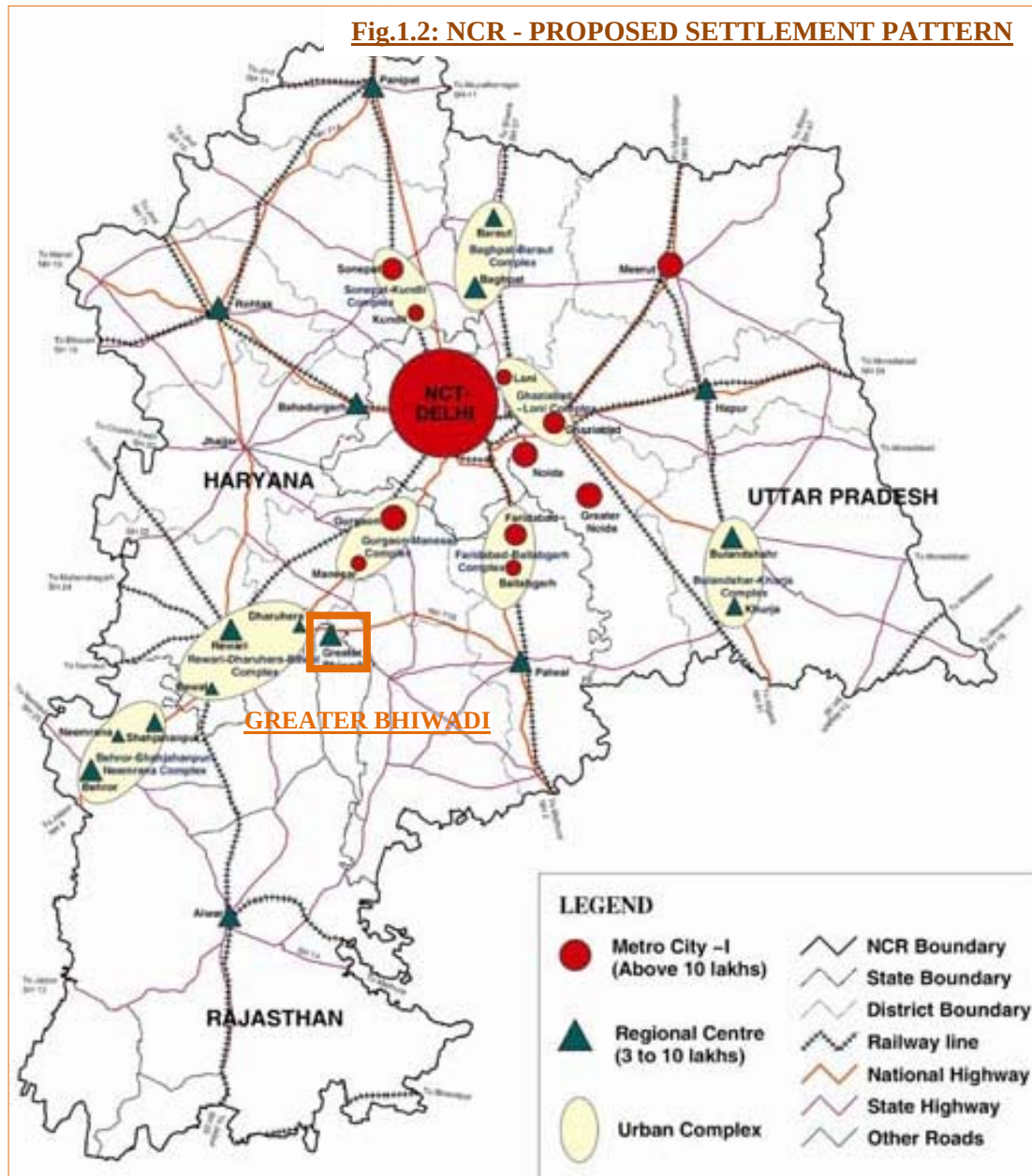
Table 1.1: Proposed Six-Tier Hierarchy of Settlement

S. No.	Hierarchical Level	Population Range
1.	Metro Centre	10 lakhs and above
2.	Regional Centre	3 to 10 lakhs
3.	Sub-regional Centre	0.5 to 3 lakhs
4.	Service Centre	10,000 to 50,000
5.	Central Village	5,000 to 10,000
6.	Basic Village	Below 5,000

Greater Bhiwadi Complex as Regional Centre: Greater Bhiwadi has been identified as one of the leading Regional Centre which would be a well-established urban centre in the region, marked by highly specialized secondary and tertiary sector activities and providing job opportunities, which normally cannot be performed by other lower order centres. The Regional Centre will be developed for advanced industrial and other economic activities and will have concentration of administrative and higher order service functions, which are expected to exert an increasingly dynamic influence on attraction of investment and creation of conducive living and working environment.

Though the range of population assigned to Regional Centres is up to 10 lakhs, Greater Bhiwadi Complex has been planned for a design population of 15 lakhs due to the induced development strategy adopted in line with the development strategy of NCR Regional Plan 2021.

Fig.1.2: NCR - PROPOSED SETTLEMENT PATTERN



1.4.5 Activity Specific Policy Issues and Development Strategy in Regional Plan-2021

A. Industrial

The Regional Plan-2021 recommends that while taking stringent measures in NCT-Delhi and Central NCR, the search for new industrial areas outside Central NCR needs to be intensified. The NCR hinterland has enough potential to satisfy this urge provided some serious efforts are made to remove bottlenecks, particularly, power, water, telecommunications and transportation. Specific areas may have to be earmarked for the relocation of polluting and hazardous industries proposed to be shifted outside

Delhi, which may be adequately equipped with pollution control and management measures to keep the overall regional environment free from pollution.

Industrial policy adopted in the Regional Plan-2021 says:

- The towns selected for priority development should have a strong industrial content, and incentives should be given to all types of industries for creation of infrastructure such as power, water, sewage, drainage, CETP etc.
- Modern industrial townships/estates should be developed in the area outside Central NCR
- Specific areas should be earmarked in the region outside the Central NCR for relocation of polluting, hazardous, heavy and large and non-conforming industries proposed for shifting out of NCT-Delhi.

The Central NCR towns and the Regional Centres, selected in the Regional Plan for induced development, have been envisaged to play a significant role and would have a strong industrial content.

The strategy for industrial development may entail following elements:

- These locations to be developed as model industrial areas/Special Economic Zones equipped with facilities such as uninterrupted power supply, efficient telecommunications network, transportation and warehousing facilities, common effluent treatment plants and industrial and potable water supply.
- The decision of the Government to allow Foreign Direct Investment in the development of integrated townships would go a long way in attracting private sector participation in the development of townships and key industrial infrastructure facilities like power, water supply, telecommunications etc.
- Establishment of single window system of registration, financing and industrial regulatory measures.
- In order to encourage industries to be located in NCR, liberal incentives for creation of infrastructure facilities be given to new units as provided in the industrial policy framework of the states.

B. Wholesale Trade & Commerce

Incentives for provision of infrastructure facilities should be made available in the various regional towns in order to encourage and accelerate the growth of trade centres on a wider scale within NCR.

Based on the various factors affecting location of wholesale trade such as volume of commodity flow, direction of flow, trade linkages, mode of transport, preferences of traders, etc., **Bhiwadi has been suggested** to be developed as wholesale trade centre for building materials. Alternative wholesale markets for the above commodities could be developed as “joint venture” projects and also declaring these commodities under the “Specified Commodities Act” as explained under the head “Institutional Machinery” at various Regional Freight Complexes.

C. Government, Public Sector and Commercial/Corporate Offices

The Central Government offices which are considered for being shifted from NCT-Delhi and the Central NCR Towns should be located in other towns of NCR and incentives in the form of CCA, HRA etc., as given to employees who may be affected by this shifting for a limited period. Other incentives like providing government accommodation, allowances for study of their children etc., should also be given.

D. Transport

- To provide linkages amongst Metro/Regional Urban Settlements in the outlying areas of NCR.
- To connect Metro/Regional Centres with the Capital by an efficient and effective transport network for facilitating faster movement of traffic among such centres and NCT Delhi. The rail based Regional Rapid Transit System (RRTS) proposed by the NCRPB is one such effort.
- Perimeter/Ring roads: All the Metro and Regional Centers to be connected with perimeter roads of expressway standard to act as bypass for through traffic. An appropriate hierarchical road system for the regional towns to cater to the intra-urban traffic in an efficient manner is proposed to be developed for all the priority towns.

Master Plan for Greater Bhiwadi Complex-2031 has been prepared in view of the provisions kept in terms of development policies, strategies in the NCR Regional Plan-2021 to take full advantage of such provisions at regional level without losing focus on the local development issues and aspirations of the stakeholders identified after detailed analysis of existing status of life and economy of Greater Bhiwadi Complex.

At all stages of Master Plan preparation including formulation of objectives, development perspective, design concept, plan structure, viable size of the city, development policy and strategy adopted, proposals on physical and social infrastructure including transportation network and zoning regulation etc. translating

into landuse plan, policies, strategies and recommendations of NCR Regional Plan-2021 have been guiding principles. In addition to above, the regional and national level planning initiatives having potential impact on planning and development of Greater Bhiwadi Complex like Delhi-Mumbai Industrial Corridor (DMIC), Dedicated Freight Corridor (DFC), proposed Kasaula-Khushkhera road link, proposed RRTS along with station and area reserved for Transit Oriented Development (TOD), Kasaula Chowk-Tapookara link proposed by RIICO, planned Neemrana-Bhiwadi link road via Azarka etc. have been part of the conceptualization and design of the Master Plan. It is to be noted that about 60 Km long proposed Neemrana- Bhiwadi link road with 90m ROW has been integrated in the proposed road network of Greater Bhiwadi Complex.

1.5 OUTLINE OF THE MASTER PLAN

The Report of Greater Bhiwadi Master Plan, after introducing the general and planning history in the context of the NCR Regional Plan 2021, establishes the objectives of Master Plan. Chapter 2 to 6 forms the 'Study Report' wherein the existing status of demography; economy, including agriculture, industries and trade and commerce; physical and social infrastructure; environment and existing landuse has been presented. The second part of the Report forms the 'Development Plan'. Chapter 7 explains the development perspective and design concept of the Master Plan. Chapter 8 establishes and defines the viable size of the Greater Bhiwadi Complex and identifies planning zones. Chapter 9 describes proposed landuse by 2031 in detail while Chapter 10 explains intentions behind development proposals in the form of policy and the report closes with chapter 11 defining zoning regulation and development code as tools for Master Plan implementation and development control and regulation.

1.6 DRAWINGS OF MASTER PLAN

The drawings supporting the Master Plan for Greater Bhiwadi Complex include:

- a) The Base Map 2009
- b) Existing Land Use Map 2009
- c) Proposed Land Use Map 2031 and
- d) Urban Area Map 2031

Chapter 2

DEMOGRAPHY

2. DEMOGRAPHY

2.1 GREATER BHIWADI PLANNING AREA

Bhiwadi-Tapookara-Khushkhara Complex (Greater Bhiwadi Complex) is notified area for purpose of planning and administration named as Greater Bhiwadi. NCR-Regional Plan 2021 has also designated Greater Bhiwadi Complex as Greater Bhiwadi and identified as Regional Center for development on priority. Greater Bhiwadi includes 99 villages of Tijara and Khushkhara Tehsils of Alwar district. It spreads over an area of 250 sq.km housing a population of 1,51,844 (Census 2001). Greater Bhiwadi is an emerging industrial city with three existing major industrial areas named as Bhiwadi Industrial Area, Khushkhara Industrial Area and Chaupanki Industrial Area. Further Kaharani Industrial Area and Tapookara Industrial Area are under development. Thus Greater Bhiwadi has to be planned considering the needs of future Industrial Township for which existing demographic indicators of the area has been analysed in this Chapter.

2.2 POPULATION SIZE AND DISTRIBUTION

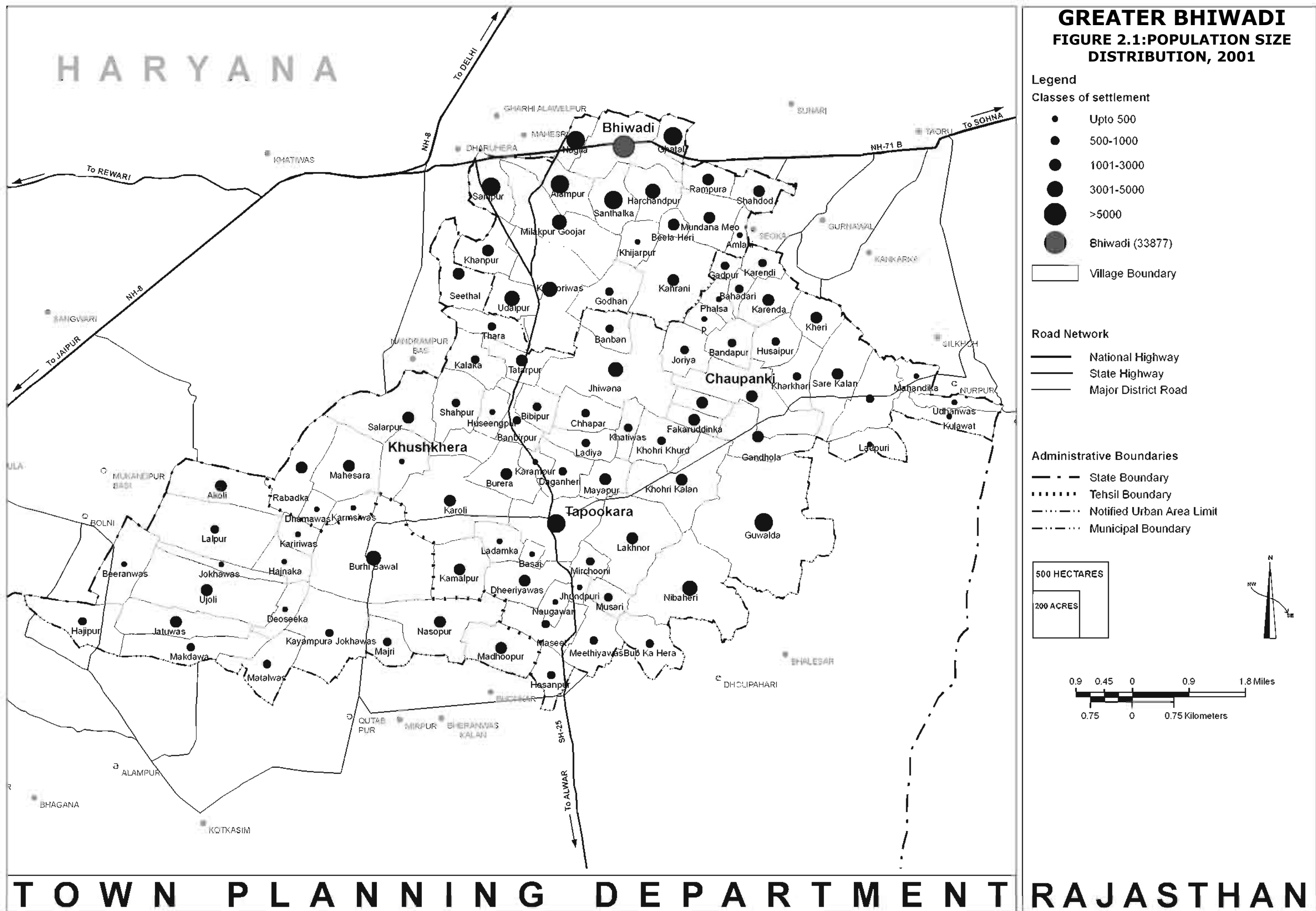
In Greater Bhiwadi Complex, Bhiwadi is only Census Town comprising of 5 villages (Bhiwadi, Naglia, Alampur, Saidpur, Ghatal) spread over an area of 20 sq.km housing a population of 34000 (Census 2001). Rest of the 94 villages, of which the larger ones are Tapookara, Santhalka, Gwalda, Milakpur Goojar, Jhiwana, Harchandpur, Burhi Bawal etc. Different settlements have been grouped into 5 categories according the size of population which is shown in Table 2.1.

Table 2.1: Size distribution of population in Greater Bhiwadi

Population Size	No. of Villages/Town
<500	22
500- <1000	32
1000-<3000	30
3000-<5000	7
>5000	4

(Source: Census of India 2001)

Besides Bhiwadi, there are 3 villages having population more than 5000 which are Tapookara, Santhalka and Guwalda. Development in these 3 villages needs to be



studied carefully for planning, as they have potential to become urbanized in near future and will play an important role in the development of Greater Bhiwadi Complex. Also 7 villages viz. Burhi Bawal, Nibaheri, Udaipur, Milkapur Goojar, Harchandpur, Jhiwana, Khijooriwas having population ranging between 3000-5000 are expected to grow faster and needs special attention.

2.3 POPULATION GROWTH TRENDS

Population is continuously growing in proposed Master Plan area with a high rate. Greater Bhiwadi comprises of 94 villages and Bhiwadi Census Town. Bhiwadi has played a significant role in the growth of Greater Bhiwadi Complex. Bhiwadi was a village till 1981 and attained the status of Class-IV Census Town in 1991. Further in 2001, population of Bhiwadi increased to 33,877 to become a Class-III town. With the conclusion of recently held Municipal elections, Bhiwadi became a Municipal Town with an elected Municipal Board. An overview of the population growth trends in Greater Bhiwadi Complex is shown in Table 2.2.

Table 2.2: Population Growth Trend in Greater Bhiwadi

Year	Population	% Growth Rate
1971	46807	
1981	59272	26.6
1991	88881	50.0
2001	151844	70.8

(Source: Census of India)

Growth rate of Population in Greater Bhiwadi Complex has continuously been increasing. The decadal growth rate during 1971-1981 was 26.6%, which increased to 50% during 1981-91 and further to 71% in 2001. This fast growth of Greater Bhiwadi Complex may be attributed to lopsided growth of Bhiwadi. Bhiwadi was a small settlement with a meager 1,729 inhabitants in 1981. But in the decade of 1981-1991, it grew, at a tremendous rate (decadal growth of 784%) to a size of 15,282 in 1991. During 1991-2001 the population grew at a relatively lower rate (121%), still Bhiwadi remained fastest growing town among all Regional Centers of NCR, when it reached to a size of 33,877 inhabitants. Other villages are comparatively growing at a slower rate i.e. 28% in 1981-1991 and 60% in 2001.

2.4 POPULATION DENSITY

In 2001, Population density in Greater Bhiwadi Complex was 605 persons per sq.km, higher than the district's 357 persons/sq.km and State's 165 persons/sq.km.

Table 2.3: Population Density in State, District and Greater Bhiwadi Complex Area

Name	Area	Population	Density
	Sq.Km	Persons	Persons/sq.km
Rajasthan State	342239.00	56507592.00	165
Alwar District	8380.00	2992592.00	357
Greater Bhiwadi	251	151923.00	605
Bhiwadi Census Town	20.00	33877.00	1694
Other Villages (of Greater Bhiwadi Complex)	231	118046	511

(Source: Census 2001)

Statistics in Table 2.3 shows that 23% of the population of Greater Bhiwadi Complex resided in Bhiwadi (CT) which forms just 8% of the total area, giving a high density of 1,700 persons per sq. km. whereas, the density in rest of the area works out to be 511 persons per sq. km. Overall density in Greater Bhiwadi Complex is 605 persons/sq.km. It is evident that Bhiwadi is dominating the entire settlement pattern of the Greater Bhiwadi Complex. Population density in Greater Bhiwadi Complex in last decades is shown in Table 2.4.

Table 2.4: Change in Population Density and household size over decades

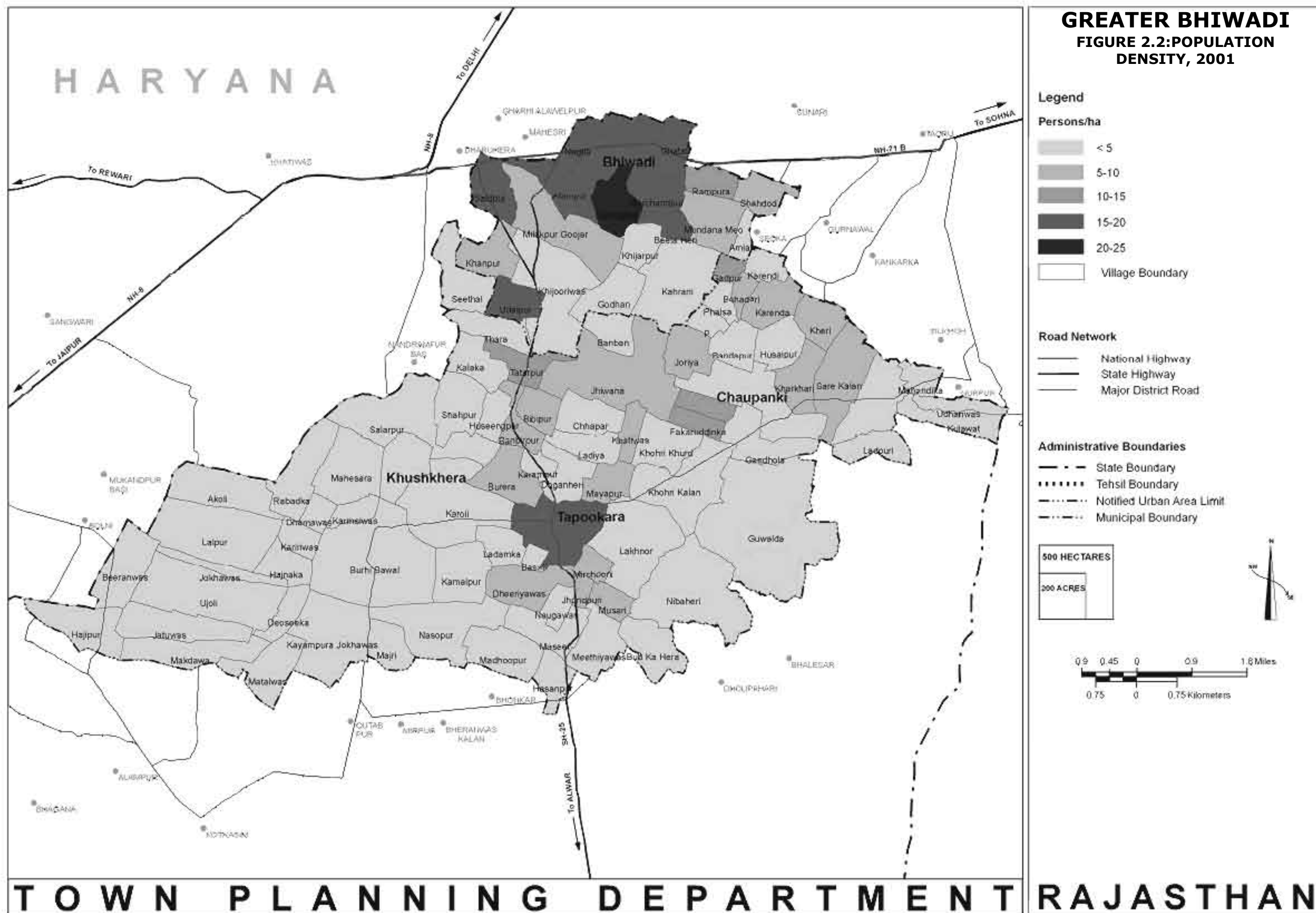
Year	Area (ha)	Population	No. of Household	Population Density (persons/ha)	Average Household Size
1971	25205	46807	6778	1.86	6.9
1981	25052	59272	9121	2.37	6.5
1991	26715	88881	15952	3.33	5.6
2001	26239	151844	29217	5.79	5.2

(Source: Census 2001)

As evident from table 2.4, population density of Greater Bhiwadi which is predominantly rural, steadily increased from 1.9 persons/ha in 1971 to 3.3 persons/ha in 1991. Sudden increase in the density was observed between 1991 and 2001 due to tremendous growth of Bhiwadi town. As per Census 2001, there was a total of 29,217 households in Greater Bhiwadi Complex. Average household size in Bhiwadi town was 4, whereas in rest of the predominantly rural areas it was 6, which is higher than the national average, in line with the state and district averages.

GREATER BHIWADI

FIGURE 2.2: POPULATION DENSITY, 2001



2.5 SEX RATIO

Sex Ratio is an important indicator of health and social status of women in society which has direct and indirect bearing on other key indicators like child mortality. Thus, the sex ratio for various age groups in the State, district and in the Greater Bhiwadi Complex has been presented (table 2.5) and discussed below.

Table 2.5: Year-wise Sex Ratio in Greater Bhiwadi Complex

Year	Sex Ratio	Sex Ratio (0-6 years)
1971	884	
1981	878	
1991	805	903
2001	755	870

(Source: Census of India)

The Sex Ratio in Greater Bhiwadi Complex was 755 females per 1,000 males in 2001 which is lower than the State's and district's average of 921 and 886 respectively. It is a cause of concern as Rajasthan state itself has a very low sex ratio as compared to the national average of 933. Further the Sex Ratio has been decreasing drastically in Greater Bhiwadi Complex over last few decades. In 1971 sex ratio was 884 which decreased to 878 in 1981. Again in 1991, it fell down to 805, which further decreased to as low as 755 in 2001 showing the poor health and social status of women in the area. This may partially be attributed to in migration of young males for jobs opportunities in industrial areas of RIICO leaving their family behind at home outside Greater Bhiwadi. But the fall in sex ratio in age group (0-6) years from 903 in 1991 to 870 in 2001 clearly signifies the increased incidence of pre-birth sex selection.

2.6 LITERACY RATE

Literacy rate is an important indicator of the socio-economic status of the area. The status of overall literacy rate along with male and female literacy in State, district and Greater Bhiwadi has been shown (table 2.6) and analysed below.

Table 2.6: Literacy Rate in State, District and Greater Bhiwadi Complex in 2001

Area	Literacy Rate (2001)		
	Male	Female	Total
Rajasthan	75.7%	43.8%	60.40%
Alwar District	78.10%	43.30%	61.70%
Greater Bhiwadi Complex	78.47%	44.06%	63.99%
Bhiwadi Census Town	88.70%	66%	80.80%

(Source: Census 2001)

The literacy rate (2001) in Greater Bhiwadi Complex was 64% (male 78.5% and female 44%), which is higher than the district's and State's average of 61.7% and 60.4% respectively as shown in Table 2.6. Bhiwadi, being a town having access to more educational facilities, has higher overall literacy as well as male and female literacy as compared to other parts of Greater Bhiwadi Complex which comprises of 92% of rural area.

Table 2.7: Year wise Male-Female literacy rate in Greater Bhiwadi Complex

	Literacy Rate	
	1991	2001
Male	61.64	78.47
Female	20.95	44.06
Total	43.84	63.99

(Source: Census of India 1991 and 2001)

It can also be observed from the Table 2.7 that male and female literacy rate increased during the period of 1991-2001 in Greater Bhiwadi Complex and thus overall literacy rate raised to 64% in 2001 from 44% in 1991. Increase in overall literacy rate shows that people understand the importance of being educated and will further be able to reduce the unemployment level in the Master Plan area. Even though the female literacy rate is lower than the male literacy rate, but the rate of increase of female literacy is higher than male literacy during 1991-2001. This is positive trend showing the improving status of women in the society.

2.7 SOCIAL COMPOSITION

Social Composition is mainly representing the percentage of Scheduled Caste and Scheduled Tribe out of the total population in Greater Bhiwadi Complex. Out of the total population of Greater Bhiwadi Complex 13.3% are SC and 0.16% are ST (Census 2001).

Chapter 3

ECONOMY

3. ECONOMY

3.1 INTRODUCTION

Rajasthan has been in the forefront of Economic Reforms. Rajasthan's economy is primarily based on agriculture. With the pace of urbanization, economy is shifting to secondary and tertiary sectors. Rajasthan is taking lot of initiatives towards industrialization. Rajasthan Government had set up RIMDC in 1969 which later changed to RIICO (The Rajasthan State Infrastructure Development and Investment Corporation Ltd.) in 1980 to oversee and facilitate industrial development in the State. Industrial development is a potential instrument through which large scale employment can be generated along with the sustainable contribution for the enhancement of state domestic product.

Traditionally, agriculture has been the major economic activity in Greater Bhiwadi. With the decision of State Government in 1970s to develop Bhiwadi as its preferred industrial centre, the diversification of economy gradually picked up. RIICO has been instrumental since 1975, behind industrialization in Bhiwadi. Hence, with passage of time employment in agricultural activities is declining and increasingly shifting to industrial and service sector activities. Industrial sector, besides providing employment opportunities, has immense export potential which needs to be further focused to earn valuable foreign exchange for the country.

3.2 SHARE OF SECONDARY SECTOR IN THE ECONOMY

As per Draft Annual Plan 2008-2009, in 2003-04, secondary sector had contributed 23.55% of the gross domestic product in Rajasthan State. An advanced estimate done in Annual Plan suggests that contribution by primary sector will decrease and will increase in secondary and tertiary sector with the pace of development. An overview of the Greater Bhiwadi Complex also shows that development of industries are taking over the agricultural activities showing a shift in economy from primary to secondary and tertiary sectors in Master Plan Area. Thus to ensure the direction of growth of economy, economic base of Greater Bhiwadi Complex has been discussed in detail in this Chapter in following sections. Greater Bhiwadi

3.3 ECONOMIC BASE

Economic growth of the area is an important factor driving the overall development of the area. Bhiwadi is playing a significant role in the economic development of Rajasthan. Agriculture, industries and trade and commerce are the leading economic activities in Greater Bhiwadi indicating diversified economic character. Therefore, it is imperative to assess the economic profile of the Master Plan area with due emphasis on predominant sectors. Occupational structure in Greater Bhiwadi shows that 41% of the workers were engaged in secondary and tertiary sector activities in 1991 which increased to 66% in 2001 clearly indicating shift of economy from primary to secondary and tertiary sector. To appreciate the economic profile of Greater Bhiwadi, economic indicators like workers classification, workforce participation rate and occupational structure have been discussed in the following section.

Table3.1: Workers Classification

Year	Population	% Main Workers	% Marginal Workers	% Total Workers	% Non Workers
1981	59272	26.74	9.01	35.75	63.41
1991	88881	29.77	13.23	43.00	57.00
2001	151844	34.48	17.91	52.39	47.61

(Source: Census of India)

The work force participation rate in Greater Bhiwadi as per Census 2001 is 52.4% which is higher than Bhiwadi Town (46.9%) and Alwar district (48.7%). Out of the total working population in the Complex, 66% of the total workers are main workers and the rest of 34% are marginal workers not having full time employment. But it can be observed from the Table 3.1 above that there is continuous increase in the percentage of total workers and decrease in percentage of non-workers during the decades of 1981-2001 showing that the workforce participation rate and thus the economic status of Greater Bhiwadi is improving.

Further, analysing the economic base of the Master Plan area in past decades will help to understand the direction of growth of the area in terms of economy. Thus, to identify future potential sectors of development, distribution of the workers in various sectors of economy-primary, secondary and tertiary over a period of time is studied. Percentage of main workers in various categories in last 3 decades and their growth rate has been discussed in Table 3.2.

Table 3.2: Occupational Structure

Categories of Main Workers	Years						Growth Rate	
	1981		1991		2001		81-91	91-01
	Nos.	%	Nos.	%	Nos.	%	%	%
Cultivators	11807	74.5	13656	51.6	16171	30.9	15.66	18.42
Agricultural Labourer	1212	7.6	1853	7.0	1589	3.0	52.89	-14.25
Household Industry Manufacturing, Processing, Servicing, and Repairs	243	1.5	269	1.0	441	0.8	10.7	63.94
Livestock, Forestry, Fishing, Hunting and Plantations, Orchards and Allied activities	2586	16.3	108	0.4	34156	65.2	292.7	236.35
Mining and Quarrying			60	0.2				
Manufacturing & Processing in other than household industry workers			6702	25.3				
Construction Workers			524	2.0				
Trade and Commerce			899	3.4				
Transport Storage & Communication			530	2.0				
Other Services			1862	7.0				
Total	15848	100.0	26463	100.0	52357	100.0	66.98	97.85

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

Occupational structure of Greater Bhiwadi shows that in 2001, 65.2% of Main Workers were engaged in other activities (OW). The type of workers that has been included under the category of 'OW' are all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport, banking, mining, construction, political or social work, priests, artists, etc. i.e. all other than those engaged in agricultural activities and household industries.

It has been observed that percentage of workers involved in agricultural activities, mainly agricultural cultivators, decreased during 1981-2001. In 1981, 74.5% of the main workers were agricultural cultivators which decreased to 51.6% in 1991 and 30.9% in 2001. On the other hand, there is continuous increase in percentage of 'Other Workers'. In 1981, only 16.3% of the Main workers were engaged in other activities, which increased to 41% in 1991 and 65.2% in 2001. This is clearly showing that there is a shift in occupational structure in Greater Bhiwadi with time. People are shifting from their traditional agricultural activities to other activities like industries, trade and commerce, construction activities etc. This trend may be attributed to the fact that of the industrial and building activities is coming up in a big way in Greater Bhiwadi.

There are number of industrial areas like Bhiwadi, Khushkhera, Tapookara, Chaupanki etc. showing growing industrial landscape in Greater Bhiwadi. Agricultural activities are the second most important economic activity employing about 34% of the main workers as cultivators and agricultural labourers. Industrialisation has already taken over and leading the economic production system in the area and also RIICO has continuously been acquiring land for further development of the industries in future. Thus, the economic growth of Greater Bhiwadi Complex would heavily depend on the industrial activities reducing the agricultural activities. Therefore, industries, agriculture and allied activities and trade & commerce constitute the economic base of Greater Bhiwadi Complex which will further be discussed in detail under different economic functions Greater Bhiwadi.

3.4 INDUSTRIES

3.4.1 Role of Industrial Sector

Industrial sector is playing a major role in the economy of the State as well as in the Greater Bhiwadi Complex. In 2003-2004, 43% of the secondary sector share is contributed from manufacturing sector in Rajasthan State. Industries are playing a key role in employment generation in Greater Bhiwadi Complex and contributed largely to increase the share of secondary sector in the economy. By 1991, in Greater Bhiwadi Complex, 25% of the total workers were employed in manufacturing sector which is continuously increasing thereafter with the fast industrialization in the area. In 2009, as per DIC records, about 72,000 workers were engaged in industries in Greater Bhiwadi Complex.



3.4.2 Distribution of Industries

There are eight Industrial Areas of RIICO in Greater Bhiwadi Complex. Few industrial areas are still under development. Besides the RIICO industrial areas, there are independent industrial units located along Bhiwadi-Alwar State Highway-25 (Tijara road). Industries are mainly divided into small, medium and large scale industries by Department of Industries based on number of factors. One of the most important such factors is investment size.

Table 3.3: Distribution of Small, Medium and Large Industries

Scale of Industry	1997	2003	2006
Small	663	1025	1079
Medium	144	200	225
Large	39	55	58
Total	846	1280	1362

(Source: Bhiwadi Manufacturer's Association)

Table 3.3 shows that there is continuous increase in all categories of industries viz. small, medium and large scale. Over the period of 2007 to 2009 a number of large industries were established in Greater Bhiwadi Complex. Some of the recently established large industries are- United Breweries Ltd. in Chaupanki IA, M/s Lafarge Boaral Gypsum (I) Pvt. Ltd. in Khushkhera IA, M/s Jaquar & Co. Ltd. in Bhiwadi IA, Honda Siel Cars India Ltd. in Tapookara IA, M/s Bestex MM India (P) Ltd. again in Tapookara, M/s Amtek India Ltd. in Bhiwadi, Shree Cement at Khushkhera etc.



3.4.3 RIICO Industrial Areas

RIICO, is playing a dynamic role in industrial development. RIICO develops land for industrial development with provisions of basic infrastructure. RIICO also provides financial support to industrial entrepreneur through various schemes promoting the investors to invest in Rajasthan.. RIICO has invested enormous amount for the development of industrial areas in Greater Bhiwadi Complex. Growth of industries in Industrial Areas of Greater Bhiwadi set up by RIICO has been shown in Table 3.4.





GREATER BHIWADI

FIGURE 3.1: INDUSTRIAL LANDSCAPE

Legend

- Industries
- Village Boundary

Road Network

- National Highway
- State Highway
- Major District Road

Administrative Boundaries

- State Boundary
- Tehsil Boundary
- Notified Urban Area Limit
- Municipal Boundary

S.No.	Major Industries's Name
1.	BTK, BHIWADI
2.	INDO ALUSYS
3.	LAKHANI SHOES
4.	BAUSCH & LOMB
5.	FEDERAL MOGUL
6.	ORIENT SYNTEX
7.	NAHAR INDUSTRIES
8.	SIEGWERK
9.	SRIRAM CABLES
10.	BTK, CHAUPANKI
11.	SHILPI CABLES
12.	UNITED BREWERIES
13.	HONDA SIEL
14.	LAFARGE BORAL GYPSUM
15.	SHREE CEMENT

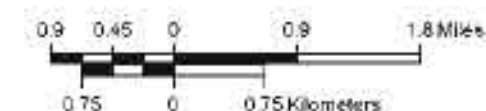
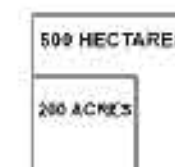


Table 3.4: Growth of Industries in Greater Bhiwadi Complex

Year	Number of Units
1997	724
2003	1280
2006	1362
2009	2453

(Source: Bhiwadi Manufacturer's Association)

It is observed from table 3.4 that during the year 1997-2003 there was 76.80% increase in the number of industries. In next three years during 2003-06 there was comparatively marginal growth of 6.4% in industrial development. Again in last three years during the period of 2006-09 there was huge growth in industrial development i.e. 80% more industries were established in Greater Bhiwadi Complex.

3.4.3.1 Industrial Areas

There are eight industrial areas in Greater Bhiwadi Complex. Bhiwadi Industrial Area was set up by RIICO way back in 1976 which laid the foundation of many more industrial areas and their extensions in Greater Bhiwadi Complex. The industrial activity in Bhiwadi was started on a small area of 130 acres which, of late, has expanded to cover a total geographical area of 6,550 acres, distributed in different industrial areas.

Subsequently after Bhiwadi more industrial areas have come up namely Chaupanki, Khushkhhera and Sarekhurd in 1995-1996. Appreciating the high potential of industrial development and interest of the investors in Greater Bhiwadi Complex, two more industrial areas-Tapookara and Pathredi were established in 2007. In 2009, Kaharani Industrial Area between Bhiwadi and Chaupanki was developed. Details of various industrial areas of Greater Bhiwadi Complex have been shown in Table 3.5.

Table 3.5: Status of Development of various Industrial Areas in Greater Bhiwadi, 2009

S. No.	Location	Year of Estab.	Developed Land (Acres)	Saleable Land (Acres)	No. of Plots Planned Nos.	Plots Allotted Nos.	Vacant Area Acres	Vacant Plots Nos.
1	Bhiwadi	1976	2138.63	1509.96	1701	1670	0	0
2	Kahrani	2009	1217	615	249	97		152
3	Chaupanki	1996	802	495.97	1107	1030	19.93	42
4	Khushkhhera	1995	825.83	675.9	1017	946	8.96	40
5	IID Khushkhhera	1995	151.77	99.5	479	383	13.14	49
6	Tapookara	2007	781.44	670.62	22	9	64.19	13
7	Sarekhurd	1995	94.59	75.58	61	55	4.99	6

8	Pathredi	2007	538.1	373.67	115	81	75.89	33
	Total		6549.36	4516.2	4751	4271	187.1	335

(Source: RIICO Unit I & II, Bhiwadi)

At present a total of 6,550 acres is under industrial development within Greater Bhiwadi Complex distributed in eight industrial areas. In addition to RIICO industrial areas, industries are developed along Bhiwadi-Alwar Road also. As per rules and regulations, RIICO allots 70% of the developed area for development of industrial units (saleable) and 30% is used for provision of infrastructure including commercial and open spaces. As mentioned above, Bhiwadi is the oldest industrial area in Greater Bhiwadi Complex which is now saturated, and there are no vacant plots left in Bhiwadi IA. Kaharani IA, which has started developing in 2009, already has started attracting big industrial groups for setting up their units. Details of the number of units under production and construction in each of the industrial areas have been shown in Table 3.6.

Table 3.6: Details of the Units in Industrial Areas

S. No.	Location	Units under Production	Units under Constructio	Total Units
		Nos.	Nos.	Nos.
1	Bhiwadi	1455	118	1573
2	Kahrani	Nil	3	3
3	Chopanki	183	347	530
4	Khushkhera	87	290	377
5	IID Khushkhera	10	64	74
6	Tapukara	Nil	4	4
7	Sarekhurd	1	4	5
8	Pathredi	3	4	7
Total		1739	834	2573

(Source: RIICO Unit I & II, Bhiwadi)

Total number of units registered in various RIICO industrial areas is 2575 of which 67.5% (1739) are under production and 32.5% (834) are under construction (Table 3.4).

3.4.3.2 Type of Industries

Industries in Greater Bhiwadi Complex are of varied scale and nature. There are number of large, medium and small scale industries. Auto Parts, Ceramics, Chemical, Drugs and Pharmaceutical, Electronics, Food Products, General Engineering, Glass, Iron & Steel, Metals, Bathroom Fittings, Plastic, Packaging, Rubber, Leather, Textile related industries are concentrated in Bhiwadi, Khushkhera and Chaupanki industrial areas. Product wise number of industries in major industrial areas is given in Table 3.7.

Table 3.7: Types of Industries

S. No.	Type of Product	Bhiwadi (Nos.)	Khushkhera (Nos.)	Chaupanki (Nos.)
1	Auto Parts, Cycle components, Service station & allied items	63	2	6
2	Casting and Forgings	22		
3	Ceramic, Crockery Moulding Powder, Cement Product, Marble Product & Allied items	46	6	5
4	Chemicals, Cosmetics & Allied items	55	9	5
5	Drugs, Pharmaceuticals, Surgical, Medical Instruments, Insecticide, Fertilizers etc	28		3
6	Electrical & electronic components cables, battery & allied items	75	3	8
7	Food products, Poultry & Cattle feeds, Mineral water, Soft drinks etc.	38	9	3
8	General Engineering, bearing, dye, Fabrication etc.	126	6	13
9	Glass, Wood paper & Allied items	11		
10	Iron & Steel	74	9	10
11	Non-Ferrous Metal, Aluminium, Bathroom Fittings	32		3
12	Packaging	51		6
13	Paints & Printing Ink	18	4	3
14	Plastic	87	4	8
15	Printing Press, Stationary items	8		1
16	Rubber, leather & Foam products	45	3	2
17	Textile, Yarn, Readymade Garments etc.	34	4	2
18	Miscellaneous	75	4	5
19	Unclassified	567	24	100
	Total	1455	87	183

(Source: Bhiwadi Manufacturer's Association)

Data related to product wise number and classification of industries are available for only 1035 industrial units. About 1750 units which are under production are not registered with Bhiwadi Manufacturer's Association (BMA), hence details are not available on these units. Table 3.7 shows that 14% of the industries are of general engineering, bearing, dye, fabrication etc. Pathredi industrial area has developed into three major zones, one for auto and engineering, second for cable sector and third for garment sector. Some of the big industries in Greater Bhiwadi Complex are Balakrishna Tyres (Tyres), M/s Federal Moghul (Spark Plug), Sri Ram Cables Pvt. Ltd. (Cables), Relaxo Footwear's, Orient Syntax Ltd. (Textiles), Parasrampuriah Synthetics (Synthetic Yarn),

Honda Siel Cars India Pvt. Ltd., United Breweries Ltd., M/s Lafarge Boaral Gypsum (I) Pvt. Ltd., Khushkhera, M/s Jaquar & Co. Ltd., Bhiwadi, Shree Cement Khushkhera.

3.4.3.3 Industrial Employment

Industries are the second largest employer after agriculture in Greater Bhiwadi Complex. Number of employees in each of the existing industrial areas has been presented in Table 3.8.

Table 3.8: Number of employees in each of the industrial area

S. No.	Industrial Area	No. of Workers
1	Bhiwadi	60000
2	Khushkhera	3000
3	IID Khushkhera	1000
4	Tapookara	1500
5	Chaupanki	3500
6	Pathredi	1000
7	Sarekhurd	50
	Total	70050

(Source: RIICO Unit I & II)

As per Table 3.8, total number of employees currently working in industrial areas is 70050. With the pace of industrialisation in Greater Bhiwadi Complex, it is expected that a sizeable number of gainful employments will be generated in industries and its allied activities in near future.

3.4.4 Industries outside Organised Industrial Areas

There are about ten independent industries, covering an area of 700 acres, outside RIICO industrial areas in Greater Bhiwadi Complex. Most of them were established even before the establishment of industrial areas by RIICO. Most of them are located along Tijara Road. Out of these, seven units are under production and rest three is not operational. Some of the major industries outside industrial estates are Nahar Industries, SRF Chemicals Ltd., H.R. Steel, Seigwork India Ltd. and Harvest Bread Ltd. etc.

3.4.5 Industrial Infrastructure

3.4.5.1 Physical Infrastructure

RIICO, as part of its industrial development activities, provides plot with complete physical infrastructure. It mainly includes construction and maintenance of roads, drains, water supply etc. Bhiwadi, Chaupanki and Khushkhera are supplied with high quality infrastructure. Development of infrastructure in Tapookara, Pathredi and Kaharani industrial areas is under progress and industrial units are under construction. Status of major infrastructure provided in Industrial areas is shown in Table 3.9.

Table 3.9: Status of Physical Infrastructure in Industrial Areas, 2009

S. No.	Industrial Areas	Length of Infrastructure Laid (in Kms)		
		Road	Drain	Water Pipeline
1	Bhiwadi	55	90	55
2	Khushkhera	23	45	21.6
3	IID Khushkhera	4.15	8	18
4	Pathredi	10	-	9
5	Chaupanki	33	17.5	30
6	Sarekhurd	1.9	No drain	No pipeline
7	Tapookara	Data not available		Proposed

(Source: RIICO Unit I & II, Bhiwadi)

Water supply is one of the key physical infrastructures required for the industries. RIICO provides water for 24 hours to industries as per requirement. RIICO has 33 tube wells for supplying water in four industrial areas viz. Bhiwadi, Khushkhera, IID Khushkhera and Chaupanki. Other than these, industries have private tube wells also. RIICO has system to supply 89.5 lakh lts/day and has 133.6 kms water pipeline network.

RIICO has laid extensive road network (127 kms) and drainage network (160 kms) in its industrial areas. Further roads and drains are under construction in newly established industrial areas.

There is no underground sewerage system in industrial areas. Industrial effluent flows through open drains to the only CETP at Bhiwadi wherein domestic wastewater of Bhiwadi town is also treated. In absence of organized sewerage system complete wastewater from industries are not able to reach to CETP and gets stagnated at number of places in low lying areas.

For solid waste management, private contractors have been employed by RIICO for solid waste collection including street sweeping, cleaning of drains and their disposal.

Industries independently employ private contractors for disposal of industrial waste. There is no designated sanitary landfill site to dispose off industrial waste, which is serious cause of concern. Private contractors hired for waste management of industrial area dispose of the waste in low lying open plots.

Power is another vital infrastructure for running industries. There are three main Electric Substations, GSS of 220 KVA of 200 MVA capacity and GSS 132 KVA of 100 MVA capacity at Bhiwadi, GSS of 400 KVA of Power Grid in Bhiwadi. Besides, there are 33KV GSS at Chaupanki, 132 KVA sub-station at Khushkhera. Further new substation of 132 KV at Chaupanki is proposed and 220 KV at Tapookara is under construction. Other than above mentioned substations, a number of 33 KV substations are proposed at different locations in Industrial Areas. Thus, there is good provision of power supply in Greater Bhiwadi Complex.

3.4.5.2 Other Support Industrial Infrastructure

There is lack of other vital infrastructure to support large scale industrial activities like facilities of warehousing and godown, wholesale markets, loading and unloading facilities, truck terminals, organized parking spaces, auto repair, service stations etc. There are number of export oriented units in industrial areas of Greater Bhiwadi Complex. There is a **RAJISCO Inland Container Depot** located in Bhiwadi which is not having adequate facilities required for movement of goods to and from Industrial Areas. Thus, industries approach to various transporters located in Dharuhera, Rewari, Gurgaon etc. for transporting their goods.

3.4.5.3 Infrastructure for Industrial Employees

One of the basic requirements for the industrial employees is housing. In view of large size of employment (72000 employees) offered by industrial units in Greater Bhiwadi Complex, housing for industrial workers and associated social infrastructure facilities are essential which is lacking grossly at present. Provision of EWS (Economically Weaker Section) and LIG (Low Income Group) housing for industrial workers near industrial areas at commutable distance is very crucial. There is huge gap between demand and supply of houses for industrial workers. Of late, efforts are being made particularly by Rajasthan Housing Board and UIT to construct EWS and LIG houses for industrial workers. About 3500 units of ESW and LIG housing are planned together by RHB and UIT. Housing options for middle income and higher income industrial employees are relatively better as number of private developers have already constructed sizeable number of houses and many more are under construction.

Social facilities like health and education are grossly inadequate in Bhiwadi forcing people to commute from nearby developed areas. Low income employees are living in barrack type single accommodations in villages in and around Industrial Areas leaving their families back home due to lack of social facilities. Further there is lack of recreational and socio-cultural facilities viz. parks and playgrounds for different income level population, important to lead a descent urban life.

3.4.6 Planned Industrial Projects

RIICO is in continuous process of expanding and developing new industrial areas in Greater Bhiwadi Complex. Kaharani industrial area is planned on 1217 acres of land for which infrastructure development like roads, power lines etc. are being laid. In addition to that, two big chunks of land about 1000 acres each adjoining existing Tapookara Industrial Area in north and south and 200 acres of land near Chaupanki industrial area is under acquisition for future extension.

3.5 AGRICULTURE AND ALLIED ACTIVITIES

3.5.1 Introduction

Traditionally, agriculture has been a major economic activity in Greater Bhiwadi Complex before advent of modern industries. In 1981, 74% of the workers were engaged in agricultural activities. With rapid urbanisation and growth of industry and trade, significance of agriculture is decreasing. The occupational pattern of Greater Bhiwadi Complex in 1991 and 2001 (Census of India) has shown the clear shift in occupational pattern from primary to secondary and tertiary sector activities. Agricultural workers are mainly shifting to tertiary sector activities such as trade and commerce, transportation etc.



3.5.2 Land Utilisation Pattern

Total geographical area of Greater Bhiwadi Complex, as per revenue records, is 25130 ha. Out of the total area, 71.7% is cultivated land, rest is under hills, forest, non culturable, pasture or non cultivated culturable land. Overall land utilisation pattern has been presented in Table 3.10.

Table 3.10: Land Utilization Pattern in Greater Bhiwadi Complex (2007-2008)

S. No.	Land Utilisation Pattern	Area	Percentage
		(Hectares)	(%)
1	Forest	1114	4.43
2	Hills	114	0.45
3	Non Culturable land	1105	4.40
4	Land other than agricultural use	2451	9.75
5	Pasture Land	59	0.23
6	Non cultivated culturable land	2258	8.99
	b) Fallow Land (2-5 years)	1290	5.13
	c) Culturable waste	968	3.85
7	Total cultivated area	18029	71.74
	a) Net Sown area	16689	66.41
	b) Current fallow land	1340	5.33
Total Area		25130	100.00

(Source: Respective Panchayat Samiti)

Table 3.10 shows that out of the total geographical area, 28.3% (7101 ha) is uncultivated land, of which 4.9% is hills and forest which are protected and 9.75% (2451 ha) area is under non agricultural use which includes buildings, roads, water bodies etc. About 4.4% (1105 ha) is **non culturable land** which cannot be brought under cultivation.

Out of total area, 8.99% (2258 ha) is **non cultivated culturable waste** land which can be taken up for cultivation but has not been cultivated in last 5 years or more in succession which is either fallow or covered with shrubs or jungles or inaccessible. Non cultivated culturable waste land includes 5.13% **fallow land other than current fallow**.

About 5.33% (1340 ha) is current fallow land which is cultivated area but kept fallow for current year. 66.41% (16689 ha) is **Net Sown Area** which is actual area sown with crops and orchards. With this 71.74 % (18029ha) of the total geographical area is **cultivated area**.

In Greater Bhiwadi Complex 29080 ha is gross cropped area which includes area sown more than once in addition to net sown area. 42.6% (12393 ha) of the total cropped area is **sown more than once** in a year and 57.4% is net sown area. Land utilization pattern shows overall **cropping intensity** of 174.2%.

3.5.3 Cropping Pattern

Wheat and Bajra followed by Barley are the main food-crops in Tijara and Kotkasim Tehsils, mainly due to semi-arid climate of this region. Other than food grains cotton and oilseed of *Rai* and *Sarso* are main commercial crops in this area.

3.5.4 Irrigation Facilities

In Greater Bhiwadi Complex, ground water is the only source for water for irrigation. Hence heavy exploitation of groundwater is obvious. Percentage area irrigated in Greater Bhiwadi Complex is shown in table 3.11.



Table 3.11: Irrigated Area in Greater Bhiwadi, 2007-08

Irrigated Area	Area in Hectares
Net Irrigated Area	15629
Area irrigated more than once	303
Gross Area irrigated	15932

The actual area irrigated in Greater Bhiwadi Complex is 93.6% (Net irrigated area). Tube wells and other wells feeding on groundwater are major source of irrigation in this area. 54% of the area is irrigated by tube wells and 46% is irrigated by other wells.

3.6 TRADE AND COMMERCE

3.6.1 Introduction

Shopping and commercial areas are true index of economic well-being and image of the city. Bhiwadi is primarily an industrial town wherein traditional commercial activities gradually expanded with expanding industrial estates of RIICO to support the local population in terms of their local commercial needs. As per the field surveys, there were 4442 retail enterprises in Greater Bhiwadi Complex. Total employment in these commercial establishments is estimated to be about 10,000.



Besides Bhiwadi urbanized area, Greater Bhiwadi Complex has sizeable commercial activities in rural and industrial areas including Tapookara to meet local commercial

needs of rural areas. Out of total 4442 units, 30 percent of these commercial units are located outside Bhiwadi town.

3.6.2 Organized and Planned Commercial Centres

Except few organized and well laid shopping centres most of the commercial areas have grown organically along major roads at different localities in Bhiwadi. The organized shopping centres are either located within Bhiwadi Industrial Area or inside the group housing complexes. Organized shopping complexes in Bhiwadi comprises of Ashiana Bagicha and adjacent Bhagat Singh Colony shopping centre, Central Market and adjacent Ganpathi Mall near Samtel Chowk, RIICO Chowk, Dhaba Complex, Ajanta Chowk, Relaxo Chowk, Ganpathi Plaza and adjacent Hanuman Complex at Phoolbagh, Ashiana Angan on Alwar bypass road and Sector 4 UIT Colony along Gaurav Path.



Quite a few shopping complexes and malls which are under construction indicate the growing demand for the service. Those under construction include- BB Mall near Neelam Chowk, Parasvnath and Capital Mall near UIT Police Post on SBI Road, Genesis Mall on Alwar bypass road.



3.6.3 Un-organized Shopping Streets

In addition to organized relatively smaller shopping areas, there is a sizeable number and length of unorganized shopping streets in Bhiwadi to meet the local shopping needs of the population. Basically, these shopping streets have grown organically in response to the demand with physical expansion of the town. Some of the major shopping streets include-Main Road Bhiwadi (NH-71B) from Bhiwadi Mode to Neelam Chowk, Bhiwadi Mode to Mansha Chowk (old Alwar Road till Milakpur Gujjar), Neelam Chowk to SBI, Gaurav Path at UIT and RHB Housing Colony, Harchandpur village, Ghatal Village, Beelaheri and Rampura village. Besides, there are commercial strips located outside Bhiwadi urbanized area like Kahrani, Tapookara, Burhibawal villages and Industrial Areas of Chaupanki and Khushkhara.

3.6.4 Fruit and Vegetable Market

There are only two small vegetable markets in Bhiwadi town-one located behind Ramfal Cinema near Ganpathi mall and other located near Fire Station on Phoolbagh-Harchandpur Road. In absence of adequate organized fruit and vegetable markets and their spatially balanced distribution, innumerable street hawkers selling vegetables and fruits have encroached upon carriageway of major roads making the area a traffic hazard.



3.6.5 Hierarchy of Commercial Centres

The commercial places in Bhiwadi are not reflecting any clear hierarchy. They are non-hierarchical which is due to lack of compact development. Unplanned haphazard development is taking place all around which is spread over a large area to serve localized population. However, the existing trade and commercial activities in Bhiwadi may be conveniently organized in the following manner for the ease of understanding.

Table 3.12, showing details of the commercial areas in Greater Bhiwadi Complex clearly indicates that Bhiwadi town is serving as biggest commercial centre for the local population with about 3000 commercial units. Central Market combined with long shopping street on Main Road (NH-71B) and Ganpathi Mall (40 % of the total 3000 units) forms the Central Business District (CBD) of existing Bhiwadi Town.

Next in the hierarchy is the Ganpati Plaza and Hanuman Complex Shopping Centre at Phoolbagh with more than 15 percent (471) units of commercial enterprises.

Outside Bhiwadi town, Tapookara has emerged as the second level of settlement. The size of commercial activities is evident that Tapookara, by virtue of its central location in the Greater Bhiwadi Complex, is going to be the competing settlement with Bhiwadi in future. Tapookara alone has a share of 25 percent of commercial activities of Greater Bhiwadi Complex.



Table: 3.12: Commercial Areas in Greater Bhiwadi, 2009

	Commercial Areas	No. of Shops/Comm. Units	% to Sub-total
A	Bhiwadi Town	Organised/Planned Markets	
		Central Market (Main Road - NH-71B)	328
		Ganpati Mall	256
		Ganapati Plaza & Hanuman Complex	471
		UIT and Gaurav Path	233
		Bhagat Singh Colony & Ashiana Bagicha	112
		Relaxo Chowk	104
		Dhaba Complex	84
		BKT Chowk	62
		Ajanta Chowk	32
		RIICO Chowk	32
		Commercial Streets	
		Main Road Bhiwadi (Bhiwadi Mode to Neelam Chowk)	611
		Bhiwadi Mode to Mansha Chowk (Old Alwar road)	321
		Harchandpur	215
		Neelam Chowk-SBI Road	112
	Sub-total (Bhiwadi Town)	2973	100.0
B	Outside Bhiwadi Town	Commercial Streets	
		Tapookara	1057
		Burhibawal	174
		Kahrani Road	61
		Chaupanki IA	103
		Khushkhera IA	74
	Sub-total (Outside Bhiwadi Town)	1469	100.0
	Grand Total	4442	

(Source: Primary Surveys)

3.6.6 Basic and Non-basic Functions of Commercial Centres

With regard to the economic efficiency of various commercial centres in Greater Bhiwadi, Bhiwadi undoubtedly is serving the local population residing in surrounding housing schemes and urbanized villages. While Tapookara, as a service centre, is serving the surrounding rural villages. Hence the nature of commercial enterprises is quite different at these two locations. Bhiwadi is serving urban population with modern needs while Tapookara is serving agricultural hinterland with service centre activities.

3.6.7 Commercial Infrastructure

Commercial infrastructure in Greater Bhiwadi Complex supporting trade and commerce is yet to develop properly. Though there are few planned organized market places which have developed recently but they are very small. Tremendous population pressure created by continuous industrial expansion has led to establishment of unorganized markets without proper infrastructure like parking facilities as commercial places are not planned. There are few banks with their ATM facilities but they seem inadequate due to heavy pressure on them.

3.6.8 Informal/Un-organized Sector

As discussed above, due to demand, commercial activities have suddenly sprang up all around. Bhiwadi being a small town which has its economy based on industrial activities; commercial activities are only of supporting and subsistence nature. But sudden demand has led to creation of shopping centres at numerable places meeting daily needs of the population. Therefore, informal sector is playing a major role in meeting the commercial need of people at Bhiwadi as well as other places like Tapookara, Burhibawal, Kahrani, Industrial Areas of Chaupanki and Khushkhera.

3.6.9 Other Tertiary Sector Services

There are few hotels which offer descent accommodation to businessmen visiting Bhiwadi industrial areas. Major hotels in Bhiwadi include Ashiana Tree House and Village Centre, Hotel Regency, RC Palace, Hotel Pahel etc. Ashiana Industrial Park is located on Main Road Bhiwadi which houses many commercial enterprises like private banks etc. but there are no big corporate offices in Bhiwadi. However there are quite a few government offices for local administration.

Chapter 4

BIO-PHYSICAL ENVIRONMENT

4. BIO-PHYSICAL ENVIRONMENT

4.1 ENVIRONMENTAL RESOURCES

4.1.1 Geology

The major group of rocks in Greater Bhiwadi is pre-Aravalli comprising of schist, quartzite and granite. Alwar group consists of quartzite and schist. Major minerals found in Alwar district are Baryte, Building stones and Copper. District leads in the production of these minerals. The rocks consist of schist and quartzite and intrusion of Granite. These are one of the oldest reported formations dating back 2500 million years. The Baryte deposits are mined about 2000 tonnes annually. Alwar district is the second richest in Rajasthan where Copper ore is found. Other mineral deposits in the district are Asbestos, China clay, Feldspar, Fine clay, Soap stone and Quartz.

4.1.2 Climate and Rainfall

Rajasthan is known for extreme type of dry climate. The climate of Alwar district is very hot in summer and very cold in winter. The monsoon season is of very short duration. The south-west monsoon continues from July to mid September. The maximum temperature of the district touches 47°C and the minimum goes to freezing point. Average temperature is 26°C. The winds are strongest (13.1 km/hr) in June and lightest (5.6 km/hr) in November. The predominant wind directions are NW, SW, SE and NE. Average annual rainfall in Alwar district is recorded as 611.6 mm. In Greater Bhiwadi Complex the amount of rainfall varies between 600 and 700 mm.

4.1.3 Soil

Major types of soil in the district include loam, sand, sandy clay and clayey loam. Predominant soil found in the region is loam. However, sand is also quite prevalent in different Tehsils of Alwar district viz. Kotkasim, Tijara, Neemrana, Ramgarh, Reni and Behror. In Greater Bhiwadi Complex the soil present is Alluvial Sandy soil with Strength of SBC 8-10 tonne/m². Different types of soil present in district has been shown in **Figure 4.1**

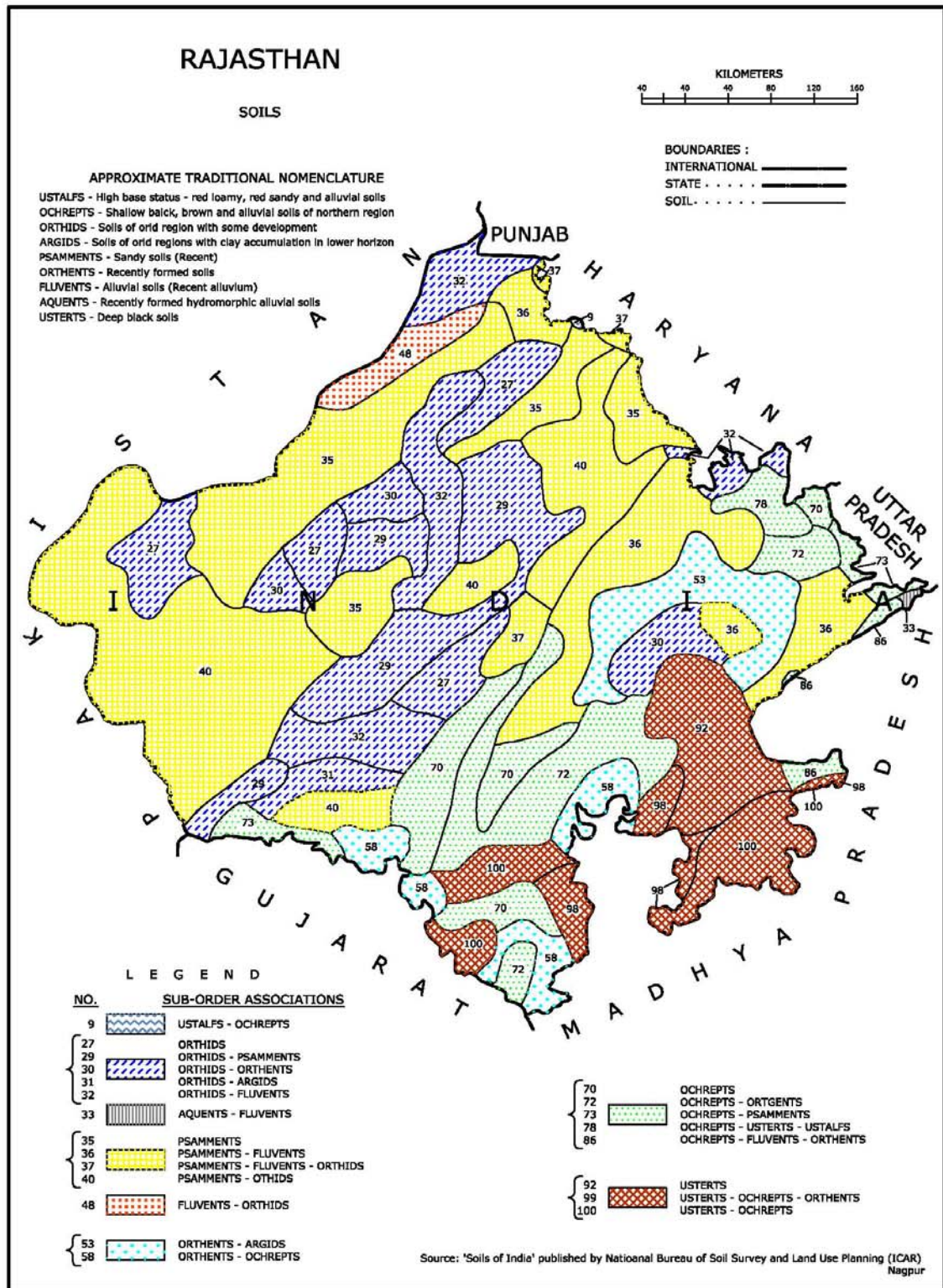


Figure 4.1: Soil

4.1.4 Water Resources

Surface Resources

There is no perennial river in the district. The seasonal rivers, which flow through the district and carry the runoff from the hills are Sahibi, Ruparel, Chuhan Sidh and Lohdoha. Several of these rivers and their tributaries have been impounded at suitable sites and the water is used for irrigation purposes. The natural drainage is from southeast to northeast.

Sahibi, the largest river of the district, flows through western part of Greater Bhiwadi, rises from Sewar hills (Jaipur district) and enters Bansur tehsil of Alwar district in the west. It flows in north-eastern direction passing through Bansur, Behror, Mandawar, Kishangarh and Tijara tehsils. It carries away the water of the western slope of the central range of the Aravali hills.

Ground Water Resources

Ground water is the major source of water in Greater Bhiwadi Complex for all purposes which are present in Old Alluvium layer of the soil. It is one of the ground water potential zones (**Figure 4.2**) where yielding in Old Alluvium varies from 50-200 m³/day. Ground water potential of the alluvial aquifers is good and equal everywhere due to uniform distribution of rainfall, effective porosity and geometry of the aquifers. As per Ground water department of Alwar district, ground water is overexploited in Alwar district (**Figure 4.3**) and thus in Greater Bhiwadi Complex. Again as per survey of Groundwater Department, 2007, in Tijara Tehsil ground water level varies from 9.70 meter to 44.65 meter. Wells and borewells yielding capacity varies from 1 lakh liters to 1.5 lakh liters per day. Survey results of the ground water at different location of the Greater Bhiwadi are shown in Table 4.1.

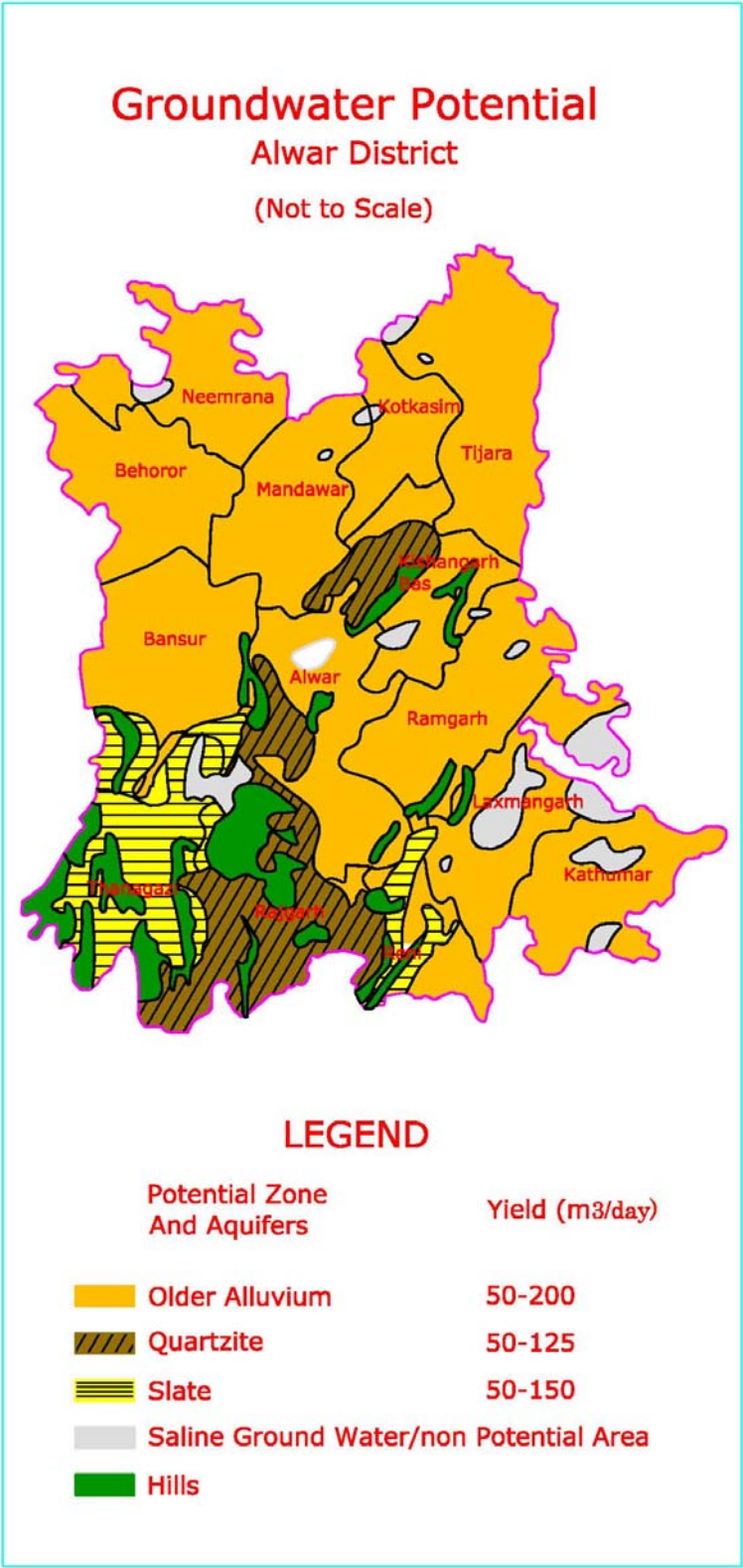


Figure 4.2: Groundwater Potential

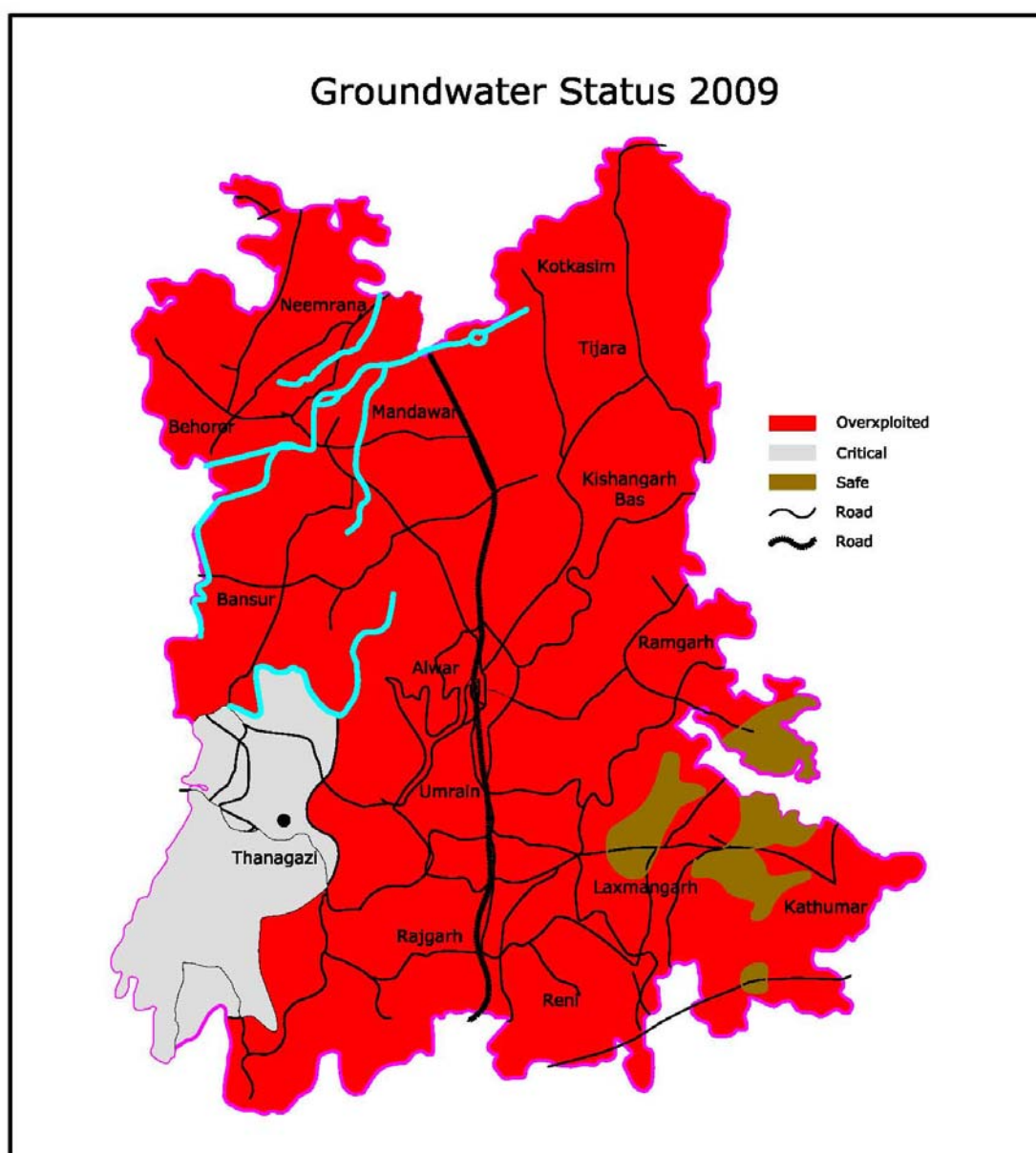


Figure 4.3: Groundwater Status

Table 4.1: Ground water level in last 5 years

Monitoring Village Name	2005	2006	2007	2008	2009
	Units in Meter				
Burhi Bawal Pz	13.35	13.75	17.05	15.85	19.25
Makdawa	Dry	Dry	Dry	Dry	Dry
Bhiwadi Pz	37.05	41.05	44.65	Dry	Dry
Hasanpur Pz	19.55	20.85	20.45	21.75	22.5
Khohri Kalan Pz	22.75	22.05	22.25	22.5	22.95
Meetiawas	Dry	Dry	Dry	Dry	Dry
Naugawan	11.4	11.35	Dry	Dry	Dry
Sarekalan	Dry	25.9	20.35	25.3	27

Monitoring Village Name	2005	2006	2007	2008	2009
	Units in Meter				
Tapookura Pz	20.73	19.83	19.88	20.53	21.83
Tatarpur Pz	17.25	17.55	16.65	17.3	17.15

(Source: Ground Water Department, Alwar)

Table 4.1 shows that ground water level which was 44.65 m in 2007 at the specified location the well got dried in 2008 which shows high rate of ground water extraction. Again in other industrial areas as per RIICO, ground water level varies from 3000 to 4000m. Of all the locations of ground water survey only in Bhurhibawal the level got raised during 2005 to 2009 showing recharge of groundwater. Bored cavity tubes are the most common method of ground water extraction structures being used for irrigation purposes in areas around Kotkasim, Tijara, and Tapookara. In these areas discharge of wells varies from 10.5 to 42 $\mu\text{g}/\text{m}^3$.

4.2 PHYSIOGRAPHY AND RELIEF

Macro level physiography of the state depicts that the major parts of Rajasthan lie between 100 and 350m above mean sea level. Hills are low in the north and east of Alwar district but become more prominent and more precipitous from the eastern border towards Alwar town and from north to south and congregate in the south. They cover nearly the whole of Thanagazi and Rajgarh tehsils and about one-third of Alwar tehsil and form important features in Bansur, Kishangarh and Tijara tehsils. They enclose between them fertile valleys and high land, which are reserved forests, thickly wooded with spontaneous growth.

However, micro relief features of Alwar district have internal micro level variations too. The Greater BhiwadiComplex topography consists of few hillocks of Aravali series and the altitude varies from 150m to 300m above mean sea level shown in **Figure 4.4** and **Figure 4.5**.

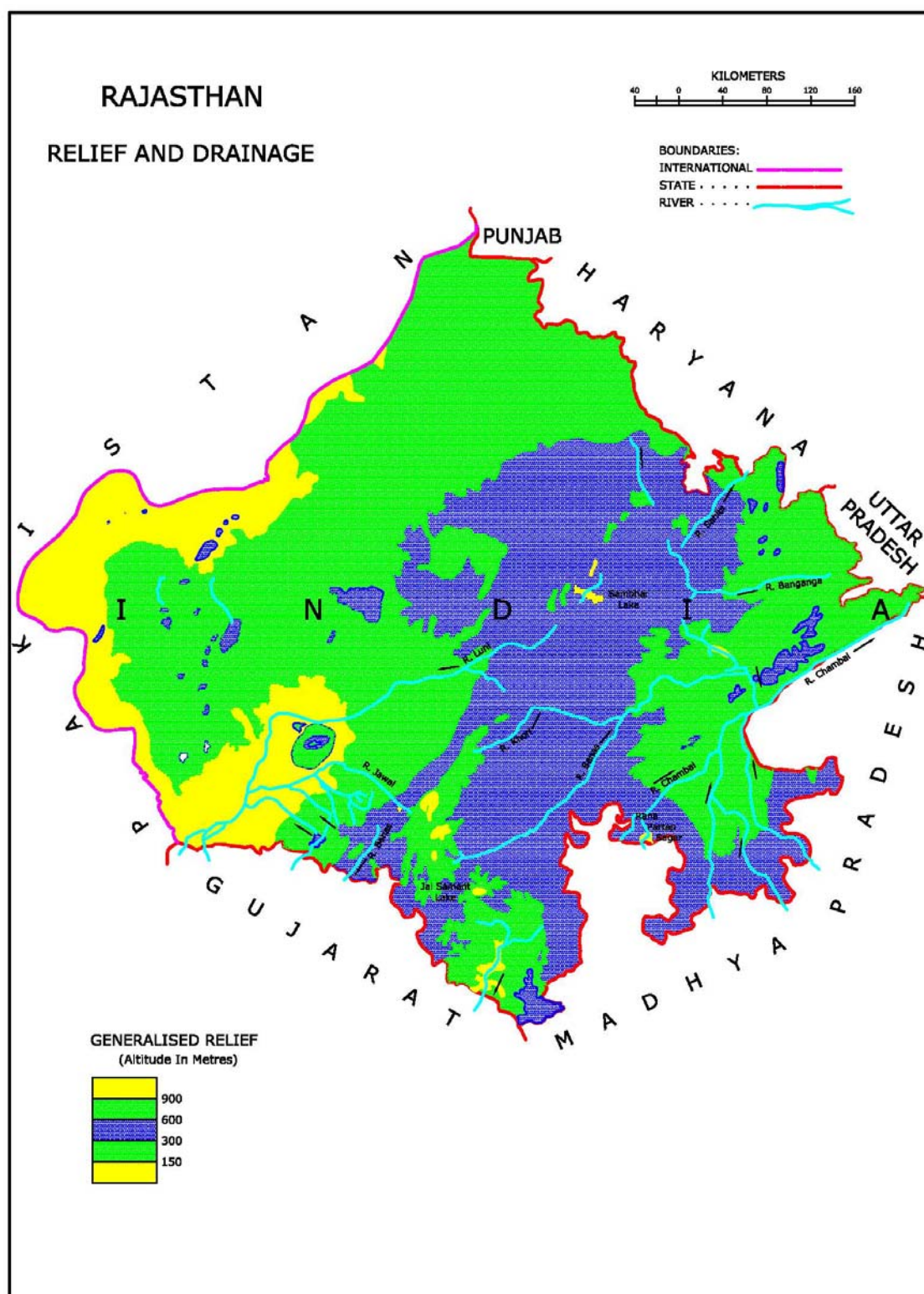


Figure 4.4: Relief and Drainage

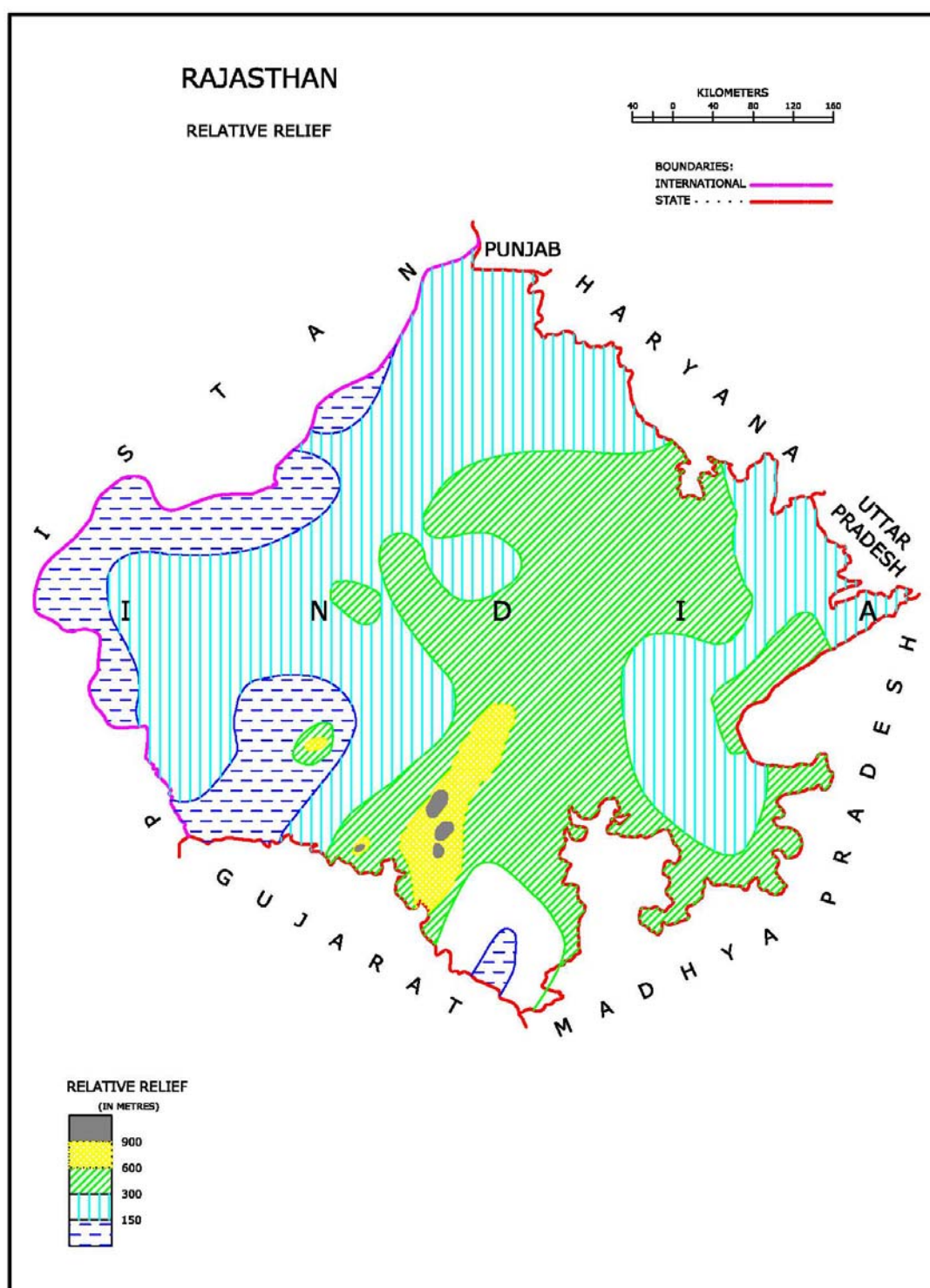


Figure 4.5: Relative Relief

4.3 NATURAL FEATURES

There are number of hills and protected forest present in Greater Bhiwadi Complex namely Gondhan forest, Chaupanki forest, Kohri Kalan forest, Sarekalan forest and Banvan forest. Areas under various forest blocks of Greater Bhiwadi Complex are presented in Table 4.2.

Table 4.2: Area under Forest

S. No.	Forest Block	Protected Forest	Unclassified forest	Total Area
		Area in Hectares		
1	Banban	45.94	0	45.94
2	Chaupanki	218.75	0.18	218.93
3	Guwalda	58.82	1.91	60.73
4	Khori Kalan	214.97	0.14	215.11
5	Udhanwas	289.75	0	289.75
6	Sarekalan	211.66	0.25	211.91
7	Ghatal	184.92	0	184.92
8	Khijarpur	78.42	0	78.42
9	Godhan	182.02	0.29	182.31
Total Area		1485.25	2.77	1488.02

(Source: Forest Department, Alwar)

Table 4.2 shows that there are no reserved forests in this area whereas 1485 ha is under protected forest. Dhonk, Ronj, Hingot, Dacer, Ber and Kareel are the major species of trees present in this area.

Further there is a sizable amount of land is under ravines i.e.798 ha which needs to be protected and measures to be taken to save the top soil from erosion. Thus hills, forest and ravine infested land should be conserved through restricting development into these areas while planning for Greater BhiwadiComplex.

Again there are two major water bodies in Greater Bhiwadi Complex one Sahibi river which passes through Kotkasim tehsil and other is magnificent Sare Khurd Lake. Presently no water flows in Sahibi river and villagers are cultivating river bed which is a cause of concern. But Sare Khurd Lake is having lot of water which should be conserved and can be developed for tourism purposes in future.



Chapter 5

INFRASTRUCTURE

5. INFRASTRUCTURE

A. PHYSICAL INFRASTRUCTURE

5.1 WATER SUPPLY

5.1.1 General

Rajasthan being an arid region, water is a precious element. There is scarcity of surface water sources in Rajasthan. Sahibi River flows through the Greater Bhiwadi but presently there is no water in the river and farmers are cultivating dry river bed. In absence of surface source of water and poor rainfall, ground water is the major source for all purposes including drinking, irrigation and industrial use. Due to this ground water is over exploited in this region of Rajasthan State.

5.1.2 Water Supply in Bhiwadi Town

5.1.2.1 Source of Water Supply

Bhiwadi is the only town in Greater Bhiwadi Complex. Primary source of water in and around Bhiwadi is ground water. There are no other sources of drinking water in this area. Bhiwadi Census Town comprises of five revenue villages viz. Ghatal, Nanglia, Alampur, Saidpur and Bhiwadi. Drinking water in aforesaid villages is still being supplied by PHED whereas in extended area of Bhiwadi town water is supplied by different agencies such as UIT, Housing Board and RIICO.

Water supply network is present in UIT, RHB and RIICO areas. UIT is supplying water through 22 Tube wells and 7 Stand Posts to nine UIT sectors and sector 4 & 7 of Housing Board. In sector 1, 2 & 3 of Old Housing Board colony, RIICO is providing water from their tubewells meant for Bhiwadi Industrial Area. All private developers have their own tubewells for providing water to their housing schemes.

In five villages of Bhiwadi Town, PHED is supplying water through its 2 tubewells and 8 hand pumps by Pump and Tank scheme which will be detailed further in following sections. Population residing in old Bhiwadi area is facing scarcity of water.

5.1.2.2 Quantum of Water Supply

In nine sectors of UIT viz. 1, 2, 2A, 3, 3A, 5, 6, 8 & 9, Bhagat Singh Colony, Vasundhra Colony and Sector 4 & 7 of Housing Board, quantum of water supplied is 3,52,000 Gallons/day (1.6 MLD). Total duration of water supply is 4 hours, twice a day for 2 hours each.

5.1.2.3 Transmission and Distribution System

a) Water Storage System

Though both UIT and Housing Board have their own storage tanks, but presently they are not being used since water is directly pumped from tubewell to distribution network on daily basis.

b) Distribution Network for Piped Supply

Water supply network is present in UIT Sectors 1, 2, 2A, 3, 3A, 5, 6, 8, 9, Bhagat Singh Colony, Vasundhra Colony and Housing Board (HB) sectors-1, 2, 3 and Sector 4 & 7. Water supply network covers 5921 plots with a pipeline length of 31 kms in UIT area; and 1974 plots with pipeline length of 12.15 kms in Housing Board colonies.

5.1.2.4 Consumer Connections

Presently, about 2666 connections have been given for water supply by UIT into its sectors and Sector 4 & 7 of Housing Board. Whereas, a total of 1100 connections have been given by RIICO in old RHB sectors 1, 2, 3.

5.1.2.5 Water Tariff

UIT is collecting water charges for domestic connections based on the plot size. Collection efficiency of UIT is 75%. UIT has fixed water charges based on plot size as represented in Table 5.1.

Table 5.1: Water collection charges by UIT

Sr. No	Plot size	Rate
	(sq.m)	(Rs./per month)
1	<100	50
2	100-200	100
3	>200	150

(Source: UIT, Bhiwadi)

5.1.3 Rural Water Supply

There are 99 villages in Greater Bhiwadi Complex, of which 5 revenue villages are part of Bhiwadi Census Town. For rural areas, PHED is the implementing agency of all drinking water schemes run by the State Government. Abadi areas of aforesaid 5 villages, even after being part of Bhiwadi town, are still being served by PHED. In other words, in addition to 94 rural villages, PHED supplies water to aforesaid 5 villages.



There are four major schemes by which water is being supplied in rural areas of Greater Bhiwadi Complex known as Hand Pump Schemes, Traditional Source Scheme (TSS)/Janta Jal Yojna (JJY), Pump and Tank Scheme and Piped schemes for which details have been summarized in the table 5.2.

Table 5.2: Type of Drinking Water Supply Scheme

Sr. No.	Type of Scheme	Brief Description of Scheme
1	Hand Pump Schemes	When the hand pumps are installed in a village the system is called a Hand Pump Scheme.
2	Traditional Source Scheme (TSS)/Janta Jal Yojna (JJY)	In the Janta Jal Yojna and Traditional Source Schemes, the community maintains the scheme and the expenses incurred regarding electricity charges and the repair of pump and machinery and also Rs. 500 per month for the payment to the worker is reimbursed by the state.
3	Pump and Tank Scheme (P&T Scheme)	When water is locally available and is distributed at one point and multiple points through reservoir then it is defined as a Pump and Tank Scheme.
4	Piped Scheme	In case house connections are released in such P & T schemes, it is called piped water scheme.

Water, in all constituent villages of Master Plan Area, is being supplied under aforesaid four schemes from ground water only. It is learnt through literature from secondary sources that there is lack of water supply in villages. As per PHED, till 2004, there were 16 tubewells and 617 hand pumps in entire Greater Bhiwadi Complex. Many of these tubewells/hand pumps got dried. Total water production is 5.7 MLD from all the schemes in rural areas, which is inadequate. Water scarcity is even more acute in abadi areas inside Bhiwadi Town. Those facing acute shortage of drinking water includes-

Ghatal, Nanglia, Saidpur, Alampur and Bhiwadi. There are only 2 tubewells and 8 hand pumps for these 5 villages with service level as low as 20%. It is important to note that the service level of water supply schemes are below 50% in many of the villages namely- Harchandpur, Rampura, Shahdod, Amlaki, Mundana Meo, Kaharani, Chaupanki, Husaipur, Bubka Hera, Naugawan, Ladamka. In some of the villages like Seethal, Udaipur, Santhalka, Tatarpur, Thara, Khijooriwas etc. number of handpumps has been increased under sector reforms thereby improving the supply of water in these villages.

Piped connections from tubewell are limited to very few villages viz. Bhiwadi, Seethal, Udaipur, Santhalka, Khijooriwas, Guwalda, Tapookara, Nibaheri, Kamalpur. Villagers pay at a flat rate of Rs. 52 per month to PHED. Collection efficiency of tariff is very good (95%) in these villages.

5.1.4 Industrial Water Supply

Greater Bhiwadi is an Industrial Complex wherein industrial areas cover about 29 Sq.km. These industrial areas have sizeable demand for water. This demand of water for industrial uses is being met from ground water extracted through tubewells. As stated earlier, there is no alternate source available in and around this region pushing ground water table at a very critical level which should be taken up seriously before it becomes too critical to reverse the damages done.



RIICO is primarily responsible for providing major infrastructure services including water throughout the industrial areas. RIICO in association with PHED is operating and maintaining water supply system in all industrial areas of Greater Bhiwadi Complex.

There are five major operational industrial areas in Greater Bhiwadi Complex viz. Bhiwadi, Chaupanki, Khushkhera, Tapookara and Sarekhurd. There are some isolated individual industries along Tijara road outside existing RIICO industrial areas which also demand water for industrial use. A total of 2570 industrial units are there in these industrial areas, of which 1745 are in production and 825 are under construction. Development of two more industrial areas viz. Kaharani and Pathredi are under progress and very shortly will demand for water. There are more industrial expansion plans of RIICO in Greater Bhiwadi Complex. Thus, the demand for water is continuously increasing and will further increase in future with the rapid industrialization.

5.1.4.1 Existing Infrastructure for Industrial Water Supply

RIICO supplies water in all its industrial areas by extracting ground water-the only available source throughout Greater Bhiwadi for all purposes through tubewells by pumping. Table 5.3 provides details of water supply infrastructure created, owned and maintained by RIICO.

Table 5.3: Existing Industrial Water Supply Infrastructure (2009)

S. No.	Industrial Areas	Tube Wells	Ground Water Table	Yield of Tube Wells Gallon/hr.	Storage Capacity	Connections	Length of Pipe Line (km)	Quantity of water supplied
		Nos.			Nos. & Lakh Its	Nos		Lakh Its/day
1	Bhiwadi	23	30 Mt. Below G.L	3000-4000	7 CWR 7 S.R	IND: 867 RHB: 1100	53	40
2	Khushkhera	5			1 CWR: 14 1 SR: 7.5	70	21.6	21.5
3	IID Khushkhera	1			1 SR: 1.5 1 CWR: 2	40	18	2.5
4	Chaupanki	4			2 S.R: 7.5 & 1.9 2 CWR: 14 & 1.9	125	30	25.5
5	Sarekhurd	Nil	30	3000	NA			

(Source: RIICO, Bhiwadi)

RIICO has existing water supply infrastructure in four industrial areas - Bhiwadi, Khushkhera, IID Khushkhera and Chaupanki. RIICO has also planned for developing such infrastructure for new upcoming industrial areas viz. Tapookara, Pathredi, Kaharani etc. RIICO has 33 tubewells through which water is being pumped to their storage reservoirs and being supplied to 2200 connections through a piped network of 122.6 kms spread over different industrial areas.

5.1.5 Proposed Projects

Development of water supply infrastructure planned by RIICO in two industrial areas namely Tapookara and Pathredi is under progress. Details of proposed water supply projects are given in Table 5.4.

Table 5.4: Details of proposed water supply projects of RIICO, 2009

S. No.	Industrial Area	Tube Wells	Storage Capacity	Connection	Length of Pipe Line	Proposed Quantity of water supply
		Nos.	Nos. & Lakh Its	Nos	(km)	Lakh Its/day
1	Tapookara (Proposed)	4	1 CWR: 4 ; 1 SR: 4	5	9.2	8
2	Pathredi (Proposed)	2	1CWR:16; 1 S.R: 8	NA	9	25

(Source: RIICO II, Bhiwadi)

5.1.6 Demand for Water

As mentioned earlier, ground water is the only source for provision of water supply in Greater Bhiwadi Complex. There are multiple agencies supplying water in different areas and for different purposes through tubewells viz. RIICO in Industrial Area, UIT and RHB in Bhiwadi Extension and PHED in abadi areas. Besides, there are private tubewells owned by industries, private developers, farmers which are not registered with any government departments. In absence of information available on water supplied through unregistered private tubewells, which are substantial in number to have impact on actual existing demand for water, it is prudent to calculate the demand for the terminal year 2031 to plan the basic infrastructure for Greater Bhiwadi Complex which is expected to be urbanised by that time.

Future demand for water has been calculated in line with the Master Plan for Delhi-2021 and water supply Manual. Thus, the demand of water has been estimated for year 2031 as under:

Categories	Quantity	Unit	Rate of Water Supply	Water Demand (MLD)
Industrial	6201.48	ha	45000 lt/ha/day	279
Green Areas	940.97	ha	67000 lt/ha/day	63.0
Domestic	1549115	persons	150 LPCD	232.4
Fire Fighting			1% Total Demand	5.7
Total Water Demand				580.1

Thus, the total demand of water supply in Greater Bhiwadi Complex by the year 2031 is estimated to be **580 MLD**

As per the Groundwater Department studies, ground water has already been over exploited in Greater Bhiwadi Complex. In view of the continuously expanding industrialization and consequent increasing population pressure on groundwater which will further deplete the water table, it would be prudent to conduct a detailed study to

explore the alternate source of water and suggest effective measures to recharge and reinstate the fast depleting groundwater table in Greater Bhiwadi Complex.

5.2 DOMESTIC SEWERAGE

5.2.1 Sewerage Network and Coverage

An organised sewerage system is an important aspect to create sanitary and healthy living conditions in any city. There is no sewerage system in Greater Bhiwadi Complex. All domestic wastewater generated in Bhiwadi town are currently discharged into the open and few closed drains constructed by UIT, RHB and RIICO. All domestic sewage gets mixed with storm water into these drains and gets collected at common effluent treatment plant located in Bhiwadi. Further there are areas which are not even connected to drains and their waste flows outside the house creating unhygienic condition. As per Census 2001, in Bhiwadi town, only 18% of the houses have connectivity to closed drains as wastewater outlet, 71% has connectivity to open drains and 11% has no connectivity at all.

To improve the sanitary condition in the town, UIT has planned and started constructing an underground sewerage system in the residential colonies in Bhiwadi. The area covered under planned underground sewerage system is UIT Sectors, 1, 2 and 2A, 3 and 3A, 5, 6, 8, 9, GH-5, GH-6, Vasundhara Nagar, Bhagat Singh Colony, Housing Board Old Sector 1, 2, 3, and Sector 4 and 7 and all Ashiana Schemes viz. Ashiana Gulmohar, Ashiana Green, Ashiana Garden, and Ashiana Village and adjoining areas. Total numbers of households covered under the scheme is 6516.

5.2.2 Quantity of Sewage Generated

As mentioned earlier, there is no record of actual quantity of water supplied due to unregistered tubewells. Similarly, there is no record of actual quantity of sewage generated and collected also. As per the information from Bhiwadi Jal Pradushan Niwaran Trust (CETP) Office, 9MLD of wastewater reaches existing CETP of which approximately 3 MLD is domestic sewage. Moreover, estimated 3MLD of domestic wastewater collected at CETP account for only partial sewage generated. Therefore, it is not possible to calculate existing quantity of sewage generated, collected or the gap between the two.

5.2.3 Sewage Treatment Facilities

Presently a Common Effluent Treatment Plant with installed capacity of 2-3 MLD located in Bhiwadi town is treating the sewage collected through open drains which include storm water, domestic wastewater and industrial effluent. Treatment Plant has facilities for all primary, secondary and tertiary treatment of wastewater, but due to insufficient capacity, the quality of water treated is not up to the required safety standards. UIT Bhiwadi is constructing new Sewage Treatment Plant with a design capacity of 3.2 MLD separately for treatment of domestic sewage. But this STP is expected to run out of capacity as the estimated sewage generation is far beyond the capacity of the plant. With the pace of urbanization, Bhiwadi town is experiencing more STPs will be required to be developed shortly.

5.2.4 Disposal Outlets

There is no proper disposal outlet for the partially treated wastewater due to inadequate capacity of existing CETP. A portion of the partially treated water is disposed off in open agricultural field near Thara village. While due to limited intake capacity of CETP untreated wastewater overflow from the CETP which enters bordering Haryana due to local slope conditions. This creates complex administrative problems for authorities of Rajasthan and Haryana States. A proper disposal outlet needs to be identified after a detailed topographic study of the area.

5.2.5 Ongoing and Projects in Pipeline

Two projects are under construction in Bhiwadi for improvement of sanitary condition in the town. One, laying of piped sewerage network connecting 6516 houses planned to serve a population of 56,000 and second STP of 3.2 MLD capacity is under construction for domestic sewage treatment.



5.2.6 Future Demand

To plan the infrastructure, total sewage generated till year 2031 is considered to be 80% of total water supplied. Thus the domestic wastewater generated till year 2031 is estimated to be 185.9MLD.

Estimated quantity of sewerage generation shows that there is an urgent need of laying a piped sewerage system and construction of the STP. Again due to the limited source of

water in this area it is proposed to treat wastewater upto the reusable quality to recycle it for non-drinking purposes so that the problem of disposal will also get eased and precious groundwater extraction could also be reduced.

5.3 INDUSTRIAL EFFLUENT

5.3.1 Existing Status

As mentioned in earlier section, industrial effluent is discharged into open and closed drains constructed by RIICO in industrial areas. Industrial wastewater in open drains gets mixed with storm water on the way to the Common Effluent Treatment Plant (CETP) located in Bhiwadi. CETP has a capacity of 2-3 MLD in which storm water, domestic wastewater and industrial effluent reaches together through common intake drain. As per secondary information, a total of 9MLD wastewater reaches to CETP of which 6 MLD is reported to be industrial waste. Amount of wastewater reaching CETP is much higher than its treatment capacity putting pressure on treatment plant and reducing the quality of treatment. An augmentation scheme is under implementation raising its treatment capacity to 6 MLD. A separate STP is also under construction for domestic waste water presently being treated in CETP.

5.3.2 Ongoing and Planned Projects

Augmentation of existing CETP to 6 MLD is under progress to treat the industrial effluent. Augmentation of CETP has considered only the Bhiwadi Industrial Area. But there are industries present in other industrial areas viz. Chaupanki, Khushkhera, Tapookara and will further increase with the pace of industrialization. Thus there is need to plan for more CETPs in Greater Bhiwadi Complex to serve other than Bhiwadi Industrial Areas.

5.3.3 Future Generation of Industrial Effluent

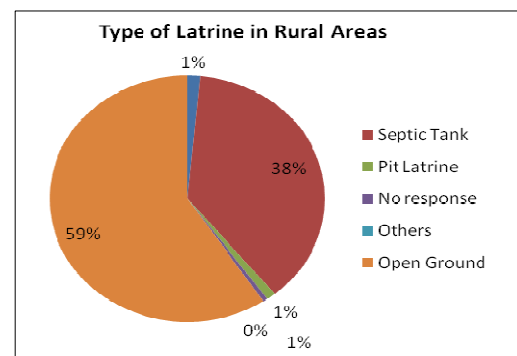
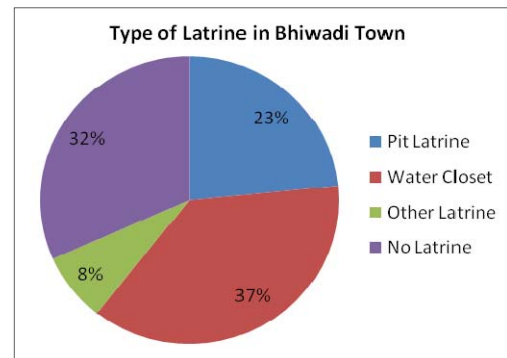
For planning of infrastructure for treatment and safe disposal of industrial effluent, wastewater generated from industries is considered to be 80% of the water supplied to industries. Thus the industrial effluent generated is estimated to be 223.2 MLD.

5.4 SANITATION

Various alternate methods of sanitation are in practice including pit latrines, water closets with septic tank or even open defecation is also practiced. Details of different types of toilets being used by people is based on household amenities reported in Census 2001 for Bhiwadi town and socio-economic primary surveys for rural areas.

As per Census 2001, 37% of the houses have water closet, 23% have pit latrine and 32% are not having latrine of any sort and they defecate in open in Bhiwadi town. Thus the sanitary condition in the town needs to be focused on priority.

In rural areas of Greater Bhiwadi Complex, 59% of the households are defecating in open and 38% have toilets with septic tank.



5.5 DRAINAGE

Bhiwadi town has a complicated drainage problem. The town is surrounded by inter-state border from three sides – north, east and west and there is no sufficient slope towards south. The natural slope is towards east across inter-state border into Haryana. Domestic wastewater, storm water and industrial effluent are mixed and flow into open drains. Due to lack of clear segregation of storm water, domestic wastewater and heavily polluted industrial effluent coupled with ineffective treatment of such wastewater due to very limited capacity of existing CETP, no wastewater is being permitted to enter across the border. Consequently hazardous industrial effluents without proper treatment are stagnant at number of places within and outside industrial areas including agricultural fields polluting underground water.



In Bhiwadi town, RIICO has constructed open drains of a total length of 160 kms in different industrial areas and UIT and Housing Board have also constructed roadside drains. But there is general lack of drains in rural abadi areas even in big villages such as Tapookara, Burhibawal, Guwalda, Beeranwas, Milakpur Goojar. Wastewater flows on narrow streets/lanes from household. Due to lack of proper drains coupled with improper management of storm and wastewater flowing through existing drains wherever exists, all the wastewater generated is not getting collected causing widespread water logging. Limited wastewater is collected from Bhiwadi town through existing drains that includes industrial effluent also reaches to the CETP which, as explained earlier is running out of capacity. Further absence of proper outlet from CETP adds to problem of water logging at various places such as in Ghatal village, Thara village, near Kaharani village making unhygienic conditions in Greater Bhiwadi Complex.



In view of the acute problem of drainage in Greater Bhiwadi Complex, it is strongly recommended that a storm water drainage plan be prepared for entire Greater Bhiwadi Complex including rural settlements based on detail topographic study.

5.6 SOLID WASTE MANAGEMENT

5.6.1 Existing System

Collection of solid waste is being done in limited areas of UIT and RHB through private contractors. RIICO also manages solid waste in its industrial areas through private contractors. Door to door collection, regular street sweeping and cleaning of drains, cleaning and maintenance of public toilets are being done in UIT and RHB areas. As far as availability of infrastructure for solid waste management is concerned, there are 15 dustbins distributed in UIT and RHB served areas. Waste is collected once a day. As per UIT, 5 tonnes of waste is collected and transported daily. Collection and transportation of waste is done through a private agency. In areas, not covered under waste collection, waste is dumped on vacant plots and left unattended. Private agency entrusted with the task of waste management is dumping waste indiscriminately in open areas in absence of any designated dumping ground/ landfill site.

RIICO is separately taking care of solid waste management in its industrial areas. Private contractors are employed for cleaning of drains twice a year, cleaning of area once a

year, cleaning of dustbins twice a month and regular cleaning of roads and dead animals in Industrial areas. Further management of industrial waste generated within industrial units is the responsibility of the individual unit owners. Thus in absence of any hi-tech sanitary landfill site silt, construction debris, fly ash etc. is being dumped indiscriminately.

5.6.2 Future Waste Generation and Management

Waste generation in Greater Bhiwadi Complex by 2031 is estimated to be 1024.6 metric tonnes/day at the rate of 0.6 kg/capita/day. Beside, there will be hazardous and biomedical waste which would be required to manage carefully with the increased urbanization and industrialization. Thus, it is recommended to prepare solid waste management plan.

5.7 ROADS AND TRANSPORTATION

5.7.1 Regional Linkages

Greater Bhiwadi is located on Dharuhera-Sohna road, 5 kms from NH-8 (Delhi-Jaipur highway). Dharuhera–Sohna road, an upgraded NH-71B, passes through Bhiwadi town. Greater Bhiwadi is well connected by regional network of roads to Delhi, Jaipur, Sohna and Alwar. It is 55 km from Delhi International Airport, 200 kms from State capital Jaipur and 90 km from Alwar. It is connected to Alwar via Tijara road (SH-25) and to Delhi and Jaipur by NH-8. There is no railway line connecting Greater Bhiwadi. Nearest Station is Rewari which is 25 kms from Bhiwadi and nearest Airport is Delhi International Airport.

5.7.2 Hierarchy of Network

There are mainly four categories of road present in Greater Bhiwadi, National Highway, State Highway, Major District Road and Village Road. Other than that there are village tracks which are either gravelled or kutcha. Hierarchy of road network present in Greater Bhiwadi is shown in Table 5.5.

Table 5.5: Existing Road Hierarchy

Hierarchy of road	Length of road	Percentage
NH (71B)	4.5	2.28
SH (25)	17.5	8.89
MDR	25.2	12.80
VR	123	62.45
TRACK	26.75	13.58

Hierarchy of road	Length of road	Percentage
Total	196.95	100

(Source: PWD, Bhiwadi)

Upgraded NH-71B which passes through Bhiwadi town is 4.5 km long inside Greater Bhiwadi and SH-25 falling in Greater Bhiwadi Complex connecting Bhiwadi to Alwar till Hasanpur is 17.5 kms. Other than that MDR-61 & 61A running in east-west direction, connecting Tapookara to Nuh on eastern side and Tapookara to Qutubpur through Burhi Bawal on the western side of Greater Bhiwadi provides good regional connectivity. Further 123 kms of village roads are present in Greater Bhiwadi Complex. All these roads are black topped. Most of the villages are connected to each other through tracks.

5.7.3 Road Cross-Sectional Elements

Detailed road inventory survey on all important roads of the Greater Bhiwadi Complex is summarised in table 5.6.

Table 5.6: Summary of Road Inventory carried out on Major Roads of Greater Bhiwadi Complex

Road	Place		Major Land Use		Existing ROW	Surface Type	Carriageway Width(m)		
	From	To	Left	Right			Left	Median	Right
NH-71-B	Alwar Bypass RTO Check Post	Modern Public School	Mixed	Mixed	30.9	B	5.5	0.0	5.5
NH-71-B	Bhiwadi Mode	Neelam Chowk	Commercial	Commercial	31.0	B	7.0	0.9	7.0
NH-71-B	Neelam Chowk	Mahavir Aluminium Chowk	Industries	Industries	43.7	B	7.0	1.0	7.0
SH-25	Alwar Bypass RTO Check Post	Khijooriwas Junction	Mixed	Mixed	44.2	B	5.9	-	5.9
SH-25	Khijooriwas Junction	Hasanpur	Mixed	Mixed	34.0	B	3.5	-	3.5
MDR-61	Tapookara	Mehandika	Agriculture	Agriculture	18.0	B	3.5	-	3.5
MDR-61	Burhibawal	Tapookara	Mixed	Mixed	30.0	B	3.5	-	3.5
MDR-61	Burhibawal	Majri	Agriculture	Agriculture	7.1	B	1.5	-	1.5
OR	Nandrapur Bas Border	Burhibawal	Mixed	Mixed	14.1	B	3.5	-	3.5
OR	Chaupanki	Kahrani	Mixed	Mixed	60.0	B	3.5	-	3.5
VR	Tapookara	Choupanki Ind.Area	Mixed	Mixed	12.7	B	1.7	-	1.7
VR	Chaupanki Ind.Area	Karenda	Mixed	Mixed	6.2	B	1.7	-	1.7
VR	Matlwas	Beernwas	Agriculture	Agriculture	8.4	B	1.5	-	1.5
VR	Beeranwas	Bilaheri	Agriculture	Agriculture	7.2	B	2.8	-	2.8
VR	Tapookara	Bubkahera	Agriculture	Agriculture	10.0	B/G	3.5	-	3.5
VR	Akoli	Jatoowas	Agriculture	Agriculture	9.4	B	2.0	-	2.0
VR	Nibaheri	Guwalda	Agriculture	Agriculture	10.0	B	2.5	-	2.5

Note: B: Blacktopped, G: Graveled

Above table shows that various stretches of NH-71B has different ROW varying from 31-44m and divided carriageway between 11-15m. All other roads surveyed including State Highway and MDR are having undivided carriageway. Also MDR-61, has ROW varying

from 7-30 m and carriageway 3-7m. Carriageway of village roads is varying from 3.0 to 7.0m.

5.7.4 Traffic Characteristics

In order to understand the existing travel characteristics through carrying out a number of traffic surveys so as to enable estimation of travel demand in Greater Bhiwadi Complex. Various surveys done includes traffic volume count at identified locations in inner cordon, outer cordon and intersections, origin-destination surveys for goods movement and household surveys for passenger travel characteristics and modal choice. Analysis of the various parameters has been detailed in following sections.

A) Traffic Volume Count at Inner Cordons

Average 16 hour traffic volume count has been conducted at various locations in Greater Bhiwadi Complex to understand the travel demand on major roads of the inner cordon and analysed the peak hour traffic and composition of traffic to estimate the future traffic and plan the road network to cater the traffic till 2031. **Table 5.7** presents the summary of traffic characteristics on major roads of the city.

Table 5.7: Summary of Volume Count on various locations of Inner Cordon

S. No.	Location	16 Hour Traffic		Peak			Composition (%)			
		Vehicles	PCU	Hour	Traffic, PCU	%	Private & Para Transit Mode	Bus/ Minibus	NMV	Goods
1	Gaurav Path near UIT Guest House	14232	13092	18.45-19.45	1227	9.4	71.6	1.6	19.1	7.7
2	Phool Bagh- Harchandpur Road	9015	10553	16.30-17.30	1190	11.3	59.0	0.2	16.9	23.9
3	Tatarpur on SH-25	12140	15738	17.15-18.15	1495	9.5	66.4	3.1	3.8	26.7
4	Jhiwana-karendi road near Jhiwana Police Station	1848	1754	17.30-18.30	186	10.6	74.1	0.3	17.4	8.2
5	Nuh road near Sare Kalan (Ajmere Gate)	3041	4847	12.15-13.15	476	9.8	65.7	0.5	2.0	31.8
6	Nuh-Guwalda road	1839	2340	15.30-16.30	246	10.5	72.3	0.3	7.1	20.4
7	Nuh road near Kohri Kalan	4019	4547	17.15-18.15	421	9.3	78.0	0.6	2.1	19.3
8	Burhi Bawal-Nandrapur Bas near Shree Cement Khushkhera	3959	5838	10.15-11.15	483	8.3	62.0	0.8	5.0	32.3
9	Tapookara-Karoli road near Honda Siel	2847	2840	17.45-18.45	292	10.3	77.9	1.7	9.6	10.8
10	Burhibawal-Majri Section	1567	1360	15.15-16.15	142	10.4	75.1	1.7	18.0	5.2
11	Mirchooni-Musari Road	1350	1068	07.15-08.15	134	12.5	72.2	0.0	23.3	4.4
12	SH25, near Maseet Bandh	9751	14330	10.30-11.30	1872	13.1	63.7	2.6	1.1	32.7
13	NH -71 B near Central	33512	37689	18.00-19.00	3155	8.4	76.4	0.9	12.9	9.8

S. No.	Location	16 Hour Traffic		Peak			Composition (%)			
		Vehicles	PCU	Hour	Traffic, PCU	%	Private & Para Transit Mode	Bus/ Minibus	NMV	Goods
	Market									
14	NH -71 B near Ganapathi Plaza, Phool bhag	25051	30093	08.30-09.30	2596	8.6	72.3	0.7	15.3	11.7
15	Near Kahrani Village, (Chand Hotel)	9603	14065	18.00-19.00	1453	10.3	63.4	1.6	8.8	26.2

Source: Primary Survey

The salient findings are as follows:

- It can be observed that at present minimum traffic is on Mirchooni-Musari Road of 1068 PCU and the maximum traffic is on NH-71 B near Central Market of 37689 PCU.
- 8-13% of the total traffic flow is during the peak hour.
- 59-78% of the traffic composition is contributed by the private and para transit mode.
- The highest share of private vehicles is observed on Tapookara Karoli road (78%) and the lowest on Phoolbagh Harchandpur road (59%).
- Goods traffic is mainly on SH-25 and other roads connecting to industrial areas. Highest percentage of goods traffic is at Maseet Bandh, SH-25 (32.7%) followed by Burhi Bawal-Nandrampur Bas near Shree Cement Khushkhera (32.3%) and Nuh road near Sare Kalan (31.8%).
- In Greater Bhiwadi at present share of public transport has average share of 1 % only.

Level of Service (LoS) on each of the important roads of the Greater Bhiwadi has been shown in Table 5.8 which is calculated based on the road inventory and traffic volume surveys.

Table 5.8: Traffic Volume and level of service at various inner-cordon locations

IC No	Location	Carriageway (m)	Capacity (PCUs)	Total Vehicles	Peak Hr volume	V/C	LoS
1	Gaurav Path near UIT Guest House	21.0	7714	14232	1227.15	0.16	A
2	Phool Bagh- Harchandpur village road	7.0	2143	9015	1190.1	0.56	C
3	SH-25 near Tatarpur	7.0	2143	12140	1495.3	0.70	C
4	Jhiwana-karendi road near Jhiwana Police Station	3.5	1071	1848	186.35	0.17	A
5	Nuh road near Sare Kalan	7.0	2143	3041	476.3	0.22	A
6	Nuh-Guwalda road	4.0	1071	1839	246.25	0.23	A

IC No	Location	Carriageway (m)	Capacity (PCUs)	Total Vehicles	Peak Hr volume	V/C	LOS
7	Nuh road near Kohri Kalan	7.0	2143	4019	421	0.20	A
8	Burhi Bawal-Nandrampur Bas near Khushkhera	7.0	2143	3959	483.45	0.23	A
9	Tapookara-Karoli road near Honda Siel	7.0	2143	2847	291.85	0.14	A
10	Burhibawal-Majri section	3.0	1071	1567	141.8	0.13	A
11	Mirchooni-Musari road	3.5	1071	1350	133.75	0.12	A
12	SH25, near Maseet Bandh	7.0	2143	9751	1872.3	0.87	D
13	NH -71 B near Bhiwadi More	15.0	5143	33512	3155	0.61	C
14	NH -71 B near Ganapathi Plaza, Phool bhag	15.0	5143	25051	2596.05	0.50	C
15	Near Kahrani Village, (Chand Hotel)	7.0	2143	9603	1453.2	0.68	C

Traffic volume count on various roads of Greater Bhiwadi shows that traffic is concentrated on few of the roads showing poor level of service on those roads. NH-71 B near Bhiwadi More, NH-71B at Phoolbhag, Bhiwadi-Chaupanki Road, Phoolbagh-Harchandpur Road have LOS C whereas SH-25 near Maseet Bandh have LOS D showing the need to widen the road or provision of alternate road to balance the V/C ratio.

B) Traffic Volume Count at Outer Cordons

The traffic volume count was conducted at 10 outer cordon locations for 24 hours and 16 hours based on the location. The summary of the traffic characteristics are given in **Table 5.9**.

Table 5.9: Summary of Volume Count on various locations of Outer Cordon

S. No.	Location	Daily Traffic		Peak			Composition (%)			
		Vehicles	PCUs	Hour	Traffic, PCUs	%	Private & Para	Bus/ Mini Bus	NMV	Goods
1	NH-71B, Dharuhera-Taoru Road at RTO Checkpost	33110	44381	20.00-21.00	3871	8.7	70.4	2.6	4.3	22.6
2	NH-71B, Dharuhera-Taoru Road near Mahavir Aluminium	17272	21684	18.15-19.15	2511	11.6	54.5	0.8	21.3	23.3
3	Bhiwadi-Tijara Road at Gelpur	8557	12245	19.00-20.00	1196	9.8	65.6	4.0	2.3	28.0
4	Nandrampur Bas Border	4537	8145	17.45-18.45	562	6.9	55.3	1.0	4.8	39.0
5	Tapookara-Nuh Road at Mehandika	3077	5653	16.30-17.30	491	8.7	58.4	0.5	1.5	39.7
6	Bolni Border	3018	3488	11.45-12.45	286	8.2	73.8	2.3	7.3	16.5
7	Burhibawal-Qutabpur Road at Qutabpur	1288	1211	08.00-09.00	134	11.1	77.6	1.8	13.0	7.6
8	Tapookara-Dholpahari Road at Bubkahera	641	605	10.30-11.30	62	10.2	77.8	0.0	14.4	7.8

S. No.	Location	Daily Traffic		Peak			Composition (%)			
		Vehicles	PCUs	Hour	Traffic, PCUs	%	Private & Para	Bus/ Mini Bus	NMV	Goods
9	Karendi-Jhiwana Road near Karendi Border	472	552	08.30-09.30	88	15.9	77.1	0.2	5.3	17.4
10	Ujoli-Kanharka Road at Matalwas	572	539	09.45-10.45	86	16.0	79.7	1.4	12.6	6.3

(Source: Primary Survey)

The salient findings are as below:

- Highest traffic volume on outer cordon locations are at entry and exit of NH-71B into Bhiwadi showing that there is huge through traffic passes through Bhiwadi creating congestion which can be reduced by developing its bypass or alternate road in Haryana.
- Further after NH-71B, highest traffic volume on outer cordon of SH-25 at Gelpur showing the flow of traffic towards Alwar.
- The highest share of non motorised vehicles (NMV) are observed near Mahavir Aluminum Factory (21.3%) which is due to the presence of labourers in neighbouring villages commuting to Bhiwadi industrial area.
- Goods vehicle share is highest at Nuh Road near Mehandika (39.7%) followed by Nandrapur Bas Border (39.0%) showing the entry and exit roads preferred by goods vehicles to reach industrial areas of Greater Bhiwadi.

Table 5.10: Traffic Volume and level of service at various outer-cordon locations

S. No	Location	Carraigeway (m)	Capacity (PCUs)	Total Vehicles	Peak Hr volume	Peak Hour	V/C	Lo S
1	NH-71B, Dharuhera-Taoru Road at RTO Checkpost	14.0	5143	33110	3871	20.00-21.00	0.75	C
2	NH-71B, Bhiwadi-Sohna Road at Mahavir Aluminium Chowk	14.0	5143	17272	2511	18.15-19.15	0.49	C
3	Karendi-Jhiwana Road near Karendi Border	3.5	1071	472	88	08.30-09.30	0.08	A
4	Tapookara-Nuh Road at Mehandika	7.0	2143	3077	491	16.30-17.30	0.23	B
5	Tapookara-Dholpahari Road at Bubkahera	7.0	2143	641	62	10.30-11.30	0.03	A
6	Bhiwadi-Tijara Road at Gelpur	7.0	2143	8557	1196	19.00-20.00	0.56	C
7	Burhibawal-Qutabpur Road at Qutabpur	3.5	1071	1288	134	08.00-09.00	0.13	A
8	Ujoli-Kanharka Road at Matalwas	7.0	2143	572	86	09.45-10.45	0.04	A
9	Bolni Border	5.5	1607	3018	286	11.45-12.45	0.18	A
10	Nandrapur Bas Border	7.0	2143	4537	562	17.45-18.45	0.26	A

(Source: Primary Survey)

It is evident from table 5.10 that roads at outer cordons are having adequate width to handle the existing traffic except National Highway and State Highway passing through Greater Bhiwadi.

C) Traffic Volume at Intersections

Traffic volume and composition of modes at various intersections of Greater Bhiwadi has been surveyed to analyse the intersection capacity to cater the traffic, details of which are shown in Table 5.11 and Table 5.12.

Table 5.11: Traffic Volume at Intersections

S. No	Location	16 Hour Traffic		Morning Peak		Evening Peak	
		Vehicles	PCUs	Peak Hour	Traffic (PCU)	Peak Hour	Traffic (PCU)
1	Bhiwadi Mode	43878	50290	10.30-11.30	4231	18.30-19.30	4494
2	Samtal Chowk	41952	45065	11.00-12.00	3285	12.15-13.15	3788
3	Neelam Chowk	41818	43867	11.30-12.30	3205	17.30-18.30	3791
4	RIICO Chowk	39722	42475	10.45-11.45	3512	14.30-15.30	3658
5	Phoolbagh Chowk	37130	41803	08.45-09.45	3579	17.30-18.30	3259
6	BKT Chowk	11666	12704	11.15-12.15	866	17.30-18.30	1281
7	Mansha Chowk	20493	19314	07.30-08.30	1514	18.15-19.15	1625
8	Old SH-25 & Bypass Junction	12953	15513	08.00-09.00	1247	17.45-18.45	1226
9	SH-25, Honda Siel Chowk	12348	17208	09.00-10.00	1565	17.00-18.00	1252
10	SH-25, Tapookara Khushkhera Junction	13611	15646	09.30-10.30	1168	18.00-19.00	1365
11	Nuh Chowk, Tapookura	12041	11806	11.30-12.30	969	16.30-17.30	987
12	Guwalda Mod	5243	5623	11.15-12.15	453	17.15-18.15	540

(Source: Primary Survey)

Table 5.12: Composition of Traffic at Intersections

S. No.	Location	Traffic Share (%)					
		Private	Para Transit	Public	Commercial	NMV	Total
1	Bhiwadi Mod, NH 71-B	54.4	17.2	1.5	9.6	17.3	100
2	Samtal Chowk, NH 71-B	56.2	14.1	1.4	9.5	18.8	100
3	Neelam Chowk, NH 71-B	54.7	12.8	0.8	9.8	21.8	100
4	RIICO Chowk, NH 71-B	55.0	14.1	0.5	10.1	20.3	100
5	Phoolbagh Chowk, NH 71-B	51.9	15.4	1.5	12.0	19.1	100
6	Mansha Chowk	70.7	4.2	2.1	7.6	15.4	100
7	Old SH-25 and By pass Y Junction	64.0	6.7	3.3	20.7	5.4	100
8	SH-25, Tapookara-Khushkhera Jun.	67.5	5.7	2.6	18.2	6.0	100
9	BKT Chowk	49.6	5.9	0.8	20.7	23.0	100
10	SH-25, Honda Siel Chowk	61.5	6.9	3.0	24.5	4.1	100
11	Nuh Road Chowk, Tapookara	74.0	2.2	0.3	11.4	12.2	100
12	Guwalda Mod	72.8	3.4	0.5	17.2	6.1	100

(Source: Primary Survey)

Observations from the volume count at intersections are as follows:

- It can be clearly observed that intersections on NH-71B mainly Bhiwadi Mode and Phoolbagh chowk are the busiest intersections because these intersections are connected with higher order roads in other parts of Greater Bhiwadi Complex.
- It can also be observed that substantial percentage of NMV traffic is present on the surveyed intersections which are mainly connected to industrial areas such as BKT Chowk, RIICO Chowk, Neelam Chowk, Samtal Chowk, Bhiwadi Mod.
- Share of private vehicles varies from 52-74% whereas share of public transport is comparatively negligible varying from 0.3 to 3.3%.

There are three major intersections having heavy traffic flow in Greater Bhiwadi Complex. These intersections located on NH-71B includes Bhiwadi Mod (3 arm), Samtal Chowk (4 arm), Phoolbhag Chowk (5 arm). Arm wise detailed traffic analysis during peak hour has been done in following paragraphs.

Bhiwadi Mode: This is a three arm intersection located at about 300m west of Samtal Chowk Intersection. Western and eastern legs of the intersection are part of NH -71-B, the southern leg of the intersection leads to Mansha Chowk. Bhiwadi Mod is the busiest intersection of the Greater Bhiwadi Complex acting as main entry and exit point. Morning peak of this intersection is from 10.30-11.30 with 4231 PCU traffic flow and evening peak is from 18:30-19:30 with 4494 PCU traffic. Total traffic passing from Bhiwadi mod in 16 hours is 50290 PCU. Arm wise traffic flow during evening peak hour is shown in figure 5.1 showing major traffic flows along arms on NH-71B.

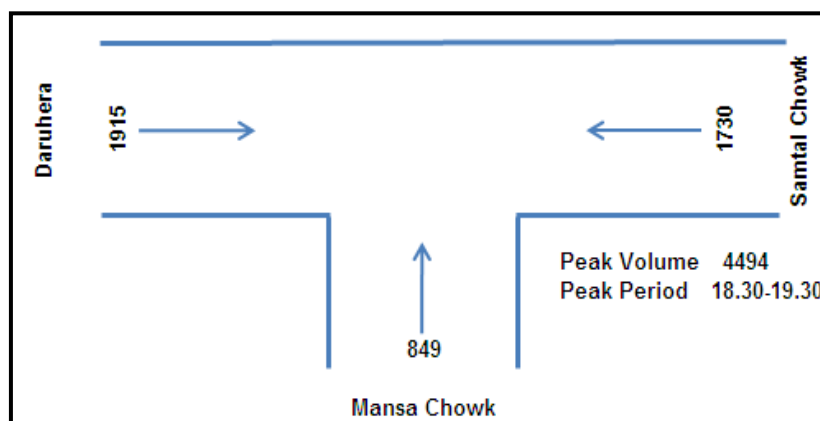


Figure 5.1: Bhiwadi Mode Peak Hour Traffic Flow Pattern

Samtal Chowk: It is a four arm intersection present on NH-71B between Bhiwadi Mod and Neelam Chowk. Commercial activities are concentrated around this intersection acting as main commercial centre of Bhiwadi. Total traffic flow from this intersection is 45065 PCU, of which 3285 PCUs passes during morning peak (11:00-12:00) and 3788 PCU passes during evening peak (17:15-18:15). Flow of traffic during evening peak hour through each of the arm has been represented in figure 5.2, again showing that maximum traffic is along NH-71B.

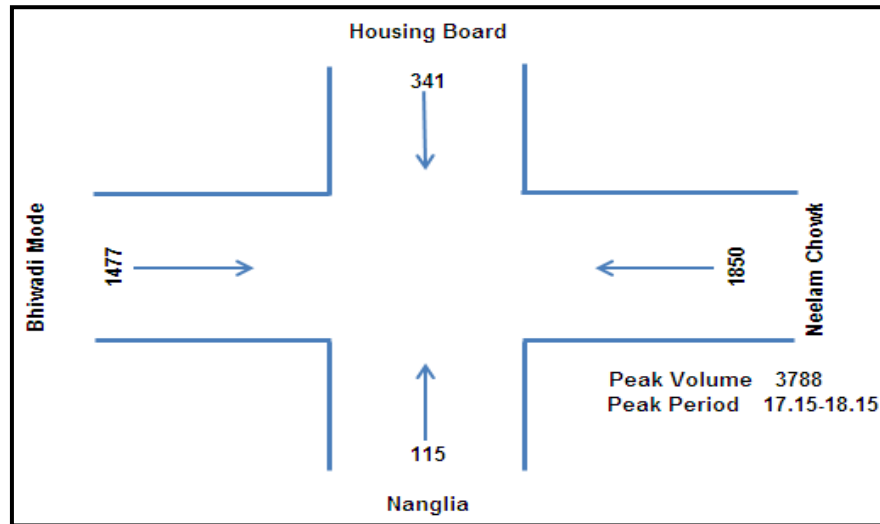


Figure 5.2: Samtal Chowk Peak Hour Traffic Flow Pattern

Phoolbagh Chowk: This is a five arm intersection located about 750m east of RIICO Chowk. NH- 71B approaches the intersection in western and eastern direction. North arm leads to Rathiwas (Haryana) and southern arm leads to Harchandpur. North-eastern arm leads to Ghatal village. The 16 hours traffic at the intersection is 37130 vehicles. The peak hour traffic share is 8.6% of the 16 hour traffic. This intersection carries 3579 PCU in morning peak (8.45 to 9.45) and 3259 PCU in evening peak (17.30-18.30). The peak hour traffic flow diagram is presented in the figure 5.3.

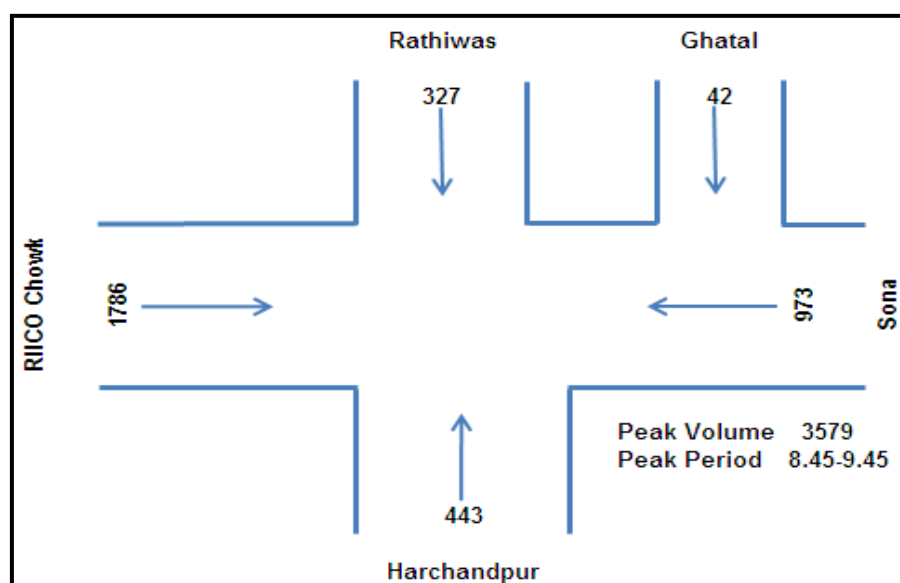


Figure 5.3: Phool Bagh Chowk peak hour traffic flow pattern

D. Household Survey

Household travel surveys have been carried out in the study area covering a sample of 936 households spread over 99 villages through stratified random sampling technique to understand the travel characteristics. Analysis includes the study of vehicle ownership, purpose wise distribution of trips, mode-wise distribution of trips and interaction between various zones which are detailed in following sections.

Vehicle Ownership

Vehicle ownership in Greater Bhiwadi observed to be 0.784 out of which personal modes of transport comprising two wheeler, car/jeep/van and cycles account for 0.68. This implies 8 out of every 10 households own a vehicle. High personalized vehicle ownership of 0.68 indicates lack of public transport facility in Greater Bhiwadi. As the primary source of employment in Greater Bhiwadi is agriculture, the vehicle ownership of Tractor, LCV, Dumber, Truck and Animal cart were observed to be 0.093 (i.e. 1 in every 10 households). Vehicle type wise ownership details are presented in Table 5.13.

Table 5.13: Vehicle Ownership

Vehicle Type	Vehicle Ownership
Two-wheeler	0.541
Three-wheeler	0.011
Car/ Jeep/ Van	0.114
Tractor	0.069
LCV	0.002
Cycle	0.025

Vehicle Type	Vehicle Ownership
Dumper	0.005
Truck	0.009
Camel cart	0.007
Horse cart	0.001
Total	0.784

Purpose wise distribution of trips

The purpose wise distribution trips are presented in the table 5.14. It is evident from the household survey done that work and education purpose trips account for 90% of total trips whereas work and education trips are 53% and 38% respectively. Shopping is the next major activity generating 8% of total trips.

Table 5.14: Distribution of trips according to purpose

Purpose	Total Trips	
	No. of Trips	Percentage
Work	47629	53.28
Education	34112	38.16
Shopping	7235	8.09
Social	137	0.15
Religious	58	0.07
Health	229	0.26
Grand Total	89399	100.0

Mode wise distribution of trips

The mode wise distribution of trips in presented in the **Table 5.15**. About 60% of the trips were observed to be carried out by pedestrians, 14% by two-wheeler, while cycle and bus account for 12% and 10% respectively.

Table 5.15: Distribution of trips according to modal choice

Mode	Total Trips	
	No. of Trips	%age
Walk	53183	59.49
Cycle	10693	11.96
Scooter / Motor-Cycle	12634	14.13
Car/Taxi	2579	2.89
Bus	9014	10.08
Auto/Tempo	1297	1.45
Grand Total	89399	100.0

5.7.5 Interaction between Various Zones

Household travel data is analysed to arrive at Origin Destination matrices for various purposes viz. Work, Education and Other purpose. As the share of shopping, social, religious and health purpose trips are low, they have been aggregated and put under 'other purpose trips'. OD matrices within the internal zones (93) are derived from household data.

Interaction between internal zones to external zones, external zones to internal zones and external to external zones is derived from the Outer Cordon survey data for passengers and goods separately.

Total OD matrices for passenger and Goods were arrived combining the Household and Outer Cordon survey data.

The desire lines for various purposes showing the travel patterns within and outside the study area are shown for various purposes in figures 5.4-5.8.

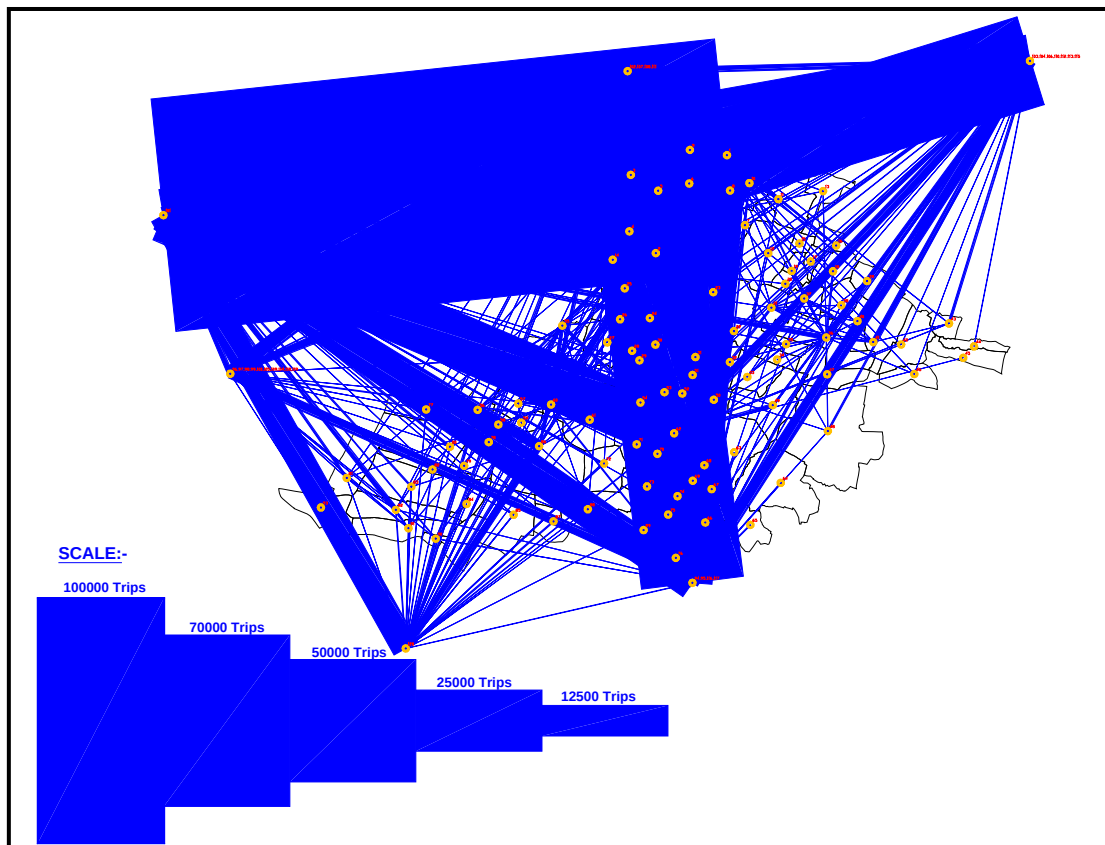


Figure 5.4: Desire line Diagram for Total Passenger Trips

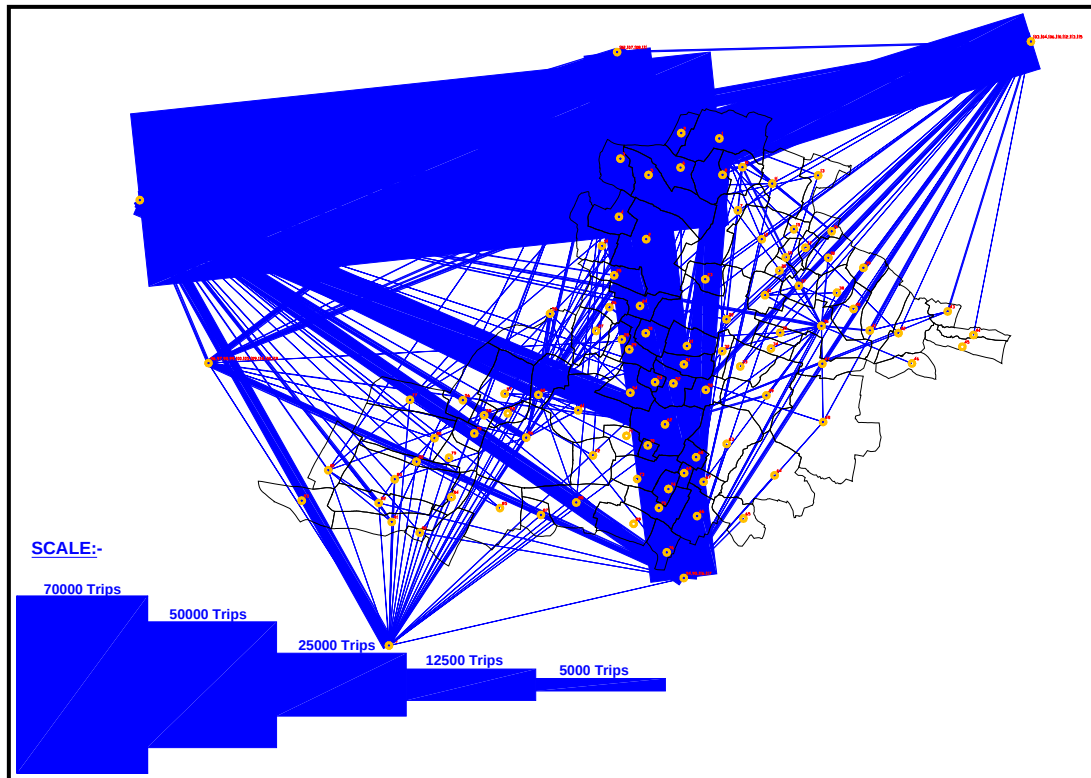


Figure 5.5: Desire Line Diagram for Work Trips

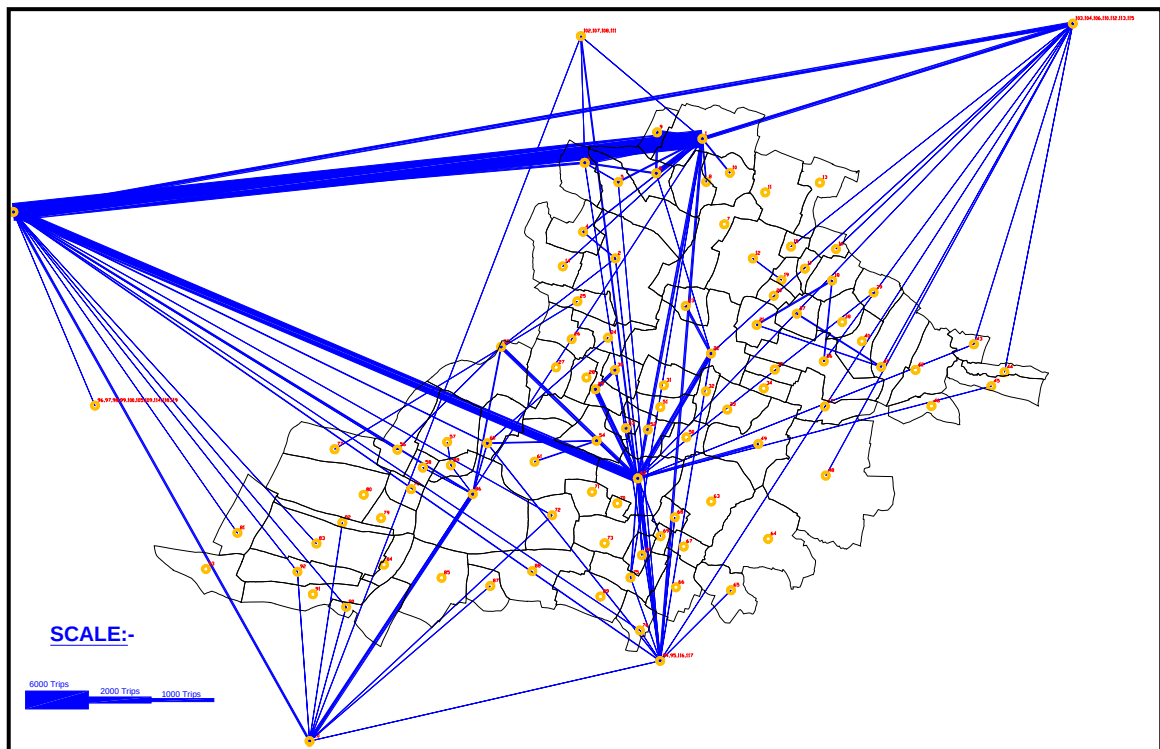


Figure 5.6: Desire Line Diagram for Educational Trips

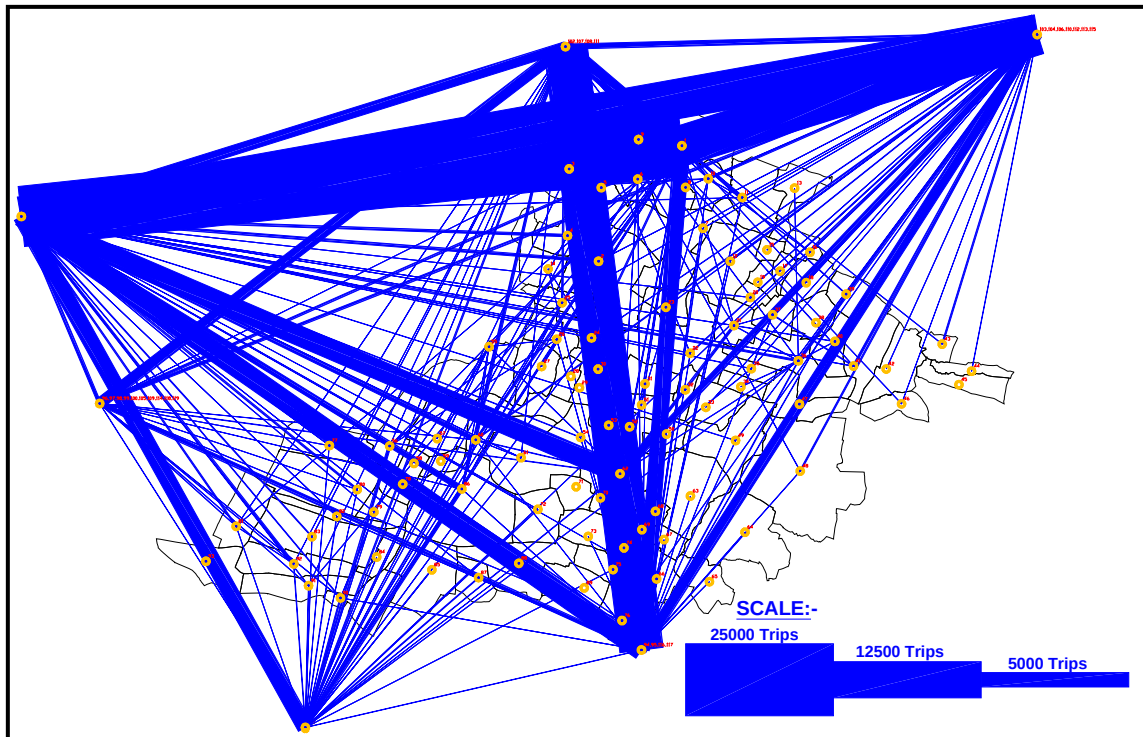


Figure 5.7: Desire Line Diagram for Other Purpose Trips

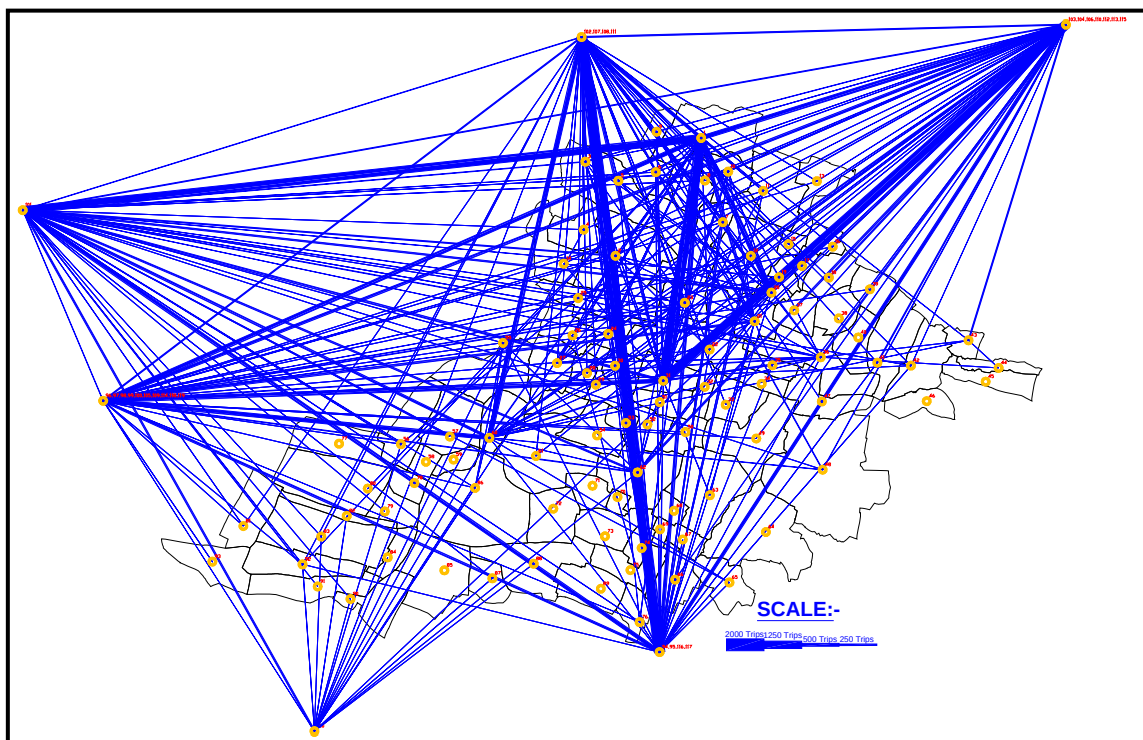


Figure 5.8: Desire Line Diagram for Goods Vehicular Trips

5.7.6 Transport Infrastructure in Greater Bhiwadi Complex

There is lack of transport infrastructure in Greater Bhiwadi Complex. There is a newly constructed bus stand near Bhiwadi mode for intercity buses running to Rewari, Alwar, Jaipur, Sohna and other surrounding cities. But there is no bus service for intra city movement. Also there are no organized parking spaces for trucks. Trucks of various transport companies are parked on-street along NH-71B and for loading and unloading of goods on vacant land or outside industries. Further there is one Inland Container Depot of RAJISCO which provides some transport services to various ports in India for export based industrial units in Greater Bhiwadi. This container depot is operating at a very small scale and has very limited infrastructure. Industries are mainly dependent on transporters located in Rewari for exporting their goods.



5.8 POWER SUPPLY

Power is an important infrastructure component for urban life and economy. Due to the presence of extensive industrial areas in Greater Bhiwadi Complex power supply becomes even more critical infrastructure. Jaipur Vidyut Vitran Nigam Ltd. (JVVNL) is the agency responsible for laying the electricity distribution network and supplying power.. RIICO is responsible for managing the power supply in its industrial areas through JVVNL. Thus, RIICO provides land to JVVNL for construction of electric substations in Industrial Areas. Besides JVVNL, Power Grid Corporation of India also supply power in Greater Bhiwadi. Domestic and agricultural needs are also being taken care of by the same power distribution infrastructure. Existing main electric substations in Greater Bhiwadi Complex with their capacity is shown in Table 5.16



Table 5.16: Existing Electric Substations in Greater Bhiwadi, 2009

Substation	Capacity
Bhiwadi-I	132 KV
Bhiwadi-II	220 KV
Chaupanki	33 KV
Power Grid Corporation	440 KV

Substation	Capacity
Khushkhera	132 KV

(Source: JVVNL & RIICO)

Realizing the fast growing demands for power due to fast urbanization and industrial development, more substations have been planned by RIICO in consultation with JVVNL. The proposed substations at various locations primarily, in industrial areas of RIICO are presented in Table 5.17.

Table 5.17: Proposed Electric Sub Stations

S. No.	Location	Area (sq.m)	Capacity (KV)
1	Rampur Mundana (near ESI hospital)	2500	33/11
2	IA Khushkhera	2500	33/11
3	IA Bhiwadi (Samtel Zone)	2950	33/11
4	IA Kahrani (Bhiwadi Extn. Near plot no. F 40)	3000	33/11
5	Milakpur Gujjar (RHB Scheme)	2250	33/11
6	IA Pathredi	3000	33/11
7	IA Bhiwadi (Ghatal, plot no. F1258)	3368	33/11
8	RHB Sec-4 Bhiwadi	-	-
9	Chaupanki		132
10	Tapookara		220

(Source: JVVNL)

B. SOCIAL INFRASTRUCTURE

5.9 HOUSING

5.9.1 Introduction

Housing is an important determinant for quality of life of people. It is the most basic need of human being after food and clothing that needs to be addressed on priority. Greater Bhiwadi Complex is predominantly consists of rural settlements. Bhiwadi is the only town in the complex wherein demand for MIG and HIG housing exists besides LIG and EWS housing. Since Greater Bhiwadi is growing as an industrial town, LIG and EWS housing for industrial labour is of greater concern in and around industrial areas. This chapter examines the housing scenario in Greater Bhiwadi Complex.

5.9.2 Housing Stock

Bhiwadi is the only town in Greater Bhiwadi Complex where housing stock is crucial for industrial workers. Total population of the Bhiwadi Town (2001) is 33877 and total

numbers of households were 9143 with household size of 3.7. As per Housing Census 2001, total number of census houses in Bhiwadi town were 13981, of which 8545 (61%) are occupied. Of the occupied houses, 8096 (95%) are being used for residential purposes and rest of 5% are in other uses. Out of the total occupied houses 72% are rented and 24% are owned by the residents.

5.9.3 Quality of Housing Structure

Condition of housing structure is an important aspect to assess the quality of housing in an area. Condition of housing is being divided mainly into permanent, semi-permanent and temporary structures. Out of the total number of occupied houses in Bhiwadi town, almost all i.e. 99% are permanent structures. Permanent structures are the one which are having their roof and walls made of permanent materials like tiles, slate, G.I. Sheets, brick, stone or concrete. Also if we study the type of material used for walls, 90% are made of brick and 9% are of stone whereas 58% of the houses are having roof of stone, 38% are of concrete and 4% are of G.I sheets.

In rural villages, the condition of houses has been assessed based on the household level primary surveys done for representative samples from all the villages. Survey results shows that 76% of the houses are pucca, 14% are kutcha and rest is in moderate condition which is based on the surveyors visual assessment. Further 96% of the houses are owned by the villagers and only 2% are rented.

5.9.4 Housing Suppliers

Private developers and Rajasthan Housing Board (RHB) are the contributing majorly to the housing stock in Bhiwadi town. UIT is primarily developing plots for residential purposes. Housing Board has developed Old Housing Board sectors 1, 2 & 3 and sector 4 & 7 of the UIT Colony. Other than that Housing Board is constructing and planning number of housing schemes in Milakpur Goojar, Kohri kalan, Bandapur, Thara etc. Category-wise number of houses sanctioned and completed till March 2009 by Housing Board in various parts of Greater Bhiwadi is shown in Table 5.18.



Table 5.18: Status of houses built by RHB till March 2009

Type of House	Sanctioned	% of Total Sanctioned	Completed	Percentage completed
EWS	1692	31.5	1115	65.9
LIG	1205	22.4	889	73.8
MIG-I	753	14.0	325	43.2
MIG-II	746	13.9	458	61.4
HIG	974	18.1	673	69.1
Total	5370	100	3460	64.4

(Source: Rajasthan Housing Board, Bhiwadi)

Housing Schemes of RHB in Bhiwadi are distributed at various locations viz. Old Bhiwadi, UIT Sector 4 & 7, Milakpur Goojar and Kohri Kalan. Out of the total sanctioned houses 64.4% has been constructed and rest 35% are under construction. Remarkably, out of the total number of sanctioned houses 31.5 % are for EWS, 22.4% for LIG, 28% for MIG and 18% for HIG.

UIT is developing residential plots along with basic infrastructure making them ready to build houses. Residential colonies developed by UIT include Sector 1, 2, 2A, 3, 3A, 5, 6, 8, 9, Group Housing 5 & 6, Bhagat Singh Colony and Vasundhara Nagar. Details of UIT Schemes are shown in table 5.19.

Table 5.19: Residential colonies developed by UIT

S.No	Name of Sector/ Scheme	Area (Sq.m)	No. of Plots
1	Bhagat Singh Colony	379500	835+54(EWS)
2	Sector-1	45000	300
3	Sector- 2 & 2A	82300	200
4	Sector- 3 & 3A	95000	200
5	Sector- 5	133000	800
6	Sector- 6	133000	800
7	Sector- 8	100000	450+181(LIG)
8	Sector- 9	133000	200+160(MIG)+201(LIG)
9	Sector- 9 extension	65000	75
10	Group Housing sector-5	22500	79(LIG)
11	Group Housing sector- 6	53000	100+89(LIG)
12	Vasundhara Nagar	545600	110
	Total	1786900	4834

(Source: Urban Improvement Trust, Bhiwadi)

Area developed by UIT for residential purposes in Bhiwadi town is 178.7 ha divided into 12 sectors. Out of the total 4834 plots developed 54 plots are reserved for EWS, 550 for LIG and 160 for MIG.

Other than UIT and Housing Board which have considerable number of houses reserved for LIG and EWS categories, a sizeable number of private developers are also contributing to the housing stock in Greater Bhiwadi but they primarily caters to the MIG and HIG categories. Ashiana Village, Ashaina Gulmohar, Ashiana Garden, Ashiana Green are the existing residential projects built by private developers. Numbers of other private housing schemes viz. MVL, Krish City, Falcon City, Avalon etc. are under construction. Concentration of such private developers is mainly along the Alwar Bypass.



5.9.5 Housing for Poor

Greater Bhiwadi is predominantly an industrial area where huge number of industrial workers is employed. Other than industrial workers sizeable number of population is involved in trade and commerce, construction and transport activities. Therefore, this area has significant demand of housing for EWS and LIG. In absence of the affordable good quality housing for poor, industrial workers are forced to live in single room tenement of very small size in rural settlements or nearby towns like Dharuhera, Taoru, Sohna etc. Occupancy rate in such rooms is reported to be 4 to 5 persons.



Currently UIT and Housing Board are the agencies involved in constructing houses for EWS and LIG. Housing Board has such housing schemes in old Bhiwadi, UIT Sector 4 & 7, and Milakpur Goojar, whereas low income housing schemes developed by UIT is in Bhagat Singh Colony, UIT sector 8, GH-5 and GH-6. Details of LIG and EWS housing developed by UIT and RHB have been shown in Table 5.20.

Table 5.20: Housing for Poor

Type of House	UIT	HB	Total
EWS	54	1115	1169
LIG	550	889	1439
Total	604	2004	2608

(Source: Housing Board and UIT, Bhiwadi)

GREATER BHIWADI

FIGURE 5.9: RESIDENTIAL LANDSCAPE

Legend

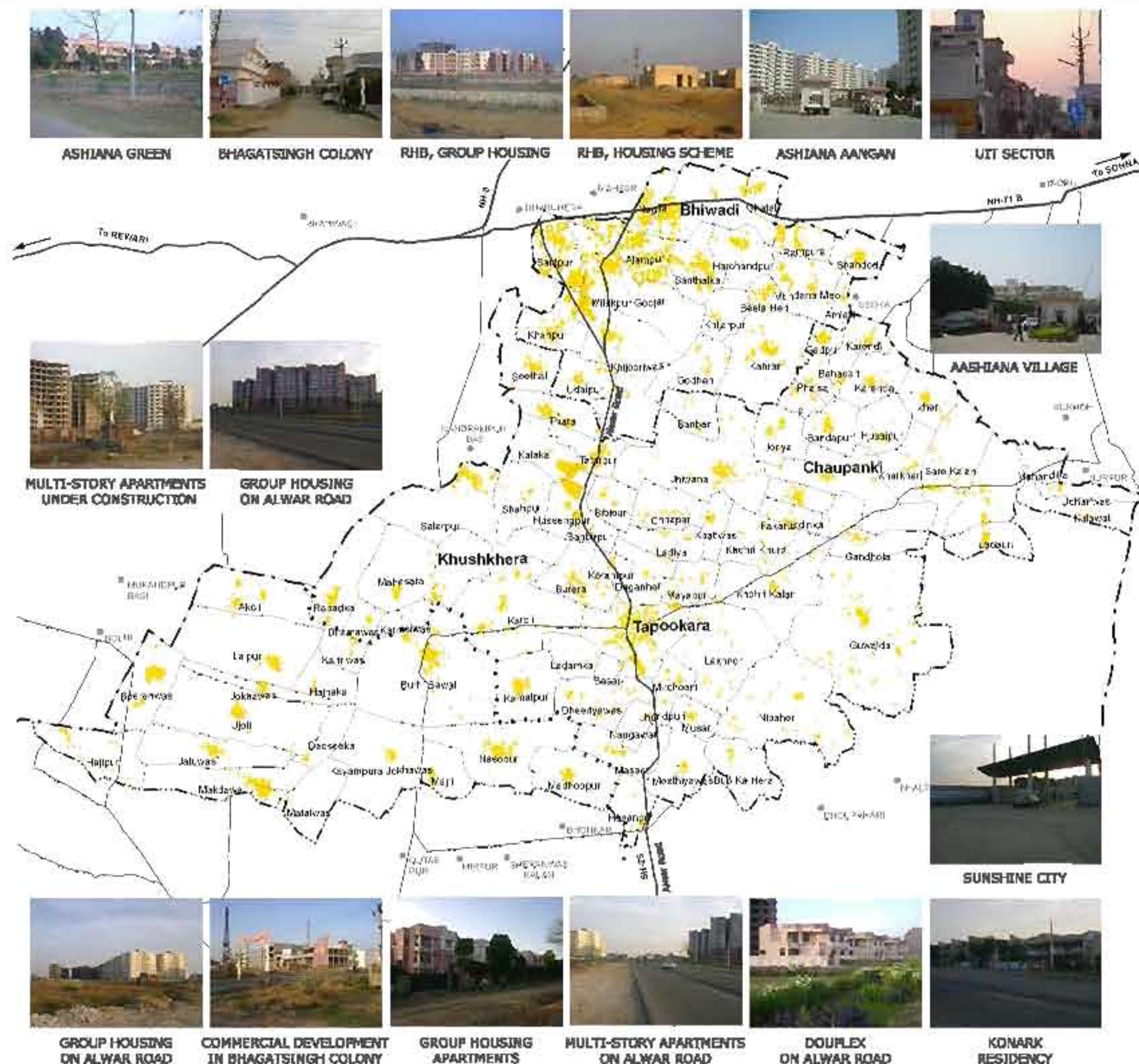
- Residential
- Village Boundary

Road Network

- National Highway
- State Highway
- Major District Road

Administrative Boundaries

- State Boundary
- Tehsil Boundary
- Notified Urban Area Limit
- Municipal Boundary



A total of 2608 houses have been constructed for poor, of which 1169 are EWS and 1439 are LIG houses. This is a marginal number as compared to industrial workers in Greater Bhiwadi Complex. A total of 2897 houses for EWS and LIG have been sanctioned by Housing Board, of which 70% is already constructed and 30% are under construction. Importantly, existing number of industrial workers is more than 70,000 besides the low income group workers employed in other sectors reflect high demand for EWS and LIG housing.

5.9.6 Proposed Housing Projects

Responding the high demand for housing, real estate construction activities in Greater Bhiwadi are growing very fast. UIT and Housing Board have prepared various housing schemes for future, especially for EWS and LIG. Table 5.21 and 5.22 show details of various housing schemes planned by UIT and RHB.

Table 5.21: Proposed Housing Schemes by UIT

S.No.	Housing Schemes	Area (Hectares)
1	Patel Nagar	55
2	Kamal Kunj	40
3	Eklavya Nagar	180
4	Panchsheel	280
5	South Extension	340
6	Baba Mohan Ram Vihar	10.62
7	Rajiv Gandhi Enclave scheme	-

Table 5.22: Proposed Residential Schemes by Housing Board

S. No.	Residential Schemes (R.S)	Area (Ha)
1	Thara R.S	50.56
2	Khori Kalan R.S	65.47
3	Bandapur R.S	92.63

In addition to above planned housing schemes by government agencies (Housing Board and UIT), number of private residential schemes are also coming up very fast. Some of the ongoing schemes include Innovative Colonisers, Dream Land Township, Kajaria Green, Krish Infrastructure, Krish City, BDI Sunshine City, MVL, Omaxe City, Avalon Garden, Kingfisher, Dynamic Developers, Trehan House Developers etc.

5.9.7 Present and Future Housing Need

An estimated puts the total population of Greater Bhiwadi in 2010 as 5 lakh. With an average household size of 5, housing stock required works out to be 1 lakh. In addition to that, presently a sizable number of workers is daily commuters from nearby areas outside Greater Bhiwadi Complex. Further projected population for 2031 is 15 lakhs. With the provision of the adequate housing and other physical and social infrastructure in Greater Bhiwadi Complex, it is assumed that at least 85-90% of the population will stay in the planned city itself. Thus, about 2,70,000 to 3,00,000 houses will require to be constructed to accommodate the estimated population.

5.10 EDUCATION

5.10.1 Introduction

Education is an important factor influencing the quality of life of the people and future development of an area. It empowers them with skills and knowledge and helps them to lead their life in a better way and to access best of the employment opportunities available in the market. This in turn will impact the work force participation rate and economy of the area.

5.10.2 Hierarchy of Educational Institutes

Elementary Education

There are four hierarchies of government schools in Greater Bhiwadi viz. Primary school, Upper Primary school, Secondary school and Senior Secondary school. Almost all the villages of Tijara and Kotkasim tehsils have primary school except Deoseeka, Mahandika, Karampur, Karmsiwas, and Ladpuri. 36 out of total 99 villages have middle schools.

Secondary Education

Secondary education is an important link between elementary education and higher education and prepares children to opt for appropriate higher education. Status of population of feeder villages and feeder elementary schools under each of the Secondary and Senior Secondary schools are shown in Table 5.23.

Table 5.23: Status of Secondary Schools with respect of feeder elementary schools

Sr. No.	Village Name	Population of Feeder Villages	Year of Establishment	No. of Feeder Schools	
				Primary	Upper Primary
GOVT.SECONDARY SCHOOL					
1	Hajipur	7290	1994	10	4
2	Lalpur	2811	2005	2	2
3	Khijooriwas	13635	1981	5	4
4	Salarpur	15000	1984	10	3
5	Santhalka	10000	1997	3	1
6	Beela heri	4000	1996	3	2
7	Nasopur	1500	1999	1	3
	TOTAL	54236		34	19
GOVT. SENIOR SECONDARY SCHOOL					
1	Matalwas	15000	1989	5	5
2	Joriya	8100	2007	1	1
3	Burhi Bawal	10000	1999	3	5
4	Tatarpur	9895	1997	10	7
5	Rampura	15754	1968	5	6
6	Tapookara	7934	1980	1	1
7	Bhiwadi (CT)	30000	1992	1	2
	TOTAL	96683		26	27

As per Dept. of Secondary Education, 7 Govt. Secondary Schools are present in Greater Bhiwadi Complex. It is observed that number of existing secondary schools is comparatively less putting most of the schools under high pressure.

5.10.3 Private Educational Institutes

Probably due to the inadequate infrastructure facilities and deteriorating quality of education in Govt. Schools, private schools are steadily growing in number in all upcoming urban areas. This trend has also been observed from existing landuse survey that large number of private schools has come up in Bhiwadi and even in some of the villages in Greater Bhiwadi for elementary and secondary levels. Some of the major private schools include Modern Public School, Presidency International School, Central Academy, St. Xavier's Public School, R.S Memorial



School, UCSKM Public School, Lipin Public School, KDM Public School, ESA India Convent School, New Era Public School, Adarsh Vidya Mandir, All Saint International School, Hasanpur, Cambridge Public School, Tapookara Navodaya Academy.

5.10.4 Higher Education

It is important to impart higher education to students for nation building and improved quality of life comes naturally along with it. Higher education actually enhances the skills and helps in accessing wider employment opportunities. There is huge gap in availability of higher educational institutions in Greater Bhiwadi Complex. There is one under graduation collage i.e. Baba Mohan Ram Mahavidyala for general higher education which is grossly inadequate. Another private college offering vocational training courses to girls is Annie Besant Girls College at Shahpur. For higher education students go to neighbouring towns like Alwar, Rewari, Gurgaon, or even to Jaipur and Delhi. There are few technical institutions like ITI's namely HONDA Industrial Training Institute, Bhiwadi; Shri Krishnan ITI, Khushkhera; Shri Ganesh ITI, Tapookara; Lord ITI, Bhiwadi Industrial Area; Kisan ITI, Burhi Bawal and Astha Dental College which is yet to start. Thus, there is an urgent need for colleges offering higher education both for general courses as well as technical courses in view of the demand for skilled manpower in industrial areas of the Greater Bhiwadi.



5.10.5 Spatial Distribution of Educational Facilities

It was observed from the analysis that primary and upper primary schools are adequate in number and equitably distributed also. But schools at secondary and higher secondary level are inadequate and its present distribution is also skewed. Educational facility for higher education is grossly inadequate.

5.10.6 Demand of Educational Facilities

Existing status of the educational facilities in Greater Bhiwadi Complex shows that there is huge gap in secondary and higher level educational facilities. There is inadequate number of secondary schools. Whereas As per the planning norms, there should be one integrated school one with hostel and one with without hostel facility for every 1 lakh population. For higher education, there should be a general college for every 1.25 lakh population. Considering the present population of Greater Bhiwadi as 5 lakhs in 2010, at least four general colleges are required while only one college is presently operational.

Thus there is a huge gap at this level of educational facility. As far as technical education is concerned, there are adequate numbers of ITIs in Greater Bhiwadi. As per the norms, the Master Plan area doesn't qualify to have an engineering or medical college at the moment. Greater Bhiwadi Complex will also need a University and technical colleges like Engineering and Medical College by 2031, in addition to educational facilities at primary and secondary level for future requirements.

5.11 HEALTH

Among various public semi-public facilities, education and health are of prime importance particularly in case of Greater Bhiwadi Complex as the existing Complex is primarily rural and grossly lack such facilities at higher level. Again availability of Govt. Hospitals is important as it is affordable for all income groups. Greater Bhiwadi Complex has adequate health facilities to serve the existing population size. In Greater Bhiwadi Complex Public Health Centre (PHC) are available in Bhiwadi, Tapookara, Jhiwana and also in Tijara at a distance of 15km. Further Sub PHCs are located in number of villages including Bhiwadi, Khijooriwas, Seethal, Saidpur, Beelaheri, Kahrani, Salarpur, Jhiwana, Nibaheri, Sarekalan, Tapookara, Hasanpur, Rabadka, Nakhnol, in Tijara Tehsil and Makdawa, Matalwas etc. in Kotkasim tehsil. PHC has pathological facilities for blood tests, pregnancy test, urine test, Hemoglobin tests and an operation theatre. Other than PHC and Sub PHC's, E.S.I Hospital is present in Bhiwadi town of 50 beds with more specialised facilities.

In addition to one Govt. Referral Hospital, one ESI Hospital and one ESI Dispensary in Bhiwadi town, there are about 26 private hospitals and nursing homes. Some of the major private hospitals and nursing homes include City Nursing Home, Gopinath Hospital, Gupta Nursing Home, Saroj Nursing Home, Gandhi Hospital, Gulati Children Hospital, Shakuntala Nursing Home, S.S. Hospital, Navjeevan Hospital, Santhigiri Hospital, Gupta Eye Care etc.

However to serve the future population of 15 lakhs up to the year 2031, there is requirement of specialized hospital, general hospital of 500 beds and numbers of intermediate hospitals of category A and B.

5.12 RECREATIONAL FACILITIES

Recreational facilities are very important to lead a quality life in any city. Recreational areas in Bhiwadi include parks, open spaces, recreational club, and cinema halls. Existing recreational facilities cover an area of 56.76 ha which is only 0.75% of the existing developed area in Greater Bhiwadi. Major recreational facilities in Bhiwadi town include

- Ashaina's Tree House with facilities of indoor games, swimming pool; RIICO Children Park, **UIT Central Park**. Bhiwadi has quite a few small parks and tot lots in all the housing colonies and open spaces in residential and industrial areas. Playgrounds are normally present in school compound.



Water bodies are also an integral part of recreational facility which helps in maintaining ecosystem. There is a magnificent lake i.e. **Sarekhurd Lake** on eastern boundary of Greater Bhiwadi having immense potential to be developed as one of the finest recreational centre. Sahibi River passes through Kotkasim tehsil in Greater Bhiwadi. Though presently the river is dry, if river bed is revived and conserved it may be a potential recreational resource. There are 5 cinema halls in Bhiwadi town and Tapookara.



As per the standard, more than 15% of urban area should be under recreational use. The existing recreational space is grossly inadequate in terms of area under such uses. In addition to bridge the existing gap, recreational and open space will be required at city level, sector level, neighborhood level etc. in future planned city.

5.13 OTHER COMMUNITY FACILITIES

5.13.1 Police Station

To maintain the law and order, particularly in an industrial town adequate police force is important. Spatial distribution of such police force through police station, police post assumes even more significance. Presently, there are two police stations one in Bhiwadi town and other at Tapookara besides seven police posts at strategic locations in Greater Bhiwadi Complex. Of the seven police posts, six are located in Tijara tehsil one each at Jhiwana, Chaupanki, Khushkhera and three are located in Bhiwadi town at Bhiwadi More, UIT Colony and Matila village, whereas one at Beeranwas village in Kotkasim tehsil.



5.13.2 Fire Station

Fire station is one of the vital facilities particularly in the context of Industrial Township. Further it is important that such facilities are located at strategic locations so that it can reach to accident sites within a reasonable time. Details of this facility with locations in Greater Bhiwadi Complex have been shown in Table 5.24.

Table 5.24: Fire station and its infrastructure

Location of Fire station	No. of Vehicles	Capacity of vehicles (lt)	No. of pipes	Water Storage Capacity (lakh lt)	No. of Staff
Bhiwadi	2	2500, 4500	10	Nil	8
Khushkhera	1	2500	5	Nil	5
Chaupanki	1	2500	5	1	5

(Source: Bhiwadi Fire Station)

It was reported that approximately 240 accidents occur in a year. Above table shows that fire stations are located at three important nodes of the in Greater Bhiwadi Complex. But facilities available are inadequate in these fire stations, as there is no water storage facility available in Bhiwadi and Khushkhera fire stations and vehicles are insufficient to handle the fire hazard. This important facility needs to be augmented on priority in view of frequent fire hazards and intense industrial activities in Greater Bhiwadi.



5.13.3 Socio-Cultural and Religious Centre

Socio-Cultural facilities include multipurpose community halls, banquet halls, exhibition and fair ground, dharamshalas etc. Hotel Ridgewood, RHB Community Centre, Aggarwal Dharmshala with facility of Banquet hall and conference hall, Mohan Baba Temple and a fair ground along with many dhramshalas around it, Mohan Ram Temple at Milakpur Gujjar, at Alampur village on Gaurav Path are some of the major socio-cultural and religious facilities in Greater Bhiwadi. Besides, there are number of small temples in villages. Baba Mohan Ram fair is organized twice a year on Baba Mohan Ram fair ground where lakhs of people gather. Beside two grand gatherings in a year, it is also held every fortnight.



5.13.4 Communication Facilities

Communication facilities mainly include Post and Telegraph Offices and telephone service. BSNL is the major telephone service providers in Greater Bhiwadi. Details of their telephone exchanges and other facilities have been shown in Table 5.25.

Table 5.25: BSNL Telephone Exchanges

Location of Exchange	No. of Villages covered	No. of Landline connections	No. of PCO's
Bhiwadi	17	3892	224
Tapookara	29	957	79
Khushkhera	6	584	50
Gandhola	7	203	13

(Source: BSNL Office, Bhiwadi)

BSNL telephone exchanges are present at four locations Bhiwadi, Tapookara, Khushkhera and Gandhola. Maximum (29) number of villages is covered from Tapookara exchange. Whereas largest number of connections (around 4000) has been provided from Bhiwadi exchange. Besides, BSNL has given connections to STD PCO's.. Out of the total connections provided by BSNL 40% are residential and 60% are commercial.

Other than BSNL, MTS, Airtel and Vodafone are also providing service in Bhiwadi.

Postal services still are important. There are two post offices in Bhiwadi one at Phoolbagh and other at RIICO Chowk and one in Tapookara. Besides Bhiwadi, there are sub-post offices at Jhiwana, Salarpur, Guwalda, Burhi Bawal and Ujoli villages.

5.13.5 Future Demand of Other Community Facilities

With the pace of urbanisation in Greater Bhiwadi Complex large number of various types of community facilities will be required to cater the demand of population till year 2031. In addition to bridging the existing gaps in various community level services, there will be requirement of such facilities like police stations, fire stations, post offices, telegraph and telephone exchange, community halls, socio-cultural centres etc. for the planned city, Greater Bhiwadi.

Chapter 6

EXISTING LANDUSE

6. EXISTING LANDUSE

6.1 EXISTING LANDUSE DISTRIBUTION IN GREATER BHIWADI COMPLEX

Greater Bhiwadi Complex comprises of 95 villages and one census town (5 villages) named as Bhiwadi. Bhiwadi town is only 8% of the Master Plan Area in which 23% of the total population was residing in 2001. Rest of the area is rural where agriculture is the main occupation. Thus, presently a large amount of area (about 70%) is under agriculture. Further break-up of the existing landuse, 2009 based on the manual survey is presented in table 6.1.

Table 6.1: Existing land use in Greater Bhiwadi, 2009

S. No.	Land use	Area (Ha)	Percentage	%	Area
				Without Agr.	Without Agr
1	Residential	1493.92	5.9	19.43	1493.4
2	Commercial	111.62	0.4	1.45	111.62
3	Industrial	1470.83	5.9	19.13	1470.83
4	Public-Semi Public	291.1	1.2	3.79	291.1
5	Recreational	58	0.2	0.75	58
6	Roads and Transportation	637.56	2.5	8.29	637.56
7	Agriculture	17418.55	69.4	-	-
8	Water Bodies	700.4	2.8	9.11	700.4
9	Natural Areas	1610.42	6.4	20.94	1610.42
10	Vacant	1315.61	5.2	17.11	1315.61
Total		25107.9	100	100	7689.4

(Source: Primary Survey)

Some of the salient features of the existing land use 2009 may be summarized as under:

- Total area notified for Master Plan is 251 sq.km;
- About 69.4% area is under agriculture reducing percentage share of area under residential (5.9%), industries (5.9%), commercial (0.4%) and circulation (2.5%).
- Minus area under agriculture, the share of industry is too high (19%) reducing share of other critical land use like residential (19.43%), recreational (0.75%), public/semi-public (3.79 %), circulation (8.29%) etc.;

- Natural areas include hills, forest and ravines which covers 1610 ha (6.4%) of the Greater Bhiwadi Complex. These areas are environmentally sensitive and thus should not be put to any intensive use;
- Existing water bodies mainly include Sahibi River, Sare Khurd Lake, streams and ponds which are very important to conserve and revive in this area due to scarcity of water. Area under water bodies is 704 ha (9%).
- Area under circulation is 8.9% of developed area (non-agricultural area) which is inadequate as major logistic facilities are presently missing.
- Vacant areas are mainly areas where no construction has been done yet. For example Kahrani industrial area has been acquired for industries but neither agriculture is practiced nor have industries come yet.
- Public-Semi-public use is 3.7% of non-cultivated area which is much lesser than planning norms. It should vary from 8-10% as per UDPFI guidelines.
- Similarly, residential and commercial areas are 19.4% and 1.45% of total non-agricultural area respectively. As per standards, residential area should vary between 20-30% for an industrial township reflecting the shortage of housing stock.
- Area under recreation is just 0.75% which is negligible. There is an urgent need for provisions of recreational facilities to maintain a healthy social life especially an industrial town.

6.2 RESIDENTIAL DEVELOPMENT

As mentioned earlier, Greater Bhiwadi Complex at present is primarily rural except the Bhiwadi town. Further Bhiwadi town include abadi areas of five villages amidst urbanized developments around it without any open area left. Existing residential areas in Greater Bhiwadi Complex have been divided into four categories based on density, details of which are given in table 6.2.

Table 6.2: Density Wise Distribution of Residential Area in Greater Bhiwadi Complex

Residential	Area	Percentage
Low Density	465.04	31.54
Medium Density	244.95	16.61
Medium High Density	599.19	40.64
High Density	165.33	11.21
TOTAL	1474.51	100.00

Low density area includes mainly rural villages such as Jhiwana, Guwalda, Ujoli, Beeranwas etc. wherein people have their independent houses with a huge open area around other than built up. Medium density residential area includes areas having plotted development and Group Housing schemes like Bhagat Singh Colony, Ashiana Gulmoher, Ashiana Green etc. Maximum area i.e. 40.64% is covered under medium

high density residential area includes urbanized villages falling between Bhiwadi Extension and industrial areas viz. Saidpur, Ghatal, Milakpur Goojar, Harchandpur, Chaupanki, Pathredi, Karoli, Burera etc.

6.3 COMMERCIAL AREA DEVELOPMENT

Total area under commercial activities in Greater Bhiwadi Complex is 111.62 ha which is 0.4% of total Greater Bhiwadi Area. No hierarchy exists at present in commercial areas of Greater Bhiwadi Complex. There are no specialized markets available in area. Retail business and general commercial is spread over all along the important roads. Total area under general retail business and general commercial is 100 ha, which is 89% of the total commercial area of Greater Bhiwadi Complex. Except few organised commercial complexes in Bhiwadi viz. Ganpati Plaza, Ganpati Mall, BB Mall, Parshavnath Mall, shops are present along the roads. Main commercial streets in Greater Bhiwadi are NH-71B, Old Tijara road from Bhiwadi Mod to Mansha Chowk, Gaurav Path, Tijara road in Tapookara village, Kaharani Road etc. Other than retail business and general commercial, there are few warehouses and godowns serving the trade & commerce and industrial activities of Greater Bhiwadi Complex. There are few hotels, restaurants, cinema halls and fuel stations distributed in various parts of Greater Bhiwadi.

6.4 INDUSTRIAL AREA

Industrial development is playing an important role in landscape of Greater Bhiwadi. Total area under industries is 1470.8 ha, which is 5.9% of the total Greater Bhiwadi Area. Major industrial areas in Greater Bhiwadi include Bhiwadi, Khushkhara, Chaupanki, Tapookara and Pathredi developed by RIICO. Kaharani Industrial Area is under development and further acquisition for more area for industrial development is under progress.

6.5 PUBLIC-SEMI-PUBLIC

Public semi-public facilities includes educational facilities, health facilities, public utilities related to water, sewerage, power, social facilities like community halls, cultural centers, dharmshala, religious places like temple, mosque, gurudwara, other community facilities like police station, fire station, other facilities like cremation ground, burial ground and Government Semi-Govt. offices. Public-semi public facilities are integral part of the city covering an area of 291 ha. which is 1.2% of the Greater Bhiwadi Complex. Out of the total area under public semi public, 30% is under educational facilities, 30% under utilities and rest of 40% is divided into others.

6.6 RECREATIONAL

Recreational facilities like parks, playground, stadium, club etc. are important for leading quality social life in any city. Major recreational facilities present in Greater Bhiwadi Complex are RIICO Children Park, Tree House, Baba Mohan Ram festival Ground. Other than these, there are small parks in various sectors and between industrial areas and playgrounds available with schools. In general there is lack of recreational facilities in Greater Bhiwadi. Land under recreational use is only 58 ha (0.2% of Greater Bhiwadi).

6.7 ROADS AND TRANSPORTATION

Good road network and transportation is life line for any city. It has special role in development of economic activities. Total area under roads and transportation is 637.56 ha. Transport infrastructure present in Greater Bhiwadi Complex is limited to bus stand near Bhiwadi mod and RAJISCO Inland Container Depot. About 99% of the area under the sector is roads showing negligible area under transportation facilities. Present transport infrastructure is inadequate to serve the huge industrial area of Greater Bhiwadi Complex.

6.8 AGRICULTURE

Greater Bhiwadi is predominantly rural where agriculture is the key occupation. Around 70% of the area is under agriculture. Agricultural land use covers cultivated land, dairy farming, nurseries, and orchid.

6.9 WATERBODIES

Total area under water bodies is 700.4 ha which is 2.8% of the total Greater Bhiwadi. Major water bodies present in the Complex includes Sahibi River and Sarekhurd Lake. Sahibi River is dry and farmers are cultivating the river bed. There are quite a few ponds/johars in villages.

6.10 NATURAL AREAS

Natural areas include hills, forest and ravines covering an area of 1610.4 Ha (6.4%). These natural areas are environmentally sensitive and should be conserved on priority.

6.11 VACANT LAND

Vacant land includes the area which is presently not being developed and is under no use like a huge land has been purchased by RIICO in Kaharani which is presently neither under agriculture and nor industrial. There are quite a few such pockets in Greater Bhiwadi Complex covering an area of 1315.6 ha 5.6% of the total Master Plan area.

6.12 STATUS OF DEVELOPMENT PROPOSED IN MASTER PLAN-2011

Master Plan 2011 was prepared in 1991 when 554 ha of area was urbanized. The Master Plan envisaged a population of 2,25,000 for the year 2011. A total of 2550 ha of land was proposed to be urbanized till 2011. However, as per existing landuse survey 2009, approximately 3527 ha area got urbanized beyond the expectation. After 1991, Bhiwadi Industrial area grown swiftly and RIICO expanded its industrial development very fast. Besides, a number of UIT sectors and housing board colonies came up during the period 1991-2009. Also private developers started development along Alwar bypass which got extended much beyond urbanisable area 2011. Further new industrial areas Chaupanki, Pathredi, Sarekhurd, Tapookara, Khushkhera developed on the west and south of Greater Bhiwadi Complex. Also due to the proximity of Kotkasim tehsil from NH-8 and expected good future connectivity, private developers have started developing residential townships in the north-western part of Greater Bhiwadi Complex showing the impetus of development from all three sides.

Chapter 7

DEVELOPMENT PERSPECTIVES AND DESIGN CONCEPT

7. DEVELOPMENT PERSPECTIVES AND DESIGN CONCEPT

7.1 DEVELOPMENT PERSPECTIVE

Greater Bhiwadi is developing as an independent city with industry as its basic economic function. The same economic base is going to be further strengthened with world class industrial infrastructure. It is envisaged that by the year 2031 Greater Bhiwadi will be the 'Gateway to Industrialization in Rajasthan' and finds itself prominently on the industrial map of the country. To achieve the envisaged goal, it becomes imperative to make the city equally livable also equipped with state of the art residential, recreational and business environment. Bhiwadi by virtue of its location along NH-8 and in the middle of Delhi-Jaipur development corridor which is going to be a future megalopolis, has been identified as investment region by Delhi-Mumbai Industrial Corridor (DMIC) and made part of national level planning and development efforts. Since, Bhiwadi is poised to compete with other regional centres and DMA towns in the entire National Capital Region; this Master Plan has been envisaged to be a catalyst to help achieve the goal.

The type of industries will also experience a gradual shift from the traditional small and medium scale industries to hi-tech industries like Information Technology, Bio-Technology etc. and their ancillary R & D platform. The focus will also be to develop it as an integrated town with all the amenities and the infrastructure for the resident population to create conducive living environment which has been found lacking in the existing scenario.

Apart from traditional manufacturing units, high tech industrial units which are likely to converge in Bhiwadi in future which would demand provision of institutional support system to accommodate diverse institutional facilities from finance and banking to information technology. Modern transshipment and goods handling facilities would also be essential along with warehousing complex and freight handling depots.

7.2 PLANNING IMPERATIVES

Within the framework of policy for the development of the NCR and Rajasthan sub-region and in view of the expected development pressures due to the identification of Bhiwadi-Khushkhera-Neemrana as Investment Region by DMIC, alignment of Dedicated

Freight Corridor (DFC) through middle of Greater Bhiwadi Complex, planned RIICO expressway connecting NH-8 with Industrial Areas in Greater Bhiwadi Complex, and other proposed roads to access NH-8 on north of Bhiwadi through Haryana, the Master Plan has been prepared with following underlying imperatives:

- To prepare a Master Plan for the horizon year 2031 for integrated development to accommodate future growth of population and ensuring good quality of life of the residents of the Greater Bhiwadi Complex;
- To capitalize upon the opportunities created by changes occurring in the global economic scene and in the National Capital Region; and
- To make the area competitive for attracting investment by providing high quality infrastructure.

One of the major objectives of preparation of Master Plan for Greater Bhiwadi is to capitalize upon the opportunities created at regional level. DMIC with DFC will create large opportunity for Greater Bhiwadi as well as for its surrounding region. Delhi-Mumbai Industrial Development Corridor (DMIC) embraces parts of six states and 89 districts and has an estimated population of 231 million in 2009. At the heart of the corridor will be a new dedicated freight railway. Twenty four regions comprising of industrial regions (IRs) and Industrial Areas (IAs) of 100-200 sq.km have also been identified across the Corridor to facilitate growth.

One such Investment region is Khushkhera-Bhiwadi-Neemrana in Rajasthan. The investment region (IR) is located within 50 km from the DFC which is passing through the middle of the Greater Bhiwadi Complex. DFC alignment has been integrated in the Master Plan 2031. The IR being part of NCR and close to NH-8 which forms part of the Golden Quadrilateral falls under high marketability region of the DMIC. Due to comparative locational advantages this IR has immense potential for fast development and the Greater Bhiwadi Master Plan will add value to the opportunities created in the region.

7.3 VISION

The Strength, Weakness, Opportunity and Threat (SWOT) Analysis at Bhiwadi and regional level has been done to establish the link between present and future of Greater Bhiwadi which eventually has guided the concept of Master Plan for Greater Bhiwadi Complex. Therefore the vision of Greater Bhiwadi by 2031 is as under:

A livable Greater Bhiwadi with a vibrant manufacture and service sector economy as Regional Centre of NCR supported by matching world class

infrastructure with specific consideration for existing abadi areas with provisions of basic physical and social infrastructure.

7.3.1 Strength

- Proximity to Delhi
- Existing institutional support to industrial development, NCR Plan supports the same
- Strong industrial base promoting other large scale projects proposed in industrial, residential and commercial sectors
- Boom in industrial and Real Estate development
- Presence of basic infrastructure due to strong industrial base
- Agricultural activity predominant in this region, being semi-arid as compared to rest of the arid Rajasthan
- Agro-based industries has good development potential
- Large lands available for development with villagers willing to part with their land
- Proximity to other major settlements across the state border
- Climate is conducive for development as compared to rest of Rajasthan
- National Highway and State Highway are major means of access, rest of settlements fairly well connected especially industrial areas within the planning area
- Serves as an employment centre for several surrounding states
- Ram Mohan Baba Temple and natural lake on western limit of notified area could be potential sites for tourist attraction.

7.3.2 Weakness

- Inaccessible peripheral areas towards the State Border have lack of infrastructure and poor focus as these are bordering areas
- Lack of supporting infrastructure for all industrial areas in terms of parking, truck terminals, loading and unloading docks etc
- Unregulated ground water extraction in all industrial units through tube wells, including in residential areas
- Lack of clear institutional roles and responsibilities between various government departments such in fields like infrastructure and social facilities provision
- Constraints of border and slope causes drainage to be poorly planned and industrial effluents are let out into nearby fields causing health hazards

- Lack of housing provision for EWS section. No provision from RIICO and spontaneous barrack style housing with poor living conditions springing up near industries
- Inadequate good quality educational institutes in Greater Bhiwadi
- Absence of cultural and recreational facilities like stadiums, theatres, etc
- Absence of facilities to keep white collared people to stay within Bhiwadi town.

7.4 PLANNING AND DESIGN CONCEPT

7.4 .1 Statement of Intent

The structure and forms of the Greater Bhiwadi Master Plan has been conceptualized with following intentions:

- Structure of Greater Bhiwadi Urban Complex as an organized system of nodes defined by the scale of economies;
- To develop an alternative economic zone to complement and also to diversify the existing economic structure of the city
- Promote the function of Greater Bhiwadi as Regional Centre defined in the NCR Regional Plan 2021;
- Consider the natural growth trends in addition to the local market development dynamics;
- Promote support infrastructure-physical and social to support economies and life on sustainable basis;
- Promote Mass Rapid Transit System that supports the economies and provide ease of commute to and from work centres;
- Promote logistic areas for the city such as 'Integrated Freight Complex' and 'Transport Nagar', through an integrated approach between transport and landuse planning;
- Promote development of congestion free aesthetic residential and commercial areas;
- Support through Development Control Regulations and enabling policy, controlled public and private development of social infrastructure like health and education;
- Promote Group Housing with large plots which will promote development of scale, quality of service delivery and conserve energy and environment.
- Promote conservation of natural and environmentally fragile areas like forests, hills, ravines, water bodies etc.

- Consider ongoing and proposed projects being undertaken by different development agencies;

7.4 .2 Design Concept

Based on the experience of several new towns and urban expansion projects implemented in the country, and keeping in view the contemporary thought and approaches to the city planning and design a few areas of concern have been identified which have greatly influenced the conceptualisation of the form, structure and design of the new urban complex. These are outlined in the following points.

- The structure of plan has been guided by the physical expansion of Industrial Areas of RIICO
- Connectivity of Bhiwadi with NH-8 has been very important consideration for evolving regional and city level road network
- Rapid corridor like development all along Alwar road (SH-25) particularly along Alwar bypass.
- Administrative constraint on three sides (north, east and west) created by state boundaries
- Presence of Sahibi river in southeast has also been positively contributed to shape the future city
- Physical constraint due to presence of a series of hillocks dotted on eastern half and south eastern part of the notified area further guided the concept of development plan.

Thus, the main features of the design and concept of Greater Bhiwadi Master Plan are as under:

1. Two contiguous industrial complexes viz. Bhiwadi-Kahrani-Chaupanki and Khushkhera-Tapookara with their extensions;
2. Accommodation of future expansion of industrial activities to provide sustainable employment and strengthen economy;
3. An integrated infrastructure system to support industrial base of the city;
4. An alternative economic zone-Corporate Park based on IT, IT Enables Services (ITES) and other soft economic activities;
5. Continuance of existing Corridor Development trend along Alwar Road;
6. Provision of high density mixed use on both sides of Alwar Road to attract investments.
7. Provision of residential development to accommodate an estimated population of 15 lakh by 2031;

8. Abadi areas within and outside industrial areas to be developed gradually and contain them
9. Provision of adequate physical and social infrastructure along with hierarchical commercial places to support the estimated population;
10. A well coordinated hierarchical road network to support goods and passenger movements within and outside the city guided by existing road network and proposed connectivity with NH-8 and NH-71B
11. Sustainable public transport system for the future city dwellers;
12. Adequate recreation and other socio-cultural facilities.
13. Promoting environmental concerns at local level and conserve major environmental hot spots like hillocks, forests, water bodies and ravines.
14. A spatially balanced development to be achieved through integration of landuse and transportation network.

7.5 THE PLAN STRUCTURE

Bhiwadi has been planned on gridiron pattern. Major roads have been planned vertically in north-south direction. While few major roads are running in east-west direction perpendicular to north-south roads forming a grid and dividing the area into sectors. The town is planned on the concept of self-contained integrated township.

The city centre and major public and semi public uses are located so as to run linearly in a north-south direction more or less centrally. The south and south-eastern parts of Greater Bhiwadi Complex are relatively environmentally sensitive. Therefore, these areas have been put to soft usage like Institutional, Regional Park and Sport Complex to keep it green to enhance the environmental capacity for conservation. The expansion of industries is expected in a big way for which adequate land has been kept reserved contiguous to the existing industrial areas to get benefit of the economy of scale and optimization of industrial infrastructure. In view of the potential on south-western part due to proximity to NH-8 and planned RIICO road link from Kasaula to Khushkhera, corporate park has been located on this part of city.

Residential zoning along arterial has a tendency to be most vulnerable for unauthorized imposition of commercial use despite all enforcement measures by local authorities. To optimize the use of more valuable land strips abutting such arterial, as also to impart organic character to the urban development process, the concept of 'Mixed Use Zoning' has been advocated along Alwar Road.

7.5.1 Residential and Mixed Use

The residential use area is planned in the form of sectors with an average size of 60 ha. A total of about 120 residential sectors have been planned. Besides, 45 sectors are kept under high density mixed use where along with residential, commercial and institutional use shall also be permitted both vertically and horizontally as per the requirements and proposals of landowners and Urban Local Body. Provision has been made to accommodate 15 lakh population by the year 2031. Out of total 120 residential sectors, 6 are of low density, 98 are of medium density and 12 are of high density. The high density sectors include 4 residential sectors exclusively for affordable housing.

In each sector community facilities in the form of schools, dispensaries, shopping centres, open spaces, parks and playgrounds have been provided in a hierarchic manner. Additionally, provision has been made for locating facilities such as community hall, baarat ghar and others within residential sectors as per the requirement of population. However, only city level facilities have been shown on the Landuse Map-2031 and community level facilities have been recommended as per planning norms which shall be provided while detailing the sector layouts.

7.5.2 Commercial

City level commercial centres have been provided in the form of city centre, sub-city centre and community shopping centre. In addition, retail business and general commercial areas have been planned at various locations within the existing city limits as well as in future development areas. Also local shopping centres will be provided in each of the residential sectors. Considering the tendency of retail commercial use to concentrate along major arterials linear retail commercial areas have been located along city arterials and other important major roads in the form of strips. In addition to above, commercial activities shall also be permitted in high density mixed use also both vertically and horizontally as per the requirements and proposals of landowners and Urban Local Body.

Wholesale market and mandis have been proposed inside the integrated freight complex (IFC) located towards west of the city well connected with main arterials thereby with regional network. Appropriate area has been earmarked for warehousing and godown inside IFC. A Trade and Exhibition Ground has been proposed to boost the local economy of the proposed alternative economic zone i.e. Corporate Park and also for cultural activities.

In addition to above commercial areas, few specialized markets have also been planned. Proposed 'Specialised Market' shall have specialized commodity based

markets like automobile market, timber market, building material market, electronics and electrical goods market.

7.5.3 Industrial Area and Corporate Park

Presently about 2650 ha of land is under industrial use and by the year 2031 a total area of 5355 ha (about 2705 ha additional) will be developed as industrial zone. Large industrial areas have been planned at two locations. One known as Bhiwadi–Kahrani-Chaupanki Industrial Area in the northeast and the other known as Khushkhera-Tapookara Industrial Area in the southwest. These two Industrial Areas have been planned taking into consideration the existing development and the future requirements. The industries at two locations provide sufficient spread of industrial work centres in the town with a view to reduce commuting distances. Both the industrial complexes have been supplemented with residential sectors to provide residential accommodations to industrial workers. In addition certain pockets have been proposed to be reserved for EWS, LIG and MIG category of housing as “Affordable Housing”.

As an alternative economic zone, a modern ‘Corporate Park’ has been proposed in view of the immense potential for non-manufacturing economic development. Therefore, only non-manufacturing activities like corporate offices, IT parks, bio-tech parks, R & D Centres, trade and exhibition ground, five star hotels etc. shall be developed in this zone.

Proposed corporate park with matching facilities like exhibition ground, multi-modal transit station (MMTS), golf course and amusement park shall be developed as an independent high-end city.

7.5.4 Recreational Zone

While planning recreational areas care has been taken that recreational areas are distributed in all parts of the city. Natural features such as hills, forests, water bodies and others have been a consideration while locating recreational areas.

Major recreational zones have been proposed along the outer peripheral road in the south and south-west. A Golf course with Amusement Park has been proposed on the bank of Sahibi River. Among other city level organised open spaces earmarked for recreational uses are the Sports Complex and Regional Park. Besides, there are adequate numbers of parks and green spaces distributed in the city to create green landscape.

A large Fairground has been proposed to accommodate gatherings on Mohan Baba Temple. The fairground may be used for other cultural activities and during the pilgrimage the same may be exclusively used for the pilgrims.

7.5.5 Public and Semi Public Use

Extensive zoning for major institutional uses, public semi-public areas have been proposed. A large institutional area has been provided adjacent to the green areas in the southeastern part of the city. This institutional area will accommodate institutes of higher learning like university, technical colleges and other specialized research institutes. Various Public Semi-public facilities like health, education, post & telegraph, fire service, police station, socio-cultural facilities and other community facilities (OCF) have been strategically distributed all over the city to serve the communities. Besides, adequate area has been reserved for public semi-public offices near Corporate Park. In addition to above, institutional use will also be permitted in high density mixed use both vertically and horizontally as per the requirements and proposals of landowners and Urban Local Body.

7.5.6 Transportation

Keeping in view the projected population size of Greater Bhiwadi Complex, existing road network, MRTS (Mass Rapid Transit System) and RRTS (Rapid Regional Transport System) of NCR, intra and inter-city movements, a number of arterial roads have been proposed besides outer peripheral road.

The Road Hierarchy of Greater Bhiwadi Complex has been proposed in consideration of regional and city level connectivity for both passenger and goods movements expected after expansion of industrial base. The hierarchy proposed is as under:

- Outer Peripheral Road (90 m ROW)
- NH-71B (60 m ROW)
- SH-25 (60 m ROW)
- Arterial Road (60 m ROW) and
- Sub-Arterial Road (45 m ROW)

Further lower hierarchy of roads will form part of sector layout details.

The range of facilities proposed to support city and regional level transport network includes:

a) Bus Terminals – Besides an Inter-state Bus Terminal on the 60 m road connecting NH-8 and NH-71B further linking the main spine i.e. Alwar Road. In view of the future public transport needs, two MMTS (Multimodal Transit Station) have been proposed one in the Corporate Park zone and other near junction of outer peripheral road and Alwar road on south of Tapookara.

b) Integrated Freight Complex (IFC) - An Integrated Freight Complex has been proposed in the western side north of Khushkhera Industrial Area, which will have connectivity of regional as well as city level arterials. The IFC will have all integrated facilities inside and is envisaged to cater to the need of entire Greater Bhiwadi Complex. The freight complex will also have large area for idle parking to meet the need of Truck Terminal for western industrial belt.

c) Transport Nagar – Besides IFC, a separate Transport Nagar has been provided on eastern limit of city between outer peripheral road and arterial road along DFC both connecting NH-8 and with NH-71B near Karendi. It will provide facilities for idle parking of trucks, repair workshops, offices of booking and forwarding agencies, petrol filling and service station and related facilities.

d) Bus Depot – A large bus depot has been provided along outer peripheral road at the junction with Nuh Road to cater to the need of bus based MRTS in future.

e) Helipad – The stadium near UIT Sector 3A will have incidental use as a helipad to facilitate VIPs and emergency lifting.

f) As proposed in the Bhiwadi Master Plan 2011, a **Railway Line** alignment also has been integrated in the proposed Master Plan. The engineering alignment of the railway line is yet to be decided by the Railway Board. This rail link is expected to strengthen the regional connectivity by linking Greater Bhiwadi with DFC station at Rewari.

g) The Regional Rapid Transit System (RRTS)-

National Capital Region Planning Board (NCRPB) after conducting a study on “Integrated Transportation Plan” has prepared a proposal to improve transportation and connectivity in whole of the Area. Thus Regional Rapid Transit System (RRTS) has been proposed to connect the Delhi with cities in NCR through high speed rail link/commuters trains. The project will cover four states Delhi, Haryana, Rajasthan and Uttar Pradesh.

As proposed by the NCR Planning Board, RRTS alignment has also been integrated in the Greater Bhiwadi Master Plan which will further strengthen the regional connectivity

with the national capital. Provision has been kept for RRTS station at Matila village along with 22 ha. land reserved for transit oriented development beside the station.

7.5.7 Ecological Conservation Zone

An Ecological Conservation Zone (ECZ) has been proposed on the south-east of outer peripheral road covering an area of 2250 Ha. This area is infested with large scale ravines hence is an Eco-Sensitive Area which needs to be stabilized to protect the soil erosion on one hand and to provide much needed green area for improving environmental health of the planned city of Greater Bhiwadi.

7.5.8 Peripheral Control Belt 1375 ha

Peripheral Control Belt (PCB) is the area between Urbanisable Area limit and Notified Area limit. Objective of the peripheral control belt is to restrict haphazard development on periphery of the city along road. This belt will have very limited activities permitted inside like agriculture and allied activities, mining/quarrying and stone crushing, motel, resort, amusement parks, brick kilns etc. Total area under peripheral control belt is 1375 Ha distributed in three patches in Greater Bhiwadi Complex.

Chapter 8

VIABLE SIZE OF THE CITY

8.

V IABLE SIZE OF THE CITY

8.1 POPULATION PROJECTION

To work out the viable size of the city by perspective year 2031 population growth trend has been analysed and future population has been estimated. Alternative methods have been used to project the population as shown in Table 8.1 and Fig. 8.1

Table 8.1: Population Projection

Year	Simple Arithmetic Method	Geometric Increase	Linear -Graphical Method	Labourforce Participation Method
1971	46807	46807	46807	46807
1981	59272	59272	59272	59272
1991	88881	88881	88881	88881
2001	151844	151844	151844	151844
2011	235358	259371	293563	648000
2021	402387	443044	632429	809406
2031	652929	756783	1502221	1549115

Due to induced nature of development the trend based projection methods are not expected to give true picture. Therefore induced development based on industrial activities has been made basis for future population estimation. However, comparative analysis of projected population using different methods reveals that linear graphical method puts the figure comparatively on higher side close to labourforce participation method based on assumed local dynamics and future development perspectives. Hence the size of the city is estimated to be 15 lakh by 2031.

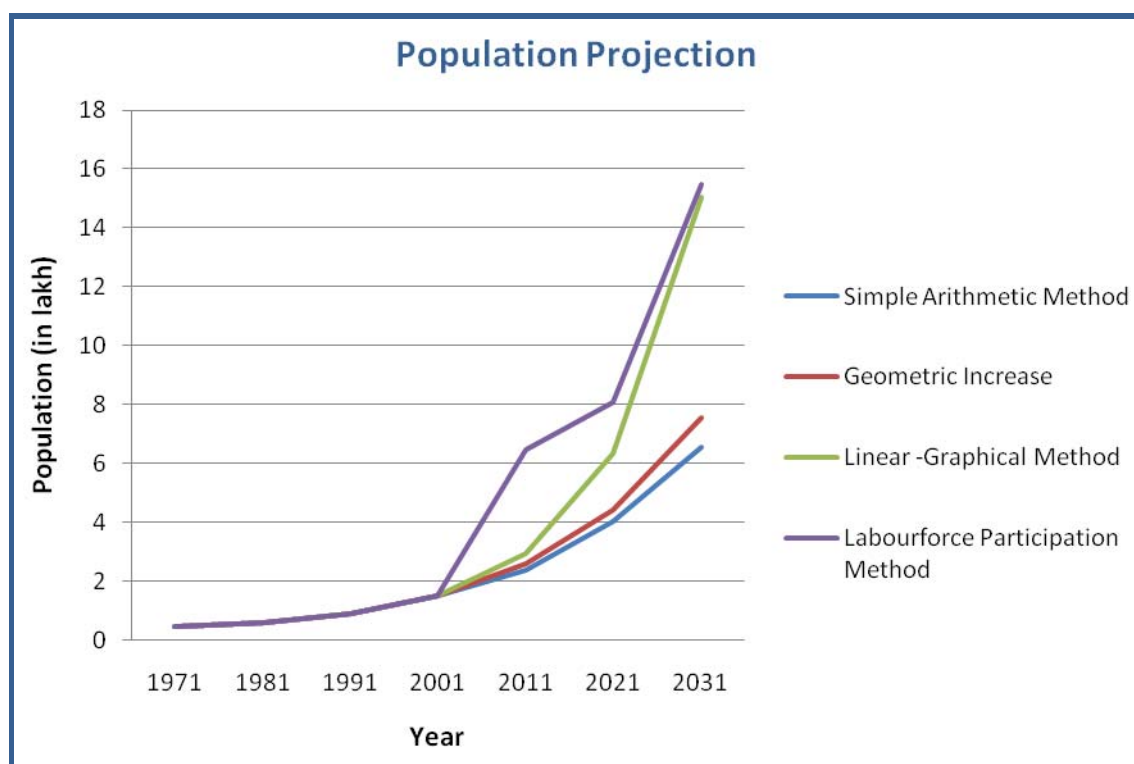


Figure 8.1: Population Projection

8.2 PROPOSED OCCUPATIONAL STRUCTURE

The proposed occupational structure has been worked out around the industrial employment expected to be generated in induced industrial development in Greater Bhiwadi Complex. Employment in other major economic activities will be ancillary to manufacturing industries.

Though demographic trend of Greater Bhiwadi Complex suggest a very high (52.4) workforce participation rate (WFPR) in 2001 which is even higher than the district average of 48.7. This distortion may be attributed to the fact that industrial workers living in this area are single without their family due to lack of housing and related social facilities. Hence, extrapolation of this distorted figure may not give a true picture both in terms of WFPR as well as composition of occupational structure. Therefore, based on induced development proposed, estimated WFPR and occupational structure by 2031 has been presented in Table 8.2.

Table 8.2: Proposed Occupational Structure 2031

Occupation	Total Workers	Percentage
Agriculture & Allied	35785	7
Manufacturing Industry	168699	33
Trade and Commerce	92017	18

Occupation	Total Workers	Percentage
Transportation	51121	10
Construction Workers	35785	7
Other Services	127802	25
Total	511208	100

8.3 NOTIFIED AREA

For the purpose of preparation of Greater Bhiwadi Master Plan, Government of Rajasthan has notified 99 villages under Section-3, Sub section-1 of Rajasthan Urban Improvement Act 1959. List of 99 notified villages covering an area of 251 sq km (25107.46 ha) included as urban area has been annexed as Annexure-2.

8.4 URBANISED AREA 2009

Out of the total notified area 3533 Ha (17%) was urbanized till 2009 which is distributed in the form of three distinct clusters. It mainly includes Bhiwadi Industrial Area, Bhiwadi extension, Chaupanki Industrial Area, Pathredi Industrial Area, Khushkhara Industrial Area, Topookara Industrial Area and Tapookara village.

8.5 URBANISABLE AREA 2031

Size of the urbanisable area has been estimated based on envisaged induced development and consequent land requirement to accommodate estimated population by 2031. Estimated population for 2031 is 15 lakhs. Thus to accommodate 15 lakh population land required for various uses and size of urbanisable area for 2031 has been presented in Table 8.3.

Table 8.3: Land required for 2031

Land Use	Area	Percent
	Ha	%
Residential	4900	22.56
Mixed Use	1650	7.6
Commercial	590	2.7
Industrial	5400	24.9
Public-Semi-Public	850	3.9
Utilities	300	1.4
Recreational	980	4.5
Transportation	2900	13.3
Special Uses (Corporate Park, , TEG, PF, NCZ, TOD)	2000	9.2

Land Use	Area	Percent
	Ha	%
Water bodies	350	1.6
Abadi Area	1800	8.3
Total Urbanisable Area	21720	100.00

Urbanisable area required is estimated to be 21720 ha. Large part of the area will be required to be under industrial (5400 ha), residential (4900 ha) and recreational (980 ha) uses. About 6% of the total notified area has been kept as peripheral control belt and 9% as ecological conservation zone. Further rest of the facilities has been provided as per the norms for an industrial township and worked out after studying UDPFI Guidelines, the Master Plans of Delhi, Noida and Greater Noida. All the land required for future development has been taken on southern direction only because inter-state boundary restricts development on three sides - north, east and west.

8.6 PLANNING ZONES

Based on the existing characteristics, including economic activities, landuse, physical constraints and their interplay, Greater Bhiwadi Complex has been divided into eight planning zones. First six zones are urbanisable while seventh zone is peripheral control belt and eighth is ecological conservation zone. Urbanisable zones have been planned to be self sufficient in terms of their economic, commercial and recreational needs at local level.

For higher level commercial, educational and health facilities, Tapookara-Jhiwana Planning Zone (Zone C) and Khori Kalan Planning Zone (Zone D) will serve as Central Business District (CBD) and educational and recreational hub respectively. Bhiwadi-Khijooriwas Planning Zone (Zone B) and Tapookara-Jhiwana Planning Zone (Zone C) are primarily residential with adequate provision of physical, social and economic infrastructure supporting respective residential community.

Table 8.4: Planning Zones 2031

Zone	Planning Zones	Area (ha)
A	Bhiwadi-Kaharani-Chaupanki Industrial Zone	4541.9
B	Bhiwadi-Khijooriwas Planning Zone	3457
C	Tapookara-Jhiwana Planning Zone	2254.3
D	Khori Kalan Planning Zone	2157.2
E	Khushkhera-Tapookara Industrial Zone	5707.3
F	Corporate Park Planning Zone	2765.2
G	Peripheral Control Belt	1761.2
H	Ecological Conservation Zone	2463.8
	Total	25107.8

(A) Bhiwadi-Kaharani-Chaupanki Industrial Zone is spread over an area of 4542 ha. This zone mainly covers existing Bhiwadi Phase-I to Phase-V, Chaupanki and Pathredi Industrial Areas. It will also be including Kaharni industrial area which is under development. Some of the major abadi areas falling in this zone are Ghatal, Harchandpur, Rampura, Shahdod, Beelaheeri, Kaharni, Karenda, Bahadari, Pathredi, Chaupanki, Husaipur, Bandapur, Bhadari, Gadpur, Phalsa, Bhoodli etc. This zone has number of existing public- semi public facilities such as Honda ITI, Loard's ITI, Fire Station, Post Office, JVVNL 132 and 220 KVA electric substations, ESI Hospital and commercial complexes like B.B. Mall, Central Market, Ganpati Mall, Ganpati Plaza, Hanuman Complex, Dhaba Complex, Hotel Ridgewood etc. Also number of government and semi-government offices of RIICO-I & RIICO-II, Bhiwadi Manufacturer's Association, Assistant Commissioner of Police, JVVNL office etc are falling in this zone. Other than existing development, further industrial area for future extension and few residential sectors in north-east near Rampura and in south-east near Bandapur village with adequate supporting educational, health and commercial facilities have been proposed.

(B) Bhiwadi-Khijooriwas Planning Zone comprises of existing developed bhiwadi town and its fast developing surroundings which spreads over an area of 3457 ha. Abadi areas falling in this zone are Bhiwadi, Naglia, Alampur, Saidpur, Milakpur Goojar, Khanpur, Khijooriwas, Khijarpur, Godhan and Udaipur. This zone is primarily residential areas with urban basic services. Important landmarks falling in this zone are Bhiwadi mode, Mansha Chowk, Baba Mohan Ram temple, Power Grid Corporation of India, SRF Chemicals, Nahar Industries etc. Major residential areas present in this zone are sectors of UIT, old sectors 1, 2, 3 and sector 4 & 7 of Housing Board, Bhagat Singh Colony, Ashiana Gulmoher, Ashiana Village, Aashiana Baghicha etc. Public semi-public facilities, recreational and social facilities essential to sustain the present town population are available. Some of the such major such facilities include Ashiana Tree house, UIT Park, Ashiana Village Centre, Nagina Garden. DFC corridor defines southern limit of this zone. In addition to existing residential and supporting facilities new residential sectors with planned facilities has been proposed in this zone. A stretch of 4.5 kms of mixed landuse falls in this zone along which major commercial and transportation facilities have been proposed. Two sub-city centres, ISBT and a large fairground have been proposed in this zone. Also a regional transport system named as Regional Rapid Transit System (RRTS) alignment along with its station and space reserved for Transit Oriented Development (TOD) proposed by NCRPB is falling in this zone.

(C) Tapookara-Jhiwana Planning Zone has been proposed to have city centre and redevelopment of Tapookara village. This zone is bounded on the north by DFC while by Tapookara-Nuhu Road on the south. Its western limit is defined by Alwar road and on the east by Chaupanki Industrial belt.

Tapookara is the most important existing settlement accessible to all parts of the Greater Bhiwadi Complex. Most of the major arterials converge at Tapookara making it congested. Therefore, many alternate roads to bypass densely built-up Tapookara and a flyover on SH-25 have been proposed at this location. Total area covered under this zone is about 2254.3 ha.

(D) Khorī Kalan Planning Zone is located on southern part of the proposed city on east of Alwar road. Proposed outer peripheral road separates this zone from Ecological Conservation Zone on south. The zone is relatively small in size (2157.2 ha.) endowed with Khorī Kalan protected forest on hillocks. Further presence of ravines on eastern part makes this zone environmentally sensitive. Hence, eco-friendly usage like Regional Park, Sports Complex and institutional areas has been proposed around these natural areas. Few residential sectors have also been proposed on eastern part. About 4 Km of mixed landuse stretch of Alwar road south of Tapookara is part of this zone. Adequate planned facilities have been proposed for the residential sectors as well as institutional for community housed in this zone. Major abadi villages in the zone includes Gandhola, Khorī Kalan, Mirchoni and Musari.

(E) Khushkhera-Tapookara Industrial Zone is located on west of Alwar road and extends up to Sahibi river on the west covering an area of 5707.3 ha. On south it is bounded by expressway and is predominantly industrial. RIICO has acquired large chunk of land on north and south of existing industrial area. Additional land has been reserved for industrial expansion in future on the west of existing industrial area. An Integrated Freight Complex (IFC) towards north and few sectors of residential on south, along expressway, have been proposed. Major villages in the zone include Burhibawal, Rabarka, Mahesara, Kamalpur, Burera etc.

(F) Corporate Park Planning Zone forms an alternative economic zone and is located on the western end of Greater Bhiwadi west of Sahibi river spread over an area of 2765.2 ha. Presently this zone is predominantly agricultural showing immense potential for non-manufacturing economic development. Proposed Corporate Park along with few residential sectors on west and south with matching facilities like exhibition ground, Multimodal Transit Station (MMTS), golf course and amusement park will be an independent hi-end city. Abadi villages in this zone include – Jatoowas, Beeranwas, Ujoli, Lalpur, Akoli, Deoseeka, Jakhawas and Hajnaka.

(G) Peripheral Control Belt (PCB) is distributed at three locations. The major chunk of this belt is located on south of outer peripheral road and west of SH-25. In addition a strip of mixed use on the south of outer peripheral road and on both sides along stretch of Alwar Road falling in this zone. Other two small patches of the peripheral control belt

are located on outer periphery along Haryana Border on eastern and central west (north of zone E & F) of Notified Area. Villages which are part of this zone includes Makdawa, Matalwas, Hajipur, Majri, Madhopur, Hasanpur and Meethiyawas,. Total area under PCB is about 1761.2 ha.

(H) Ecological Conservation Zone (ECZ) falls on the south east of the outer peripheral road covering an area of 2463.8 Ha. This area is mainly ravines infested hence an Eco-Sensitive Area and will have limited eco-friendly low intensity uses. The lake between Sare Khurd and Udhanwas falling in this zone is a potential tourist attraction. Though the lake is outside the urbanisable area, it is being proposed that the lake front may be developed for tourism purpose. An STP, solid waste disposal site, social facilities like school, hospital, police station, fire station to serve the villages falling in this zone and adjoining Sarekhurd Industrial Area has been proposed in this zone. Villages which are part of this zone includes Bhub ka hera, Nebaheri, Guwalda, Sare Kalan, Sare Khurd, Ladpuri, Udhanwas and Kulawat.

Chapter 9

LAND USE PLAN

9. LAND USE PLAN

9.1 DESIGN POPULATION

Greater Bhiwadi Master Plan-has been prepared for a design population of 15 lakh. The Notified Area considered for Master Plan covers 99 notified villages including Bhiwadi Census Town. All such villages in Master Plan have been termed as *abadi* areas.

9.2 LAND USE DISTRIBUTION

The proposed land use allocation in the Master Plan for Greater Bhiwadi – 2031 follows a distinct hierarchical order. The total area to be developed has been divided into sectors and facilities have been distributed as per the norms established after careful study of UDPFI Guidelines and Master Plans for Noida and Greater Noida, as these two cities are being established under the U.P. Industrial Development Act for the promotion of industries, and having comparable characteristics with Greater Bhiwadi.

9.2.1 Hierarchical Land Use Allocation

The distribution of facilities is planned at three levels: i) firstly at the city (Greater Bhiwadi Complex) level for a population of 15 lakh by 2031; secondly at the community level with population of 75,000 – 1,00,000 and iii) finally at the sector level with average population ranging from 15,000 – 20,000 persons. At all these levels, facilities related to commerce, health, education, communication, socio-cultural, recreational, transportation are planned as per the norms established. The complete matrix of facilities and the areas required at the city level, sector and community levels has been shown in Table 9.1.

Table 9.1: Matrix for Proposed Facilities and Area at City Level (for a population of 15 lakh in 2031)

	Type of Facilities	No. of units	Area per unit	Total Area
			(Ha)	(Ha)
i.	Government Offices			
	Offices related to local development and governance & industrial development	3		95

	Type of Facilities	No. of units	Area per unit	Total Area
			(Ha)	(Ha)
	Sub Total			95
ii.	Health Facilities			
1	General Hospital	9	6	54
2	Intermediate Hospital Category A	6	4	24
3	Super Speciality Hospital	1		28.3
	Sub Total			106.3
iii.	Educational Facilities			
1	College	5	8	40
2	Specialised Institutions			371.8
3	University Campus			
4	Engineering /Medical Collage			
5	Integrated School Without Hostel A	8	3.8	30.4
6	Integrated School With Hostel B	4	4.8	19.2
7	School for Handicapped Children	1		2.4
8	Other Main Existing Institutions			24.6
	Sub Total			488.4
iv.	Socio-Cultural Facilities			
1	Auditorium for Arts Performance	4	1.5	6.0
2	Meditation and Spiritual Centre	5	2.5	12.5
3	Music, Dance and Drama Club	3	2.5	7.5
4	Open Air Theatre	3	4	12
5	Public Library	3	2	6
6	Socio-cultural Centre	2	12	24
7	Dharamshala			6
	Sub Total			74
vii	Telecommunication Facilities			
1	Post & Telegraph Office	6	0.42	2.52
2	Telephone Exchange	6	0.8	4
	Sub Total			7.3
viii	Utilities			
1	Sewage Treatment Plant	3		83.8
2	Common Effluent Treatment Plant	3		93
3	Solid Waste Disposal Site	3		51.5
4	Electric Sub Station			73.9
	Sub Total			302.3
ix	Commercial			
1	City Centre	1		57.7
2	Sub-City Centre	5	20-25	109.6
3	Community Shopping Centre	15	4	60

	Type of Facilities	No. of units	Area per unit	Total Area
			(Ha)	(Ha)
4	Specialised Market	4		62.4
5	Retail Business & General Commercial			299.6
	Sub Total			589.3
x)	Recreational			
	Regional Park	1		138
	Golf Course/ Amusement Park	1		158
	City Level Sports Complex	1		116
	Stadium	1		7.0
	Fair Ground	1		44
	Trade and Exhibition Ground	1		64.5
	City Level Park/Park			62
	UIT Park	1		2.0
	Green Buffer			454
	Sub Total			1045.5
xi)	Transportation facilities			
	Bus Depot	1		16.7
	Inter State Bus Terminal	1		25.9
	Regional Rapid Transit Station	1		2.5
	Railway Station	1		2.6
	Multi-Modal Transit Station	2	12-13	25.2
	Helipad	1		
	Integrated Freight Complex	1		186.7
	Transport Nagar	1		17
	Sub Total			276.7
xii)	Other Community Facility			
1	Fire Station	1	12	12
2	Sub Fire Station	9	1.5	13.5
3	Police Station	9	1.5	13.5
	Sub-total			39
Grand Total				2721.4

Community Level and Sector Level required facilities are given in Tables 9.2 and 9.3 respectively.

Table 9.2: Matrix for required facilities at Community Level for a population of 100,000

S. No.	Level	Facilities	No. of Units	Area in Ha.	
				Per Unit	Total
1	Population 1,00,000	Intermediate Hospital category C (101-200 beds)	1	1	1

S. No.	Level	Facilities	No. of Units	Area in Ha.	
				Per Unit	Total
2		Intermediate Hospital category D (upto 100 beds)	1	0.5	0.5
3		Family Welfare Centre	2	0.08	0.16
4		Maternity Home (upto 50 beds)	2	0.2	0.4
5		Nursing Home/Polyclinic (upto 50 beds)	2	0.2	0.4
6		Dispensary for pet animals & birds	1	0.03	0.03
7		School for Mentally/Physically Challenged	1	0.2	0.2
8		Community Post-office	1	0.25	0.25
9		Community Centre	1	4	4
10		Socio-Cultural Centre	1	0.1	0.1
11		Banquet Hall	1	0.08	0.08
12		Electric Sub-Station 66Kv	2	1	2
13		Police Post	1	0.5	0.5
14		LPG Godown	3	0.2	0.6
15		Petrol Pump/ CNG Station	6	0.3	1.8
16		Recreational club	1	0.2	0.2
17		Community Park	1	5	5
18		Community Sports Centre	1	3	3
19		Multipurpose Park/Ground	1	2	2
20		Bus Terminal	1	0.1	0.1

Table 9.3: Matrix for required facilities at Sector Level for a population of 15,000

S. No.	Level	Facilities	No. of Units	Area in Ha.	
				Per Unit	Total
i.	Housing cluster: 250 population	Tot Lot	1	0.02	0.2
ii.	Housing Block Population 5000	Nursery School	2	0.1	2
		Primary /Middle School	1	0.2	0.2
		Religious Building	1	0.05	0.05
		Milk Booth	1	0.015	0.015
		Convenience Shopping	1	0.1	0.1
		Housing area Park	1	0.5	0.5
		Housing area Play ground	1	0.5	0.5
iii.	Sector Population: 15,000-20,000	Senior Secondary School	1	0.6	0.6
		Dispensary	1	0.12	0.12
		Multipurpose Community Hall	1	0.2	0.2

S. No.	Level	Facilities	No. of Units	Area in Ha.	
				Per Unit	Total
		Electric Sub-Station 11 KV	1	0.05	0.05
		Service Market	1	0.2	0.2
		Informal Bazaar	1	0.1	0.1
		Local Shopping	1	0.3	0.3
		Auto Rickshaw and Taxi Stand	1	0.04	0.04
		Neighborhood Park	1	1	1

Table 9.4 : Proposed Land use Distribution in Greater Bhiwadi

Land Use	Area	Percent
	Ha	%
Residential	4822.12	22.4
Mixed Use	1657.26	7.7
Commercial	589.35	2.7
Industrial	5355.25	24.9
Public-Semi-Public	849.33	4.0
Public Utilities	302.45	1.4
Recreational	973.16	4.5
Transportation	2837.32	13.2
Special Uses (Corporate Park, , TEG, PF, NCA and TOD)	1987.2	9.3
Abadi Area (including abadi development and redevelopment)	1767.63	8.2
Water bodies	341.79	1.6
Urbanisable Area	21482.83	100
Peripheral Control Belt	1374.98	5.5
Ecological Conservation Area	2250.13	8.96
Notified Area	25107.94	

The land utilization pattern is going to be drastically changed in future in view of the sizeable increase in industrial area and proposed facilities to make it an independent industrial town. As per existing landuse 2009, 70% of the land was under agriculture. Table 9.4 shows the proposed land use distribution in Greater Bhiwadi. After Greater Bhiwadi will achieve the population of 15 lakhs by 2031, overall density of the city is expected to be around 60 persons per hectare. The area for residential development will increase to 22.4% (excluding the residential component in mixed use and existing abadi area) of urbanisable area. The industrial area has increased both in absolute and in percentage, primarily due to proposed induced industries in this complex. The area under industry will be 5355.25 ha i.e. 24.9% of urbanisable area. Beside these, there will be corporate park in the western part of this complex as an alternate economic zone.

The public and semi-public area has also been increased from 1.1 to 5.4% (including public utilities) to serve the population till 2031. The area devoted to recreational use has also been increased to 4.5% (excluding protected forest and natural conservation area) from existing 0.20%. 8.9% of the total area has been kept as ecological conservation zone which is environmentally sensitive due to presence of ravines.

9.3 RESIDENTIAL AREA DEVELOPMENT

Proposed residential area is 4822 ha excluding mixed use corridor development along Alwar Road and the area under abadi. . It has been assumed that about 50-60 percent of mixed use will be under residential use making it a total of about 5651 ha (25.75% of urbanisable area). Residential area will be developed in the form of residential sectors of a population of 15,000-20,000. The proposed density ranges are up to 200 ppha for low-density sectors (with an average of about 150 ppha).. For medium and high density residential sectors a density of 200-400 ppha and >400 ppha respectively has been proposed. Beside these, the area along both side of the Alwar road (SH-25) has been proposed as high density mixed use zone with an average proposed density of around 500 ppha. Residential sectors near Corporate Park and Natural Conservation Areas have been proposed as low density areas.

The facilities proposed at the sector level includes senior secondary school, dispensaries, multipurpose community hall, local shopping centres, service market, informal bazaar, auto-rickshaw and taxi stands, etc. The sectors have been planned to achieve integrated socio-economic development by proposing people of different income categories such as Economically Weaker Section (EWS), Low Income Group (LIG), Middle Income Group (MIG) and High Income Group (HIG) to reside in each sector.

There are many existing villages within the Greater Bhiwadi Complex. Adequate land surrounding the existing villages has been reserved for their future expansion as abadi development areas in proposed industrial areas. These villages have also extended beyond their original abadi areas. These villages and extensions thereof had a completely different life-style for long time and are now getting merged into the urban environment and need a sensitive treatment in the planning and development process. While they require modern services and amenities, they also require practicing their traditional and cultural styles. Settlements of historic significance also require to be conserved. Planning and development of these village and their extensions should be an integral part of the development. Health, education and recreational facilities should be developed around these settlements.

9.3.1 Hierarchical Development of Residential Areas

As per the lowest residential density proposed by the Master Plan, i.e. below 200 persons per hectare, housing cluster will be of 50 households.. A group of housing clusters will form a housing block for 1,000 families and, therefore a population of 5,000. The housing block will have the facilities as detailed in Table 9.3. A group of residential blocks will constitute a sector. Similarly a group of sectors i.e. at least 10 sectors will form a community level residential area. The community level residential area will have the facilities as detailed in Table 9.2.

9.4 COMMERCIAL AREA DEVELOPMENT

The role of trade and commerce is of vital importance as a supporting activity for proper industrial growth in an industrial township. The vision that should guide the development of centres for trade and commerce in such a potentially dynamic area should take into account the fast changing scenario in terms of new technology, expansion in vehicular movement and awareness about environmental quality. As such, commercial centres are not merely places of trading and transactions but for recreation and enjoyment as well. Today's commercial centres in metropolitan cities and other thriving trading towns are beset by acute problems of parking and lack of green landscaped areas. Clearly, the centres for trading and commerce require to be planned with much more liberal standards for parking and open space requirements and should leave enough cushions for accommodating relatively dramatic changes in the pattern of use of commercial areas. Keeping the above factors in mind, the total area proposed for commercial land use is 589.35 ha.

Besides above, commercial facilities have been provided at sector, block and cluster levels as well. But these provisions are treated as part of residential areas and hence not included in the calculations for commercial areas as part of land use analysis for the complex.

9.4.1 Daily Hawking and Weekly Markets

Informal sector in the form of hawkers is an integral part of the economic activity of a city. Studies have shown that this segment constitute about one to one and a half percent of the population of a city. For Greater Bhiwadi Complex, with a projected population of 15 lakh, this will imply about 15000-20000 hawkers. Hawking activity shows a strong relation with the retail commerce, thus, planning of commercial areas should incorporate these activities in a planned manner at the layout level within commercial areas. Spaces for hawkers can be allocated in plazas along pedestrian

corridors in commercial areas. Options of multiple use of parking spaces after office hours can be explored for evening time hawking activity.

Total number of informal units in commercial areas can range from 25% of the formal shops at the highest hierarchy of commercial i.e. city centre, sub city centre and community shopping centre to about 50% of the formal shops at the lowest hierarchy i.e. the convenience and local shopping centres. On an average the size of the unit will be about 2.5 sq.m. The average space required by various hawking activities range from about 1 sq.m for a cobbler to about 6 to 7 sq.m for florist/bookseller etc. Considering that shopping malls have emerged as a phenomenon in large cities, it is suggested that incorporation of area earmarked for hawking activity within malls or adjacent public plazas need to be considered.

Besides in the planned commercial areas, hawking activity in the immediate vicinity of other uses is proposed as follows:

Government and Commercial Offices	5 to 6 units per 1000 employees
Wholesale trade	3 to 4 units per 10 formal shops
Hospital	3 to 4 units per 100 beds
Bus terminal	1 unit per two bus bays
(Besides bus terminals provision of 2 to 3 hawkers at bus stops should also be made)	
<i>Schools</i>	
Primary	3 to 4 units
Senior secondary	5 to 6 units
<i>Parks</i>	
Regional/ City parks	8 to 10 units at each major entry
Neighbourhood parks/play areas	2 to 3 Units
Residential	1 unit per 1000 population
Industrial	5 to 6 units per thousand employees

Provision for one to two hawkers at each sector entry can be earmarked in the layout. It is likely that some of the uses like low income residential, hospital, park, and government offices etc. which generate high pedestrian activity when grouped together at layout level may generate concentrated hawking activity in residential sector. It is suggested that hawking areas be earmarked taking into account surrounding activities.

Incorporation of hawking activity should be ensured at the time of the approval of layout plan. For the existing hawking activity, attempt should be made to incorporate them in the upcoming planned commercial areas. Possibility of declaring some of the

areas as hawking zones can also be considered taking care that such a decision does not infringe on the rights of the pedestrian.

For weekly markets an area of about 0.4 ha at one location can be allocated for a population of about 75000 with 300 to 400 units. Since the characteristic of weekly market is primarily one day use, multiple use of space (eg. parking spaces, meeting grounds, parks, plazas, etc.) is more appropriate than allocating exclusive space.

9.5 INDUSTRIAL AREA DEVELOPMENT

In an industrial township, the land requirement for industries has been planned comparable with the characteristics of towns and cities with a prominent industrial base. Demographic trend of Greater Bhiwadi Complex suggests a very high (52.4) workforce participation rate (WFPR) in 2001 which is even higher than the district average of 48.7. This distortion may be attributed to the fact that industrial workers living in this area are single without their family due to lack of housing and related social facilities. Hence, extrapolation of this distorted figure may not give a true picture both in terms of WFPR as well as composition of occupational structure. Therefore, based on induced development proposed, estimated WFPR, it is further assumed that the work force participation rate will settle down to 35 percent as the town develops. Workers' density is assumed to be 30 workers per hectare for small-scale industries and 20 workers per hectare for medium and large scale industries.

9.5.1 Industrial Infrastructure

Several infrastructure requirements such as Integrated Freight Complex (IFC), Transport Nagar etc. have been proposed for the development of industries. Proposed Integrated Freight Complex will have all requisite facilities inside (Table 9.5).

Table 9.5: Different types of proposed wholesale markets, freight complex and activities inside IFC in Greater Bhiwadi Complex would be as under:

Commodity/Activities	Area in ha.
Textile & Textile products	11
Auto-Parts and machinery	7.9
Fruits & Vegetable & future Needs	28.2
Hardware and building materials	11.6
Iron & Steel	6.8
Timber	5.9
Food grains	6.8
Leather	4.6

Commodity/Activities	Area in ha.
Junk market	3.1
Medical & Pharmaceuticals	3.2
Electrical & Electronic goods	3.9
Eggs, Poultry & Fish	11.7
Fodder	5.1
Paper & Stationery	3.6
Marble	3.7
Booking & Forwarding Agencies	14.5
Warehousing & Go downs	18
Workshops	3.4
Idle parking	37
Community Facilities	10
Total	200

9.5.2. Greater Bhiwadi Corporate Park

The Corporate Park, spread over an area of 833 Ha. is located on the south-western part of the complex, west of Sahibi River. The major components of this park would be Corporate Offices, IT Park, Bio-Tech Park, B.P.Os., ITES, R & D Centre, Trade and Exhibition Ground, Five Star Hotels etc.

9.6 RECREATIONAL AREA DEVELOPMENT

Like other facilities, recreational facilities too have been provided at different levels. The facilities are namely:

- i) tot lots at housing cluster level;
- ii) neighbourhood parks, play grounds, etc. at the sector level;
- iii) community park, sports centre, recreational club at community level
- iv) regional park, sports complex and a golf course at the city level;
- v) The existing Sare Khurd Lake, located in the eastern part of Greater Bhiwadi Complex and the Sahibi river in the western part may be developed as Water Front Area and Amusement Park respectively.

Whereas facilities at the housing cluster and sector levels have been provided as per the norms for residential area development and included in land use analysis as part of residential areas, recreational facilities at the level of community and above are categorised under Recreational Land Use. Considering the city level recreational facilities, area proposed under recreation is 973 ha, 4.5% of the urbanisable area.

9.7 DEVELOPMENT OF PUBLIC AND SEMI - PUBLIC AREAS

Provisions have been made for public and semi-public offices and institutions. Areas have also been allocated for facilities for education, health care, religious functions, socio-cultural activities, fire fighting, police station, distributive services such as petrol pumps, LPG go-down, and host of other facilities normally needed by residents of a town. For area calculations, only the facilities at the city level have been accounted for (Table 9.1).

9.7.1 Social Infrastructure and Utilities

Provision of social and physical infrastructure is one of the key principles of planned development. These are provided in a hierarchical manner. The lower order facilities are included as part of the residential sectors and will be detailed during the sector plan preparation. Higher order facilities at the city level have been incorporated in the Plan.

a. Health Facilities

Dispensaries have been provided at the residential sector level. Additional facilities will be made available at the level of the community and at the city level. For each community of one lakh population, an intermediate hospital category C for general treatment facilities and an intermediate hospital category D including a maternity ward have been proposed. Additionally, provision has been made for a polyclinic and a nursing home. At the city level, Super Speciality Hospital, general hospital, intermediate category hospital A and intermediate category hospital B has been proposed.

b. Educational Facilities

Educational facilities provided at the sector level include nursery, primary and middle level schools. Provision of one secondary school and one college has been made at city level to serve a population of 1.00 to 1.25 lakh. Separate zone for higher educational institutions such as university, engineering/medical college and R & D centres has been provided along outer peripheral road.

c. Socio-Cultural Facilities Centre

Space has been allocated for socio-cultural facilities centre, which should contain an auditorium for performing arts, institutional buildings for spiritual and meditation activities; and institutions related to music, art and culture. The area would also include an open-air theatre and public library. This area would also accommodate housing where studios can be provided to various artists for promotion of Indian classical music, art and culture.

d. Other Community Facilities (OCF)

Various other community facilities (OCF) under public semi-public uses have been provisioned adequately which are distributed strategically in the Master Plan.

e. Telecommunication / Postal Facilities

Post offices and telephone exchanges have been provided in each cluster of 4-5 sectors to serve the population of one lakh.

f. Security

There are two existing police stations in the complex, one at Bhiwadi and other at Tapookara. One police post for every 50,000 population and one police station for every 1.00 to 1.5 lakh population has been proposed.

g. Fire Fighting Services

There is an existing fire station in Bhiwadi and space for two others has been reserved in industrial areas. Further to serve the population of 15 lakh till 2031, a fire station has been proposed on the junction of Alwar Road and Outer Peripheral Road and provision of sub fire stations have been provided one in each cluster of 4-5 residential sectors with good accessibility. Provisions for the same will also be kept in industrial areas while preparing the detailed layout of the industrial zone by RIICO.

h. Distributive Services**i) LPG Godowns**

Liquid petroleum gas storage and distribution facilities will be offered through one gas godown for every 45,000 population conveniently located in relation to industrial area and services centres.

ii) Petrol Pumps/ CNG Stations

One petrol pump/CNG station with service facilities shall be provided for every fifteen thousand population.

9.8 PUBLIC UTILITIES

Urban basic services and utilities such as water supply, sewerage, drainage solid waste management and power supply are essential for efficient functioning of city life and economy. Provisions for these have been made in Greater Bhiwadi Complex.

a) Water Supply

Only source of water for all kinds of usage in Greater Bhiwadi Complex is groundwater which has reportedly been overexploited. Therefore, water will be the most crucial

factor for sustainable development of the planned city. Till a stable source of raw water is identified and supply is commenced after adequate treatment, existing groundwater should be developed through adequate, multipronged measures using modern available techniques.

b) Sewerage System

The existing Common Effluent Treatment Plant (CETP) even after planned augmentation will be inadequate in terms of capacity to treat effluents from only Bhiwadi Industrial Area . Also sewerage treatment plants (STP) are essential infrastructure required to manage wastewater in any planned city. Hence, adequate suitable sites at strategic locations for two STPs and two CETPs have been reserved for future requirements.

c) Power Supply

Power is the most critical input for industrial development. Presently the electric demand is being met through one 220 KV s/s, two 132 KV s/s, three 120 KV s/s, and 400 KV of Power Grid Corporation of India. About 8 additional small sub-stations are proposed at different locations in Greater Bhiwadi. It has been assumed that the power distribution infrastructure needs to be doubled in view of the proposed expansion of industrial base in Greater Bhiwadi Complex which is expected to meet the marginal demand from domestic and commercial areas also. Presently most of the power distribution substations including the proposed ones are located within the RIICO Industrial Areas. Hence it is recommended that provisions for such infrastructure shall be made within the proposed RIICO Industrial Areas during preparation of detailed layouts as per the requirements. Smaller substations in residential and commercial areas shall be part of sector layouts.

d) Solid Waste Disposal

It is proposed that efforts be made to collect, segregate and treat waste to the extent possible at sector level so that total amount disposed at the landfill site is minimized. Special care will be required for disposal of waste from hospitals, fruits and vegetable markets and industrial waste. Preparation of solid waste management plan for the city is recommended whereas suitable space has been allocated for sanitary landfill sites at three locations. To workout the requirements of dustbin and 'dhalaos', the norm of 0.6 kg per capita per day is recommended.

e) Drainage

Management of storm water is a critical problem in Greater Bhiwadi Complex. Problem of water logging in city is perpetual. The natural drainage flows across interstate border into Haryana. Due to lack of clear segregation of storm water, domestic waste water and polluted industrial effluent, no wastewater is being permitted to enter across the

border. Consequently hazardous industrial effluents without proper treatment are stagnant at number of places within and outside industrial areas including agricultural fields polluting underground water. The Master Plan envisages an integrated approach that packages mutually supportive infrastructure components i.e. water-sewerage-drainage for recycling, harvesting and optimal use of water.

9.9 DEVELOPMENT OF TRANSPORT RELATED USE AREAS

Transportation is an important sector for achieving development objectives of an area. The role of transport in enabling and directing urban development has been long appreciated. In the planning for a transport system, a number of objectives form the base. In case of Greater Bhiwadi Complex the following objectives have been identified:

- i) To enable the mobility of people and goods, and faster economic development and enhance social interactions.
- ii) To improve the accessibility of Greater Bhiwadi particularly to and from the sub-region and thereby promote the nodal functions of this complex.
- iii) To encourage inter-sectoral integration and ensure intra-sectoral coordination.
- iv) To conserve resources (land, material, money, energy etc.)
- v) To maximise safety.
- vi) To promote the environmental quality of the area and enhance the quality of life.

The objectives are achieved through selection and combination of a number of strategies. The important strategies adopted are:

- A multi-modal transport system providing opportunities and environment for each potential mode to operate and provide the services at its optimal efficiency, truly integrated with other modes to provide an overall optimum system.
- A hierarchical road network system.
- Identification and selection of appropriate transport technological system.
- Promoting and giving priority to public transport system.
- Segregating both by natural processes and by design of different levels, types and modes of movement.

9.9.1 Proposed Regional Linkages

Regional road network have been proposed keeping in view the potentially advantageous location of Greater Bhiwadi in relation to major transport routes linking Delhi, Alwar, Jaipur and Rewari.

- a) Regional Rapid Transit System (RRTS) – The proposed RRTS alignment along with station supported by Transit Oriented Development (TOD) has been integrated in the Greater Bhiwadi Master Plan. The National Capital Region Planning Board (NCRPB), in order to enhance the connectivity within the National Capital Region, has proposed to connect Urban, industrial (SEZ/industrial parks), regional and sub-regional centres through a Regional Rapid Transit System (RRTS). One of the proposed station of RRTS is in Greater Bhiwadi.
- b) Rewari-Bhiwadi-Palwal Railway Line with station has also been integrated as per the Bhiwadi Master Plan 2011. This rail link is expected to strengthen the regional connectivity by linking Greater Bhiwadi with DFC station at Rewari.
- c) Proposed Regional Road Linkages - The proposed road linkages will connect the city with the regional movement system. There are two major roads that have been proposed in Greater Bhiwadi, one is the Outer Peripheral Road connecting NH-8 near Kausala Chowk to NH-71 B near Taoru through southern periphery of Greater Bhiwadi Complex and second, proposed Expressway by RIICO from Kausala to Khushkhera Industrial Area connecting to NH-8 through Tapookara Nuh Road.
- d) A bypass, though in Haryana, connecting NH-8 and NH-71B in the north has also been proposed. Efforts should be made at State Government level for such a road alignment.
- e) A 90 m wide road linking Shahjahanpur-Neemrana-Behror (SNB) Complex with Greater Bhiwadi Complex via Ajarka, which is in planning stage. Possible alignment of this road has been considered at regional level and accordingly major roads towards this direction have been strengthened.

Arterial roads have also been proposed in areas earmarked for industrial expansion to facilitate city and regional level connectivity. Lower level roads in industrial areas will be as per RIICO's policy but it is to be ensured that the hierarchy of road network is maintained. While efforts should be made to connect Greater Bhiwadi Complex with Rewari through a rail link running parallel to DFC on north to get the benefits of DFC alignment passing through middle of the city. Till the time this rail link in place a 60 m wide road has been proposed parallel to DFC to connect Greater Bhiwadi with Rewari.

These roads according to their hierarchical status have suitably been designated. The details of road hierarchy have been presented in the table 9.6.

Table 9.6: Proposed hierarchy of roads

S. No.	Hierarchy	ROW (m)	Buffer (m)	Remarks
1	Outer Peripheral Road	90	-	
2	NH-71B	60	-	Efforts will be made to widen the road in future by taking front setback on either side.
3	SH-25	60	30 each side	- There will be no buffer on Alwar bypass (NH-71B-SH-25) upto Khijooriwas - Efforts will be made to widen the above section of the road in future.
4	Arterial	60	-	
5	Sub-Arterial	45	-	These roads define sectors. Further lower roads shall be designed in such a way that the hierarchy is maintained up to 12 m roads in the sector layout.

The range of transportation facilities proposed to support city and regional level transport network includes – Bus Terminal, Integrated Freight Complex, Transport Nagar, Bus Depot, Multi-modal Transit Stations, RRTS Station with TOD and a helipad at Bhiwadi.

9.9.2 Parking Proposals

It is recommended that every five years the norms for parking be reviewed and upgraded in the town. For different uses the parking norms are proposed to be as follows:

- Commercial Areas - In the commercial areas it was seen that the nature of the demand is more of short-term nature. So it is recommended that the provisions in the commercial centres be made with respect to the following norms:

In the City Centre and the Sub-City Centres the parking provisions be made at 3.0 to 3.2 equivalent car spaces (ECS) per 100 sq. m of the commercial floor area.

In the lower hierarchy of the commercial centres parking provisions be made at 2.0 to 2.5 ECS per 100 sq. m of the floor area. In the convenient shopping centre the parking provisions should be made as per 1.0 to 1.2 ECS per 100 sq. m of floor area.

- b) Residential Areas - It has been found after projecting the vehicle ownership status that in sectors plot areas less than 250 sq. m and 75 per cent of the income group lying in MIG and HIG categories, the roads can not accommodate the parking demand. So in such sectors an off-street parking provision of 0.4 ha per 10,000 of the population should be made. These parking centres should be provided by the side of bus routes so as to promote the uses of the bus transport. The parking on roads within the residential areas should be allowed as per Table.3.4.

Table 9.7 : Parking Allowances on Roads within the Residential Areas

Right of Way	Parking Allowance	Type of Parking
Less than 9.0 m	No parking Allowed	-
9.0 m wide	One side parking	Parallel
12.0 m wide	One side parking	Parallel
18.0 m wide	Both side parking	Parallel
24.0 m wide	Both side parking	Parallel
30.0 m wide	Both side parking	Perpendicular

- c) Industrial Areas - In the industrial areas it is seen that the parking on the roads is being done by the service industries. For spill over parking on the road strict enforcement along with punitive measures need to be taken.

Chapter 10

DEVELOPMENT POLICY AND PLAN IMPLEMENTATION

10. DEVELOPMENT POLICY AND PLAN IMPLEMENTATION

10.1 DEVELOPMENT POLICY

10.1.1 General

Bhiwadi developed as an industrial town. Its character as an industrial township got only strengthened during its continued development and will further continue to grow in future. To sustain its present character and future integrated development, besides supporting infrastructure for industrial development, provisions have been made for adequate infrastructure facilities for the design population working and residing in Greater Bhiwadi Complex making Greater Bhiwadi as Regional Centre defined in the NCR Regional Plan 2021.

Greater Bhiwadi Master Plan has been prepared on the basis of design population and consequent land requirement. Proposed land use plan is based on land suitability and efforts have been made to achieve the balance between developable land available and land requirement for different uses. Adequate efforts have also been made to assimilate all previous commitments by government in the land use plan 2031. In case any duly approved project/schemes have been left that should be considered assimilated in the proposed plan.

10.1.2 Mixed Use

Mixed use essentially means provision of non-residential activity in residential areas. On a single premise or in an area, mixed residential and non-residential activity has its positive and negative environmental and socio-economic impacts. It suits the present socio-economic needs of a large section of the society and reduces the transportation needs and traffic movement considerably. However, unless properly regulated and in certain conditions it could have quite an adverse effect in terms of congestion, pollution and general inconvenience to the people of the area.

Residential zoning along arterial has tendency to be most vulnerable for unauthorized imposition of commercial use despite all enforcement measures by local authorities. To optimize the use of more valuable land strips abutting such arterial, as also to impart organic character to urban development process, the concept of 'Mixed Use Zoning' has

been advocated along Alwar Road and along all roads above 45 m width for a depth of 50m.

In view of the above the following approach is suggested:

- Residential, institutional and commercial activities shall be permitted in mixed landuse area both vertically and horizontally as per the requirements and proposals of landowners and Urban Local Body.
- Non-residential activity on residential premises should be permitted selectively and carefully taking into consideration community needs, environmental impact and provision for safe and easy traffic circulation and adequate parking.
- In case of new developments, planned mixed residential and non-residential activity should be introduced right at the time of the preparation of the sector layout plans along with the planning of Commercial Centres for which appropriate provision of parking, circulation and services be kept in view. Norms for parking and commercial use on different floors be specified.
- Regularisation of commercial and institutional use in mixed landuse area shall be subject of payment of appropriate charges as decided by the local body and provision of adequate parking and other parameters as per norms.

10.1.3 Residential

- Residential areas have been planned in such a way that it fosters healthy community environment on one hand and minimizes trip generation and travel time to work place, educational institutions, shopping areas and recreational areas is reduced.
- Residential density along the mixed use corridor up to a depth of 500m shall be high beyond that it will be medium.
- Residential densities of various sectors have been assigned considering landuse in surroundings. Residential sectors surrounding large commercial areas have been assigned high density while a sector near conservation areas shall have low density. In a high income neighbourhood like corporate park, few sectors will have low density.
- Hierarchical landuse allocation has been done for proposed facilities at three levels viz. city, community and sector level as per the established norms. City level facilities have been located on landuse plan 2031 while matrices for such facilities at community and sector level have been given which shall be located during zonal plan/sector layout plan preparation.

- As per Rajasthan Affordable Housing Policy, certain pockets have been proposed to be reserved for EWS, LIG and MIG category of housing. These pockets have been located near major work centres.
- A Township Zone has been proposed in Land Use Plan 2031 as per the provisions of Rajasthan Township Policy. This Township Zone will be reserved for private developers who would be encouraged to develop integrated townships and other schemes in this zone. However, private developers would be allowed to develop integrated townships and other schemes in other sectors also as per prevailing rules and regulations. Sector Plan of this Township Zone should be prepared by the Local Body on top priority so as to achieve planned development. Construction of sector roads in this zone should also be given top priority.
- Residential sectors with different densities have been proposed in the proposed Land Use Plan 2031, however density limits shall be governed by the policies and prevailing building regulations of the State Government/Urban Local Bodies.

10.1.4 Village Abadi Area

- Adequate areas have been proposed for extension of existing village abadi/settlements. These areas shall be utilized for future expansion of abadi areas and also to provide village level community facilities such as schools, dispensaries, community halls and others.
- Villages within the proposed urbanisable limits lacking basic services should be provided with adequate drinking water supply, streets, drains, sanitation facility and street light at par with surrounding urban areas.
- In the new development areas planning of sectors have been done in such a manner that village abadi areas are contained within surrounding planned development areas so that they don't expand on to the sub-arterials (sector defining roads).
- Policies will be framed in the future for redevelopment of densely populated and congested abadi areas such as Tapookara redevelopment area, on the principle of amalgamation of plots, higher FAR and self financing projects with community or private sector participation. While formulating these schemes care shall be taken that no household is permanently displaced from their existing locations.
- Detailed village abadi plans would also be prepared by the Local Body as to ensure proper and planned development. Local Body should give top priority for such plans.

- Village abadi/settlements within the Peripheral Control Belt and Ecological Conservation Zone shall have an extension area of 500m from its existing abadi limits for future growth.

10.1.5 Commercial

A five tier system of commercial facilities has been proposed (Table 10.1). Upper three tiers of commercial areas are meant to cater to commercial needs at city level. Rest two lower level hierarchy commercial areas will be part of sector layout.

Table 10-1: Hierarchy of Commercial Areas

Tier	I	II	III	IV	V
Population		5 lakh	1 lakh	10,000	5,000
Hierarchy	City Centre	Sub City Centre	Community Shopping Centre	Local Shopping Centre	Convenient Shopping Centre

- Besides the above hierarchical system some commercial space would be provided as per requirements at work centres and transportation nodes.
- Proposed 'Specialized Market' shall have specialized commodity based markets like automobile market, timber market, building material market etc.
- Utilities and conveniences are to be provided as per requirement at all hierarchy of commercial areas.
- Service & repair and informal activities shall be provided while preparing zonal plans/sector plans and scheme plans.
- Formulation of guidelines for schemes for vendors shall be as per the State Government Policy. Local Body should follow such guidelines strictly.

10.1.6 Industrial

- The industrial areas will be developed as per the policy adopted by RIICO and State Industrial Policy.
- Industrial estates and complexes should be developed comprehensively with centralised pool of support functions and services according to contemporary norms and standards for such facilities.
- Industrial units along Tijara Road are quite old. At the time of their development, these industrial units were located away from the dense built-up areas. But now these are in the heart of proposed city. Some of them are hazardous waste generating units. As per the inventory of hazardous waste generating units in Rajasthan and Action Taken Report up to 30.06.2009,

submitted to the Supreme Court Monitoring Committee (Ministry of Environment and Forest) by Rajasthan State Pollution Control Board, few of them have developed their own pollution control mechanisms individually. Therefore, it is proposed that they should be allowed to operate for the time being from their existing locations. But in the larger community interest it is desirable that such units should be relocated in due course in the proposed RIICO Industrial Areas.

- SRF Chemicals which was established away from the inhabited areas and Bhiwadi town is now part of the proposed central area of the city. Since this unit stores hazardous and volatile substances, ideally it should be relocated outside the city limits. However since the unit is very large established with huge investment, it is proposed that the unit may be allowed to operate at present location till such time surrounding area is inhabited. In view of the policy to shift all isolated industrial units to RIICO Industrial Areas or other suitable areas, isolated industrial units along Alwar road shall also be shifted to organized RIICO industrial areas in due course, hence have not been shown in the proposed Land Use Plan 2031. All industries in future shall be developed in the planned industrial areas only.
- Stone crushers and brick kilns presently operating at various places in Greater Bhiwadi Complex should be relocated outside the proposed city.
- Health facilities should be provided into industrial layout along with other facilities proposed by RIICO, as it is one of the important social facility required in emergency.

10.1.7 Water

- Only source of water for all kinds of usages in Greater Bhiwadi Complex is groundwater which has reportedly been overexploited. Therefore, water will be the most crucial factor for sustainable development of the planned city.
- Entire demand of water in Greater Bhiwadi Complex is presently met with groundwater which has alarmingly lowered the groundwater table below critical level. A conservative estimate puts the water demand as 580 MLD by 2031 to support life and economy of Greater Bhiwadi Complex. Therefore, alternate sources of water, other than groundwater, will have to be found soon to avoid the impending crisis. Recognizing the fact that water supply, power and drainage are inter-state issues, a feasibility study to identify potential sources of raw water on urgent basis is strongly recommended.
- Till a stable source of raw water is identified and supply is commenced after adequate treatment, existing groundwater should be developed through adequate, multipronged measures using modern available techniques.

- The Master Plan envisages an integrated approach that packages mutually supportive infrastructure components i.e. water-sewerage-drainage for recycling, harvesting and optimal use of water.
- It is imperative to promote water conservation through an integrated and a community driven model, comprising of complimentary short term and long term measures as given below:
 - i) Recycling of treated wastewater with separate lines for potable water and recycled water for non drinking purposes in big hotels, industrial units, air conditioning of large buildings, and irrigation of parks/green areas. For this, dual pipe supply system shall be introduced.
 - ii) All non-residential buildings having a discharge of over 10,000 litres a day should incorporate a wastewater recycling mechanism.
 - iii) Zero wastewater generating industries should be encouraged and heavy water consuming industries should be discouraged in industrial areas of Greater Bhiwadi Complex.
 - iv) Ground water recharging through rain water harvesting, conserving water bodies and controlling groundwater extraction shall be the key strategies.
 - v) Groundwater extraction is to be controlled through registering boreholes and recharging according to test yields. Ground water management is to be enforced by concerned agency.
 - vi) Efforts shall be made for focused planning and action to prepare and implement rain water as roof water harvesting schemes both with the aim of optimizing water use and ground water recharge. For this suitable mandatory provisions are to be made for planning and construction of various schemes. Roof top rain water harvesting should be made mandatory in building bylaws.
 - vii) The wasteful practice of 'drill, pump, and spill' shall gradually be replaced by efficient methods of water conservation, use, and recycling as standard and mandatory procedures. There is a need to incorporate the mandatory stipulation of water saving/waterless flushing system in the Building Bye-laws.
 - viii) The concepts of 'zero run-off drainage', with retention ponds, sediments traps and balancing lakes should be adopted, with a segregated wastewater disposal system. Simple methods of site planning, which incorporate porous/semi-permeable paving, drop inlet/down pipe, sediment trap, retention ponds, etc. will contribute in maintaining ground water table.
 - ix) About half of the water that is treated and distributed at public expense is non-revenue water. This is due to unrecorded usage or illegal taps and

water connections. Reducing water losses is cheaper than augmenting water capacity for such losses.

- x) Tariff for the recycled treated waste water should be fixed in such a way to encourage its non-portable uses such as gardening, horticulture, and other uses.

10.1.8 Sewerage

- There has been no planned sewerage system in Bhiwadi town. In view of the existing sewerage generated planned sewerage network and STP (under construction) designed for a limited urban population is going to be grossly inadequate even for the present urbanized area.
- Sewerage network should be extended to cover entire urbanized area on urgent basis.
- The Master Plan envisages an integrated approach that packages mutually supportive infrastructure components i.e. water-sewerage-drainage for recycling, harvesting and optimal use of water. Hence while planning for sector layout above three networks should be integrated for optimization of cost and valuable water resources.
- The existing Common Effluent Treatment Plant (CETP) even after planned augmentation will be inadequate in terms of capacity to treat effluents from Bhiwadi Industrial Area itself. Since, planning of the city must incorporate land at appropriate location for Sewerage Treatment Plants (STPs) and CETPs, sites at strategic locations for two STPs and two CETPs have been reserved for future requirements.
- Possibility of recovering energy/gas as fuel from sewerage shall be explored.

10.1.9 Drainage

- Drainage should be integral part of Road Development Plans/Flyovers/Grade Separators.
- Present Bhiwadi town has a complicated drainage problem. Domestic wastewater, storm water and industrial effluent are mixed and flow into open drains. The natural drainage flows across interstate border into Haryana. Due to lack of clear segregation of storm water, domestic waste water and polluted industrial effluent, no wastewater is being permitted to enter across the border. Consequently hazardous industrial effluents without proper treatment are stagnant at number of places within and outside industrial areas including agricultural fields polluting underground water. Therefore, to resolve the existing drainage related problems of Bhiwadi town following are suggested:

- i) Storm water and domestic waste water should be segregated from heavily polluted industrial effluents.
- ii) Augmentation of existing CETP and construction of STP should be completed at the earliest.
- iii) A storm water drainage plan should be prepared for entire Greater Bhiwadi Complex including rural settlements based on detailed topographic study.
- iv) The Master Plan envisages an integrated approach that packages mutually supportive infrastructure components i.e. water-sewerage-drainage for recycling, harvesting and optimal use of water.

10.1.10 Solid Waste Management

Presently there exists no organized solid waste management system on scientific basis in Bhiwadi town. Collection is done in limited areas of UIT and RHB without segregation through private agency. In areas not covered under waste collection, waste is dumped on vacant plots and left unattended. Private agency entrusted with the task of waste management is dumping waste indiscriminately in open areas in absence of any designated dumping ground/ landfill site.

- As Bhiwadi is growing very fast, it is proposed to reorganize the entire municipal solid waste management system in the town.
- For effective waste management, its segregation at source is essential. The waste shall be segregated and collected in separate chambers at dalaos. For this, involvement of rag pickers with RWAs, CBOs and NGOs is to be encouraged.
- Segregation of bio-degradable waste from non-bio-degradable waste such as plastics, glass, metal paper etc. at the source should be made compulsory.
- For biodegradable and recyclable waste which is segregated at the source, decentralised treatment at neighbourhood level may be adopted, while for silt, centralised treatment may be followed.
- Disposal of biomedical waste is to be as per bio-medical waste rules and hazardous waste, which requires special handling, according to hazardous waste handling rules.
- Incinerators should be mandatory to be installed in hospitals to dispose of bio-medical wastes.
- Proper dumping, recycling and reuse of construction debris and fly ash have to be ensured.
- Considering the nature of solid waste and the economic aspects of its disposal, major part of solid waste especially silt has to be disposed of in

sanitary landfills. But wherever recycling is possible, it should be preferred than disposing of the waste in sanitary landfill sites.

- More viable alternatives to landfills are vermiculture, fossilisation, composting etc.
- Implementation and monitoring of Bio-Medical Wastes (Handling & Management) Rules, 1998, for hospitals, nursing homes, and clinics should be taken up.
- Three sanitary landfill sites have been reserved in the proposed landuse plan 2031 which shall be developed at different stages of urbanization of Greater Bhiwadi as modern hi-tech sanitary landfill sites.
- Industrial waste should be handled separately in industrial areas as per the policy of RIICO.

10.1.11 Public Semi-Public

- Among various public semi-public facilities, education and health are of prime importance particularly in case of Greater Bhiwadi Complex as the existing Greater Bhiwadi is primarily rural and grossly lack such facilities at higher level. Hence adequate educational and health facilities in a hierarchical manner have been provisioned in the Master Plan. Area for such facilities at higher level have been allocated at Master Plan level itself while at lower levels such as community and sector levels shall be adequately provisioned and suitably located during zonal/sector plan preparation.
- Considering the size of the future city and requirement of modern educational and research institutions and modern health facilities, provisions have been made for an educational area intended to house a university and institutions of higher learning and research. Likewise, a super specialty hospital has been located in the centre of the city. It would be desirable to locate such higher level vital institutions at designated locations suggested in the Master Plan.
- The existing Greater Bhiwadi Complex is quite rich in socio-cultural facilities particularly in rural villages. Such facilities indicate cultural life of the local population hence they shall be respected and further developed. Adequate provisions have been made at strategic locations in the Master Plan for such facilities at higher level to boost such cultural ethos. Besides a large fairground, Mohan Baba Temple Complex has been given adequate space for accommodation of socio-cultural facilities like auditorium for arts performance, meditation and spiritual centre, music, dance and drama club, open air theatre, central public library and Art Township. Another area for

such facilities has been earmarked at a central location in the vicinity of educational city and city centre.

- It is recommended that social facilities like 'old age home' and 'orphanage' may also be accommodated within such socio-cultural facility areas and/or in residential sectors while planning for sector layouts.
- There are quite a few existing public semi-public offices in the Greater Bhiwadi Complex. Important ones include two regional offices of RIICO, offices of UIT, RHB, BSNL, and Assistant Commissioner of Police etc. It is envisaged that in addition to offices of government line departments, urban local bodies and law and order administration, sizeable number of corporate like offices will come up in Greater Bhiwadi Complex. Hence, adequate area at strategic locations has been indicated for development of such offices.

10.1.12 Power

As part of public and semi-public uses, provisions of public utilities are crucial for the development of planned city. Detailed policy guidelines for utilities like STP, CETP and Solid Waste Disposal Sites have been described in earlier sections. Land for Electric Sub-stations of various capacities shall require to be reserved. Continuing with the existing trend it is proposed that the land reservation for such infrastructure facilities be done within the proposed industrial areas by RIICO with a view to provide flexibility of planning for RIICO while developing industrial area layouts.

The land shall be reserved as safety zone (horizontal and vertical clearance) along the high tension electric lines as per the provisions of the prevailing India Electricity Rules and Manuals under Indian Electricity Act, and compliance of other related norms and standards are to be ensured while preparing the detailed sector layouts.

10.1.13 Roads and Transportation

The proposed hierarchical road network has been designed looking into the existing and proposed development, connectivity of Greater Bhiwadi Complex with NH-8 and NH-71B, future circulation requirements within the city and outside at regional level and extensive traffic and transportation studies conducted by the consultants. Special consideration for multimodal public transport system within the proposed city and its integration with intercity public transport system of surrounding major urban centres including Delhi, Gurgaon, Jaipur, Alwar, Rewari, Sohna etc. has been fundamental part of proposed structure plan. Alignment of proposed Dedicated Freight Corridor (DFC) has been integrated in the network plan. Lowest hierarchy of road considered in the Master

Plan is 45m ROW defining sectors. Rest of the lower hierarchy roads will be planned with the sector layout design as per requirement.

Table 10.2: Proposed hierarchy of roads

S. No.	Hierarchy	ROW (m)	Buffer (m)	Remarks
1	Outer Peripheral Road	90		
2	NH-71B	60	-	Efforts will be made to widen the road in future by taking front setback on either side.
3	SH-25	60	30 each side	- There will be no buffer on Alwar bypass (NH-71B-SH-25) upto Khijooriwas - Efforts will be made to widen the above section of the road in future.
4	Arterial	60	-	
5	Sub-Arterial	45	-	These roads define sectors. Further lower roads shall be designed in such a way that the hierarchy is maintained up to 12 m roads in the sector layout.

- An Outer Peripheral Road (90m) has been proposed connecting NH-8 at Kasaula Chowk with NH-71B at Taoru. This will act as a regional bypass to Greater Bhiwadi. Since the part of this road is passing through Haryana state, actual alignment of the road falling in Haryana shall be decided in consultation with the Govt. of Haryana. Development shall be strictly restricted along the Outer Peripheral Road except and otherwise permitted in the landuse plan 2031 and zoning regulations.
- 60m wide road connecting NH-8 with NH-71B in Haryana state has been retained as per the proposals of Mater Plan 2011. Actual alignment of this road falling in Haryana shall be decided in consultation with the Govt. of Haryana.
- In addition to a grade separator (flyover) on SH-25 at Tapookara, a 45m road as Tapookara bypass has been proposed by extending it from Honda Chowk towards south up to Outer Peripheral Road thereby connecting SH-25.
- Since DFC is running in east-west direction a number arterial roads including SH-25 and its parallel roads intersect at right angle with the DFC alignment. All these important intersections would need grade separators in the form of

Rail Over Bridge (ROB). Detail engineering design of all such intersections need to taken up in detail also for deciding appropriate types of grade separators.

- Major existing roads up to the level of village road have been assimilated in proposed road network through either widening or upgrading their status.
- In addition to major arterials proposed with new alignments, proposed DFC and RIICO's Kasaula (NH-8)-Khushkhera link and Neemrana-Bhiwadi alignment have been integrated in the network.
- Arterial roads have also been proposed in areas earmarked for industrial expansion to facilitate city and regional level connectivity. Lower level roads in industrial areas will be as per RIICO's policy but it is to be ensured that the hierarchy of road network is maintained.
- Efforts should be made to connect Greater Bhiwadi Complex with Rewari through a rail link running parallel to DFC on north to reap the benefits of DFC alignment passing through middle of the city. Till the time this rail link is in place a 60m wide road has been proposed parallel to DFC to connect Greater Bhiwadi Complex with Rewari.
- DFC alignment has been represented in the proposed Land Use Plan 2031 as provided by the Dedicated Freight Corridor Corporation of India Limited. DFC is entirely on a new alignment from Dadri to Rewari.
- Regional Rapid Transit System (RRTS) alignment along with station and area reserved for Transit Oriented Development (TOD) has been represented as given by the National Capital Regional Planning Board (NCRPB). The National Capital Region Planning Board (NCRPB), in order to enhance the connectivity within the National Capital Region, has proposed to connect Urban, industrial (SEZ/industrial parks), regional and sub-regional centres through a Regional Rapid Transit System (RRTS). One of the proposed station of RRTS is in Greater Bhiwadi.
- Rewari-Bhiwadi-Palwal Railway Line with station has been shown as per the Bhiwadi Master Plan 2011. This rail link is expected to strengthen the regional connectivity by linking Greater Bhiwadi with DFC station at Rewari.
- Major transportation infrastructure proposed to support goods movements to and from industrial areas includes a large Integrated Freight Complex (IFC) and a Transport Nagar.
- The IFC shall be developed as per the area allocation for each of the components specified in the Master Plan 2031.
- Proposed IFC and Truck Terminal will have adequate provisions for idle parking that should be optimally utilized and on-street parking in industrial areas shall be discouraged.

- It is envisaged that Mass Rapid Transit System (MRTS) will require to be introduced in near future for large scale passenger movements within the city. A multimodal integrated public transport system (PTS) is envisaged to meet the future travel demand.
- One ISBT and two Multi-modal Transit Stations (MMTS) have been proposed on major corridors to support future public transport system requirements. All arterial roads have been planned to accommodate bus and rail based MRTS along with facilities for pedestrian, cyclists and other non-motorised modes. The road cross-section shall be designed in such a way that the Bus based MRTS may easily be transformed into light rail transit system (LRTS) to increase the capacity of corridors.
- It is proposed that the space proposed as stadium in the Bhiwadi Master Plan 2011 shall be used for helipad as an incidental use.

10.1.14 Environment and Recreation

- Natural features such as hills, forests, water bodies and ravines make an area environmentally sensitive. Hence, as a matter of policy such areas have been considered while locating recreational facilities. Eco-friendly usages like Regional Park, Sports Complex and institutional areas have been proposed around natural areas. Therefore, it is recommended that the environmental concern should be the guiding factor while planning such facilities at local level.
- Such environmentally fragile areas have been designated as 'Natural Conservation Area' and Ecological Conservation Zone which shall be conserved and no development activities having adverse impact should be allowed on them.
- Conscious efforts have been made to locate city level recreational facilities in a spatially balanced manner so that every part of the city has access to such facilities at a reasonable distance.
- Amusement Park with Golf Course has been planned on the bank of river Sahibi with dual consideration. River front offers an ideal location for leisurely entertainment which in turn presses for the development of river bank and its bed.
- Sahibi river has been given a green buffer of 250 m on either side which would help revive the dry river through water retention and recharge the river bed. The buffer would also restrict encroachment in the river ecosystem.

- Sincere effort should be made by all concerned agencies to help revive Sahibi river through afforestation and removing encroachments in the catchment area in upper course of the river.
- All water bodies including river, lakes, ponds (johar), rivulets and streams are means of ground water recharge. Conservation of all such water bodies shall be ensured by the Urban Local Body or by the concerned department while preparing sector level plans. They should be maintained and kept free from building activities particularly those identified in revenue records even if no water is found at present.
- A sizeable Mela Ground has been proposed to accommodate gatherings on Mohan Baba Temple. The mela ground may be used for other cultural activities and during the pilgrimage the same may be exclusively used for the pilgrims.

10.1.15 Special Uses

- Corporate Park has been proposed as an alternative economic zone in view of the immense potential for non-manufacturing economic development. Therefore, only non-manufacturing activities like Corporate Offices, IT Parks, Bio-Tech Parks, B.P.Os., ITES, R&D Centres, Trade and Exhibition Ground, Five Star Hotels etc. shall be developed in this zone.
- Proposed Corporate Park with matching facilities like exhibition ground, Multimodal Transit Station (MMTS), golf course and amusement park shall be developed as an independent hi-end city.

10.1.16 Peripheral Control Belt

- Peripheral Control Belt (PCB) is the area between Urbanisable Area limit and Notified Area limit. Objective of the peripheral control belt is to restrict haphazard development on periphery of the city along road. This belt will have very limited activities permitted inside like agriculture and allied activities, mining/quarrying and stone crushing, motel, resort, amusement parks, brick kilns etc.
- Sare Khurd lake on eastern limit of Notified Area Boundary has been kept as part of Ecological Conservation Zone with an aim to conserve the lake. However, lake front shall be developed exclusively for tourism purposes in a planned manner to ensure only eco-friendly limited development takes place and that no harm is done to the lake from tourism activities.
- Cremation ground and burial ground will be allowed to be developed in peripheral control belt.

10.1.17 Ecological Conservation Zone

- An Ecological Conservation Zone (ECZ) has been proposed on the south-east of outer peripheral road. This area is infested with large scale ravines hence is an Eco-Sensitive Area which needs to be stabilized to protect the soil erosion on one hand and to provide much needed green area for improving environmental health of the planned city of Greater Bhiwadi.
- The ECZ will have extremely limited environment-friendly low intensity use with minimum habitation as per the provisions of zoning regulations.

10.2 PLAN IMPLEMENTATION

Planning is a continuous process. This process starts with preparation of plan and is not the end of the planning process itself. It is rather the beginning of an effort to make the city a better place to live and work. Once the Plan is approved by the Government, it legally comes into force and the implementation of various provisions of the Master Plan assumes greater Importance.

The best way to make the Plan successful is to make sincere efforts to translate the Plan into practice. Most of the plans have failed, not because they were unrealistic, but because no conscious efforts were made to implement them with instant faith in ultimate realization. Plan implementation involves activities that translate the Plan into action, that execute rather than conceive. It involves all acts and actions by Public Authorities and private agencies, which are required to yield, in definite form, the results which the sanctioned Plan contemplates.

It requires both regulatory and developmental activities. Successful implementation depends upon legal provisions, administrative organization, technical guidance and financial resources backed by active participation and support of the citizens, who must make conscious efforts, individually as well as collectively, in making Greater Bhiwadi Complex a better place to live and work.

10.2.1 Existing Framework

Urban Improvement Trust (UIT), Bhiwadi, Rajasthan Industrial Development and Investment Corporation (RIICO) and Rajasthan Housing Board (RHB) have their presence felt in Greater Bhiwadi Complex. Since Greater Bhiwadi Complex is part of Rajasthan Sub-Region of NCR, the NCR Cell of Town Planning Department also discharges its assigned functions. Recently, the Bhiwadi Municipal Board (BMB) has also been constituted. Besides above agencies, Public Works Department (PWD), Jaipur Vidyut

Vitrans Nigam Ltd. (JVNL), PHED etc. are some of the important development agencies taking part in the development efforts in the town.

RIICO, an autonomous corporation, acquires, develops and disposes land on its own by virtue of its elaborate autonomy. UIT, Bhiwadi does the same at a very limited scale with limited technical capabilities. RHB also is doing its bit by developing its housing schemes. BMB is very new to assume its function among such multiple actors of development which has only limited jurisdiction defined in Greater Bhiwadi Complex. Likewise, other line departments are also involved serving existing rural areas in Greater Bhiwadi Complex like PHED and PWD.

There is a classical case of multiplicity of development agencies creating classical problems in regulating development, co-ordination and proper enforcement. At present there is no unified single agency to look after the development, maintenance and co-ordination at the local level. Co-ordination both during planning as well implementation stage is vital for the success of any Development Plan. If there is a single authority acting as a coordinating body to look after all development activities and provide proper guidelines for the various departments, it shall not only facilitate organized development of the town according to the overall plan but also help the various development agencies in their respective works. This coordinating authority should, however, remain in constant touch with all development agencies.

There are two crucial aspects of planning process left after plan preparation and approval by the State Government – (a) plan implementation and monitoring and (b) development control and regulation. Both the functions are of prime importance and complementary to each other. An organization entrusted with overall responsibility to implement and regulate the development envisaged in Master Plan for Greater Bhiwadi -2031 shall have sweeping powers vested in it and enormous efficiency and efficacy coupled with state of the art technical capabilities.

At present none of the organizations are in a position to fully discharge any of the major two- implementing or regulatory functions, at entire Greater Bhiwadi level.

10.2.2 Future Options

It is, therefore, imperative that one Unified Authority be entrusted to regulate, enforce and co-ordinate all development works in Greater Bhiwadi. In National Capital Regional Plan-2021, emphasis has been given to create a Regional Development Authority with wider jurisdiction to undertake Planning and Implementation work in the entire

Rajasthan Sub-Region. The objectives of the Authority shall be to promote and secure the development of Sub-Region. The Authority shall be the principal body.

The newly constituted Bhiwadi Municipal Board (BMB) may take up the responsibility of carrying out civil functions with adequate powers. In accordance with the 74th Constitutional Amendment Act, 1992, status of the Urban Local Body i.e. BMB may be upgraded to Municipal Corporation with adequate powers to take up the responsibilities as specified in the XIIth Schedule of the Constitution of India. Accordingly the jurisdiction of the local body may be extended to cover entire Greater Bhiwadi Complex at a suitable point of time.

To achieve the goal of Greater Bhiwadi Master Plan-2031, a fast impending growth will have to be efficiently managed and regulated. It is strongly recommended that various suitable modes of 'Public-Private-Partnership' (PPP) be adopted to finance and develop selected big projects. Specific areas of development where such options of PPP should be explored include- large projects like construction of proposed outer peripheral road and arterial roads as toll roads, integrated freight complex, non-manufacturing economic projects in proposed corporate park, large health and educational projects etc. and Operation and Maintenance of water supply, sewerage and solid waste management schemes.

10.2.3 Public Cooperation and Participation

Development of a city in the ultimate analysis depends on the hopes and aspirations of the people. For the speedy realization of the Master Plan objectives, it is important to have the fullest cooperation of its citizens. No Plan can ever be successful without the active participation of the people for whose benefit and well being it is evolved. Therefore, the Greater Bhiwadi Master Plan accepts the need for institutional capacity building, "User Pays" approach and public private partnership as tools for institutional strengthening. To improve the efficiency and boost the performance, increasing community involvement and decentralised management is required.

10.2.4 Conclusion

A Master Plan is only a picture of likely opportunities for developing a city and can be realized provided energetic efforts are made to implement it. A rational or practical approach has been evolved while preparing the Master Plan of Greater Bhiwadi Complex. Minimum dislocation of the existing use had been aimed at. The Plan has been prepared with the express desire for the betterment of town facilities, increasing public amenities and making Greater Bhiwadi a healthier place to live and work.

Chapter 11

DEVELOPMENT PROMOTION AND CONTROL REGULATIONS

11. DEVELOPMENT PROMOTION AND CONTROL REGULATIONS

11.1 INTRODUCTION

The objective of the Development Promotion/Control Regulations Master Plan -2031 is to promote and regulate development controls for building(s) within use premises in accordance with the development policies and landuse proposals contained in the Master Plan-2031, Greater Bhiwadi Complex. These regulations will be effective throughout the Greater Bhiwadi Master Plan Area.

The Development Promotion and Control Regulation (Master Plan-2031) are being envisaged to regulate the development building proposals in Greater Bhiwadi Complex. The regulations will act as mechanism to grant permissions for creation of infrastructure facilities for the city and also to implement the broad landuse policies of Master Plan-2031. These regulations will act as promotional as well as control the development to achieve the planned growth.

The approval of landuse shall be granted by competent authority as per provisions of these regulations. It is a systematic Development Promotion Control Regulation to ascertain the use activity at two levels

- Conversion of use zones in to use premises (layout)
- Permission of use activities on use premises. The Development Promotion/Control Regulations differentiates between the use zone and use premises.

11.2 THE TITLE AND EXTENT

11.2.1 These may be called the Development Promotion/Control Regulations Greater Bhiwadi Master Plan-2031.

11.2.2 It covers the entire Greater Bhiwadi defined as Bhiwadi-Tapookara-Khushkhera Complex notified under sub-section (1) of section (3) of Rajasthan Urban Improvement Act 1959 (Rajasthan Act No. 35 of 1959)

11.3 DEFINITIONS

In this code unless the context otherwise requires:

- 1) Land Use Plan means the Master Plan-2031 indicating use zones.
- 2) Zonal Development Plan means a plan for one of the zones of Greater Bhiwadi Complex containing detailed information regarding provision of social infrastructure; parks open spaces and circulation system etc.
- 3) Local area plans means the plan of a sub zone to be prepared and approved by the concerned local body.
- 4) Layout plan means a plan indicating configuration and size of all use premises. Each use zone may have one or more than one layout plan depending upon the extensiveness of the area under the specific use zones and vice versa. A layout plan shall have at least two use premises apart from recreational, utilities and transportation and a minimum area of 1 hectare below which it is termed as site plan or sub division plan.
- 5) Permitted use premises means allowed use premises without any condition.
- 6) Permissible use premises means allowed use premises with certain condition by the competent authority.
- 7) Mixed land use means provision for non residential activity in residential premises.
- 8) Special uses means uses which have special purposes in Greater Bhiwadi Complex as defined in the Landuse Plan of the Greater Bhiwadi Complex.

11.4 SANCTION OF PLANS

11.4.1 Layout Plans, Site Plans and Building Plans shall be approved by competent authority/local bodies.

11.5 DESIGNATED USE ZONES

The notified area of Greater Bhiwadi is divided into nine use zones, which are as follows:

- (i) Residential Use Zone
- (ii) Commercial Use Zone
- (iii) Industrial Use Zone
- (iv) Public-Semi-Public
- (v) Recreational
- (vi) Transportation
- (vii) Special Use Zone
 - a) Corporate Park
 - b) Protected Forest
 - c) Natural Conservation Area
 - d) Ecological Conservation Zone
- (viii) Transit Oriented Development
- (ix) Peripheral Control Belt

11.6 LOCATION AND BOUNDARIES OF USE ZONES

- 11.6.1 Any one of the use zone may be located at one or more than one places as shown in the Land Use Plan.
- 11.6.2 The boundaries of various pockets of use zones are defined in land use plan by features like roads etc.

11.7 LOCATION AND BOUNDARIES OF USE PREMISES

- 11.7.1 The location and boundaries of each use premises shall conform to as specified in the layout plan with reference to important benchmark like road or other physical features.
- 11.7.2 Any change in the location, boundaries and predominant use of use premises due to any reason and duly approved shall be incorporated in layout plan.

11.8 SUB DIVISION OF USE ZONES IN USE PREMISES

- 11.8.1 The objective of this development code is to guide the preparation of layout plans for various land use zones and service plans corresponding to these layout plans for provision of physical infrastructure like water supply, sewerage, drainage etc. shall conform to the prescribed norms.

11.9 PERMISSION OF USE PREMISES IN USE ZONE

- 11.9.1 May be as part of approval of layout plan or as a case of special permission by the competent authority.

Note:

1. The layout plan already approved by the Authority or any other local authority concerned in accordance with the law shall be deemed to be approved under these Development Promotion/Control Regulations Master Plan-2031
2. An area in respect of which there is no approved layout plan shall be governed by the provisions of the Master Plan and Zonal Plan.
3. The permission under these regulations shall be granted for the land use only, the building permission shall have to be obtained by the plot owner/developer etc. as per provisions and building parameters applicable.
4. The competent authority shall formulate detailed rules procedures parameters, charges payable etc. for granting permission under these regulations.
5. In case of doubt, the permissibility of use premises shall be decided by the competent authority.

11.10 PERMITTED AND PERMISSIBLE USE PREMISES IN VARIOUS USE ZONES

11.10.1. (A) Permitted Use Premises in Residential Use Zones

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Auditoriums	0.15 (for a sitting capacity upto 500 seats)	30 mt. and above	A premises having an enclosed space to seat audience and stage for various performances like Concerts, Play, Recitals, Functions etc.	Auditorium Watch & Ward Residence (upto 30 sq.m)
2	A. Banks B. ATMS	0.75 to 0.1	12 mt & above	A premise for office to perform banking function and operations	Bank, Watch, & Ward Residence (upto 30 sq.m), Commercial, Office, and Canteen
3	Barat Ghar	0.2	18 mt. & Above	A premises used for marriage and other social functions	Barat Ghar, Soft Drink, & Snack Bar (upto 15 sq.m)
4	Boarding and Lodging house	0.05	18 mt. & Above	" Boarding house" is a premises in which rooms are let out on a long term basis as compared to hotels; 'lodging house' is a premises used for lodging of less than 50 persons	Boarding house and lodging house watch and ward residence (upto 30 sq.m) personnel service shops of Barber, Launderer, Soft drink & Snack stall (upto 15 sq.m)
5	Bus Stop	2.5 mt X 0.5 mt	On 18 mt. & above road	Road side shade for passenger awaiting city buses	Bus stop for every 500 to 750 mt. interval 30 to 40 mt. away from road crossing.
6	Community Centre	0.29	18 mt. & above road	A premise having an enclosed space for various social and cultural activities of a residential area.	Community hall, Watch and ward residence (upto 30 sq.m), Soft drink and Snack stall.
7	Convenience Shopping Centre	0.10	12 mt. & above	A group of shops not exceeding 50 in number in residential area serving a population of 5000 persons.	Retail, Repair and Personnel service shop, Restaurant clinic.
8	Cycle rickshaw/cycle cart stand	1.5 mt. x 1.5 mt per unit	As per parking zone of the scheme		
9	Dharamshala	0.05	12 mt & above	A premises providing temporary accommodation for short duration on no-profit basis.	Dharamshala, Personnel service shop of barber & Launderer, Soft drink & Snack bar (upto 15 sq.m.).
10	Exhibition and Art Gallery	1.0 to 2.0	18 mt. & above	A premises with facilities for exhibition and display of paintings, Sculptures, Murals, Ceramics, handicrafts or products of a specific	Library, watch and ward residence (upto 30 sq.m), Canteen, Exhibition and Art Gallery, Auditorium.
11	Group Housing	0.50	18 mt. &	A premises comprising of residential flats with basic	Residential flat, Retail shop of confectionery,

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
			above	amenities like Parking, Park, Convenience shops, Public utility etc.	Grocery & General merchandise, Books & Stationary, Chemist, Barber, Laundry, Tailor, Vegetable shop (on Ground floor with an area upto 20 sq.m. each). Crèche and day care centre, on ground floor with an area up to 50 sq.m.
12	Guest House	0.05	18 mt. & above	A guest house is premises for housing the staff of Government, Semi-Government, Public undertaking and private limited company for short duration.	Guest house watch and ward residence (upto 30 sq.m.) personnel service shops of Barber, Launderer, Soft drink & Snack stall (upto 15 sq.m.).
13	Gymnasium	0.05	12 mt & above		
14	Health Centre upto 30 beds	0.20 to 0.30	12 mt & above	A premise having facilities for treatment of indoor and outdoor patients having up to 30 beds. The health centre may be managed by a public or a charitable institution on non-commercial basis.	Health Centre watch and ward residence (upto 30 sq.m), Chemist shop (upto 15 sq.m each)
15	Hostel	0.05	18 mt & above	Premises in which rooms attached to 'institutions' or otherwise are let out on a long term basis;	Hostel watch and ward residence (upto 30 sq.m), Personnel service shops of Barber, Launderer, Soft drink & Snack stall (upto 15 sq.m).
16	I.T unit in residential plot	0.02 & more	12 mt. & above	A Premise in which I.T unit is being run.	I.T unit office watch and ward.
17	A. Integrated residential school with hostel facility B. Integrated school without hostel facility C. School for Handicapped Children	As per norms of educational dept. 2.0 to 3.0 0.20	18 mt & above 18 mt & above 12 mt. & above	A premise having educational and playing facilities for student.s up to xii standard. It shall have boarding facilities for students and may have residences for faculty members.	Residential flat (for maintenance staff), Institutional hosted, Retail shops of 15 sq.m. each (Confectionery, Grocery & General merchandise, Books & Stationery, Chemist, Barber, Launderer, Vegetable), Canteen, Bank extension counter, Auditorium, Indoor games hall, Swimming pool, Play ground, Post office counter facility.
18	Library	0.05 to 0.1	12 mt. & above	A premise having a large collection of books for reading and reference for general public or specific class.	Library, watch & ward Residence (up to 30 sq.m.), Canteen, Exhibition and Art gallery, Auditorium.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
19	Local shopping centre	0.40	12 mt. & above	A group of shops not exceeding 75 numbers in residential area serving a population of 15,000 persons.	Retail , Repair and Personnel service shop, Informal sector unit, Commercial office, Cottage and Service industry, Clinical Laboratory, Clinic & Polyclinic, Restaurant, Soft drink & Snack stall, Post office and Bank extension counter, Nursing home and Guest house.
20	Nursery & kindergarten school	0.10	12 mt. & above	A premise with facilities for training and playing for children preparatory to the school.	Nursery and kindergarten school watch & ward residence (up to 30 sq.m).
21	Nursing Home	0.20 to 0.30	12 mt. & above	A premise having medical facilities for indoor and outdoor patients having up to 30 beds. It shall be managed by a doctor or a group of doctors on commercial basis.	Nursing home, watch & ward Residence (upto 30 sq.m. each), Chemist shop (up to 15 sq.m. each).
22	Old Age Home	0.1	12 mt. & above	A premise with residential and related facilities for old age persons.	Old age home, Residence/flat for Caretaker and watch & ward. Personnel service shop, Dispensary, Club, Community hall.
23	Park	-	-	A premise used for recreational leisure activities. It may have on it related landscaping, Parking Facilities, Public toilet, Fencing etc. it will include synonyms like Lawn, Open space, Green, etc.	Park, Soft drink & Snack stall (on the park with & above 1.0 hectare area).
24	Plant Nursery	0.05	12 mt. & above	It is a premise with facilities for rearing and sale of young plants.	Nursery, watch & ward Residence (upto 30 sq.m.). All structures shall be temporary in nature.
25	Plotted Housing	As per scheme	-	A premises for one or more than one dwelling unit and may have on it one main building block and one accessory block for garage/garages and servant quarters.	Residence mixed use activity as per the recommendation in the section on mixed land use.
26	Police Post	0.05	12 mt. & above	A premise having facilities for a local police post of a temporary nature or on smaller scale as compared to a police station.	Police post, Essential staff housing.
27	Primary School	0.20 to 0.40	12 mt. & above	A premise having educational and playing facilities for students up to v standard.	Primary school, Watch & ward residence (upto 30 sq.m.), Books and Stationery shop (up to 15 sq.m.), Soft drink & Snack stall.
28	Professional	0.05	12 mt. &		

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	Offices		above		
29	Public utilities and building except services and storage yard	As per concerned Dept. norms		(i) Overhead tank- A premises having an overhead tank for storage and supply of water to its neighbouring areas. It may or may not include a pump house. (ii) Underground tank- A premises having an underground tank for storage and supply of water to its neighbouring areas. It may or may not include a pump house. (iii) Oxidation pond- A premises having a tank used for the oxidation process for sewage and other waste. (iv) Septic tank- A premises having an underground tank for collection of sewage and its consequent disposal. (v) Sewage pumping station- A premises with a pumping station used for pumping sewage on to a higher gradient. (vi) Public toilet and urinal- A premises having latrine and urinals for use of public. It may or may not include drinking water facility. (vii) Electric sub – station – A premises having electrical installation and transformer for distribution of power. (viii) Solid waste collection centre- A premises used for collection of garbage for its onwards transportation to sanitary landfill/disposal.	Public utility premises- Overhead tank, Underground tank, Oxidation pond, Septic tank, Sewerage pumping station, Public toilet urinal, Electric substation, Solid waste collection centre, Dhobi ghat.
30	Recreational Clubs	0.10	18 mt. & above	A premise having facilities for recreational activities including indoor games	
31	Religious Premises	0.05	12 mt. & above	A premise dedicated to accommodations and service of god or other objects of religious nature. It may have different nomenclature in different	(i) Temple, (ii) Mosque, (iii) Church, (iv) Gurudwara, (v) Synagogue, (vi) Ashram, (vii) Bathing tank, (viii) Dargah and (ix) Charitable

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				religions like temple (all faiths), Mosque, Church, Gurudwara, Ashram.	dispensary and Library.
32	Research and Development Centre	0.10	18 mt. & above	A premise providing facilities for research and development for any specific field.	Research & Development centre, Watch & ward Residence (upto 30 sq.m.), Residential flat (for maintenance staff) Hostel, Canteen, Bank extension counter, Library, Post office extension facility.
33	Residence cum work plot (Shop cum Residence)	As per scheme	12 mt. & above	A premises providing residential accommodation for one family (one household) and its workspace restricted to ground floor.	Residence, ground floor area may be used as work- space for Retail shop, Household industry and Personnel service shop.
34	Residential Flat	0.10	12 mt. & above	A residential accommodation for one family (one household) which may occur as a part of group housing or independently.	Residence, Professional activity
35	Secondary School	1.0 or as per requirement of educational deptt.	12 mt. & above	A premise having educational and playing facilities for students up to x standard. It shall include middle schools which are upto viii standard for the purpose of this code.	Secondary, Senior secondary and Integrated school, Watch & ward Residence (upto 30 sq.m.), Books & Stationery and Chemist shop (upto 15 sq.m.), Soft drink & Snack stall, Canteen, Bank extension counter, Auditorium, Indoor games hall, Swimming pool, Post Office Counter Facility.
36	Senior Secondary School	2.0 or as per requirement of educational deptt.	12 mt. & above	A premise having educational and playing facilities for students up to xii standard.	Secondary, Senior secondary and Integrated school, Watch & ward residence (upto 30 sq.m.), Books & Stationery and Chemist shop (up to 15 sq.m.), Soft drink & Snack stall, Canteen, Bank extension counter, Auditorium, Indoor games hall, Swimming pool, Post office counter facility.
37	Social Welfare centre without Auditorium	0.10	18 mt. & above	A premise with facilities for welfare and promotion of community development.	Social welfare centre, Watch & ward Residence (upto 30 sq.m.), Canteen, Exhibition – cum – sale counter.
38	Taxi and Auto Stand	2 mt x 2 mt	As per parking zone of the scheme		

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
39	Technical Training Centre	0.10 (as per norms of the Technical Education deptt.)	18 mt. & above	A premise with facilities for training in discipline of technical nature. It includes technical school and industrial training institute, etc.	Technical training centre, Residential flat (for maintenance staff), Books & Stationery shop, Chemist shop (up to 15 sq.m. each), Canteen, Bank extension counter, Auditorium, Post office counter facility.
40	Water Pumping Station	As per PHED Norms		In Facility Area	
41	Weekly Market	0.10	18 mt. & above	An area used once in a week by a group of informal establishments in the form of a market. These markets shift from one area to another on different days of the week.	Weekly market, Informal sector trade, Soft drink & Snack stall (all structures will be either temporary or mobile, only for one day in a week).
42	Yoga Centre	0.05	12 mt. & above	A premises having facilities for self attainment, achieving higher quality of mind and body, Spiritual and religious discourse etc.	Yoga centre, Meditation, Spiritual and Religious discourse centre- Yoga centre, Meditation, Spiritual and Religious discourse centre, Watch & ward residence (upto 30 sq.m.), Hostel, Soft drink & stall.
43	Banquet Hall		18 mt. & above		

11.10.1 (B) Permissible Use Premises In Residential Use Zones

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Bakeries and Confectionaries	30 sq.m	18 mt. & above		
2	Burial Grounds/ Cremation site	The site for Burial grounds/ Cremation site shall be indentified at such locations		It is a premise with facilities for burying of dead bodies.	Burial ground, Cremation ground, Cemetery and electric crematorium- burial ground, Cremation ground, Cemetery and electric crematorium, Retail shops of wood, Flowers and related materials, Watch & ward Residence (up to 30 sq.m.)

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
		which are not in proximities to residential areas.9			
3	Bus Depot without workshop	As per the requirement of RSRTC	As per requirement of RSRTC	A premises used by a public transport agency or any other such agency for parking maintenance and repair of buses. This may or may not include a workshop.	Bus depot, Workshop, Watch & ward residence (up to 30 sq.m.), Soft drink & Snack stall, Administrative office.
4	Children Traffic Park	1.0 to 2.0	18 mt. & above	A premise in the form of park with facilities for introducing and educating children about traffic and signaling.	Children traffic park, Watch & ward residence (upto 30 sq.m.), Soft drink & Snack stall, Museum, Auditorium.
5	A. Cinema Hall B. Multiplex	0.15 0.20	30 mt. & above 30 mt. & above	A premise with facilities for projection of movies and stills with a covered space to seat audience.	Cinema, Watch & ward residence (upto 30 sq.m.), Administrative office, Soft drink & Snack stall, Museum, Auditorium.
6	Clinical laboratory	0.01 to 0.02	12 mt. & above	A premise with facilities for carrying out various tests for confirmation of symptoms of a disease.	Clinical laboratory, Soft drink & Snack stall.
7	Household Industry	30 sq m and above	12 mt. & above		
8	Motor Cycle repairing work shop garages	45 sq.mt		In convenient shopping centre.	
9	Multipurpose shop	60 sq.mt	12 mt. & above		
10	Municipal state and central govt. office	As per requirement of the concerned deptt.	12 mt. & above	A premises used for the office of the central/state government.	Central government office, Local government office & Public undertaking office- Central government, State government, Local government & Public undertaking office. Watch & ward residence (up to 30 sq.m.), Retail shop, chemist, Books and Stationery, Consumer store (up to 20 sq.m. each on ground floor), Canteen, Bank extension counter, Post office extension counter.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
11	Museum	0.10 to 0.15	18 mt. & above	A premise with facilities for storage and exhibition of objects illustrating antiques, Natural History, Art, etc.	Museum, Exhibition centre and Art gallery, Auditorium and Open air theatre- Museum, Exhibition centre and Art gallery, Auditorium and open air theatre, Watch & ward residence (up to 30 sq.m.), Canteen.
12	Music Dance and Drama Training Centre	0.10	18 mt. & above	A premises having facilities for imparting training and coaching for Music, Dances and Dramatics.	Museum, Exhibition centre and Art gallery, Auditorium and Open air theatre-museum, Exhibition centre and Art gallery, Auditorium and Open air theatre, Watch & ward Residence (up to 30 sq.m.), Canteen.
13	Open air theatre	0.10	18 mt. & above	A premises having facilities for audience seating and a stage for performance and is open to sky.	Open air theatre, Watch & ward residence (up to 30 sq.m.), Canteen.
14	A. Orphanage without school B. Orphanage with school	0.05 0.1 to 0.15	12 mt. & above 18 mt. & above	A premise with facilities for boarding of children who are bereaved of parents. It may or may not have educational facilities.	Boarding house, school, watch and ward (up to 30 sq.m.)
15	Petrol and diesel Pump without service station	30 mt x 20 mt. or as per norms of MOST.	24 mt. & above	A premise for sale of petroleum products to consumers.	Petrol pump, Soft drink & Snack Stall, Automobile repair shop.
16	Printing Press	0.02	12 mt. & above	A premise with facility of machinery for printing & publishing Books, etc.	Hall for providing press. Watch & ward, Toilet etc.
17	Restaurants	0.05 to 0.07	24 mt. & above	A premises used for serving food items on commercial basis including cooking facilities. It may have covered or open or both for sitting arrangement.	Restaurants
18	Socio-cultural institute	0.1	18 mt. & above	A premises with facilities for activities of socio-cultural nature run by a public, Voluntary or individual on primary noncommercial basis.	Social and Cultural institute, Watch & ward residence (upto 30 sq.m.), Soft drink & Stall, Restaurant, Bank extension counter facility, Canteen, Auditorium, Library, Music, Drama training centre, Museum, Exhibition centre and Art gallery.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
19	Storage of LPG Gas Cylinders	0.10	18 mt. & above (500 mt. away from residential plot/ petrol pump)	A premise where cylinders of cooking gas or other gas are stored.	Storage, Godown, & Warehousing, Watch & ward residence (upto 30 sq.m.), wholesale outlet, administrative and sales office.
20	Transit visitors camp	0.10	18 mt. & above		

11.10.1 (C) Permissible and non permissible uses in High Density Mixed Use

- (i) Manufacturing industries will not be allowed in High Density Mixed Use.
- (ii) Any trade or activity involving any kind of obnoxious, hazardous, inflammable, non compatible and polluting substance or process shall not be permitted.
- (iii) Commercial Activity in the form of retail shop as per (ii) shall be permitted in plots abutting notified mixed use zone. Retail shops shall be permitted on plots abutting streets notified for mixed land use only on the ground floor as per the applicable building bylaws.
- (iv) Shops operating from basement on such streets may continue, subject to relevant provisions of building bylaws, structural safety, clearance. The following activities shall not be allowed under mixed use such as:

Retail shop of building materials, timber, timber products (excluding furniture), firewood, coal, any fire hazardous and other bulky material, marble, iron, astral (grave, cement and sand)

- (v) The small shops of maximum 20 sq. mt. area trading in or dealing with the following items or activities may be allowed on ground floor only, in residential premises as listed below.
 - a) Vegetables / fruits/ flowers.
 - b) Bakery items/ confectionary items.
 - c) Kirana / General store / Departmental store.
 - d) Dairy product
 - e) Stationary / books/ gifts / book binding.
 - f) Photo state/ Fax / STD/ PCO.
 - g) Cyber café / Phone call booths.
 - h) LPG Booking office/showroom without LPG cylinders.
 - i) Atta Chakki.
 - j) Barber shop / Hair dressing saloon / Beauty Parlour.
 - k) Laundry / Dry cleaning / Ironing.
 - l) Sweet shop/ Tea stall without sitting arrangement.
 - m) Chemist shop / Clinic / Dispensary / Pathology lab.
 - n) Optical shop.
 - o) Tailoring shop.
 - p) Electrical /Electronic repair shop
 - q) Photo studio
 - r) Hosiery/Readymade garments /Cloth shop.
 - s) ATM.

- t) Cycle repair shop.
- vi) On Residential plots abutting minimum 18' ROW, following activities shall also be permitted.
 - a) Pre primary School (including nursery / Montessori crèche).
 - b) Nursing Home.
 - c) Clinic, dispensary, pathology lab and diagnostic centre.
 - d) Guest house (including lodging house) irrespective of number of rooms.
 - e) Bank.
 - f) Fitness centre (including gymnasium, yoga / meditation centre).
 - g) Coaching centres / tuition centre other than those imparting structured courses leading directly to the award of a degree or diploma or conducting classes such as a regular school.

Note:

- A. The above mentioned activities shall also be subject to any other specific terms and conditions as may be prescribed in the relevant acts / rules applicable to them.
- B. Pre – primary school and fitness centre shall be restricted only to the ground floor up to the permissible ground coverage.
- C. It shall be the responsibility of the plot owner to make arrangement for parking as per the bylaws so that the parking does not encroach / spill over on public land.
- D. No encroachment shall be permitted on street or public land.
- E. Development control norms as per building by laws applicable for the particular residential use will continue to be applicable even if the plot or dwelling unit is put to mixed use.
- F. If the notified street is a master plan road, and if a service road is available or provided for by local bodies, then the mixed use premises should be approached from such service road and not directly from the main carriageway.
- G. If any commercial activity is proposed on plotted development, front set back should not have boundary wall so that it can be used for additional parking.
- H. Common parking areas would be earmarked on notified mixed use streets taking it to an account that the additional load on traffic and parking consequent' s up on notification of the street under mixed use policy.
- I. Where there is only one dwelling unit in a residential plot there can be only one type on mixed use (i.e. retail shop or professional activity or one of the other activities listed in (v)
- J. Where there are more than one dwelling unit in a residential plot, each of the dwelling units will be permitted to have only one type of mixed use activity i.e. (either retail shop or professional activity or any one of the other activity as listed in (v)

- K. In group housing only professional activity and small shops as listed in (v) shall be permissible. Retail shops specifically provided in the layout plan of group housing would be permissible.
- L. The case of mixed use within the plot, the building regulations may specify and to that extent the above shall be created as modified

11.10.2 (A) Permitted Use Premises in Commercial Use Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Auditoriums	0.10	18 mt. and above	A premises having an enclosed space to seat audience and stage for various performances like Concerts, Play, Recitals, Functions etc.	Museum , Exhibition centre and Art gallery, Auditorium and open air theatre, Watch & ward Residence)
2	Auto/Thela/Rickshaw stand	2 mt.X 1.5	Mt. Per auto 2mt. Per thela & 2mt. * 1.5 mt. Per rickshaw	A premise providing space for parking of Auto/Rickshaw with or without parking fee.	
3	Bakeries & confectionaries	0.03	12 mt. & above	A premises having an eclectic own/Bhatti for making Bakeries items & three marketing.	
4	Bank	0.07 to 0.1	18 mt. & above	A premise used for office to perform banking function and operation.	Bank watch & ward residence (up to 30 qm. M.) Commercial office and Canteen.
5	Community hall/Baratghar	0.1	18 mt. & above	A premises used for marriage and other social functions	Baratghar, soft drink & snack bar(up to 15 sq. m.)
6	Boarding house & lodging house	0.05	18 mt. & above	Boarding house is a premises in which rooms are let out on a long term basis as compared to hotels: Lodging house is a premises used for lodging of less than 50 persons	Boarding house & lodging house, watch and wad residence (Upto 30sq .m) Personnel service shops of barber, Launderer and soft drink & snack stall (Upto 15 sq.m)
7	Bus Terminal	1.0	30 mt. & above	A premises used by public transport agency to park the buses for short duration to serve the population . It may include the related facilities for passengers	Bus Terminal. Soft drink & SNACK stall, Administrative office, Other Offices
8	Cinema	0.15	30 mt. & above	A premise with facilities for projection of movies and stills with a covered space to seat audience	Cinema, watch & ward residence (Upto 30 sq.m). Administrative office ,soft drink & snack stall, Museum, Auditorium
9	College A. Technical College B. Medical	As per AICTE norms As per Norms of	30 mt. & above 30 mtr &	A premise having educational and playing facilities for students of under graduated and post graduated courses under a university. It includes all professional disciplines.	College, Residential flat (for maintenance staff),institutional hosted, Retail shops of 15 sq.m each (Confectionary, grocery & General Merchandise , Books & Stationery, Chemist, Barber, Launderer, Vegetable),canteen, bank

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	College	Medical council of India	above		Extension counter, Auditorium, Indoor games hall, Swimming pool, play ground, Post office counter facility
10	Commercial office	0.05	12 mtr & above	A premises used for offices of profit making organisation	Commercial office, retail & personnel Service shop, Restaurant, bank, Post & Telegraph office
11	A. Gas Godown Including Supply office B. Gas Booking Office	0.6 3 mt. X 3 mt.	18 mtr & above 9 mtr & above	A premises having stories facilities for gas cylinder storage out skirts of residential colony.(200 mt. Away from residential Plot) A shop/ office for booking of gas cylinder without any storage.	Gas Godown, watch & ward Residence (Upto 30 sq. m) , Care taker Office
12	General Business	0.30 to 0.50	18 mt & above		
13	Go downs & ware hosuing (Non-Inflammable)	0.025 to 0.05	18 mt & above	A premise for Whole sale trade is a premise from where goods and commodities are sold and delivered to retailers. Such premises include storage and godown and loading and unloading facilities	Whole sale trade-Whole sale shop, Go down & Storage, commercial office (Restricted to 25 5 of the total floor area)
14	Govt./ Institutional Office	0.10	18 mt & above	A premises used for the office of union /State Government	Central government, State government, local government & Public undertaking office. Watch & ward residence (upto Sq. m). retail shop, Chemist, Books and Stationery, Consumer store (upto to 20 sq.m each on ground floor), canteen, bank Extension Counter , Post office Extension Counter.
15	Group Housing/ Residential Plot	0.5(GH) 0.02 to 0.05 (RP)	12mt & above	A premises comprising of residential flats with basic amenities like parking, park, convenience shops, public Utility, etc.	Group housing- Residential flat, retail shop of Confectionery, grocery & general Merchandise, Books & Stationary, Chemist, barber, Lundry, tailor, Vegetable shop (on ground floor with an area up to 20 sq. m each). Crèche and day care centre, on ground floor with an area upto 50 sq.m.
16	Guest houses	0.05	18 mt & above	A guest house is premises for housing the staff of Government, Semi Government, Public Under taking and private limited company for short	Hostel, Guest house, boarding house and Lodging house, watch and ward residence (Upto 30 sq.m). Personnel service shops of barber, launderer , Soft

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				duration; 'Boarding house' is a premises in which rooms are let out on a long term basis as compared to hotels 'Lodging house' is a premises used for lodging of less than 50 persons	drink & Snack stall (upto 15 sq.m)
17	Health centre Upto 20 beds	0.20 to 0.30	18 mt & above	A premise having facilities for treatment of indoor and outdoor patients having upto 30 beds . the health centre may be managed by public or a charitable institution on non-commercial basis. It Includes family welfare centre.	Health Centre Watch & ward residence (upto 30 sq.m each), chemist shop (upto 15 sq.m each)
18	Hotels	0.15	24 mt & above	A premises used for lodging of 15 persons or more on payment with or without meals	Hotel, Retail & Personnel service shops & Commercial office restricted to 5 % of the total floor area, Restaurant
19	Library	0.05	12 mt & above	A premise having a large collection of books for reading and reference for general public or specific class.	Library, watch & ward residence (upto 30 sq.m each). Canteen, Exhibition and art gallery, Auditorium
20	Medical Clinic	0.02	12 mt & above	A premise with facilities for treatment of outdoor patients by a doctor. In Case of a polyclinic, it shall be managed by group of Doctors.	Clinic
21	Motor Driving Training Centre	0.1	18 mt & above	A premise having facilities for training of driving automobiles	Motor Driving Training Centre, Watch & ward residence (upto 30 sq.m), Soft drink & Snack stall
22	Night Shelter	0.05 or more	12 mt & above	A premises providing night accommodation to individuals without any charges or with token charges it may be run by local government of voluntary agencies	Night Shelter
23	Nursing Home	0.10 to 0.20	18 mt & above	A premise having facilities for indoor and outdoor patients having upto 30 beds . it shall be managed by a doctor or a group of doctors on commercial basis	Nursing Home, Watch & ward residence (upto 30 sq.m), Chemist shop (upto 15 sq.m each)
24	Park/ Open Space	-	-	A premise used for recreational leisure activities. It may have on it related Landscaping, Parking	Park, Soft Drink & Snack Stall (on the park with & above 1.0 hectare area).

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				facilities, public toilet, Fencing etc. It will include synonyms like lawn, open space, green, etc	
25	Parking Sites	As per Scheme	As per parking zone of the scheme	A premises used for parking of vehicles. The public parking lots may be run on commercial or non-commercial basis	Parking
26	a. Petrol pump with service station b. Without service station	36 mtr X 36 mt. 30 mt. X 20 mtr	24 mtr & above	A premise for sale of petroleum products to consumers. It may include servicing of automobiles	Petrol pump, Soft Drink & Snack Stall, Automobile repair shop
27	Police Station/ Police Post	0.02 to 0.05	12 mtr & above	A premise having facilities for the offices of local police station.	Police Station, Essential staff housing,. Police post, Essential staff housing
28	Post office	0.02 to 0.05	12 mtr & above	A premise with facilities for postal communication for use by the public	Post office, Post & telegraph office, Watch & ward residence (upto 30 sq.m),Canteen
29	Railway freight godown	As per dept. Norms		A premise for storage of goods transported by the railways	
30	Technical Training Institute	0.1	18 mtr & above	A premise with facilities for training in discipline of technical nature. It Includes technical school and industrial training institute ,etc.	Technical training center, residential flat (for maintenance staff), Books & stationary shop, Chemist shop (Upto 15 sq. m each), Canteen, Bank Extension counter, Auditorium, Post Office counter facility
31	Research and Development	0.1	18 mtr & above	A premise providing facilities for research and development for any specific field	Research and Development, , Watch & ward residence (upto 30 sq.m), Residential flat (for maintenance staff) hostel, canteen, Bank extension counter , Library , Post office extension facility
32	Restaurants	0.05 to 0.07	24 mt & above	A premise used for serving food items on commercial basis including cooking facilities. It may have covered or open or bath for sitting arrangement	Restaurants

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
33	Retail Shops	3 mtr X 3 mtr	12 mt & above	A premise for sale of commodities directly to consumer with necessary storage	Retail shop, Repair shop, Personnel service shop.
34	Road/rail/air / transport booking office	30 sq. mtr per counter	12 mt & above	A premise for ticket booking facilities for Road/rail/air / transportation	Booking office
35	Service Center & Service Industry	0.05	18 mt & above	A premises essentially having repair shops for automobiles ,electrical appliances, building material, etc. to provide essential services to neighboring residential areas	Retail, Repair & personnel service shop, Cottage industry, Gas Godown, commercial office.
36	Stock Exchange / Financial Institution	0.10	18 mt & above	A premise having facilities for stock trading and financial activities	Stock Trading, Foreign exchange & Trassing activities banking facilities, brokers offices etc.
37	Technical Training Centre	0.10 (As per norms of Technical education deptt.)	18 mt & above	A premise with facilities for training in discipline of technical nature. It Includes technical school and industrial training institute ,etc.	Technical training center, residential flat (for maintenance staff), Books & stationary shop, Chemist shop (Upto 15 sq. m each), Canteen, Bank Extension counter, Auditorium, Post Office counter facility
38	Telephone Exchange	0.1	12 mt & above	A premise having facilities for central operation of telephone system for a designated area	Telephone Exchange, Watch & ward residence (upto 30 sq.m), Canteen
39	Ware Housing & Covered storage	0.05 to 0.1	18 mt & above	A premise for whole-sale trade is a premise from where goods and commodities are sold and delivered to retailers. Such premises includes storage and godown and loading and unloading facilities	Whole-sale shop, godown storage, commercial office(Restricted to 25% of the total floor area).
40	Weekly Market	0.10	18 mt & above	An area used once in a week by a group of informal establishments in the form of a market. These Markets shift from one area to another on different days of the week. Informal unit: retail/Service unit, stationary or mobile working without roof including small khokhas on road side.	Weekly Market, Informal sector trade, Soft Drink & Snack Stall (all structures will be either temporary or mobile , only for one day in a week)
41	Whole Sale	0.02 to 0.03	12 mt &	A premise for Whole Sale Trade is a premise from	Whole sale shop, godown & storage, commercial

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	Trade		above	where goods and commodities are sold and delivered to trailers. Such premises include storage and godown and loading and unloading facilities.	office (Restricted to 25% of the total floor area). Notes:- (I) Park, Parking, Public Conveniences, Public utility are permitted in all premises wherever needed. (II) In case of clubbing of premises , uses of all the premises clubbed are allowed (III) In case of doubt, the permissibility of use premises/use activity shall be decided by the concerned committee of the Jaipur Development Authority constituted under section 10 of the act. (IV) A structure which can be shifted from one place to another or removed as the case may be shall be considered as temporary structure
42	Work place/ Offices	0.10	18 mt & above	A premises used for offices of profit making organisation	Commercial offices, retail & Personnel service shop , Restaurant, Bank, Post & Telegraph office.
44	Banquet Hall		18 mt. & above		

11.10.2 (B) Permissible Use Premises in Commercial Use Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Bus Terminal	As per requirement of RSRTC	18 mt. & above	A premises used by a public transport agency for parking maintenance and repair of Buses. This may or may not include a workshop.	Bus depot, workshop, watch & ward Residence (up to 30 sq. m.) soft drink Snack stall Administrative office.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
2	Children's Traffic Park	.01 to 0.2	12 mt. & above	A premises in the form of park with facilities for introducing and educating children about traffic and signaling.	Children Traffic park, watch & ward Residence (up to 30 sq.mt. soft drink Snack stall , Museum, Auditorium.
3	Coal/Wood/ Timber Yard	0.1	18 mt. & above	Open space for storage & trading of Coal/Wood/Timber.	Trading & facilities for storage of Coal /Wood /Timber watch & ward Flat up to 30sq.m.
4	Coal storage / chilling plant	0.1 to 0.15	30 mt. & above	A premises where perishable commodities stored in covered space using mechanical and electrical devices to maintain the required temperature, etc..	Cold storage, Watch & Ward Residence (up to 30 sq. m.), Caretaker office.
5	Community hall	0.20	18 mt. & above	A premise having an enclosed space for various social & cultural activities of a residential area.	Community hall, Watch & Ward Residence (up to 30 sq. m.) soft drink Snack stall.
6	Cultural Information Centre	0.10	18 mt. & above.	A premises with facilities for cultural and information services for an institution, state and country.	Cultural and Information centre Watch & Ward Residence (up to 30 sq. m.) Hostel, Canteen, Bank extension counter facility. Auditorium (up to 500 v sitting capacity) Library, Exhibition and Art Gallery.
7	Exhibition centre and Art Gallery	1.0 to 2.0	18 mt. & above	A premises with facilities for exhibition and display of paintings, Sculpture, Murals, ceramics, Handicrafts or products of a specific class.	Exhibition centre and Art Gallery Watch & Ward Residence (up to 30 sq. m.) Canteen
8	Gas Installation & gas works	0.05	12 mt. & above	A premises with facilities of storage for Gas cylinder and Gas welding work.	
9	Hospitals	1.5 to 2.5		A premises providing medical facilities of general or specialized nature for treatment of outdoor and indoor patients.	Hospitals, Residential flat (employees and service personal) Institutional hostel, Medical college, Retail shop (confectionary, Grocery & General merchandise, Books and stationary, Barber, Launderer, vegetables).
10	Hotel / Transit visitors houses	05.05 0.10	12 mt. & above	A premises in which rooms attached to Institutions or otherwise are let out on a long term basis.	Hotel, Commercial office , Retail & Personal service shop , Restricted 5% of the total floor area, Restaurant
11	Junk Yard	0.05	12 mt. & above	A premises for covered and semi- covered or open storage including sale & purchase of waste goods,	Junk Yard, Watch & Ward residence , Sales office

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				Commodities and Materials.	
12	Motor garage and workshop	0.02 to 0.5	12 mt. & above	A premises for servicing and repair of automobiles.	Workshop, Watch & Ward residence (up to 30 sq. m.) soft drink Snack stall Administrative office.
13	Non- obnoxious light industries	As per norms of industries deptt.			
14	Open air theatre	0.1	18 mt. & above	A premises having facilities for audience seating and a stage for performance and is open to sky.	Open air theatre, Watch & Ward residence (up to 30 sq. m.)
15	Plant nursery	0.05 to 0.1	12 mt. & above	It is a premises with facilities for rearing and sale of young plants.	Nursery, Watch & Ward residence (up to 30 sq. m.)
16	Religious Building	0.05 to 0.1	12 mt. & above	A premises dedicated to accommodations and service of god or other objects of religious nature. It may have different nomenclature in different religions like temple (all faiths), mosque, church, gurudwara, Ashram.	(i)Temple (ii) Mosque (iii) Church (iv)Gurudwara (v) Synagogue , (vi) Ashram (vii) Bathing tank , (viii) Dargah and (ix) Charitable dispensary and Library
17	Research & Development	0.1	18 mt. & above	A premises providing facilities for research and development for any specific field.	Research & Development centre, Watch & Ward Residence (up to 30 sq.m.) Residence flat (for maintenance staff) Hostel Canteen, Bank extension, counter, Library, Post Office extension facilities.
18	Vocational training institute	0.1	18 mt. & above	A premises with training facilities for short – term courses for discipline, preparatory to employment in certain profession and trade. It includes training cum work centre.	Vocational training institute, Watch & Ward Residence (up to 30 sq.m.) Hostel, Books, & stationary ship (up to 15 sq. m.) Canteen, Library.
19	Voluntary health service	0.05	12 mt. & above	A premises having medical facilities for treatment of outdoor patients and other like blood bank, etc. by voluntary institutions. This service may also take the form of temporary camp with charitable motive.	Voluntary health service, Watch & Ward residence (up to 30 sq.m.) Administrative office, Dispensary, Canteen.
20	Ware Housing / storage	0.10	18 mt. &	A premises for storage godown and ware housing means premises for exclusive use of storage of	Storage, godown & ware housing, Watch & ward Residence (up to 30 sq.m.), Wholesale outlet,

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	godowns of perishable goods.		above	goods and commodities in a manner as per the requirements of respective commodities. The premises includes the related loading and unloading facilities for the purpose of goods and commodities by road transport or rail transport as the case may be;	administrative & Sales office.
21	Sewerage treatment plant	As per Municipal corporations norms.			

11.10.3 (A) Permitted Use Premises in Industrial Use Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
(Manufacturing, service, and light industry, extensive and heavy industry, special industrial areas and warehousing) In industrial use zone the buildings and premises shall normally be used for identified and associated permitted and permissible use/activities, on an application.					
1	Auditorium	0.15	18 mt. & above	A premises having an enclosed space to seat audience and stage for various performances like concerts, Play, Recitals, Functions, etc.	Museum, Exhibition centre and Art gallery, Auditorium and Open air theatre, Watch & ward residence (up to 30 sq.m.), Canteen.
2	Boarding and Lodging house	0.05	18 mt. & above	Boarding house is a premises in which rooms are let out on a long term basis as compared to hotels; Lodging house is a premises used for lodging of less than 50 persons.	Boarding house and lodging house, watch and wad residence (upto 30 sq.m.) Personnel service shops of Barber, Launderer, Soft drink & Snack stall (up to 15 sq.m.)
3	Bus Depot and Workshop	0.15 (as per requirement of RSRTC)	18 mt. & above	A premises used by a public transport agency or any other such agency for parking maintenance and repair of buses this may or may not include a workshop.	Bus depot, Workshop, Watch & ward Residence (up to 30 sq.m.) Soft drink & Snack stall, Administrative office.
4	Bus Terminal	1.0 (as per requirement of	30 mt. & above	A premises used by public transport agency to park the buses for short duration to serve the	Bus terminal, Soft drink & Snack stall, Administrative office, Other offices.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
		RSRTC)		population. It may include the related facilities for passengers.	
5	Cinema	0.15	30 mt. & above	A premise with facilities for projection of movies and stills with a covered space to sea audience.	Cinema, Watch & ward residence (upto 30 sq.m.), Administrative office, Soft drink& Snack stall, Museum, Auditorium.
6	Cold Storage and Ice factory	0.1 to 0.15	30 mt. & above	A premises where perishable commodities are stored in covered space using mechanical and electrical devices to maintain the required temperature, etc.	Cold storage, Watch & ward residence (up to 30 sq.m.), Caretaker office.
7	Commercial Complex	0.10	12 mt. & above	A premise having training facilities for Stenography, Correspondence, Record keeping, etc.	Commercial and Secretarial training centre, Watch & ward Residence (up to 30 sq.m.), Canteen.
8	Dispensary	0.08 to 0.12	12 mt. & above	A premise having facilities for medical advice and provision of medicines managed by public or charitable institutions.	Dispensary, Soft drink & Snack stall.
9	Gas godowns	As per petroleum norms		A premise where cylinders of cooking gas or other gas are stored.	Gas godown, Watch & ward residence (up to 30 sq.m.), Caretaker office.
10	Guest House	0.05	18 mt. & above	A guest house is premises for housing the staff of Government, Semi-government, Public undertaking and Private limited company for short duration.	Guest house, Watch and wad Residence (up to 30 sq.m.) Personnel service shops of Barber, Launderer, Soft drink & Snack stall (up to 15 sq.m.)
11	Hostels	0.05	18 mt. & above	Premises in which rooms attached to Institutions. Or otherwise are let out on a long term basis	Hostels watch and wad residence (up to 30 sq.m.) Personnel service shops of Barber, Launderer and Soft drink & Snack stall (up to 15 sq.m.)
12	Loading-unloading spaces	As per parking zone of the scheme			
13	Nursing Home	0.10 to 0.20	18 mt. & above	A premise having medical facilities for indoor and outdoor patients having up to 30 beds. It shall be managed by a doctor or a group of doctors on	Nursing home, Watch & ward residence (up to 30 sq.m. each), Chemist shop (up to 15 sq.m. each).

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				commercial basis.	
14	Park	0.1 or may be more		A premise used for recreational leisure activities. It may have on it related landscaping, parking facilities, public toilet, fencing etc. It will include synonyms like Lawn, Open space, Green, etc.	Park, Soft drink & Snack stall (on the park with & above 1.0 hectare area).
15	Parking	As per parking zone of the scheme		A premises used for parking of vehicles. The public parking lots may be run on commercial or noncommercial basis.	Parking
16	Petrol and Diesel pump without service stations	20 mt x 20 mt	24 mt & above	A premise for sale of petroleum products to consumers.	Petrol pump, Soft drink & Snack stall, Automobile repair shop.
17	Petrol and Diesel pump with service stations	36 mt x 36 mt	24 mt & above	A premise for sale of petroleum products to consumers. It may include servicing of automobiles.	
18	Public Utilities	As per norms of concerned deptt.		i) Overhead tank- a premises having an overhead tank for storage and supply of water to its neighbouring areas. It may or may not include a pump house. ii) Underground tank- A premises having an underground tank for storage and supply of water to its neighbouring areas. Its may or may not include a pump house. (iii) Oxidation pond- A premises having a tank used for the oxidation process for sewage and other waste. (iv) Septic tank- A premises having an underground tank for collection of sewage and its consequent disposal. (x) Sewage pumping station-A premises with a pumping station used for pumping sewage on to a higher gradient.	Underground tank, Overhead tank, Oxidation pond, Septic tank, Sewage pumping station, Public toilet and Win ales electric substation, Solid waste collection centre, Dhobi ghat.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				(xi) Public toilet and urinal-A premises having latrine and urinals for use of public. It may or may not include drinking water facility. (xii) Electric sub-station – A premises having electrical installation and transformer for distribution of power. (xiii) Solid waste collection centre - A premises used for collection of garbage for its onwards transportation to sanitary landfill/disposal. (xiv) Dhobi Ghat- A premises used for cleaning and drying of clothes/linen by washer man.	
19	Restaurants	0.05 to 0.07	24 mt & above	A premises used for serving food items on commercial basis including cooking facilities. It may have covered or open or both for sitting arrangement.	Restaurant
20	Storage and depot on non-perishable and non-inflammable commodities and incidental use	0.1 or more	18 mt & above	A premise for storage, Godown and ware housing means a premises for exclusive use of storage of goods and commodities in a manner as per the requirements of respective commodities. The premises include the related loading and unloading facilities for the purpose of carriage of the goods and commodities by road transport or rail transport as the case may be.	Storage, Godown & Warehousing, watch & Ward residence (up to 30 sq.m.), Wholesale outlet, Administrative & Sales office.
21	Ware housing	0.05 or more	12 mt & above		
22	Wholesale business establishment	0.02 to 0.05	12 mt & above	A premise for whole – sale trade is a premise from where goods and commodities are sold and delivered to retailers. Such premises include storage and godown and loading and unloading facilities.	Wholesale shop, Godown & Storage, Commercial office (restricted to 25% of the total floor area)

11.10.3 (B) Permissible Use Premises in Industrial Use Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Auto/thela/Rickshaw stand	2 mt. X1.5 mt. Per Auto 2 mt. X 2 mt. Per thela & 2 mt. X 1.5 mt. Per Rickshaw		Premises for Auto/Thela/Rickshaw for Parking the same during non committing time.	
2	Banks and Financial institutions	0.05 to 0.1	12 mt & above	A premises for office to perform banking and financial institutions functions and operations	Bank, Office, Watch and ward residence up to 30 sq.m.
3	Electric power plants	As per norms of concerned deptt.			
4	Exhibition Centre and Art Gallery	0.10	18 mt & above	A premise with facilities for Exhibition and Display of Paintings, Sculptures, Murals, Ceramics, Handicrafts or products of a specific class.	Exhibition centre and Art gallery watch & ward Residence (up to 30 sq.m.), Canteen.
5	Flatted group industry	0.1 & above	12 mt & above	A premise having a group of small industrial units having upto 50 workers with non-hazardous performance. These units may even be located in multistoried building.	Cottage and small industries shall be permitted, provided such industries do not have excessive i) Vibrations ii) Solid or liquid water or iii) Movement or raw material/finished products. Watch and ward residence (up to 30 sq.m)
6	Govt./Semi-Govt. private business establishment	0.1	18 mt & above		
7	Hospitals	0.5 or may be more	30 mt & above	A premise providing medical facilities of general or specialised nature for treatment of indoor and outdoor patients.	Hospital, Residential flat (employees and service personnel), Institutional hostel, Medical college, Retail shop (confectionery, Grocery & General merchandise, Books and Stationery, Barber, Launderer, Vegetable).
8	Indoor stadium	2 ha & above	18 mt &	A premise for indoor stadium with play area and	Stadium, Local government office (maintenance),

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
			above	spectator seating including related facilities for players.	Watch & ward residence (up to 30 sq.m.), Residential flat (for maintenance staff), Retail shop, Restaurant.
9	Industry specific type	As per deptt. of industry norms		A premises for an industrial unit within a group of such units for manufacturing of specific products like electronic goods, etc.	Light industrial unit, Administrative office, Sales outlet, Residential flat to the extent of 5% of the floor space or 80 sq.m whichever is less for watch & ward and Supervision.
10	Junk Yard			A premise for covered, Semi-covered or Open storage including sale and Purchase of waste goods, Commodities and materials.	Junk yard, Watch & ward residence sales office.
11	Medical Centres	0.05	12 mt & above		
12	Motor garage and workshop	45 sq.mt		A premise for servicing and repair of automobiles	Workshop, Watch & ward residence (up to 30 sq.m.) Soft drink & Snack stall Administrative office.
13	Museum	0.1 to 0.15	18 mt & above	A premise with facilities for storage and Exhibition of objects illustrating antiques, Natural History, Art, etc.	Museum, Exhibition centre and Art Gallery, Auditorium and open air theatre, watch and ward residence (up to 30 sq.m.) Canteen.
14	Night Shelter	0.05		A premises providing night accommodation to individuals without any charges or with token charges. It may be run by local government or voluntary agencies.	Night Shelter
15	Outdoor stadium	2 ha & above	18 mt & above		Stadium, Local government office (maintenance), Watch & ward residence (up to 30 sq.m.), Residential flat (for maintenance staff), Retail shop, Restaurant.
16	Railway Freight Godown	As per railway norms		A premises for storage of goods transported by railways.	
17	Religious Buildings	0.05	9 mt. & above	A premise dedicated to accommodations and service of god or other objects of religious nature. It may have different nomenclature in different	(i) Temple, (ii) Mosque, (iii) Church, (iv) Gurudwara, (v) synagogue, (vi) Ashram, (vii) Bathing Tank, (viii) Dargah and (ix) Charitable

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				religions like Temple (all faiths), Mosque, Church, Gurudwara, Ashram.	Dispensary and Library
18	Research and development centre	0.1	18 mt & above	A premise providing facilities for research and development for any specific field.	Research and Development centre, With & ward residence (up to 30 sq.m.), Residential flat (for maintenance staff) Hostel, Canteen, Bank extension counter, Library, Post office extension facility.
19	Service Stations	As per scheme		Premises essentially having repair shops for Automobiles, Electrical appliances, Building material, etc. to provide essential services to neighbouring residential areas.	Retail, Repair & Personnel Service shop, Cottage industry, Gas godown, Commercial office.
20	Sewage disposal works	As per the requirement of the concerned deptt.			
21	Vocational training institute	0.1	18 mt & above	Premises with training facilities for short – term courses for discipline, preparatory to the employment in certain profession and trade. It includes training-cum-work centre.	
22	Wholesale business establishment	0.02 to 0.05	12 mt & above		
23	Workshops/garages	0.02 to 0.03	12 mt & above	A premise for servicing and repair of automobiles.	Workshop, Watch & ward Residence (up to 30 sq.m.) Soft drink & Snack stall Administrative office.

11.10.4 Permitted Use Premises in Public-Semi Public Use Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Hospital (i) 500 beds & above (ii) 201 to 500 beds (iii) 101 to 200 beds (iv) up to 100 7 beds	6.00 4.00 – 6.00 2.50 – 4.00 1.00 – 2.50 (Area requirements may be relaxed looking to the non availability of Land)	24 mt. & above	A premises providing medical facilities of general or specialized nature for treatment of indoor and outdoor patients.	Hospital, Residential flat (employees and service personal) , institutional hostel , Medical college, Retail Shop (Confectionary , Grocery & general merchandise , Books and Stationary , Barber , Launderer, Vegetable).
2	Health Centre (including family welfare centre)	0.20 – 0.30	18 mt. & above	A premises having facilities for treatment of indoor and outdoor patients having up to 30 beds. The health centre may be managed by a public or a charitable institution on non – commercial basis. It includes family welfare centre.	Health centre, Nursing home, watch & ward residence (up to 30 sq.m. each) , Chemist shop (up to 15 sq.m. each).
3	Nursing home / Maternity home / Poly – clinic	0.10 – 0.20	18 mt. & above	A premises having facilities for indoor and outdoor patients having up to 30 beds. It shall be managed by a doctor or a group of doctors.	Health centre, Nursing home , watch & ward residence (up to 30 sq.m. each) , Chemist shop (up to 15 sq.m. each).
4	Dispensary	0.08 – 0.12	12 mt. and above	A premises having facilities for medical advice and provision of medicines managed by public or charitable institutions.	Dispensary, Soft drink & Snack stall.
5	Clinic	0.10	12 mt. & above	A premises having facilities for treatment of outdoor by a doctor. In case of a polyclinic, it shall be managed by a group of doctors.	Clinic

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
6	Clinic Laboratory	0.02 – 0.05	12 mt. & above	A premise with facilities for carrying out various tests for confirmation of symptoms of a disease.	Clinic Laboratory, Soft drink & Snack stall.
7	Voluntary health service	0.05	12 mt. & above	A premises having medical facilities for treatment of outdoor patients and other like blood bank, etc. by voluntary institutions. This service may also take the form of temporary camp with charitable motive.	Voluntary health service, Watch & ward residence (up to 30 sq . mt. Administrative office,. Dispensary, Canteen.
8	Specialized hospital	1.00	30 mt. & above	Hospital for specialized diseases such as highly infections or contagious diseases.	Specialized hospital , residential flat (for employees and service personal), and institutional hostel, Retail shop (Confectionery , Grocery , General merchandise , Books & Stationary , barber , Launderer , vegetable).
9	Veterinary hospital for pet animals & birds	1.00	30 mt. & above	A premises providing treatment for indoor and outdoor sick animals.	Veterinary hospital , residential flat (for employees and service personal) , institutional hostel, Veterinary college ,Retail shop (Confectionery , Grocery , General merchandise , Books & Stationary , barber , Launderer).
10	Residential flat and residential plot – group housing (for staff and employees)	As a part of the campus in public / semi – public use.		Residential accommodation for one family (one household) which may occur as a part of group housing or independently .(for the use of staff & employees of the Public & Semi – Public use).	Residence , Professional activity (as given in residential plot (1)
11	Hostel (for student of medical college and staff)	0.05 – 1.00	18 mt. & above	A premises in which rooms attached to ‘ Institutions’ or otherwise are let out on a long term basis;	Hostel , Guest House , Boarding house and Loading house , watch & ward residence(up to 30 sq.m.) personal service shops of Barber Launderer, Soft drink & Snack stall (up to 15 sq. m.)
12	Retail and repair shop (convenient shopping)	50sq. mt.	18 mt. & above	A premises equivalent of a retail shop , repair of household goods, Personal service shop electronic gadgets, Automobiles , Cycles, etc.	Retail shop , Repair shop , Personal service shop, Restaurant Clinic.
13	University	As per UGC	30 mt. &	A premises having an educational institution	Educational Institution Colleges Residential Flat

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
		norms	above	designed for instruction examination or both of students in many branches of advanced learning conferring degrees in various faculties , and often embodying colleges and similar institutions	(for maintenance staff) Institutional Hostel, Retail shops of area 20 sqm each (Confectionery, Grocery , General merchandise , Books & Stationary) Chemist, barber, launderer, vegetable, Residential , Library , Bank extension counter , Auditorium . Post office extension counter facility, Canteen, Indoor games hall.
14	Bank	0.10	18mt. & above	A premises for office to perform banking function and operations.	Bank , watch & ward residence (up to 30 sq. m.), Commercial office , and Canteen.
15	Guest House	0.05	18mt. & above	A guest house is premises for housing the staff of Government , semi- Government public undertaking and private limited company for short duration;	Hostel , Guest House , Boarding house and loading house Watch & ward residence (up to 30 sq.m.) personal service shops of Barber, Launderer, Soft drink & Snack stall (up to 15sq.m.)
16	Restaurant	0.50-0.75	24 mt. & above	Restaurant “Road transport booking office ‘ – A premises used for the offices of a road transport agency.	Restaurant
17	Play Ground	0.10	9 mt. & above	A premises used for outdoor games. It may have on it landscaping , Parking facilities , Public toilet , etc.	Play Ground
18	Botanical Garden	2.00	12 mt. & above	A premises in the form of a garden with plantation for research and exhibition.	Zoological gardens, Bird sanctuary, watch & ward residence (up to 30sq.m.), Residential flat (for maintenance staff), Retail shop, and Restaurant .
19	Zoological garden / Aquarium	1.00	12 mt. & above	A premises in the form of a garden or park or aquarium with a collection of animals , species and birds for exhibition and study. It shall include all related facilities.	Zoological garden Watch & ward residence (up to 30 sq.m.) Residential flat, Retail shop, Restaurant.
20	College	1. As per	30 mt. &	A premises having educational and playing	School and College residential flat (for

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	1. Medical college 2. Engg. College 3. General college	norms of medical council of India 2. As per AICTE norms 3. AS UGC norms	above	facilities for students of under graduated and post graduated courses under a university. It includes all professional disciplines	maintenance staff), Institutional hosted , Retail shops of 15 sq. m. each (Confectionery, Grocery, General merchandise, Books & Stationary, Chemist, barber, Launderer, Vegetable), Canteen, Bank extension counter, Auditorium, Indoor games hall, Swimming pool, Play ground, Post office counter facilities.
21	Schools 1. Nursery 2. Primary 3. Secondary 4. Senior Secondary	0.10 0.20- 0.40 (As per norms of education deptt.)	9- 12 mt. 12 mt. 18 mt. 18 mt.	• A premises having nursery facilities for infants during day time. The centre may be managed by an individual or an institution on commercial or non commercial basis. • A premises having educational and playing facilities for student's up to V standard. • A premises having educational and playing facilities for student's up to VIII standard. • A premises having educational and playing facilities for student's up to XII standard	School and College Residential flat (for maintenance staff), Institutional hosted , Retail shops of 15 sq. m. each (Confectionery, Grocery, General merchandise , Books & Stationary, Chemist, barber, Launderer, Vegetable), Canteen , Bank extension counter , Auditorium , Indoor games hall , Swimming pool , Play ground, Post Office counter facility.
22	Library	0.10	18 mt. & above	A premises having a large collection of books for reading and reference for general public or specific class.	Library, watch & ward residence (up to 30 sq.m.), Canteen, Exhibition and Art gallery, Auditorium.
23	A. Integrated residential school with hostel facility B. Integrated residential school with out hostel facility	As per norms of education deptt.	18 mt. & above 18 mt. & above	A premises having educational and playing facilities for student's up to XII standard. It shall have boarding facilities for students and may have residence for faculty members.	School and College Residential flat (for maintenance staff), Institutional hosted , Retail shops of 15 sq. m. each (Confectionery, Grocery, General merchandise , Books & Stationary, Chemist, barber, Launderer, Vegetable), Canteen , Bank extension counter , Auditorium , Indoor games hall , Swimming pool , Play ground,, Post Office counter facility.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
24	Crèche and day care center	0.05	12 mt. & above	A premises having nursery facilities of infants during day time. The centre may be managed by an individual or an institution on commercial or non – commercial basis.	Crèche and day care center Watch & ward residence (up to 30sq.m.)
25	Veterinary Institute	0.20	18mt. & above	A premises having educational and playing facilities for students of under graduate & post graduate courses along with research facilities under a university.	College , Residential flat (for maintenance staff), Institutional hostel, Retail shops of area 20 sqm. each (Confectionery, Grocery) .
26	Library college (medical profession and like)	0.05 – 0.1	12 mt. & above	A premises having a large collection of books for reading and reference for general public of specific class.	Library, Watch & ward residence (up to 30sq.m.) Canteen, Exhibition and Art gallery, Auditorium.
27	Research & Development centre	4.0.25 or may be more	18 mt. & above	A premises providing facilities for research and development for any specific field.	Research & Development centre watch & ward residence (up to 30 sq.m.) Residence flats of maintainer's staff, Hostel canteen, bank extension counter, Library, Post office, and Other facility.
28	Hotel management institute	0.10	12 mt. & above	A premises with training facilities for hotel management discipline it shall be ran by public / private body. It includes training come work centre.	Hotel management institute watch & ward residence (up to 30 sq.m.) Book and Stationary and Chemist shop(up to 20 sq.m. each) canteen, bank extension counter, Auditorium, Post office, and counter facility.
29	Commercial & Secretarial Training centre	0.10	12 mt. & above	A premises having training facilities for Stenography , Correspondence , Record keeping etc.	Commercial & Secretarial Training centre watch & ward residence (up to 30sq.m.), Canteen.
30	Social welfare centre	0.05	12 mt. & above	A premises with training facilities for hotel management discipline it shall be ran by public / private body. It includes training come work centre.	Social welfare centre Watch & ward residence (up to 30sq.m.), Canteen, Exhibition – cum – sale counter.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
31	Multipurpose community hall	0.20	18 mt. & above	A premises having an enclosed space for various social and cultural activities of a residential area.	Community hall, Watch & ward residence (up to 30sq.m.), Soft drink & snack stall.
32	Yoga & Meditation Centre	0.10	12 mt. & above	A premises having facilities for self attainment, Achieving higher quality of mind and body, Spiritual and religious discourse etc.	Yoga Centre & Meditation, Spiritual and religious discourse centre hall, Watch & ward residence (up to 30sq.m.), Hostel , Soft drink & stall.
33	Music, Dance & Drama training centre	0.10	18 mt. & above	A premises having facility for importing training and coaching music dance & dramatics.	Music, Dance & Drama training centre Watch & ward residence (up to 30sq.m.), Canteen & Auditorium
34	Recreational club/ Recreational club at community level	0.50 0.20	18 mt. & above	A premises used for gathering of group of persons for social and recreational purpose with all facilities.	Recreational club, Recreational club Watch & ward residence (up to 30sq.m.), Residential flat (for maintenance staff), Swimming pool . Indoor and Outdoor games facilities.
35	Indoor games stadium	0.25 – 0.50	12 mt. & above	A premises for indoor stadium with play area and spectator seating including related facilities for players.	Stadium, Local Government office (maintenance), Watch & ward residence (up to 30sq.m.), Residential Flat (for maintenance staff) Retail shop , Restaurant.
36	Outdoor games stadium	2.00	18 mt. & above	A premises for outdoor games with pavilion building and stadium structure to seat spectators including related facilities for players.	Stadium, Local Government office (maintenance), Watch & ward residence (up to 30sq.m.), Residential Flat (for maintenance staff) Retail shop , Restaurant.
37	Open Air Theatre	0.50	18 mt. & above	A premises having facilities for audience seating and a stage for performance and is open to sky.	Museum, Exhibition centre and Art gallery, Auditorium and Open Air theatre, watch & ward residence (up to 30sq.m.) , Canteen.
38	Banquet hall	0.08 – 0.20	18 mt. & above	A premises to hold small public gathering Community functions, Marriage etc.	Hall for public gatherings, Marriages, Cooking facilities and Other logistics.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
39	Auditorium	0.50 – 1.00	18 mt. & above	A premises having an enclosed space to seat audience and stage for various performance like concerts , play , Recitals, Functions, etc.	Museum, Exhibition centre and Art gallery, Auditorium and Open Air theatre, watch & ward residence (up to 30sq.m.) , Canteen
40	Museum	0.20 & above	18 mt. & above	A premises with facilities for storage and exhibition of object illustrating antiques, Natural history , art , etc.	Museum, Exhibition centre and Art gallery, Auditorium and Open Air theatre, watch & ward residence (up to 30sq.m.) , Canteen
41	Exhibition centre and Art gallery	0.10	18 mt. & above	A premises with facilities for exhibition and display of paintings, Sculptures, Murals, Ceramic, Handicrafts or products of a specific class.	Museum, Exhibition centre and Art gallery, Auditorium and Open Air theatre, watch & ward residence (up to 30sq.m.) , Canteen
42	Planetarium	0.20 - above	18 mt. & above	A premises with necessary facilities and equipment for studying and Country.	Planetariums watch & ward residence (up to 30sq.m.) , and Canteen
43	Cultural and Information centre	0.25	18 mt. & above	A premises with facilities for cultural and information services for an institution, State and Country.	Cultural and Information centre watch & ward residence (up to 30sq.m.), Hostel, Canteen, Bank extension counter facility, Auditorium (up to 500 v seating capacity) library, Exhibition and Art gallery.
44	Social and Cultural institute	0.10	18 mt. & above	A premises with facilities for activities of socio – cultural nature run by a public, Voluntary or individual on primary non – commercial basis.	Social and Cultural institute watch & ward residence (up to 30sq.m.) Soft drink & Stall , Restaurant , , Bank extension counter facility, Canteen, Auditorium , Library, Music, drama training centre, Museum, Exhibition and Art gallery.
45	Conference hall / centre	0.20	24 mt. & above	A premises having all facilities for a conference meeting, symposium, etc., where a number of different countries may also be participating.	Conference centre, watch & ward residence (up to 30sq.m.) Residential flat(for maintenance staff) , Restaurant , Bank , Post & Telegraph office , Library , Exhibitions centre ,
46	Convention centre	City level as per requirement		A premises having all facilities for International / National conference ,Meetings , Symposium etc.	Internal National convention centre watch & ward residence (up to 30sq.m.) Restaurant, Bank, Post & Telegraph office, Library, Exhibitions centre , Golf course

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
47	Night shelter	0.05	18 mt. & above	A premises providing night accommodation to individuals without any charges or with taken charges. It may be run by local government or voluntary agencies.	Night shelter
48	Anganwari	0.20 – 0.03	12 mt. & above	Anganwari as a space provision of residential housing / neighborhood level is a centre for provide service for children of six years age, pregnant woman , Feeding mother etc. under the integrated child development scheme (ICBS)	Kitchen , Toilet and Hall
49	Dharamshala	0.05	18 mt. & above	A premises providing temporary accommodation for short duration on no- profit basis;	Dharamshala, Personal service shop of barber & Launderer, soft drink & snack bar(up to 15 sq. m.).
50	Adult education centre	0.02 – 0.025	12 mt. & above	A premises having the facilities of formal education and training to adult with flexible timings.	Flexible use gives to a Primer school, Community centre or on such community buildings.
51	Reformatory	0.05 – 0.075	12 mt. & above	A premises with facilities for behavioral reforms.	Reformatory and orphanage Residential Flat (for maintenance staff). Hostel, Personnel service (up to 20 sq.m.)
52	Orphanage	0.10	12 mt. & above	A premises with facilities for boarding of children who are bereaved of parents. It may or may not have educational facilities.	Hostel, Residence (for management and maintenance staff) Primary school watch & ward residence (up to 20 sq.m.)
53	Old age home / care centre for physically / mentally / challenged/ working woman / men Hostel	0.10	12 mt. & above	A premises having the facilities caring and training boarding and loading of the elderly physically / Mentally / challenged / Working Woman / Men.	Care home with residence facility, Residence for management or maintenance staff, Primary school, Recreational, Library, Health, gym, Canteen Dining facility.
54	Religious / premises/building	0.05 or may be more	12 mt. & above	A premises dedicated to the service of the objects of religious nature it may have different nomenclature in different religions / faiths.	Temple, mosque, church, gurudwara etc. charitable dispensary, library.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
55	Dobhi ghat, machine laundry public utility premises	Sites which have appropriate arrangement for water and drainage facilities and it shall be ensured that the water bodies are not polluted as a result of such activities.		A premises use for cleaning and drawing of cloths and liner and PU.	Overhead, Underground tank for Oxidation pond , Septic tank, Sewerage, Pumping station , Public toilet and Urinal, Electric substation , Machine laundry.
56	Fire post	0.02	12 mt. & above	A premises with lesser degree of facilities or fire fighting. The post may be attached to specific premises with fire prone activities.	Fire post
57	Fire station	1.0	18 mt. & above	A premises with facilities for fire fighting for a catchment area assigned to it. It may include residence of essential staff	Fire station, residential flat (for maintenance staff), hostel (for employees), and service workshop.
58	Fire training institute	3.0	12 mt. & above	A premises having facilities of training for emergency uses in case of fire building collage etc.	Fire training centre hostels staff residence open practice grounds fire stations , watch and ward residence (up to 30 sq.mt.) etc.
59	Disaster management centre	1.0 along with suitable open area (2 Hac.) for	18 mt. & above	A premises having facilities of training for emergency backup hospital facility training centre for disaster preparedness wireless communication etc.	Disaster management training centre, open ground for practice and relief camps communication centre, Hostels, Staff residence fire station. Watch and ward residence (up to 30 sq.mt.) etc.
60	Police post	0.05 or may be more	12 mt. & above	A premises having facilities for a local police post of a temporary nature or on smaller scale as compared to a police station.	Police post, Essential staff housing.
61	Police post	0.05 – 0.1	18 mt. & above	A premises having facilities for the offices of local police station.	Police station, Essential staff housing.
62	District Police office and Battalion	1.0		A premises having facilities for the offices and paramilitary forces.	District police office and Civil defence & Home guard, Residential flat (for maintenance staff) Hostel, Play ground, Canteen, Bank extension

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
					counter.
63	Police line	2.0		An area having facilities for work and residential accommodation of paramilitary forces.	Police line and Related facilities
64	Jail	5.0	18 mt. & above	A premises having facilities for detention, confinement and reform of criminals under the law.	Jail
65	Police training institute / College (include central security forces)	5.0	30 mt. & above	A premises having facilities for training of paramilitary forces.	Training Institute residential flat (for maintenance staff) Hostel, retail shops of area 20 sq. mt. each Confectionary , Grocery , Books & stationary, Chemist, Barber, Laundry, Vegetable, Canteen , Bank extension counter, Auditorium for Indoor & Outdoor games, Swimming pool, play ground post office, counter facility.
66	Police firing range	10.0 (to be located at fringe area)	30 mt. & above	A premises having facilities for firing practice of the paramilitary forces.	Police firing range (temporary structure only)
67	Traffic and Police control room	As per requirement		A premises of temporary structure having facilities for the managing of traffic and low and order related issues.	Temporary traffic and Police control room
68	Civil defence home ground	1.0 or less	24 mt. Above	A premises having facilities for office and other facilities or civilian organization for internal defence.	Civil defence and home guard, Residential flat for maintenance staff), Hostel , Play ground.
69	Forensic science laboratory	0.05 -0.75	12 mt. & above	A premises containing facilities for application of medical knowledge to legal problems.	Forensic science laboratory
70	Post office counter without delivery	0.05	9 mt.	A premise with facilities of post office counters only (without post delivery).	Post office , Post & Telegraph office , Watch & Ward residence (up to 30 sq.m.), Canteen
71	Post & Tele graph office (booking & delivery)	0.10	12 mt. & above	A premises with facilities for postal and telecommunicate-ion	Post office, Post & Telegraph office , Watch & Ward residence (up to 30 sq.m.), Canteen
72	General and head post	0.25	18 mt. &	A premises with facilities for postal and	Head post office, General post office, watch &

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	office with administrative office with. without delivery office		above	telecommunication to and from a no of post offices attached to it.	ward residence (up to 30 sq.m.), Canteen.
73	Telephone Exchange	0.25	12 mt. & above	Is a premise having facilities for central operation of telephone system for a designed area.	Telephone Exchange, Watch & ward residence (up to 30 sq.m.), Canteen.
74	Radio and Television station	0.20 – 0.30	18 mt. & above	Is a premise with facilities for recording, broadcast and transmission of news and other programs through the respective medium . It may include some hostel accommodation for guest artists, transmission facilities like towers.	Radio and Television station, watch & ward residence (up to 30sq. mtr), Hostel , Canteen , Library .
75	Transmission tower / wireless station	0.10	12 mt. & above	Is a premises used for installation of a tower for communication purpose.	Transmission tower, watch & ward residence (up to 30 sq.mt.)
76	Satellite and telecommunication centre	0.20 – 0.30	18 mt. & above	Is a premises with facilities for research and development of satellite and telecommunication technology.	Satellite and telecommunication centre and Observatory & weather office , residential flat (for maintenance staff.), Canteen , Research laboratory.
77	Observatory & Weather office	0.10	18 mt. & above	Is a premise with facilities for research and development of data relating to weather and forecasting thereof.	Observatory & Weather office watch & ward Residence (up to 30sq. m.)
78	Motor driving school	0.10	18 mt.& above	A premise having facilities for training of driving automobiles.	Motor driving training centre, Watch & ward residence (up to 30sq.m.) , Soft drink & snack Stall.
80	Road / Rail / Air ticket Booking & reservation office.	25 sq. mt. per counter	12 mt.& above	A premise used for the offices of a road transport agency.	Railway and road transport Booking office, storage.
81	Cremation / Burial ground	The site for cremation ground shall be identified	12 mt.& above	A premise with facilities of performing last rites of dead bookies by burning.	Burial ground, Cremation ground , cemetery a Crematorium , Retail shops , wood, Flowers and related materials. Watch & ward Residence (up to 20 sq. m.)

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
		in locations which are not in proximities to residential area.			
82	Swimming pool			A premise with related facilities for swimming and spectators seating which shall vary with size, standard and purpose.	Swimming pool, Watch & ward and maintenance staff residence, Restaurant.
83	Post and telegraph office	0.10	12 mt. & above	A premise with facilities for Postal and telecommunication for use by the public	Post office, Post & Tele graph office, Watch & ward residence (up to 30 sq. m.)
84	Health Centre up to 20 beds	0.20 – 0.30	12 mt. & above	A premise having facilities for treatment of indoor and outdoor patients having up to 30 beds. The health centre may be managed by a public or a charitable institution on non- commercial basis. It includes family welfare centre.	Health Centre, Nursing home , watch & ward residence (up to 30 sq.m. each), Chemist shop (up to 15 sq. m. each).
85	Shooting Range	20	18 mt. & above	A premise with related facilities for shooting practice and or sports.	Stadium, Local Government office (maintenance), Watch & ward residence (up to 30 sq.m.), Residential flat (for maintenance Staff), Retail shop, Restaurant
86	A. Recreational club B. Community Recreational club	0.05 0.20	18 mt. & above 18 mt. & above	A premise used for gathering of group of persons for social and recreational purposes with all facilities.	Recreational club, Recreational club, Watch & ward residence (up to 30sq.m.), Residential flat (for maintenance staff) , swimming pool , indoor and Outdoor games facilities.
87	Motor garage and workshop	0.05	12mt. & above	A premise for serving and repair of automobiles.	
88	Public utility buildings	As per concerned deptt. norms.		(i) Overhead tank – A premises having an overhead tank for storage and supply of water to its neighboring areas. It may or may not include a	Public utility premises – overhead tank, Underground tank, oxidation pond , septic tank , Sewerage Pumping station ., Public toilet urinal , Electric substation, Solid waste collection

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				pump house. (ii) Underground tank – a premises having an underground tank for storage and supply of water to its neighbouring areas. It's may or may not include a pump house. (ii) Oxidation pond – A premises having a tank used for the oxidation process for sewerage and other waste. (iii) septic tank – A premises having an underground tank for (iv) Sewerage pumping station – A premises with a pumping station used for pumping sewerage on to a higher gradient. (v) Public toilet and urinal – A premises having latrine and urinals for use of public. It may or may not include drinking water facility. (vi) Electric sub – station – A premises having electrical installation and transformer for distribution of power. (vii) Solid waste collection centre – A premises used for collection of garbage for its onwards transportation to sanitary landfill / disposal. (viii) Dhobi ghat- A premises used for cleaning and drying of cloths/ linen by washer man.	centre, Dhobi ghat.

11.10.5 Permitted Use Premises in Recreational Use Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Bird Sanctuary			A Premises used in form of a large park or forest for preservation and breeding of birds with all related facilities.	Park, Forest, Watch & ward residence (up to 30 sq.m. each) Restaurant.
2	Botanical Garden	0.2	12 mt & above	A premise in the form of a garden with plantation for research and exhibition.	Garden, Research and Exhibition hall etc.
3	Bus passenger terminal	As per requirement of the concerned deptt.		A premise for bus terminal	Bus terminal space, snacks booth, parking area.
4	Children Traffic Park	0.10-0.20	12 mt & above	A premises in the form of a park with facilities for introducing and educating children about traffic and signaling.	Children traffic park, watch and ward residence (upto 30 sq.m), soft drink & snack stall, museum, auditorium.
5 (a)	District Park		12 mt & above		District Park, Theme park, Recreational Club, National Memorial, Open-air food court, Children Park, Orchard, Plant Nursery, Area for water harvesting, Archaeological Park, specialized Park, Amusement Park, Children Traffic Park, Sport activity, Playground, Amenity structures. Restaurant in a District Park having an area above 25 Ha. subject to following: a. Area of the restaurant plot shall not be more than 0.8 Ha. or 1% of the District Park, whichever is less. b. Restaurant plot shall have no physical segregation from the rest of the District Park area. c. The building shall be a single storey structure with max. FAR of 5 and height not more than 4m. without any residential facility and to harmonize with the surroundings. d. In case there is no parking lot in the vicinity, parking should be provided at a reasonable

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
					distance from the restaurants. Parking area should not from part of the restaurant complex /greens. 30% of the area shall be developed as dense plantation.
5 (b)	Regional Park				Ridge, Residential Flat (For watch & ward), Picnic Hut, Park, Shooting Range, Zoological Garden, Bird Sanctuary, Botanical Garden, Local Government office (Maintenance) , Open Air Theatre, Police Post, Fire Post, Orchard, Plant Nursery and Forest.
5 (c)	City Park				Aqua Park/Water sport park, Arboretum, Botanical Garden, National Memorial (approved by Cabinet/Govt. of India), Amphitheatre, open Playground, Aquarium, other activities same as permitted in District Park.
5 (d)	Sectoral Park				Park, Children Park, Open air food court, playground etc.
6	Dairy Booth	As per requirement		Premises with basic facility for the supply of daily groceries to the local population.	Booth
7	Forest			It is a thick natural flora. It shall include city forest which may have part natural flora and part man made flora.	Forest
8	Fire Post	0.02	12 mt. & above	A premise with lesser degree of facilities or fire fighting. The post may be attached to specific premises with fire prone activities.	With residential flat for staff.
9	Health centres for players and staff	0.1	12 mt.	A premise having facilities for treatment of players. The health centre may be managed by a public or a charitable institute on non-commercial basis.	Health Centre, Nursing Home, Watch & Ward residence (up to 30 sq. m. each), Chemist shop (up to 15 sq. m. each).
10	Library	0.10	12 mt. & above	A premise having a large collection of books for reading and reference for general public or specific class.	Library, Watch & Ward residence (upto 30sq. m.), Canteen, Exhibition and Art Gallery, Auditorium.
11	Local Govt. office for	As per requirement of		A premises used for the offices of local	Office space, Watch & ward residence (up to 30 sq.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	maintenance	concerned deptt.		Government and local bodies.	m.)
12	Motel/Holiday Cottage & Resort	0.4	18 mt. & above	A premises designed and operated especially to cater to the boarding, Lodging, rest and recreation and related activities of travelers by road.	Motel
13	Open air theatre	0.5	18 mt. & above	A premises having facilities for audience seating and a stage for performance and is open to sky.	Museum, Exhibition Centre and Art Gallery, Auditorium and open Air Theatre, Watch & ward Residence (upto30sq.m.), Canteen.
14	Orchard	0.02	-	It is a premise with thick growth of fruit trees. It may also include garden with fruit trees.	Orchard, Watch & ward and Maintenance staff Residence (up to 30 sq. m.), all structures shall be temporary in nature.
15	Petrol filling station	As per IRC standard	29 mt. & above	A premise for sale of petroleum products to consumers. It may include servicing of automobiles.	Petrol pump, Soft drink & Snack stall, Automobile Repair shop.
16	Police post			Premises having facilities for a local police post of a temporary nature or on smaller scale as compared to a police station.	Police Post, Essential staff housing.
17	Post and telegraph office	0.10-0.15	12 mt. & above	A premise with facilities for Postal and Telecommunication for use by the public.	Post office, Post & Telegraph office, watch & ward Residence (up to 30sq. m.), Canteen.
18	Picnic huts	0.05-0.07		Premises for short duration stay for recreational or leisure purpose of a family, located within a tourist and/or recreational centre.	Picnic hut
19	Plant Nursery	-	-	It is a premise with facilities for rearing and sale of young plants.	
20	Play Ground			Premises used for outdoor games. It may have on it Landscaping, Parking facilities, Public toilet, etc.	Playground
21	Public Utilities	As per requirement of concerned deptt.		(i) Overhead tank-A premises having a overhead tank for storage and supply of water to its neighbouring areas. It may or may not include a pump house. (ii) Underground Tank-A premises having an	Overhead tank, Underground tank, Imitation pond, Septic tank, Sewerage pumping station, Public toilet urinal, Electric substation, Solid waste collection centre, Dhobi ghat.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				underground tank for storage and supply of water to its neighbouring areas. It may or may not include a pump house. (iii) Oxidation pond- A premises having a tank used for the oxidation process for sewage and other waste. (v) Septic tank- A premises having an underground tank from collection of sewage and its consequent disposal. (vi) Sewage pumping station-A premises with a pumping station uses for pumping sewage on to a higher gradient. (vii) Public toilet and Urinal-A premises having latrine and urinals for use of public. It may or may not include drinking water facility. (viii) Electric sub-station-A premises having electrical installation and transformer for distribution of power. (ix) Solid waste collection centre- A premises used for collection of garbage for it's onwards transportation to sanitary landfill/disposal. (x) Dhobi ghat- A premises used for cleaning and drying of clothes/linen by washer man.	
22	A. Recreational Club B. Community Recreational Club	0.50 0.20	30 mt & above 18 mt & above	A premises used for gathering of group of persons for social and recreational purposes with all facilities.	Recreational Club, Recreational Club, watch & ward Residence (upto 30 sq.m.), Residential flat (for maintenance staff), Swimming pool, Indoor and Outdoor games facilities.
23	Regional Park	100			
24	Restaurant/Cafeteria	0.05-1.00	18 mt & above	A premises used for serving food items on commercial basis including cooking facilities. It may have covered or open or both for sitting	Restaurant

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				arrangement.	
25	Shooting Range	10-20	18 mt & above	A premises with related facilities for shooting practice and or sports.	Stadium, Local Government office (maintenance), Watch & ward Residence (up to 30sq.m.), Residential Flat (for maintenance staff), retail shop, restaurant.
26	Special recreation and special recreational areas	0.4	30 mt.	A premises having facilities for special recreation and Special education.	
27	Specialised parks	0.4 to 0.6		A premises having a park or ground for a designated use like public meeting grounds, fun park, wonder land etc.	Public Meeting Ground, Public Address Podium, soft Drink & snack Stall.
28	Sports training centre	2.0	30 mt & above	A premises with facilities for welfare and promotion of community development.	Sports Training Centre, Residential Flat (for Maintenance Staff), Retail shop (confectionery, grocery & general merchandise), Hostel, Bank, Post Office, canteen, Indoor and Outdoor Stadium, Swimming Pool, Play Ground.
29	Stadium (indoor)	As per requirement of concerned department			
30	Stadium (outdoor)	As per requirement of concerned department			
31	Swimming pool	0.15-0.20	12 mt & above	A premises with related facilities for swimming and spectators seating which shall vary with size, standard and purpose.	Swimming Pool, Watch & ward and Maintenance staff residence, Restaurant.
32	Trade Fair ground/Fair Ground	0.5-1.0	24 mt & above		
33	Vending booth	3 mt x 3 mt		A premises in the form of booth for sale of commodities of daily needs either through a mechanical installation or otherwise	Vending booth
34	Zoological Garden	0.1	12 mt & above	A premises in the form of a garden or park or aquarium with a collection of animals, species and birds for exhibition and study. It shall include all	Zoological garden, Bird sanctuary, Watch & ward Residence (up to 30 sq. m.), Residential flat (for maintenance Staff), Retail shop, Restaurant.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				related facilities.	
35	Amusement Park	As per requirement of the concerned deptt.			
36	Golf Course	As per requirement of the concerned deptt.			
37	Green Buffer/Green Belt				
38	Sports Complex	As per requirement of the concerned deptt.			

11.10.6 Permitted Use Premises in Transportation

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
A)	Integrated Freight Complex				
1	Godowns & ware housing (Non-Inflammable)			A premise for Whole sale trade is a premise from where goods and commodities are sold and delivered to retailers. Such premises include storage and godown and loading and unloading facilities	Whole sale trade-Whole sale shop, Go down & Storage, commercial office (Restricted to 25 % of the total floor area)
2	Park/ Open Space			A premise used for recreational leisure activities. It may have on it related Landscaping, Parking facilities, public toilet, Fencing etc. It will include synonyms like lawn, open space, green, etc	Park, Soft Drink & Snack Stall (on the park with & above 1.0 hectare area).
3	Ideal Parking			A premises used for parking of vehicles. The public parking lots may be run on commercial or non-commercial basis	Parking
4	a. Petrol pump with service station b. Without service			A premise for sale of petroleum products to consumers. It may include servicing of automobiles	Petrol pump, Soft Drink & Snack Stall, Automobile repair shop

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	station				
5	Police Station/ Police Post			A premise having facilities for the offices of local police station.	Police Station, Essential staff housing,. Police post, Essential staff housing
6	Railway freight godown			A premise for storage of goods transported by the railways	
7	Restaurants			A premise used for serving food items on commercial basis including cooking facilities. It may have covered or open or bath for sitting arrangement	Restaurants
8	Retail Shops			A premise for sale of commodities directly to consumer with necessary storage	Retail shop, Repair shop, Personnel service shop.
9	Road/rail/air / transport booking office			A premise for ticket booking facilities for Road/rail/air / transportation	Booking office
10	Service Center & Service Industry			A premises essentially having repair shops for automobiles ,electrical appliances, building material, etc. to provide essential services to neighboring residential areas	Retail, Repair & personnel service shop, Cottage industry, Gas Godown, commercial office.
11	Telephone Exchange			A premise having facilities for central operation of telephone system for a designated area	Telephone Exchange, Watch & ward residence (upto 30 sq.m), Canteen
12	Weekly Market			An area used once in a week by a group of informal establishments in the form of a market. These Markets shift from one area to another on different days of the week. Informal unit: retail/Service unit, stationary or mobile working without roof including small khokhas on road side.	Weekly Market, Informal sector trade, Soft Drink & Snack Stall (all structures will be either temporary or mobile , only for one day in a week)
13	Whole Sale Trade			A premise for Whole Sale Trade is a premise from where goods and commodities are sold and delivered to trailers. Such premises include storage and godown and loading and unloading facilities.	Whole sale shop, godown & storage, commercial office (Restricted to 25% of the total floor area). Wholesale market may be for textile and textile products, Auto parts and machinery, fruits and

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
					vegetable, hardware and building materials, Iron and steel, Timber, Food grains, leather, medical and pharmaceuticals, electrical and electronic goods, eggs, poultry and fish, fooder, paper and stationary, marble etc. Notes:- (I) Park, Parking, Public Conveniences, Public utility are permitted in all premises wherever needed. (II) In case of clubbing of premises , uses of all the premises clubbed are allowed (III) In case of doubt, the permissibility of use premises/use activity shall be decided by the concerned committee of the concerned authority (Iv) A structure which can be shifted from one place to another or removed as case may be shall be considered as temporary structure
14	Junk Yard			A premises for covered and semi- covered or open storage including sale & purchase of waste goods, Commodities and Materials.	Junk Yard, Watch & Ward residence , Sales office
15	Motor garage and workshop			A premises for servicing and repair of automobiles.	Workshop, Watch & Ward residence (up to 30 sq. m.) soft drink Snack stall Administrative office.
16	Ware Housing / storage godowns of			A premises for storage godown and ware housing means premises for exclusive use of storage of	Storage, godown & ware housing , Watch & ward Residence (up to 30 sq.m.), Wholesale

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	perishable goods.			goods and commodities in a manner as per the requirements of respective commodities. The premises includes the related loading and unloading facilities for the purpose of goods and commodities by road transport or rail transport as the case may be;	outlet, administrative & Sales office.
17	Medical Clinic			A premise with facilities for treatment of outdoor patients by a doctor. In Case of a polyclinic, it shall be managed by group of Doctors.	Clinic
18	Coal storage / chilling plant			A premises where perishable commodities stored in covered space using mechanical and electrical devices to maintain the required temperature, etc.	Cold storage, Watch & Ward Residence (up to 30 sq. m.) , Caretaker office.
19	Dispensary			A premises having facilities for medical advice and provision of medicines managed by public or charitable institutions.	Dispensary, Soft drink & Snack stall.
20	Bank			A premises for office to perform banking function and operations.	Bank, watch & ward residence (up to 30 sq. m.), Commercial office , and Canteen.
21	Fire post			A premises with lesser degree of facilities or fire fighting. The post may be attached to specific premises with fire prone activities.	Fire post
22	Fire station			A premises with facilities for fire fighting for a catchment area assigned to it. It may include residence of essential staff	Fire station , residential flat (for maintenance staff), hostel (for employees), and service workshop.
23	Post & Tele graph office (booking & delivery)			A premises with facilities for postal and telecommunicate-ion	Post office, Post & Telegraph office , Watch & Ward residence (up to 30 sq.m.), Canteen
24	Public utility buildings			(i) Overhead tank – A premises having an overhead tank for storage and supply of water to its neighboring areas. It may or may not include a pump house. (ii) Underground tank – a premises having an	Public utility premises – overhead tank, Underground tank, oxidation pond , septic tank, Sewerage Pumping station , Public toilet urinal , Electric substation, Solid waste collection centre, Dhobi ghat.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				underground tank for storage and supply of water to its neighbouring areas. It's may or may not include a pump house. (ii) Oxidation pond – A premises having a tank used for the oxidation process for sewerage and other waste. (iii) septic tank – A premises having an underground tank for (iv) Sewerage pumping station – A premises with a pumping station used for pumping sewerage on to a higher gradient. (v) Public toilet and urinal – A premises having latrine and urinals for use of public. It may or may not include drinking water facility. (vi) Electric sub – station – A premises having electrical installation and transformer for distribution of power. (vii) Solid waste collection centre – A premises used for collection of garbage for its onwards transportation to sanitary landfill / disposal. (viii) Dhobi ghat- A premises used for cleaning and drying of cloths/ linen by washer man.	
25	A. Cinema Hall			A premise with facilities for projection of movies and stills with a covered space to seat audience.	Cinema, Watch & ward residence (upto 30 sq.m.),Administrative office, Soft drink & Snack stall.
26	Weigh Bridge	As per requirement			
27	Boarding and lodging house			Boarding house is a premises in which rooms are let out on a long term basis as compared to hotels;	Boarding house and lodging house, watch and ward residence (upto 30 sq.m), Personnel service shops of Barber, Launderer, Soft drink and Snack stall (upto 15 sq.m)
28	Commercial office			A premises used for offices of profit making organization.	Commercial office, other offices such as industries association, Employees state

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
					insurance corporation, provident fund authority etc., retail & personnel Service shop, Restaurant, bank, Post & Telegraph office
29	Taxi and Auto Stand			A premise to be used for parking of intermediate public transport vehicle. The lots may run on commercial or non commercial basis.	
30	Bus Terminal			A premises used by public transport agency to park the buses for short duration to serve the population. It may include the related facilities for passengers	Bus Terminal. Soft drink & SNACK stall, Administrative office, Other Offices
31	Cycle rickshaw/cycle cart stand			A premise to be used for the parking rickshaw and cycle. The parking lots may be run on commercial or non-commercial basis.	
B)	Transport Nagar				
1	Bank	0.07 to 0.1	18 mt. & above	A premise for office to perform banking function and operations	Bank, Watch and ward residence (up to 30 sq.m), commercial office and Canteen
2	Boarding and lodging house	0.05	18 mt & above	Boarding house is a premises in which rooms are let out on a long term basis as compared to hotels;	Boarding house and lodging house, watch and ward residence (upto 30 sq.m), Personnel service shops of Barber, Launderer, Soft drink and Snack stall (upto 15 sq.m)
3	Motor Garage and workshop	0.02 to 0.5	12 mt & above	A premise for servicing and repair of automobiles.	Workshop, watch and ward residence (upto 30 sq.m), soft drink and snack stall, administrative office
4	Night Shelter	0.05	18 mt. & above	A premises providing night accommodation to individuals without any charges or with token charges. It may be run by local government or voluntary agencies.	Night Shelter
5	Restaurant	0.05 to 0.07	24 mt. & above	A premises used for serving food items on commercial basis including cooking facilities. It may have covered or open or both for sitting arrangement	Restaurants

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
6	Retail and Repair Shop	3 mt. x 3 mt.	12 mt. & above	A premise for sale of commodities directly to consumer with necessary storage	Retail shop, repair shop, Personnel service shop
7	Road Transport and booking office	30 sq.m per counter		A premises used for the offices of a road transport agency. It may not include godown.	Road transport booking office, storage
8	Ideal parking	As per requirement		A premise used for parking of vehicles especially trucks. The parking lots may be run on commercial and non-commercial basis.	Parking
9	Public utility buildings			i) Overhead tank – A premises having an overhead tank for storage and supply of water to its neighboring areas. It may or may not include a pump house. ii) Underground tank – a premises having an underground tank for storage and supply of water to its neighbouring areas. It's may or may not include a pump house. (ii) Oxidation pond – A premises having a tank used for the oxidation process for sewerage and other waste. (iii) septic tank – A premises having an underground tank for (iv) Sewerage pumping station – A premises with a pumping station used for pumping sewerage on to a higher gradient. (v) Public toilet and urinal – A premises having latrine and urinals for use of public. It may or may not include drinking water facility. (vi) Electric sub – station – A premises having electrical installation and transformer for distribution of power.	Public utility premises – overhead tank, Underground tank, oxidation pond , septic tank, Sewerage Pumping station, Public toilet urinal, Electric substation, Solid waste collection centre, Dhobi ghat.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				(vii) Solid waste collection centre – A premises used for collection of garbage for its onwards transportation to sanitary landfill / disposal. (viii) Dhobi ghat- A premises used for cleaning and drying of cloths/ linen by washer man.	
E)	Inter-State Bus Terminal	As per transport Deptt. Requirement	30 mt. & above	A premise used by a public transport agency to park the buses for short duration to serve the population. It may include the facilities for passengers.	Bus Terminal. Soft drink & SNACK stall, Administrative office, Other Offices
F)	Bus Depot/Bus stand	As per transport Deptt. Requirement	18 mt. & above	A premise may be used by the public transport agency or any such agency for parking, maintenance, and repair of buses. This may or may not include a workshop.	Bus depot, Workshop, Watch & ward Residence (up to 30 sq.m.), Soft drink & Snack stall and Administrative office.

11.10.7 Permitted Use Premises in Special Use Zone**11.10.7(A) Corporate Park**

- 1) The major components of the Corporate Park would be corporate offices, IT Park, Bio-Tech Park, B.P.Os, R & D Centre, Trade and Exhibition Ground, Hotels/Resorts/Holiday Cottage, SEZ/Film City/Sports City, Educational Institutes (professionals, collages, integrated residential schools), Convention Centre, Religious buildings, Central Govt. Offices/State Govt. Office.
- 2) Housing for staff for respective institutions within their campuses will be permitted.
- 3) Manufacturing unit will not be allowed in Corporate Park. Any other trade or activity involving any kind of obnoxious, hazardous, inflammable, non compatible and polluting substance or process shall not be permitted.

Note: Any other major activity not mentioned above shall only be permitted by competent authority.

11.10.7(B) Protected Forest

No activities shall be allowed in protected forest.

11.10.7 (C) Natural Conservation Area

No activities shall be allowed in Natural Conservation Area (NCA) other than following

- (I) Agriculture and Horticulture
- (II) Pesiculture
- (III) Social forestry/plantations including afforestation

11.10.7 (D) Permitted Use Premises in Ecological Conservation Zone

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Agriculture				
2	Bird Sanctuary	-	-	A premise used form of a large park or forest for preservation and breeding of birds with all related facilities	Bird sanctuary, Watch & ward Residence (up to 30 sq.m), Residential flat (for maintenance staff), Retail shop, Restaurant
3	Botanical garden	1.0	18 mtr. & above	A premise in the form of a garden with plantation for research and exhibition	
4	Cremation and burial ground			A premise with facilities of performing last rites of dead bookies by burning	Burial ground, Cremation ground, Cemetery and electric Crematorium, Retail shops of wood, Flowers and Related materials, Watch & ward Residence (up to 30 sq.m)
5	Forest	-	-	Is a thick natural flora, it shall include city forest which may have part natural flora and part man made flora	
6	Government reserved area	-	-	A premises of government land for reserved use	Government reserved area
7	Orchard & nursery	-	-	A premise with facilities for rearing and sale of young plants	Nursery, Watch & ward Residence (upto 30 sq.m.), all structures shall be temporary in nature
8	Police post	0.5 or may be more	12 mtr. & above	A premise having facilities for a local police post of a temporary nature or on smaller scale as compared to a police Station	Police post, Essential staff housing
9	Regional park	100 (Diapering of the availability of land)	18 mtr. & above		
10	Village Abadi Extension	As per requirement of concerned authority		A premise for residence of village people with related facilities.	Rural settlement and its planned growth within 500m from abadi limit.
11	Water bodies				
12	Wireless and	0.10	12 mtr. &		

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
	transmission		above		
13	Aquarium			A premise in the form of a garden or park or aquarium with a collection of Animals, Species and birds for exhibition and study. It shall include all related facilities	

11.10.8 Transit Oriented Development (TOD)

All the activities permissible in High Density Mixed Use Zone mentioned in 11.4.1 (C) will also be permitted in Transit Oriented Development (TOD)

11.10.9 Permitted Use Premises In Rural Area (Peripheral Control Belt)

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
1	Art and craft training centre	1.0 to 1.5	12 mt & above		
2	Bird/Veterinary hospital	0.05	12 mt & above		
3	Bus Depot	0.5	12 mt & above	A premises used by a public transport agency or any other such agency for parking maintenance and repair of buses this may or may not include a workshop.	Bus depot, Workshop, Watch & ward Residence (up to 30 sq.m.), Soft drink & Snack stall and Administrative office.
4	Cattle market	4.0	12 mt		
5	Cold storage/milk chilling plant			A premises where perishable commodities are stored in covered space using mechanical and electrical devices to maintain the required temperature, etc.	Cold storage, Watch & ward residence (up to 30 sq.m.), caretaker office.
6	Dairy farm/plant	1.0 to 1.5	12 mt & above	It is a premise with facilities for rearing and processing of dairy products. It may have	Dairy farm, Watch & ward residence (up to 30 sq.m.).

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				temporary structure for sheds of animals and birds.	
7	Drive in Cinema			A cinema with facilities for projection of movies and stills for car audience including an auditorium for other audience.	Drive-in-cinema, Watch & ward residence (up to 30 sq.m.), Administrative office, Restaurant, Soft drink & Snack stall.
8	Extractive Industry			An industrial premises used for carrying on industrial production or manufacturing and extractive and mining industry is a premises for carrying out quarrying and crushing of stone, Lime and brick kiln and extraction of sub-soil material, etc.	Extractive and Mining industry.
9	Flying club	1.0	18 mt & above	A premises used for training and fun rides on gliders and other small aircrafts. it may include other activities like recreational club and indoor games.	Flying club, Watch & ward residence (up to 30 sq.m.), Residential flat (for maintenance staff), Swimming pool and Indoor and Outdoor games facilities.
10	Jail			A premise having facilities for detention, confinement and reform of criminals under the law.	Jail
11	Junk Yard	0.05 to 0.07	12 mt & above	A premise for covered, semi covered or open storage including sale and purchase of waste goods, commodities and materials.	Junk yard, Watch & ward residence sales office.
12	Motel	0.4		A premises Designed and Operated especially to cater to the Boarding, Lodging, Rest and Recreation and Related activities of travelers by road.	Motel
13	National Cadet corps, scouts, & guide training area	0.50 or may be more	18 mt & above		
14	Naturopathy hospital/yoga centre	1.0	18 mt & above		
15	Petrol pump	36 mt x 36 mt	24 mt & above	A premise for sale of petroleum products to consumers. It may include servicing of	Petrol pump, Soft drink & Snack stall Automobile repair shop.

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
				automobiles.	
16	Piggery	1.0 to 1.5		A premise with facilities for rearing and processing of piggery products. It may have temporary structure for sheds of pigs.	Piggery shed, Watch – ward residence (up to 30 sq.m.). all structures shall be temporary in nature.
17	Police station	0.05 to 0.10	12 mt & above	A premise having facilities for the offices of local police station.	Police station, Essential staff housing
18	Poultry farm	1.0 to 1.5	18 mt & above	It is a premise with facilities for rearing birds and production of eggs. It may have temporary structure for sheds to birds.	Poultry farm, watch and ward residence (upto 30 sq.m) all structures shall be temporary in nature.
19	Research and development centre	0.1	18 mt. & above	A premise providing facilities for research and development for any specific field.	Research and development Centre, watch and ward residence (upto 30 sq.m), residential staff (for maintenance staff), Hostel, Canteen, Bank Extension Counter, Library, post office extension facility.
20	Resorts	1.0	18 mt. & above		
21	Sports City	50	18 mt. & above		
22	Storage/Perishable/ inflammable goods	1.0 or may be more	18 mt. & above		
23	Veterinary Hospital	0.20	18 mt. & above	A premises providing treatment for indoor and outdoor sick animals.	Veterinary hospital, Residential flat (for employees and service personnel), Institutional hostel, Veterinary college, Retail shop (confectionery, Grocery, General merchandise, Books & Stationery, Barber, Launderer).
24	Burial Grounds/ Cremation site	The site for Burial grounds/ Cremation site shall be indentified at such locations which are not in proximities to residential areas.		It is a premise with facilities for burying of dead bodies.	Burial ground, Cremation ground, Cemetery and electric crematorium- burial ground, Cremation ground, Cemetery and electric crematorium, Retail shops of wood, Flowers and related materials, Watch & ward Residence (up to 30 sq.m.)

S. No.	Activity	Minimum Area Required (Ha)	Road Width in Meters	Definitions	Use Premises
25	In addition to 1-24 above, agriculture, horticulture, social forestry, sanitary landfill site/compost processing plant, farm house outside abadi areas, wireless station/weather station, telephone and electric transmission lines and poles, power substation/water works/treatment plants and expansion of existing village within 500m of abadi limit will be permitted.				

11.10.10 The Permission of Use premises in following use zone shall be governed by the specific function of the use zone: Hotel/Heritage Hotel, Historical Monument, Rail Terminal, Rail Circulation, Bus Terminal & Depot, Road Circulation, Multi-Modal Transit Station (MMTS), Regional Rapid Transit Station (RRTS), Water, Sewerage, Electricity, Solid Waste, Drain, Government Reserved Area, Cremation and Burial Ground, Religious, Water Body

NOTE: In case of any doubt, the permissibility of use premises shall be decided by the competent authority