

# Spatial Development Plan

For

## **Bakkas Village**

Gosaiganj Block

District Lucknow

State: Uttar Pradesh



सत्यमेव जयते

Ministry of Panchayati Raj  
Government of India

Sponsored By  
Ministry of Panchayati Raj

Prepared by



**Faculty of Architecture, AKTU Lucknow**

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## Ch-1 Introduction

### 1.1. Rural India in transformation

Along with rapid growth of population in cities, the out migration of rural population for employment, disinterest of farmers towards agriculture, and changing character of villages in the vicinity of cities are some of the inevitable occurrences that India is witnessing as a result of high rate of urbanization. Though the problems in villages don't seem so intense in comparison to cities they cannot be overlooked. There are 6.4 lakh villages in the country and 68.84 percent of the total population lives in the rural areas. In India, rural areas cover 94% of land and 69% of population while urban area holds 6% of land and 31% of population. (Census of India, 2011) The rural population and settlement figures across Indian states are shown in Table 1-1.

Table 1 Rural Settlements and Rural Population at State Level

State	Rural Population	No Of Villages	Average Rural Population Per Village
Jammu & Kashmir	918060	6652	1369
Himachal Pradesh	6176050	19831	311
Punjab	17344192	12.729	1363
Chandigarh	28991	24	1.208
Uttarakhand	7036954	16.805	419
Haryana	16509359	6955	2,374
Nct Of Delhi	419042	165	2.540
Rajasthan	51500352	41353	1,245
Uttar Pradesh	155317278	107,440	1,446
Bihar	92341436	45,113	2,047
Sikkim	456999	452	1,011
Arunachal Pradesh	1066358	4,065	262
Nagaland	1407536	1315	1,070
Manipur	2021640	2,391	846
Mizoram	525435	817	643
Tripura	2712464	870	3,118
Meghalaya	2371439	6,023	394
Assam	26807034	26,247	1,021
West Bengal	62183113	40,783	1,525
Jharkhand	25055073	32,615	768
Odisha	34970562	51,352	681
Chhattisgarh	19607961	20,308	966
Madhya Pradesh	52557404	55,392	949
Gujarat	34694609	18,544	1,871
Daman & Diu	60396	23	1,626

<b>Dadra &amp; Nagar Haveli</b>	<b>183114</b>	<b>70</b>	<b>2,616</b>
<b>Maharashtra</b>	<b>61556074</b>	<b>43,722</b>	<b>1,408</b>
<b>Andhra Pradesh</b>	<b>56361702</b>	<b>28,123</b>	<b>2,004</b>
<b>Karnataka</b>	<b>37469335</b>	<b>29,483</b>	<b>1,271</b>
<b>Goa</b>	<b>551731</b>	<b>359</b>	<b>1,537</b>
<b>Lakshwadeep</b>	<b>14141</b>	<b>24</b>	<b>539</b>
<b>Kerela</b>	<b>17471135</b>	<b>1,364</b>	<b>12,809</b>
<b>Tamil Nadu</b>	<b>37229590</b>	<b>16,317</b>	<b>2,282</b>
<b>PI'ducherry</b>	<b>395200</b>	<b>92</b>	<b>4.296</b>
<b>A.Ndaman &amp; Nicobar Islands</b>	<b>237093</b>	<b>547</b>	<b>433</b>
<b>INDIA</b>	<b>833748852</b>	<b>640867</b>	<b>1,301</b>

Villages in India are experiencing constant transformation. This is due to the varied kind of impact they have due to rural-urban interaction. One such interaction is due to the flow of people from rural to urban areas. The migrants aren't always victim, but instead are rational decision makers who prefer to move to cities for lucrative benefits. This Uni-directional migration leads to gravitation of population in cities which implicitly asks for a balance to be brought between rural and urban areas. Another interaction is through exchanges of goods via market which is a major factor in development of rural areas reflecting the global trend towards market-led strategies. Many peri-urban areas possessing mix of rural-urban character face the brunt of waste generated from urban centers. These interaction have leapfrogged and now we even witness a peculiar kind of interaction which is sectoral interaction, this is defined as rural activities taking place in urban areas and vice versa. Villages having industries and urban areas doing agriculture is one such example (Tacoli, 1998).

The above mentioned interactions have major spatial impacts. If not dealt properly at right time this culminates to poor spatial growth of rural areas. This calls for a dire need to bring spatial planning a part of rural planning so that the change which these villages witness becomes smooth and not abrupt. The facilities and services required for a village has always been a part of government schemes and policies. The only aspect which has not been incorporated is how spatially these things should be applied.

## **1.2. Rural-urban dichotomy: Need for renewed thrust in rural planning in India**

Irrespective of the country concerned, the distinction between "rural" and "urban" draws on spatial and sectoral dimensions all. Though demographic and economic criteria on which definitions of urban and rural areas are based can vary widely between different nations, censuses and other similar statistical exercises usually define rural and urban populations in terms of settlement size. Agriculture is assumed to be the principal activity of rural populations whereas urban dwellers are thought to engage primarily in industrial production and services. In reality, however, things tend to be far more complex. Especially, in the densely populated metropolitan regions of South Asia, the existence of rural and urban settlements side by side with overlapping of many functions and intense human and commodity exchanges at the fringes.

Over the past half century, policies aiming at economic growth traditionally followed one of two different approaches. The first favors investment in the agricultural sector, which can then provide the necessary surplus for industrial and urban development, whereas the second approach argues that industrial and urban growth are pre-requisites for a more modern and productive agricultural sector. Tacoli (1998) highlighted the various theoretical positions that have emerged in the context of this dichotomy: Modernization through Industrialization and Urbanization; Urban Bias; and, Structural Adjustment, Globalization and Decentralization. Indian policies for economic development being urban-biased have brought a wide gap between rural and urban growth trend. Rural areas have taken a backseat in terms of indicators pertaining to economic growth. The emphases towards urban issues are so acute that rural areas are overlooked when it comes to overall national development. Though there are policies and schemes to overcome the same but the figures from census asks for more attention towards rural areas. "India lives in villages" were the golden words of Mahatma Gandhi many decades ago. Even today a majority of the Indian population lives in the villages. Though there is substantial migration from rural to urban areas in India, still almost 73% of the households live in rural areas. (Socio Economic and Caste Census, 2011) Ironically villages lag behind in almost every aspect of socio-economic analysis. Our country

portrays an economy of rich cities and poor villages. Rural India is far behind Urban India in every Indicator of Progress.

Agriculture and allied services though being back bone of village economy have reduced in contribution to the GDP of the nation from 51.81% in 1950 to 13.94% in 2013. Similarly Socio-Economic Census (2011) data regarding rural livelihood and employment is daunting. Almost three fourths of the rural households live with a monthly income of less than Rs.5000. More than half the rural households do not own land and more than half of them are involved in casual labor. In case of poverty too the rate of poverty reduction in urban areas has been higher than rural areas. The Rangarajan Committee estimates are also indicative of the fact that rural poverty is higher than urban and stands at approximately 31% in 2011-12. The same rural urban lens reveals that rural literacy rate is much lower than the urban literacy and within it the urban female literacy rate is almost higher by 20% than the rural female. Rural India lags behind Urban India in all health related indicators too like Infant Mortality Rate, percentage of Anemic Population. Access to Basic Services (as of 2006) is also a major concern in rural India (Census 2011). No doubt that government policies and schemes thrive hard to overcome the above mentioned issues. At places they have been successful and have failed too depending on the environment where they have been implemented and the intensity and vigor which they have come up.

### **1.3 Need for integrated spatio-economic planning framework for rural settlements in India**

The Census of India clearly defines urban as places with a municipality, corporation, cantonment board or notified town area committee, etc. and all other places which satisfied the following criteria: i) A minimum population of 5,000; ii) At least 75 per cent of the male main working population engaged in non-agricultural pursuits; and iii) A density of population of at least 400 persons per sq. km. However there is no definition of rural provided in the Census. It is interesting to note that if India changes the definition of urban centers to one based on a relatively low population threshold as used by many Latin American and European nations, a large proportion of its rural population would get classified to urban. Apart from the problems which have always been allied with villages there are some problems faced by villages which are associated with urbanization. First and foremost amongst them is that many villages

in India seem to possess urban characteristics (Gupta, 2013). Villages lose their rural character when they come close to cities. Many a times they experience a backwash effect where they become devoid of rural assets like agricultural land and skilled farmers. The rural to urban migration for employment aggravates the pressure of urbanization on major cities. Villages need to be revisited in terms of planning. They need to be dealt differently on the basis of specific character they have acquired pertaining to the changes they have come across.

A review of the prominent pre-independence rural development initiatives in India reveals that they were sector specific and community centric. Post-independence various rural development initiatives were taken up by Government of India during each of the Five Year Plan periods. However, the spatial dimension was not incorporated in these programmed. Today, the flagship rural Programmes of Government of India are utilizing IT and geo-spatial technology and have in-built convergence mechanisms, but the need is to integrate these into a spatial planning framework that will take into consideration the dynamic settlement characteristics of India's villages.

Indian states have a legislative framework in place for spatio-economic planning of urban areas. However, when it comes to rural, there is a lack of integration of spatial aspects in development plans. The Constitution of India requires the states to constitute District Planning Committees and Metropolitan Planning Committees to consolidate plans at the district and metropolitan level respectively, taking into account the concerns of both rural and urban local bodies. Interestingly, as per the Constitution, DPCs and MPCs are to incorporate spatial planning aspects in the District and Metropolitan Level Plans respectively. However, the legislative framework of most states are yet to be updated to make the spatial planning aspect mandatory, in the absence of which sectoral plans lack the desired spatial underpinning.

Spatial planning of villages has never been given much heed. This realization by government came as guidelines which came recently in 2016 by Ministry of Panchayati Raj known as Rural Area Development and Plan Formulation and Implementation (RADPFI) Guidelines. This was a first step by the government towards spatial planning of rural areas. As this is a recent intervention its

implementation on ground and its accomplishment has not been apprehended. This project is an opportunity to link and reframe RADPFI Guidelines with GPSDP. To demonstrate the planning process the village chosen is Bakkas Village in Lucknow District. The working group comprises of Ministry of Panchayati Raj, National Institute of Rural Development, National Remote Sensing Centre, and Faculty of Architecture, Lucknow.

#### **1.4 Need for integrating spatial planning and GPDP**

73rd amendment in the constitution has given way to democracy in rural areas, taking it further ahead the XIV Finance Commission award has created an opportunity for responsive local governance at institutional level of the Gram Panchayat. The guidelines issued by Ministry of Finance instruct that proper plans i.e. Gram Panchayat Development Plan (GPDP) is to be prepared by the Gram Panchayat for the basic services within the functions devolved to them as per State laws. These plans have to be participatory plans involving the community, particularly the Gram Sabha, in the formulation of priorities and projects and will also have to ensure the mandates of social justice and economic development mentioned in Article 243G. GPDP has a clear component addressing vulnerabilities of poor and marginalized people and their livelihood opportunities through an integrated poverty reduction plan. It allows for different local models and innovations that are locally appropriate and cost effective. It helps to transform GPs into institutions of local self-governance and to cement the GP's identity as development institution. Overall the process of participatory planning for a Gram Panchayat Development Plan is expected to improve service delivery, enhance citizenship, motivate volunteerism, create space for an alliance of people's institutions and groups, and improve governance at the local level. The above contents mentioned only refer to the sectoral development of the villages/Gram Panchayats but no spatial reference is made.

Spatial plans are prepared for cities and towns popularly known as Master Plans and Development Plans and notified under the respective State Town and Country Planning Acts and Urban Development Acts. These Acts in their title include *Country Planning*, but in actual terms, there is neither provision of preparing Master/Development Plans for *countryside* village nor much attention has been given by the State Governments to prepare the same. There has been no serious

attempt to prepare Spatial Plans for rural areas and taking into account the vast rural population of the country who have been deprived of the access to basic facilities. Herein lies the importance of preparing a template for a spatially integrated version of the GPDP, namely the GPSDP (Gram Panchayat Spatial Development Plan).

### **1.5 Methodology for preparing GPSDP**

Bakkas village in Gosaiganj Block in Lucknow district is selected for Gram Panchayat Spatial Development Plan as it exemplifies typical peri urban character. This village lies outside the boundary of Planning Area and is prone to intense transformation due to approaching urbanization.

The GPSDP incorporates the spatial layers corresponding to attributes like physical features, land holding and land ownership of revenue lands, land use in Abadi area, overall physical and social infrastructure, etc.; built environment parameters like housing typology, building height, building age, etc.; economic parameters like land-holding wise cropping pattern, etc. It also integrates the non-spatial attributes like socio-economic condition, skill level, governance dimensions, etc. The outcome is in the form of zoning system and prescriptions for rural settlements.

The study would be intensively based on primary survey and Census data 2011. Spatial and Non Spatial data would be collected by study team comprising of faculty members and students from Faculty of Architecture, Lucknow who made necessary number of visits to the village. The data related to demography would be procured from Census 2011 but rest of the data regarding Land use for abadi and village area, socio-economic condition of population, services, infrastructure, housing condition etc. would be collected on ground. During the visit meetings would be conducted with the Sarpanch, Gram Sabha members and villagers in subgroups of women, children and youth. Visit of NIRD&PR official would also took place for the appraisal of the project during surveys. Comments and expectations of the focused group discussion would be noted to consider during the proposal. This process of data collection would reflect the interest of residents as most of it will be procured through open ended personal interviews, questionnaire based interviews, focus group discussion etc. Considering spatial emphasis of the project pertinent spatial data related to land use, cropping pattern, infrastructure, housing etc. would

be collected on ground and then transferred to map through GIS. Maps depicting combined indices would be produced for rational approach.

## Ch – 2 Introduction to the Study Area

### 2.1 Panchayati Raj Institutional Set up in Uttar Pradesh

Panchayat is the basic institution of rural local governance. The Directive Principles of State Policy contained in the Constitution of India provides for the Panchayati Raj System. Following the Constitution (73rd Amendment) Act, 1992 in order to bring about conformity with the provisions of the Constitution, the Government of U.P. amended the two Acts named above, through the Uttar Pradesh Panchayat Laws (Amendment) Act, 1994. The three levels of Panchayat are Zilla Panchayat [District], Kshetra Panchayat [Janpad] and Gaon Panchayat [Village].

The Gram Sabha has power to approve works under annual budget of the village constituted with the elected members, these institutions work for five years. Village Panchayat with its funds executes the disposal of discriminating articles, water supply, public works (roads, buildings, wells, and tanks), market exchange, cooperation with governmental works, community health and development works. Janpad Panchayat with its funds in its area works for community development and integration, agriculture, social, trade, cattle-breeding, fish-breeding, adult education, co-operatives, cottage industries, welfare and employment oriented programme. The District Panchayat has the duty to supervise and control the Janpad and Village Panchayats. It has also to direct the development works and advise the State Government.

### 2.2 Panchayati Raj Institutional Set up in Lucknow

Lucknow District has a total of 807 villages. The Zilla Panchayat is the apex level PRI institution in Lucknow District. Below it there are eight Kshetra Panchayats at Block level. These are Mal, Malihabad, Bakshi-Ka-Talab, Chinhhat, Kakori, Sarojaninagar, Gosaiganj and Mohanlalganj (Gramin) Janpad Panchayat. There are 498 Gram Panchayats in the District. The particulars of settlements in Lucknow are shown in table below..

Table 2 Particulars of Settlements in Lucknow District

S.n	Particulars	2001	2011
1	Area in sq.kms	2528	2528
2	Number of Sub Districts	4	4
3	Number of CD Blocks	8	8
4	Number of Towns	9	12

S.n	Particulars	2001	2011
5	Number of Statutory Towns	9	10
6	Number of Census Towns	0	2
7	Number of Villages	835	807
8	Inhabited Villages	831	803
9	Un- Inhabited	4	4
10	Revenue Village	835	807
11	Gram Panchayat		498
12	Rural Area		2057.3
13	Total Population	942004	4589838
14	Proportion of Rural Population	23.8	33.8

Table 3 Particulars of Village in Lucknow District

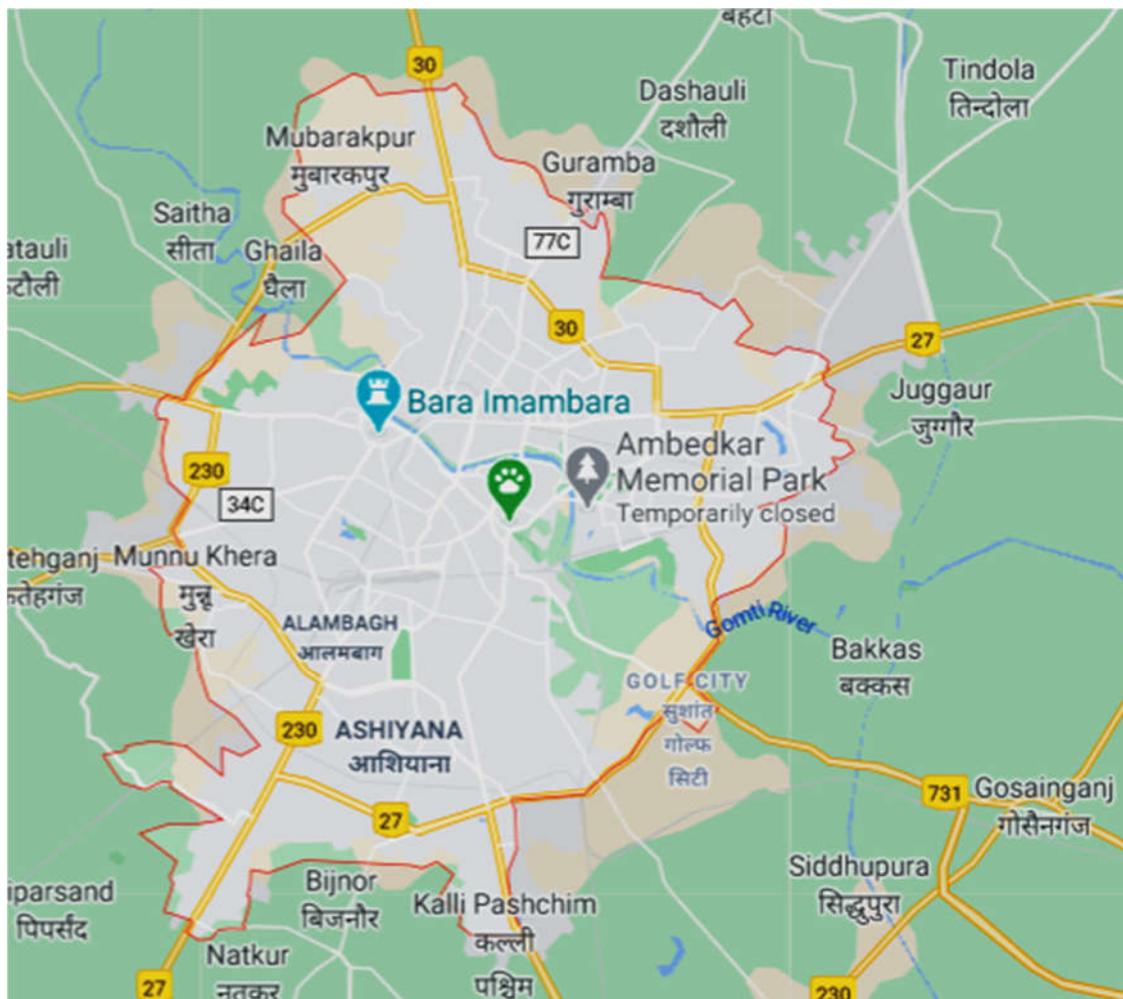
S.n	CD Block	Inhabited Villages	Area [sq. kms]
1	Mal	87	246.86
2	Malihabad	98	216.23
3	Bakshi -Ka-Talab	160	310.04
4	Chinhat	57	125.64
5	Kakori	82	210.81
6	Sarojaninagar	90	305.26
7	Gosaiganj	116	273.61
8	Mohanlalganj	113	403.76
	Total	803	2092.3

Table 4 Population Details of CD blocks in Lucknow District

S.n	CD Block	Villages	Population	Male	Female
1	Mal	87	170962	89553	81409
2	Malihabad	98	179673	94343	85330
3	Bakshi -Ka-Talab	160	239938	126133	113805
4	Chinhat	57	137251	71641	65610
5	Kakori	82	152277	80242	72035
6	Sarojaninagar	90	224045	117745	106300
7	Gosaiganj	116	198184	102864	95320
8	Mohanlalganj	113	248512	131231	117281
	Total	803	1550842	813752	737090

### 2.3 Study Area: Bakkas Village

Bakkas is a revenue village located in Mohanlalganj Tehsil of Lucknow District. It comes under the Gosaiganj CD Block which has 116 inhabited village under it. It is situated 16 km from the heart of Lucknow city. The geographical area is 730.52 Ha. Total number of households is 1444 and total population is 8141 as per Census 2011. As per revenue records, Bakkas is part of a group of hamlets situated on the National Highway 731 in the transition zone between the eastern end of Lucknow city and the countryside around it as shown in figure below.

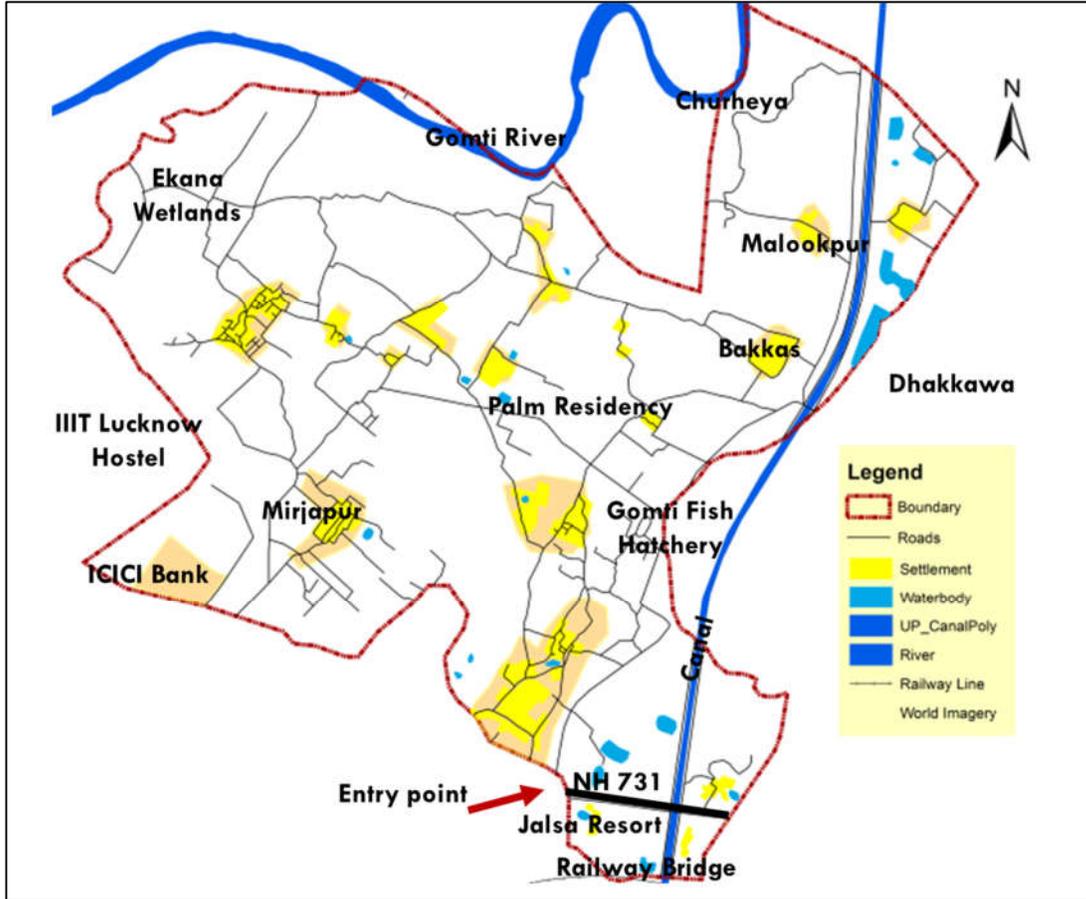


Map 1 Location Map in context of Lucknow city

The area is bounded by prominent physical feature on all ends that area Gomti River on the North and National Highway in the South. The Canal marks the Eastern end and the Ekana Wetlands marks the western end as shown in Map below.

The Table represents the various settlement within the village as the area is sparsely located shown in the map below. Katra, Shekhnapur, Bakkas are amongst the major settlement areas as shown in the table below based upon number of Households.

Further the Demographic Profile data of the villages as per Census 2011 is also presented below in the table.



Map 2 Study Area Map with major Landmarks

Table 5 Major Settlements in the Study Area

S.no	Settlement Name	HHs	Distance from the Village (in km)
1	KATRA	250	0.5
2	BAKKAS	150	0
3	LAKSHIMANPUR	85	1.5
4	SITARAMPUR	80	1
5	FATTEHPUR	120	2.5

S.no	Settlement Name	HHs	Distance from the Village (in km)
6	DULLAPUR	120	2.5
7	SHEKHNAGHAT	150	3.5
8	ANANDPUR	150	2.5
9	SHEKHNAPUR	200	3
10	CHILAU LI	145	4

It is a rural settlement as per Census 2011 and is just outside the Planning Area boundary of Lucknow. It has not been included in the Municipal Area of Lucknow till date. It is characterized by large tracts of agricultural land and the original habitation area comprises clusters of houses situated off the main roads. Some important institutions like IIIT, Sushant Golf City, IT city, ISCON Temple have come up in the neighboring parts within the last decade. These institutes and facilities act as trip attractors for many residents of the study area who commute mainly for daily-wage jobs. Ahmamau and Lucknow, two nearest towns located within in Municipal Corporation limits, also attract a large number of trips from the study area. Some signs of diversion of agricultural land for real estate development are evident in the study area, as the area lies along the national highway but building activity has been stagnant. Inter-city buses are available only along NH 731. Shared auto rickshaws are available on NH, MDRs but the service quality and Frequency is generally poor.

Table 6 Demographic Profile of the Study Area

S. N	Details	Total
1	Total Population (census-2011)	<b>8171</b>
2	Decadal Growth in Rural Population (%) (2001-2011)	<b>25.9%</b>
3	Household Size	<b>5.7</b>
i	No. of Households	<b>1444</b>
4	Sex Ratio	<b>901</b>
5	Age Profile* (Age bracket with the largest % of population)	<b>15-59</b>
		<b>55%</b>
6	Total Land Area (in Hectares)	<b>730.52</b>
i	Under Agriculture	<b>511.36</b>

For the purpose of preparation of spatial plan, social profile describing the individual social characteristics including literacy rate, contribution of Schedule Caste (SC) and Schedule Tribe (ST) in the total population, percentage of differently challenged people and single women were also collected. The average literacy rate of Bakkas Village is 55.8 percent, which is more than the average literacy rate of district but less than that of the state i.e. 46.7 and 67.7 percent respectively. The contribution of SC population to the total population is 42.4 percent (3762) while the percentage of ST population is zero in the cluster. The table showing the social characteristics of the village are shown in the table below.

*Table 7 Social Profile of the Study Area*

<b>S. N</b>	<b>Details</b>	<b>Total</b>
1	Literacy Rate	<b>55.8</b>
2	SC Population	<b>3462</b>
3	ST Population	<b>0</b>
4	Education Levels	<b>-</b>
i	% with Higher Secondary and above	<b>7.9</b>
ii	% with Senior Secondary and above	<b>14.9</b>
iii	% with primary Education and above	<b>45.4</b>
5	% of Population - disabled	<b>0.5</b>
6	% of single women	<b>54.4</b>

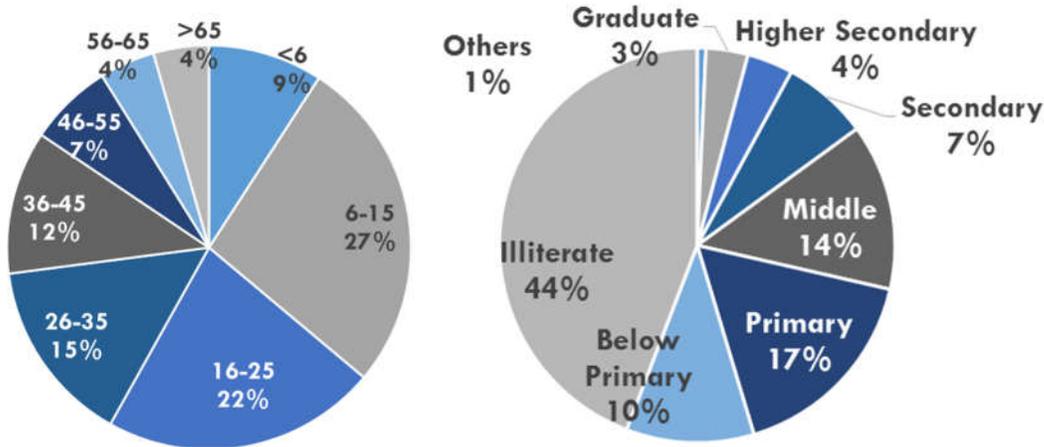


Figure 1 Age and Education of Inhabitants of Bakkas Village

The pie shows the age profile of the inhabitants of the Bakkas village as per the SECC Data collected. The major percent of population are in the student and working age i.e. 27% and 56% respectively. Further data was also collected based upon the education levels of people and it is shown as follows. Among the literate people maximum are class eight or Upper Primary educated i.e., 14%.

Further the economic profile of the village from census and secc were also collected and tabulated as below. The economic profile helps to understand the economic base of the cluster which includes occupational structure and details of employment activity. The village is devoid of industries with a majority of population engaged in agriculture and working as laborers under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The workforce participation rate in the cluster is 29 percent (1375) which is lower than district and state average with 36.1 percent and 32.9 percent respectively.

Table 8 Economic Profile of Study Area

S.N.	Details	Total
1	<b>Occupation Structure</b>	
i	Cultivation	<b>4%</b>
ii	Manual Casual Labour	<b>79%</b>
iii	Domestic Service	<b>2%</b>
iv	Foraging Rag Picking	<b>0%</b>
v	Non-Agricultural	<b>1%</b>
vi	Others	<b>13%</b>

S.N.	Details	Total
iii	Occupation by industry	No
iv	Average distance to work place for majority of the work force (in km)	4

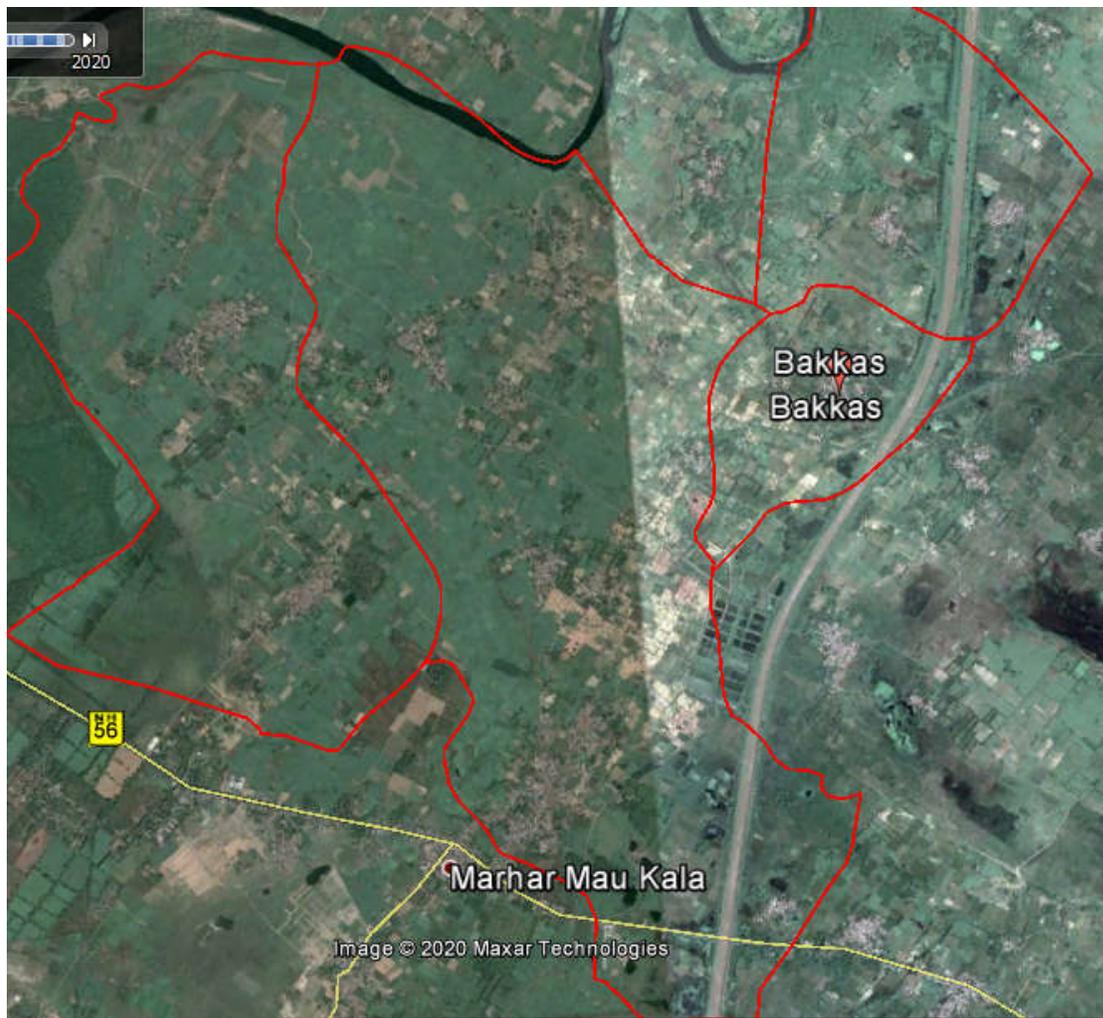
As stated previously, Bakkas village lies outside Planning Area and as such, the provisions of the Uttar Pradesh Adhiniyam do not apply to it. It is not part of any zoning as per the statutory Lucknow Development Plan in force. Neither the general Development Control Rules in the form of Bhumi Vikas Adhiniyam of the state applies to it. Section 15 of the U.P Panchayat Raj Act 1947 and sections 32 and 33 of U.P. Kshetra Panchayats and Zilla Panchayats Act 1961, respectively provide for the devolution of functions, in conformity with Article 243-G. It has the power to approve all plans including Annual Plans, Programmes and projects for social and economic development before such plans, Programmes and projects are taken up for implementation by the Gram Panchayat. It is also mentioned that it has the power to control local plans, resources and expenditure for such plans. Detail powers/ works of the Gram Sabha as per the Act is given in section 14.

The UP District Planning Committee Act was enacted and Notified on July 29, 1999. However, they have still not been constituted in the districts. In the absence of DPCs perspective or annual plans are prepared by Panchayats. The plan shall be prepared keeping in view the land use plan and requirement of basic amenities of Gram Sabha, on priority basis of long term plan through a yearly plan based on the financial resources to be received per year to the Gram Kosh of a Gram Sabha. However, there is no such land use plan prepared for Bakkas village. There is no attention to the spatial expansion of the Abadi area and its implications on the quality of life, or the changing spatial character caused by the recent land diversions. There is a need to relate these funds phase wise with the development priorities of the village. In dynamic peri-urban areas, these aspects are very much required to be considered and incorporated in a statutory planning framework for rural settlements. Hence there is need for a GPSDP for the village, which may serve as a template or model GPSDP for all such rural settlements in the country.

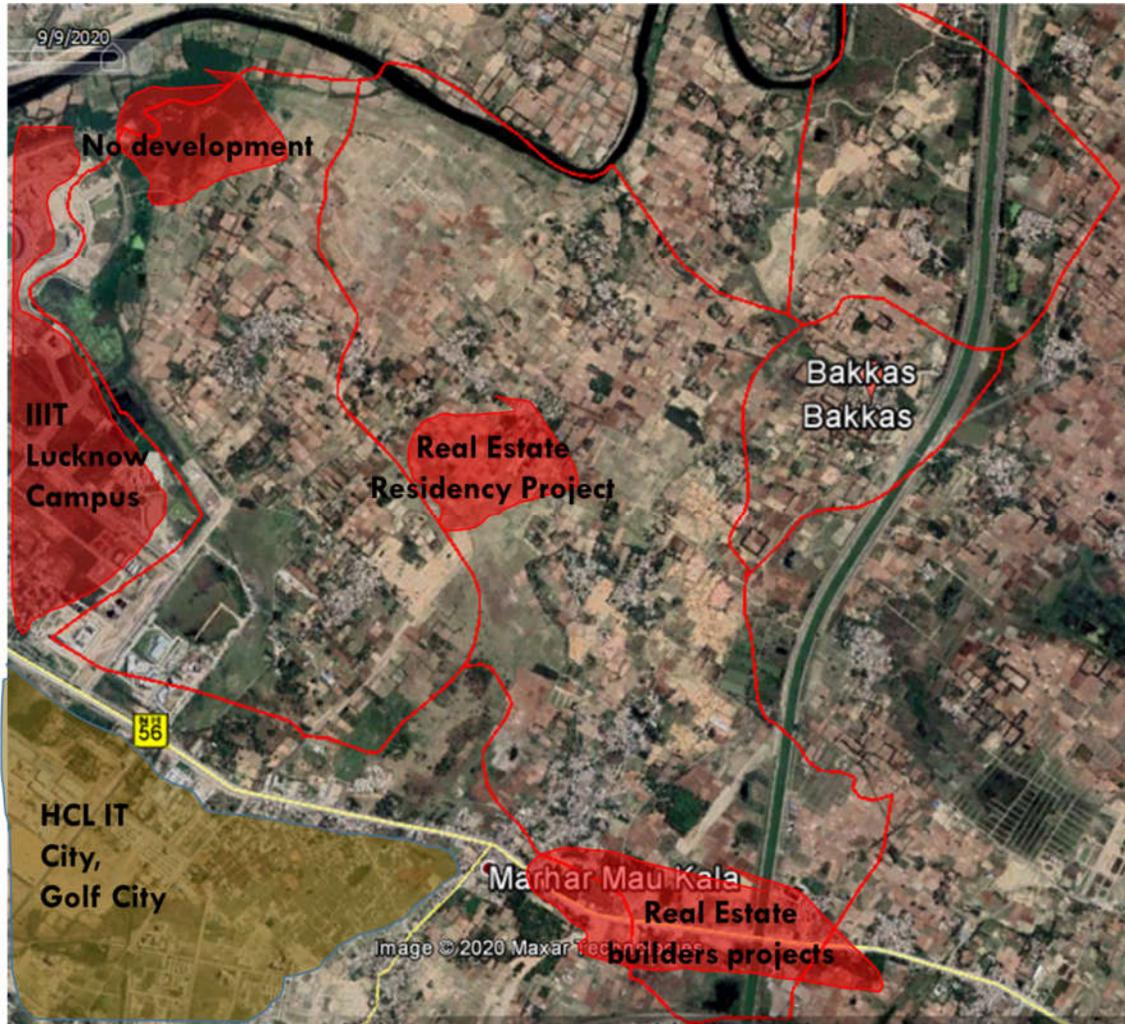
## Ch-3 Current Situation Analysis

### 3.1 Evolution of Bakkas Village

The history of Village establishment is unknown but based upon imagery and data available it has history of 3 decades. With the advent of year 2015, plotted residential colonies of private developers, are observed at the periphery of the village boundary, in south eastern direction, which is also marked as the edge of Lucknow Planning Area. The figure below shows the decadal change in terms of area, settlement size and surrounding developments over the period of ten years [2010-2020]



Map 3 2010- Imagery for Study Area



Map 4 2020-Spatio Temporal Change in the Study Area

Many central government institutes like IIIT, Golf City, HCL IT City and Residency are coming up at the edge of the boundary under Lucknow Municipal Corporation. Evaluating the present extent of development, plotted settlement is growing along the municipal boundary in South-eastern directions. The maps show the spatial temporal change in and around the area.

### 3.2 Land Cover Classification

Abadi area consists of approximately 7% of the total area of Bakkas Village with around 5% urban and 2% rural settlements. It is located centrally in the village along the main road. The spatio temporal image

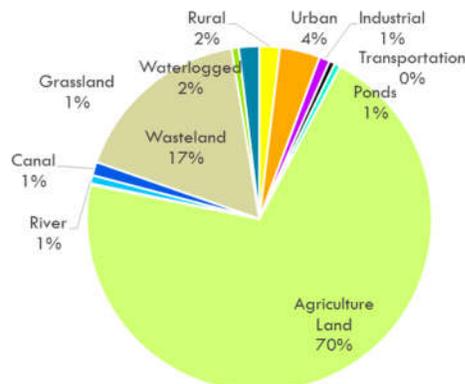
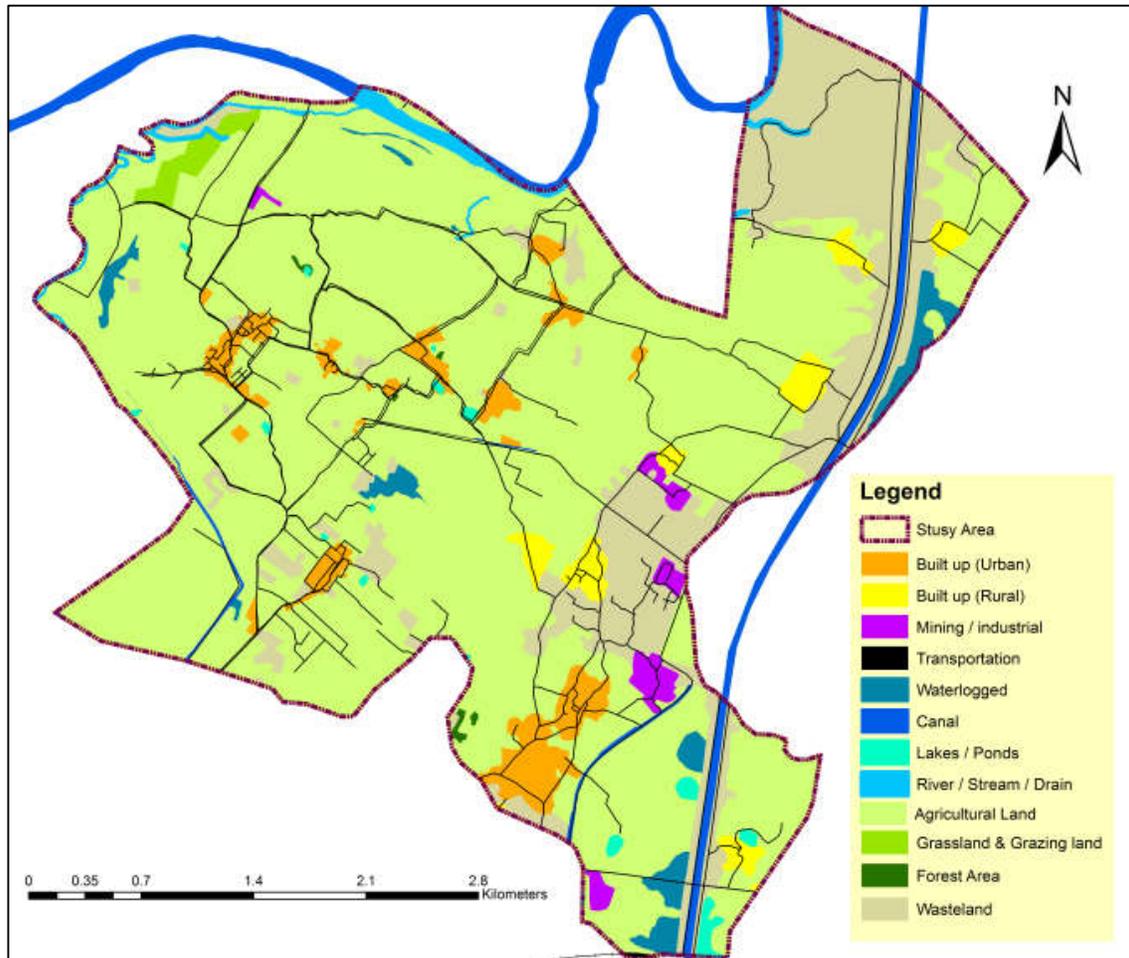


Figure 2 land Cover Classification

shows that lot of land conversions along the national highway as well as the village have occurred and maybe owned by private developers due to its location. Further due to Ekana wetlands and canal and river bed area lot of land goes under no development or wasteland area. Agriculture still has a major share and maximum population is dependent upon agriculture as their primary source of income only.

The land cover map of the study area is shown below.

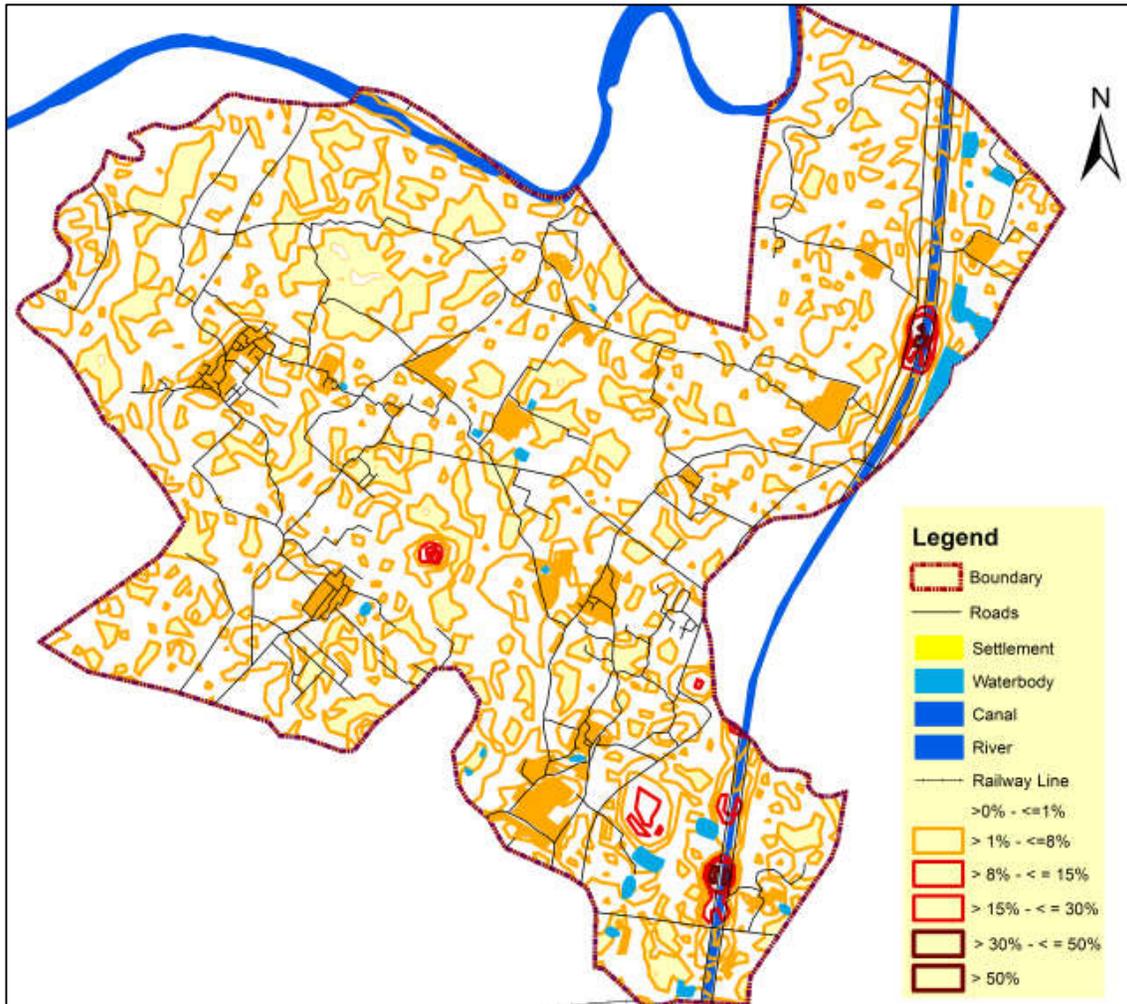


Map 5 Land Cover Classification of the Study Area

### 3.3 Slope Analysis

The village majorly lies in the Gently Sloping Area [ $>1\%$  - $\leq 8\%$ ], except a few areas beyond 15% slope [unfit for any development] as shown in the map below. Based upon the slope and contours of the area indicates that the slope is towards Eastern side towards the canal. Thus major drainage and water accumulation if lack proper drainage channels would lead to

waterlogged area in the eastern or the northern side due to presence of Gomti River and Ekana wetlands.



Map 6 Slope Analysis of the Study Area

### 3.4 Land Use Analysis

The Study Area



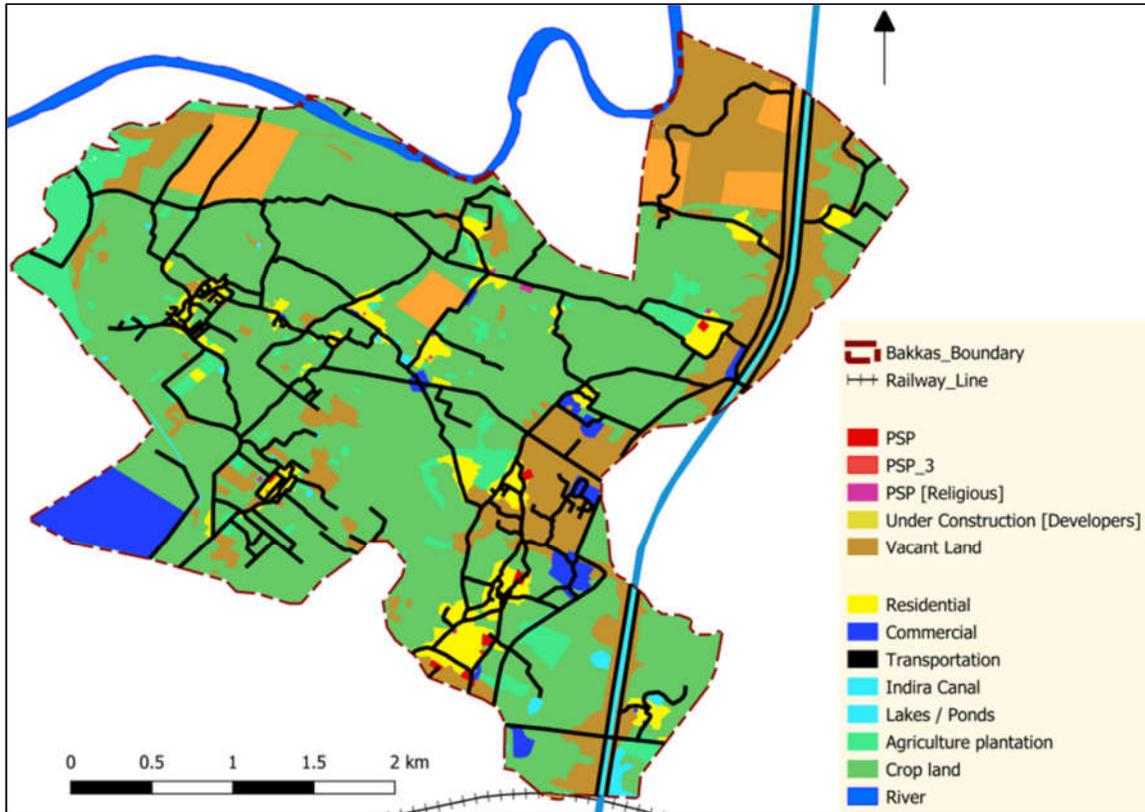
Figure 3 Shekhna Ghat in the Study Area



Figure 4 Upcoming Residential Project Site



Figure 5 Under Construction Site



Map 7 Landuse Map of the Study Area

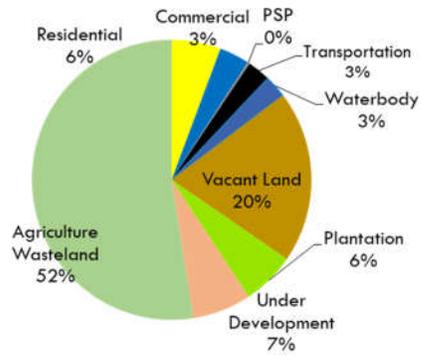


Figure 6 Landuse Classification in the Study Area

## Ch – 4 Primary Survey Analysis and Photographic Documentation

Under Rural Development, 14 desirable components are listed which focuses on skill development training linked to economic activities and provision to basic infrastructure services in the cluster. The desired level for each of the components is provided by Ministry of Rural Development (MoRD) in ICAP guidelines. Therefore, the gap between desired level and existing situation helps to identify the prevailing deficiency and need for the future generation. The 14 desirable components are as follows:

1. Skill Development training linked to Economic Activities
2. Agro Services and Processing
3. Digital Literacy
4. 24 X 7 Piped Water Supply
5. Sanitation
6. Solid and Liquid Waste Management
7. Village Streets and Drains
8. Village Street Lights
9. Health
10. Upgradation of primary, secondary and higher secondary schools
11. Inter-Village Road Connectivity
12. Citizen Service Centers
13. Public Transport
14. LPG Connections

The three additional components are as follows:

1. Electrification
2. Housing
3. Social Infrastructure

Though the primary surveys, stakeholder consultations undertaken on few days the various component properties revealed so far with respect to the study area can be stated as under. A thorough 2 weeks of survey was carried out for physical and social mapping and Household surveys. The primary survey of 370 HHs that comprises of around 14% of HHs was carried out in the study area for better understanding of the Housing and Infrastructure

Conditions along with the social mapping to gain on better spatial study of the area. The various components of survey are listed below and the findings of the survey along with it.

### 4.1 Housing

Based upon the primary Survey and data collected from sources it was observed that the majority of household structure [95%] were Pucca and semi Pucca. 98% of households were owned and only 2% households were rented. Household income for the person with maximum earning was not more than 10000. The table below shows the SECC data for house ownership, Land Ownership and Household income along with the housing conditions prevailing in the study area. The SECC Data was available only for Bakkas thus the other two zones haven't been showed.

Table 9 House Ownership, Land Ownership and Monthly Income

	House Ownership			Land Owned			HHs with Highest Earning Member Income as		
	Owned	Rented	Other	Total Unirrigated Land (ha)	Total Irrigated Land (ha)	Total other irrigated land(ha)	< 5000	5000-10000	>1000
<b>Bakkas</b>	1351	21	3	270.76	408.77	345.68	1134	165	76



Figure 7 Housing Typology in the Study Area [Pucca - Semi Pucca]

The photos indicate the variety of household type as ne moves from highway to the interiors in the village. Typology changes to semi Pucca and kuccha as one moves inside the core of village.

### Socio Economic Characteristics

The socio characteristics of the HH Survey were found based upon the primary survey undertaken. It was found that the sex ratio of the study area was 851 with male constituting 54% and female comprising of 46% as shown in the figure beside. Further the age was categorized under various categories. It was found that the maximum population lies under the working age group i.e., 60%.

The pie chart representing the two is shown in the figure below.

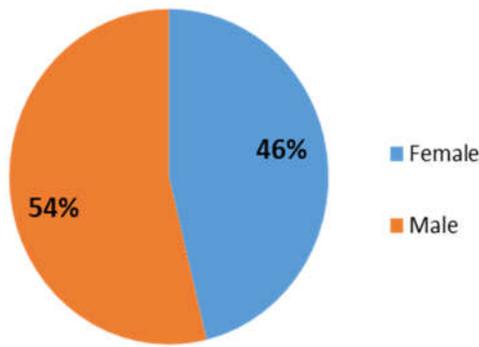


Figure 8 Sex Division

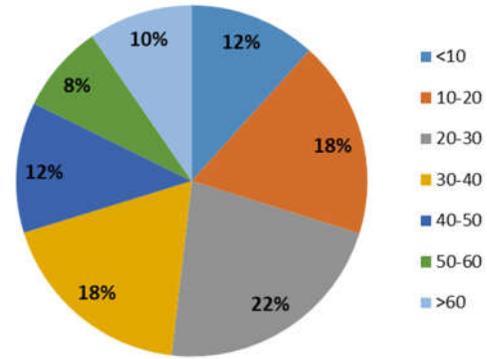


Figure 9 Classification into different age group

With regards to the education levels 34% of population surveyed were illiterate and 10% of better educated i.e., attained a professional degree. Major percentage of women surveyed were married i.e., 65%. The pie chart below show he details.

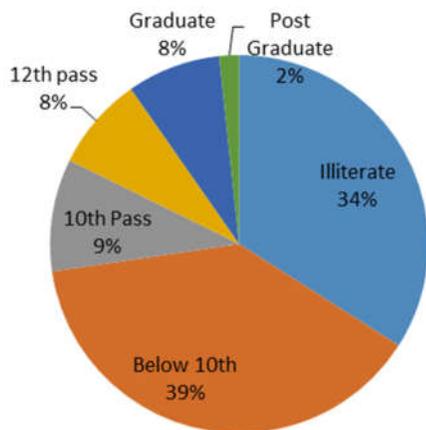


Figure 10 Education Levels in the study Area

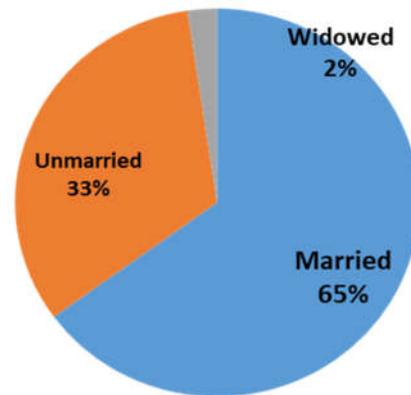


Figure 11 Married Status of Women

The major share of population is under non earning i.e., Housewife, Student and unemployed i.e., 65%. Remaining have a major share working as laborers or Service sector. Only 2 % of population are under agriculture. The study area has no proper means of Public or shared services. Maximum persons use 81% private vehicles for commuting

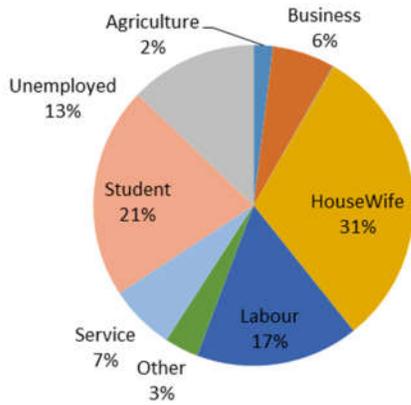


Figure 12 Occupation mode in Study Area

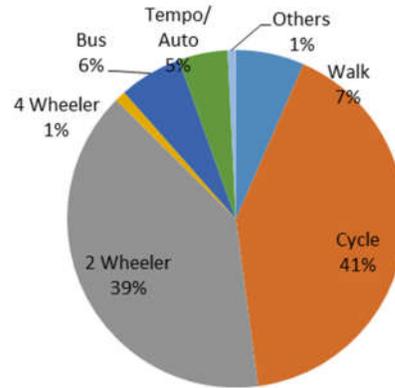


Figure 13 Mode of Travel within the study Area

52% of the surveyed population have earnings less than 1000 and 20% >50k and expenditure more than 5000 for 75% of Population depicting rise towards betterment. It also shows shift towards service sector and less dependency upon agricultural activities. The figure below further bifurcation in the Earnings and Expenditure and the ranking shows maximum expenditure is on food followed by education and Transportation. Ranking has been calculated using Garrett Score of the stated preference response shared by the people in the survey.

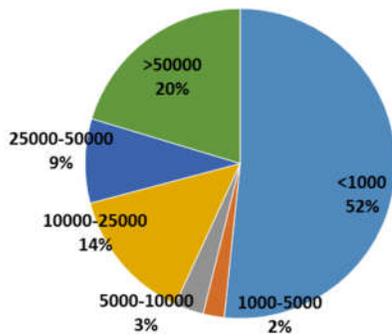


Figure 14 Income Levels in the Study Area

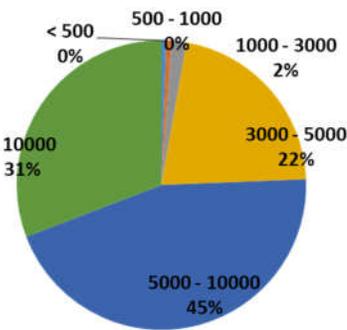


Figure 15 Expenditure Pattern in the Study Area

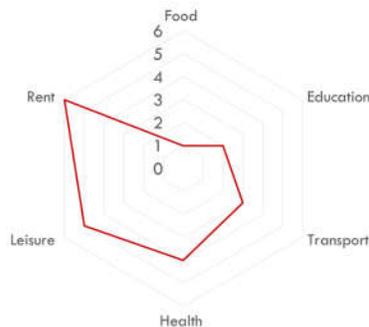
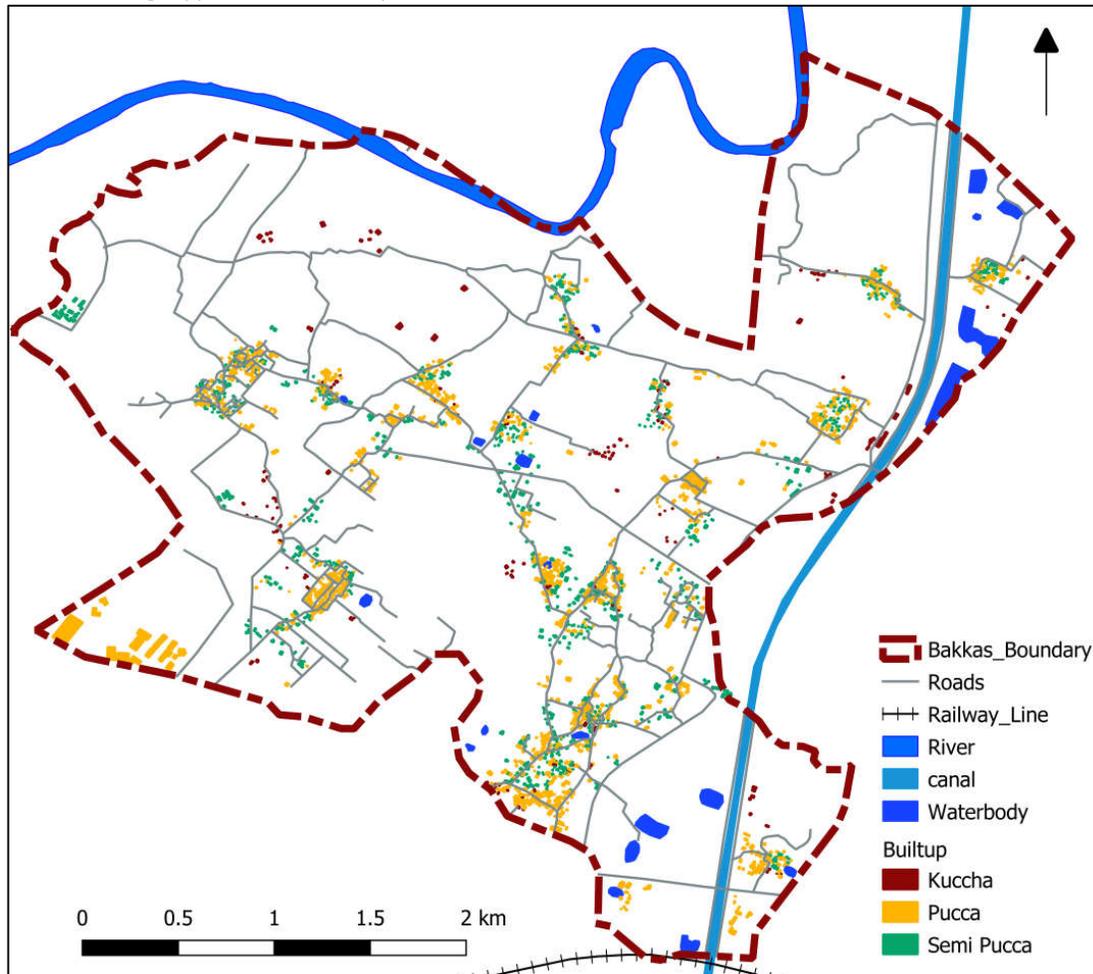


Figure 16 Ranking of Expenditure

4.2 Housing Type in the Study Area



Map 8 Housing Structure in Study Area

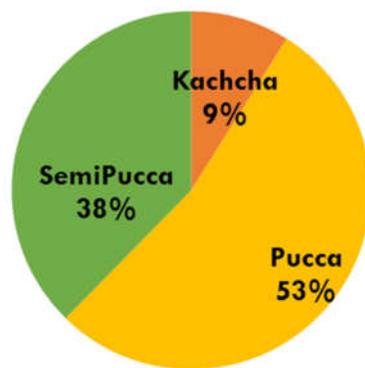
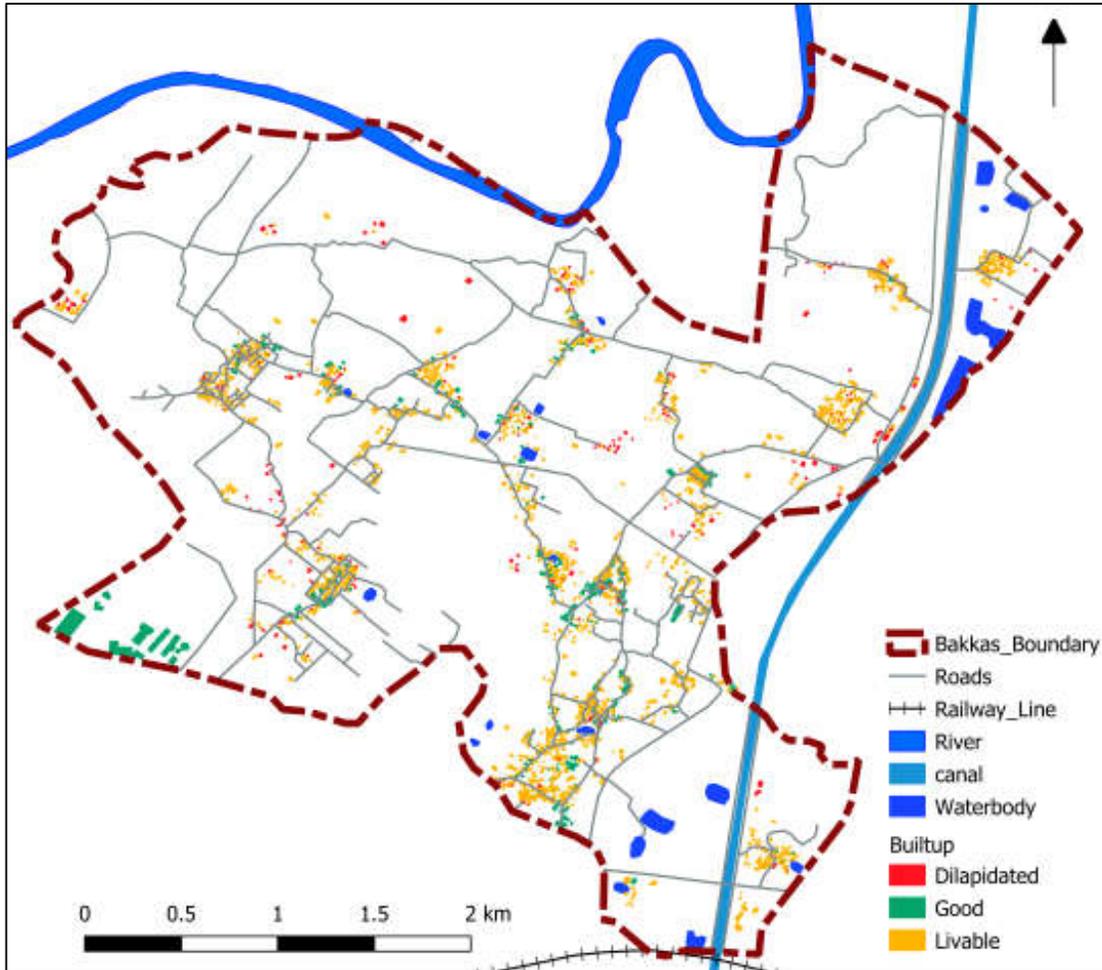


Figure 17 Housing Structure in Study Area

Inference:

- 53% of structure found to be Pucca structures depicting better living conditions.
- Only 9% of HHs were Kuccha households mainly along the canal and far ends
- The figure shows the housing structures in the study area.

4.3 Housing Condition in the Study Area



Map 9 Housing Condition in the Study Area

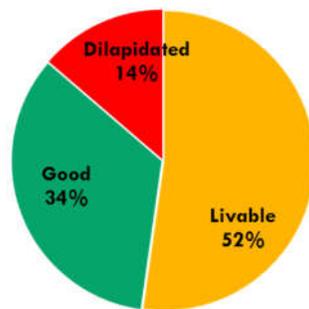
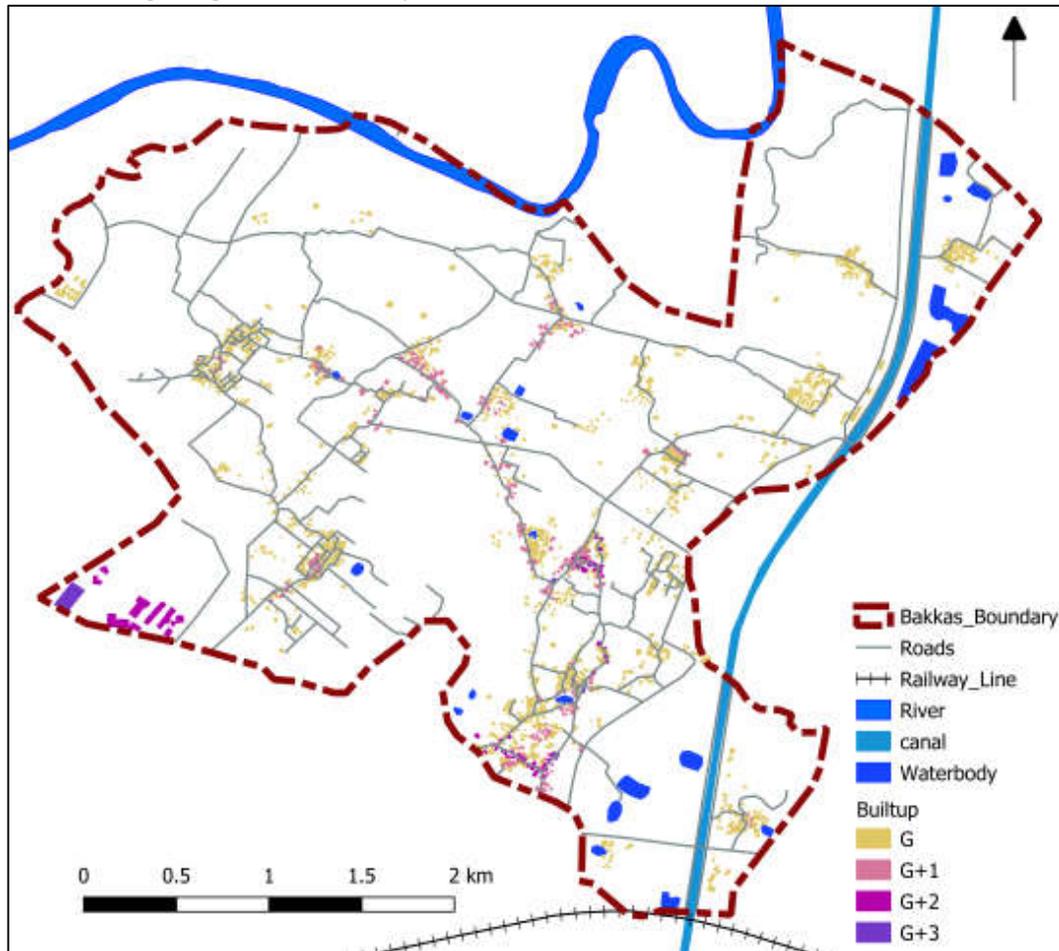


Figure 18 Housing Condition in the Study Area

Inference:

- 52% of structure found to livable condition and 34% in quite a good condition newly built structures as well.
- Only 14% of HHs were under dilapidated conditions lying around the river and canal areas.

4.4 Building Height in the Study Area



Map 10 Building Heights in the Study Area

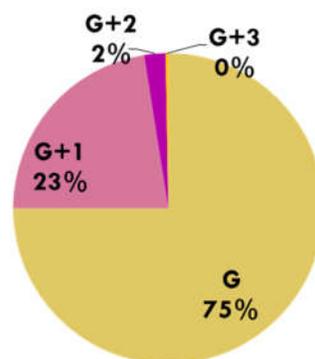
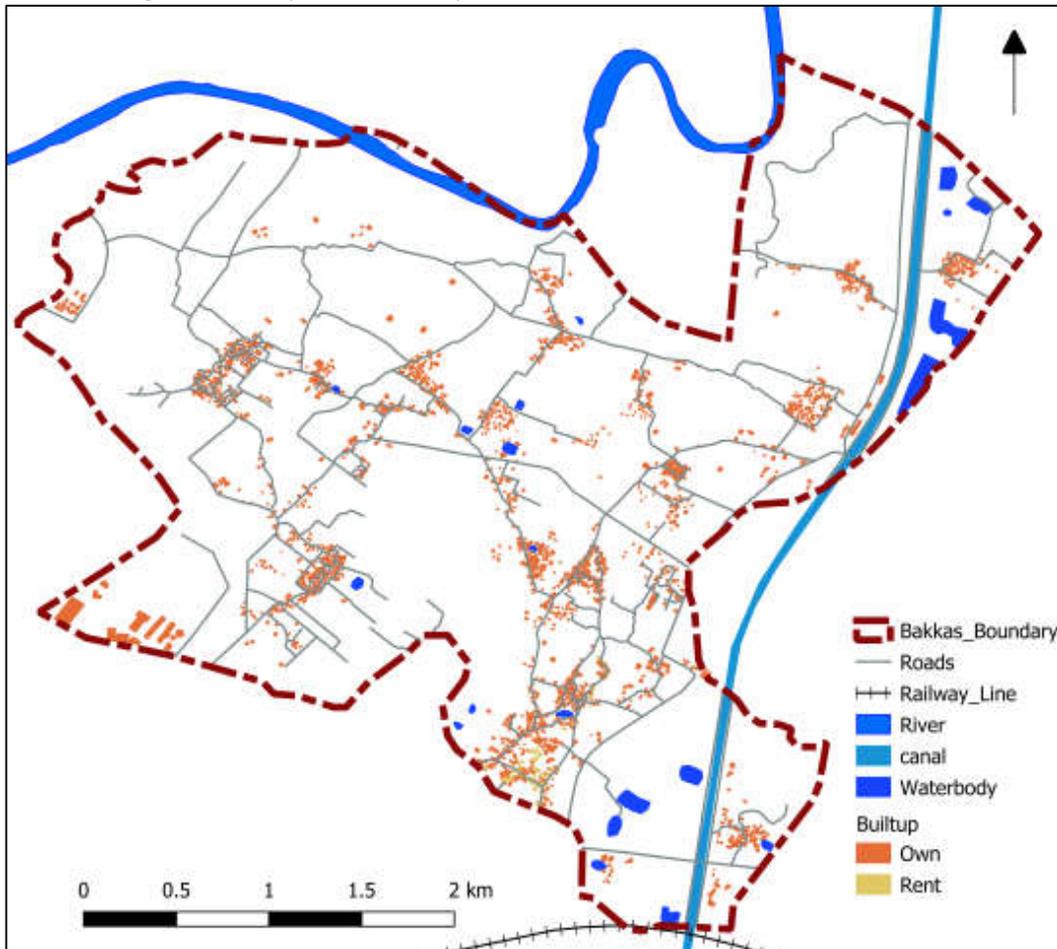


Figure 19 Building Heights in the Study Area

Inference:

- Major HHs were Ground or G+1 Structures. The newly constructed houses or buildings, commercial areas towards the highway were observed to be G+2/ G+3 structures

4.5 Building Ownership in the Study Area



Map 11 Building Ownership in Study Area

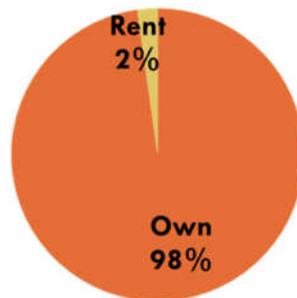


Figure 20 Building Ownership in Study Area

Inference:

- As observed previously rent is the least ranked task under expenditure. It shows that the majorly HHs are owned,.
- Due to new development few HHs have started with rent structures.

4.6 Other Socio Characteristics in the Study Area

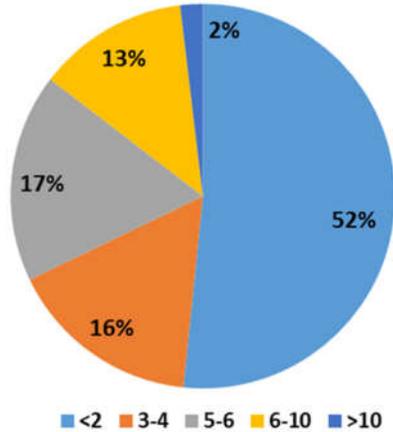


Figure 21 Household Size in Study Area

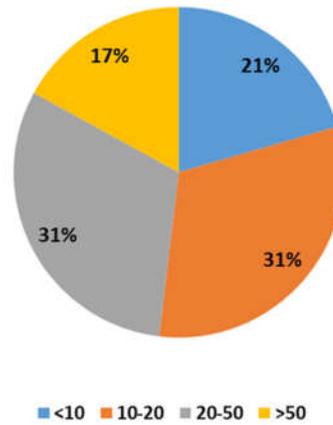


Figure 22 Building Age within the Study Area

The HHs size are 50-50 distributed b/w 2 and more people. The Average HH size was found to be 3.7 but based upon census 2011 it was 5.7 as stated. Further, Majorly structure are recently built i.e., 52%. 17% are more than 50 years of which few were found to be under dilapidated condition as well. Further, with respect to material of construction, as stated 86% of HHs were under good, livable conditions can be justified based upon their building materials as well as they are made up of concrete structures [70%]. 47% of HHs have concrete walls which make them more livable Only 9% have structures with temporary shelter such as mud or thatch.

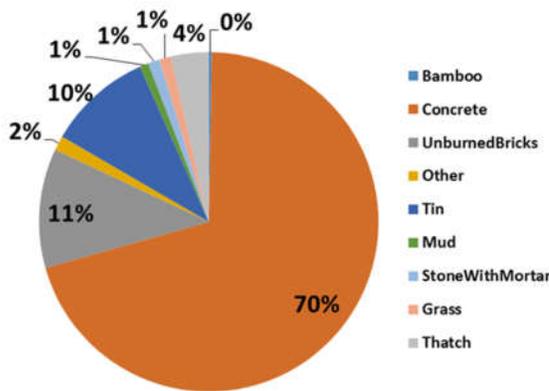


Figure 23 Roof Material of the Built Structures

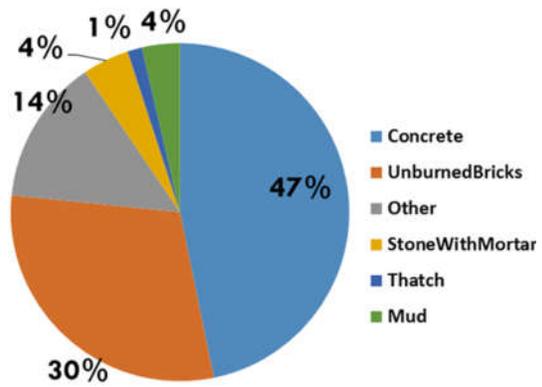


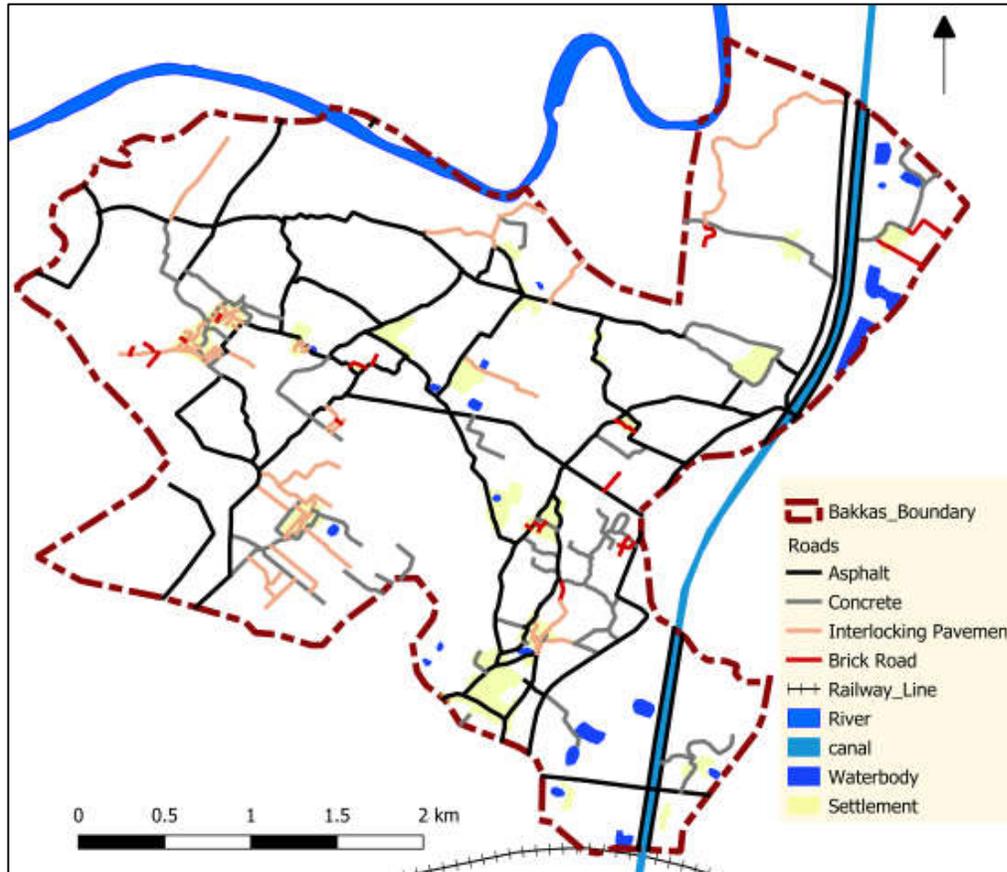
Figure 24 Wall Material of the Built Structures

## 4.2 Physical Infrastructure

Physical infrastructure comprises of various Sub Components as stated below.

### 4.2.1 Road Network

The road network length in the study area was 68kms. Majorly roads connecting the settlements were asphalt, within the Abadi area were Concrete or Interlocking Pavers



Map 12 Road Classification in the Study Area

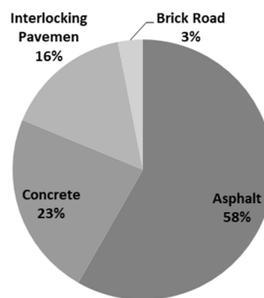


Figure 25 Road Type in the Study Area

### Inferences

- No kuccha or mud roads were observed in the study area.
- To support upcoming developments which are located along Gomti, road widening is a solution.

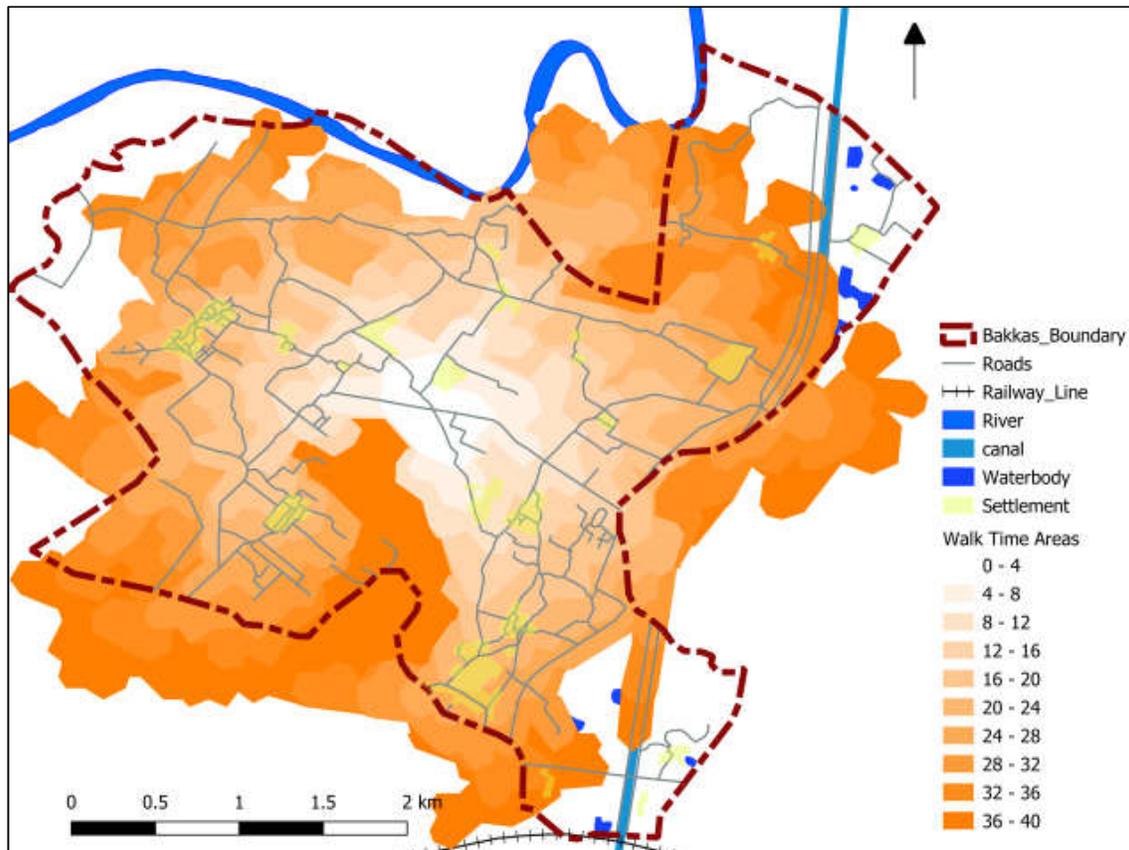
4.2.2 Walk Time Areas [Pedestrian]

Walk Time Areas or also Stated as Isochrones helps to identify which of the areas are within the walkable distances or driving distances in a given time period from an identified point.

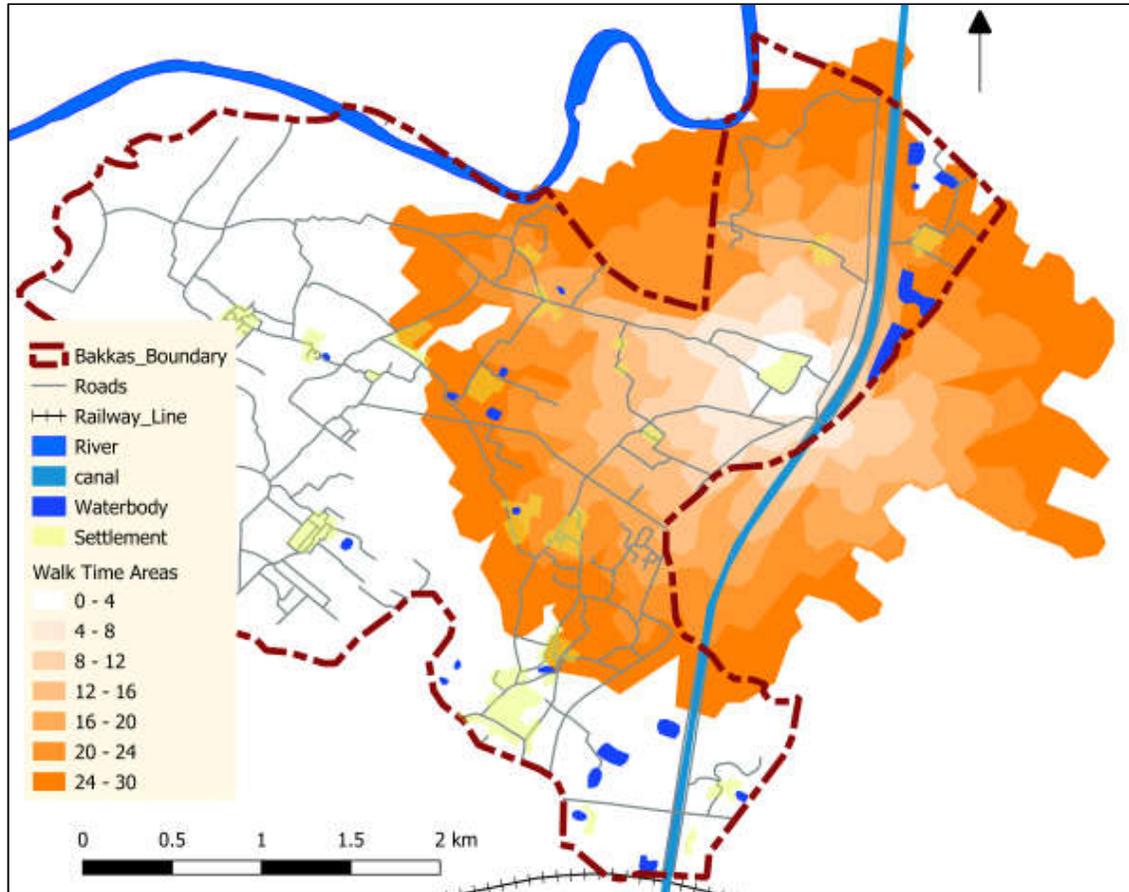
The Walk Time areas and Drive time areas both have been found out for the study area from two locations.

- The center of the settlement
- The Bakkas Settlement along the canal.

Walk time areas have been found on a regular Interval of 4 minutes whereas driving areas are found at a regular interval of 5 minutes



Map 13 Walk Time Area from Central Area



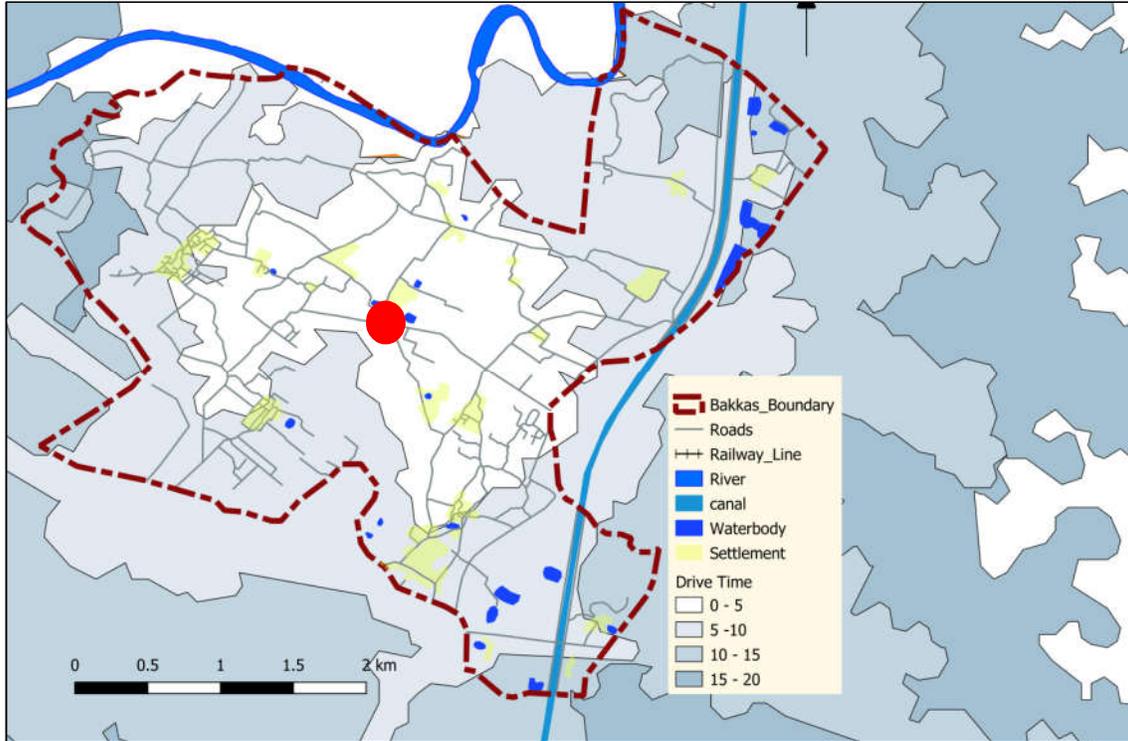
Map 14 Walk time areas from Peripheral Area

Inference:

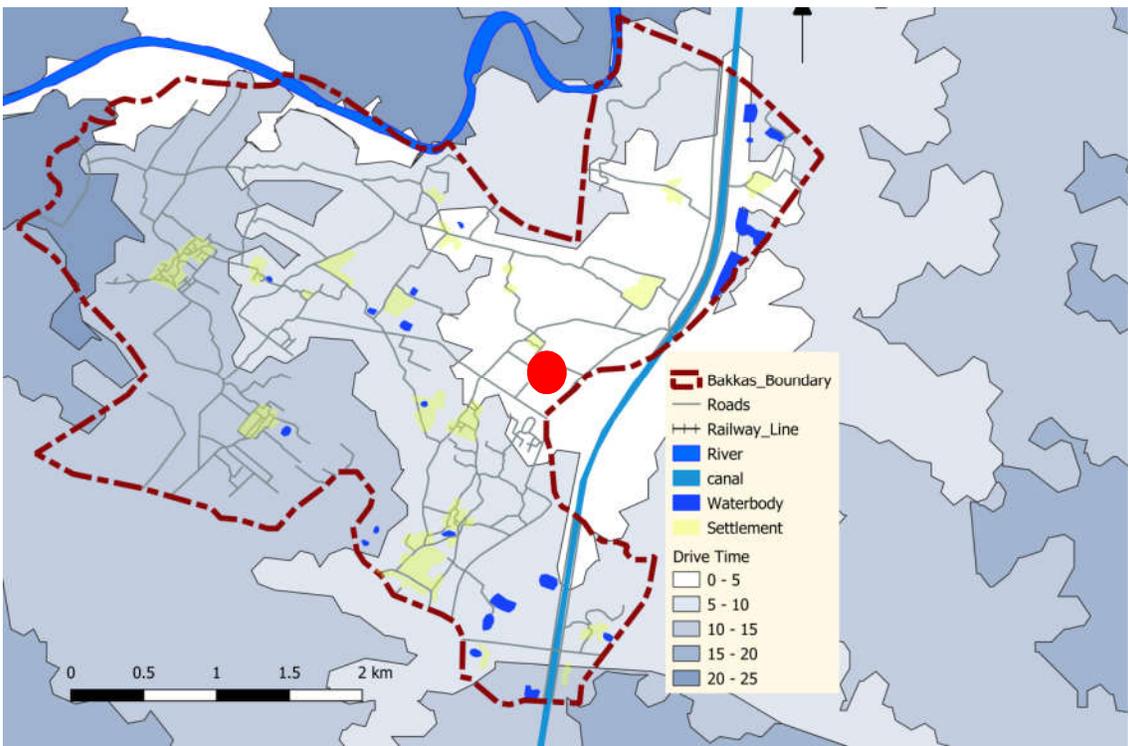
- It was observed that the highway is not at all at a walkable distance and takes more than or around 40 minutes to come to a point of obtaining any mode of commuting apart from private means.
- It signifies the reason for being the third largest part in the expenditure ranking for transportation.
- It highlights the need for public transport or shared rickshaws within the study area.

#### 4.2.3 Drive Time Areas [Vehicles]

- It was observed that even the driving timing to reach a highway from center is >10 minutes.
- Need for better road infrastructure is considered as a need for current scenario to support upcoming developments



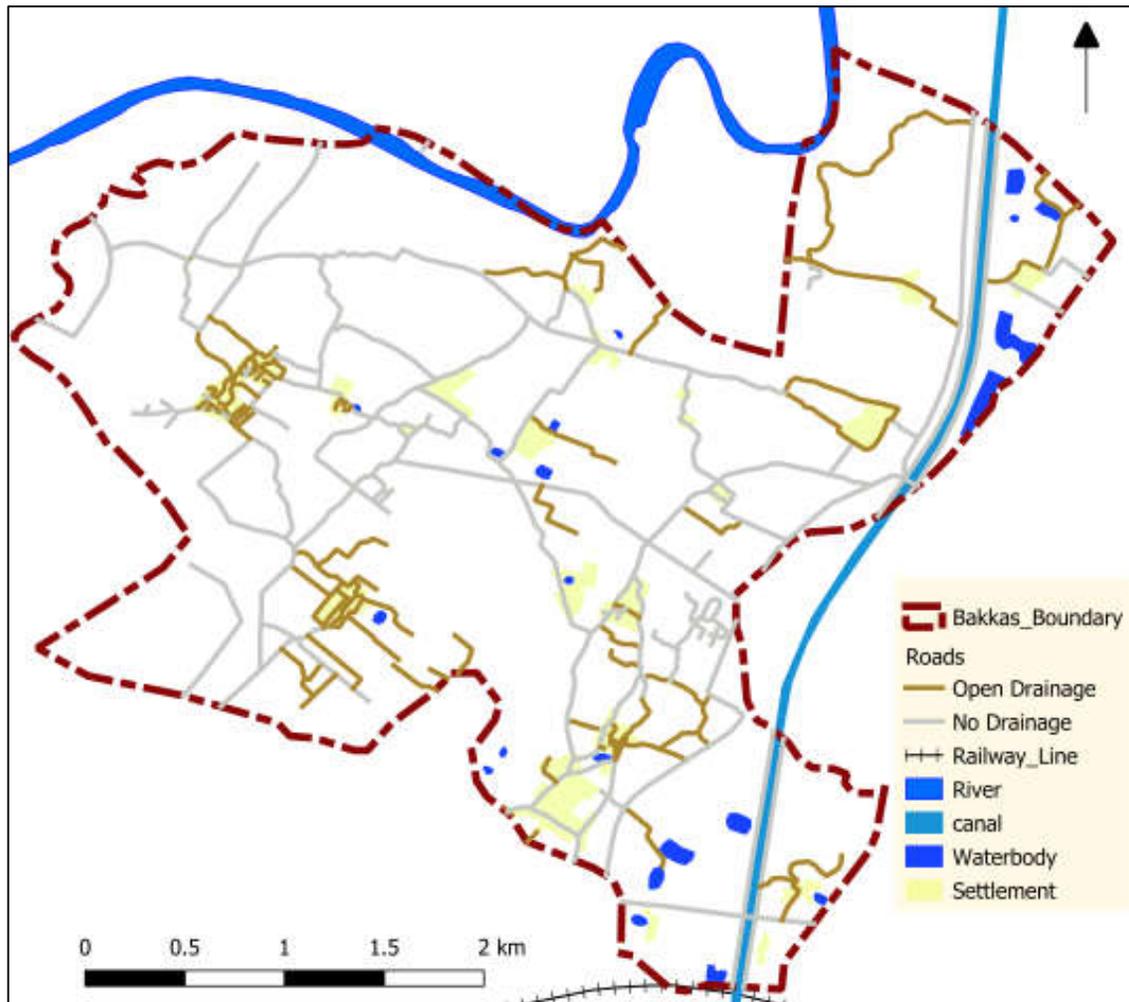
Map 15 Drive Time Areas from the Centre



Map 16 Drive Time Areas from the Periphery

The drive time areas have been found taking into consideration the rural driving time i.e., single lane undivided roads with less chances of overtaking etc.

## 4.2.4 Road Network with Drainage Channels

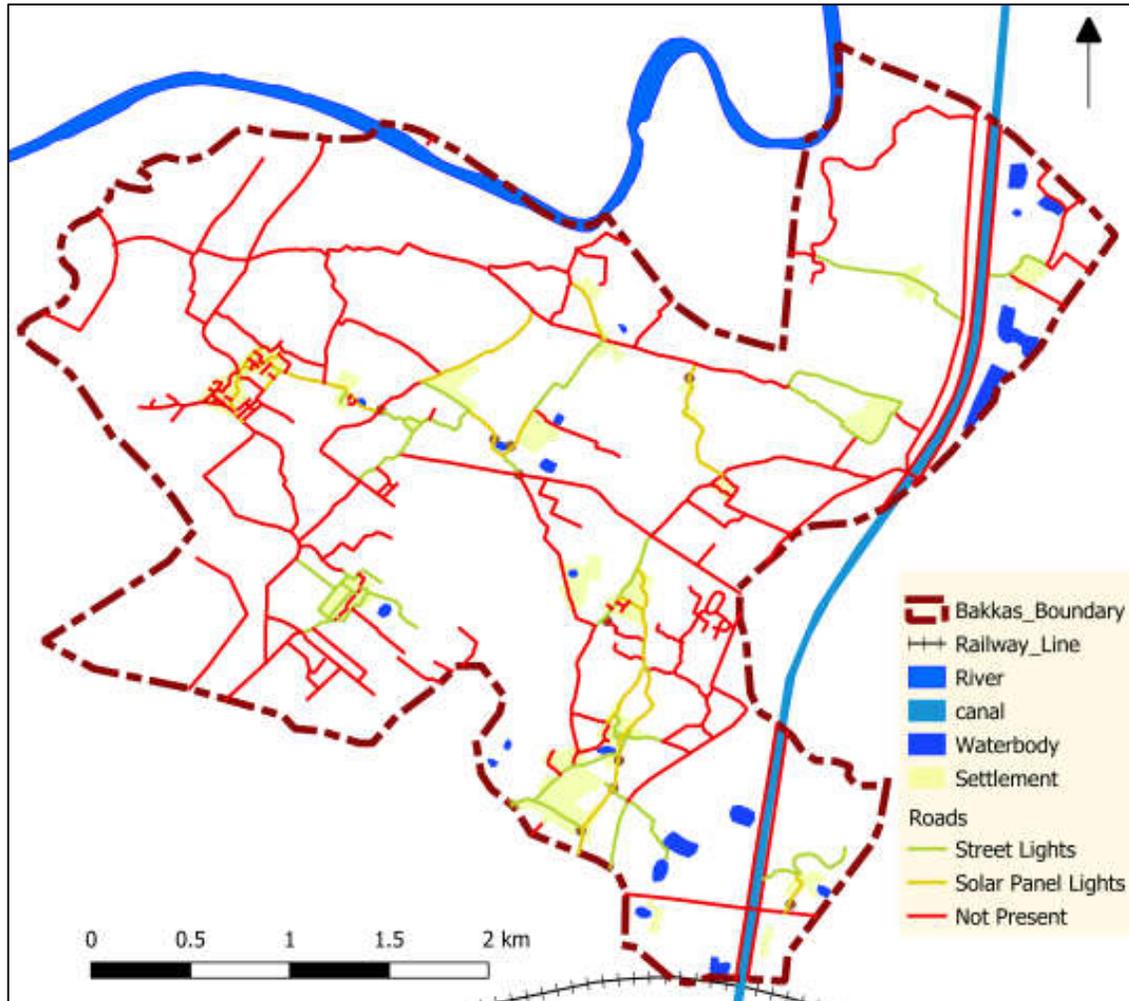


Map 17 Drainage Lines in the Study Area

## Inferences

- 30% of the streets within the abadi area have open drainage as shown in images above.
- All Abadi areas [90%] had open drains which shows a better living conditions i.e., along concrete and Interlocking pavement areas.
- Closed drainage could not be spotted.

## 4.2.5 Road Network with Street Lights

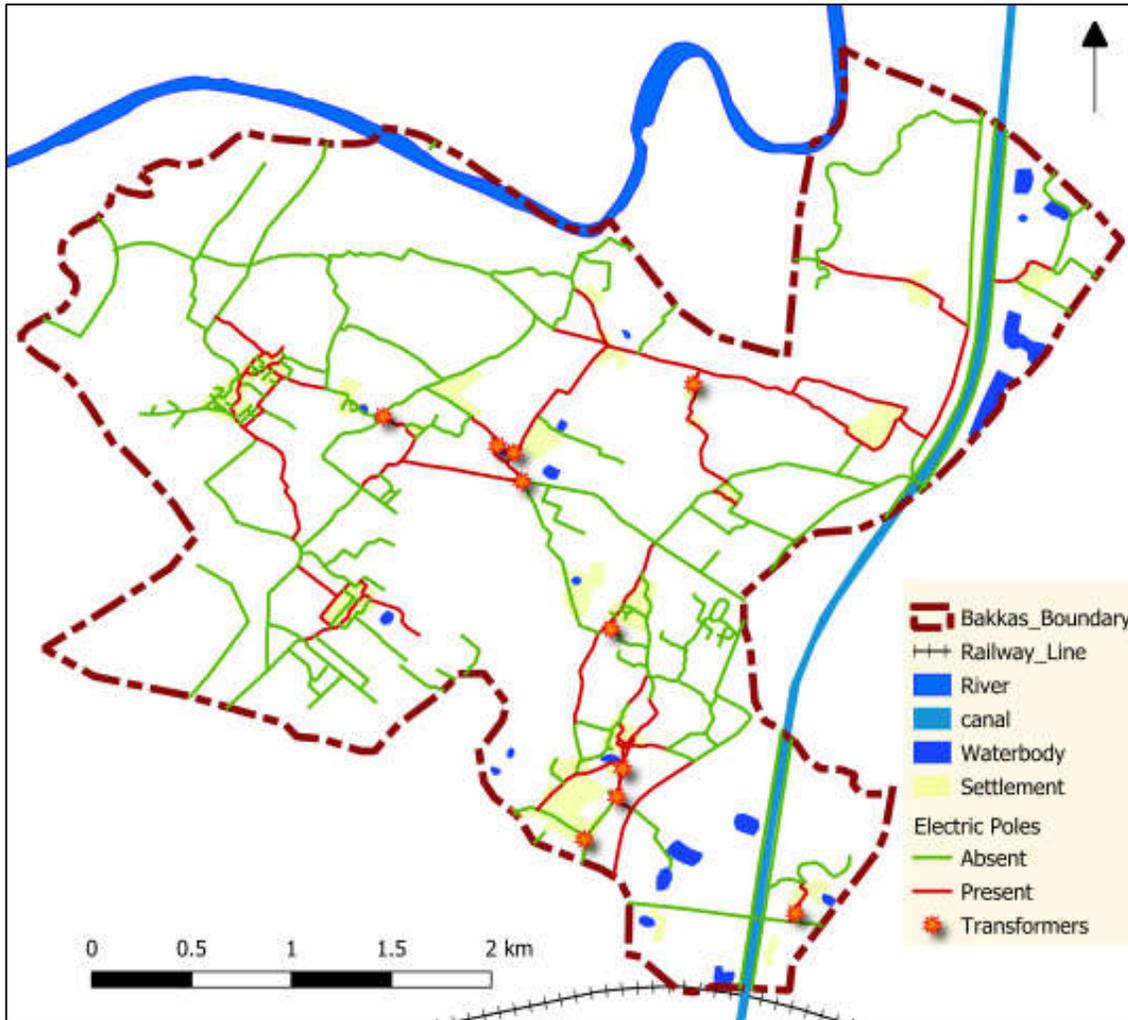


Map 18 Street Lights within the Study Area

## Inferences

- Under Deen Dayal Upadhyaya Gram Jyoti Yojana , majorly around all Abadi areas street lights have been planted.
- 42% of them were not in working conditions, when queried with the residents.
- Few corridors have also been observed with solar light panels showing a move towards sustainability
- The connecting roads between two settlements lacks any street light leading towards unsafe streets.

4.2.6 Electrification



Map 19 Electric Poles within the Study Area

- All Abadi areas have electrification. Electric Poles and Transformers could be observed all around the study area.
- Majorly electricity is used for residential and irrigation purposes.
- No electricity issues such as long power cuts etc. were observed in the study area

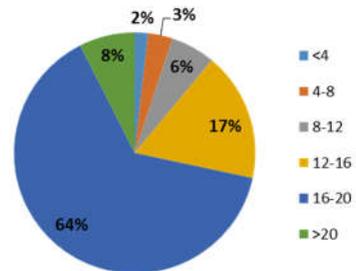
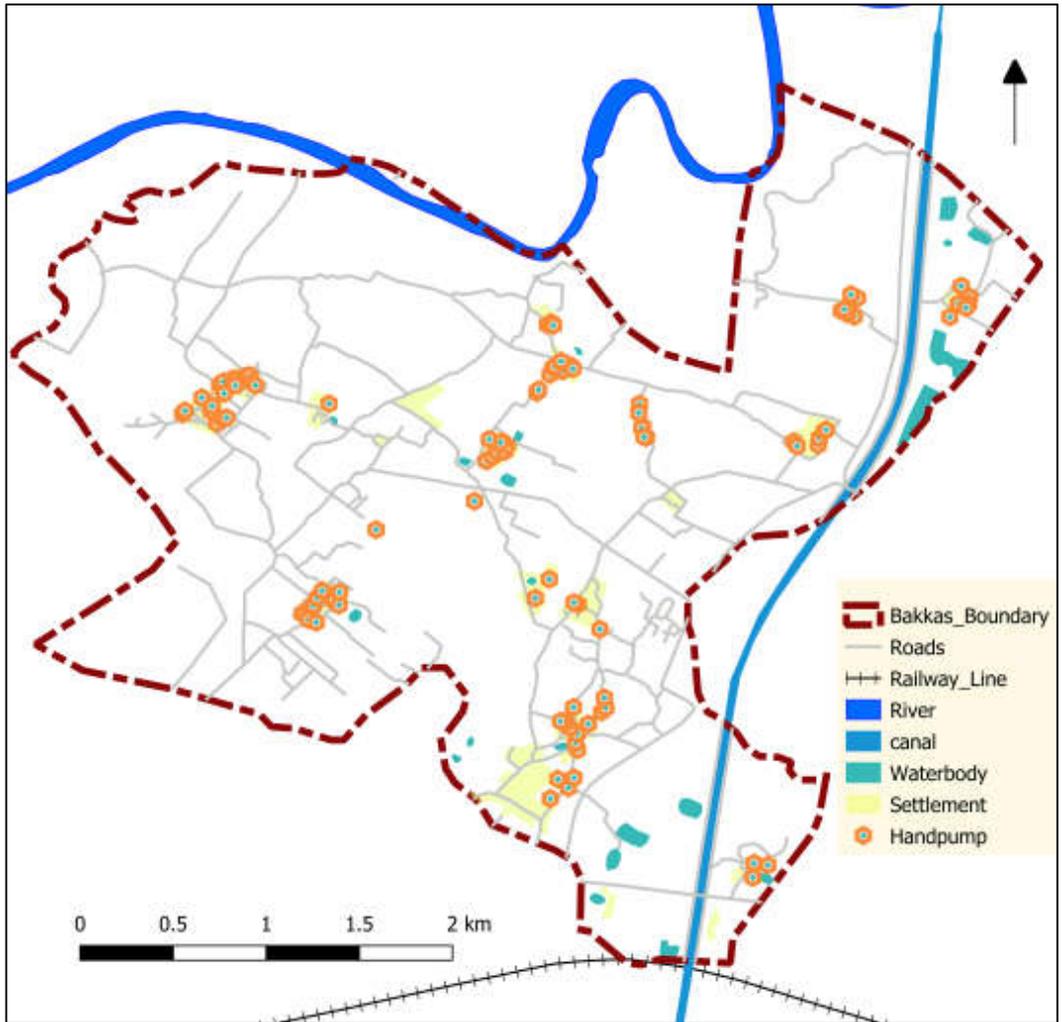


Figure 26 Electricity Supply Hours within the Study Area

- 72% of HHs had more than 16 hours of electricity
- Around 10% have electrification issues

4.2.7 Water Related Infrastructure



Map 20 Water Related Infrastructure within Study Area

83% of HHs have their own means for drinkable water via bore well/ hand pumps with 24 hours of water supply facility [92%]. There was no OHT observed in the study area. Municipal water lines were not present as it lies outside planning area

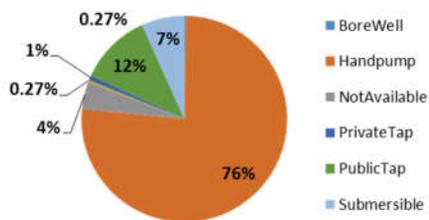


Figure 27 Source of Water Supply

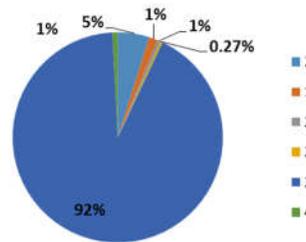
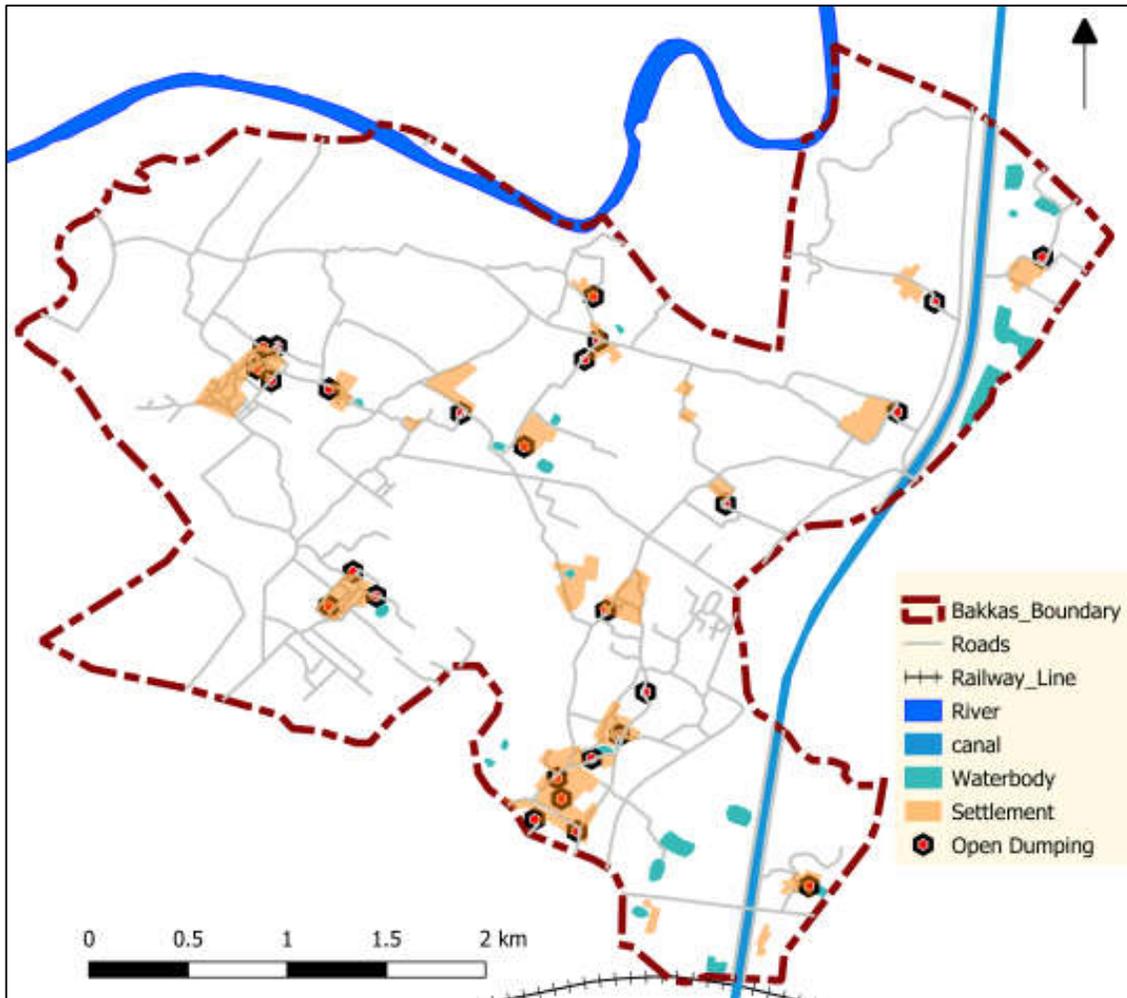


Figure 28 Hours of Water Supply

4.2.8 Sewerage and Solid Waste Dumping Locations



Map 21 Open Dumping Locations within the Study Area

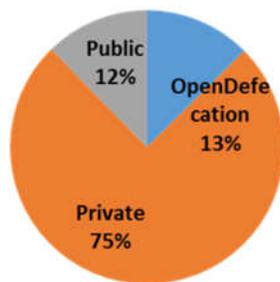


Figure 29 Toilet Availability within Households

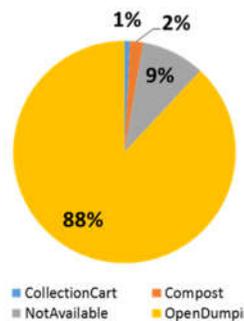
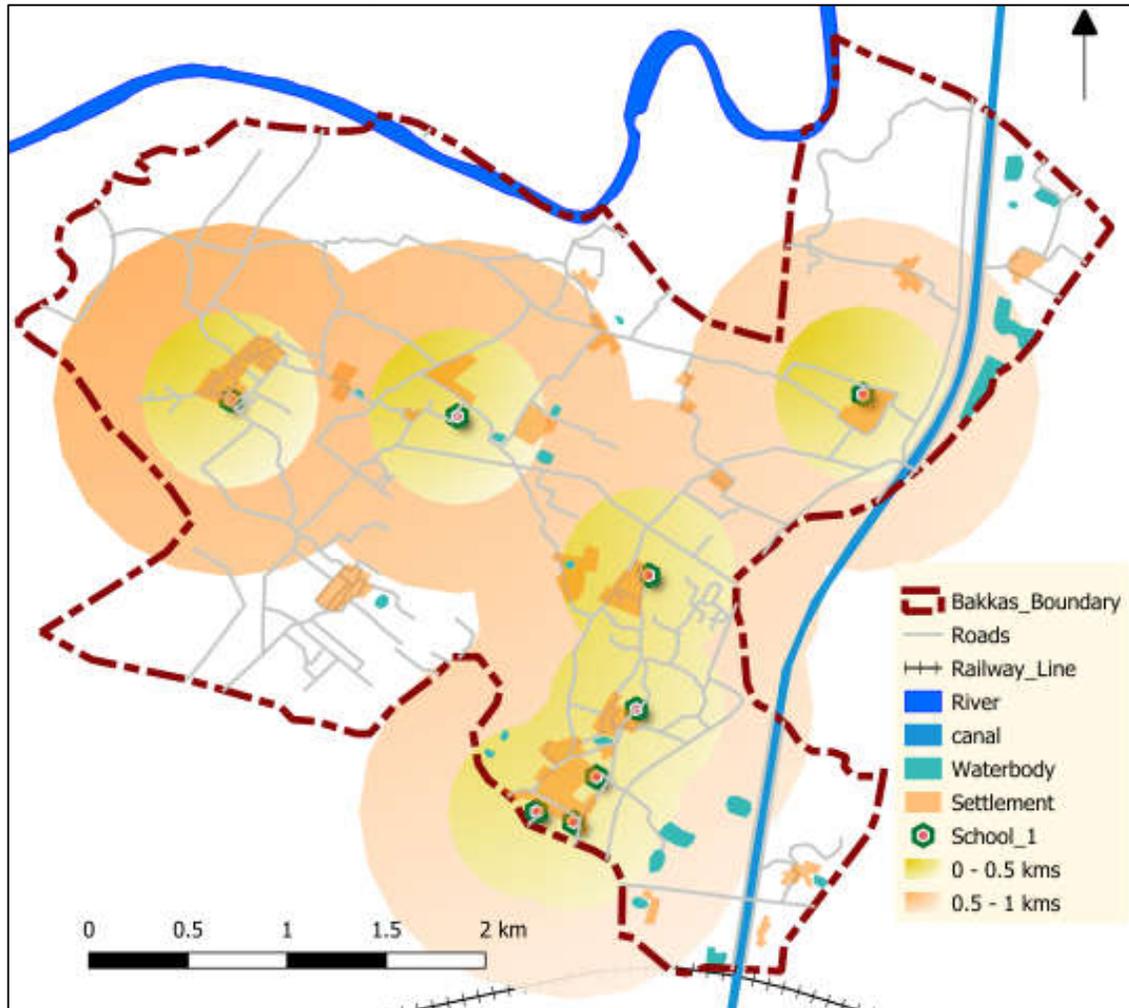


Figure 30 SWM Condition in the Study Area

75% HHs have toilets within 13% practice open defecation. 37% were built under scheme rest by self. There are no organized means of collection of waste. 88% of HHs go for open dumping. The map shows the identified areas for open dumping found on the site.

4.3 Social Infrastructure

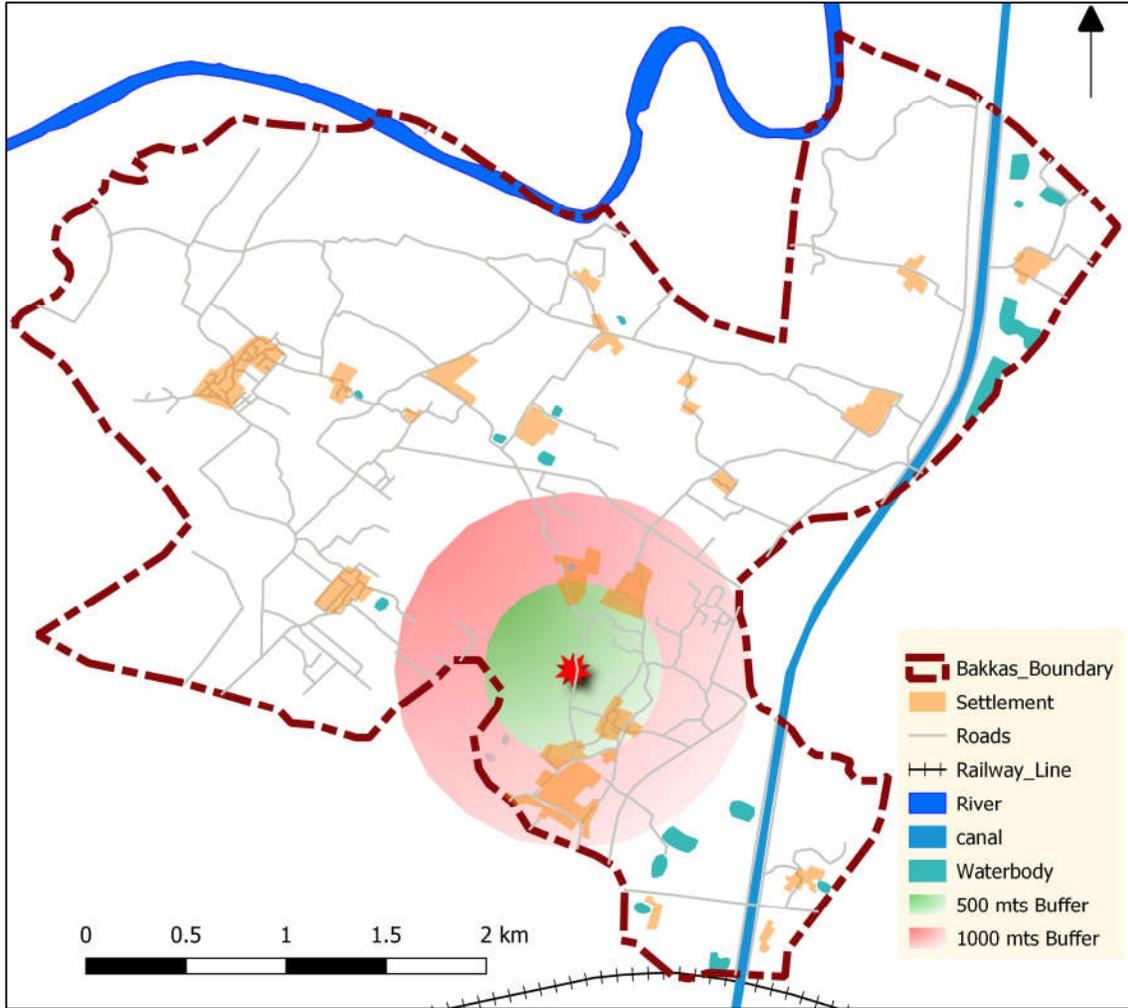
4.3.1 Location and Accessibility of Educational Institutions



Map 22 Location and Accessibility of Educational Institutes

There are 4 primary schools and 2 middle primary schools observed in the study area. 2 private schools were also found in the study area. The condition of schools in the study area seems to be in a desirable manner with the basic necessities of toilets, water taps, and paved tiles. The map shows the accessibility of schools from the settlement area and it is observed they are within the range of 500 – 1000mts as desired. The study area has no means of further education. Nearest Senior Secondary School is located in Ahmamau [>5kms] and college is in Lucknow [>10kms]

4.3.2 Location and Accessibility of Health Infrastructure



Map 23 Location and Accessibility of Health Infrastructure

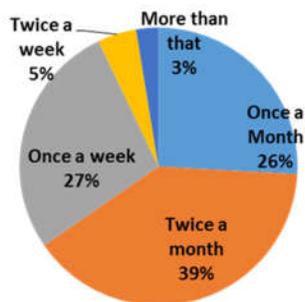


Figure 31 Frequency of Visit to Health Facility

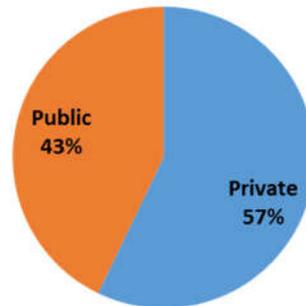
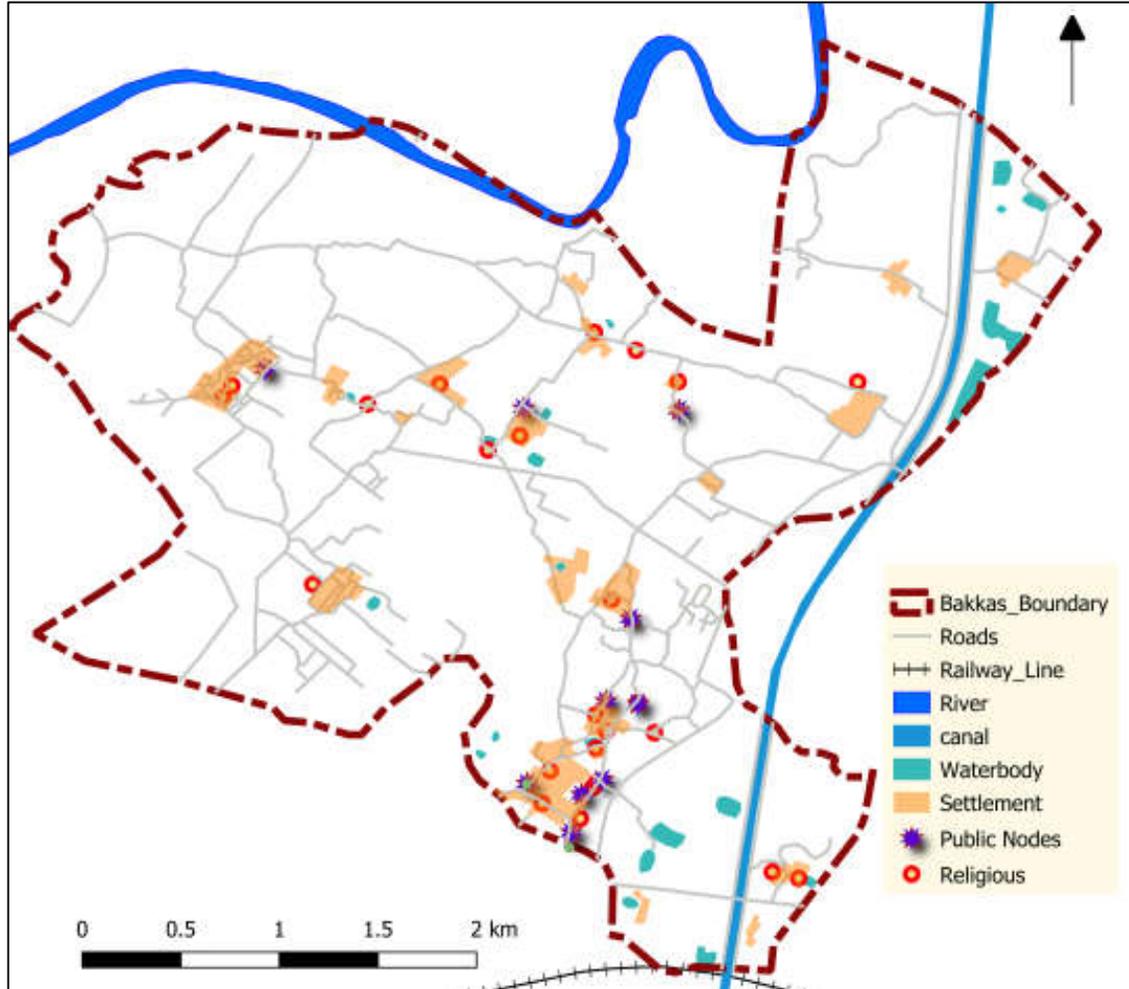


Figure 32 Mode of Commute for Health Facility Visit

Health is the 4<sup>th</sup> most part for expenditure and due to any proper facility of Health as well as commuting people generally take private modes. Based upon survey it was found that 35% of persons need to visit more than or once a week health facility. There is only 1 CHC in the study area. The facilities provision are not adequate to the need of the study area. The location of CHC is also not

accessible from all settlement areas as shown in map. Few dispensary were observed near the highway road.

#### 4.3.3 Other Social Infrastructure



Map 24 Location of Other Social Infrastructure Facilities

The area has sufficient amount of Religious places. Lacks community level Facilities such as Crematorium/ Burial Grounds, community Gathering Spaces etc. Poor Maintenance of few places such as ghat area etc. leads to loss of aesthetics

The Chapter concludes with the major mapping and analysis of all sectors within the study area to gain knowledge upon the understanding of the study area. Further, based upon the current analysis and its regional linkages, populations has been forecasted and landuse considerations have been taken to propose conceptual landuse layout for the study area.

## Ch- 5 Regional Linkages

### 5.1 Introduction

Bakkas Study area lies in the outskirts of the planning area boundary of Lucknow as per the approved master plan of 2001. The growth of Lucknow over the years has been in a significant manner as shown in the figure. The area increased from 146sq.km in 1981 to 414.35 sq.km in 2021 as per the previous master plan sanctioned. Till 2021 Bakkas lied outside the planning area boundary.

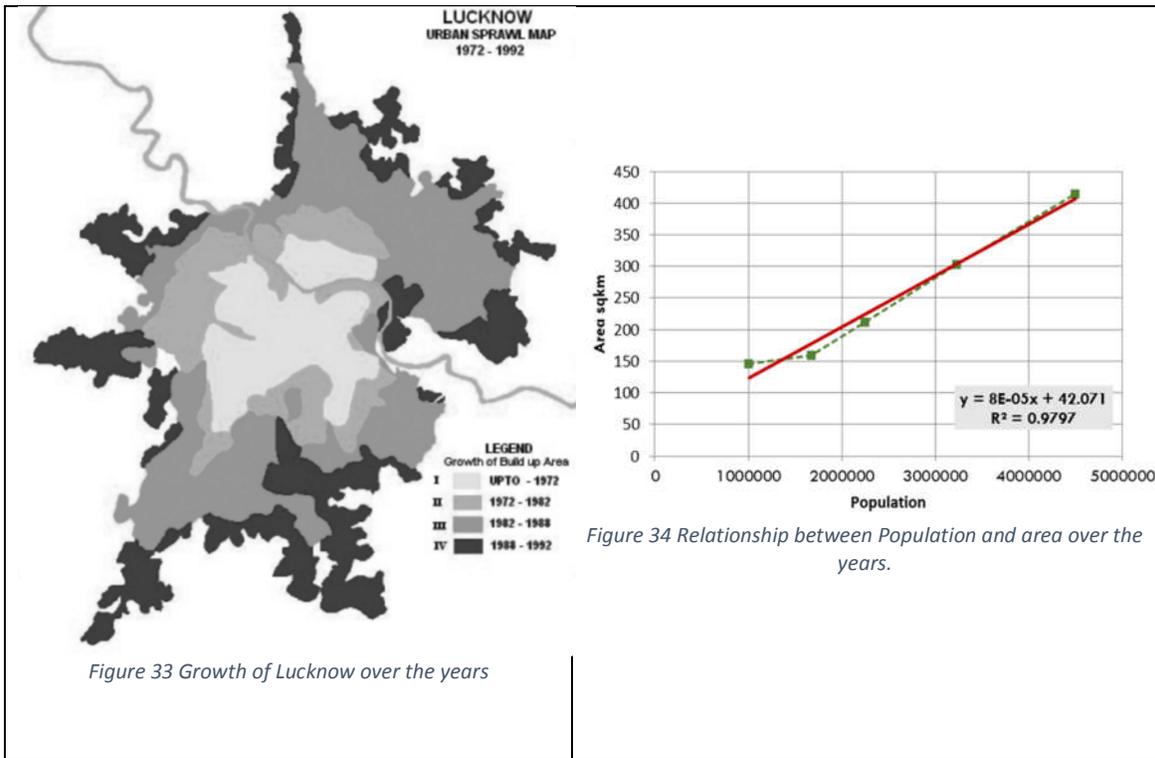


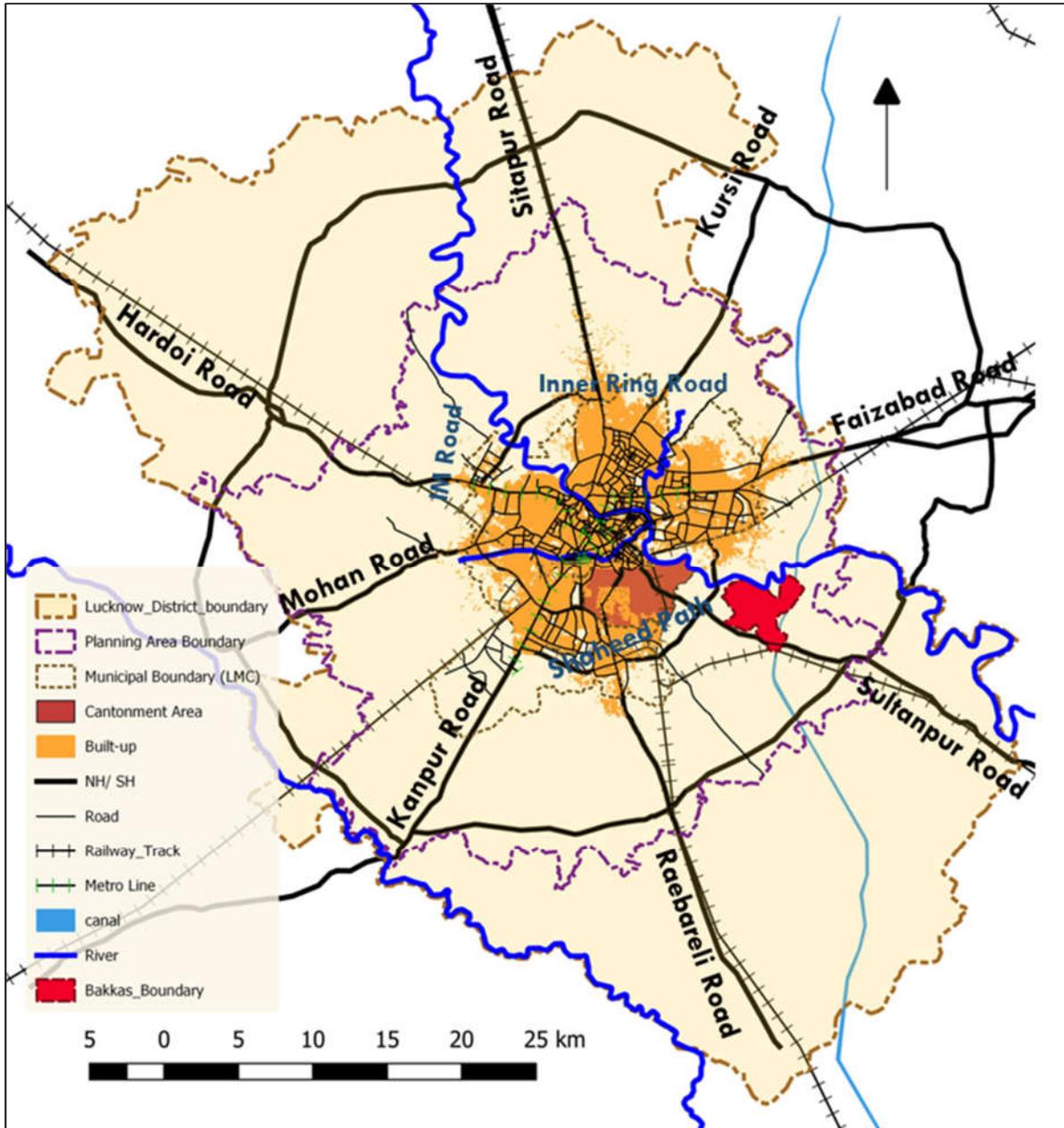
Figure 33 Growth of Lucknow over the years

Figure 34 Relationship between Population and area over the years.

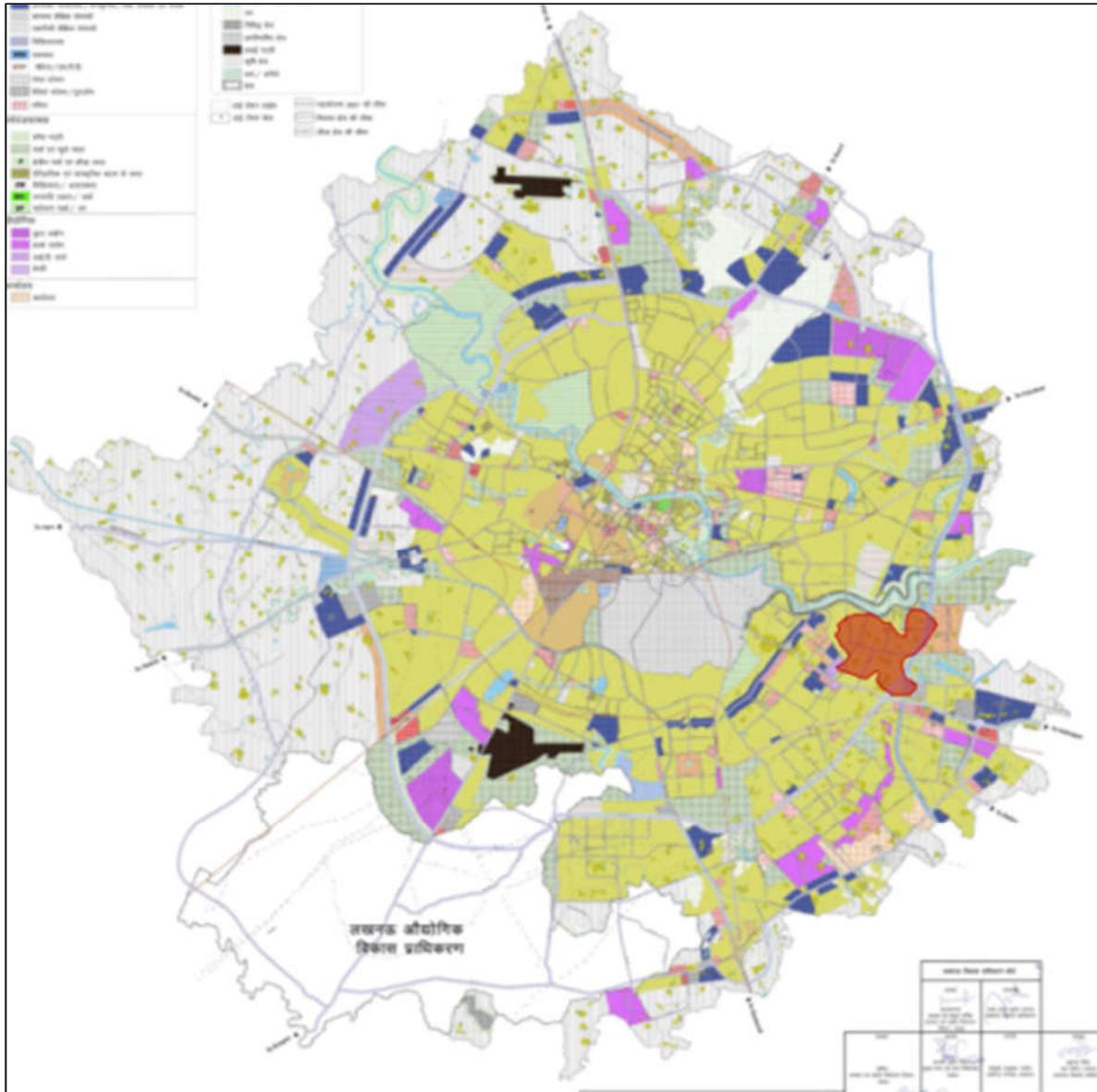
As per the relation between population and area. It was observed that the two had a strong relationship with  $r > 0.95$ . Thus, using the same equation if the projected 2031 population i.e., close to 60,00,000 is computed, the tentative increase in the area is close to 600 sq.km by 2031.

Since the 2021, master plan never came into existence and government decided to come up with the 2031 master plan directly, the area seem to increase further. As per the secondary sources of information tentative increase in area is 1050sq.km.

The revised boundary as per 2031 master plan of Lucknow is shown in the figure below along with the study area. The two have been compared with the draft master plan land use predefined for the study area to have a better grip of understanding and formulate the base of the future conceptual land use for the study area.



Map 25 Proposed Boundary for Lucknow as per 2031



Map 26 Proposed Master Plan Lucknow, 2031

It could be observed from the figures with increase in the planning area boundary of 2031, the study area Bakkas tends to fall inside the boundary. Since Lucknow as a city had no physical barriers of growth on any of its end it tends to grow radially, providing equal opportunities of development on all ends. Bakkas being lying along the national highway corridor would have an additional advantage for growth. As per the master plan land use proposed for Bakkas, it can be seen as fully residential with institutional, commercial and Industrial uses surrounding it because of the presence of two major corridors i.e. National Highway 731 and Proposed Ring Road.

As stated previously in the Analysis Chapters as well that more than 75% of the male working population are engaged in Non-Agricultural Activities. It justifies the fact that already lands within the

study area have been purchased by the real estate developers and it is soon to be developed. Lots of construction projects are already ongoing due to its locational advantage being adjacent to IT City, Institutional area and National Highway.

### 5.2 Upcoming Projects that impact the study area

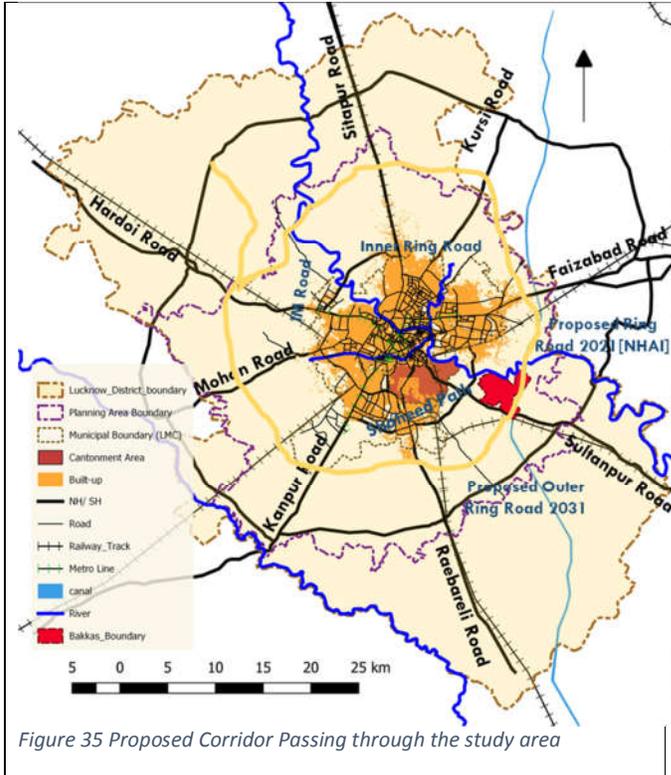


Figure 36 Proposed IT City adjacent the study area



Figure 37 Upcoming Residential Projects coming in the Study Area

As stated under land cover analysis and demonstrated in the land use analysis as well, only 2% of population practice agriculture, rest are either the service sector employee or the laborers. The agricultural land has been converted into NA and owned by large real estate builders for residential projects such as Gomti enterprise phase 2 and 3 development, godrej enclave, Nishant green city and more. Increase in planned residential colonies improves the amenities and accessibility levels within the study area. Further, proposed ring road crosses the study area adjacent the Indira canal suggesting the area suitable for commercial or small and medium scale industries which are preferred within residential colonies such as dairy plant etc. Existing and proposed IT City and institutional area adjacent the study area impacts the living structure of owned and rented households.

Thus, the following upcoming developments needs to be taken into consideration for planning out and suggesting for conceptual proposed land use in the study area.

## Ch-6 Future Population Forecast

As explained earlier, the study area boundary is not limited to Bakkas rather comprises of three parts marked as Zone 1 [Mastemau]. Zone 2 [Bakkas] and Zone 3 [Malookpur]. Population forecast for all the three zones have been carried out separately using three different methods i.e. Arithmetic, Geometric and Exponential.

### 6.1 Arithmetic Projection

Under this method, the average increase in population per decade is calculated from the past census reports i.e. 2001 and 2011. This increase is added to the present population to find out the population of the next decade. This method is based on the assumption that the population increases at a constant rate i.e. the rate of change of population with time is  $\frac{dP}{dt} = C$ , where C is an arithmetic constant.

Therefore, Population after nth decade will be:  $P_n = P + nC$ , where,

$P_n$  is the population after 'n' decades and 'P' is present population.

As per Arithmetic Progression Method, the projected population for the year 2031 is 5146 for Zone 1, 10,589 for Zone 2 and 3838 for Zone 3.

### 6.2 Geometric Projection

In this method, percentage increase in population from decade to decade is assumed to remain constant. Hence, Geometric mean increase is used to find out the future increment in population.

The population at the end of nth decade 'P<sub>n</sub>' can be estimated as:

$P_n = P[1 + [lg/100]^n$  where,

lg = Geometric Mean (in %)

P = Present population

n = no. of decades.

Under this method, the projected population for the year 2031 is 7142 FOR Zone 1, 13,627 for Zone 2 and 4457 for Zone 3.

### 6.3 Exponential Projection

In this method, the population project is similar to the geometric but taking increment growth it takes the combined growth for the stated time period together. Under this method, the projected population for the year 2031 is 7256 for Zone 1, 13,721 for Zone 2 and 4470 for Zone 3.

### 6.4 Future Mean Population

The final population for the three zones has been computed taking the mean value of all the stated three methods as study area shows traits of both arithmetic and geometric growth pattern.

If upcoming developments are incorporated and completed timely and the area is included within the planning area boundary the population may increase exponentially and if it is not then it may grow arithmetically. Thus, the average has been considered and sum of all three is stated as the total population of the study area. The compiled table for the three zones with population projection, Households and Household size assumption for the year 2021 and 2031 has been shown.

It can be observed that total study area population for the year 2031 should be 23415, where Zone 1 [Mastemau] contributes 27.8% i.e. 6515, Zone 2 [Bakkas] contributes major share 54% i.e., 12,465 and Zone 3 [Malookpur] contributes 23% i.e., 4255. Thus, Bakkas is the major settlement area and the major upcoming development is also planned in the Bakkas area followed by Malookpur Area being adjacent to the proposed ring road corridor.

There are no residential projects proposed in the Mastemau area, but the area has its own perks being part of IT City development and adjacent to IIIT Lucknow giving it an identity of institutional area.

Year/ Means	Categories	Zone 1		Zone 2	Zone 3
		Minjapur	Mastemau	Bakkas	Malookpur
2001	HHs	174	332	1115	515
	Population	1013	1945	6490	2893
	Avg HH Size	5.8	5.9	5.8	5.6
2011	HHs	289	344	1444	573
	Population	1528	2239	8171	3307
	Avg HH Size	5.3	6.5	5.7	5.8
HH Size Assumption for future forecast		5.3	6.2	5.5	5.7
Arithmetic Projection	Population [2021]	2305	2577	10287	3792
	HHs	436	417	1861	675
	Population [2031]	2541	2605	10589	3838
	HHs	481	421	1915	683
Geometric Projection	Population [2021]	2509	2601	10552	3832
	HHs	475	421	1908	682
	Population [2031]	4120	3022	13627	4457
	HHs	779	489	2465	793
Exponential Projection	Population [2021]	3082	2916	12404	4277
	HHs	583	472	2243	761
	Population [2031]	4227	3030	13721	4470
	HHs	799	490	2482	796
Total	Population [2021]	2632	2698	11081	3967
	HHs	498	436	2004	706
	Population [2031]	3629	2886	12645	4255
	HHs	686	467	2287	757

Figure 38 Population Forecast

## Ch-7 Summary of the Finding and SWOT Analysis

The chapter aims to compile the findings obtained in the previous analysis for all sectors together and look over the Strength, weakness, potential and threats of the study area. The broad sectors taken to summarize the findings are Economic Activity, Built Environment, Physical Infrastructure and Social Infrastructure. The summary for each sector has been stated below.

### 7.1 Economic Activity

The study area has a net sown area of 249.57 hectares as per census 2011 but the current occupation pattern shows that only 2% of population are engaged with agriculture thus, the net sown area would have been decreased. The exact area as per current scenario is not known. Based upon the Census town definition i.e., a) Population should be greater than 5000, b) 75% of the male working population should be engaged in nonagricultural activities, c) Population density should be 400 persons per sq.km, d) Must have its own statutory body. With the given criteria's, the study area may be declared as a census town in the coming census body and included within the planning area boundary. The figure shows the agricultural farms, and service sector engagement. Major grown crops in study area are wheat, paddy and vegetables.



Figure 39 Cultivable Land

Figure 40 Service Sector Engagement

Figure 41 Agricultural Land gain NA

### 7.2 Built Environment

The built environment comprises of basically the housing and Commercial Spaces.

#### 7.2.1 Housing

As stated in the analysis chapter under the housing conditions 53% of the structures are Pucca structure and 86% of them are under good, livable conditions. More than 50% of the structures are recently built i.e., less than or 10 years old. It signifies that the growth has been made in the study area recently. Census 2011 also confirms the rate of growth to be 25% in the study area and with the current growth rate, it may soon be developed into a better planned area. In the current scenario majorly structures are owned and ground floor building but with the current development upcoming in the study area the scenario may flip with high rise structures and rented buildings due to institutional area in the close vicinity. The figures below shows the condition and glimpses of the housing condition within the study area.



Figure 42 Newly Built Structures



Figure 43 Dilapidated Structures



Figure 44 Old Kuccha Built Structures

### 7.2.2 Commercial Spaces

The study area lacks any proper designated commercial spaces except the entry part of the highway. There are only residential level commercial spaces for daily needs.

### 7.3 Physical Infrastructure

Physical Infrastructure basically comprises of five sectors which are discussed below.

#### 7.3.1 Roads and Drainage

The study area has a total stretch of 68 kms of Road. No kuccha roads as such except for the field part were observed. All Abadi area have either Concrete roads or Interlocking pavements with open drains provided at both ends. The road width is not up to the standards mentioned in the RADPFI guidelines of minimum 4.5m width but connecting roads to be minimum 6mts. The connecting roads between two habitations are asphalt road with no drainage lines but a scope of unpaved shoulder which provides good scope for widening. The figures below shows the condition of Roads and Drains in the study Area



Figure 45 Brick Road in Abadi Area



Figure 46 Concrete Roads in Habitation



Figure 47 Connecting Asphalt Roads

### 7.3.2 Water Supply

## 6.5 Major Issues and Potentials

### STRENGTH

- Located next to National Highway 731. Thus, wide scope for Real Estate Development.
- Being adjacent to institutional area increases the job opportunity for the service sector.
- Verge on being declared as census town as well as being in the planning area boundary, thereby increasing means of development.
- Proper accessible roads present to all Abadi areas [Road widening needed based upon RADPFI Norms]

### OPPORTUNITY

- Gomti River can be potential sources of water supply with proper treatment plant.
- Ring Road proposed to pass along the Indira canal providing dual accessibility
- Scope of small and medium scale industries to reserve the spaces
- Adequate space for big commercial or expo canters due to its accessibility through major trunk roads and being on the outskirts.

### THREAT

- Flood possibility at time of heavy rainfall, thus proper containment walls and channels to be prepared along gomti.
- Restrict dense development on the northern parts
- Lack of proper public transport facility increases the dependency upon private transport.

### WEAKNESS

- Being under Rural the area is primarily dependent on Service Sector and laborers. Only 2% of the HHs are dependent upon agricultural activities.
- Lack proper amenities to support agriculture produce such as godowns, Weekly Haats etc.
- Gomti River, Canal and Wetlands limits its boundaries of growth in the Northern, eastern and Western Ends
- Being adjacent to the institutional area and small industries such as dairy plants etc., but don't have proper infrastructural facilities such as treatment plants and public transport etc
- Lacks Proper Closed Drainage and Sewerage facilities leading to waterlogged Areas
- Poor Maintenance of Cultural Spaces.
- Lacks proper gathering spaces and organized green spaces
- Lacks Public Transport to access the main highway.
- Lacks Proper Health Infrastructure Facility

## Ch- 8 Conceptual Landuse Layout

### 8.1 Landuse Considerations

Predefined Abadi area boundaries is not known thus, study area as a whole with zone wise consideration been undertaken. Existing and Upcoming Projects have been taken into consideration during designation of areas. Zone wise amenities have been planned based upon the RADPFI Guidelines as stated in the Table below. The amenities location would be within the residential area marked in the conceptual landuse layout.

*Table 10 Amenities Required within the Study Area*

Amenities	Population	Area [Ha]	Distance From Habitation	Zone 1 [6615]	Zone 2 [12645]	Zone 3 [4255]	Total [23515]
Primary School	5000	0.4-0.6	500m	1	3	1	5
High School	15000	1	1000m	0	1	0	2
Dispensary	5000	0.05	500m	1	3	1	5
Community Hall	5000	0.05	1000m	1	3	1	5
Anganwadi	5000	0.05	500m	1	3	1	5
Crematorium	5000	0.05	-	1	3	1	5
Playground	5000	1	-	1	3	1	5
Religious Places	5000	0.04	-	1	3	1	5

Predefined Abadi area boundaries is not known thus, study area as a whole with zone wise consideration been undertaken. Existing and Upcoming Projects have been taken into consideration during designation of areas. Zone wise amenities have been planned based upon the RADPFI Guidelines as stated in the Table below. The amenities location would be within the residential area marked in the conceptual landuse layout.

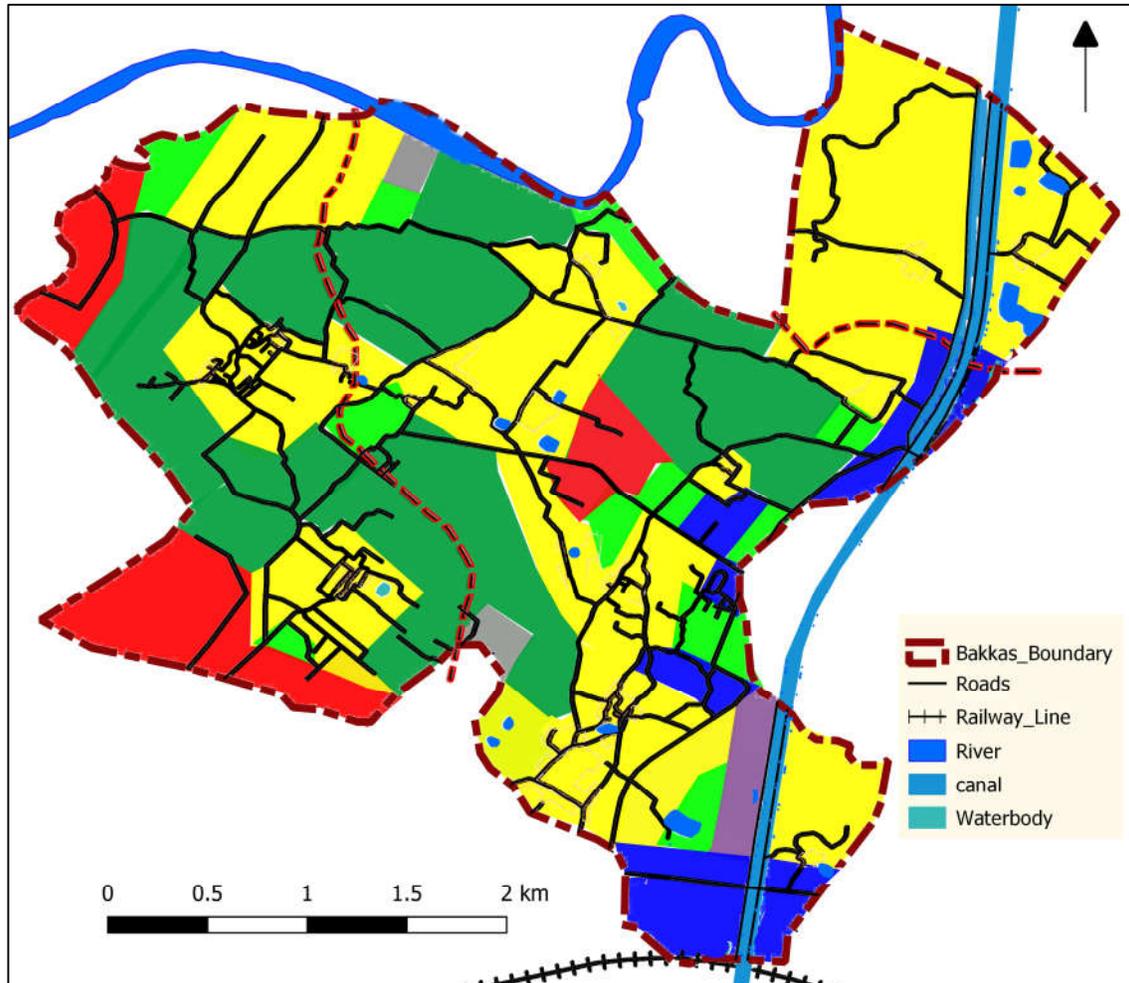
### 8.2 Conceptual Landuse Layout

Major Corridor for Access into the study area. Thus development should be provided along the same. The amenities provision as per the current requirement is bound to be present in the Bakkas area [Zone 2] being the center and having the major corridor or development. Cultivable Lands near the settlements may not be allowed to be converted into other uses as agriculture is equally important for survival.

The land around the canal and especially towards the canal area has been already purchased by developers for residential projects. Thus, Residential area bound to increase in the upcoming years and same has been suggested in the master plan 2031

Existing IIIT Lucknow and law university hostel campus present. The area may be planned to facilitate with offices and other administrative purposes. Existing IT City Proposed under construction. Thus the area may be reserved for institutional purpose itself. The area near the river is suitable for provision

of water treatment plant and provision of municipal water supply in the area, which at current is not present. Suitable for provision of Waste treatment as it is away from residential area and has a clear space to bear off the smell. The planned Ring Road passes along the canal road providing new accessibility on the eastern end. Thus area adjacent may be utilized with commercial, Convention center or small scale and medium scale industrial enterprises which may not harm any residential development.



Map 27 Conceptual Landuse Layout

Conclusion /Remarks

The tentative proposals are based upon area specific keeping in mind the upcoming Developments. The exact area can't be specified due to misclarity with respect to the area of upcoming developments and rojects thus, tentative and possible locations has been stated.