

- There is gap between the amount of taxes that should be collected, and taxes originally submitted.
- There is a need for a legal and policy framework for the Municipal Board in order to link property taxes from standard rents and rent controls.
- Lack of public participation in E- Service in municipal work hampers fulfillment of aspirations of the people.
- Improper reforms at ward level such as ward information system are not functional.
- Lack of auditing of funds allocated under various schemes and monitoring of the work done under these schemes.
- Lack of capacity to improve the Board is one of the major issues of governance.
- The NLMB lacks the use of technology in infrastructure monitoring which can provide fast, more accurate data. This could be done by employing skilled technical workers.

12.7 Conclusions

The North Lakhimpur Municipal Board governance system shows that there are some improvements in the governance of the town with developments taking place because of the support through central grants. However, the Board needs to strengthen its capacity by improving the overall organizational structure for the overall development of the area. Collection of revenues through taxes should be systematized so as to provide funds through budgets and proper management and auditing of the budget should be carried out on a regular basis, ensuring transparency and efficiency in the system. Good governance through use of digital technologies for redressal of public grievances in relation to municipal works could present the first step. This can be implemented soon. Municipal Board must deliver proper services with equality and transparency.

CHAPTER 13: LAND USE

13.1 Introduction

In urban area land use planning is the key aspect for the preparation of a master plan. Land use is the predominant use of land such as residential, commercial, public semi-public, industrial, recreational, transportation and other agriculture and eco-sensitive area. In land use plan different zones are defined for planning purposes. These zones are related to different zones within municipal areas based on the different character and the planning area outside the municipal area. In this chapter we will describe different types of land uses in North Lakhimpur city based on the existing land use classification.

13.2 Planning Area

Planning area is the area of the municipal boundary, adjoining villages falling in the previous master plan area and the proposed village area which is to be included in the proposed master plan area for future development. A total of 70 villages are falling in the Planning Area of North Lakhimpur town. Municipal area of the town is 14.461 sq km, which is 11.75 percent of the total planning area (see Table 13.1).

Table 13.1: Total Planning Area

S.No.	Planning Area	Area (sq km)
1.	North Lakhimpur Municipal Area	14.461
2.	Adjoining 70 Villages	108.56
3.	North Lakhimpur Planning Area	123.02

Source: SPA Delhi (2022).

13.3 Existing Land Use Distribution

Total developed area is 7.498 sq km (51.84 percent) and non-developed area is 6.963 sq km (48.16 percent) within the Municipal boundary. Residential area is 4.221 sq km which is 29.19 percent of total area and 56.30 percent of total developed area within the Municipal boundary. Total commercial area is 0.975 sq km which is 6.74 percent of total Municipal area and 13.00 percent of total developed area. Public semi-public land use is 1.00 sq km which is 6.92 percent of total Municipal area and 13.34 percent of

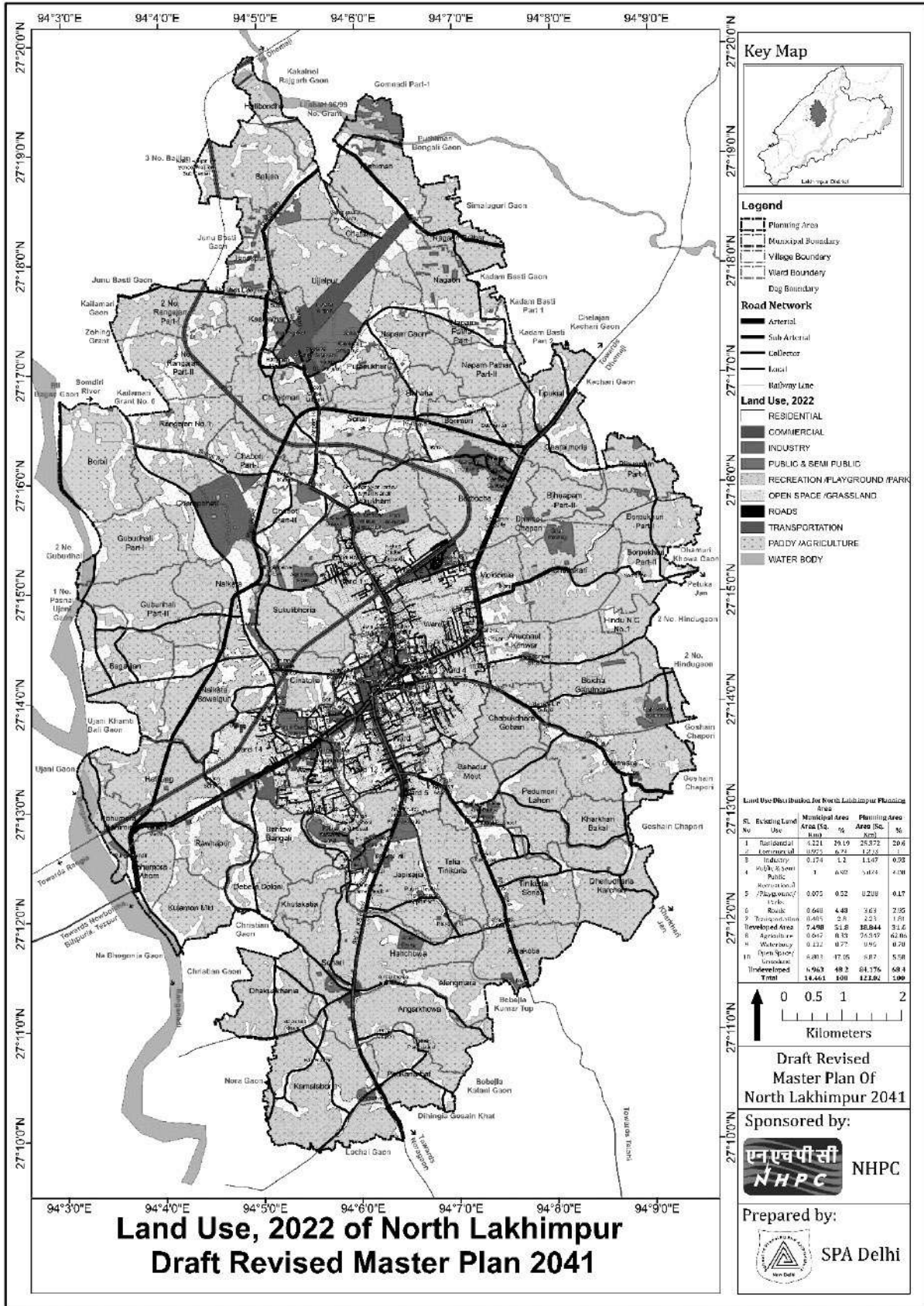
total developed area. Transportation land use is 1.053 sq km and percentage share is 7.28 percent of total Municipal area and 14.04 percent of total developed area. Recreational/Playground/Parks within the Municipal area is 0.075 sq km which is 0.52 percent of total Municipal area and 1.03 percent of total developed area. The total agriculture land within the Municipal area is 0.047 sq km which is 0.33 percent of Municipal area. Water bodies and Open spaces are 0.112 sq km and 6.80sq km which is 0.77 percent and 47.05 percent of total Municipal area respectively (**see Table 13.2**).

Table 13.2: Distribution of Land Uses, 2021

Sl. No	Existing Land Use	Municipal Area		Planning Area	
		Area (Sq. Km)	%	Area (Sq. Km)	%
1.	Residential	4.221	29.19	25.372	20.6
2.	Commercial	0.975	6.74	1.233	1.00
3.	Industry	0.174	1.20	1.147	0.93
4.	Public & Semi Public	1.00	6.92	5.024	4.08
5.	Recreational /Playground/ Parks	0.075	0.52	0.208	0.17
6.	Roads	0.648	4.48	3.63	2.95
7.	Transportation	0.405	2.80	2.23	1.81
	Developed Area	7.498	51.84	38.844	31.58
8.	Agriculture	0.047	0.33	76.347	62.06
9.	Waterbody	0.112	0.77	0.96	0.78
10.	Open Space/ Grassland	6.803	47.05	6.87	5.58
	Undeveloped Area	6.963	48.16	84.176	68.42
	Total	14.461	100	123.02	100

Source: SPA Delhi (2021).

Figure 13.1: Land Use of North Lakhimpur Planning Area, 2021



13.3.1 Residential

Residential land use is the area where housing is predominant use on land and this is demarcated in yellow color on the land use map. It includes all the plotted development, group housing complexes, apartments, slum- squatters, colonies and rural settlements outside municipal boundary. In North Lakhimpur town plotted housing is the most prevailing one. There is one slum settlement located in front of the railway colony. Detached houses are found in urban and rural areas both. Major housing area in town is along KB road, Chetia gaon, Khelmati and railway colony. KB road housing area having pucca houses with 2 stories is located in southern area of town. Chetia gaon housing area is located in norther direction of town. Khelmati housing area is located in western side of town with mixed housing character. Railway colony is located near North Lakhimpur railway station which is in north-eastern direction of town. As per the URDPFI guidelines 45-50 percent of land area is under residential land use for small towns.

13.3.2 Commercial

Commercial Land use is the use of land which is predominantly commercial in nature, occupying shops, market area, shopping complexes, convenient shopping, mandi and informal markets. Commercial areas are located along the major roads of town such as NT road, Girl's Charali road, KB road and Thakurbari road. These market areas create congestion along these major roads. There are two commercial complexes planned by municipal board of North Lakhimpur.

As per URDPFI guidelines 2-3 percent of land use area is demarcated under commercial land use in small towns.

13.3.3 Public-Semi Public

Public-Semipublic land use includes educational, healthcare, religious, bank and government offices, socio-culture buildings and utilities such as cremation, solid waste disposal site, STP, water storage and treatment and electric sub stations. Majorly government offices are located along the district court road and Nakari Road near DC office located in the center of the city. Education institute in North Lakhimpur town are North Lakhimpur Girl's Higher Secondary School, North Lakhimpur Government

Higher secondary School, North Lakhimpur Town High School, Kendriya Vidyalaya distributed all over the town. Major colleges in the town are Lakhimpur Girls College, North Lakhimpur Autonomous College near old college road in the upper side of NH 15 in western side of the town. Lakhimpur B. Ed.College, North Lakhimpur Law College, North Lakhimpur College, Lakhimpur Commerce college and Fine Art college located in the central area of town near government offices. Proposed land use under Public and Semi-Public land use is 6-8 percent in small town as per URDPFI guidelines.

District hospital named as Old Civil Hospital is located on the Nakari Road. Mid-Town Hospital and Research Institute and DM Hospital are the major hospitals in town. Most of the government and private hospital are located along the Nakari Road.

Number of temples and mosques are located all over the town. Recreational facilities such as one public park, two playgrounds and one multi-purpose park are present in town. Recreational Land use is 12-14 percent as per the URDPFI guidelines for small towns.

Sadar Police Station, district police headquarters and fire station are facilities related to safety and security are also come under public –semi-public land use.

Other utilities such as 3 cremation ground and one land fill site located in Chandmari is also present in town which are which are part of PSP land use.

13.3.4 Industrial

Industrial land use includes all the large, micro and medium and household industries. This land use is demarcated in purple color in land use plan. As per the URDPFI guidelines 8-10 percent area is demarcated in industrial land use for small town. North Lakhimpur town is lacking in terms of industries. One industrial Estate of 3.5 ha is located in Lilabari. There are number of micro handloom and household level industries are present in town. Auto and spare parts related industrial units are there along NT road in North Lakhimpur town.

13.3.5 Transportation

Transportation includes all the roads (arterial, sub-arterial, collector and local roads), railway station, bus stand, and airport. Bus station is located in the center on the

district court road. Lilabari airport is located 5 kms from the city toward the Nakari Road connected Lilabari Airport Road. 10-12 percent of area is demarcated under Transportation land use for small town as per URDPFI guidelines.

13.3.6 Agriculture and Water Bodies

Agriculture is the backbone of the economy of the region. Agriculture land is available not only present in the rural areas but also in the fringes of municipal area. Rice is the major crop in the area.

Subansiri and Ranganadi rivers are located fairly away from the town in the eastern and western side respectively. So, in the town number of individual ponds is located in front of individual houses. People are using these ponds for fishery purpose. Gariajan and Bagalijan are the two major nals in town which are going towards south and meeting the Subansiri River.

CHAPTER 14: POTENTIALS AND ISSUES

14.1 Introduction

North Lakhimpur town provides the gate way to Arunachal Pradesh. Being an administrative town and headquarters of the district, North Lakhimpur town becomes important urban centre for development. North Lakhimpur town has strategic location with good regional connectivity. However, some parts of the town are prone to flooding during monsoon. The Master Plan, 2011 provided direction of development of the town but the implementation of the plan has lagged time.

14.2 Demography

Decadal population growth rate is decreasing in North Lakhimpur Municipal Area, and it is stagnant in rural parts of the planning area. There are no pull factors to attract population to the urban area. Growth of North Lakhimpur town took pace when it was declared the district headquarters later due to no industrial development, town's growth rate has been declining. The literacy rate of Planning Area is at par with the state average. But only 40 percent of population is educated till tenth grade. There is shortfall of skilled working population which is crucial for industrial development. Findings from socio-economic household survey revealed that assets are bare minimum and annual income is just sufficient to meet basic needs. Agriculture sector is underdeveloped. Decreasing working population in the primary sector in rural areas is a major concern. Lack of employment opportunities is also responsible for migration of youth population. Potential economic sectors with regards to North Lakhimpur need to be identified to facilitate economic growth of the town.

14.3 Economy

Economic development in North Lakhimpur got accentuated as it started developing as the administrative centre. Now, trade and commerce, health, education, and banking services are also driving the economy of North Lakhimpur. Commercial areas have sprawled around main arterial road of the town, creating congestion, parking issues in many areas. Such scenario of development can hamper growth of trade and commerce.

It is therefore necessary to propose planned commercial complexes and provision of planned vending zones to enhance trade and commerce in the town. There is no significant industrial development in the area due to lack of raw materials except silk, unavailability of skilled labor and lack of market potential. While handloom presents immense opportunity, lack of marketing and low labor capacity could be further enhanced. In rural areas, agriculture-based industry, and agriculture itself needs to be strengthened by providing irrigation facilities and mechanized cultivation facilities so that crops could be cultivated more than once a year. More cash crops may be given priority for cultivation in villages within the planning area which can get direct market in the town and surrounding areas.

14.4 Housing

Housing design in North Lakhimpur Planning Area is consistent with the climatic conditions. Planning Area experiences heavy rainfall for longer duration. The houses have pitched and gambrel styled roofing. Traditional building materials are used for construction. The traditional housing characteristics are sustainable for the climatic condition of the town and the seismic zone. This requires to be encouraged to maintain the traditional characteristic of the town.

Around 50 percent of houses have walls made up of bamboo and thatched walls. This is since bamboo is grown in every household in Assam. In the urban area, walls are constructed with modern building materials like cement and concrete. Mostly, houses have ground floor only. Houses are being built in North Lakhimpur town in a haphazard manner. Leap frog development is seen as houses are built without a plan. Planned development of housing along with provision of basic facilities like roads, drainage system, and streetlights could be provided.

This Master Plan meant for 2041 could ensure densification of residential areas in North Lakhimpur Planning Area. There is a rental housing demand within town which will increase if the economic activities of the town increase. Better housing needs to be provided for the five percent dilapidated houses.

14.5 Traffic and Transportation

The NT Road is the main arterial road in North Lakhimpur. It is a part of the National Highway - 52. The newly constructed bypass on the National Highway - 52 has brought some a relief to commuters as well as town residents as through traffic is moving straight out to their destinations without going into the town. Due to lack of planning and lack of adequate development of the road network in the town, traffic movement within the town is inefficient. Local roads are mostly kuccha roads connecting dwellings to main roads and are constructed in an irregular manner. Radial development along main roads is observed increasing urban sprawl, which further contributes to low level of service on town roads. Traffic is a major issue in North Lakhimpur Municipal Area as roads are highly congested and require urgent attention. Bus terminal in the town needs to be shifted as it is causing congestion in the town.

14.6 Water Supply and Drainage

North Lakhimpur Planning Area is experiencing very paradoxical situation. Although around the year there is ample of water on surface and beneath the earth, yet there is very little water fit for drinking throughout the year. Ground water is the main source of water supply. Ground water is also available in abundant quantities. Water supply scheme based on ground water as source needs to be initiated. Majorly wells and handpumps are used to fetch groundwater. Condition becomes severe during rainy season as water in well gets polluted. Due to flooding and water logging in the rainy season, handpumps are not accessible. Therefore, provision for piped drinking water supply becomes necessary. In rural areas, piped drinking water supply schemes are initiated under the Jal Jeevan Mission. Water treatment and expanding water distribution network is extremely necessary to ensure safe, potable water reach in each household. Water logging is a major issue in the town affecting water supply adversely. Primary reason is unplanned and haphazard growth without construction of a drainage system. Expansion of drainage network and its periodic maintenance is imperative to overcome recurring problem of water logging.

14.7 Sanitation

North Lakhimpur Planning Area consisting of North Lakhimpur Municipal Area and surrounding villages are declared as open defecation free. This is remarkable achievement with each household having basic facility of individual household toilet. Further challenges in this sector are related to management of fecal and septage. At present there is no infrastructure in town and villages to cater to fecal and septage management.

14.8 Solid Waste Management

Segregation of waste needs to be enhanced in North Lakhimpur Municipal Area. Measures in terms of awareness and penalties will help to increase percent of waste segregated. Segregation of wastes will promote waste processing. Composting plant for wet waste and recycling for dry waste are possible strategies at town level. This will reduce the amount of waste to be dumped in the landfill. Immediate attention needs to be given to shift the landfill from existing location. The new location for landfill should be outside the municipal boundary. Sanitary landfill should be constructed in accordance with the Municipal Solid Waste Management Rules, 2016.

14.9 Social Infrastructure

Social infrastructure plays vital role in improving the quality of life of citizens. North Lakhimpur Planning Area is well equipped with educational facilities. It has adequate number of primary, secondary, and higher secondary schools. It also houses various higher educational institutions. Government Medical College would start from 2022 and is expected to attract students from all over Assam. Students from other parts of Lakhimpur district and parts of Arunachal Pradesh to access educational facilities. North Lakhimpur Municipal Area has adequate health infrastructure. However, rural area has poor health infrastructure. Rural area, even for basic health services, needs to depend on North Lakhimpur town. Health services needs to be improved in rural area by provision of Community Healthcare Centers (CHCs) with provision of at least one medical officer and a facility to admit. CHCs can be allocated in decentralized manner within the Planning Area. This will enable healthcare facility to all at a reasonable distance. There is lack of organized green spaces in the North Lakhimpur Municipal

Area. Only one public park is present in North Lakhimpur Municipal Area. Master Plan 2041 could consider equitable provisioning of organized green spaces in residential areas of North Lakhimpur town.

14.10 Tourism

The city of North Lakhimpur despite being a small and developing town, has the potential to be a great potential tourist destination with its natural beauty and other resources. The town combines the scenic beauty of the plains and the rivers also has the potential to promote eco-tourism for the city and the region. The city has space for improving infrastructure like parking spots, basic amenities, connectivity, sings, etc. Organising and propagating mela and temples as a part of the religious tourism is a great way for the town to generate revenue. Publicity and development of tourist sports are important for promotion of tourist development for which the town needs additional resources and planning. With time comes development and with development comes opportunities to create good tourist spots in and around the town for which tourist circuits can be created in the planning area to ensure proper flow of tourists. We could also promote local crafts, artisan and handicrafts, live pottery, etc. for tourists. Dhari workshop can be incorporated at their residence or dedicated area could be allocated to promote culture of the town. Overall, the town has a great scope in becoming a tourist destination with all its natural resources.

14.11 Environment and Disaster Management

North Lakhimpur is situated at a plain area and has abundance of water resources and complex geomorphology. However, water in the town contains iron as past and present research has shown. This has made water unsuitable for drinking purposes without treatment. This remains a major concern for the health of the people. The area of North Lakhimpur is subjected to natural disasters like earthquake and erosion, especially floods which affect the weaker sections the most. In North East, Assam is one of the states that is always affected by floods during the monsoon seasons including North Lakhimpur which is also located in an area prone to flash floods and erosion. Proper planning needs to be carried out and planning policies for mitigating floods need to be included in the development plan.

14.12 Governance

The North Lakhimpur Municipal Board governance system shows that there are some improvements in the governance of the town with developments taking place because of the support through central grants. However, the Board needs to strengthen its capacity by improving the overall organizational structure for the overall development of the area. Collection of revenues through taxes should be systematized so as to provide funds through budgets and proper management and auditing of the budget should be carried out on a regular basis, ensuring transparency and efficiency in the system. Good governance through use of digital technologies for redressal of public grievances in relation to municipal works could present the first step. This can be implemented soon. Municipal Board must deliver proper services with equality and transparency.

**PLANNING AND DEVELOPMENT
PROPOSALS**

CHAPTER 15: POPULATION PROJECTIONS

15.1 Introduction

One of the primary considerations for planning an urban settlement is population projections as it forms the basis for allocating land for all other land uses as well as provisioning of social and physical infrastructure. Total requirements for the provisioning of developed land for various uses like residential, commercial, traffic and transportation, industrial, public and semi-public spaces, green spaces, etc. and educational, health and socio-cultural facilities is computed on the basis of population projections for a planning period or master plan horizon period, which is 2041 in the case of Master Plan for North Lakhimpur town. Hence it is necessary to have credible projections to avoid deficiencies or excess provisioning of developed land and facilities and infrastructure for the next 20 years.

15.2 Population Projections

There are several population projection methods such as arithmetic projection method, logistic projection method, geometric projection method, exponential projection, cohort projection method, etc. In our case, we have taken the past population growth trends into considerations for making population projections. The projected population is shown in **Table 15.1**.

Here we have adopted the geometric method because induced growth is planned for the development of the town through proposed developments. Population projects with the geometric method show a 15 percent decadal growth rate. Consequently, total projected population is projected to be 92,000 for the municipal area and 1,37,000 for the planning area other than the municipal area in the year 2041. Total projected population for North Lakhimpur Planning Area is 2,29,000 or say 2,30,000 in the year 2041 (**see also Table 15.1**).

All land allocations for various land uses, infrastructure networks, and facilities in the Master Plan for North Lakhimpur 2041 are provided for 2,30,000 population for the plan horizon period 2021-2041 for the existing planning area (see Figure 15.1) as provided by the authorities of the Lakhimpur district.

Table 15.1: Population Projection for North Lakhimpur Town and Planning Area, 2041

	Arithmetic Method			Geometric Method		
	Municipal Area	Other Than Municipal Area	Planning Area	Municipal Area	Other Than Municipal Area	Planning Area
2021	67,614	92,253	1,59,867	68,786	94,144	1,62,930
2026	71,514	99,153	1,70,667	73,945	1,03,558	1,77,503
2031	75,414	1,06,053	1,81,467	79,491	1,13,914	1,93,405
2036	79,314	1,12,953	1,92,267	85,453	1,25,305	2,10,758
2041	83,000	1,20,000	2,03,000	92,000	1,37,000	2,29,000

CHAPTER 16: PROPOSALS FOR HOUSING

16.1 Introduction

Access to a house for every family living in North Lakhimpur town is essential because decent human living directly depends on it. Adopting an egalitarian planning approach, Master Plan for North Lakhimpur, 2041 thus envisions providing a house to each household by 2041. Following the mandate provided in the Article 21 of the Indian Constitution and policies of the central government and state government, dwelling unit built on a plot of adequate size for each economic class is also proposed.

16.2 Housing Requirement Assessment

Housing demand is assessed for the horizon year 2041 as shown in **Table 16.1**. In each decade starting with 2021-31 and 2031-41, 5,500 houses are proposed to be constructed. Total housing demand in planning year 2041 is 21,395. It is assumed that there will be decrease in family size with more nuclear families residing in the planning area seeking economic opportunities. To meet this additional housing demand, the last phase starting from 2031 to 2041 is proposed to be used.

Table 16.1: Housing Assessment for North Lakhimpur Town, 2041

Aspects	2021	2031	2041
Population	69,000	81,000	92,000
Family Size	4.7	4.5	4.3
Housing Demand	14,680	18,000	21,395
Housing Stock	13,480	12,132	16,419
Housing Supply	0	5,500	5,500
Housing Gap	1,200	368	0

Source: SPA New Delhi (2022).

Reasonably large residential plot sizes are proposed for all families of different economic classes as shown in **Table 16.2**. No group housing is proposed as developed land could be easily made available. Only limited group housing can be provided for larger plots for the government housing projects or limited new developments.

Table 16.2: Plot Sizes for Different Economic Classes

S. No.	Economic Class	Percent of Population in Each Economic Class	Plot Sizes in sq m
1.	Economically Weaker Sections	30	50-100
2.	Low Income Groups	25	100-200
3.	Middle Income Groups – I	20	200-300
4.	Middle Income Groups – II	10	300-400
5.	High Income Groups – I	10	400-500
6.	High Income Groups – II	5	500-600

Note: Land for residential use is calculated based on higher side of each plot range.

It is assumed that plotted housing will continue to be dominant housing typology in the Planning Area. Land requirement for housing is discussed in the proposed land use section. It is also assumed that 60 percent population belongs to EWS and LIG categories, 40 percent to MIG category (equally divided within MIG – I and II categories), and 10 percent population belongs to HIG category with the division of 5 percent in HIG – I and 5 percent in HIG – II.

Spatial allocation of land for different land uses is based on a specific approach. This approach seeks to first allocate vacant lands within the municipal area for development. Once vacant municipal lands are exhausted, land within the planning area is proposed for further use.

As far as housing is concerned, the Master Plan for North Lakhimpur, 2041 has made spatial allocations of residential land for housing, which is situated in the municipal area and adjacent to important roads in Planning area. As discussed in Chapter two, the population density of wards 6,7,8 and 9 are in the range 75 person per hectare (pph) to 150 pph which is medium density and ward 10 has population density above 150 pph depicting high density (Uniform Zoning Regulations, 2000). The residential areas of these wards will continue having higher population density than the other residential areas of planning area. Ward 6,7,8 and 9 will have population density in the range of 75-150 pph and ward 10 will have more than 150 pph. However further densification of these wards should not be promoted and ward 10 population density should not increase beyond 200 pph (see Figure 16.1 and 16.2).

Figure 16.1: Proposed Residential Area in North Lakhimpur Town, 2041

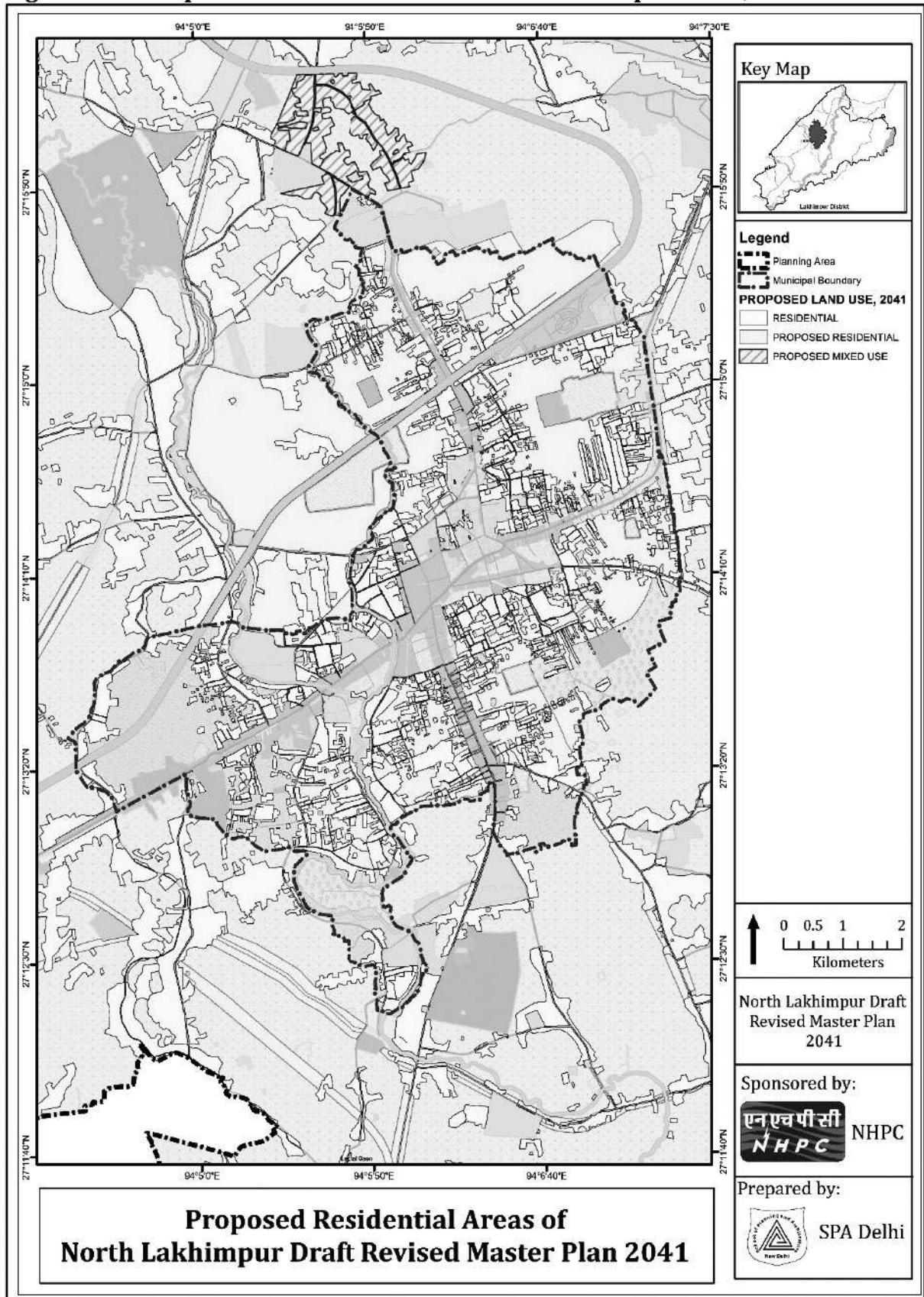
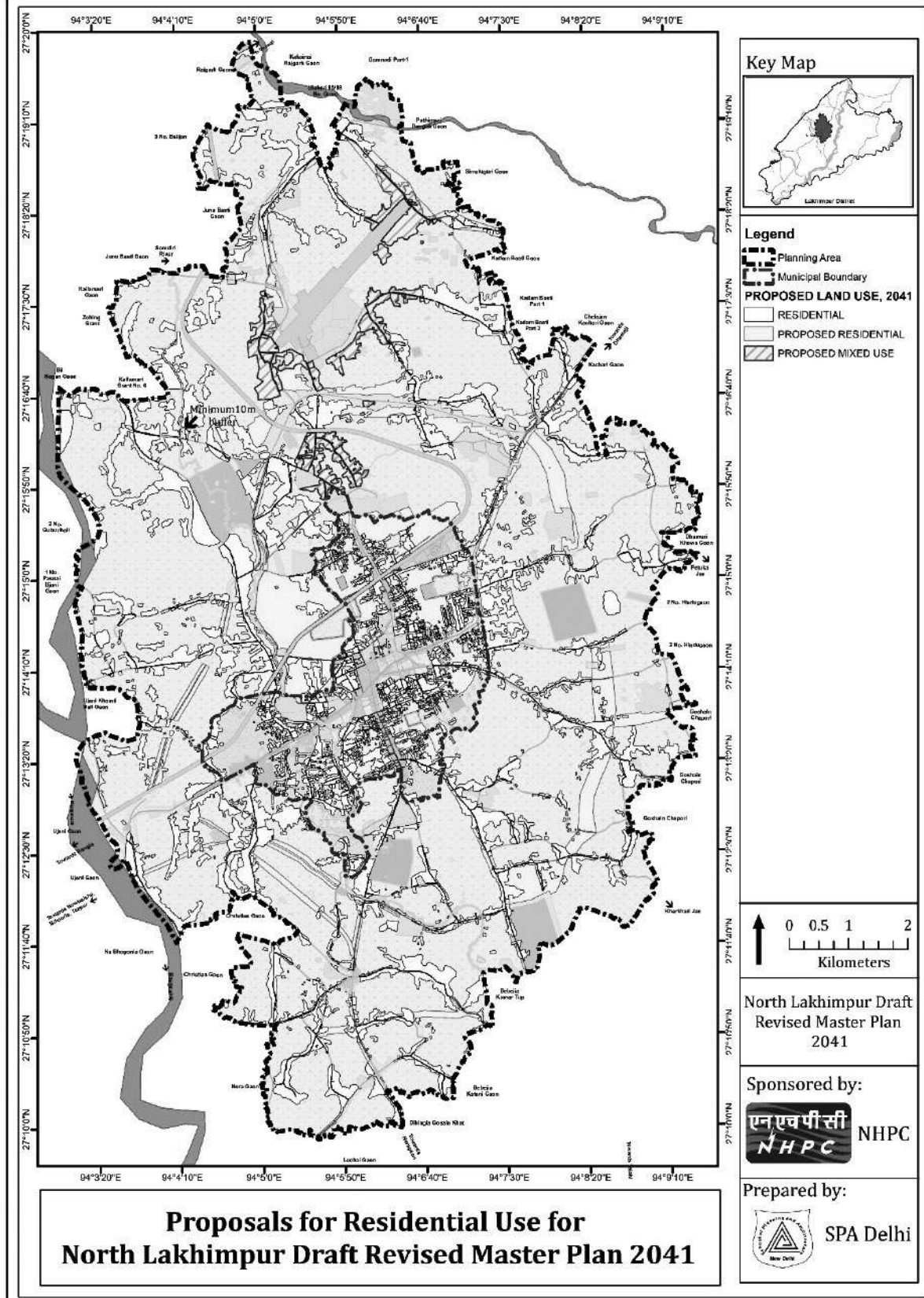


Figure 16.2: Proposed Residential Area in North Lakhimpur Planning Area, 2041



CHAPTER 17: PROPOSALS FOR ECONOMY

17.1 Introduction

Economy is the backbone of an urban settlement. Buoyant economy is dependent on growing and diverse industry, trade, and commerce. However, it also depends on highly trained human power equipped with skills needed by modern industrial, commercial and trade practices. Abundance of locally available raw materials at relatively cheap prices could further enhance the probability of fast economic growth. Based on these conditions as analyzed in the previous part of the Master Plan for North Lakhimpur, 2041, the following proposals are made.

17.2 Trade and Commerce

Master Plan for North Lakhimpur, 2041 aims to maintain as well as enhance economic growth in North Lakhimpur town by developing it as a commercial hub. For the development of trade and commerce activities, there is a need to rejuvenate and redevelop the existing commercial area with better accessibility and parking spaces, and allocation of additional area for commerce. With the shifting of the administrative offices from the town centre towards the north of the municipal area, an opportunity for developing additional area for commerce has become available. So, we have proposed that the area vacated by the existing administrative offices should be used for commercial purposes. This proposal has a merit because the proposed commercial area has good accessibility, and it is located adjacent to the existing commercial establishments and markets. Central location and high accessibility would facilitate fast development of the commercial hub in the Lakhimpur town and will generate additional revenues for the government. Additional revenues are needed for continual maintenance of the town by the municipality, which is not possible with the current low tax base.

As properly planned modern commercial hub gets developed, and more people begin to visit the town centre, more parking spaces would be required. It is proposed that parking places are built within commercial complexes. Commercial area is proposed

along the NT Road and Nakari Road up to 100m on both sides of the arterial road. Commercial development near Government Medical College on Nakari Road is also proposed.

The Lilabari Airport and the Flight Training Institute are locations that have begun to attract people from all over the country. The demand for commercial outlets, hotels and recreational spaces in this area has also seen a rise. They have a potential to develop into a happening and attractive commercial as well as recreational spot for the city. Commercial land use has been proposed near the airport. Furthermore, Mixed Use Residential areas have been proposed in the areas surrounding the proposed commercial spaces. This will provide the area the opportunity and flexibility to expand their residential spaces into commercial areas based on the future demand growth of the area. Commercial land use has also been proposed near the Government Medical College, Hospital and Technical University to facilitate the demand for commercial necessities like pharmacies, restaurants and lodging facilities for the students as well as hospital users.

Since, Residential use has been proposed along all the major roads and bypass therefore commercial areas have also been proposed to match the commerce demand of these areas.

17.3 Informal Markets

Master Plan for North Lakhimpur, 2041 seeks to promote inclusive economic development. So, the master plan makes provisions for safeguarding the interests of street vendors, vegetable vendors, and fruit vendors. Dedicated vending zone of 2 hectares is proposed to be developed in a phased manner. The existing ground in front of Gandhi Park is proposed to be used as a place for the development of the informal market(see **Figure 17.1 and 17.2**). This place will host fruits and vegetable vendors. This place should be developed as a wholesale market for vegetable and fruits for the town and surrounding areas. Vegetables and fruits growers located within the planning area should be incentivized to grow fruits and vegetables on the land currently being used for agriculture. This agricultural land is unlikely to be used for urban development for several decades to come. To further enhance farmer incomes,

commercial crops are proposed to be grown within the planning area. Government incentives are proposed in the initial stages of town development.

Figure 17.1: Proposed Commercial Areas in the North Lakhimpur Town, 2041

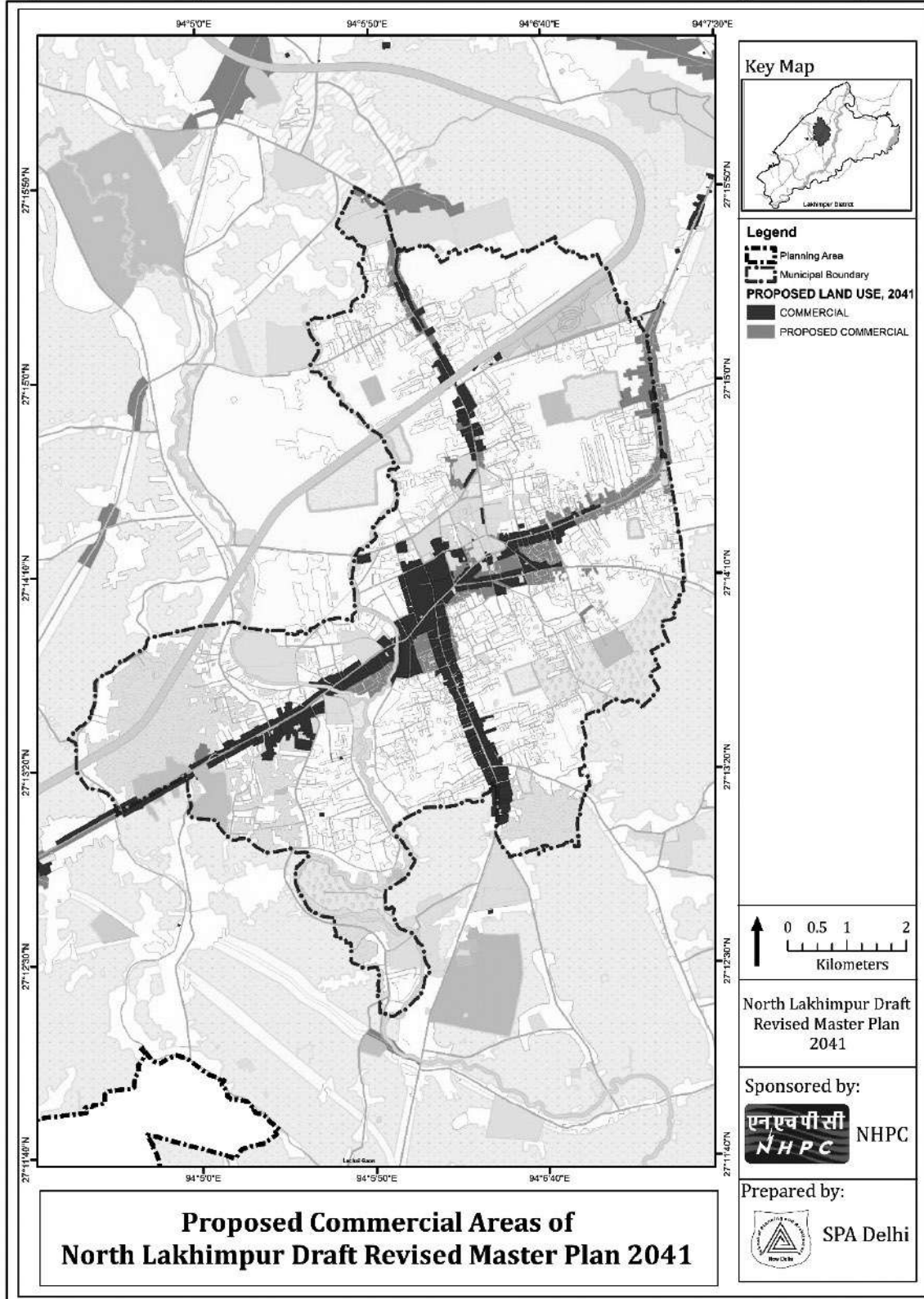
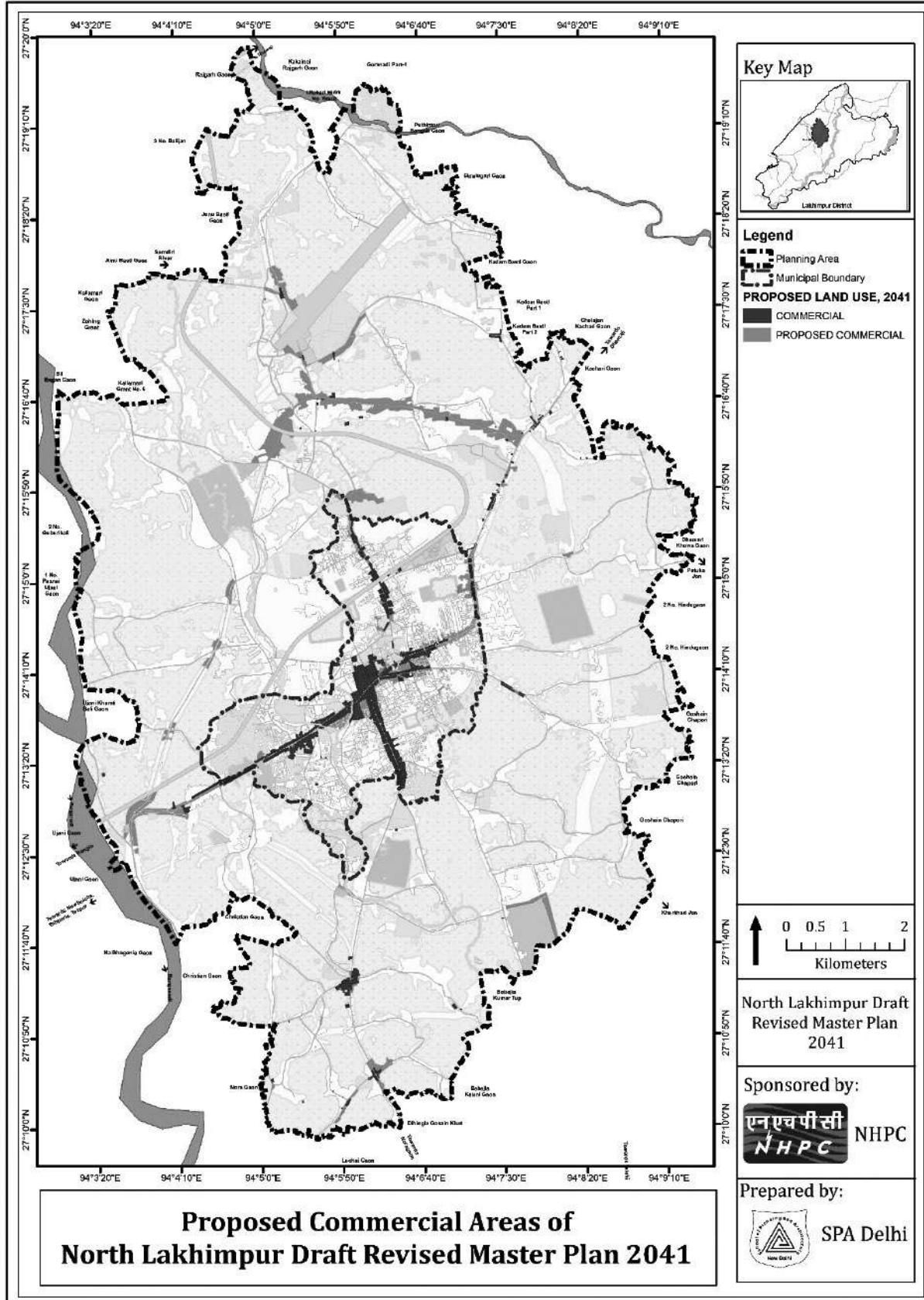


Figure 17.2: Proposed Commercial Area in North Lakhimpur Planning Area, 2041



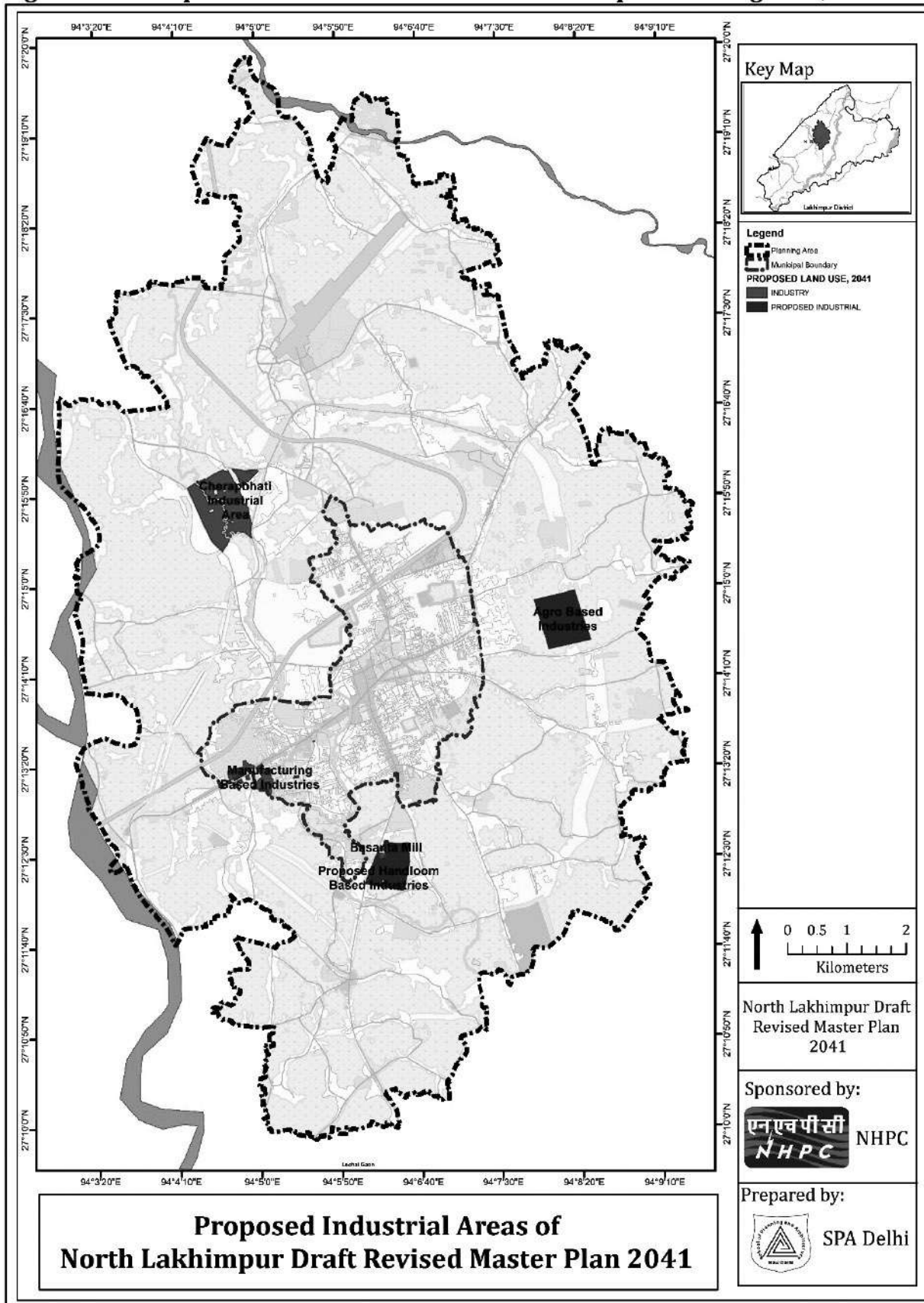
17.4 Industries

Industries are enablers of economic development and employment generation for any urban settlement. North Lakhimpur Planning Area has remained devoid of industrial development far too long as shown in the analysis. Hardly there is any industry except a few small-scale rice mills presently located in the south of the existing planning area.

Lakhimpur district has the highest muga silk production and skilled workforce trained in weaving and handloom. Hence there is a potential for the development of silk-based handloom industries. Master Plan for Lakhimpur, 2041 proposes that a package of special incentives should be given by the Government of Assam for the development of small and medium scale handloom industries. These industries could use raw materials which are currently being exported out of the district. The master plan proposes 40 hectares of land in Japisajia for handloom-based industries towards the south of the municipal area, which is near Assam Government Sericulture Institute and Cocoon Bank in Japisajia, making it an appropriate spatial location(see **Figure 17.3**).

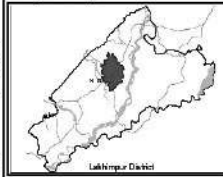
More than 50 percent of workforce in rural area is engaged in the agriculture sector. Master Plan for Lakhimpur, 2041proposes to promote intensification of agriculture in the existing planning area. It is also proposed that agriculture scenario should be transformed from self-consumption to revenue generation activity. Focus should be placed on enhancing irrigation facilities so that commercial crops are sown twice a year, generating higher yields and increased farm incomes. Cropping pattern of paddy and mustard seed is suitable for climatic conditions in the existingplanning area. Government of Assam should encourage sericulture in the mission mode in rural areas. With increased yields, there will be a scope for Agro-based industries in North Lakhimpur Planning Area. Master Plan for Lakhimpur, 2041 further proposes another 40 hectares of land for Agro-based industries in Chutiakari along the sub-arterial road. In ward number 14 within the municipal area, automobile based small scale workshops have sprawled along the NT Road. This needs to be organized into clusters and developed in a planned manner. For this, 30 hectares of land for manufacturing, service and repair industries have been proposed in ward 14 along the NT Road. The Master Plan for Lakhimpur, 2041 also proposes urban forestry as and environmental asset and a buffer for industries from residential areas.

Figure 17.3: Proposed Industrial Area in North Lakhimpur Planning Area, 2041



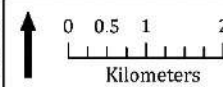
**Proposed Industrial Areas of
North Lakhimpur Draft Revised Master Plan 2041**

Key Map



Legend

- Planning Area
- Municipal Boundary
- PROPOSED LAND USE, 2041**
- INDUSTRY
- PROPOSED INDUSTRIAL



North Lakhimpur Draft
Revised Master Plan
2041

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CHAPTER 18: PROPOSALS FOR TRAFFIC AND TRANSPORTATION

18.1 Introduction

Traffic and transportation provide a crucial spatial link between various land uses and activity systems. Urban settlements grow or decline based on critically important mobility. Congested towns where citizens are stuck for hours together on the roads are not great economic growth generators. Towns with great public transport systems perpetuate economic growth and enhance greatly the quality of life for its citizens. Thus, proposals of transportation are categorized into short term and long-term proposals. Short term proposals address immediate concerns needed to be addressed to reduce traffic snarls in the core area of the town. Long term proposals focus on creating transportation infrastructure to enable efficient circulation pattern in the town.

18.2 Short Term Proposals

Results of parking studies conducted on the main arterial and sub-arterial roads of North Lakhimpur town highlight that the existing parking provisions in terms of on street parking are insufficient. The existing parking spaces are used to their full capacity. Parking accumulation ranges from 90-95 percent. On street parking provisions are primary reasons for decreasing capacity of roads and road congestion. Traffic congestion particularly affects the development of trade and commerce activities in the core area of town.

Keeping the above-mentioned issues in mind, the Master Plan for Lakhimpur, 2041 proposes three off street parking lots in the vicinity with overall capacity of 650 ECS. Locations of parking lots are given in **Table 18.1**.

Table 18.1: Off-Street Parking in the Lakhimpur Town, 2041

Off Street Parking Locations	Area in Hectares	Capacity in ECS
Existing ASTC Bus Stand	0.3	100
Playground behind Old Civil Hospital	1.2	450
Existing Private Bus Stand on the NT Road	0.3	100

Railway network passes through the middle of the Lakhimpur town. Conflict between vehicular traffic and railway line could be seen on the Nakari Road. Long traffic queues are frequently seen near the crossing. To overcome this issue, the Master Plan for Lakhimpur, 2041 proposes a grade separated crossing at the intersection to smoothen the traffic flow. Land has been already acquired for Inter State Bus Terminal (ISBT). Location of the ISBT is proposed at Chandmari along the bypass. Total land for the ISBT accounts for 5.6 hectares. This proposal is expected to reduce traffic congestion in the town as two bus stands from the core of Lakhimpur town are proposed to be shifted to outskirts at earmarked place.

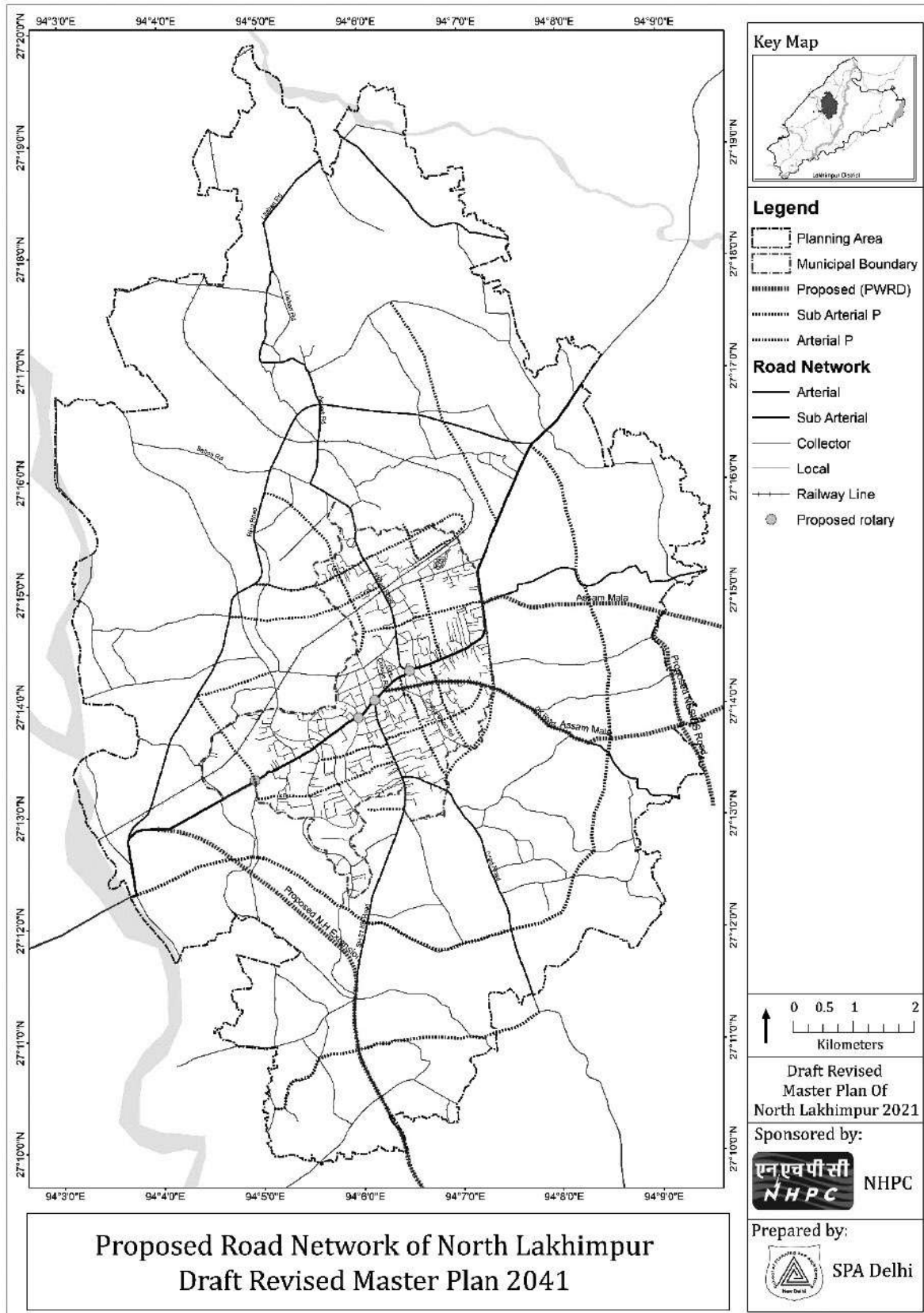
Further, in development control regulations, mandatory parking provisions as per builtup area and land uses should be provided within the premises of a property. Existing bus stands are proposed to be used for off street parking.

18.3 Long Term Proposals

18.3.1 Proposed Road Network

Grid iron pattern of development steers the proposed road network in the existing planning area. Connectivity is enhanced in the planning area through proposed road network. For example, the Ring Road is proposed in the southern and southwestern parts of the planning area, which bypasses from the National Highway - 52 passing through the town. It connects major settlements like Tinikuria Sonari, Japisajia, and Bantow Bengali. It is integrated with the existing bypass in the north. Alignment of Lilabari Road connecting the existing airport is improved (see **Figure 18.1**).

Figure 18.1: Proposed Road Network in North Lakhimpur Planning Area, 2041



**Proposed Road Network of North Lakhimpur
Draft Revised Master Plan 2041**

Draft Revised
Master Plan Of
North Lakhimpur 2021

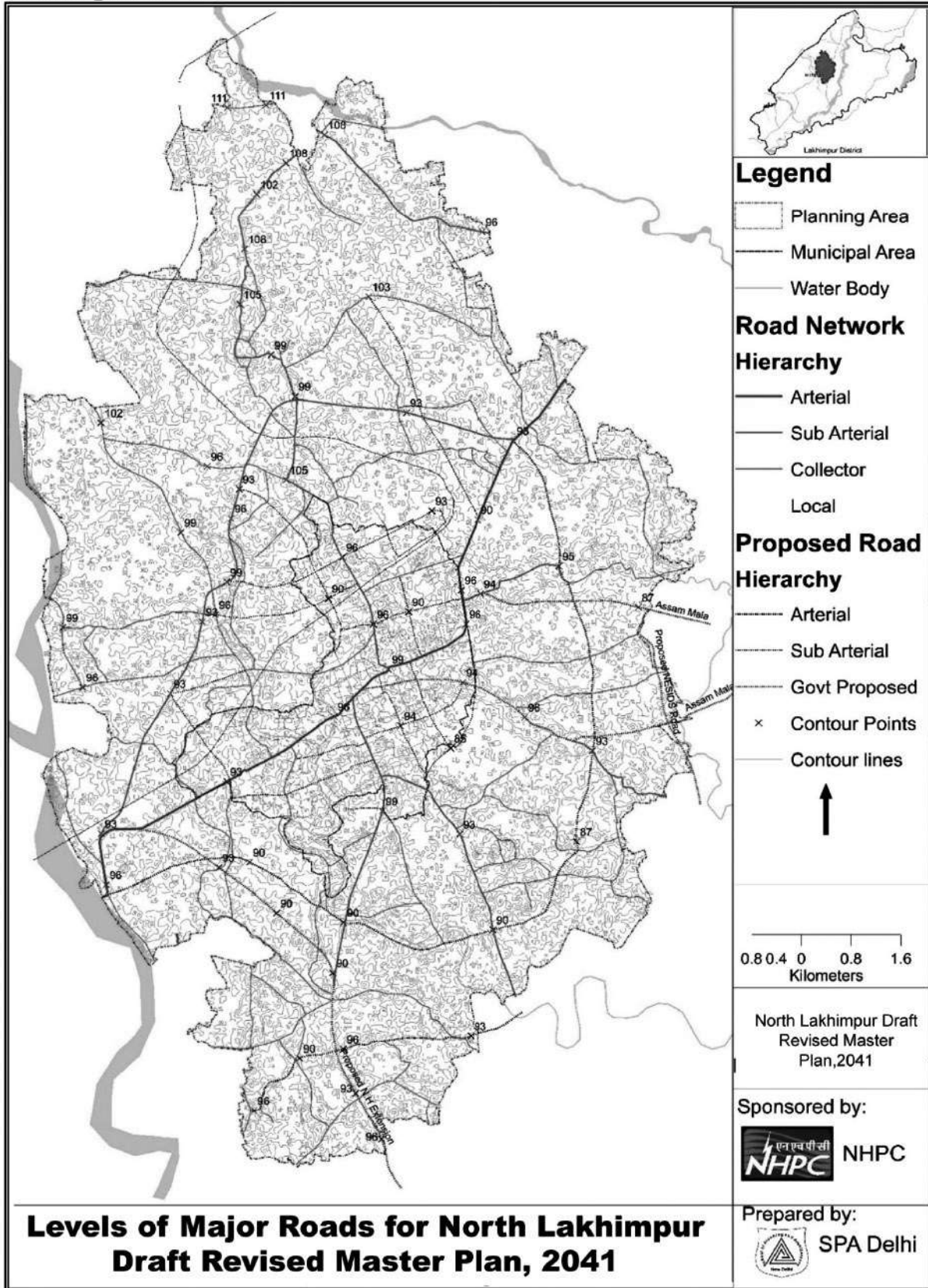
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Figure 18.2: Spot Levels in Meters of Proposed Roads of North Lakhimpur Planning Area, 2041



The levels of all major roads have also been fixed from the mean sea level for the effective and accurate execution of the proposed road network. Contour lines at a distance of 3m were generated for the entire planning area and the contour levels were obtained along major roads using the Digital Elevation Modeling (DEM) data for the planning area. The contour levels of the planning area range between 87m on the western side to 111 m on the eastern side. Contour points along the major roads have been shown in **Figure 18.2**.

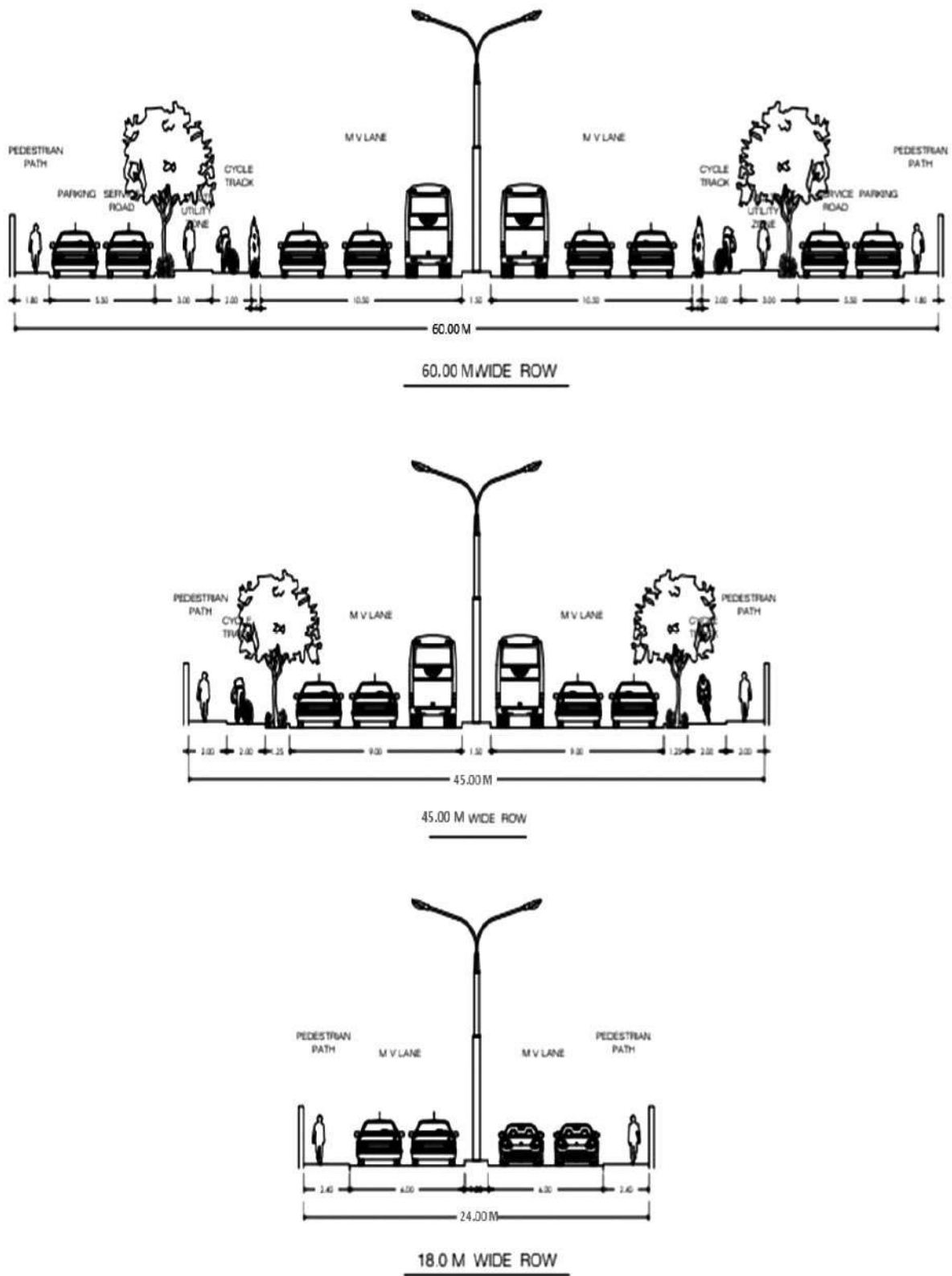
Road network in the municipal area also follows grid iron pattern. The Master Plan for Lakhimpur, 2041 proposes grids of 1 kilometer by 1 kilometer. Existing road network and built-up areas are taken into consideration while planning of new roads. Very small percent of population residing in currently built-up areas would be relocated as extreme care is taken to align new roads or widen existing roads. The existing built-up areas would not be affected because of planned road network. At present, only Nakari Road handles the existing traffic towards the north. Sub-arterial road is proposed parallel to the Nakari Road. This road will ease traffic on Nakari Road. Arterial roads are proposed with 60 meter right of way, sub-arterial roads are proposed to be with 30 meter right of way, and collector roads are proposed to be with minimum 18 meter right of way. Proposed cross sections of these three types of roads are presented as per IRC 86 as shown in **Figures 18.3**.

18.3.2 Truck terminal

Proposed industrial development is going to increase logistics flow in the planning area. In consideration to this, two truck terminals of area five hectare each has been proposed adjacent to proposed industrial area of Agro-based industries and manufacturing industries. The area of these terminals has been calculated based on proposed industrial area.

One truck terminal is located at Ward 14 adjacent to National Highway or NT road. Another terminal is located at Chutia Kari Village opposite to proposed Agro based industries, at the intersection of proposed arterial and proposed sub-arterial road.

Figure 18-3: Proposed Cross Sections of Roads, 2041



CHAPTER 19: PROPOSALS FOR SOCIAL INFRASTRUCTURE

19.1 Introduction

Social infrastructure majorly involves education and health sectors, which are significant drivers of societal development. Literate population with skills in demand promote economic and social equality and equity. Healthy citizens are an asset for economic and social development of a town. So, both education and health are important for a healthy and wealthy town with high quality of life.

19.2 Educational Institutions

According to Chapter 9, North Lakhimpur town has 79 existing middle schools which means the town has 33 schools more middle schools than the required number of 46 middle schools for the year 2041. As per Urban and Regional Development Plans Formulation and Implementation (URDPFI) 2015, one middle school is required for every 5,000 population. As the projected population for year 2041 is 2,30,000, the number of required middle schools is 46.

One secondary school is required after every 5,000 population. Hence the required number of secondary schools for year 2041 comes out to be 46 which means nine additional secondary schools are required which can be achieved by upgrading nine middle schools to secondary schools. One senior secondary school is required for every 7,500-population implying that for year 2041 there will be a requirement of 31 senior secondary schools. Currently, there are 14 schools in the town. So, 17 additional senior secondary schools are required. As per URDPFI Guidelines 2015, area required for every senior secondary school is 1.8 hectares (Ha) of which 0.60 Ha area will be dedicated to school building, one Ha to playground and 0.2 Ha for parking facilities. Total area requirement for senior secondary schools is 30.6 Ha (**see Table 19.1**).

There is a requirement of one integrated school without hostel facility for a population of 1,00,000 as per the URDPFI Guidelines, 2015. Currently there are four integrated schools in North Lakhimpur town which are sufficient for the requirement of three schools for the year 2041. However, two additional integrated schools with hostel

facilities are required for 2041 of 3.9 Ha areas each. The area is distributed as 0.7 Ha for school building, 2.5 Ha for playfield, 0.40 Ha for hostel facilities and 0.30 Ha for parking facilities.

Currently, there is only one school for physically challenged and as per the per the URDPFI Guidelines 2015, one school per 45,000 population is required. So, for the year 2041, there will be a requirement of six such schools which is an addition of five more schools. Area required per school is 0.7 Ha. So, total area required for schools for the physically challenged is 3.5 Ha. The location of these schools will be uniformly distributed in residential areas to reduce travel distance of students.

According to the URDPFI 2015, a school for mentally challenged is required for a population of 10,00,000 with an area of 0.5 Ha (**see Table 19.1**). The location of school for the mentally challenged pupils will be fixed within a Community Center which will be located near Community Park within municipal boundaries. The location must be peaceful and students friendly with a lot of activities for children.

Table 19.1: Proposal for Educational Facilities for North Lakhimpur Town, 2041

Type of Facility	Population served per unit as per URDPFI	Existing	Required		Proposal		
		2021	2031	2041	Units	Area required per unit as per URDPFI in Hectares	Total Area in Hectares
Middle School	5,000	79	39	46	-	-	-
Secondary School	5,000	37	39	46	Upgradation of 9 middle school	-	-
Senior Secondary School	7,500	14	26	31	17	1.8	30.6
Integrated School without Hostel	1,00,000	4	2	3	-	-	-
Integrated School with Hostel	1,00,000	0	2	2	2	3.9	7.8
School for Physically Challenged	45,000	1	5	6	5	0.7	3.5
School for Mentally Challenged	10,00,000	0	1	1	1	0.5	0.5

Arts College	1,25,000	10	2	2	-	-	-	
Science College	1,25,000	3	2	2	-	-	-	
Commerce College	1,25,000	3	2	2	-	-	-	
Engineering College	10,00,000	0	1	1	1	6.0	10.0	
Technical Education Centre (ITI & Polytechnic)	10,00,000	0	1	1	1	4.0	4.5	
Technical University	-	0	0	1	1	10.0 to 60.0	50.0	
Medical College	10,00,000	1	1	1	-	-	-	
Total								106.5

Source: URDPFI Guidelines (2015).

19.3 Higher Education Institutions

According to the URDPFI Guidelines 2015, one Arts, Science and Commerce College is required for 1,25,000 population. Currently, there are 10 arts colleges, three science colleges and three commerce colleges which are sufficient for the year 2041 as the requirement would be two for each category.

An engineering college is required for a population of 10,00,000, similarly one Technical Education Centre (TEC) is required for same population. Currently there is one Industrial Training Institute (ITI). However, it does not meet the required space standards as recommended by the URDPFI Guidelines 2015. Thus, one engineering college and one technical education centre is proposed within the technical university campus at the Azad Road in southern direction outside the municipal area. Area under the technical university will be acquired from Atha Khatia village and Tinikuria Sonari village which fall in the planning area of the North Lakhimpur town. The location is decided based on even distribution in the town and planning area. Town will develop towards the northern direction. The location is strategically selected to cater to the entire Lakhimpur district. The total area of university campus is proposed to be 60 Ha of which 10 Ha will be dedicated to Engineering College and 4 Ha to TEC. The TEC consists of ITI with an area of 2 Ha and a polytechnic with an area of 2.5 Ha. Dedicated land for university is 50 Ha of which 25 percent (12.5 Ha) is dedicated to residential area, 15 percent (7.5 Ha) is dedicated to Sports and Cultural Activities and 15 percent

(7.5 Ha) is dedicated to Parks and Landscape including green belt (URDPFI, 2015)(**see Figure 19.1**). Currently, there is one medical college and a specialty hospital within the planning area. As per URDPFI Guidelines, 2015, one medical college is required for a population of 10,00,000(**see Table 19.1**).

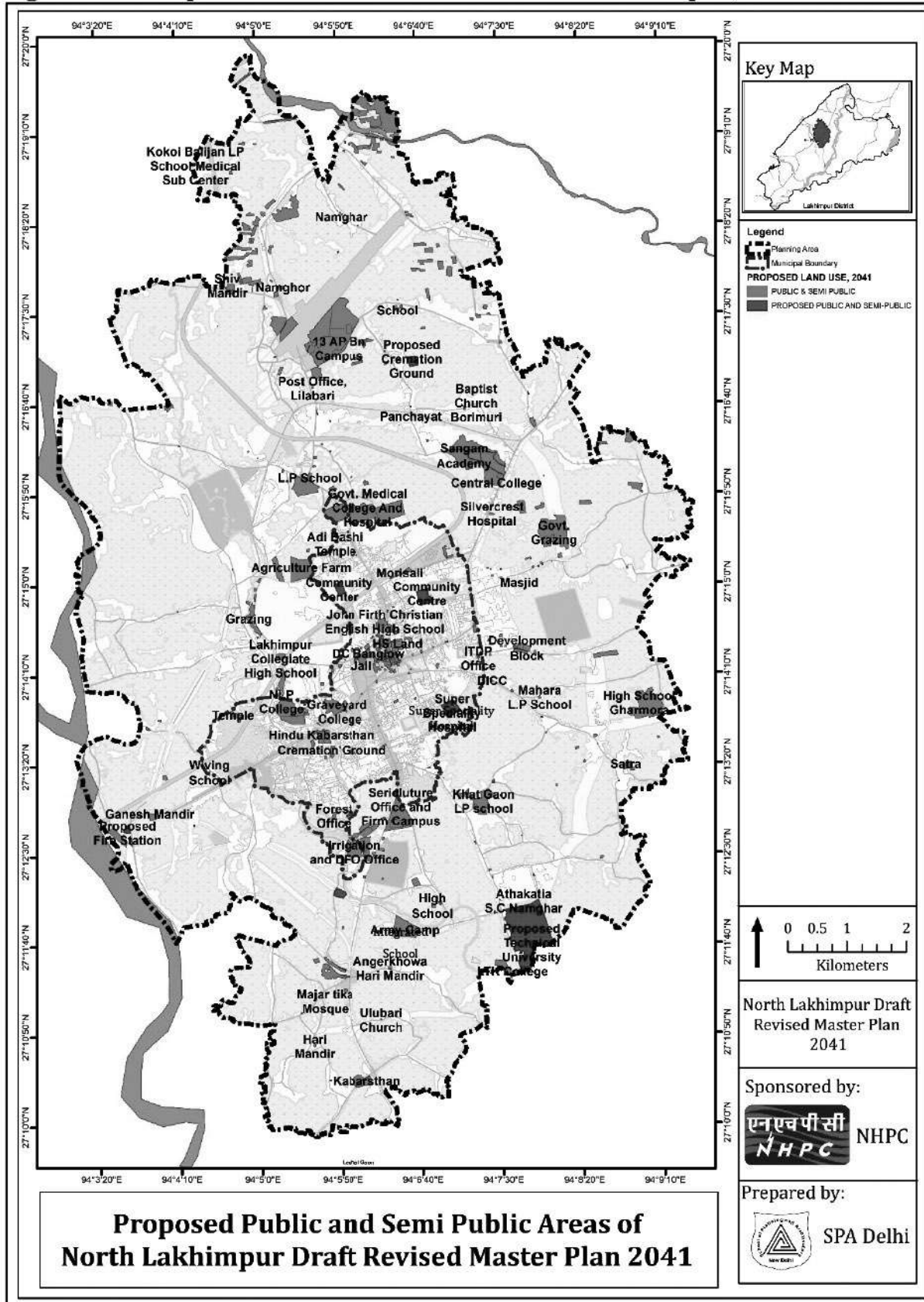
19.4 Medical Facilities

According to the URDPFI Guidelines 2015, there should be one dispensary for 15,000 population. Currently, there is only one dispensary in North Lakhimpur town. However, the requirement for year 2041 is 16 which means 15 dispensaries need to be developed by 2041. The area required for one dispensary is 0.1 Ha. Hence the total area required for the proposed 15 dispensaries is 1.5 Ha. These dispensaries will be evenly distributed in residential area to reduce travel distance for patients. One Family Welfare Centre is required to serve 50,000 population. Currently, there are two centers present within the town. For the year 2041, five centers will be required as per the URDPFI Guidelines 2015. So, three such centers are proposed in residential areas within the planning area with an area of 0.08 Ha each. The total land required is 0.24 Ha. As per the URDPFI Guidelines 2015, a Maternity and Child Welfare Centre, consisting of 30 beds is required for a population range 45,000-1,00,000. Currently there are two such centers within the town. One more additional center has been proposed for the year 2041. The area required will be 0.3 Ha.

North Lakhimpur town requires one hospital with 500 beds capacity. Since there are no super specialty hospitals in the town at present, one such hospital has been proposed in the planning area. As per the URDPFI Guidelines 2015, a hospital is required for a population of 2,50,000. The area required for the Hospital is 6 Ha of which 4 Ha will be dedicated to the super specialty hospital and 2 Ha will be utilized for residential purposes (**see Table 19.2**). The location of the Super Specialty Hospital is proposed near the existing specialty hospital to reduce travel distance between these hospitals if a patient is referred to another hospital(**See Figure 19.1**). The location is also near residential areas of the town and has good connectivity with the National Highway 15 so that residents of entire district can utilize this facility.

There is a requirement of Dental college and Hospital in North Lakhimpur Town, According to Dental Council of India, 2006 the minimum area required for a dental college with 200 seats is five acres or 2.05 Ha hence a 2.5 Ha dental college is proposed in Ward 5 adjacent to proposed General Hospital. The governing authority of this college will have to compliance with the norms suggested by Dental Council of India **(See Figure 19.2).**

Figure 19.1: Proposed Social Infrastructure in North Lakhimpur, 2041



There is an existing veterinary hospital within the town which will be sufficient for year 2041 (see Table 19.2). However, it has been proposed to be converted into a veterinary college and research institution.

Table 19.2: Proposal for Medical Facilities for North Lakhimpur Town, 2041

Facility	Population served per unit as per URDPFI	Existing	Required		Proposal		
		2021	2031	2041	Units	Area required per unit as per URDPFI in Hectares	Total Area in Hectares
Dispensary	15,000	1	13	16	15	0.1	1.5
Family Welfare Centre	50,000	2	4	5	3	0.08	0.24
Maternity and Child Welfare (30 Beds)	45,000-1,00,000	2	2	3	1	0.3	0.3
Super Specialty Hospital (500 Beds)	2,50,000	0	0	1	1	6.0	6.0
Veterinary Hospital	5,00,000	1	1	1	-	-	-
Dental Hospital and College	-	0	1	1	1	2.5 (Recommended by DCI, 2006)	2.5
Total							10.54

Source: URDPFI Guidelines (2015).

19.5 Socio-cultural Facilities

Socio-cultural facilities include community halls. One community hall is required for a 15,000 population as per the URDPFI Guidelines 2015. Currently there is only one community hall within the town. So, additional 15 community halls will be required for year 2041. Area required for each community hall is 0.2 Ha. Hence, the total area required will be 3 Ha. Community halls are proposed to be located evenly within residential areas for accessibility of residents of North Lakhimpur town.

Recreational club can be merged with music, dance and drama centre and meditation and spiritual centre. One recreational club is required for 1,00,000 population. The combined area required is 1.8 Ha as per the URDPFI Guidelines 2015. The proposal

consists of a community center with all these facilities which will be located near the Community Park and residential area for better connectivity. Two such community centres are proposed within the municipal area of North Lakhimpur town with a total area of 5 Ha each near Nakari Road.

One science centre already exists within the planning area which is required for a population of 10,00,000 as per the URDPFI Guidelines 2015. One old age home is required for 5,00,000 population which already exists within the planning area. One police station is required for 90,000 population. Currently, there is one police headquarters in North Lakhimpur town and additional two police stations will be required by the year 2041. Area required per station is 1.5 Ha and total area required will be 3.0 Ha (**see Table 19.3**). The police stations shall be strategically placed within residential areas of the town to effectively maintain law and order within the core area of the town with the best road connectivity to reduce travel time for police personnel.

Socio-cultural facilities also include cremation ground where one facility is required for every 5,00,000 population and a fire station is required for every 2,00,000 population as per the URDPFI Guidelines 2015. Currently, there are two cremation grounds, however due to the vastness of planning area, there is a requirement of two additional cremation ground of 2.5 Ha each, one of which will be located at the sub arterial road between Napam Gaon village and Bahatia village. The other cremation ground will be located at Sonari Village adjacent to proposed PWRD road. There is one existing fire station however, one additional fire station has been proposed near Ganesh Temple at Pahumora Ujani Miri village beside National Highway and bypass road for better connectivity (**see Table 19.3**).

Table 19.3: Proposal for Socio-Cultural Facilities for North Lakhimpur Town, 2041

Facility	Population served per unit (URDPFI)	Existing	Required		Proposal		
		2021	2031	2041	Units	Area required per unit as per URDPFI	Total Area (in Ha)
Community Hall	15,000	1	13	16	15	0.2	3.0
Recreational Club	1,00,000	0	2	2	2	1.0	2.0
Meditation Centre	1,00,000	0	2	2	2	0.5	1.0

Science Centre	10,00,000	1	1	1	-	-	-	
Old Age Home	5,00,000	1	1	1	-	-	-	
Police Station	90,000	1	2	3	2	1.5	3.0	
Cremation Ground	5,00,000	2	4	4	2	2.5	5.0	
Fire Station	2,00,000	1	2	2	1	1.0	1.0	
Total								15.0

within Community Centre

Source: URDPFI Guidelines (2015).

19.6 Organized Green Spaces

North Lakhimpur town severely lacks organized green spaces. Currently there is only one Neighborhood Park whereas as per the URDPFI Guidelines 2015, one Neighborhood Park is required for every 15,000 population. For the year 2041, 15 more neighborhood parks will be required with an area of 1 Ha each. These parks shall be in residential areas so that accessing these facilities becomes easy for the residential dwellers. North Lakhimpur town also requires two community park of 5 Ha each which are also to be located near residential areas for easy accessibility. One community park is located near the community center so that both these facilities can be enjoyed simultaneously by residents of the town. There is also a requirement of District Park of 25 Ha area as one park is required for a population of 5,00,000. This Park will have a patch of Somdiri canal for landscaping purposes, which passes through the town. A major portion of area for building the District Park will be taken from Sukulibhoria village. District Park will also house an artificial water body of 5 Ha for water sports. The park will also have environmentally friendly tourist guesthouse and tourism offices would provide information related to tourism sector of the North Lakhimpur district. The area for offices and guesthouse will be 2 Ha (**see Table 19.4**). The total area proposed for the District Park is 32 Ha (**see Figure 19.2**).

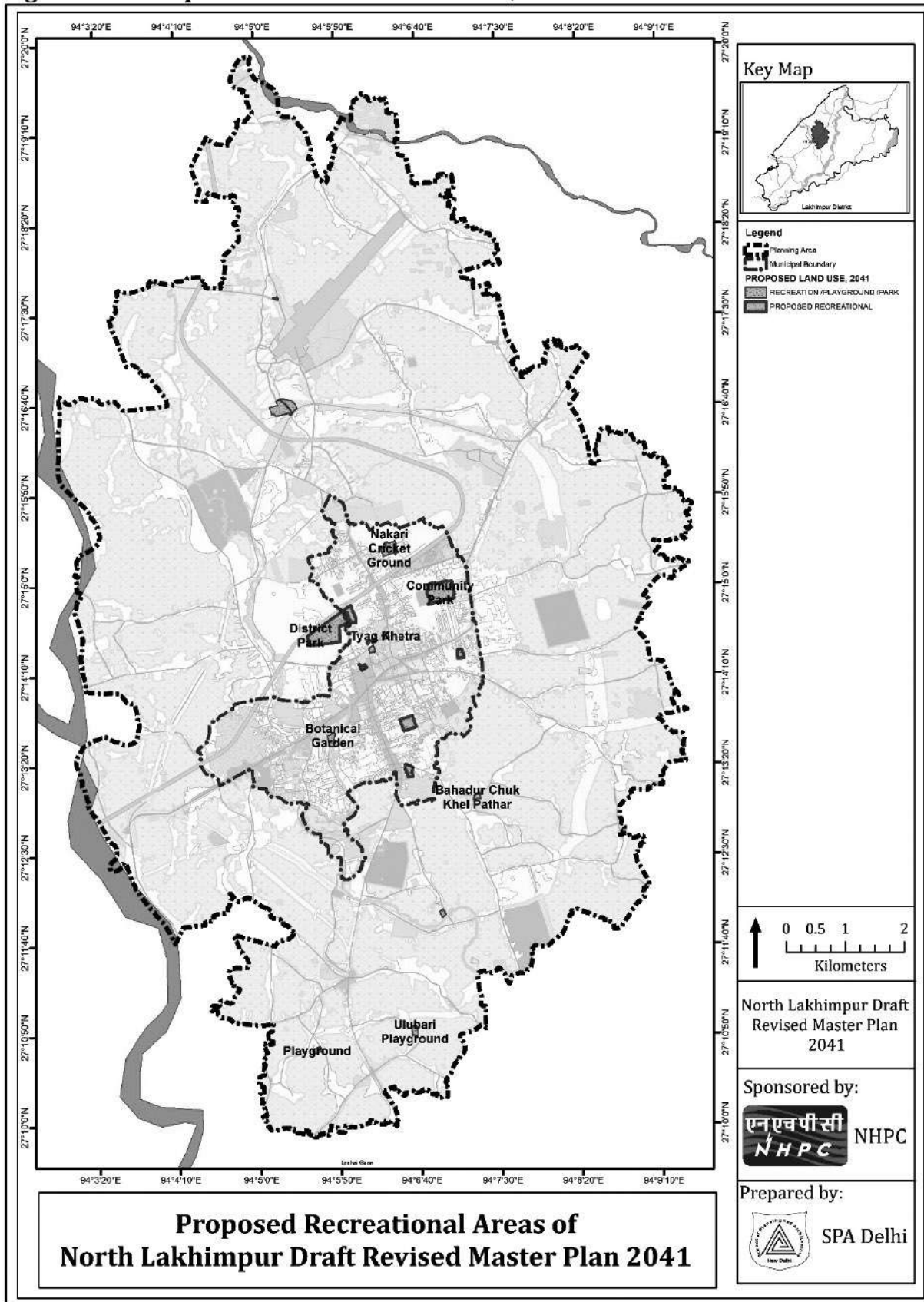
According to Municipal Board, the existing landfill site at Ward 14 of area 1.4 Ha will be developed as Botanical Garden by 2041 (**see Figure 19.2**).

Table 19.4: Proposal for Organized Green Spaces for North Lakhimpur Town, 2041

Type of Facility	Population served per unit as per the URDPFI Guidelines	Existing	Required		Proposal for 2041		
		2021	2031	2041	Units	Area required per unit as per URDPFI in Hectares	Total Area in Hectares
Neighborhood Park	15,000	1	13	16	15	1.0	15.0
Community Park	1,00,000	0	2	2	2	5.0	10.0
District Park	5,00,000	0	1	1	1	25.0	25.0
District Sports Centre	1,00,000	2	2	2	-	-	-
Botanical Garden	-	0	1	1	1	1.4	1.4
Artificial Water Body	-	0	1	1	1	-	5.0
Eco tourist guest house and office	-	0	1	1	1	-	2.0
Total							38.4

Source: SPA New Delhi (2022).

Figure 19.2: Proposed Recreational Facilities, 2041



CHAPTER 20: PROPOSALS FOR PHYSICAL INFRASTRUCTURE

20.1 Introduction

Physical infrastructure, involving water supply system, storm water drainage, sewerage system, and solid waste management system, provides the lifeline to resident population of an urban settlement as well as an input and outcome for and from industry, trade, and commerce. In this chapter, the Master Plan for Lakhimpur 2041 begins by making spatial planning proposals for water and drainage systems.

20.2 Water Supply and Storm Water Drainage

Water supply in North Lakhimpur town needs extensive development as currently only 1.2 million liters per day (MLD) of water is supplied to households of North Lakhimpur town which comes out to be only 21 liters per capita per day (LPCD). As per Central Public Health Environmental Engineering Organization (CPHEEO) manual on Water Supply and Treatment 1999, 135 LPCD of water should be supplied in urban areas with population more than 1,00,000. As the projected population of North Lakhimpur is 2,30,000, the total water demand is calculated to be 31.1 MLD for year 2041. As the existing supply is 1.2 MLD, the total gap is calculated as 29.9 MLD. Considering 20 percent losses which include transmission loss, theft and leakages, the actual water demand is calculated to be 37.3 MLD and the actual gap will be 37.3 MLD for the year 2041. To mitigate this water demand, The design period for both WTPs will be 15 years as recommended by CPHEEO 1999 guidelines. Distribution network will be designed for 30 years. To mitigate this demand, Municipal Board of North Lakhimpur has proposed four reservoirs under Atal Mission for Rejuvenation and Urban Transportation (AMRUT) scheme. These reservoirs will be equipped with Water Treatment Systems and will be located at Ward 6 near Circuit House, Ward 12 near Bishnu Temple, Ward 13 near college playground and one will be located in Sukulibhoria near Ward 1 (Municipal Board of North Lakhimpur, 2022).

Table 20.1: Proposal for Water Supply in North Lakhimpur Town, 2041

Projected Population for 2041	2,30,000
Per Capita Water Demand (in LPCD)	135
Total Water Demand (in MLD)	31.1
Transmission and other losses in Percent	20
Total Losses (in MLD)	6.2
Fire Demand (in MLD)	0.05
Actual Water Demand (in MLD)	37.35
Existing Supply (in MLD)	1.2
Demand Gap (in MLD)	36.15
Proposed Water Supply (in MLD)	40
Scope of future expansion (in MLD)	70
Area required for Water Supply System as per URDPFI (in Ha)	4
Proposed Area provided (in Ha)	12

Source: SPA New Delhi (2022).

According to the CPHEEO 1999 guidelines, the fire demand for a town with population more than 50,000 can be calculated with the formulae $1000\sqrt{P}$ where P is population. Hence, the fire demand for 2041 is calculated as 0.05 MLD and water will be supplied from WTP (**see Table 20.3**). Ranganadi River will draw raw water from surface source while the WTP situated near Hospital will have ground water as its source. Filtration methods for each WTP would be used and are explained below.

WTP will have four stage water cleansing procedure as suggested by the CPHEEO 1999 guidelines. The preliminary stage involves passing of raw water from protective bar and screening bar to eradicate heavier particulates. In primary stage raw water after preliminary stage is then passed through aerators to increase dissolved oxygen. This process reduces odor and color present in raw water. In secondary process, raw water is mixed with chemicals for the process of sedimentation and flocculation to eradicate suspended particulates from raw water. The treated water is then disinfected by using chemicals such as chlorine and additional chlorine is added to treated water to keep water disinfected during supply process. Treated water is then pumped to storage reservoirs.

20.2.1 Over Head Tank (OHT)

The area required for every OHT will be 0.5 Ha which consists of guard room, pump room and inspection room. The base of the tank will be 15 to 20 meters high from ground level depending on engineering requirements. The volume of the tank is calculated as 40 lakh liters each to suffice distribution of 40 MLD water for North

Lakhimpur town. As per suitable design, if the shape of tank is rectangular, the dimensions will be 10 meters height, 20 meters length and width. If the shape is cylindrical, the dimensions will be 10 meters height and 22.6 meters in diameter. The placement of OHT is done as per population distribution to cater to every household in the town. There are four OHTs sites proposed by Municipal Board of North Lakhimpur of which one is fully functional and construction of one OHT has started. The land for remaining two OHTs have been identified and construction process will commence soon.

20.2.2 Water Distribution Network

Water pipeline network is placed within proposed planning area in the entire town. The network will be equipped with pressure valves and check valves as required by engineering standards. High emphasis will be placed to reduce transmission losses, leakages, and chances of theft. Every household in the planning area will relate to proper metering setup (see **Figure 20.3**). The network will be developed under Municipal Board of North Lakhimpur.

20.2.3 Drainage Network

Natural disasters due to flooding significantly affect life in North Lakhimpur town as discussed in Chapter 10. To mitigate this issue, a comprehensive drainage network is proposed for the entire town. According to meteorological data provided by the India Meteorological Department, North Lakhimpur town has recorded rainfall of 1,090 millimeters (mm) over a period of 31 days during the month of July 2019, which is 35.16 mm or 1.38 inches per day. To calculate peak storm water discharge, formulae of discharge is used which is a product of coefficient of runoff (C), catchment area and rainfall intensity. C is taken as 0.45 for open fields and 0.75 for built-up or constructed area. Hence peak storm water discharge is calculated as 90,140.4 cubic meters per hour.

Considering storage capacity of the drainage network to be 15 minutes, the drainage system should be designed to store a volume of 22,535 cubic meters. The length of main drainage line is 58.45 km along the proposed arterial roads; 75.72 km for sub-main drains along sub-arterial roads; sub-sub drains of length 127.85 km along

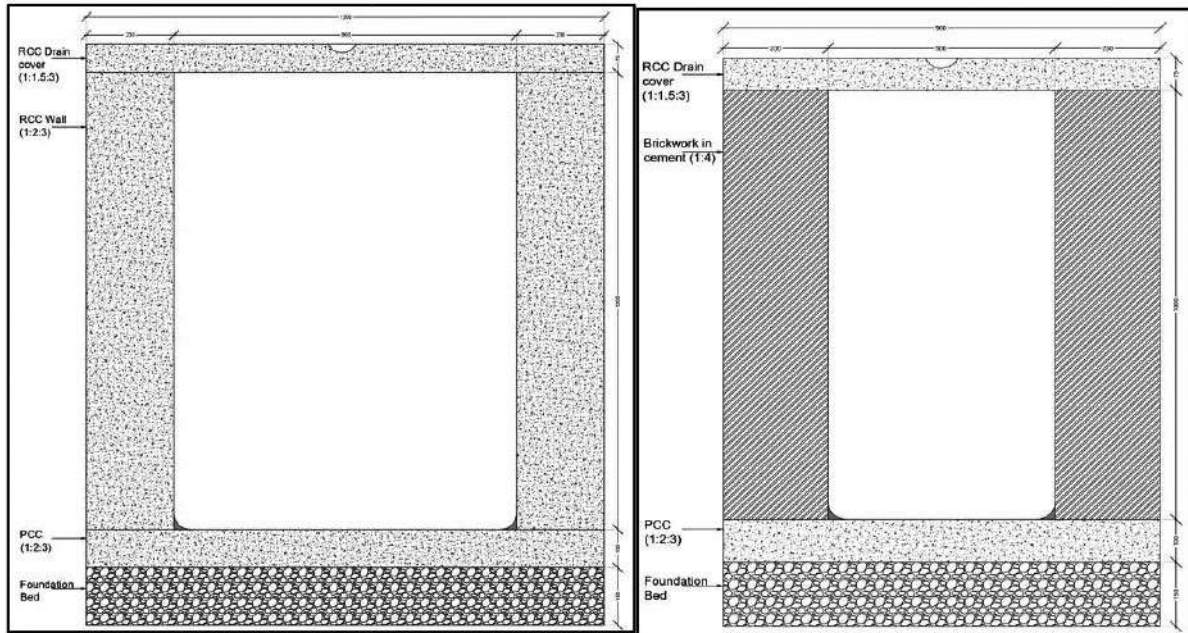
collector roads and local drains of length 78.92 km along local roads **(see Figure 20.2)**.

Arterial roads and sub arterial roads will have both side drainage channels with average cross-sectional area of 1 sq meter and 0.5 sq meter respectively. Collector roads and local roads will have one side drainage channels with average cross section area of 0.139 sq meter and 0.046 sq meter respectively (see Figure 20.1). The construction of drainage network shall be as per Manual on Storm Water Drainage Systems – 2019 provided by Central Public Health & Environmental Engineering Organisation (CPHEEO).

According to Analysis of Rate by Central Public Works Department, 2021 the estimated cost of drainage network in North Lakhimpur is calculated as Rs. 84.85 crores. This rate is tentative and can only be finalized after finalization of drainage cross section.

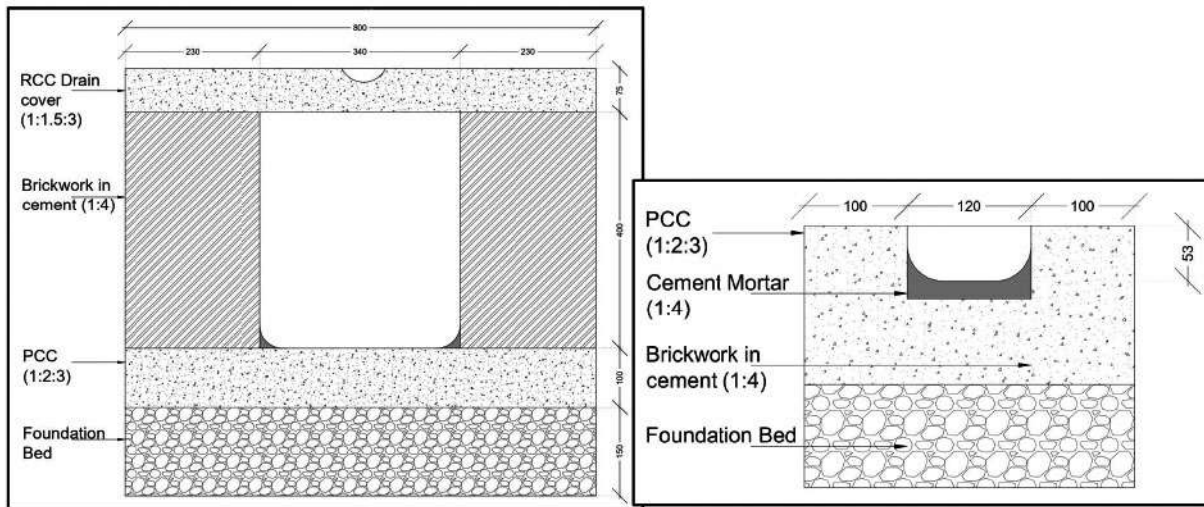
The Drainage Network will be developed by Municipal Board of North Lakhimpur. Drainage lines shall be fully covered to avoid pollutants and solid wastes entering drainage channels which may lead to blockages. Excessive runoff will be discharged into the Ranganadi River and Somdiri River. Monthly inspection of drainage lines is recommended to check proper functioning of drains. The final design of Drainage section may change based on the detailed analysis and requirements of the future drainage plan.

Figure 20.1: Typical Cross-section of Drainage Network



Cross section of 1.0 sq. m drain

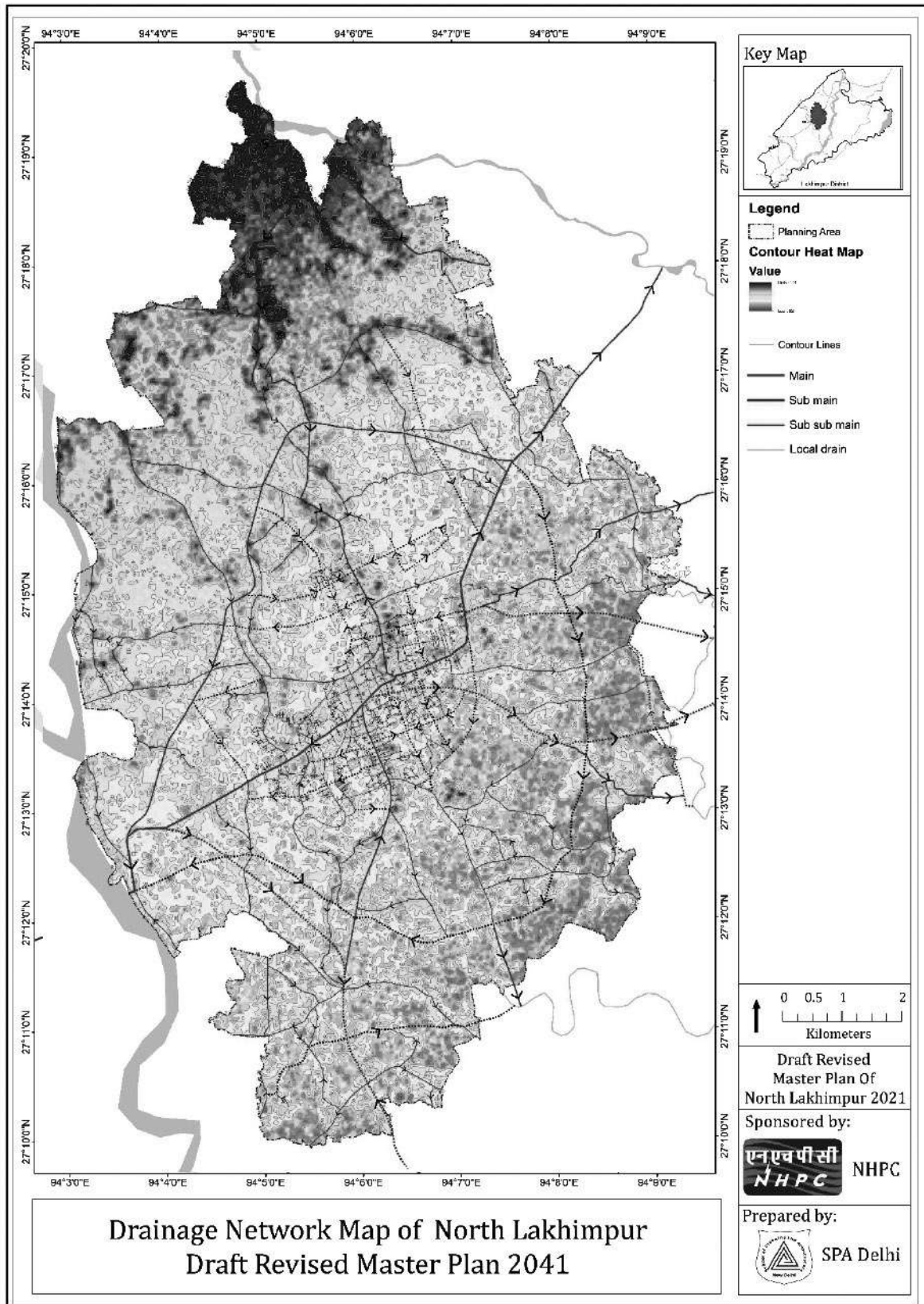
Cross section of 0.5 sq. m drain



Cross section of 0.139 sq. m drain

Cross section of 0.064 sq. m drain

Figure 20.2: Proposed Drainage Network, 2041



Source: SPA New Delhi (2022).

20.3 Sewerage System

In the analysis of sewage management for the North Lakhimpur town, it was found that most of the households in the town are dependent on septic tanks for the disposal of fecal. But without achieving water supply standards, operation and maintenance of effective sewerage network is not feasible. As 40 MLD water supplies till 2041 is already proposed, an effective sewerage network is also necessary to channelize black water towards treatment plants which should be designed of the capacity of 32 MLD, considering conversion factor of 80 percent between supplied water to sewage as suggested by CPHEEO manual on Sewerage and Sewage Treatment Systems 2013.

For North Lakhimpur, one Fecal Sludge Treatment Plant (FSTP) has been proposed by Municipal Board of North Lakhimpur at Bagalijan near Ranganadi river. The treatment plant is designed for 15 year and conventional sewers are designed for 30 years. The FSTP will treat effluents by Active Sludge Digestion process which is most used in STPs across India. Zero tolerance policy should be implemented against human scavenging and violators should be heavily penalized for their negligence. Entire procedure of septic tank cleaning should be mechanically executed with no human involvement. Treated effluents from FSTP will be discharged in Ranganadi River.

20.4 Solid Waste Management

Management of solid waste is one of the major challenges facing North Lakhimpur town as discussed in Chapter 8. The consequences of openly dumping solid wastes in open fields can have severe consequences for people residing in the planning area as it can cause various health and environmental hazards. To mitigate the issue of solid waste, one Waste Management Sites (WMS) is proposed by Municipal Board of North Lakhimpur, which will be in Ward 14 (**see Figure 20.3**).

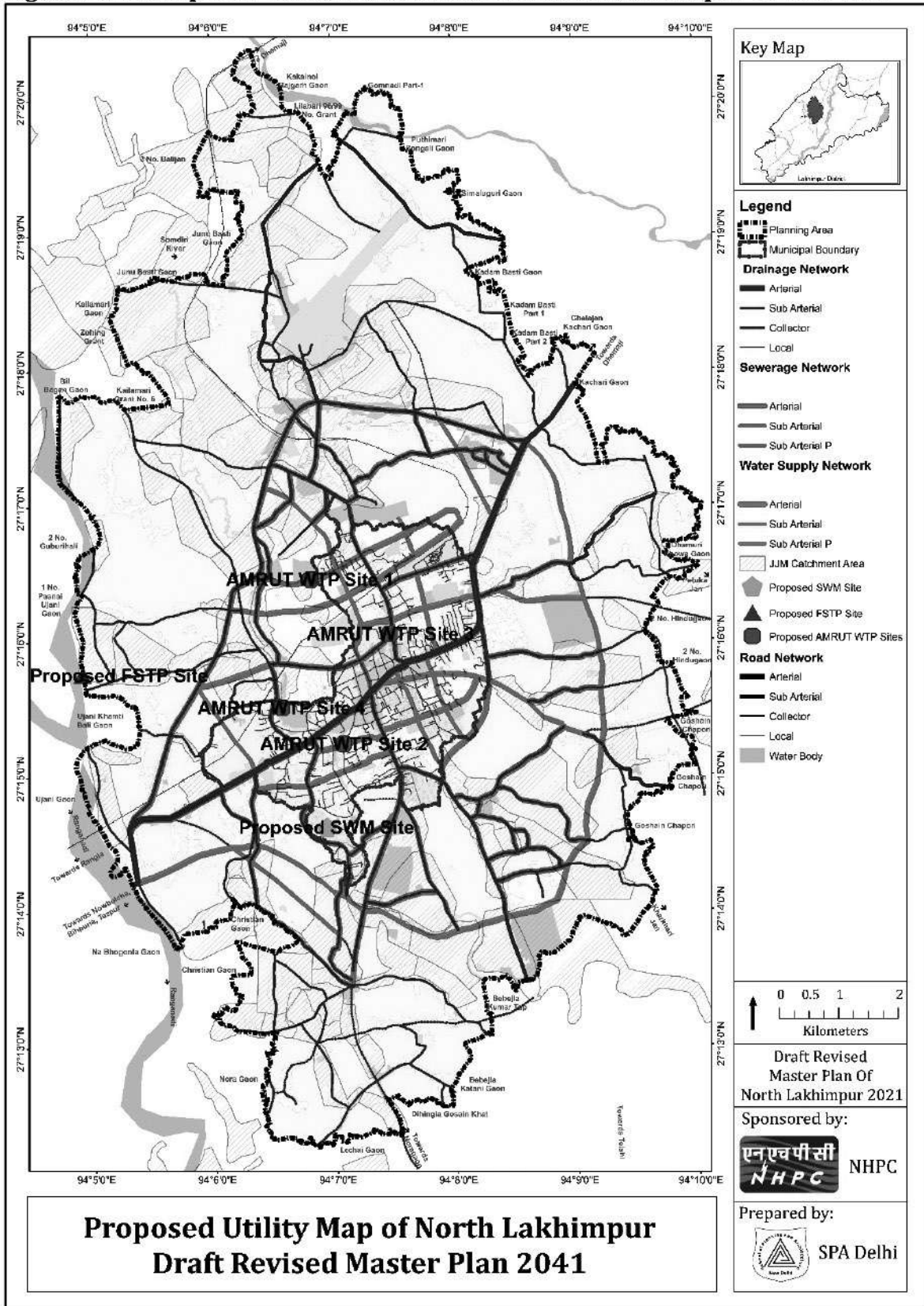
Per capita waste generation for the town, as per Proposal for Rehabilitation of Legacy Municipal Solid Waste at Dumpsite and Fresh Municipal Solid Waste 2021, is 0.3 kg waste per day. So, the total waste generation in the planning area would be 69 metric tons per day. To manage the wastes, the sites will be equipped with plastic reuse mechanism, waste paper recycling unit and decomposition of organic waste for organic compost manufacturing which could be used by nearby cultivators for crop production. The proposed SWM site is proposed in Ward 14 near forest office by

Municipal Board for which the site has already been allocated. The existing waste dump site will be proposed as botanical garden of 1.4 Ha.

Waste collecting vehicles are proposed to be covered and will have separate chambers for dry and wet wastes. These vehicles will collect wastes daily and deliver wastes in the nearest Waste Management Site. For effective process of waste management, household dwellers will be encouraged to use two separate bins for dry and wet waste so that on-site segregation of waste could be done. Public dustbins will also be placed with two separate chambers. For the safety of waste collectors, it is advised that they wear protective gloves, masks, glasses, and helmet, for the entirety of their work period. Provision for regular health checkups of waste collectors should be made free of cost to ensure their optimal health.

Having discussed all the important elements of physical infrastructure including water supply network, sewerage network, drainage system, and solid waste management, **Figure 20.3** shows all the utilities on a single map.

Figure 20.3: Proposed Utilities and Services in North Lakhimpur Town, 2041



**Proposed Utility Map of North Lakhimpur
Draft Revised Master Plan 2041**

Draft Revised
Master Plan Of
North Lakhimpur 2021

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CHAPTER 21: PROPOSALS FOR TOURISM

21.1 Introduction

Tourism is one of the important economic sectors which generates income by developing places of tourist interest. These places could be historically significant buildings, environmental features such as forests, rivers, streams, and other water bodies. The city of North Lakhimpur, despite being a small and developing town, has the potential to be a great tourist destination with its natural beauty and other resources. The town combines the scenic beauty of the plains, and the rivers also has the potential to promote eco-tourism for the city and the wider planning area.

21.2 Tourist Circuit

The main objective of a tourist circuit is to connect all potentially significant tourist places and areas located near one another and provide high accessibility, accommodation and other entertainment facilities, and infrastructure to attract tourists to spend highest possible time and money during visits.

A tourist circuit around Lakhimpur planning area is proposed which includes nine tourist areas around town. Total length of the tourist circuit is 55 km. Several picnic spots are in the reserved forest area near the town. These tourist areas are picnic spots located in the north-eastern direction of the town including the Dirgha picnic spot which is in the northern direction of the town in Kakoi reserved forest. Rajgarh picnic spot, Kimin quarry picnic spot, Ranganadi picnic spot are also located along the proposed tourist circuit. Site seeing, fishing, trekking and adventure sports related activities are proposed at these picnic spots considering the natural landscapes of rivers and hill views of Arunachal Pradesh (see **Table 21.1**).

Table 21.1: Proposed Tourist Circuit, 2041

S.No.	Tourist Circuit	Tourist Points	Length (km)	Activities
1.	Circuit I	Soil Picnic Spot, Dirgha Picnic Spot, Rajgarh Picnic Spot, Kimin Picnic Spot, Planetarium and Science Center, Satajaan Bird Sanctuary, Ranganadi Picnic Spot, Village Theme Resort, Handicraft Haat, Jumi Picnic Spot, Lilabari Planters Club and Adventure Sports	55	Site Seeing, Trekking, Adventure Sports, Mask Making, Handloom and Weaving and other handicrafts

This tourist circuit starts from Lilabari through to Jumi picnic spot, Planetarium and Science Center, handicraft haat, Ranganadi picnic spot, Satajaan Bird Sanctuary, Village Theme Resort, Kimin query picnic spot, Rajgarh, Dirgha and Soil picnic spot. This picnic spot will be based on the theme of adventure and leisure tourism. In Lilabari Cinatolia tea estate, Kilomari Tea Estate is located. Planters club is also located in Lilabari which is a major adventure sport activity **(also see Figure 21.1)**.

21.3 Handicraft Haat

Lakhimpur planning area and its surroundings are rich in intangible heritage including its handlooms, mask making, traditional cuisines, folk music, and dance. The area is famous for its silk production and handloom fabrics. So, a handicraft haat is proposed within the town limits to showcase its traditional handicrafts and culture. Tourists could get information about the handicrafts of the area and can directly buy authentic products from local weavers. This handicraft haat is expected to boost the market linkages of Sericulture of the area. Different workshops for handloom and other traditional handicraft are proposed for tourists in this haat. The main aim of this proposal is to increase employment opportunities for local people after providing skill development trainings for traditional weavers. This will be helpful in promoting local crafts, artisan and handicrafts, live pottery, etc. for tourists. Dhari workshops can be incorporated in the tribal areas where maximum number of weavers are residing (see **Figure 21.2**).

21.4 Village Theme Resort and Hotels

Majuli is the major international tourist area located 30 km away from North Lakhimpur. However, North Lakhimpur town lacks hotels and resort facilities. North Lakhimpur is the most accessible town with airport facility and commercial hub is located near Majuli. The need of hour is to promote North Lakhimpur as a major tourist town so that all the national and international tourists coming to Majuli can come via Lilabari Airport and North Lakhimpur Railway station. Additional tourist facilities such as star rating hotels, guest houses, home stays and shopping centre, tourist information centre should be developed in the town.

Figure 21.2: Village Theme Resort



As the surrounding area is predominantly rural in nature, a village theme-based resorts are proposed in the northwestern direction of the town near the Ranganadi River. This resort will be based on the traditional architecture, village life and village activities for tourists. The resort will show the glimpses of the village life such as traditional stilt houses, ponds for fishing, animal husbandry related activities. The aim of the theme resort is to preserve the traditional lifestyle and culture, Assamese rural architecture and provide tourist an experience of the place. This should be developed as the major tourist facility to increase the tourist foot fall in the town.

21.5 Tourist Information Centre

A Tourist Information Centre is proposed in the town near the proposed district park, as there is no tourist information center located in the town. Different kind of tourist facilities such as basic civic amenities (public toilets, drinking water and bins), pamphlets for tourist attraction, tourist circuit transport facility and information related to other tourist attraction near the area are also proposed in Tourist Information Center. A tourist information app is also proposed which could be developed to facilitate management of tourist information center and to provide information regarding different tourist points, stay and number of days required to cover these tourist attractions.

21.6 River Tourism

North Lakhimpur town is surrounded by the rivers Ranganadi and Subansiri. Number of picnic spots are also located near these water bodies. Different water sports, boating and cruises and fishing activities are proposed to promote river tourism in the area.

21.7 Tourism Infrastructure

Basic civic amenities should be improved in North Lakhimpur town for better tourist experience. Proper signages need to be provided for guiding tourists in the town. Star hotels, guest houses, home stay facilities, parking, connectivity, and basic infrastructure provisions such as drinking water and public toilets need to be improved. Organizing and propagating melas and temples as a part of the religious tourism is a great way for the town to generate revenues. Publicity and development of tourist sports are also important for the promotion of tourist development for which the town needs additional resources.

CHAPTER 22: PROPOSALS FOR ENVIRONMENT AND DISASTERS

22.1 Introduction

Environmental protection has assumed critical significance in the times of climate change. Due to climatic changes, disasters have become frequent and lethal in terms of loss of human life, destruction of property, and physical environment. Torrential rains, for example, in a short span of time leading to flooding presents one important illustration. In this chapter, proposal is made to reduce impact of disasters on humans and nature.

22.2 Conservation of Natural Drains

The town of North Lakhimpur is well drained by a number of rivers and rivulets. Ranganadi is the major river flowing through the Planning Area. The streams like Gariajan and Somdiri flow across the town and serve as major drainage channels. However, over the years, residential and commercial buildings have come up near these rivers, particularly in the core town area. In fact, in certain pockets, land in and around these streams has been encroached by local population which have adverse impact on the streams' flow in the long run, aggravating the problem of urban flooding. Therefore, it becomes necessary to take necessary steps to conserve these drainage pathways. Some measures have been proposed.

22.2.1 Buffer zone

Buffer zones around water bodies act as barriers and play a major role in protecting them from the adverse impacts of human activities around them. In general, a buffer zone is defined as an area around a natural resource which is used to reduce the impact of one land use on the other. The width of buffer depends on multiple factors such as the type of water resource, soil type, slope, land use, etc. However, generally, it is seen that effective width of the buffer depends on the ecological function that the buffer is expected to perform. For instance, efficient buffer widths range from 1.2 m for bank stabilization to over 100 m for the provision of terrestrial habitats. For flood attenuation, buffer widths usually range from 20 m to 150 m, depending on the size of

the river. For Gariajan and Somdiri, the drainage pathway in the town area is around 10 m to 80 m wide. Therefore, it is necessary to have a buffer of minimum 10 m on either side of these rivers. In areas where settlements have not yet come up, a buffer of 50 m is proposed.

22.2.2 Rooftop Rainwater Harvesting

Rooftop rainwater harvesting is a technique of collecting rainwater at the household level and either using it directly or storing it in subsurface reservoirs. The storage structures help in augmenting ground water levels. Since a major portion of the streams' catchment is covered with built-up and the area has an average annual precipitation of 3,268 mm, rooftop rainwater harvesting is a fairly viable option. Further, such measures should go a long way in augmenting the groundwater levels in the area during the dry season.

For the implementation of Rainwater Harvesting in North Lakhimpur, subsidies should be provided for the provisional structure of Rainwater Harvesting system so as to facilitate the progress. Strict implementation policy of rain water harvesting should be enacted for buildings having roof area of more than 100 sq. metres. Violators of this norm should be penalized and reminded time and again for the setup before taking legal actions.

22.2.3 Greening the Ecotone

Ecotone refers to the transition zone between two biomasses. In a riverine ecosystem, ecotone would be the zone between the river and its neighbouring land. An ecotone generally has a higher density and variety of species which are dependent on it for their survival. Therefore, the protection of land around a river is crucial to maintain its ecological health.

In the case of Gariajan and Somdiri, a significant part of the ecotone has been encroached. This is why delineation of buffer zone, as discussed before, becomes necessary. Within the ecotone, suitable tree species need to be planted, which are endemic to the area. This will help in reviving the riverine ecosystem. Such vegetative measures will hold the soil together, thereby increasing infiltration and reducing soil erosion.

22.3 Erosion Protection Measures

Ranganadi River falling within the Planning Area is highly vulnerable to erosion. The river originates from the Dafla hills of Arunachal Pradesh and has a total length of 145 km and a total catchment area of 2,939 sq. km of which 2,173 sq. km is in Arunachal Pradesh and 766 sq. km lies in Assam. To curb the adverse impacts of erosion, in terms of social, environmental, and economic losses, the following measures are proposed.

- Trees should be planted along the riverbanks to control the flow of runoff directly into the river. Bamboo species which act as good soil binders should be used to stabilize banks.
- Use of sandbags at vulnerable locations is an inexpensive way to prevent erosion.
- Porcupine reinforced bars should be used which would aid in reducing the flow velocity of the river.

22.4 Social Forestry

Social forestry refers to the plantation and management of trees in urban areas. Within the town, three social forestry sites have been proposed around the prime industrial area dedicated to manufacturing units which would prevent the smoke and noise pollution from reaching nearby residential areas in the town. It would also act as a buffer in separating the proposed solid waste management site from the rest of the town(see **Figure 22.1 for locations of proposals**).Along with these three social forestry sites have been also identified by the social forestry department. In these sites tree planting and natural forest management initiatives are proposed to be undertaken to meet the forestry related basic needs of the people. Social forestry would directly involve the locals into a forestry related activities for the direct benefit of those people. Plantations are also proposed to be done in the 10 meters buffer area of the stream in the municipal area.

CHAPTER 23: PROPOSED LAND USE

23.1 Introduction

Master Plan for North Lakhimpur culminates in the proposed land use plan for the horizon year 2041. It is in this proposed land use plan that all proposed land uses, networks, and facilities are presented to provide a comprehensive view of how the town would develop till 2041.

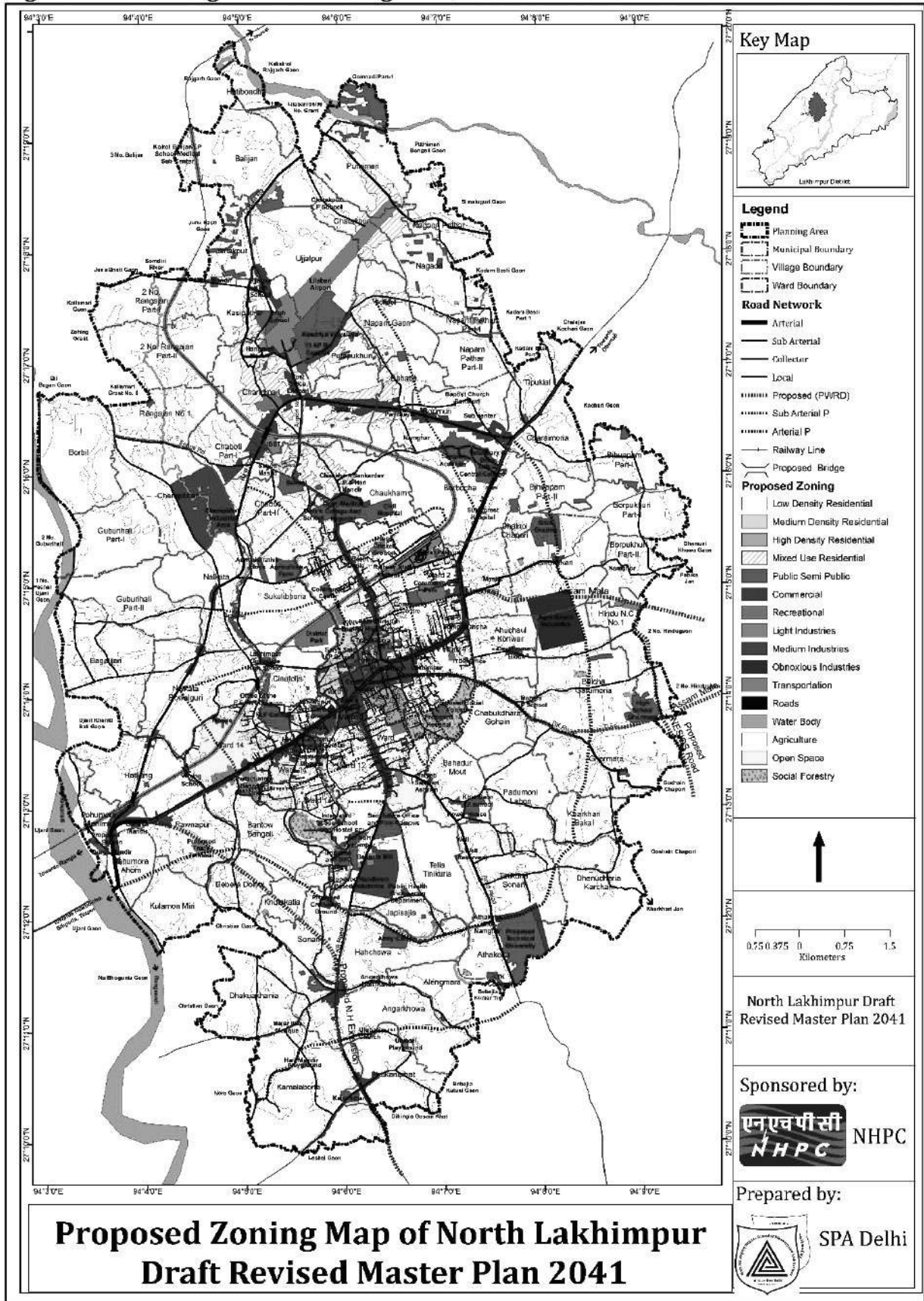
23.2 Zoning of the Planning Area

Zoning of the North Lakhimpur planning area is based on population densities, existing developments, and road network including proposed developments (see **Figure 23.1**). According to article 5.1 of the Uniform Zoning Regulations 2000, the following land use zones have been identified for the North Lakhimpur Draft Revised Master Plan, 2041. These include the following:

- (i) Residential Zone: (a) Low density (b) Mixed Use
- (ii) Commercial zone: (a) Retail Commercial (b) Wholesale Commercial
- (iii) Industrial zone: (a) Light Industry (b) Medium Industry (c) Obnoxious industry
- (iv) Public and semi-public zone
- (v) Recreational and open space zone
- (vi) Green belt zone
- (vii) Agriculture zone
- (viii) Circulation
- (ix) Government land

Out of the above mentioned nine zones, the North Lakhimpur Draft Revised Master Plan, 2041 shall concentrate on seven excluding government lands and green belt. Commercial zone is also not divided into retail commercial and wholesale commercial. In the residential zone low density implies density of less than 75 persons per hectare (pph), medium density shall be 75-150 pph and high density shall be over 150 pph. Residential areas of Ward 10 will high population density while Ward 6,7,8 and 9 will have medium population density rest every residential area in planning area will have low population density.

Figure 23.1: Zoning of the Planning Area, 2041



23.3 Land Use Distribution

The proposed land use distribution for the horizon year 2041 is given in **Table 23.1**.

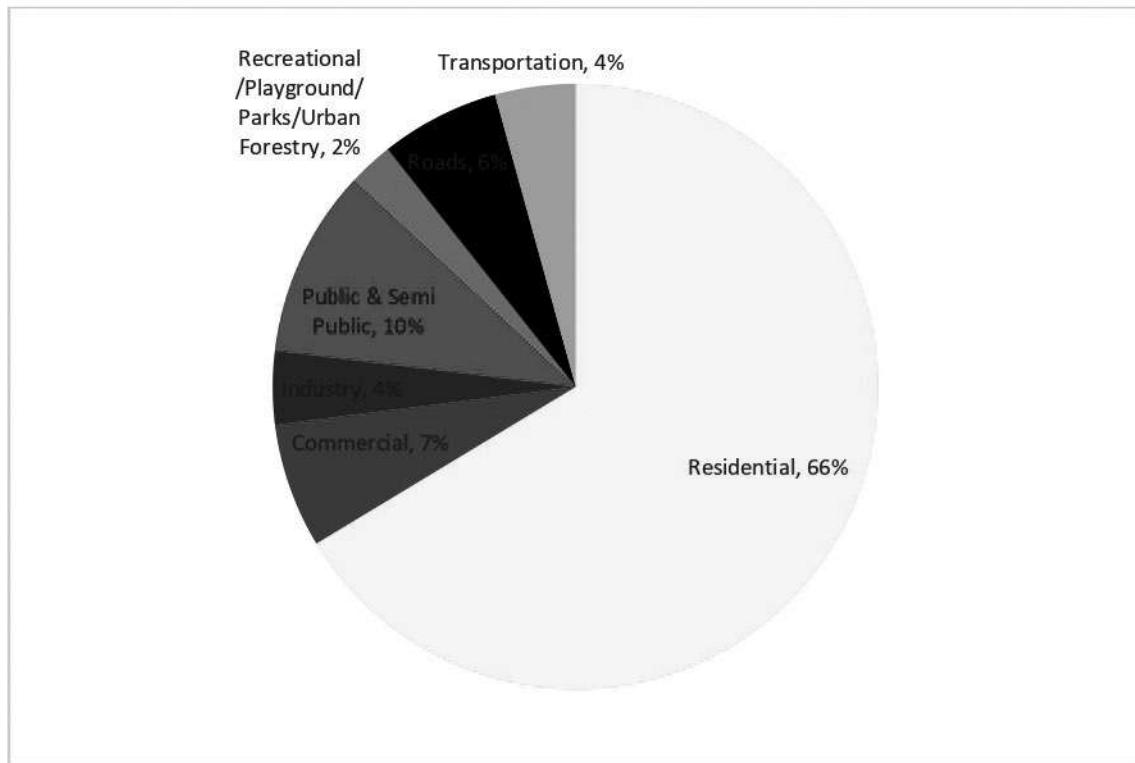
Total developed land is 12.553 sq. km in the North Lakhimpur Planning Area.

Table 23.1: Proposed Land Use Distribution in North Lakhimpur, 2041

S. No	Proposed Land Use	Municipal Area		Planning Area	
		Area (sq. km)	Percent	Area (sq.km)	Percent
1	Residential	7.884	54.52	36.927	30.1
2	Commercial	1.547	10.7	3.697	3.0
3	Industry	0.172	1.19	2.177	1.7
4	Public & Semi Public	0.943	6.52	5.584	5.5
5	Recreational /Playground/ Parks/Urban Forestry	0.974	6.74	1.34	1.09
6	Roads	0.626	4.33	3.54	2.88
7	Transportation	0.407	2.81	2.39	1.94
	Developed Area	12.553	86.82	55.655	45.24
8	Agriculture	0.00	0	64.261	52.22
9	Waterbody	0.284	1.96	1.484	1.21
10	Open Space/ Grassland	1.623	11.22	1.64	1.33
	Undeveloped Area	1.90	13.18	67.385	54.76
	Total	14.461	100	123.04	100

Source: SPA New Delhi(2021)

The proposed developable land use classification is in accordance with the URDPFI Guidelines, 2015. Residential land use accounts for 62.8percent of the total developable land within Municipal area and 66.35 percent of the total developable land within Planning area. Improvements have been made on land use classification from land use in 2021. Land under open spaces has increased significantly. There is an increase of area under traffic and transportation to enhance mobility(see **Figure 23.2**).

Figure 23.2: Developable Land in North Lakhimpur Planning Area

Source: SPA, New Delhi (2021).

Each land use describing the major proposals is detailed out in the following sections.

23.4 Residential

Total residential area accounts for 66 percent of the total developed area. Most of the proposed government projects like integrated Deputy Commissioner Office, ISBT, Stadium, Aviation Training Institute are being developed in the north of the town. New Government Civil Hospital and Medical College, Airport, Army Camp are in north side of town. Considering this, proposed residential developments are directed in the north direction of the town. Majorly, Cinatolia in the immediate north of town has shown higher growth rate. Cinatolia and Sukulibhoria villages are proposed for residential development.

Within the North Lakhimpur town, wards in northern direction, Ward 1, 2 and 3 have seen residential development only along the roads. It is proposed to bring the rear side area also under residential use. To facilitate this, the grid iron pattern of roads has been proposed in the area. The existing residential areas in the town have haphazard and irregular development. To contain the sprawl, residential density of the existing

areas is increased. Accessibility is also increased in the existing residential areas with proposed road networks. This will facilitate further development of the existing residential areas.

Residential land Use has been proposed along all major existing and proposed roads of arterial and sub arterial level. Residential land Use has also been proposed along the by-pass, proposed Technical University and Airport. Near the airport and Government medical college mixed residential land Use has been proposed in order to boost the proposed commercial Land Use, as per the future requirement of the town.

23.5 Public and SemiPublic

Total Public Semi-Public area accounts for 10 percent of the total developed area. North Lakhimpur is district headquarters of the Lakhimpur district. This has led to the development of North Lakhimpur town. The existing government offices are spread across the town. The sprawling commercial area, existing government offices and establishments, banks, hotels, etc. have caused congestion in the town. The land has been allocated for Integrated Deputy Commissioner Office in Sukulibhoria. In continuation, Master Plan proposes shifting of government offices in the periphery of the town. For this, additional 10 hectares of land is allocated besides the proposed Integrated Deputy Commissioner Office. In a phased manner, all government offices should be shifted, and administrative block can be developed in Sukulibhoria. This will ease the congestion in the town and spare space for commercial development.

To enable overall development and wellbeing of citizens of North Lakhimpur Planning Area, adequate facilities for education, health and wellbeing, social cultural development and recreation are proposed. The facilities should be evenly distributed in the Planning Area. Technical University spanning 30 hectares of land is proposed in Tinsukia Sonari and Athakotia. This will make North Lakhimpur a great educational hub in the region.

23.6 Commercial

Total Public Semi-Public area accounts for seven percent of the total developed area. Existing government offices in the core of the town cause congestion and reduce

accessibility. These spaces have potential to be transformed into commercial use after shifting of government offices. This will generate revenue for government. Commercial area is also proposed along NT Road and Nakari Road 100m on both the sides. Informal market of 5 hectares is proposed in the core area of the town.

Commercial land Use has been proposed wherever required along all major existing and proposed roads of Arterial and Sub Arterial level. Furthermore, additional commercial facilities have been proposed near all the, major junctions which have already been commercialised. Commercial land Use has also been proposed along the by-pass, proposed Technical University, Government Medical college and Airport in order to facilitate the provision of all the necessary commercial facilities that might come up in the future.

23.7 Industrial

Total Public Industrial area accounts for 4.0 percent of the total developed area North Lakhimpur Planning Area lacks industrial development. Industries are proposed in the Planning Area considering the strengths and potentials of the area. Handloom based small scale and medium scale industries are proposed as there is a surplus availability of raw silk in Lakhimpur district. There is also scope for Agro-based industries in Lakhimpur district. Total 127 hectares of land has been allocated for industrial use.

23.8 Recreational

North Lakhimpur town severely lacks in the organized green spaces. 30 hectares of District Park is proposed to be developed in Nalkata Bowalguri. It can be developed as theme park with landscaping features. It has the potential to develop as a tourist destination in the Planning Area. Four community parks, which are evenly distributed in the Municipal Area are proposed under organized open spaces. Community Parks would range from 2 to 5 hectares.

23.9 Transportation

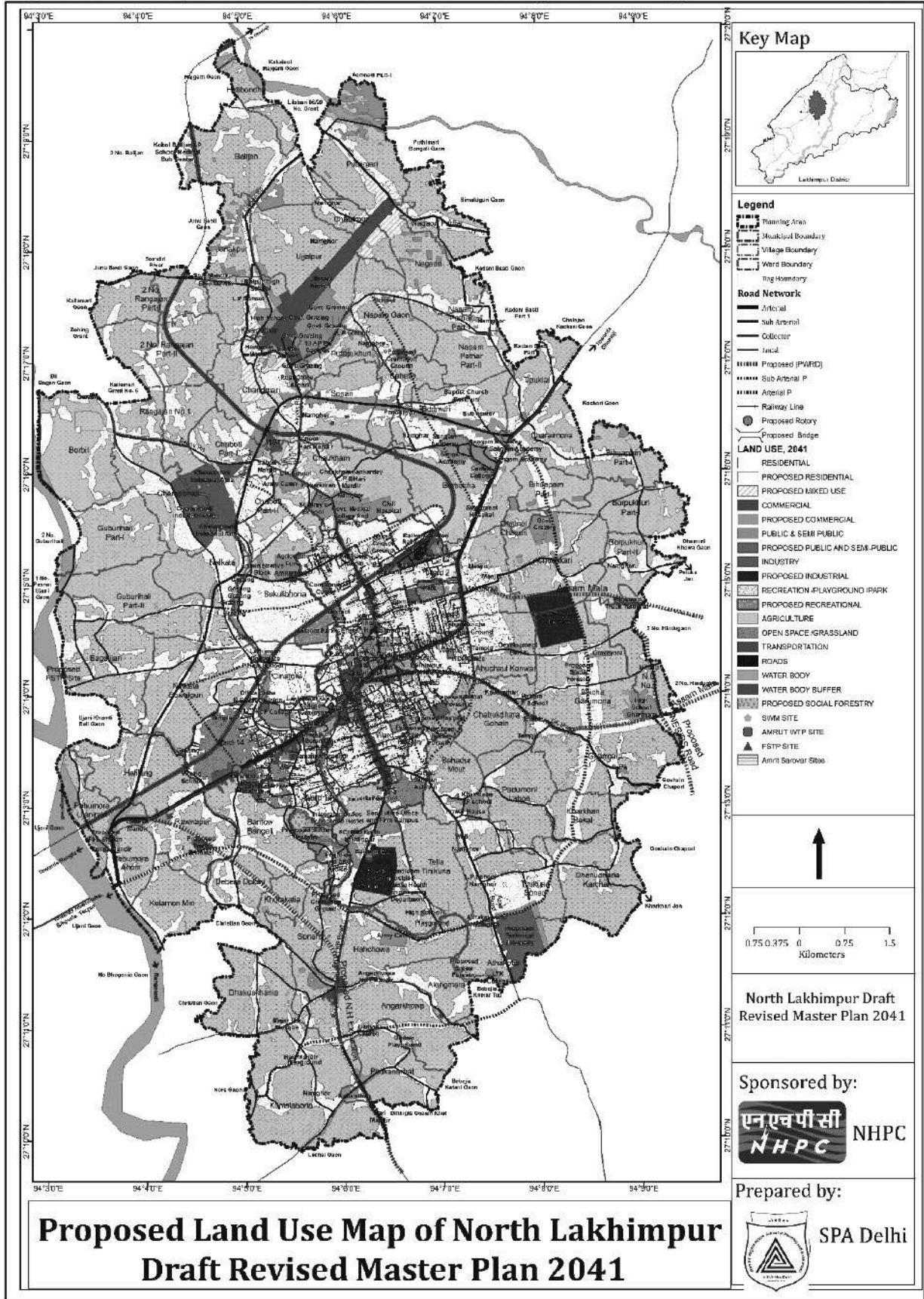
Total transportation area accounts for 10 percent of the total developed area Transportation forms the backbone of physical development of the Planning Area. Enhanced connectivity accelerates economic growth in the Planning Area. Proposed

bypass in the south of the planning area will connect major settlements. Grid iron pattern of road network is proposed in Municipal and Planning Area. Furthermore, one arterial road under the Assam Mala Scheme, one sub-arterial road under the NESIDS scheme and one extension of the National Highway has also been proposed. The extension of the National Highway is already being constructed by the PWRD, North Lakhimpur.

23.10 Agriculture

Agriculture remains primary occupation in villages within the Planning Area. Revamping of agriculture sector is necessary. Emphasis should be placed on enhancing irrigation facilities. Various interventions are required in agriculture marketing sector to make agriculture lucrative to farmers. Increasingly farmers should be facilitated to grow commercial crops.

Figure 23.3: Proposed Land Use of North Lakhimpur Planning Area, 2041



DEVELOPMENT CONTROL RULES AND REGULATION

CHAPTER 24: DEVELOPMENT CONTROL RULES AND REGULATIONS

24.1 Introduction

This chapter on development control rules and regulations forms the second most important part of the Master Plan for North Lakhimpur, 2041. Development control rules and regulations facilitate, control, and regulate 'development'.

Proposed development control rules and regulations are adapted from the Uniform Zoning Regulations, 2000, a part of which is also reflected in the Assam Notified Urban Areas (other than Guwahati) Building Rules, 2014. Major provisions of the Uniform Zoning Regulations, 2000 are included in this chapter. However, for further details, the Uniform Zoning Regulations, 2000 should be consulted.

The purpose of the development code is to ensure health, safety, and security by placing activities in a manner to minimize long-term harmful effects and optimize the beneficial effects. The code provides a system of classification of land uses based on predominant functions. Following sections discuss a system of classification, permissibility, and development control rules and regulations at city and premise level.

24.2 System of Classification: Use Category, Use Zones and Use Premises

North Lakhimpur Planning Area is divided into 8 land use categories and 27 use zones. Each land use category is further sub-divided into use zones based on the different character of an activity within a use category, which shall be further subdivided into use premises. Each use premise shall be permitted to have specific uses and use activities out of the prescribed uses and use activities with or without conditions.

Unless the context otherwise requires, in this code, use zone means an area for any one of the specific dominant uses of urban functions. Use premise means one of the many sub-divisions of a use zone, designated at the time of preparation of a layout plan for a specific main use or activity and includes the use premise described.

Layout plan means a sub-division plan indicating configurations and sizes of all use premises. This plan is meant to detail out the various provisions of the Master Plan for North Lakhimpur town. As is evident from **Table 24.1**, use categories and use zones are explicated.

Table 24.1: Proposed Use Category and Use Zones

Use Category	Use Zone
Residential (R)	R1: High Density Residential (>150 pph)
	R2: Medium Density Residential (75-150 pph)
	R3: Low Density Residential (< 75 pph)
Commercial (C)	C1: Retail Commercial
	C2: Wholesale Commercial
Industrial (M)	M1: Small and Medium Scale Industries
	M2: Light Industry
	M3: Medium Industry
Public and Semi-Public (PS)	PS1: Hospital
	PS2: Education and Research University / University centre, College,
	PS3: City level Social - Cultural, Socio-Cultural Complex/ Centre, Religious, exhibition ground
	PS4: Police / Police Headquarter / Police Lines, Fire Stations / Disaster Management Centres,
	PS5: Burial Ground / Cremation Ground
	PS6: Transmission site/telecommunication
	PS7: Government Offices/Courts
Recreational and Open Spaces (P)	P1: City/Community level Park
	P2: City/Community level Playgrounds
	P3: Organised green along roads
Transportation (T)	T1: City Bus Terminal/Bus Depot/Truck Terminal/Railway station
	T2: Road/Rail network
Utilities (U)	U1: Water (Treatment Plant etc.)
	U2: Sewerage (Treatment Plant etc.)
	U3: Electricity (Powerhouse, Sub-Station etc.)
	U4: Solid Waste (Sanitary landfill etc.)
	U5: Drain
Green, Agriculture and Water Bodies (A)	A1: Agriculture/Green Belt
	A2: Water bodies/fisheries

	A3: Plant nursery/plantations
	A4: Dairy Farm/Poultry Farm/Piggery

Light Industries are those which do not emit excessive smoke, noise, offensive odor, or harmful industrial wastes and these industries would be encouraged. These industries would employ not more than 100 workers and use power not more than 100 HP. Medium Industries are those which employ more than 100 workers.

24.3 Use Premises and Permissible Activity

Use premises and permissible activities in relation to different land uses are proposed in a comprehensive manner in the form of a matrix (see **Table 24.2**). Each use premise is also uniquely coded for the purposes of comprehensibility.

Table 24.2: Definition of Use Premises and Permissible Activity

Use Premise	Code	Definition and Content	Permissible Activity	Uses Prohibited as per Uniform Zoning Regulations 2000 of Assam
Residential				
Residential Plot	R001	A premise 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, plantation, vegetable garden, pond, onsite biodegradable solid waste management facility.	Use prohibitions as listed in Section 6.2.1: Regulations for Residential Zone: Use Prohibited.
Residence cum Work Plot	R002	A premise for one or more than one dwelling unit and may have on it one main building block and one accessory block for garage or garages and servant quarters has	Residence, Workspace for Retail Shop, Household Industry and Personal Service Shop in areas specified in land use plan or layout plan.	

		workspace on the ground floor.		
Residential Plot for Group Housing	R003	A premise of size not less than 3,000 sq m intended for built-up multi-storeyed residential flats with basic amenities like parking, park, shops for daily needs, public utility.	Residential Flat, Retail Shop of Confectionery Grocery and General Merchandise, Books and Stationery, Chemist, Barber, Laundry, Tailor, Vegetable Shop (On ground floor with an area up to 15 sq. m each.), Crèche and Day Care Centre on ground floor with an area up to 50 sq m.	
Hostel	R004	A premise in which rooms attached to 'Institutions or otherwise are let out on a long-term basis.	Hostel, Guest House, Boarding House, and Lodging House, Watch and Ward Residence (20 sq m), Service Shops (15 sq m)	
Orphanage	R005	A premise with facilities for boarding of children who are bereaved of parents. It may or may not have educational facilities.	Orphanage, Residential Flat for maintenance staff. Hostel, Service Shop up to 15 sq m.	
Dharamshala	R006	A premise providing temporary accommodation for short duration on no profit basis.	Dharamshala, Service Shops, Soft Drink and Snack Bar up to 15 sq m.	
Night Shelter	R007	A premise providing night accommodation to individuals	Rooms, Dormitories, Office, Soft Drink and Snack Bar	

		without any charges. It may be run by government or voluntary agencies		
Guest House	R008	Guest House is a premise where a residential house has been converted into an accommodation for short term stay of visitors.	Residence, Guest House, Retail and Service Shop and Office restricted to 5 per cent of total floor area.	
General Commercial				
Retail Shop	C001	A premise for sale of commodities directly to consumer with necessary storage.	Retail Shop	Use prohibitions as listed in Section 6.2.2: Regulations for General Commercial Zone: Use Prohibited.
Repair Shop	C002	A premise equivalent of a retail shop for carrying out repair of household goods, electronic, gadgets, automobiles, cycles etc.	Repair Shop	
Service Shop	C003	A premise equivalent of a retail shop providing services like tailor, barber, Photocopies etc.	Service shop	
Vending Booth	C004	A premise in the form of booth for sale of commodities of daily needs either through a mechanical installation or otherwise	Vending Booth,	
Wholesale Commercial				
Shopping Centre/Market Area	C005	A premise having a number of built-up commercial shops.	Retail, Repair and Personal Service Shop, Restaurant,	Use prohibitions as listed in Section 6.2.3:

		It may include offices and other facilities as per the hierarchy of shopping centre defined in the master plan.	Office, Micro and small industry, Clinical Laboratory, Clinic and Poly Clinic, Soft Drink and Snack Stall, Post Office and Bank, Extension Counter, Nursing Homes, Public toilet facility.	Regulations for Wholesale Commercial Zone: Use Prohibited.
Weekly Market/ Informal Sector Unit	C006	An area used once in a week by group of informal shop establishments in the form of market. These markets shift from one area to another on different days of the week	Weekly Market, Informal Retail Trade, Soft Drink and Snack Stall (All structures will be either temporary or mobile, only for one day in a week), Public toilet facility.	
Informal Units	C007	Retail/service unit, stationary or mobile, working without roof including small <i>khokhas</i> on roadside	Informal Unit	
Wholesale Market	C008	A premise from where goods and commodities are sold delivered to retailers. The premise includes storage Godown and loading and unloading facilities.	Wholesale Shop, Godown and Storage, hostel, night shelter, Commercial Offices restricted to 25 per cent of the total floor area, Public toilet facility.	
Storage, Godown and Warehousing	C009	A Premise for exclusive use of storage of goods and commodities in a manner as per the requirements of respective commodities. The premise includes	Storage, Godown and Warehousing, Watch and Ward Residence up to 20 sq m, Wholesale Outlet, Administrative and Sales Office.	

		the related loading and unloading facilities by Road Transport or Rail Transport as the case may be	
Cold Storage	C010	A premise where perishable commodities are stored in covered space using mechanical and electrical device to maintain the required temperature etc.	Cold Storage, Watch and Ward Residence up to 20 sq m, Administrative Office.
Commercial Office	C011	A premise used for offices of profit-making organisations.	Commercial Office, Retail and Personnel Service Shop; Restaurant; Bank.
Bank	C012	A premise for offices to perform banking function and operation.	Bank, Watch Ward Residence up to 20 sq m, Commercial Office, Canteen.
Motor Garage and Workshop	C013	A premise for servicing and repair of automobiles.	Motor Garage and Workshop, Retail Shop (spare parts), Soft Drink and Snack Stall.
Cinema	C014	A premise with facilities for projection of movies with a covered space to seat audience.	Cinema, Watch and Ward Residence (20 sq m), Administrative Office, Soft and Snack Stall, Retail, Shop and Commercial Office up to 20 per cent of the total floor area.
Petrol Pump	C015	A premise for sale of petroleum products to consumers. It may include servicing of automobiles.	Petrol Pump, Soft Drinks and Snack Stall, Automobile Repair Shop.
Restaurant	C016	A premise used for serving food items on commercial basis including cooking facilities. It may have covered or open space or both for sitting arrangement.	Restaurant

Hotel	C017	A premise used of lodging of 15 persons or more on payment with or without meals for short term duration.	Hotel, Retail and Service Shop and Commercial Office restricted to 5 per cent of total floor area.	
Light and Medium Industrial Zone				
Junk Yard	C018	A premise for covered semi-covered or open storage including sale and purchase of waste goods, commodities, and materials	Junk Yard, Watch and Ward Residence, Sales Office.	Use prohibitions as listed in Section 6.2.4: Regulations for Light Industrial Zone; and 6.2.5: Regulations for Medium
Industrial Plot	M001	A premise for micro, small and medium scale industrial unit	Industrial unit, Administrative Office, Sales Outlet, Residential Flat to the extent of 5 per cent of the floor space or 50 sq m whichever is lies for watch and ward and supervision.	Industrial Zone: Uses Prohibited.
Public and Semi-Public				
Government Offices			State and central government offices, local and municipal offices, radio and wireless station,	Use prohibitions as listed in Section 6.2.6: Regulations for Public and
Hospital	PS001	A premise providing medical facilities of general or specialised nature for treatment of indoor and outdoor patients.	Hospital, Residential Flat for Employees and services personal, Institutional Hostel, Medical College, Retail Shop (Confectionery, grocery and general merchandise, books and stationery, chemist, barber, launderer;	Semi-Public Zone: Uses Prohibited.
Health Centre	PS002	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.	vegetable) Health Centre and Nursing Home, Health Centre, Nursing Home, Watch and Ward Residence up to 20 sq m each, Chemist Shop up to 15 sq m each.	
Nursing Home	PS003	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	Dispensary, Soft Drink and Snack Stall. Clinic.	
Dispensary	PS004	A premise having facilities for medical advice and provision of medicines managed by public or charitable institutions.	Dispensary, Soft Drink and Snack Stall. Clinic.	
Clinic	PS005	A premise with facilities for treatment of outdoor patients by a doctor. In case of a polyclinic, it shall be managed by a group of doctors	Clinical Laboratory, Soft Drink and Snack Stall.	
Clinical Laboratory/ Diagnostic Laboratory	PS006	A premise with facilities for carrying out various tests for confirmation of symptoms of a disease.		
Crèche and Day Care Centre	PS007	A premise having nursery facilities for infants during	Crèche and Day Care Centre, Watch and Ward Residence up	

		daytime. The centre may be managed by an individual or an institution on commercial or non-commercial basis.	to 20 sq m.	
Nursery and Kindergarten School	PS008	A premise with facilities for training and playing for children preparatory to the school.	Nursery and Kindergarten School, Watch and Ward Residence up to 20 sq m, Crèche and Day Care Centre	
Primary School	PS009	A premise having educational and playing facilities for students up to V standard.	Primary School, Watch and Ward Residence (up to 20 sq. m.) Books and Stationery Shop (up to 15 sq m), Soft Drink and Snack Stall. Crèche and Day Care Centre	
Secondary School	PS010	A premise having educational and playing facilities for students from VI to X standard. It shall include existing cases of middle school which are up to VIII standard for the purpose of this code.	Secondary, Senior Secondary and Integrated School, Watch and Ward Residence up to 20 sq m. Book and Stationery and Chemist Shop up to 15 sq m, Soft Drink and Snack Stall, Canteen, Bank Extension Counter, Auditorium; Indoor Games Hall, Swimming Pool, Post Office Counter Facility.	
Senior Secondary School	PS011	A premise having educational and playing facilities for students from VIth to XIIth standard.		
Integrated School	PS012	A premise having educational and playing facilities		

		for students up to XII standard.	
Integrated Residential School	PS013	A premise having educational and playing facilities for students up to XII standard. It shall have boarding facilities for students and may have residence for faculty members.	<p>School and College, Residential Flat for maintenance staff, Institutional Hostel, Retail Shops of area 15 sq. m. each Confectionery, grocery, and general merchandise, (books and stationery, Chemist, barber, launderer; vegetable); Canteen, Bank Extension Counter, Auditorium, Indoor games Hall, Swimming Pool. Playground Post Office Counter Facility.</p> <p>School and College, Residential Flat for maintenance staff, Institutional Hostel, Retail Shops of area 15 sq m each Confectionery, grocery, and general merchandise, (books and stationery, Chemist, barber, launderer; vegetable); Canteen, Bank Extension Counter, Auditorium, Indoor games Hall, Swimming Pool. Playground Post Office Counter Facility</p>
College	PS014	A premise for	Vocational Training

		higher education affiliated to a university.	Centre. Watch and Ward Residence up to 20 sq m. Hotel (Only in case of Government Centres), Books and Stationery Shop up to 15 sq m, Canteen Library
Vocational Training Institute	PS015	A premise with training facilities for short-term courses for discipline, preparatory to the employment in certain profession and trade. It shall be run by public or charitable institution on non-commercial basis. It includes training-cum-work centre	Vocational Training Centre. Watch and Ward Residence up to 20 sq m. Hotel (Only in case of Government Centres), Books and Stationery Shop up to 15 sq m, Canteen Library
University	PS016	A premise for higher education as defined by the University Grants Commission or any other competent authority	Colleges, Academic and Administrative Buildings, Residential Flat for maintenance staff, Institutional Hostel, Faculty and staff Housing, Market, Playgrounds. Residential and related facility area should not be more than 35 percent of the total area.
Barat Ghar	PS017	A premise used for marriage and other social functions and run by public agency.	<i>Baratghar</i> , Soft Drink and Snack Bar up to 20 sq m.
Social Welfare Centre	PS018	A premise with facilities for welfare and	Social Welfare Centre, Watch and Ward Residence up

		promotion of community development. It shall be run by a public or charitable institution	to 20 sq m, Canteen Exhibition-cum-Sale Counter.
Research and Development Centre	PS019	A premise providing facilities for research and development for any specific field.	Research and Development Centre, Watch and Ward Residence up to 20 sq m. Residential flat for maintenance staff, Hostel Canteen Bank Extension Counter: Library Post Office Country Facility.
Library	PS020	A premise having a large collection of books for reading and reference for public or specific class	Library, Watch and Ward Residence up to 20 sq m, Canteen Exhibition and Art Gallery, Auditorium.
Training Centre	PS021	A premise with facilities for training in any discipline, e.g., Engineering, secretarial, sports, arts etc.	Training Centre, Residential Flat for maintenance staff, Books and Stationery and Chemist Shops, Retail Shop up to 5 percent of the built space. Canteen, Bank Extension Counter, Auditorium, Post Office Counter Facility, Hostel up to 15 percent of the Built space. In case of Sports Training Centre - Indoor and Outdoor Stadium, Swimming Pool; Playground will be permitted
Motor	PS022	A premise having	Motor Driving

Driving Training Centre		facilities for training of driving automobiles.	Training Centre, Watch and Ward Residence up to 20 sq m, Soft Drink and Snack Stall.
Museum	PS023	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 20 sq m, Canteen.
Exhibition Centre and Art Gallery	PS024	A premise with facilities for exhibition and display of paintings, photograph, sculptures, murals, ceramics, handicrafts, or products of a specific class.	
Auditorium	PS025	A premise having an enclosed space to seat audience and stage for various performances like concerts, play, music, recitals, functions etc.	
Open Air Theatre	PS026	A premise having facilities for audience seating and a stage for performance and open to sky.	
Community Hall	PS027	A premise having an enclosed space for various social and cultural activities of neighbourhood.	
Fair Grounds	PS028	A premise having facilities for	Community Hall, Watch and Ward

		exhibition and display and other cultural activities for a group of participants.	Residence (up to 20 sq m), Soft Drink and Snack Stall, Public toilet facility.
Social and Cultural Institute	PS029	A premise with facilities for activities of sociocultural nature runs by a public, voluntary or individual on primarily non-commercial basis.	Fair Ground, Residential Flat (For maintenance staff). Exhibition Centre (Temporary in nature), Restaurant, Soft Drink and Snack Stall, Post Office, Fire Post, Bank Extension Counter Facility, Post Office Counter Facility. Cultural and Information Centre Cultural and Information, Watch and Ward Residence (up to 20 sq m), Hostel, Canteen, Bank, Extension Counter Facility; Auditorium (up to 500 seating capacity). Liberty, Exhibition and Art Gallery.
Religious	PS030	A premise dedicated to accommodation and service nature. It may have different nomenclature in different religion like temple (all faiths), mosque, church, of God or other objects of religious gurudwara, synagogue, ashram, bathing	Social and Cultural Institute, Watch and Ward Residence (up to 20 sq m), Soft Drink and Snack Stall, Restaurant, Canteen; Bank Extension Counter Facility, Auditorium, Library Music: Dance and Drama Training Centre, Museum, Exhibition Centre, and Art Gallery.

		ghat, gaushala.	
Yoga Meditation, Spiritual and Religious Discourse Centre	PS031	A premise having facilities for self-attainment, achieving higher quality of mind and body, spiritual and religious discourse etc.	Temple, Mosque, Church, Gurudwara, Synagogue, Ashram, Bathing Ghat, Gaushala, Dargah, Charitable Dispensary, Library.
Police Post	PS032	A premise having facilities for a local police post of a temporary nature or on smaller scale as compared to a police station.	Yoga Centre, Meditation, Spiritual and Religious Discourse Centre. Watch and Ward Residence up to 20 sq m, Hostel, Soft Drink and Snack Stall.
Police Station	PS033	A premise having facilities for the offices of local police post	Police Post, essential staff housing.
Disaster Management Centre	PS034	A premise having facility of disaster emergency backup, hospital facility, training centre for disaster preparedness, wireless communication etc.	Public Station, essential staff housing
Fire Station	PS035	A premise with facilities for firefighting for a catchment area assigned to it. It may include residence of essential staff.	
Post Office	PS036	A premise with facilities for postal communication for use by the public.	Fire Station, Residential Flat for maintenance staff. Hostel (For employees), Service Workshop.
Telephone	PS037	A premise having	Post and Telegraph

Exchange		facilities for central operation of telephone system for a designated area.	Office and General Post Office, Watch and Ward Residence up to 20 sq m, Canteen
Radio and Television Station	PS038	A premise with facilities for recording, broadcast and transmission of news and other programmes through the respective medium. It may include some hostel accommodation for guest artist, transmission facilities like towers.	Telephone Exchange, Watch and Ward Residence up to 20 sq m, Canteen.
Transmission Tower and Wireless Station	PS039	A premise used for installation of a tower for communication purposes.	Radio and Television Station, Watch and Ward Residence up to 20 sq m, Hostel, Canteen, Library.
Gas Godown	PS040	A premise where cylinders of cooking gas or other gas are stored.	Transmission Tower, Watch and Ward Residence up to 20 sq m, Canteen,
Oil Depot	PS041	A premise for storage of petroleum products with all related facilities.	Gas Godown, Watch and Ward Residence (up to 20 sq m) Caretaker Office.
Government Office	PS042	A premise used for the offices of Union Government, State Government, Local Government and Public Sector Undertaking	Oil and Gas Depot, Residential Flat for Watch and Ward and maintenance staff only, Administrative, Office.
Zone for the Dead			

Burial Ground	PS043	A premise with facilities for burying of dead bodies.	Burial Ground, Cremation Ground Cemetery and Crematorium, retail shops of Wood, flowers, and related materials, Watch and Ward Residence up to 20 sq m. Facility for registration of deaths, sheds for performing rituals, drinking water, parking	All other activities are prohibited.
Cremation Ground	PS044	A premise with facilities of performing last rites of dead bodies by burning.		
Cemetery	PS045	A premise with facilities for burying of dead bodies by Christian community.		
Electric Crematorium	PS046	A premise with facilities for disposing off the dead body in an electric furnace.		
Recreational and Open Spaces Zone				
Park	P001	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 and Snack Stall up to 15 sq m.	Use prohibitions as listed in Section 6.2.7: Regulations for Recreational and Open Spaces Zone: Uses Prohibited.
Playground	P002	A premise used for outdoor games. It may have on it landscaping, parking facilities, public toilet, etc.	Playground, soft drink, and snack stall up to 15 sq m	
Sports Complex	P003	A premise for one or many outdoor and indoor games with related facilities. This may include pavilion building and stadium structure	Outdoor Stadium, Indoor Stadium and Shooting Range, Indoor Games Hall Stadium, Local Government Office (for Maintenance), Watch and Ward	

		to seat spectators including related facilities for players.	Residence (up to 20 sq m), Residential Flat (For maintenance staff). Retail Shop, Restaurant. Soft Drink and Snack Stall (up to 50 sq m)
Recreational Club	P004	A premise used for gathering of group of persons for social and recreational purposes with all related facilities.	Recreational Club, Watch and Ward Residence (up to 20 sq m), Residential Flat for maintenance staff. Swimming Pool, Indoor and Outdoor Games Facilities
Zoological Garden Aquarium	P005	A premise in the form of a garden with plantation for research and exhibition.	Zoological and Botanical Garden, Bird Sanctuary, Watch and Ward Residence (up to 20 sq m), Residential Flat for maintenance staff). Retail Shop, Restaurant.
Bird Sanctuary	P006	A premise in the form of large park or forest for preservation and breeding of birds with all related facilities.	
Botanical Garden	P007	A premise in the form of a garden with planation for research and exhibition.	
Specialised Park / Ground wonder land etc.	P008	A premise having a park or ground for a designated use like public meeting grounds, fun park,	Public Meeting Ground, Public Address Podium, Soft Drink and Snack Staff.
Camping Site	P009	A premise for short duration stays, for recreational or leisure purpose, of a family located within a tourist	Picnic huts

		and /or recreational centre.		
Traffic and Transportation				
Bus Terminal, Truck Terminal, Railway station	T001	A premise 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/Truck Terminal/Railway station Administrative Office, Booking Offices, passenger accommodation facilities and essential staff Residence (residential component not more than 15 percent of the built space), Soft Drink and Snack Stall, Shops, Other Offices (commercial space not more than 5 percent of the built space)	All other activities are prohibited.
Bus Depot	T002	A premise 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, Administrative Office Watch and Ward Residence (up to 20 sq m), Soft Drink and Snack Stall, Shops, Other Offices (not more than 5 percent of the built space)	
Parking	T003	A premise used for parking of vehicles. The public parking lots may be run on commercial or non-commercial basis.	Parking	
Taxi and Three-Wheeler	T004	A premise to be used for parking of intermediate	Taxi and Three Stand.	

Stand		public transport vehicles run on commercial basis		
Petrol filling station	P001	A premise to be used for filling petrol, and gas in vehicles and electric plugs for charging batteries of vehicles. This would also include shops selling groceries.	All public and private vehicles on payment.	
CNG filling station	P002			
EV charging station	P003			
Utilities Zone				
Overhead Tank	U001	A premise having an overhead tank of storage and supply of water to its neighbouring areas. It may or may not include a pump house	Overhead Tank	All other activities are prohibited.
Underground Tank	U002	A premise having an underground tank for storage and supply of water to its neighbouring areas. It may or may not include a pump house.	Underground Tank	
Water Treatment Facility	U003	A premise having mechanism for drawing, treatment, and distribution of water	Treatment Plant, Office, Watch and Ward Residence (not more than 15 sq m)	
Sewage Treatment Facility	U004	A premise having mechanism for collection of sewerage, treatment, and its consequent disposal.	Treatment Plant, Office, Watch and Ward Residence (not more than 15 sq m)	
Sewerage Pumping Station	U005	A premise with a pumping station used for pumping	Pumping station	

		sewerage on to a higher gradient.		
Public Toilet	U006	A premise having latrine and urinals for use of public. It may or may not include drinking water facility.	Toilet	
Electric Sub-station	U007	A premise having electrical installation and transformer for distribution of power.	Sub-station, Office, Watch and Ward Residence (not more than 15 sq m)	
Dhallao and Dustbin	U008	A premise used for collection of garbage for its onwards transportation to waste management facility	Community bin and Dustbin	
Dhobi Ghat	U009	A premise used for cleaning and drying of cloths/linen by washer man.	Place for washing, temporary structure for storage, drying	
Integrated Waste Management Facility	U010	A premise used for waste segregation, treatment and storing.	Place for waste segregation, storage and treatment, shop for sale of bio-manure, other recycled products,	
Agriculture, Water Bodies and Green Belt Zone				
Orchards and Plantation	A001	A premise with a thick growth of fruit or other trees. It may also include garden with fruit trees.	Orchard, Watch and Ward and Maintenance Staff Residence (up to 20 sq m).	Use prohibitions as listed in Section 6.2.8: Regulations for Green Belt Zone; Section 6.2.9: Regulations for Agriculture and Water Bodies: Uses Prohibited.
Plant Nursery	A002	A premise with facilities for rearing and sale of young plants.	Nursery, Watch and Ward Residence (up to 20 sq m) All Structures shall be temporary in nature.	

Forest	A003	A premise with thick natural flora which may have part natural flora and part man-made flora defined by any statutory body (local, state, or central) as forest. Area notified under The Forest Act	Forest
Dairy Farm	A004	A premise with facilities for rearing and processing of dairy products. It may have temporary structure of sheds of animals and birds.	Dairy Farm, Watch and Ward Residence (up to 20 sq m) All Structure shall be temporary in nature.
Poultry Farm	A005	A premise with facilities for rearing and processing of dairy products. It may have temporary structure for sheds of birds	Poultry Farm, Watch and Ward Residence (up to 20 sq m) All Structure shall be temporary in nature.
Piggery	A006	A premise with facilities for rearing and processing of piggery products. It may have temporary structure for sheds pigs.	Piggery Shed, Watch and Ward Residence (up to 20 sq m); All structures shall be temporary in nature.
Rural Centre	A007	A premise having facilities for different functions for a certain number of villages it caters to.	Rural Centre, Retail Shop, Repair Shop, Personnel Service Shop, Weekly Market, Bank, Commercial Office, Cinema, Restaurant, Local Government Office, Dispensary,

			Clinic Clinical Laboratory, Hospital, Senior Secondary School, Library, Community Hall, Police Post, Fire Post, Post Office.	
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Burial Ground, Cremation Ground, Cemetery and Electric Crematorium can also be permitted in Use Category "Agriculture and Water Bodies". Use premises not covered in the table are permitted in their use zone only.

24.4 Development Control Rules and Regulations

24.4.1 Residential Premises

The minimum lot size for high density residential development shall be 200 sq. m. For medium density residential development, minimum size of a plot shall be 268 sq m and for low residential density, the plot size shall be 355 sq m. Gross density, maximum FAR maximum ground coverage for residential development is shown in **Table 24.3** below:

Table 24.3: Proposed Residential Density, FAR and Ground Coverage

Category	Density pph	Maximum FAR	Maximum Ground Coverage in Percent
Low density	Less than 75	125	55
Medium density	75-150	175	60
High density	More than 150	225	60
Green Belt	--	100	40

Source: Uniform Zoning Regulation (2000).

Front setback for residential development for all types of residential buildings shall be high and medium density with 3 m from edge of the road, and low density 3.7 metres. Rear setback for high, medium and low density shall be 3 metres for any individual plot unless it is specified. Side setback is 1.5 meter for high and medium density, and 1.8 for low density. An indicative list of industries which could be permitted in residential areas are listed in Annexure 1 of the Uniform Zoning Regulations, 2000. For all other zoning related norms, the Assam Notified Urban Areas (other than Guwahati) Building Rules, 2014 has to be referred for all future development in the planning area.

24.4.4 Commercial Premises

Table 24.4 makes proposals about regulations for commercial premises. Some of the buildings in community centres as well as city centre will be permitted for heights greater than specified as a part of detailed schemes of the government to achieve the desired urban form. Minimum plot size of any commercial use plot will be 164.4 sq m with minimum front setback 1 m, side setback 1.5 metre and rear setback 3 metre.

Table 24.4: Proposed Commercial FAR and Ground Coverage

Category	Maximum FAR	Maximum Ground Coverage in Percent	Remarks
General Commercial	320	80	(a) Mezzanine to the extent of 33 percent of the plinth area which shall not be counted for FAR calculation. (b) Basement not used for human habitation shall not be counted for FAR calculation.
Wholesale Commercial	240	60	

Source: Uniform Zoning Regulation (2000).

Side and rear setback should be increased by 0.3 m for every 1.5 m of additional height of the building in addition to the setback already prescribed.

24.4.2 Petrol Pumps and Service Stations

Minimum distance from the road intersections shall be 100 meters. Petrol pumps shall be provided only along major roads having right of way of 24 meter or more. Minimum lot size, if it is only a filling station shall be 31 m by 17 m and if it is a filling cum service station, the minimum lot size shall be 37 m by 31 m and maximum shall be 45 m by 33 m.

24.4.3 Hotels

If hotels are located in commercial area, we propose to have the maximum ground coverage of 50 percent, maximum FAR of 150. Five percent of the FAR can be used for commercial space related to hotel functions and such spaces shall be confined to the ground floor of the hotel building. Basement below the ground floor to the maximum extent of ground coverage shall be allowed if used for parking and services should not be counted in the FAR.

24.4.4 Regulations for Other Premises

Other premises like hostels, guest houses, boarding and lodging houses, and Dharamshala, barat ghar, night shelters require a separate set of regulations (see **Table 24.5**).

Table 24.5: Regulations for Other Premises

Sl. No.	Use Premises	Minimum Plot Size sq m	Maximum Ground Coverage Percent	Maximum FAR
1.	Hostel	400	45	175
2.	Guest House, Boarding and Lodging House	400	45	175
3.	Dharamshala, Barat Ghar, Night Shelter	400	45	175

Note: Minimum front setback is 6 m and minimum side and rear setback is 3 m.

24.4.5 Industrial Premises

Minimum size for the industrial plot shall be 744 sq m for the light industry and 1800 for the medium size industry (see **Table 24.6**). Minimum front setback shall be 6m for light industry and 9 m for medium industry, side setback for light industry shall be 3 m and medium industry 6 m, and rear setback shall be 6 m for both cases

Table 24.6: Regulations for Industrial Plots

Category of Industry	Minimum Plot size in sq m	Maximum Ground Coverage in Percent	Maximum FAR
Light	744	50	--
Medium	1,800	50	--

Basement below the ground floor shall be allowed to the maximum extent of ground coverage and if used for parking and services should not be counted in FAR.

24.4.6 Public and Semi-Public Use Premises

Minimum lot size for public and semi-public shall be 400 sq. m. For public and semi-public development minimum front setback 6 m, side setback and rear setback 3 m. FAR is proposed to be 175 with a maximum of 45 percent ground coverage for public and semi-public. Detailed set of regulations are also proposed for the development of public and semi-public facilities (see **Table 24.7**).

Table 24.7: Regulations for Public and Semi-Public

Sl. No.	Use Premises	Minimum Plot Size in sq m	Maximum Ground Coverage in Percent	Maximum FAR
1.	Government Office	400	45	175
2.	Hospital	1,000	45	200
3.	Health Centre and Nursing Home	1,000	45	200
4.	Nursery school	535	50	100
5.	Primary school	804	50	100
6.	Higher Secondary School or Integrated School	2,677	50	175
7.	Degree college	4,015	50	175
8.	Socio-culture facilities centre	1,000	50	100
9.	Auditorium and Community Hall	1,860	40	125
10.	Religious Premises	804	50	125
11.	Police Post	1,000	50	100
12.	Police station, fire post, fire station, post office	1,000	40	125
13.	Fair Grounds	4,000	10	50

24.4.7 Recreational Premises

Recreational activities are progressively transforming due to globalization. Development control regulations for recreational premises are given in **Table 24.8** below:

Table 24.8: Regulations for Recreational Premises

Sl. No.	Use Premises	Maximum Ground Coverage in Percent	Maximum FAR
1.	Parks and Playground	05	05
2.	Sports Complex	20	80

24.4.8 Traffic and Transportation

Bus terminal, bus depot and railway station will have maximum ground coverage of 30 percent and a maximum FAR of 100.

All residential development will have car parking requirement of minimum one equivalent car spaces (ECS) for 93 sq m of floor area and one ECS for each dwelling unit. Commercial and public and semipublic area will have minimum requirement of one ECS for 93 sq m developed area. For other land uses and activity system, **Table 24.9** provides details:

Table 24.9: Minimum Parking Requirements for different Land Uses

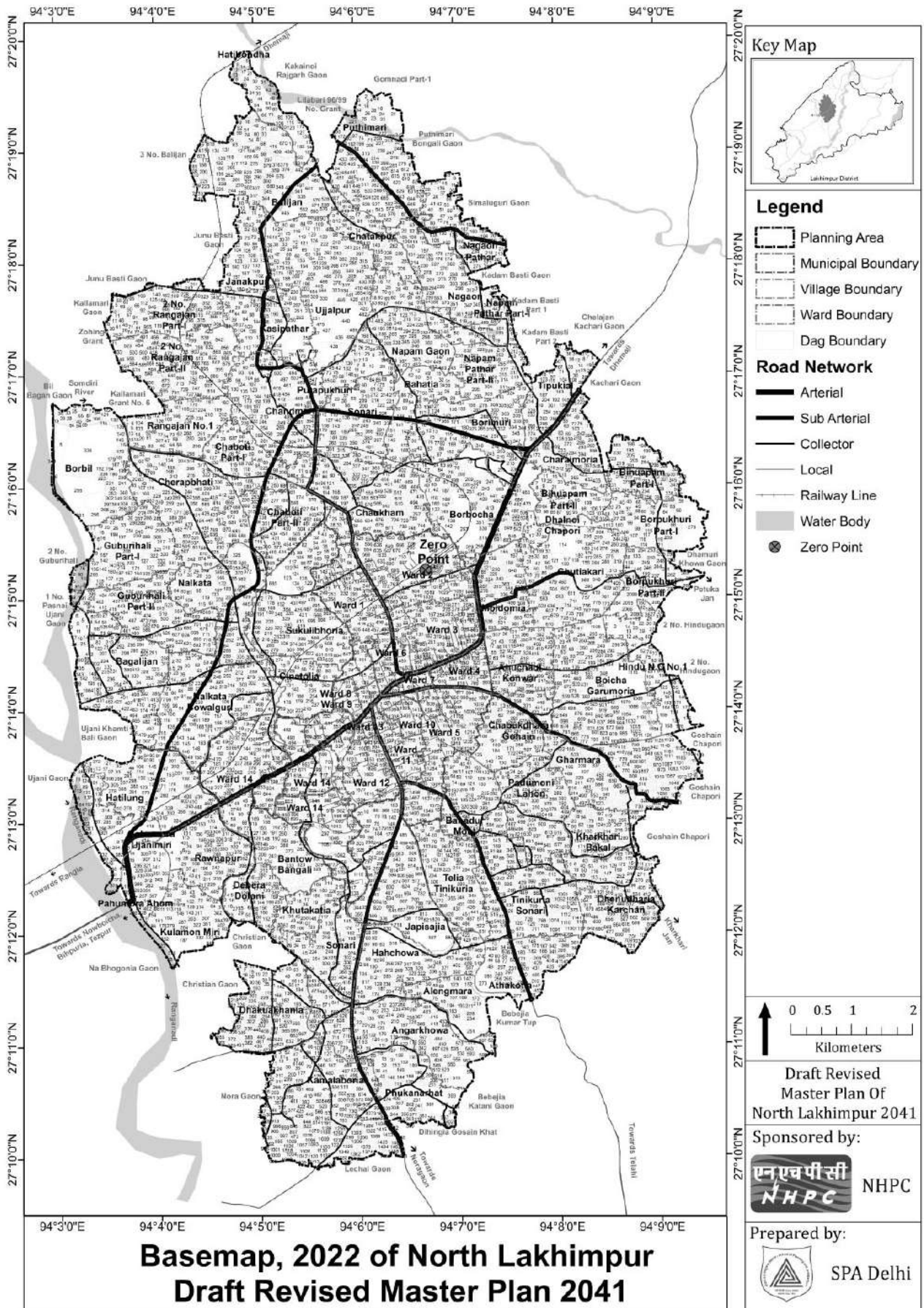
Type of Use	Equivalent Car Spaces	Scooter Parking Space	Bi-Cycle Parking Space
Residential	1 ECS for 93 sq m of floor area	--	--
Theater, auditorium and marriage hall	1 ECS for 40 seat accommodation	1 scooter parking space for 25 seat accommodation	1 bi-cycle parking space for 25 seat accommodation
General commercial, hotel, wholesale warehouse, and office buildings	1 ECS for 93 sq m of floor area	1 scooter parking space for 46 sq m of floor area	1 bi-cycle parking space for 9 sq m of floor space
Hospital	1 ECS for 30 beds of accommodation	1 scooter parking space for 20 beds of accommodation	1 bi-cycle parking space for 10 beds of accommodation
Restaurant	1 ECS for 30 seats of accommodation	1 scooter parking space for 10 seats of accommodation	--
Nursing home	1 ECS for 46 sq m of floor area	1 scooter parking space for 46 sq m of floor area	1 bi-cycle parking space for 9 sq m of floor area

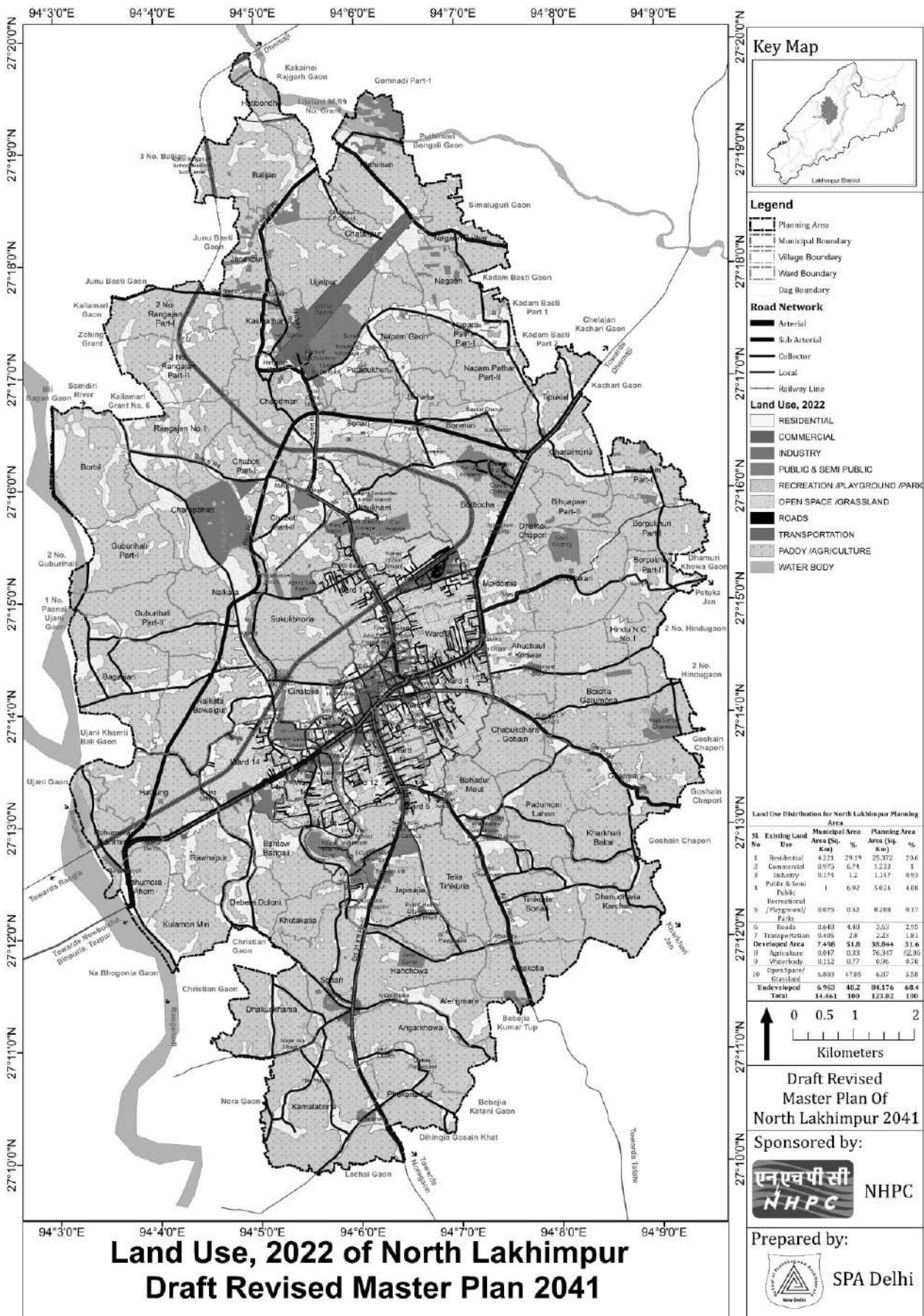
One car parking space would mean 3.6 m by 7.5 m for wholesale commercial and warehouse. For other uses, this requirement would mean 3 m by 6 m. For other buildings like industrial buildings, appropriate authority would determine parking requirements. If in doubt for other parking provisions, the Uniform Zoning Regulations 2000 may be consulted for clarifications.

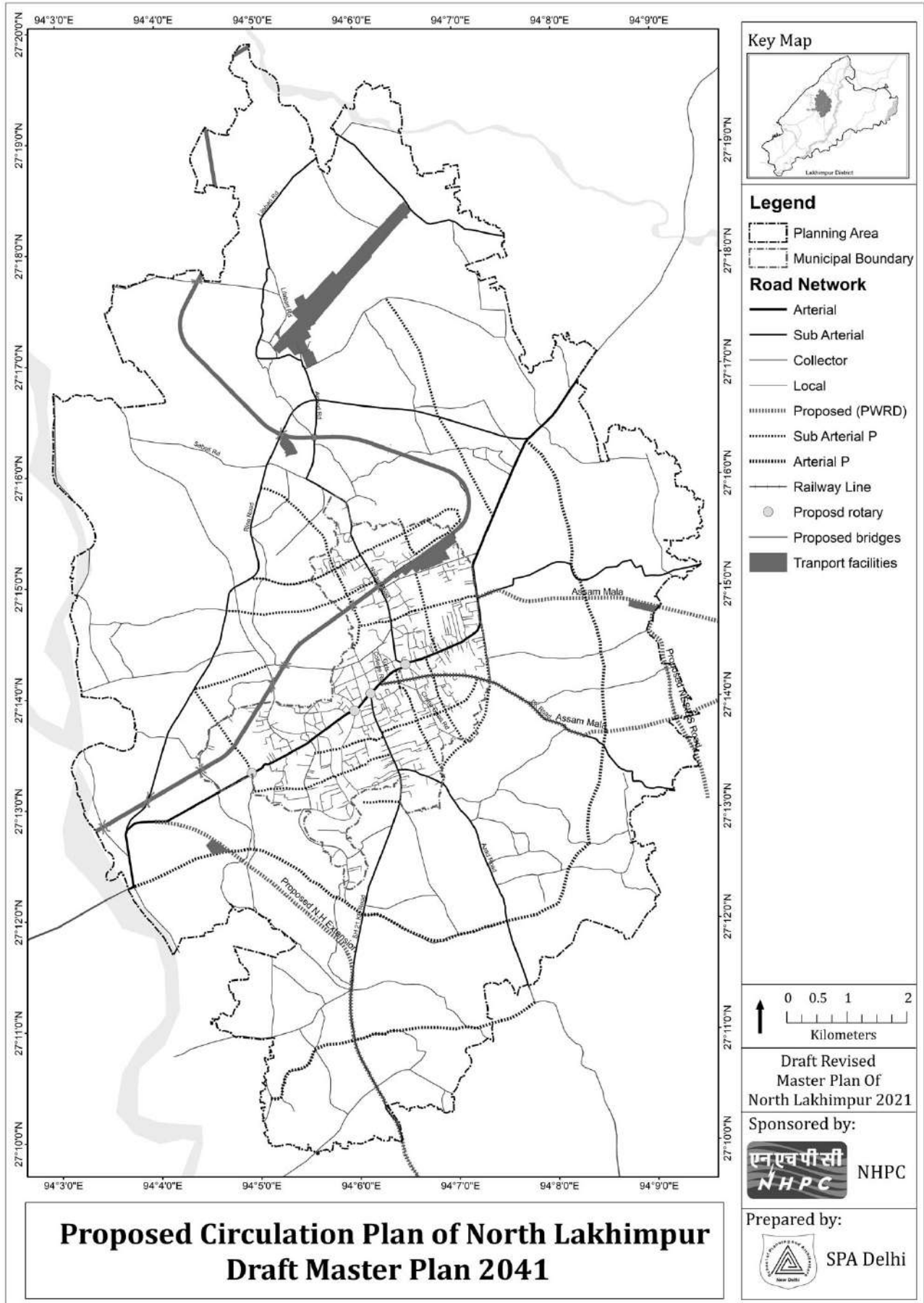
Annexure A-1: List of Villages and Townsin Planning Area of Draft Master Plan of North Lakhimpur, 2041

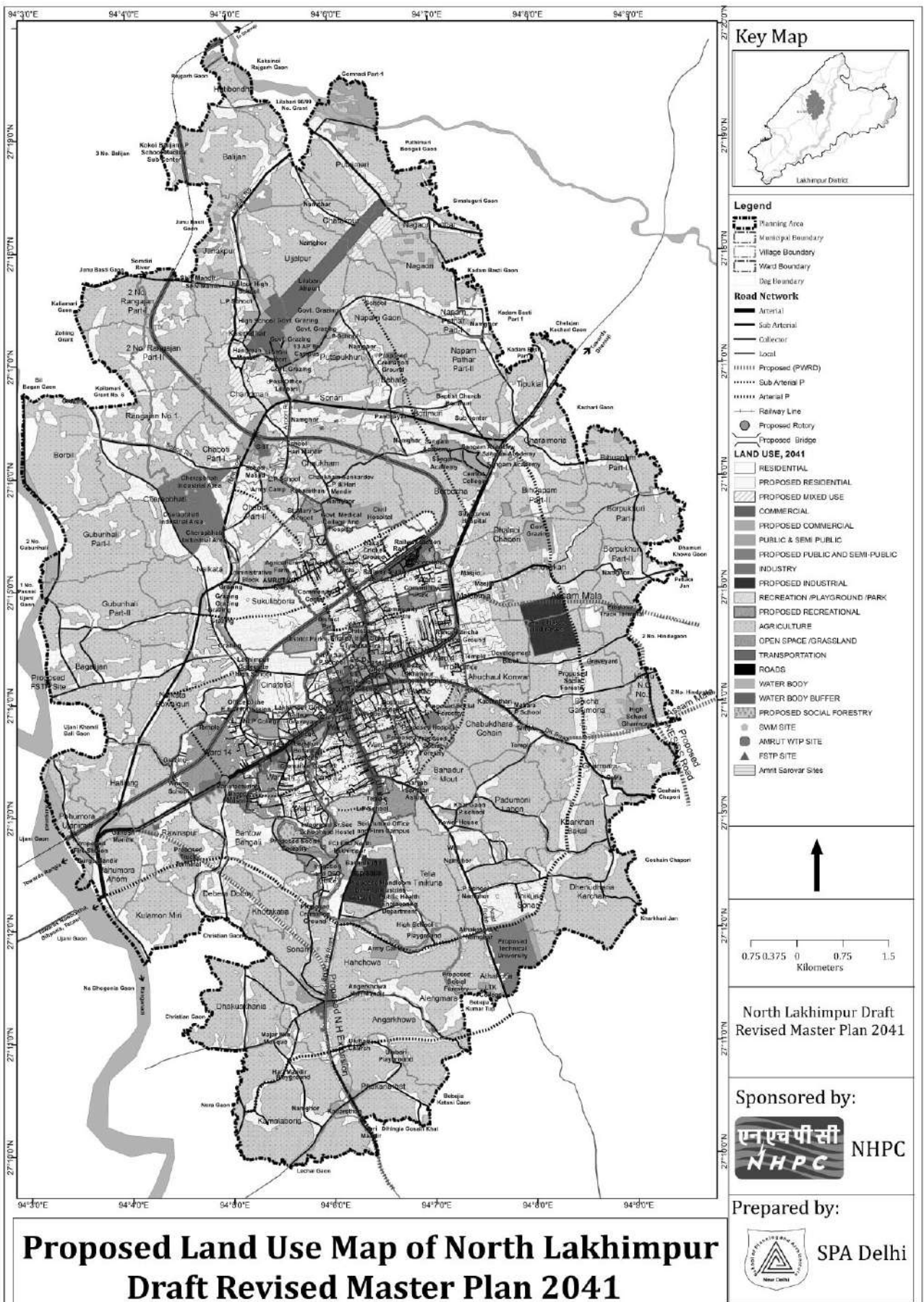
S.No.	Village	Mouza
1	Chandmari	Nakari
2	Chaukham	Nakari
3	Nalkata	Nakari
4	Chutiakari	Nakari
5	Nalkata Bowalguri	Nakari
6	Sukulibhoria	Nakari
7	Cinatolia	Nakari
8	Cherapbhati	Nakari
9	Chaboti Part-I	Nakari
10	Chaboti Part-II	Nakari
11	Moidomia	Nakari
12	Rangajan No. 1	Nakari
13	Putapukhuri	Nakari
14	Borimuri	Nakari
15	Borbocha	Nakari
16	Kasipathar	Nakari
17	Bahatia	Nakari
18	Napam Pathar Part-I	Nakari
19	Napam Pathar Part-II	Nakari
20	Napam Gaon	Nakari
21	Janakpur	Nakari
22	Ujjalpur	Nakari
23	Sonari	Nakari
24	Borpukhuri Part-I	Nakari
25	Borpukhuri Part-II	Nakari
26	Guburihali Part-I	Kadam
27	Guburihali Part-II	Kadam
28	Dhalnoi Chapori	Kadam
29	Charaimoria	Kadam
30	Bihuapam Part-I	Kadam
31	Bihuapam Part-II	Kadam
32	Tipukial	Kadam
33	Hahchowa	Kamala Baria
34	Khutakatia	Kamala Baria
35	Hatilung	Kamala Baria
36	Pohumora Ujanimiri	Kamala Baria
37	Rawnapur	Kamala Baria

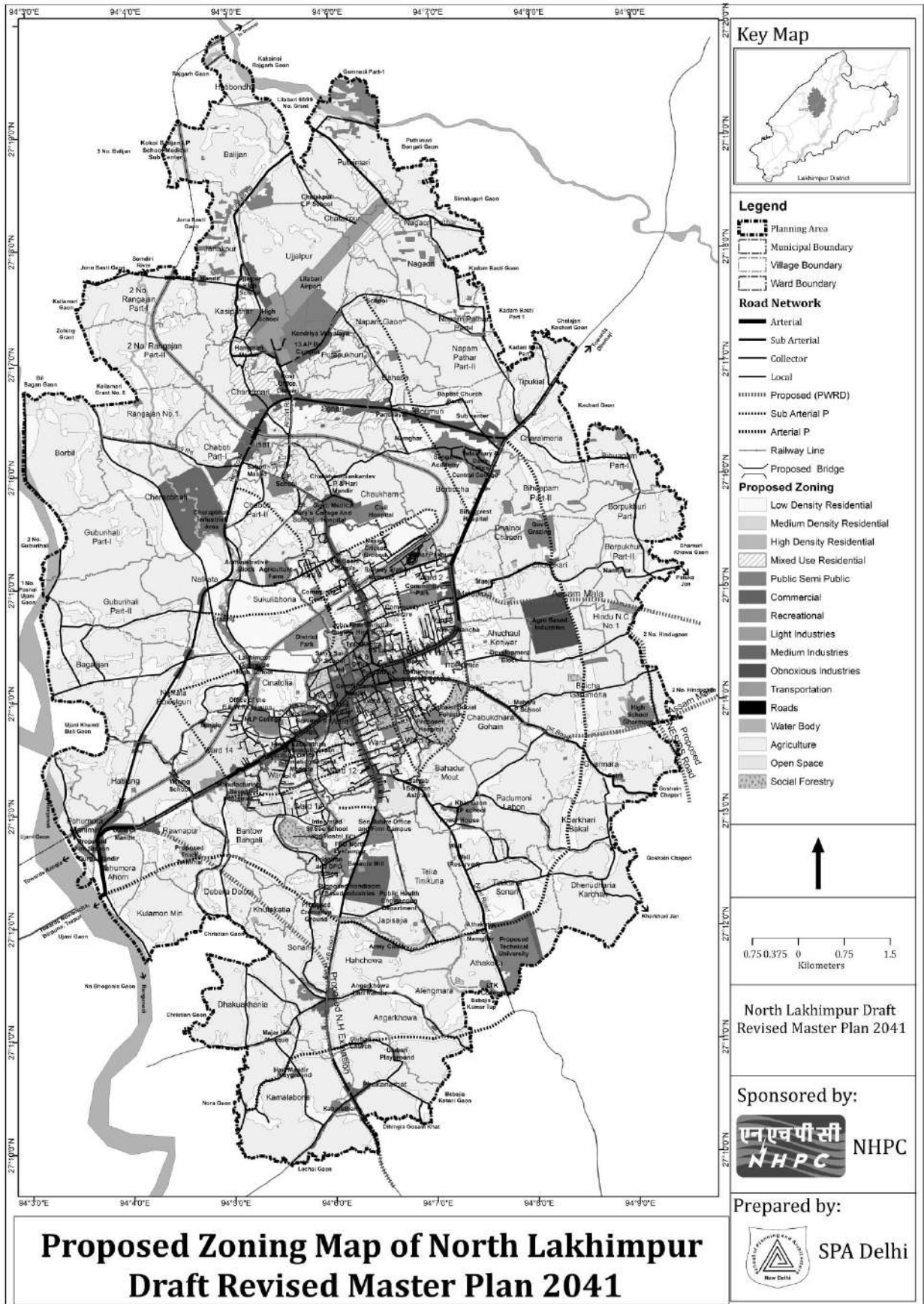
38	Sonari	Kamala Baria
39	Japisajja	Kamala Baria
40	Ahuchaul Konwar	Kamala Baria
41	Tinikuria Sonari	Kamala Baria
42	Telia Tinikuria	Kamala Baria
43	Padumoni Lahon	Kamala Baria
44	Chabukdhara Gohain	Kamala Baria
45	Bahadur Mout	Kamala Baria
46	Bantow Bangali	Kamala Baria
47	Gharmara	Kamala Baria
48	Boicha Garumoria	Kamala Baria
49	Debera Doloni	Kamala Baria
50	Bagalijan	Kamala Baria
51	Kamalaboria	Kamala Baria
52	Kulamon Miri	Kamala Baria
53	Phukanarhat	Kamala Baria
54	Alengmara	Kamala Baria
55	Angarkhowa	Kamala Baria
56	Dhakuakhania	Kamala Baria
57	Hatibondha	Nakari
58	Nagaon	Kadam
59	Nagaon Pathar	Kadam
60	Balijan	Nakari
61	Borbil	Nakari
62	Chatakpur	Nakari
63	Puthimari	Kadam
64	2 No. Rangajan Part-I	Nakari
65	2 No. Rangajan Part-II	Nakari
66	Dhenudharia Karchan	Lakhimpur
67	Hindu NC No.1	Lakhimpur
68	Athakotia	Lakhimpur
69	Kharkhari Bakal	Lakhimpur
70	Pahumora Ahom	Nawboicha

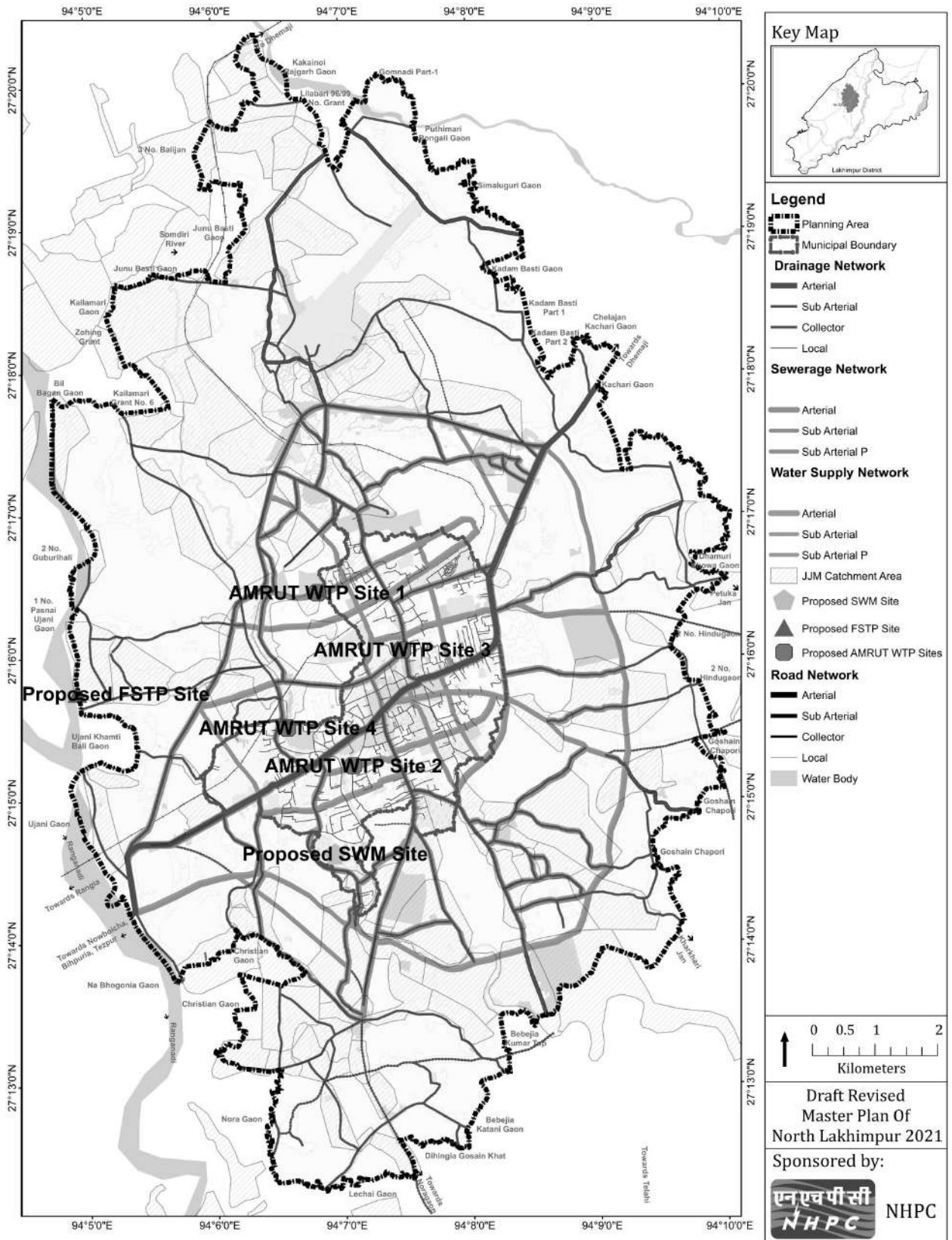












**Proposed Utility Map of North Lakhimpur
Draft Revised Master Plan 2041**

Draft Revised
Master Plan Of
North Lakhimpur 2021

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