



THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

নং 355 দিশপুৰ, সোমবাৰ, 7 আগষ্ট 2023, 16 শাওণ, 1945 (শক)
No. 355 Dispur, Monday, 7th August, 2023, 16th Sravana, 1945 (S. E.)

GOVERNMENT OF ASSAM
ORDERS BY THE GOVERNOR
DEPARTMENT OF HOUSING AND URBAN AFFAIRS

NOTIFICATION

The 24th May, 2023

ECF No. 303317/2023/139.- In exercise of the powers conferred by the section 9 and sub-section (1) of section 10 of the Assam Town & Country Planning Act, 1959 (as amended) read with sub-rule (I) of Rules 3 of the Assam Town and Country Planning (Publication of Master Plan and Zoning Regulations) Rules 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of Draft Master plan for **Sapatgram-2041**.

Notice for the Publication of Draft Master Plan for Sapatgram-2041

- It is notified that the Draft Master plan for Sapatgram prepared by the Directorate of Town & Country Planning, Assam under section 9 of the Assam Town & Country Planning Act, 1959 (as amended), as described in the schedule below is hereby published.
- Any person or persons affected by the Draft Master Plan may submit their objection or opinion in writing to the Director, Town & Country Planning, Assam, Dispur, Guwahati-6 within two months from the date of publication.
- The Draft Master plan for Sapatgram with all relevant papers and maps may be inspected free of Cost during the office hours at the Office of the Director, Town & Country Planning, Assam, Dispur, Guwahati-6, the Deputy Director, Town & Country Planning, District Office- Dhubri,

the Circle Office, Sapatgram Revenue Circle, Sapatgram, office of the Chairman, Sapatgram Municipal Board, Sapatgram, Copies of the Draft Master Plan for Sapatgram are available at the office of the Deputy Director, Town & Country Planning, Dist Office-Dhubri for sale on payment.

SCHEDULE

Name of the Draft Master Plan Area :	Sapatgram
District :	Dhubri
Sub-Division :	Bilasipara
Area- (Municipal Area + Master Plan Area) :	14.32 Sq. Km.
Block :	Mahamaya Block
Sapatgram Draft Master Plan area :	Towns and Villages
	Sapatgram (TC) Ward no.1
	Sapatgram (TC) Ward no.2
	Sapatgram (TC) Ward no.3
	Sapatgram (TC) Ward no.4
	Sapatgram (TC) Ward no.5
	Sapatgram (TC) Ward no.6
	Sapatgram (TC) Ward no.7
	Sapatgram (TC) Ward no.8
	Sapatgram (TC) Ward no.9
	Sapatgram (TC) Ward no.10
	Rangapani Pt.I
	Rangapani Pt.II
Dautpara	
Kasiatari	
Dharmapur	
Santipur	
Barkuti	
Sonamoyee Pt.I	
Sonamoyee Pt.II	
Duduarkanda	

DESCRIPTION SAPATGRAM MASTER PLAN BOUNDARIES :

North- Balapara Part I, Asharikandi Kartimari, Bhakuwamari, Atiabari and Bahadurpara.

East – Chechapani Part I, Chechapani Part II, Kadamtola, Dhanpur and Shuripara Part I

South- Raballtari and Bhalumari

West- Balapara Part II, Bhelakuba Part I, Bhelakuba Part II and Goratmari Part I Memo

KAVITHA PADMANABHAN,
Commissioner & Secretary to the Government of Assam,
Department of Housing and Urban Affairs,
Dispur, Guwahati-6.

Chapter 1: INTRODUCTION TO MASTER PLAN AREA

1. INTRODUCTION TO MASTER PLAN AREA

1.1. About the master plan

A master plan is an active document for long-term planning that offers a conceptual design to direct future development and growth. Making connections between structures, social contexts, and the environments around them is the goal of master planning. A master plan analyses, suggests, and makes ideas for a location's people, economics, housing, transportation, amenities, and land use. It is based on suggestions from the general population, polls, planning efforts, already-existing development, physical attributes, and social and economic circumstances. Master planning can play one or more of the following roles:

- Create a timeline for implementation and phasing, and decide on the top priorities.
- Serve as a foundation for revitalization and entice investment from the business sector.
- Define public, semi-private, and private spaces as well as facilities for the general public.
- Conceptualize and form the three-dimensional urban environment.
- Identify the combination of applications and their physical connection.
- Involve the neighbourhood and serve as an advocate for consensus.

Master plans have emerged as the standard instruments of planning to be developed by urban local governments in India. Master plans are forward planning tools that anticipate urban development and make provisions for it on city space in terms of the allocation of land for various uses, the regulation of its development and the provision of civic infrastructure.

1.2. Approach and Methodology

1.2.1. Approach adopted for the project

A master plan provides detail about project phasing and infrastructure and precisely correlates infrastructure with project land use avoiding the costly oversizing or detrimental under sizing of infrastructure.

It provides an opportunity for citizen participation before the public hearing process developing understanding, acceptance and support for the project design. Master plan also allows some flexibility in zoning and development standards which results in developments that are more responsive to the unique conditions of the site and allows a project to respond to changing market conditions over time.

The ability to establish a “master” or “tiered” environmental document, including appropriate mitigation measures, thus facilitating the consideration of subsequent development proposals. In the case of a Specific Plan, the plan can build in reasonable flexibility to allow a response to changing market conditions or other unforeseeable events, consistent with the revision procedures of the master plan.

It's a Physical plan: the plan is fundamentally a guide to the physical development of the community; It is long ranged: involves long term planning; It is comprehensive: encompasses all the functions that make a community work, such as transportation, housing, land use, utility systems, and recreation.

Moreover, the plan considers the interrelationships of function; Guide to decision making: for the planning board, the governing board. The plan translates community values, desires, and visions into land use and development principles that can guide the future growth of the community.

1.2.2. Methodology

The project duration was nearly 45 days. The master plan project should be completed according to the expectations of the client, public and the state govt. All of the tasks as mentioned in the SOP of the master plan should be completed within the scheduled time period and with maximum efficiency by taking into account the opinion and point of view of all the stakeholders.

Formulation of master plans start with base map preparation, existing land use surveys and collection of socio-economic data necessary for reviewing the existing situation and proposing the future land use plan. With the advances in remote sensing and geographic information system, the plan making process can be expedited with integration of both spatial and attribute data, which enables detailed assessment of spatial growth of towns/cities, land-use status, physical infrastructure facilities, etc. in anticipation of the projected population growth.

The project was started with the help of a meeting with the concerned authorities to discuss the timeline of completion of the project, about the data collection process and physical survey timeline within the master plan area. According to the SOP prepared by the town and country planning dept, govt of Assam, these are the basic steps to be followed in the preparation of master plan.

- Identification of distinctive characteristic of the Town/City and selection of theme.
- Fixation of boundary of Master Plan
- Collection of cadastral maps
- Procurement of Very High-Resolution Satellite imagery (VHRS)
- Drainage survey, contour survey and fixation of gradient. Preparation of drainage plan and reservation of land.
- Physical Survey of road and preparation of road network plan and fixation of alignment and reservation of land including RL(level) of land.
- Physical Survey of existing water supply network and preparation of water supply plan and fixation of alignment and reservation of land.
- Physical Survey and preparation of road Sewerage network plan and fixation of alignment and reservation of land.
- Physical Survey and preparation of utility plan with reservation of land for solid waste management site, water supply plant, crematorium, parks and playground.
- Physical survey for preparation environmental plan with strategy to preserve and maintain waterbodies, river, lakes and forest.
- Preparation of Disaster management plan in conformity with District and State Disaster management plan.

1.2.3. Methodology Followed by the Consultant

First of all, the cadastral maps were collected from the authority and geo-referenced with the help of GIS software, after that the maps were digitized to determine the boundary of the master plan.

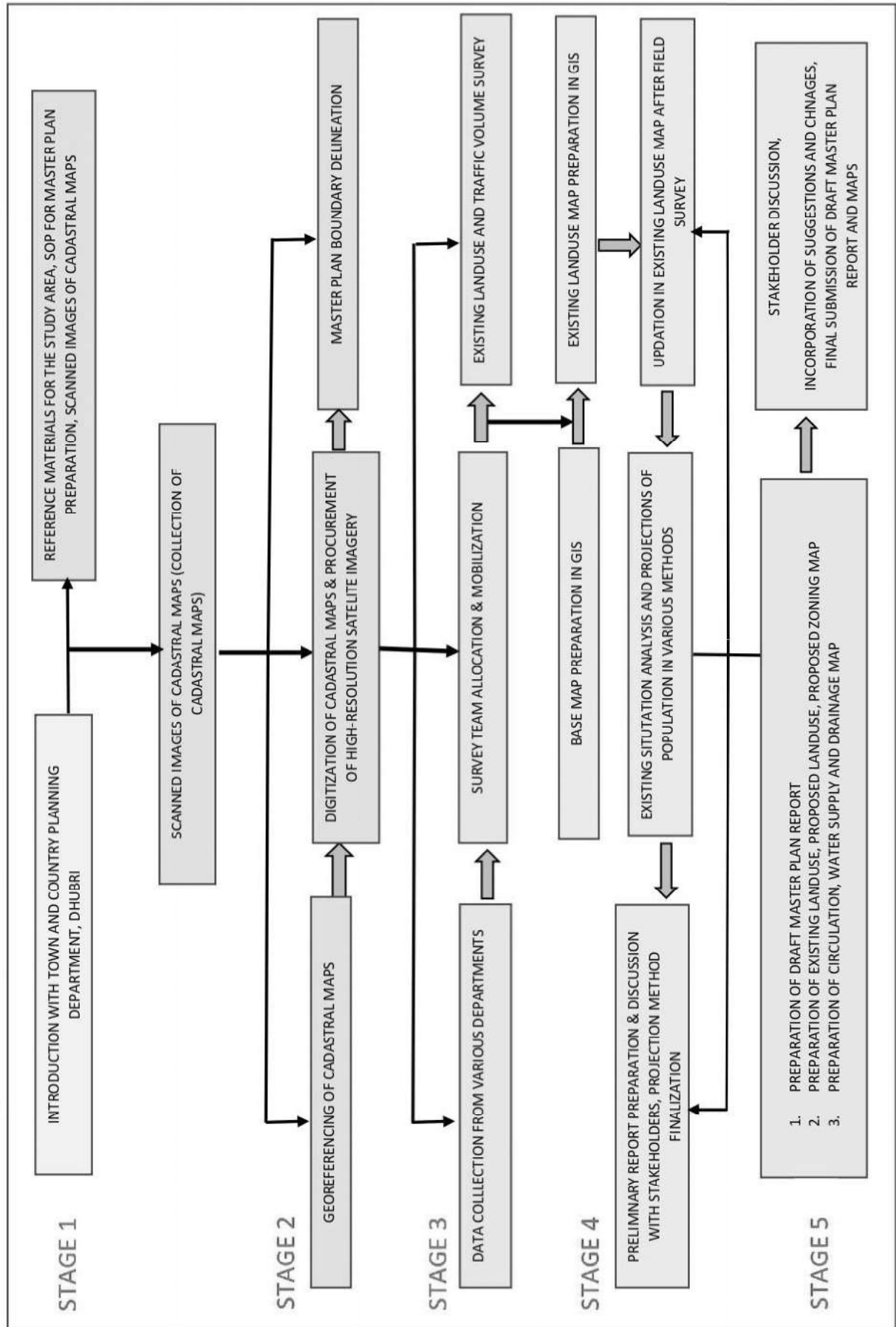
After the physical survey of various land-use, roads, important locations, traffic volume survey and traffic junctions, the survey datas were compiled and taken into GIS for map preparation and traffic volume data were used for counting the PCUs.

The first deliverable was existing land-use map. The existing land-use percentages were calculated for proposed land-use map and proposed zoning map preparation. Several meetings were conducted with stakeholders to discuss the various proposals and complete the proposed land use and circulation plan for the master plan area.

A draft master plan report was prepared that included all the contents as mentioned in the SOP namely introduction to the master plan area, demography, economic base, housing and shelter, proposed land uses, zoning restrictions, circulation networks, and utility maps, as well as identifying various projects that can be built in phases to maximize the region's economic potential.

After the preparation of draft master plan report some changes and modifications were suggested and the final report and maps were prepared.

All this process has been mentioned in the methodology flow chart given below.



1.3. Project area profile

The master plan area of Sapatgram comprises of Town area under the Sapatgram Municipal Board and nearby villages close to the Sapatgram town. The total planning area (urban-rural) of Master Plan is around 14.32 sq.km. The master plan area consists of Sapatgram Census Town and 10 villages from SapatgramCircle. Below are the list of villages and town proposed for the master plan area of Sapatgram:

Table 1:- Project area profile

Sl. No.	Name of the Town/Village	Category
1.	Sapatgram (TC) Ward no. 1	Town
2.	Sapatgram (TC) Ward no. 2	Town
3.	Sapatgram (TC) Ward no. 3	Town
4.	Sapatgram (TC) Ward no. 4	Town
5.	Sapatgram (TC) Ward no. 5	Town
6.	Sapatgram (TC) Ward no. 6	Town
7.	Sapatgram (TC) Ward no. 7	Town
8.	Sapatgram (TC) Ward no. 8	Town
9.	Sapatgram (TC) Ward no. 9	Town
10.	Sapatgram (TC) Ward no. 10	Town
11.	Rangapani Part 1	Village
12.	Rangapani Part 2	Village
13.	Dautpara	Village
14.	Barkuti	Village
15.	Duduwarkanda	Village
16.	Kasiatari	Village
17.	Santipur	Village
18.	Sonamayee Part 1	Village
19.	Sonamayee Part 2	Village
20.	Dharmapur	Village

Source: - Census 2011

1.3.1. Location

Sapatgram is bounded both by interstate and international borders: West Bengal and Bangladesh in the west; Goalpara and Bogaigoan district of Assam and Garo Hills district of Meghalaya in the east; Kokrajhar district in the north; and Bangladesh and state of Meghalaya in the south. Sapatgram is Situated 284 Kilometres west of Guwahati lies Sapatgram of Dhubri district. Sapatgram is located at 26.33°N 90.13°E. It has an average elevation of 27 meters (88 feet). It is on the river Sankosh. It is a border town between Dhubri and Kokrajhar Districts of Assam. The distance between Dhubri and Sapatgram is 47.6 km.

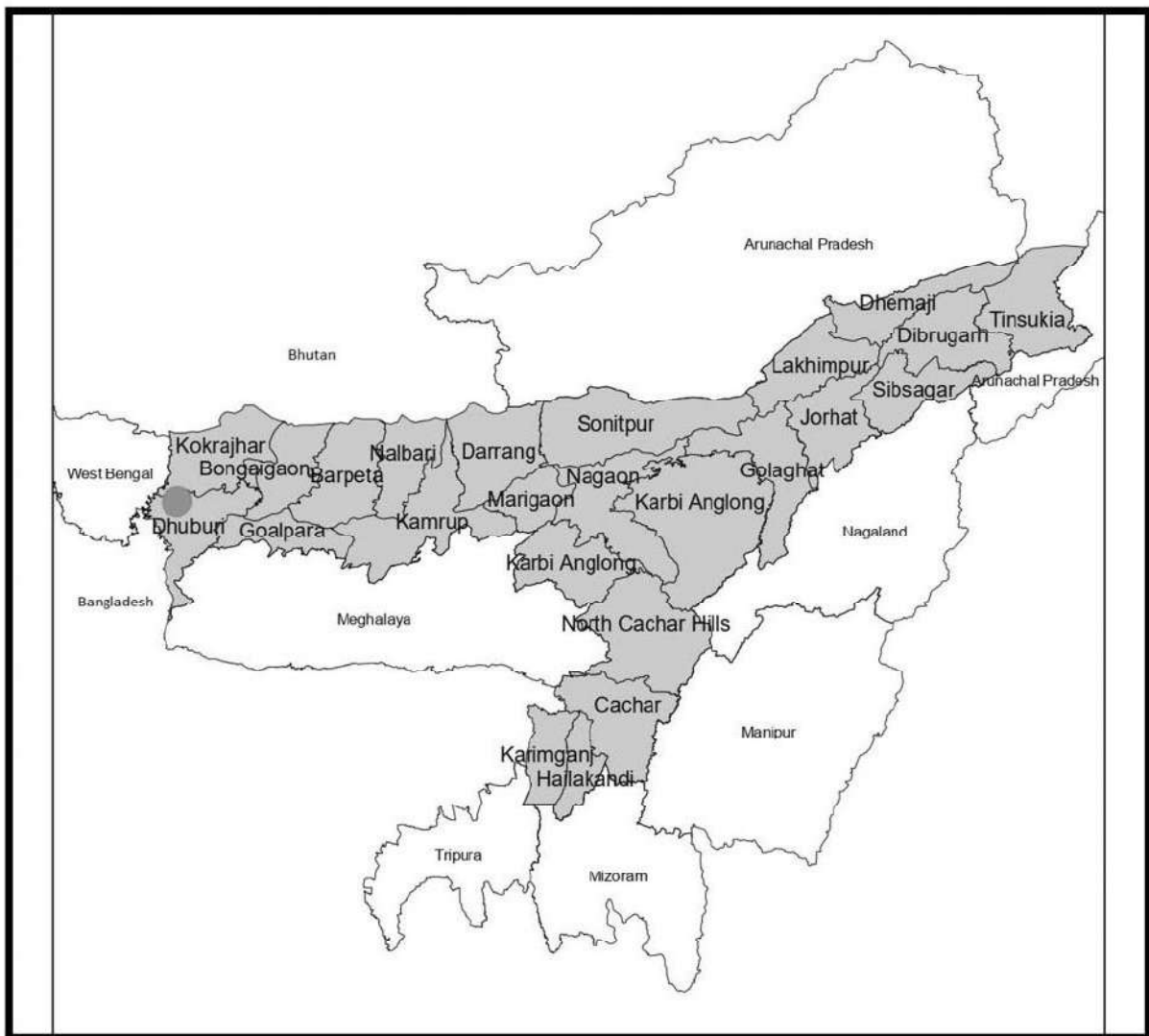


Figure 1:- Location of the project area

Source: - Author Generated

1.3.2. Regional setting

It is 17 Kilometres from National Highway - 31 via Borkonda road and 20 Kilometres from National Highway- 31 via Gossaigaon town. The district headquarters, town of Dhubri District is 52 Kilometres from Sapatgram and Bilasipara, and the sub-divisional headquarters town of Bilasipara subdivision is 23 Kilometres southeast. Surrounded by Tipkai hills on the bank of river Sankosh, Sapatgram a quaint little town had 7 timber-loading Ghats on the bank of rivers Laska, Tipkai, and Gangia that leads to River Sankosh. These Ghats were famous for the transportation of timber to Bengal by barges locally known as Chali via the river Brahmaputra.

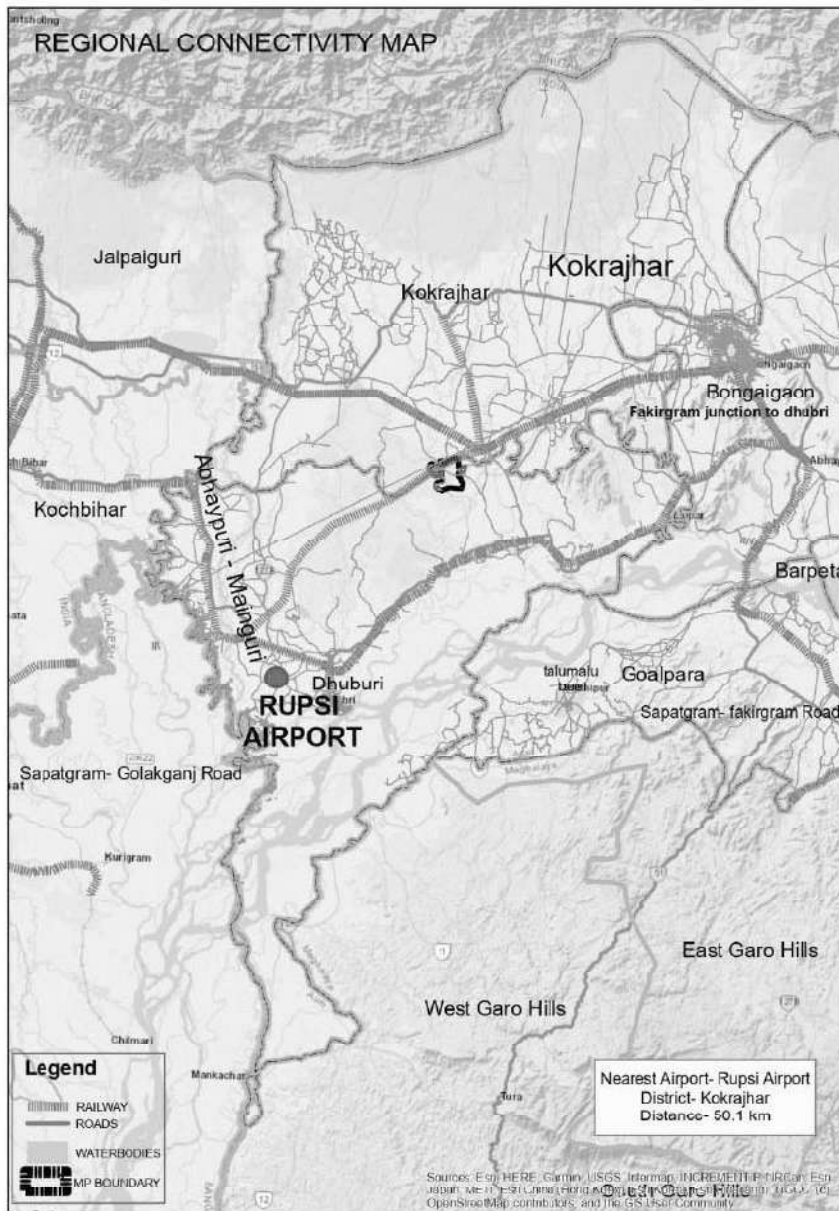


Figure 2:- Regional connectivity of Sapatgram

1.3.3. Brief history of the town and surrounding

Sapatgram is an ancient human habitation. Originally Sapatgram belonged to the ancient Koch Hajo (1581-1616) Kingdom under Raghudev and his son Parikshit Narayan of the Koch dynasty that stretched from Sankosh river in the west to the Bhareli river in the east on the north bank of River Brahmaputra. It was created by dividing the Kamata Kingdom then under Nara Narayana in medieval Assam. The western boundary, the Sankosh river, is roughly the boundary between the present-day Assam and West Bengal. The western portion of the Kamata Kingdom came to be called Koch Bihar. The name Hajo comes from a legendary king Hajo the Koch, an ancestor of the Koch dynasty, who ruled over the Rangpur district in present-day Bangladesh and some regions of Assam. In 1602, the Nawab of Dhaka and a Mughal governor moved by Lakshmi Narayan (ruler of Koch Bihar) and others attacked Parikshit Narayan, the ruler of Koch Hajo. Parikshit was defeated at Dhubri in 1614. The Mughals then appointed Kabisekhar as the kanungo and instructed Sheikh Ibrahim Karori to set up a Mughal system of administration. The Mughals appointed Bijit Narayan, son of Parikshit Narayan, as the zamindar of the region between river Sankosh and Manas. And he became the founder of the Bijni branch of the Koch royal family which finally settled in Abhayapuri. Sapatgram on the Sonkosh became a part of two estates Bijni and Porbatjoha. The line of demarcation ran through the middle of the present township of Sapatgram. After the independence, Sapatgram came under Goalpara District which was created by the British in 8th March 1876. At present Sapatgram is a prominent town of Dhubri district which was created splitting Goalpara district in 1983. 8th March is the Birth Date of Sapatgram.



Figure 3:- History of Sapatgram

Source: - [Sapatgramwikipedia.org](https://www.sapatgramwikipedia.org)

1.4. Climate, topography, and soil condition

1.4.1. Climate

Sapatgram has a humid subtropical, dry winter climate (Classification: Cwa). The district's yearly temperature is 27.74°C (81.93°F) and it is 1.77% higher than India's averages. Sapatgram typically receives about 83.15 millimetres (3.27 inches) of precipitation and has 47.1 rainy days (12.9% of the time) annually.

Table 2:- Climate of the Sapatgram

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	28.0 (82.4)	31.0 (87.8)	37.0 (98.6)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	38.0 (100.4)	39.0 (102.2)	38.0 (100.4)	35.0 (95.0)	32.0 (89.6)	29.0 (84.2)	39.0 (102.2)
Average high °C (°F)	24.33 (75.79)	27.19 (80.94)	32.11 (89.8)	33.84 (92.91)	32.78 (91.0)	33.22 (91.8)	31.76 (89.17)	33.58 (92.44)	31.82 (89.28)	30.63 (87.13)	27.96 (82.33)	24.75 (76.55)	30.33 (86.59)
Daily mean °C (°F)	21.33 (70.39)	24.11 (75.4)	28.98 (84.16)	30.79 (87.42)	30.04 (86.07)	31.14 (88.05)	30.1 (86.18)	31.56 (88.81)	29.88 (85.78)	28.11 (82.6)	25.08 (77.14)	21.75 (71.15)	27.74 (81.93)
Average low °C (°F)	15.86 (60.55)	18.11 (64.6)	21.85 (71.33)	24.0 (75.2)	24.37 (75.87)	26.62 (79.92)	26.48 (79.66)	27.35 (81.23)	26.18 (79.12)	23.4 (74.12)	19.68 (67.42)	16.39 (61.5)	22.52 (72.54)
Record low °C (°F)	12.0 (53.6)	15.0 (59.0)	15.0 (59.0)	20.0 (68.0)	17.0 (62.6)	23.0 (73.4)	19.0 (66.2)	25.0 (77.0)	22.0 (71.6)	20.0 (68.0)	16.0 (60.8)	12.0 (53.6)	12.0 (53.6)
Average precipitation mm (inches)	1.55 (0.06)	7.86 (0.31)	5.89 (0.23)	46.25 (1.82)	149.08 (5.87)	197.5 (7.78)	274.35 (10.8)	122.49 (4.82)	152.05 (5.99)	37.11 (1.46)	1.71 (0.07)	1.93 (0.08)	83.15 (3.27)
Average precipitation days (≥ 1.0 mm)	0.45	1.0	1.0	4.55	7.09	7.0	7.82	7.0	6.82	3.55	0.73	0.09	3.92
Average relative humidity (%)	53.45	48.79	39.4	50.23	68.83	74.83	79.99	74.15	77.76	73.97	68.24	60.86	64.21
Mean monthly sunshine hours	8.49	9.18	11.45	11.05	12.13	12.1	11.41	11.31	9.47	10.46	10.81	8.6	10.54

Source: - Weather&climate.org



Source: - Weather&climate.org

Figure 4:- Sapatgram temperature by month

1.4.2. Topography

The topography of this area is heterogeneous comprising small hillocks strewn within plain areas and low-lying river plains that are locally called as beels or haors.

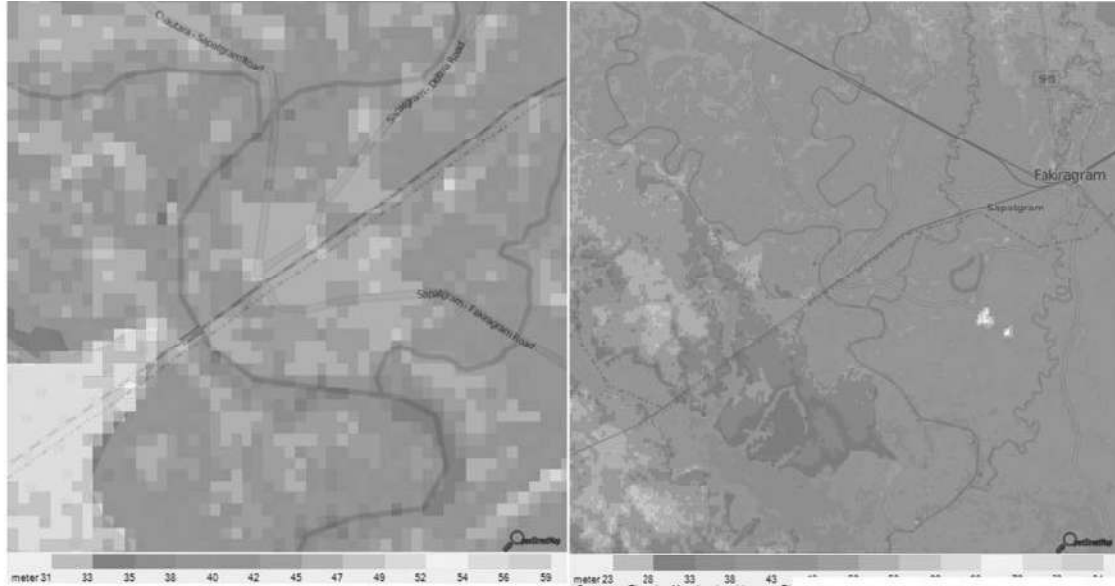
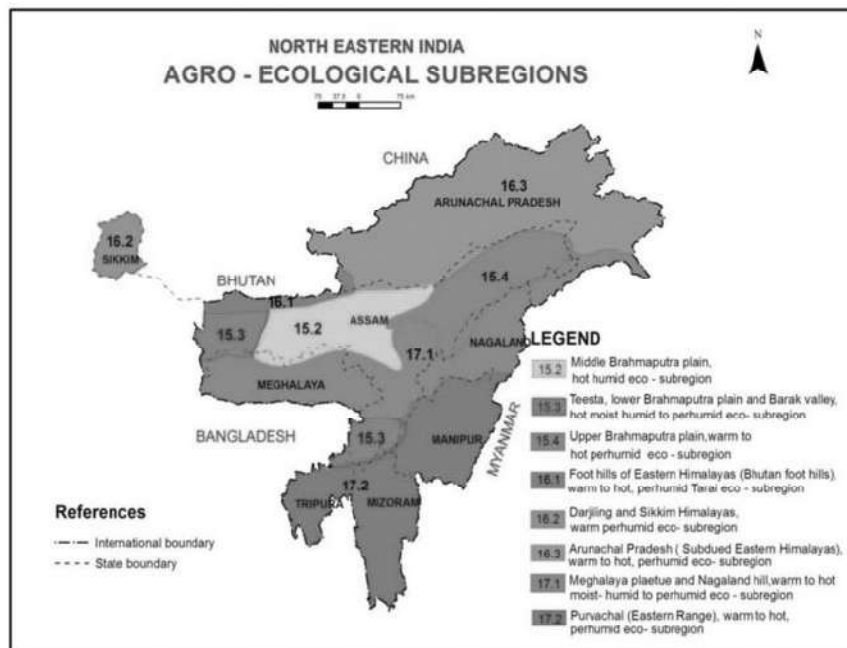


Figure 5:- Topography

Source: - Weatheratlas.org

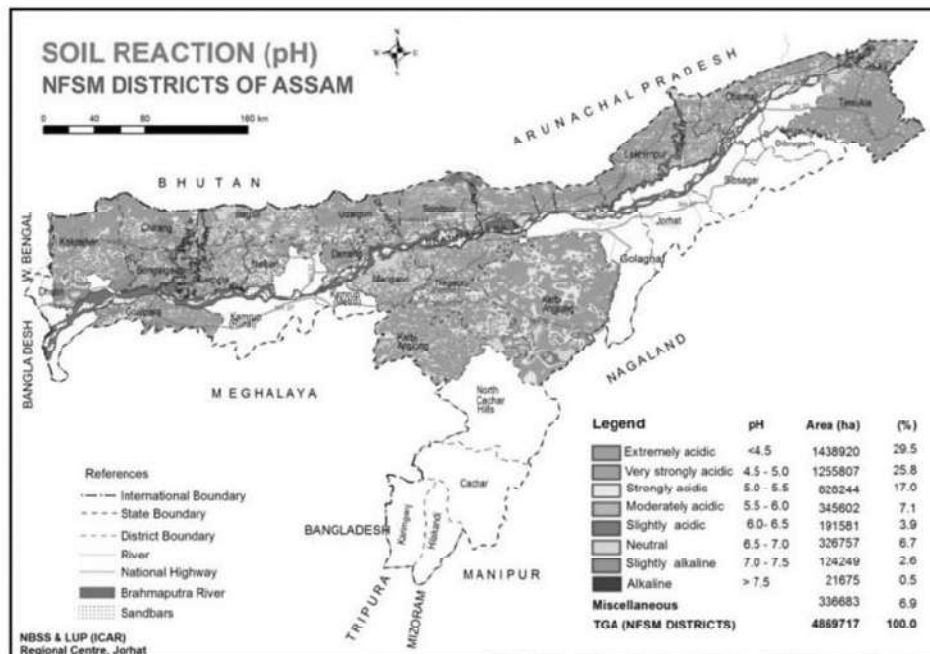
1.4.3. Soil condition

The planning area is mainly consisting of fertile alluvial soil. The general characteristic of the soil is acidic. There has been no major discovery of mineral deposits in the district as per survey conducted by the Department of Geology and Mining.



Source: - (SILADITYA BANDYPADHYAY, 2016)

Figure 6:- Agro-ecological sub-regions of North Eastern states of India



Source: - (SILADITYA BANDYPADHYAY, 2016)

Figure 7:- Spatial distribution of soil reaction in 16 priority districts of Assam

1.5. City influence and its characteristics including settlement pattern

Preparation of Sapatgram Master Plan is an effort to evolve scientific and rational policies which will meet functional needs of the town and to satisfy the aesthetic and emotional aspirations of its citizens.

The Sapatgram Master Plan area is surrounded by Tipkai hills on the bank of river Sonkoch, Sapatgram a quaint little town had 7 timber loading Ghats on the bank of rivers Laska, Tipkai and Gangia that leads to River Sankoch. These Ghats were famous for the transportation of timber to Bengal by barges locally known as Chali via river Brahmaputra.

Settlement pattern of Master plan area can be divided into two categories i.e., rural and urban. In urban area the settlement pattern includes isolated to group housing in compact dense distribution and single storied to multi-storied buildings (own-ownership, Apartments etc.) are found. In case of rural area, the settlement pattern is mostly isolated R.C.C. / Assam type/ Bamboo- hut or others. Sanitary and drainage facilities are poor in large portion of habitable area.

Figure 9:- Growth pattern of Sapatgram town in 2010



Source: - Author Generated

Figure 8:- Growth pattern of Sapatgram town in 2022



Source: - Author Generated

1.5.1. Rural-urban scenario

Sapatgram master plan area is slowly transforming from rural dominance to urban fabric as there is slow growth in infrastructure improvement. Economic activities in the town are sluggish and consequently it could not support or justify investment in major urban infrastructure or large-scale urban project.

Sapatgram master plan covers an area of 14.32 sq. km out of this, 2.59 sq.km is urban area and 11.37 sq.km is rural area respectively. As per 2011 census urban area population is 12163 persons and rural area population is 7125 persons. So, in Sapatgram master plan area, urban population consists of 63.06% and rural area population consists of 36.94%. Since originally Sapatgram developed as a commercial and an industrial town, that is why the percentage of urban population is generally high in comparison to rural population within master plan area.

However expected transformation of this town to an international trade passage with Bangladesh and opening rail link to Bangladesh may drastically change socio economic and physical infrastructure of the Master plan.

Table 3:- Rural-Urban Scenario

Name of the Master plan area	Category of area	Area in Sq.km.	Population in 2011
Sapatgram Master plan area	Urban	2.59 sq.km	12163
	Rural	11.37 sq.km	7125
Total		14.32 sq.km	19288

Source: - Census 2011

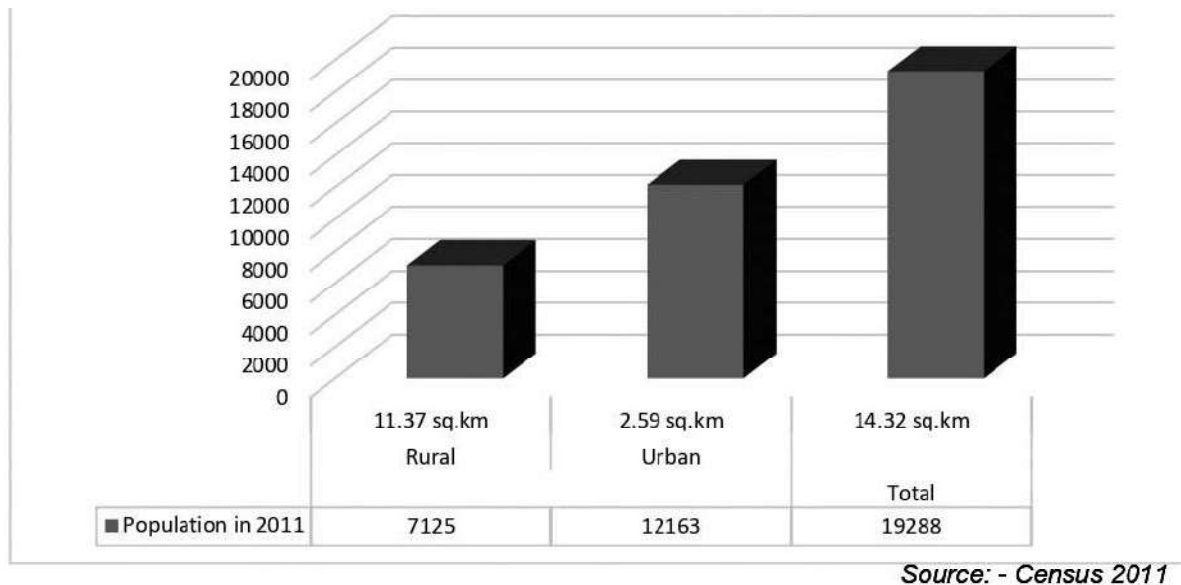


Figure 10:- Rural-Urban Scenario

1.5.2. History of the physical growth and expansion of town

A clear understanding of major city functions and their impacts on the physical growth of a city is a desirable fact. Based on the previous studies, Sapatgram town can be inferred to hold the following major functions to decide the physical growth.

- To function as a district head-quarter.
- To function as an administrative centre holding administrative entries of the district and local level.
- To function as a trade and commerce centre of the region.
- To function as an educational centre of the special order.
- To function as a transportation node being a gateway to Bilasipara.

1.6. Need for the Master Plan

The concept of planning has evolved gradually through the changing demand of man and environment, but has assumed greater significance and wider connotation from the inception of the present century. The rapid pace of industrial expansion and urbanization has fastened the growth of urban centres. The forces operating behind urban expansion in recent years is becoming more and more difficult to direct or to control. To check the unplanned and haphazard growth of the towns, the principles of planning has been accepted as urgent imperative measures.

A town is composed of land, building, people, utilities, services and transportation. It is a large configuration of more or less permanent settlers engaged in diverse economic activities. As the town grows, it attracts larger population; it enlarges the scope of their activities, while the complexity of living distorts the well-organized concept of the urban space organization.

Master plan is a statutory instrument for the provision of long-range vision for the built environment of a community. It guides the appropriate use of land within a town and its adjacent areas in order to protect the public health and safety and to promote general welfare. Among other issues, the master plan can identify suitable locations for commercial, housing and mixed-use development; locations where the city/town should increase density, use redevelopment or intervene otherwise; opportunities to extend or improve open space, recreational areas and civic facilities; strategies for increasing economic development; environmental, historic strategies for solving congestion, improving transit services and also enhance the aesthetic beauty of the town. As a result, the master plan has a direct relationship to its citizens, whether we live, work, or own a business.

The evils of unplanned growth of our towns have caused enormous problems such as shortage of living accommodation, traffic congestion, lack of sanitation and other community facilities and amenities. The growth of population and the potentiality of Sapatgram to be an industrially and commercially vibrant town soon had led the state Government to realize the importance of proper planned growth of the town and the preparation of the master plan for this purpose.

In order to translate the suggested developments for Sapatgram into action, it would be necessary to follow this master plan designed to regulate the future growth and to affect a uniform community. In preparing the master plan for Sapatgram various surveys such as land-use, socio-economic etc. were carried out to understand the existing scenario of the town and to suggest the line of actions to be adapted.

It is highly desirable at this point that the citizens of Sapatgram should clearly understand the need for the master plan because a master plan is the city/town's long range plan and is important as it affects things we do every day and how we will do then in the future. Master plan guide city /towns decisions about

important issues like what economic development strategy the city town should take; where certain types of business should the town try to attract; how much parking should be provided in neighbourhood; what improvements should be made to parks and recreations centres; how to protect our natural resources; why certain areas are designed as historic places. So, when we wonder why a building is allowed to be located somewhere, why certain streets are one-way streets, why a park has been built in our neighbourhood; a good place to start looking is the master plan. As such, the most desired results could be positive civic interest and greater confidence which will create a conducive environment and our descendants will profit by our forethought or suffer from our negligence. What better work can we achieve to make their path easier, their homes more intimate, their public buildings more attractive and accommodating.

Chapter 2: DEMOGRAPHY

2. DEMOGRAPHY

Demography is the study of human population such as size, growth, density, distribution, and vital statistics. It helps to understand population dynamics by investigating three main demographic processes in Sapatgram. It is essential that a good understanding of a population dynamics provide the basis or decision making, policy development and planning social and economic development processes and outcomes are depends upon the detailed study of population characterized of any planning area.

2.1. Total population, M/F population, Population growth rate, population density, sex ratio, literacy (Total, Male, Female, rate), working population and non-working, population, SC-ST Population, etc.

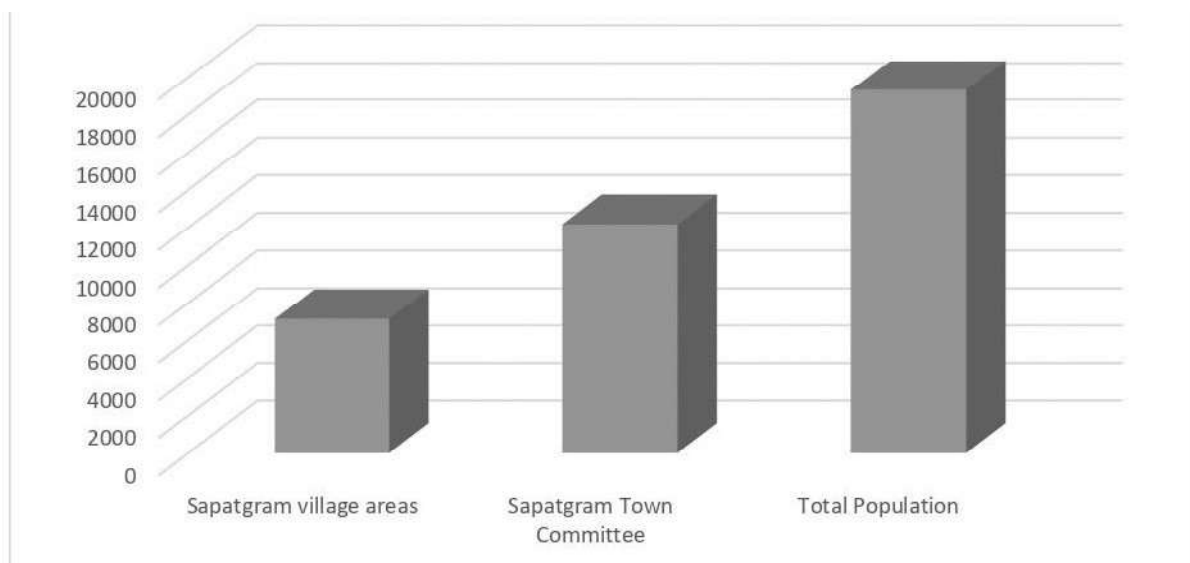
2.1.1. Total population

According to census of India 2011, the total population of Sapatgram master plan area is 19288 persons, out of which 12163 persons live within the Sapatgram town committee and 7125 persons live in rural areas of the town. The following table shows the population distribution within the Sapatgram master plan area.

Table 4:- Population distribution

Sl. No.	Master Plan area	Population (2011)	Percentage (%)
1.	Sapatgram Town Committee	12163	63.06%
2.	Sapatgram village areas	7125	36.94%
Total Population		19288	100%

Source: - Census 2011



Source: - Census 2011

Figure 11: Population distribution

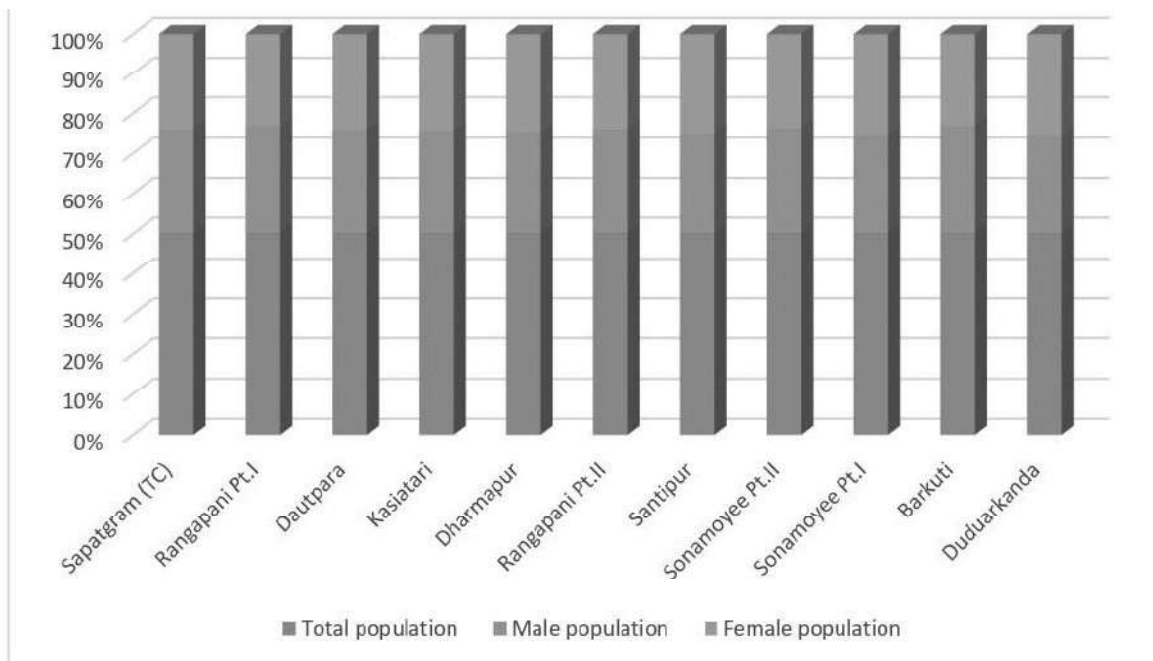
2.1.2. Male/Female population

Out of a total population of 19288 persons in Sapatgram town in 2011 the male population is 9956 and female population is 9332. Out of which 6297 male population and 5866 female population is in Sapatgram town committee and 3659 male population and 3466 female population is in Sapatgram Village.

Table 5:- Male/female population

Name	Total population	Male population	Female population
Sapatgram (TC)	12163	6297	5866
RangapaniPt. I	956	513	443
Dautpara	532	275	257
Kasiatari	257	132	125
Dharmapur	1163	587	576
RangapaniPt.II	1270	663	607
Santipur	542	271	271
SonamoyeePt.II	460	241	219
SonamoyeePt.I	621	306	315
Barkuti	398	214	184
Duduarkanda	926	457	469

Source: - Census 2011



Source: - Census 2011

Figure 12:- Male/female population

2.1.3. Population growth rate

The purpose to provide facilities and services in community is to meet the physical, economic and social needs of the people. It is a study and understanding of the growth, distribution, composition and other characteristics of the population and trend are therefore the basic requirement for the wider range planning programmes. The objective of the master plan for Sapatgram is to cater to the various needs emerging from these studies in order to meet the aspirations of its residents for whom the plan is prepared. Population growth rate of the master plan area is 17.7% per decade.

Table 6:- Population growth rate

Year	Sapatgram	Growth rate	Dhubri	Growth rate	Assam	Growth rate	India	Growth rate
1991	17793	—	133247	—	2241432	—	83,85,83,988	—
			5		2			
2001	18247	0.02	156639	17.55	2665552	18.92	1,02,87,37,43	21.5
			6		8		6	
2011	19288	0.05	194925	24.44	3120557	17.06	1,21,01,93,42	17.7
			8		6		2	

Source: - Census 2011

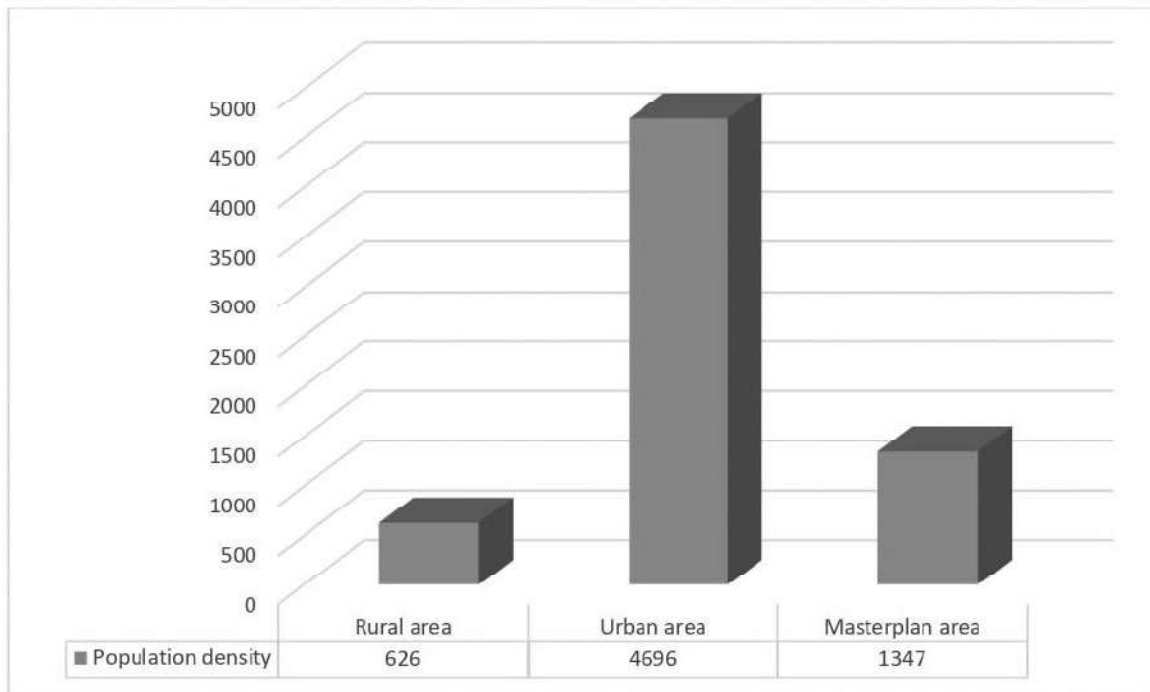
2.1.4. Population density

The net density of population in Sapatgram town committee area in 2011 is 4696 persons per sq.km. In rural area of master plan the density is 626 persons per sq.km. If we consider the master plan as a whole the density of population in 2011 is 1347 person per sq.km. in Sapatgram master plan area.

Table 7:- Comparison of population density

Rural area	Urban area	Masterplan area
626 population per sq.km	4696 population per sq.km	1347 population per sq.km

Source: - Census 2011



Source: - Census 2011

Figure 13:- Comparison of population density

2.1.5. Sex ratio

The sex ratio of population in Sapatgram town committee area in 2011 is 107 male per 100 females. In rural area of master plan the sex ratio is 105 male births per 100 females. If we consider the master plan as a whole the sex ratio of population in 2011 is 107 male births per 100 females in Sapatgram master plan area.

Table 8:- Sex ratio

Category	Rural	Urban	Masterplan area
Male population	3659	6297	9956
Female population	3466	5866	9332
Sex ratio	105 male births per 100 females	107 male births per 100 females	107 male births per 100 females

Source: - Census 2011

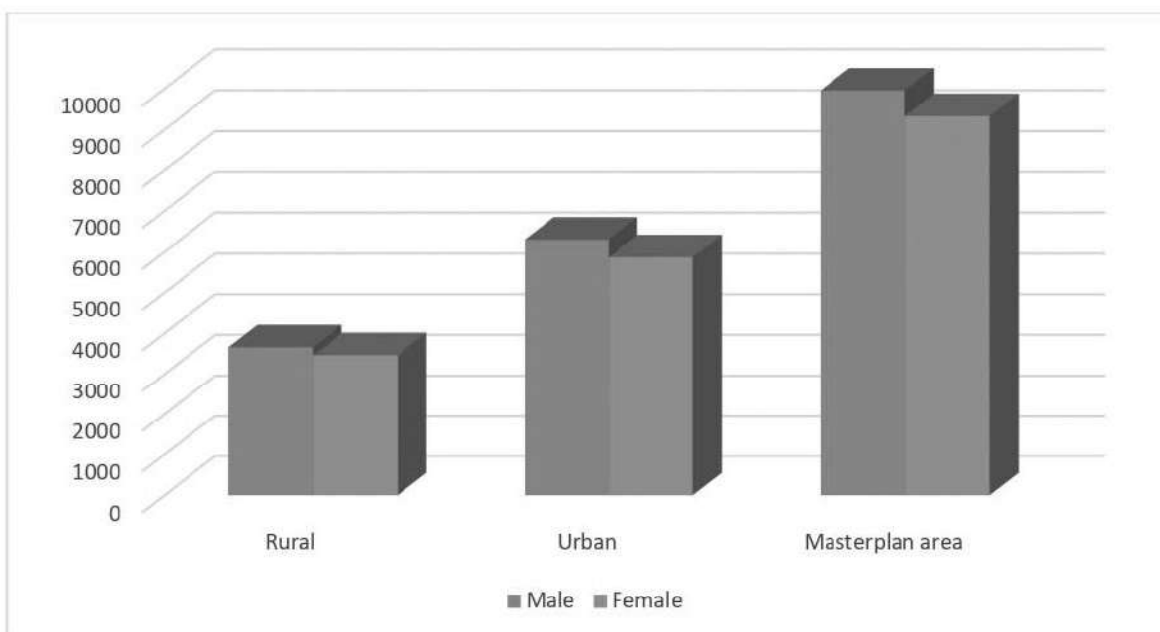


Figure 14:- Comparison of Sex ratio

Source: - Census 2011

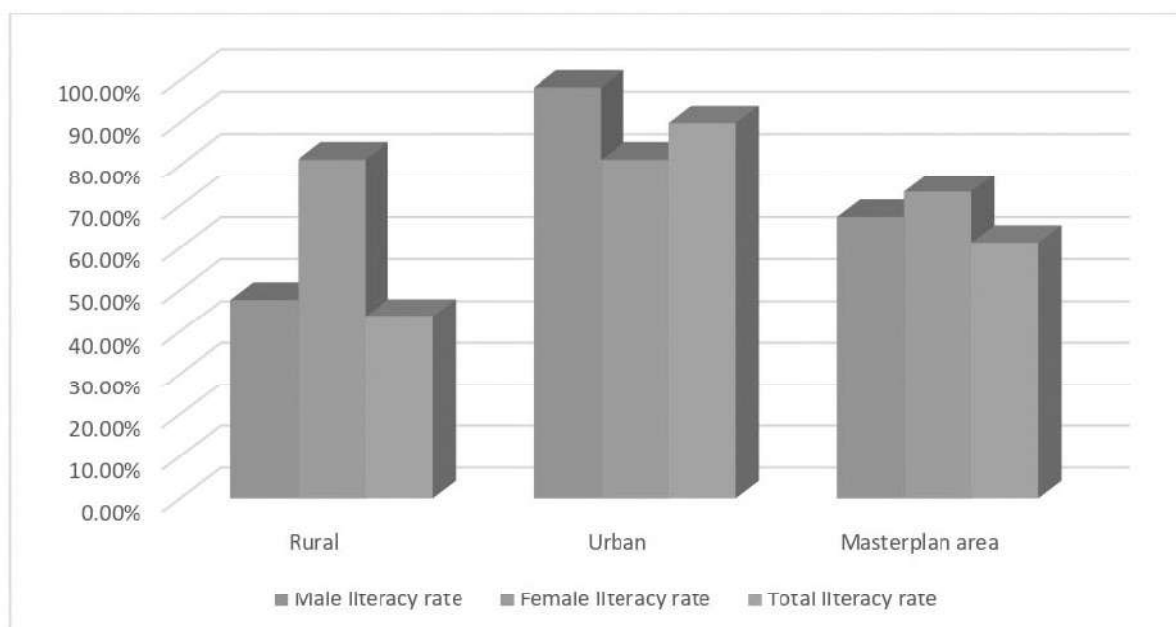
2.1.6. Literacy

The literacy rate of population in Sapatgram town committee area in 2011 is 89.83% from which 98.30% is male literacy rate and 81.33% is female literacy rate respectively. In rural area of master plan the literacy rate is 43.65% from which 47.65% is male literacy rate and 81.33% is female literacy rate respectively. If we consider the master plan as a whole the literacy rate of population in 2011 is 67.31% from which 73.32% is male literacy rate and 61.15% is female literacy rate in Sapatgram master plan area.

Table 9:- Comparison of literacy rate

Category	Male literacy rate	Female literacy rate	Total literacy rate
Rural	47.65%	81.33%	43.65%
Urban	98.30%	81.33%	89.83%
Masterplan area	67.31%	73.32%	61.15%

Source: - Census 2011



Source: - Census 2011

Figure 15:- Comparison of Literacy rate

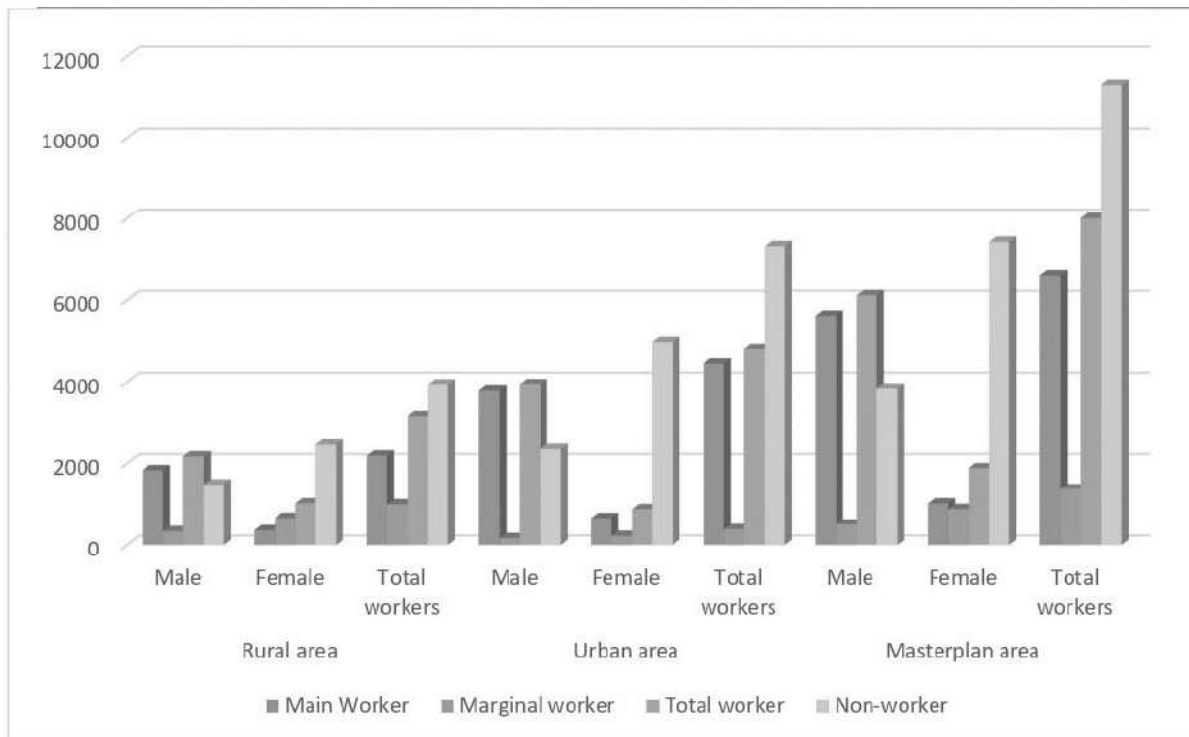
2.1.7. Working population and non-working population

Out of total population of 19,288 persons in Sapatgram master plan area the working population is 8005 persons equivalent to 41.50%. From the total working population 6119 is male working population and 1886 is female working population respectively. Out of the total working population, 6631 Persons are a main worker of which 5621 is male main workers and 1010 is female workers respectively. From the total working population, 1374 persons are marginal workers of which 498 are male workers and 876 are female workers respectively. The balance non-working population 11,238 which is 58.26% mainly consists of school-going children, women group and the unemployed section of the population who are seeking employment in white collared jobs as well as investment opportunities in business. From the total non-working population 3837 is male working population and 7446 is female working population respectively.

Table 10:- Workforce participation

Category	Rural area			Urban area			Masterplan area		
	Male	Female	Total workers	Male	Female	Total workers	Male	Female	Total workers
Main Worker	1835	356	2191	3786	654	4440	5621	1010	6631
Marginal worker	334	658	992	164	218	382	498	876	1374
Total worker	2169	1014	3183	3950	872	4822	6119	1886	8005
Non-worker	1490	2452	3942	2347	4994	7341	3837	7446	11283

Source: - Census 201



Source: - Census 2011

Figure 16:- workforce participation

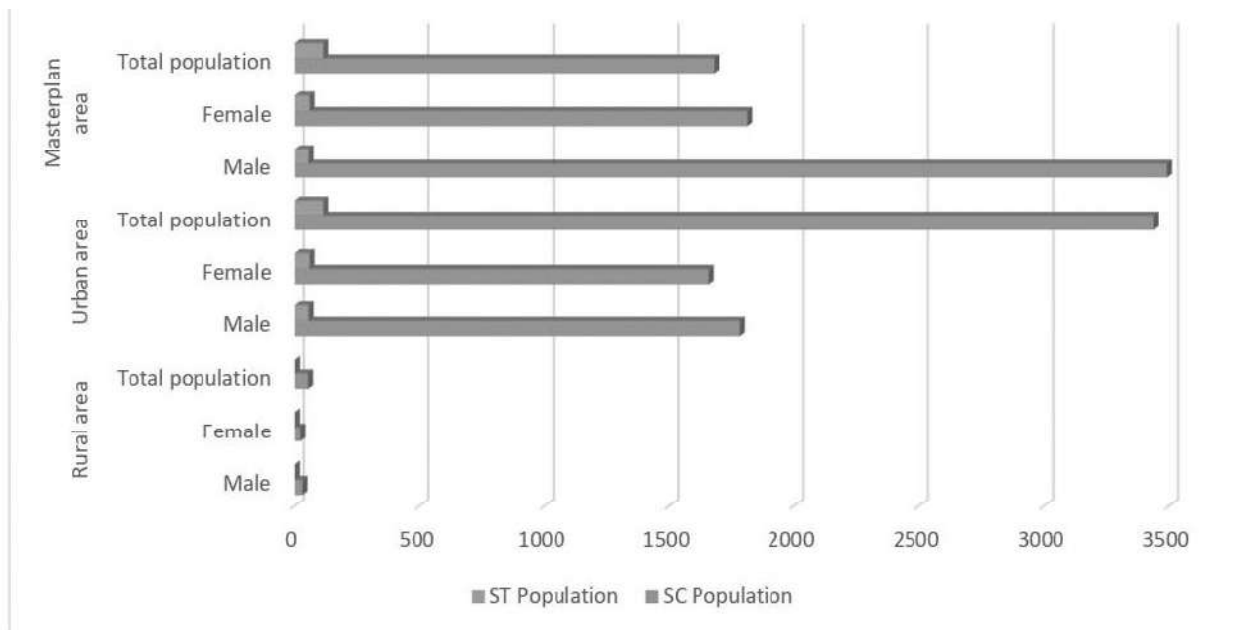
2.1.8. SC-ST Population

Out of total population of 19288 persons in Sapatgram master plan area Scheduled Caste (SC) population is 3491 persons from which 1810 is male population and 1681 is female population. Out of total population of 19288 persons in Sapatgram master plan area Scheduled Tribe (ST) population is 112 persons from which 54 is male population and 58 is female population.

Table 11:- SC-ST Population

Category	Rural area			Urban area			Master plan area		
	Male	Female	Total population	Male	Female	Total population	Male	Female	Total population
SC Population	30	22	52	1780	1659	3439	3491	1810	1681
ST Population	0	0	0	54	58	112	54	58	112

Source: - Census 2011



Source: - Census 2011

Figure 17:- SC-ST Population

2.2. Migration population

Migration into Assam is not a recent phenomenon; it is an age-old process since the British colonial period. However, it has occurred on a relatively larger scale in more recent decades particularly after 1971. The migration from the other states of India contributes significant volume of population growth in Assam. The inter-state migrant into Assam contributes about 2.39 per cent and 1.93 per cent during 1991 and 2001.

The existence of labour market, employment prospects in the destination area attracts the huge influx of migrants from the different districts of India, leading to structural disequilibrium and cultural mess-up in the region. The differential natures of migrant population from the different parts of the country lead to the modification of the original population structure of the state of Assam. It also leads to the population redistribution among the states of the country, creating tension or pressure on the land of Assam and its indigenous population.

The robust local economy of Sapatgram once attracted scores of people from other parts of the country to settle here in search of jobs and business opportunities. In addition to Assamese and various indigenous ethnic groups, the town is home to hundreds of people who migrated from undivided Bengal,

Bihar, Uttar-Pradesh, Orissa and Jharkhand to change their fortunes. Sapatgram also serves as a transit point to the adjoining rural belts and Arunachal Pradesh's landlocked areas.

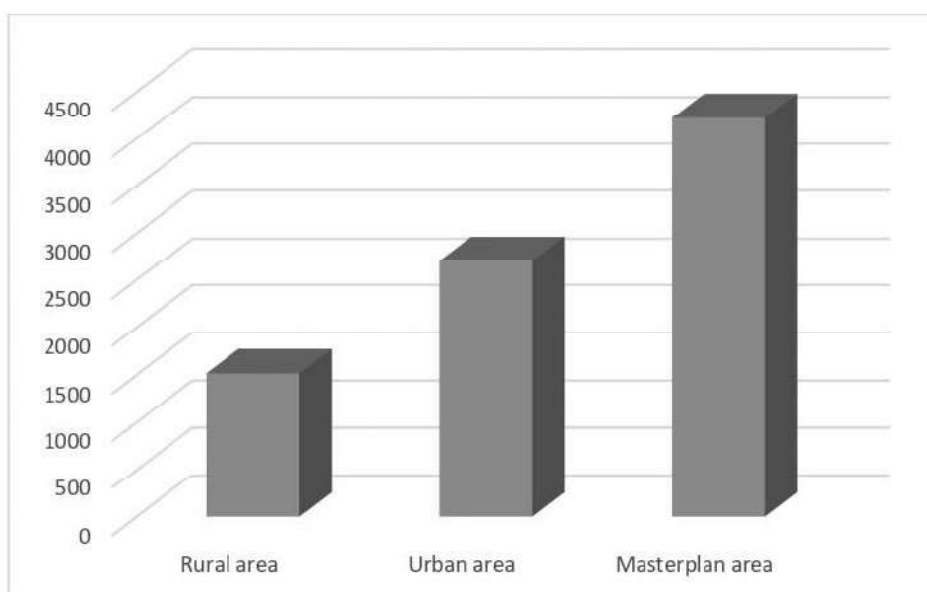
2.3. Household density and size

There are about 4227 residential houses in the year 2011 in Sapatgram master plan area. The total population of planning area is 19288 persons in 2011, as such, household size is 4.5 persons. Out of the total residential houses 2711 residential houses are in Sapatgram municipal area and 1516 residential houses are in rural areas the household size of the municipal areas and rural area are 4.4 and 4.6 respectively. Sapatgram master plan the existing land used for residential purposes is 2172515 sq.m., as such existing residential density is 112 dwelling unit per sq.m.

Table 12:- Household density & size

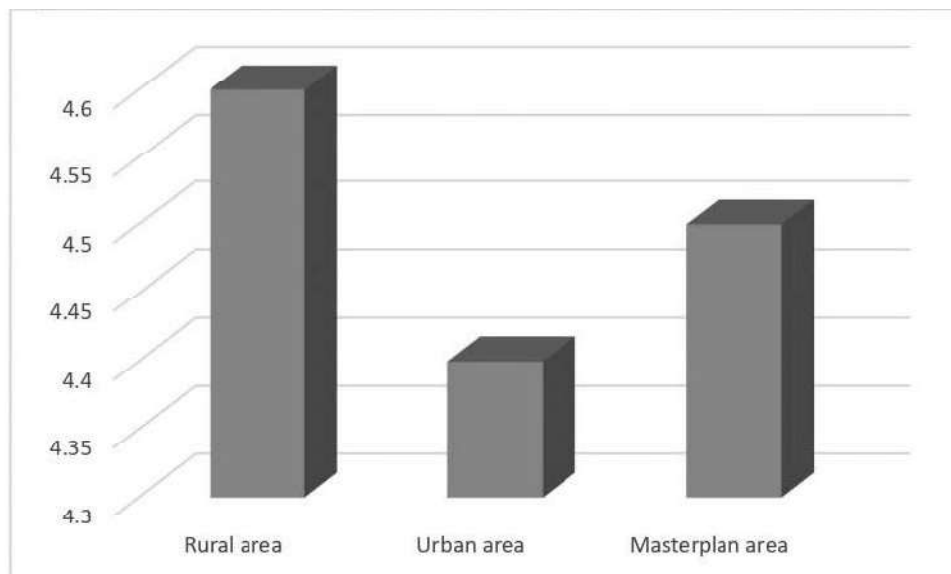
Category	No. of residential houses	Household size
Rural area	1516	4.6
Urban area	2711	4.4
Masterplan area	4227	4.5

Source: - Census 2011



Source: - Census 2011

Figure 18:- No. of residential houses



Source: - Census 2011

Figure 19:- Household size

2.4. Population projection up to 20 years

Population projection is a forecasting tool that helps to estimate the changes in population size and demographic structure. It is mandatory for the Govt. Policy makers and planners of Assam, in order to determine the future demand for basic human needs such as food, water, education, energy and services and to forecast future demographic characteristics.

The main objective is to provide or undertake activities aimed at achieving population stabilization, sustainable economic growth, social development, and environmental protection by 2041.

Population projection is a scientific attempt to keep into the future population scenario, conditioned by making certain assumptions, using data to the past available at that point of time. Assumption's used and their probability of adhering in future forms a critical input in this mathematical effort. Predicting the future course of human fertility and mortality is not easy, especially when looking beyond much further in time. Medical and health intervention strategies, food production and its equitable availability, climatic variability, socio-cultural setting, economic condition, and a host of other factors influence population dynamics, making it a somewhat unpredictable exercise. Therefore, much caution must be exercised when either making or using the population projection and the context of various conditions imposed, should not be lost sight of on the basis of past behaviour and the likely future scenario assumed.

The final population projections of Sapatgram master plan area have thus been arrived at with the entire base population of 1991 accounted for as the natural population, by adding to the natural population the increase due to the natural growth plus the increase due to emigrational flow of trade & commerce including natural increase of migrants. The following table shows the population projection up to 2041 for Sapatgram master plan area.

To arrive at a conclusive projection figure, three methods of population projections have been used for the city as well as the whole Master Plan Area. The methods used for projecting population are:

Table 13:- Population projection of Town area by different projection methods

Population Projection of Town Area by different Methods				
	YEAR	Arithmetic Progression Method	Geometric Progression Method	Incremental Increase Method
Census Population	1991	12621		
	2001	12126		
	2011	12163		
Projected Population	2021	14217	14197	16713
	2031	14749	14765	19141
	2041	15281	15355	22101

Source: - Author Generated

Table 14:- Population projection of Village area by different projection methods

Population Projection of Village Area by different Methods				
	YEAR	Arithmetic Progression Method	Geometric Progression Method	Incremental Increase Method
Census Population	1991	5178		
	2001	6121		
	2011	7125		
Projected Population	2021	8100	8354	8466
	2031	9074	9797	9684
	2041	10048	11491	10963

Source: - Author Generated

Table 15:- Population projection of Master plan area by different projection methods

Population Projection of Master Plan Area by different Methods				
	YEAR	Arithmetic Progression Method	Geometric Progression Method	Incremental Increase Method
Census Population	1991	17799		
	2001	18247		
	2011	19288		
Projected Population	2021	22317	22551	25179
	2031	23823	24562	28825
	2041	25329	26846	33064

Source: - Author Generated

Considering the three types of population projection methods, the most conservative figures have been arrived at vide the Arithmetic Progression Method, showing a population of 25329 by 2041. Since the Sapatgram town is still one of the smaller towns of Assam, with no major economic and commercial activities in the anvil, the

conservative projection figure of 25329 persons shall be considered for the purpose of planning for the horizon population.

Table 16:- Population projection

Population Projection			
Year	Town	Villages	Master Plan area
1991	12621	5178	17799
2001	12126	6121	18247
2011	12163	7125	19288
2021	14217	8100	22317
2031	14749	9074	23823
2041	15281	10048	25329

Source: - Author Generated

Chapter 3: ECONOMIC BASE & EMPLOYMENT

3. ECONOMIC BASE & EMPLOYMENT

Economic Base constitutes businesses that generate employment in a community or a geographical area and all the major industries within a geographic market area that provide employment opportunities essential to support the community. Information about an area's future population is incomplete without a parallel understanding of the local economy that largely shapes its future. Sapatgram is largely an agricultural town, with presence of few cottage, small and medium industries. Sapatgram falls in the alluvial plains of the Gangua river, Sankoch river and Tipkai river and thus is historically characterized by primary activities, mainly agriculture.

Table 17:- Economic activities in Sapatgram

Sectors	Economic activities	Economic activities found in Sapatgram
Primary sector	Agriculture, horticulture & forestry, Sericulture & fishing, mining, and quarrying, animal husbandry and dairy	Paddy, rice, vegetables, mustard, bamboo
Secondary sector	Manufacturing, construction, Household industries	Clay, Sculpture painting, rice mill and bamboo products
Tertiary sector	Trade, tourism, hotel & restaurants, transport storage & communication, banking, public administration, and informal sector	Sub-divisional offices, commercial banks, colleges

Source: - Author Generated

3.1. Economic base

Sapatgram town's business activity centered around timber and since the Supreme Court ban all the timber mills numbering 11 (eleven) are closed. Initially this gave rise to sudden unemployment and slump in revenue for the town but due to alternative means like wholesale trade of seasonal crops like jute, rice and mustard, people overcame the temporary depression. Sapatgram also has around 205 numbers of small and cottage industries which includes six trunk factories, eighteen wheat grinding units, six oil mills, one candle factory, nine Bidi factories, one bucket factory, one ice cream factory, four Dal moth (Eatable mixture of gram and other pulses) factories and numerous others. There is a sudden demand for commercial space since many of the people involved with timber trade have taken to retail business and wholesale trading of crops and vegetables. This town, which has been generously endowed by nature with natural elements and ingredients available at proximity, needs basically good communication

for growth of trade and industry. River Sankosh, is nearby, hence sand, stone etc. are easily available. The area is not flood prone and surrounding greenery makes it quite habitable. Sapatgram station, which presently is not operational, is likely to be opened for railway connectivity with broad gauge line within a very short time, which shall open new avenues for development. Other avenues that can be explored for development are agro-based industries, forestry products, herbal medicinal plants and cottage industries of cane and bamboo.



Figure 20:- Economic base

Source: - Author Generated

3.2. Formal sector

Sector which encompasses all jobs with normal hours and regular wages and are recognized as income sources on which taxes must be paid are known as formal sector.

The economy study gives the prospects of the town development at same time the potentiality for new economic development. It was described in introduction that town is developing as counter magnet of the regional economy. The economics of Sapatgram is based on tertiary sector that includes trade, commerce and transportation and a few Government jobs. As per 2001 census, activities related to trade, commerce and transportation comprise of 30.42% of the total employed population of the town and is going to rise with the development of the road linkage with surrounding towns and villages. Population percentage of marginal workers and non-workers are 3.98% and 69.58% respectively as per the 2001 census. A major factor, which jolted the economy of Sapatgram was the Supreme Court Ban on all timber related business as most of the people were dependent on the timber industry. This slump in economy saw a sizeable

section of people move out of the town, which is reflected in the population figures of the town. Lately people have come to terms with this setback and adapted themselves into other alternative trade and business.

3.3. Informal sector

The informal sector is that part of an economy which is neither taxed nor monitored by any form of Government. Activities of the informal economy are not included in the GNP. The informal sector makes up a significant portion of the economies in poor states like Assam as well as in the Sapatgram region. The informal sector of the Sapatgram region provides critical economic opportunities for the poor and has been expanding rapidly since the 1990s. The informal sector is largely characterised by several qualities such as easy entry, meaning anyone who wishes to join the sector can find some sort of work which will result in cash earnings, a small scale of operations and skills gained outside of a formal education. Most workers in the informal sector, even those who are self-employed or wage workers, do not have access to secure work, benefits, welfare protection or representation. The most prevalent types of work in the informal economy are household industry workers and street-vendors which are most common in the Sapatgram Master Plan area. Home based workers are more numerous while street-vendors are most visible.

Sapatgram town is the nerve centre of business & service of that area. People of nearby areas use to come here to sell their produce and to buy necessary goods for their domestic consumption. There are a few markets in Sapatgram, such as Sapatgram Bazar, Dhanhati Market, Sapatgramgoru Bazar, Daily Bazar, Bagribari Market, Matiabug market etc. These markets will not only fulfil the demand for Sapatgram and its suburbs but also supply the essential commodities to the people of border areas of Bilasipara. These markets have played an important role in the economic expansion of Sapatgram town.

3.4. Trade & Commerce

Sapatgram presently needs market space for many traders and vendors who were displaced from the timber industry and have opted for alternative business. Considering the location of a prime plot on the GNB road an RCC market with 13 numbers of shops has been proposed. Since proposed, many of the structures have become dilapidated and traders

are looking for better facilities this market will generate good response. The project is named as RCC Market for all further discussions.

Since shopping space for retail business like grocery and consumer goods is scarce compared to the demand, one more market with CGI roof is proposed at GNB road near the site of RCC market for catering to the demand of shops in the town. Although the demand of shops is quite high but keeping in mind a balanced overall growth of the entire cross section of people without affecting town committee's earnings only these markets of essential and secondary commodities are proposed. This market with CGI roof has been named as CGI Market for all further discussions. Fish markets are areas of brisk activity in the whole region as fish forms part of the regular meal for people of Assam and West Bengal. Sapatgram is no exception and its fish market is abuzz with activity since early morning till late evening. Fishermen and vendors from nearby villages come with their catch for selling at Sapatgram market, as inhabitants are mostly fish eaters. Trade of fish along-with vegetables is the backbone of economic activity for many a rural community of this region and any vision of economic growth without focus on these trades are short sighted and futile. The scheme is proposed for providing space to fish vendors and it is named as Fish Market for all further discussions.

Location near Kali Mandir is proposed for vegetable market, which shall also provide a venue for Raas festival. Serving dual purpose of vegetable market and religious-cultural hall this component of the IDSMT scheme is named as Vegetable Market for all further discussions. Vegetable, rice, pulses, mustard seeds, and jute are principal commodities of trade and vegetable business constitutes a large chunk. Fakiragram station 12 kilometres from Sapatgram is the transportation centre for commodities.

In the immediate future Sapatgram rail station is likely to be opened for broad gauge rail traffic for goods and passengers. Sapatgram town will witness a quantum jump in trade and business once the rail route is opened. Connecting roads to Sapatgram from Gossaigaon and Dhubri once improved will also contribute towards its development. The villages around Sapatgram produce large quantities of vegetables and this can be a principal term of business with proper connectivity to other towns of the region. To provide space to the traders of vegetable thereby contributing to the town committee coffers this market hall shall occasionally provide a venue for religious and cultural activities for the town.



Figure 21:- Markets in Sapatgram



Source :- Author Generated

3.5. Occupational pattern

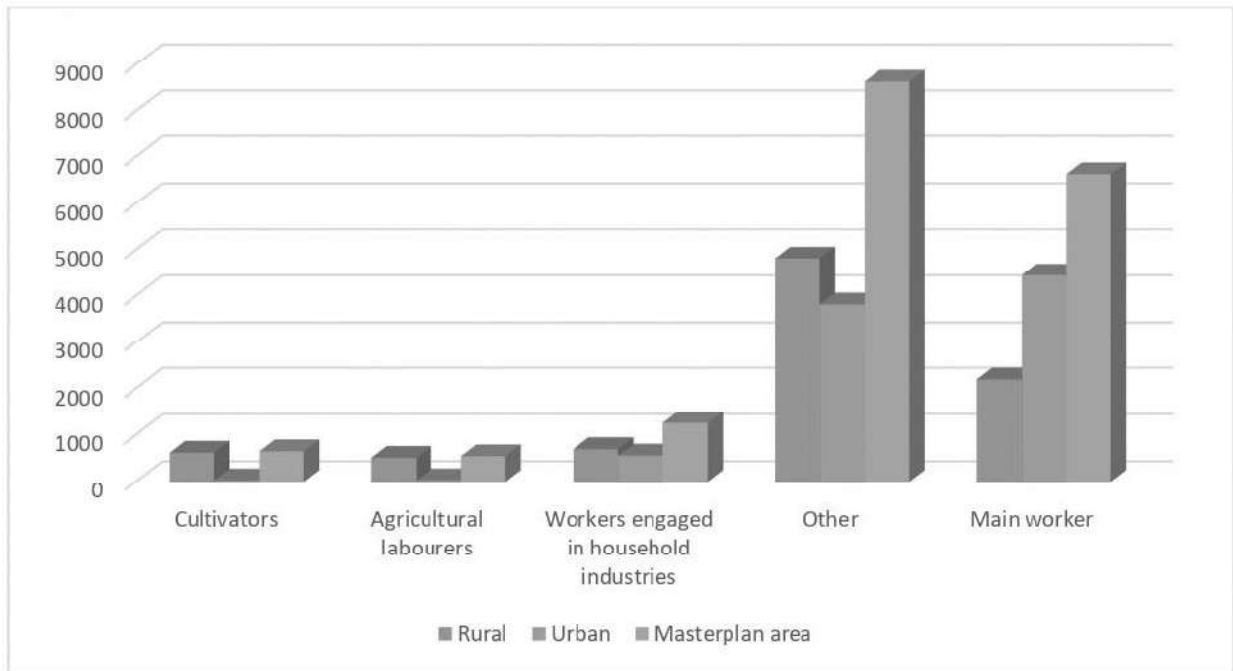
Occupational structure depicts the characteristics of employment for livelihood of the people living in a particular planning area. The engagement of people in agriculture, trade, commerce, industry and white-collar jobs etc. is known as the occupation and employment character. The percentage of working population is 39.64% for urban area and 44.67% for rural area in the year 2011. In the year 2011, in Sapatgram master plan area as a whole, the percentage of working population is 41.50% out of total population. Out of the total working population 21.04% of population are engaged with primary sector which includes any industry involved in the extraction and production of raw materials, such as farming, logging, fishing, forestry and mining, 12.50% of population are engaged with secondary sector which includes the manufacturing of goods in the economy, including the processing of materials produced by the primary sector and 66.44% of population are engaged with tertiary sector which include a wide range of activities from commerce to administration, transport, financial and real estate activities, business and personal services, education, health and social work.

Table 18:- Comparison of Main workers

Category	Cultivators	Agricultural labourers	Workers engaged in household industries	Other	Main worker
Rural	618	509	694	4810	2191
Urban	32	34	556	3818	4440

Masterplan area	650	543	1250	8628	6631
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Source: - Census 2011



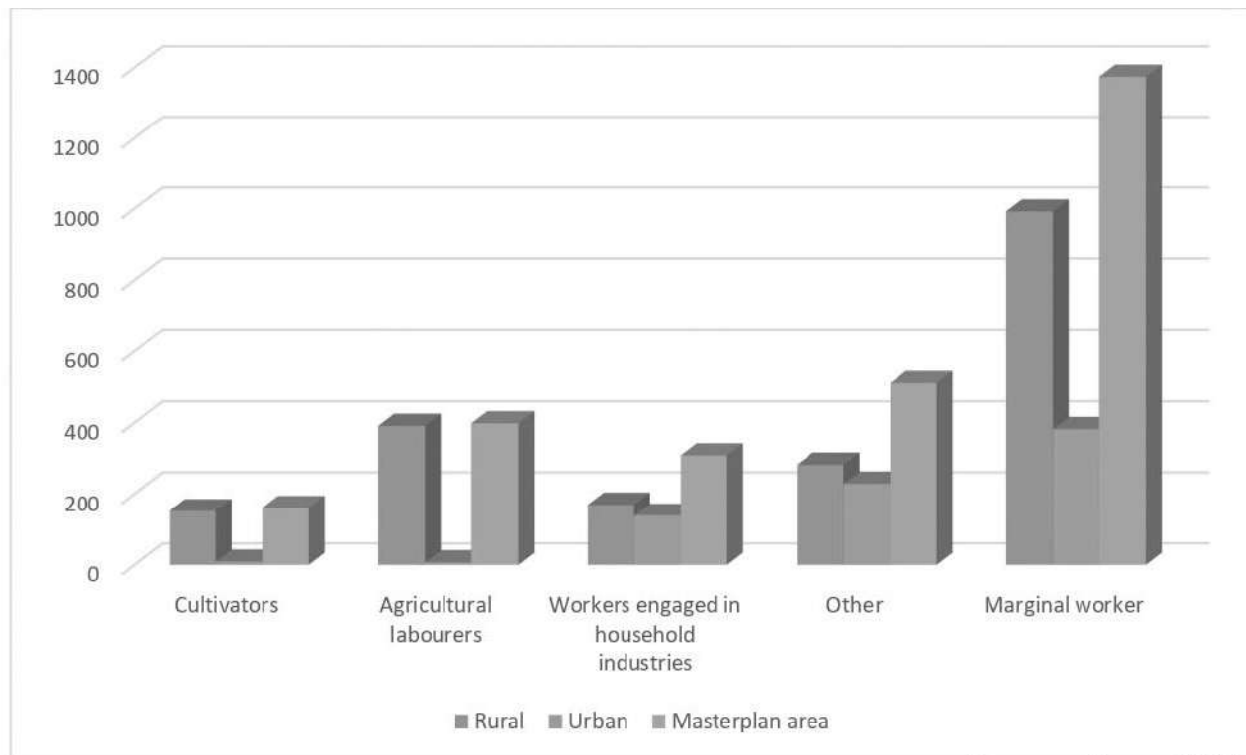
Source: - Census 2011

Figure 22:- Comparison of main workers

Table 19:- Comparison of Marginal workers

Category	Cultivators	Agricultural labourers	Workers engaged in household industries	Other	Marginal worker
Rural	151	391	169	281	992
Urban	9	7	138	228	382
Masterplan area	160	398	307	509	1374

Source: - Census 2011



Source: - Census 2011

Figure 23:- Comparison of marginal workers

The above table reveals that the number of people engaged in primary sector is higher in rural area as comparison to the urban area which is a normal phenomenon in India. The engagement of people in tertiary sector is higher in urban area than in rural area.

Sapatgram is place of scenic beauty of nature with various historical ponds and monuments and has a pleasant weather that attracts tourist to visit this place and as a result tourist sector is expanded. Expansion of micro, cottage, and service industry in the town and as well as in the outskirts of the town also generates employment opportunities. In view of the above, the question of livelihood can be separated on the following heads as mentioned below :-

- (a) Engagement in agricultural activities.
- (b) Engagement in industrial activities including micro and household industries.
- (c) Engagement in trade, commerce, and service sector.
- (d) Serving as Govt. employee & private employee.

3.6. Urban economy

The urban economy study gives the prospects of the town development at same time the potentiality for new economic development. It was described in introduction that town is developing as counter magnet of the regional economy. The economics of Sapatgram is based on tertiary sector that includes trade, commerce and transportation and a few Government jobs. As per 2001 census, activities related to trade, commerce and transportation comprise of 30.42% of the total employed population of the town and is going to rise with the development of the road linkage with surrounding towns and villages. Population percentage of marginal workers and non-workers are 3.98% and 69.58% respectively as per the 2001 census. A major factor, which jolted the economy of Sapatgram was the Supreme Court Ban on all timber related business as most of the people were dependent on the timber industry. This slump in economy saw a sizeable section of people move out of the town, which is reflected in the population figures of the town. Lately people have come to terms with this setback and adapted themselves into other alternative trade and business.

3.6.1. Issues in urban economy

- Natural growth of the population of the town.
- Trend of migration of people from rural to urban areas in this region as well as in the entire state. Impact of projects taken up in the town including infrastructure development projects.
- The lack of the infrastructure and amenity.
- Traffic and transportation problem is because of road side development and same road use for the regional connectivity.
- Need to identify the area with facility for the trading.
- Need for supporting facility like parking and use toilet, lodging and boarding etc.

Chapter 4: HOUSING AND SHELTER

4. HOUSING AND SHELTER

4.1. Housing scenario

Housing is a necessity of human beings. Despite various efforts to solve the housing problem with various policies, there is a huge gap between the supply and the demand for the housing in Assam in general and Sapatgram town in particular. A section of population in Sapatgram either have no place to live in or living under highly unhygienic, inhuman condition and deprivations. Lack of privacy, absence of minimum basic amenities, use of substandard building materials and unhygienic surroundings dominates the scene of settlements. In Sapatgram, while the housing problem in the rural areas, by and large is qualitative in nature and the problem in the urban areas is largely quantitative. The uncontrolled growth of population in urban areas due to migration and other factors have created a high magnitude of housing and infrastructure problem. Due to migration of rural population to the town, available vacant spaces in the urban areas are slowly being converted to unplanned, unhygienic built-up area. Moreover, cost of land in the urban area is also increasing. People in the low- and middle-income group even find it difficult to acquire the land at the present prevailing cost.

The housing pattern of Assam, including Sapatgram region have living habits of such a kind that is different from other states and region of the country. There is a general feeling in Sapatgram region that the basic problem is up gradation of existing units and there is very little need to be done to provide a roof for the utterly shelter less population as the category of such household is very negligible in the region.

An average household size in Sapatgram Master plan area has 4.5. The household size in urban area (4.4 members) is lower compared to rural areas (4.6 members).

It is true that development of our country is dependent on the physical and mental health of the people. People who sleep on streets or who live in unhygienic houses cannot fully develop emotionally, intellectually, economically, culturally or as a family. In fact, inadequate and insecure shelter can lead to social and political instability which eventually hampers economic development of the country.

To address this problem, Government of India introduced a new Housing scheme in 2014 namely Pradhan Mantri Awas Yojana (housing for all by 2022). If this scheme does works it would at least help to reduce India's major contribution with one of the highest homeless populations in the world. Under the **PMAY**, the main proposal was to construct 20 million homes for those people belonging to the Low Income families and Economically Weaker Sections in the identified urban and semi -urban areas by 2022. Accordingly, Sapatgram Municipal Board is also working to provide houses to the poor as per guideline.

4.2. Housing supply mechanism (self/pvt. builders & developers/Govt. housing schemes)

Housing supply is the main role of the State Government to improve living condition to the inhabitants either by directly providing houses or by financial assistance. The Government has adopted different policies to solve the housing problems especially for poor and low income group. However housing supply must address all social groups in the state including housing in urban areas, semi-urban areas and rural areas. In the recent years private building's and developer's come forward to solve the problems of housing in urban areas of the state by constructing residential apartments. Such practices are also seen in Sapatgram. In the rural areas of master plan, few houses are constructed under various centrally sponsored housing schemes. The plan recommends that State Housing Board, Development Authority should come forward to build housing colonies at Sapatgram for all sections of people of the state considering its unique scenic beauty.

4.3. Housing condition, Type of Structure, HH Facilities available, Availability of Kitchen, Latrine, Bathroom, Drainage

The Census enumerates houses on their sub-classification of 5 categories: permanent, semi-permanent, serviceable, non-serviceable and unclassifiable. The Census definition of the structures are as follows,

Permanent : Houses with wall and roof made of permanent materials. Wall can be made of Gl., Stone packed with Mortar, Stone not packed with Mortar, Metal, Asbestos sheets,

burnt bricks, Stone or Concrete. Roof can be made of Hand-made tiles, Machine made tiles, Slate, G.I., Metal, Asbestos sheets, Brick, Stone, or Concrete.

Semi-Permanent: Either wall or roof is made of permanent material while the other is made of temporary material.

Temporary: Houses with wall and roof made of temporary material. Wall can be made of Grass, Thatch, Bamboo etc., Plastic, Polythene, Mud, Unburnt brick, or Wood. Roof can be made of Grass, Thatch, Bamboo, Wood, Mud, Plastic or Polythene.

- **Serviceable temporary:** Wall is made of Mud, Un-burnt brick, or Wood.

- **Non-serviceable:** Wall is made of Grass, Thatch, Bamboo etc., Plastic or Polythene.

Unclassifiable Houses not classifiable under any of the above category. In Sapatgram, like the rest of Assam, there are 3 types of houses –

Kutch House (Temporary): A house having mud floor. bamboo wall plastered with mud and thatch roof.

Assam Type (Semi pucca/Semi permanent): A house having brick wall, cement concrete or mud flooring, CGI/AC sheet roofing. Assam type houses may have any one or more of the house components (wall, roof, floor) in non-permanent material and are thus considered semi-pucca units.

Pucca House or Permanent House: A house having cement concrete flooring, brick wall and RCC slab roofing.

Urbanization can be defined as a process which reveals itself through temporal, spatial and sectoral changes in the demographic, social, economic technological and environmental aspects of life in each society. Urbanization is a progressive concentration of population in urban unit. Urbanization is a process experienced in economically advanced as well as developing countries, cities and towns as centres of agglomeration, with fast economic growth and tertiary job opportunities. In developing countries, the rate of urbanization is very fast and it is not accompanied by industrialization but by the rapid growth of service sector in the economies. During the last three decades, rapid urbanization has been one of the most crucial socio-economic changes of our societies. As population grows more and more, people move into the cities in search of a better life, causing more housing

shortage, paucity of civic amenities leading to poverty and in the process creating bigger slums in cities.

But even where urbanization is still low, people are moving to towns and cities. The new arrivals and many long term residents too are crowded together in over populated houses, dismal tenements and teeming slums. With the growth of cities, the cost of housing and infrastructure is increasing on the one hand and lack of affordable housing facility on the other hand. These have often forced the urban poor to rely on or create their own informal infrastructure, giving way to dramatic growth of slums in urban centres.

Urbanization might also force some people to live in slums when it influences land use by transforming agriculture land into other activities and increase the land value. During the process of urbanization, some agriculture land was used for additional urban activities. That is why as urbanization grows slums also grow in India as well as Assam at a faster rate. As an observation, most of the small Indian towns are much congested and unhygienic although their effect on an individual is mitigated by the openness of the environment.

Spatagram master plan area has no slum packets.



Figure 24:- Housing types of Sapatgram

Source: - Author Generated

4.4. Housing stock, shortage and need assessment

The Housing Demand Assessment provides the background necessary to develop a comprehensive housing policy that meets the needs of current and future residents. A Housing Demand study is an analysis of the extent of the need for affordable housing in a community. The typical housing demand study has three key components:

- Current Need Analysis;
- Newly Arising Need (Demand) Analysis; and
- Supply Analysis.

Current Need Analysis The current need analysis seeks to identify households in the community that currently lack their own housing or live in inadequate housing for a variety of reasons, and cannot afford the housing they need in the local housing market without some assistance. In simple terms, the current need analysis seeks to answer the question of who in the community needs affordable housing immediately. Current housing scenario of Town and Villages in the master plan area is done below based on the existing condition of housing in 2011, followed by demand-gap analysis. For housing analysis 2011 is considered as a base year which has an average household size of 4.5 and consider that household size will remain same for horizon year.

Chapter 5: TRANSPORTATION

5. TRANSPORTATION

The circulation pattern plays a significant role on the functional efficiency of the Urban Settlement. It is important therefore to evolve an efficient circulation system. This involves movement problems in terms of circulation pattern in road inventory, traffic inventory regional and local passengers, and goods movements etc. So that suitable remedies can be evolved both in terms of short term as well as long term measures.

5.1. Road Network

The road network of the town is under-developed. The right of way in most of the roads is quite wide but few roads are bituminous. Residential areas are covered by, mostly gravel or earthen roads. The town map is organic in shape and there is a semblance of a network connecting all the wards but most of them need repairs and compaction. Roads around the market areas have become congested due to less offset of structures from the street-line and heavier pedestrian and traffic movement. There is ample scope of improvement of roads since most of the roads have adjacent vacant land and widening will not be a problem in the residential areas. Presently though the town's requirement is paving of roads on a priority basis. Since vehicular movement in the town is not very high present width of the roads is adequate.

5.2. Network of roads (NH, SH, District Roads, etc) with average road width

The road network work is the skeleton of the any urban development. Assam has a total road length of approximately 69,000 KM covering both metal and non-metal surfaces accounting for approximately 60% of the total road length in the North-east. All the major towns in the state are connected either by National Highways or State Highways.

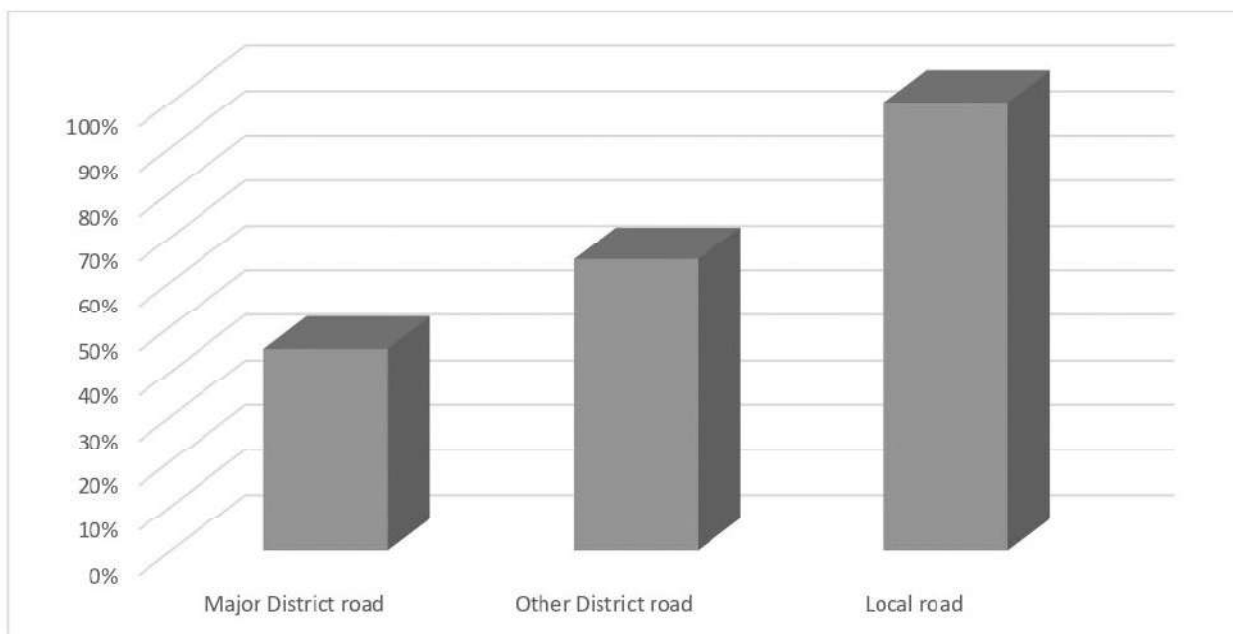
Road Other Roads network of Sapatgram is connected to several small and medium sized villages with the main roads being Sapatgram - Gossaigaon Road connecting Gossaigaon, Sapatgram Safranguri (NH-31C) and Dotoma Road connecting Kokrajhar and Bongaigaon Refinery, Sapatgram Fakiragram Road connecting Fakiragram Sapatgram Nayahaat Road connecting NH -31 for traveling to Guwahati, Dhubri and West Bengal. All these roads together with some important village roads like Sapatgram - Rangapani Road Sapatgram Balapa Road provide a reasonably developed connectivity in the region.

The study area is well connected with important cities like Nayahat, Gossaigaon, Fakirgram, Dotama and International border with Bangladesh. All these cities are well connected through road and rail services. Road infrastructure is the most important of all public assets, as they encourage economic activity between the large cities the towns and the villages they happen to connect along the way. Such connectivity enables economic activity to spread, allowing under-developed regions to catch up and drive balanced and inclusive growth.

Table 20:- Road Scenario

Roads Scenario	No. of villages	Percentage coverage
Major District Road	9	45%
Other District Road	13	65%
Local road	20	100%

Source: - Author Generated



Source: - Author Generated

Figure 25:- Percentage coverage of Road

The table and graph give the information about the various typed of road passing through the villages and their percentage. The percentage of MDR, ODR and Local Road type of road passing through the villages is very low which could be attributed to the fact that the master plan area.



Source: - Author Generated

Figure 26:- Road network (MDR/ODR)

Table 21:- Name & Type of the roads

Name of the roads	Types of the roads	Length in M
Bishnu rabha road	MDR	96
M.g. road	MDR	1281
M.g. road	MDR	799
Bishnu rabha road	MDR	418
Borkanda- sapatgram road	MDR	2819
M.g. road	MDR	456
M.g. road	MDR	338
M.g. road	MDR	332
Gopinath bordoloi road	ODR	95
Gopinath bordoloi road	ODR	402
M.g. road	ODR	438
Gopinath bordoloi road	ODR	2479
Gopinath bordoloi road	ODR	879
Lilananda ashram road	ODR	1382
Duduworkandanam mandir road	ODR	410
Duduworkandanam mandir road	ODR	1142

Duduwarkandanam mandir road	ODR	135
M.g. road	ODR	494
M.g. road	ODR	2120
Khorgeswar rai road	ODR	431
Gopinath bordoloi road	ODR	570
Gopinath bordoloi road	ODR	102
Gopinath bordoloi road	ODR	48
Gopinath bordoloi road	ODR	70
Gopinath bordoloi road	ODR	77
Duduwarkandanam mandir road	ODR	244
Duduwarkandanam mandir road	ODR	164
Dhel mandir road	ODR	906

Source: - Author Generated

5.2.1. Railways

The total route length in the state is approximately 2435 KM. Several trains directly connect the regions in Assam to New Delhi, Mumbai, Bangalore, Cochin, Tiruvananthapuram, Chennai and Kolkata. All the major towns like Tinsukia, Jorhat, Nagaon, Guwahati, Jorhat etc. are linked by railways. Several key meter gaugerail way lines are up-graded to broad gauge. The headquarters of the North East Frontier Railways (1FR) is situated at Maligaon, Guwahati. Sapatgram has a railway station. Train service from Fakirgram junction (12 KM east) to Dhubri.



Figure 27:- Railway in Sapatgram

Source: - Author Generated

5.2.2. Airways

Assam is well connected with rest of India by air. Both private and Government owned airlines operate in this sector. There are also intra-state air services which connects these six civil airports Sapatgram has no air connectivity and nearby airport is Rupsi of Sapatgram. Other major state airports are at Jorhat, Dibrugarh, Silchar, Tezpur and North Lakhimpur.

5.2.3. Waterways

At present, there is no waterway route available in the study area. The master plan area act as a straddle across the Gaurang river, Sankosh River and Laska river.

5.3. Overview of Critical roads (e.g., Road connecting major roads) and their improvement

Sapatgram Town is not directly connected to Dispur the State capital by a National Highway. Connectivity to the National Highway 27 is via Gossaigaon town and the distance is 17 Kilometers. Another approach to the National Highway 17 through Nayahat.

5.4. Bus Transport Terminals: Bus Terminus, Bus parking bays, major bus-stops, on-street parking areas and infrastructure issues

There is a Bus stand at Ward no.- 4 near railway line and 3 auto stand at ward no.- 2,5 and 6. As Sapatgram master plan area is a small town there is no need for truck terminus. Development of existing Bus stand and auto stand have been proposed for the Sapatgram master plan area.

5.5. Freight zones and Logistics: Truck terminal, loading/unloading areas, Warehousing, Feeder transport services

Logistic zones are a grouping of activities related to freight distribution such as distribution centres, transportation and supporting services within a defined and often planned area. Logistics tend to agglomerate at specific locations, mainly because of the accessibility they confer, the availability of land, as well as the benefits logistics activities derive from being close to one another. There is a wide array benefits derived from improved logistics capabilities, such as increased integration of

trade and supply chains, better utilization of transport assets, more competitiveness and employment opportunities.

There is no truck terminal in town area. The loading and unloading of goods and carrier are done in whole sale market area.

5.6. Footpaths (min. 2 mtr.wide) and Bicycle tracks

Footpaths are normally designed for pedestrian for pleasant and comfortable walking. For a short distance movement, a good number of people prefer to either walk or ride a bicycle. These two means of transportation share a major portion of educational trip, work and interzonal trip etc. Footpath provided for pedestrians are either heavily encroached or remain unused as non can take the risk of walking along the footpaths with uncovered manholes and having different levels. The barrier-free environment is a distant dream. This compels the pedestrians to use the same carriage-way with other modes of transport, thereby reducing the effective carriage-way which ultimately reduces travel speed and creates traffic jam that pollutes the environment .

There is no notified cycle track in the town due to inadequate right of way of the existing road network. Exclusive lane for slow moving vehicles, pedestrians along with spaces for street vendors are also essential for overall development of a town. The hawkers and street vendors also play an important role in urban economy. The notification of vending and no vending zone by the authority is mandatory as per the provisions of the Street Vendors Act, 2014. This improves the capacity of the lanes designed for motorized vehicles and increases the safety of slow-moving vehicles and pedestrians.

The plan suggests construction of barrier-free footpath in both sides of all the roads in the town by the concerned authority to use as a walking track.

Table 22:- Footpath tracks

Road Name	Road Type	Length	Width
KHARGESWAR ROY ROAD	ODR	158	1 M
SAPATGRAM-NAYAHAT ROAD	MDR	294	1.5 M
DUDUARKANDA HIGH SCHOOL ROAD	ODR	822	1 M
NETAJI CLUB ROAD	ODR	857	1 M
MOONSUR SHOP ROAD	ODR	1750	1 M
BISHNU RABHA ROAD	MDR	2133	1.5 M
GOSSAIGAON-SAPATGRAM ROAD	MDR	2138	1.5 M
BISHNU RABHA ROAD	MDR	2448	1.5 M
SAPATGRAM-NAYAHAT ROAD	MDR	2499	1.5 M
LILANANDA ASHRAM ROAD	ODR	2751	1 M
BORKANDA-SAPATGRAM ROAD	MDR	3144	1.5 M
DUDUARKANDA HIGH SCHOOL ROAD	ODR	5152	1 M
KHARGESWAR ROY ROAD	ODR	5929	1 M
GOPINATH BORDOLOI PATH	ODR	8005	1 M

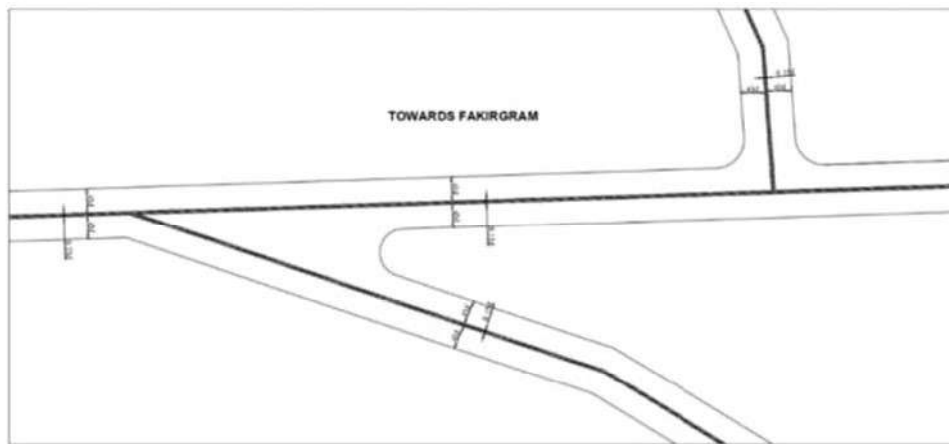
Source: - Author Generated

5.7. Areas with major traffic congestion and parking issues, accident prone area

The major traffic congestion area is towards Goshiagoan junction, towards Dhubri junction and towards Fakirgram junction in Municipal area. Accident prone areas are Settlement road where unauthorized on street parking is the major issue.

5.8. Improvement of Rotary and Junctions

Three number of important Road junctions within town area have been identified and physical features have been surveyed. These junctions are:- 1) Towards Fakirgram (MDR), 2) Towards Dhubri (MDR), 3) Towards Gossaigaon (MDR). The improvement of Rotary and junctions have been proposed and shown in below.



Source: - Author Generated

Figure 28:- Towards Fakirgram

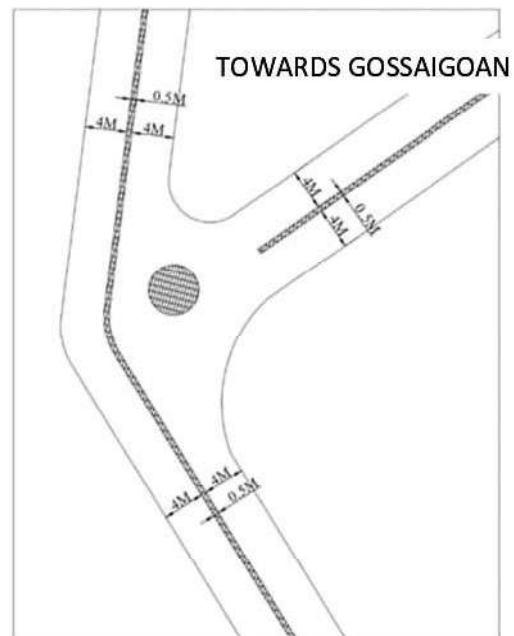
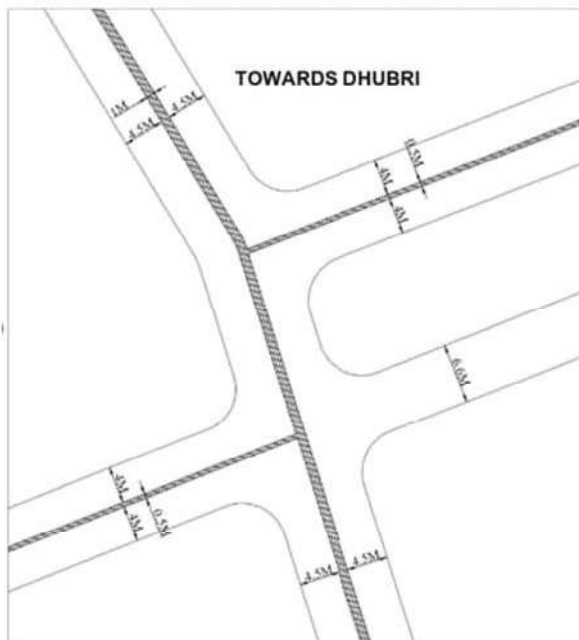


Figure 29:- Towards Dhubri&Gossiigoan

Source: - Author Generated

5.9. Signage: availability and requirements

The ULB, traffic and other concerned departments will assess the requirement of Signage and accordingly install the signage as per the rules and regulations for the beautification of the town as well as smooth flow of traffic and public convenience.

5.10. Major Proposals to be on map indicating width of road and reservation of land for the proposed road or widening of existing road

- Connections to missing road linkages all over the Master plan area except town area have been proposed and shown in proposed circulation map.
- Widening of a few vital roads of master plan for equal development on both sides, better connectivity, ease of movement and sustainable development. Roads are marked in the Circulation plan.
- Considering the scenic beauty of the town, the plan recommends plantation along the major roads and development of traffic points to augment the aesthetic beauty of the town.
- Proposed Width for the existing road in the master plan area: -

Table 23:- Proposed Width for the existing road in the master plan area

Sl.	Width of existing road	Width of proposed road
1.	Up to 3.6 m.	6.6 m.
2.	Above 3.6 to 6.6 m.	8.5 m.
3.	Above 6.6 to 8.5 m.	10.0 m.
4.	Above 8.5 to 12 m.	12.0 m.
5.	Above 12 to 15.0 m.	15.0 m.
6.	Above 15.0 m.	Same as existing width

Source: - Author Generated

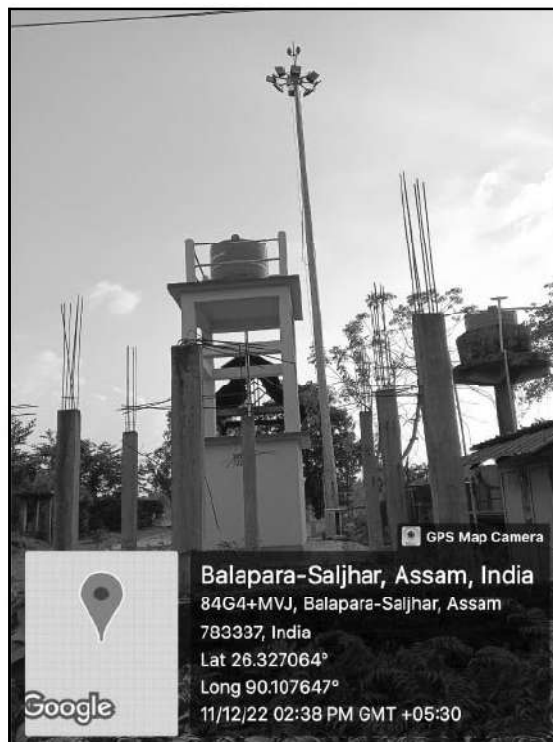
Chapter 6: INFRASTRUCTURE, PUBLIC UTILITIES & SERVICES

6. INFRASTRUCTURE, PUBLIC UTILITIES & SERVICES

6.1. Physical infrastructure: Overview of each sub-sector, current status, issues, and proposals in consultation with the Executive Engineer of D&S Division

6.1.1. Water supply

Inhabitants of Sapatgram town area are dependent on sources like ring well, hand pump, tube well and pond for supply of water. Presently, State Government has not mooted any proposal for water supply in the town.



Source: - Author Generated

Figure 30:- Water tank

6.1.2. Drainage system

Apart from around two Kilometres of brick drains in the whole town the drainage of the town is earthen in nature and needs detailed planning and improvement. Main market area and some residential areas have brick drains but due to lack of the total network these drains get clogged due to blockage in the earthen drains. The town does not have a sewerage system and most of the treatment is through septic tanks. Effluent is discharged into roadside drains.

The existing natural storm water drains are not properly defined and is slowly being encroached by the growing population. Presently road side drain Existing drainage carries the rain water. Does not have a proper slope resulting in water logging at different areas. STC has constructed some important feeder drains in the residential and market areas.



Figure 31:- Drainage system

Source: - Author Generated

6.1.3. Sewerage network

The town does not have a sewerage system. Present mode of disposal is through conventional septic tanks with soak pit arrangements in some instances. Almost all the holdings in the town have individual septic tanks. There are no dry latrines.

6.1.4. Solid waste management: current site assessment; land ownership; proposed site

Solid Waste Management (SWM) is a process which involves collecting and disposing of solid wastes is unavoidable by products of human activities. Municipal Solid Waste (MSW) in India which includes garbage, metals, bottle or glass, plastics, paper and fabric have been increasing in recent years because of population increase, rapid urbanisation, technology and improper through-way culture of people. In

general, the **MSWM** is the collection, treatment and disposal of solid waste generated by all categories of Municipal population in an environmentally, friendly and socially satisfactory manner using the available resources most efficiently. Urban bodies are generally responsible for providing the SWM services and nearly all local government laws give exclusive mandate of collecting all the wastes disposed outside homes or establishments. Effective solid waste collection and disposal is a vital component of public service provisions and should take priority particularly in emerging towns. Because, failing to have such services can result in many unfavourable outcomes in the long run and this may have serious adverse effect on public health and the environment.

The generation of solid waste has become an increasing environmental and public health problem in every urban area of India. The most urban areas of India rapid urbanisation and population growth has produced tremendous amounts of solid and liquid wastes that degrade the environment and destroy the resources. In the past, most policies and frameworks governing solid waste management in India have been directed at the service providers and less attention has been paid to the demand side aspect of the problem.

Before there was no planned solid waste management system or even a landfill site for scientific disposal of the solid waste at Sapatgram. SMB has identified a new disposal site and has moved to the authority for allotment of the land Presently SMB is collecting approximately 2 to 3 MT of solid waste with hand carts. Now there is a Solid waste processing unit at Ward no.- 8.



Figure 32:- Solid waste processing unit in Sapatgram

Source: - Author Generated

6.1.5. Electric sub-station and major transformers

The total number of electrical connections in the town is 786 out of which 154 are commercial, 32 industrial and remaining 600 are domestic. There are 344 numbers of streetlights covering all the wards.



Figure 33:- Transformers and High mast light

Source: - Author Generated

6.2. Social Infrastructure: Schools, colleges, universities, Hierarchy of hospitals and health centers, etc.

Urban amenity consists the entire supporting infrastructure available. Major amenities are education, health, and recreational facility. Other amenities are like public guest house, police and fire station, telephone, and communication services etc.

6.2.1. Education

The setup of educational institution in the town is sufficient to meet present demand. Sapatgram Amalgamated Academy (1939) is a premier institute of the region. In total, Sapatgram has 5 high schools, 1 ME and 8 LP schools besides an English medium school Sapatgram College is situated on the southern periphery of the town.



Figure 34:- Educational institutions

Source: - Author Generated

6.2.2. Hospitals

Healthcare facilities in the town are grossly inadequate with only one secondary health centre. There are ten pharmacies in the town.

6.2.3. Government Offices

Various Government offices at Sapatgram are Assam Public Works Department, Block Development Office, Forest Department, Elementary Education Office, Embankment & Drainage, Irrigation Department, BSNL, ASEB, Sales Tax and Central Excise.

6.2.4. Financial institutions

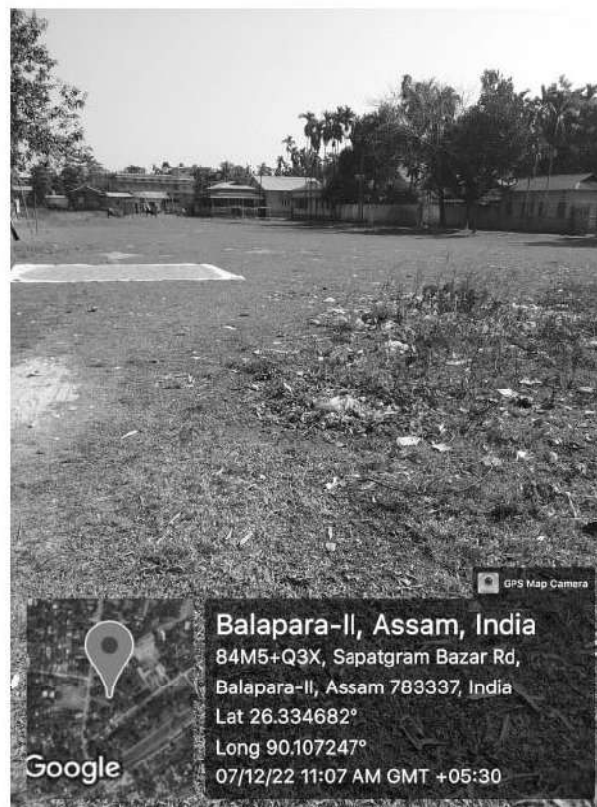
There are two banks in Sapatgram namely UCO Bank and Pragjyotish Gaolian Bank. These financial institutions not only serve the people of the town but also the surrounding areas. There is a sub-post office in the town.

6.2.5. Markets

At present Sapatgram Municipal Board has one market and two weekly Haats under its control. Sapatgram has five daily markets and one bi-weekly market. There are 881 registered shops under SMB. Together, all these markets attract people from entire region besides West Bengal.

6.2.6. Play ground

Culturally vibrant Sapatgram has one each of children Park, Children's Theatre, and a meeting hall of Goalpara Timber Traders, Sapatgram branch besides Ram Krishna Mission. There are six playgrounds in the town. Sapatgram town has a considerably large percentage of open space, which will help in future planning. The town has five numbers of playgrounds.



Source: - Author Generated

Figure 35:- Playground

6.2.7. Telephone Exchange

Sapatgram has one telephone exchange.

6.2.8. Cremation and Burial Grounds

There are 3 cremation grounds and a burial ground that are sufficient to meet the present requirements of the town.



Figure 36:- Cremation ground

Source: - Author Generated

6.2.9. Issues in social infrastructure

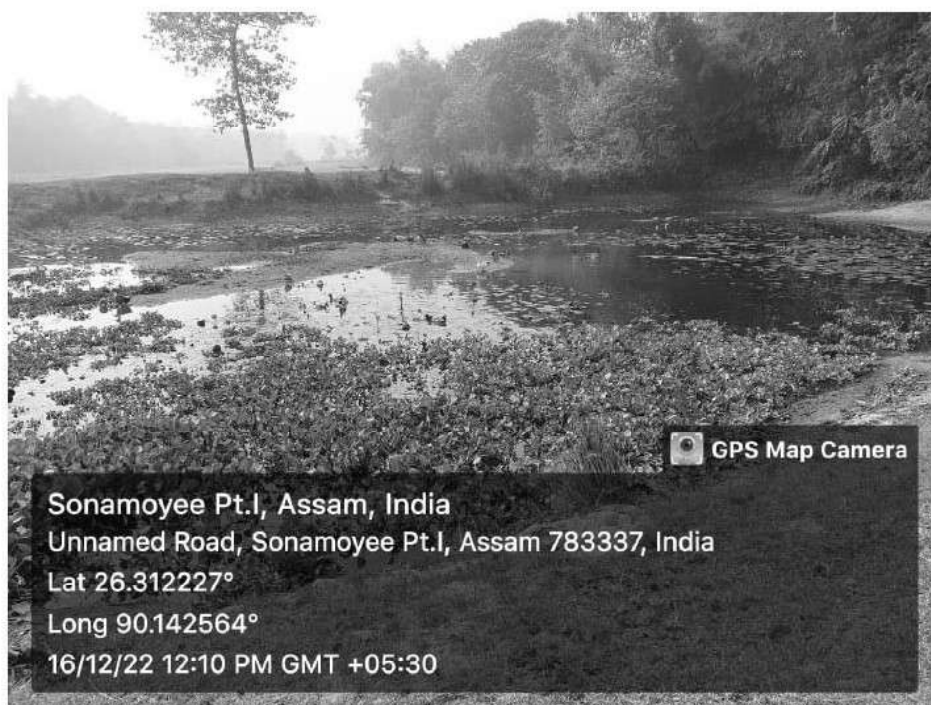
- Health facility to be improved and up-gradation required.
- Common facility like pay and use public toilet at the market area.
- The need of recreational spaces with maintained infrastructure.
- Provision of the road side parking spaces with pay any use basis.
- Small community spaces for the social interaction at all ward level and at all the major roadside.
- Need of senior citizen activity centre.

Chapter 7: ENVIRONMENT AND CITY BEAUTIFICATION PLAN

7. ENVIRONMENT AND CITY BEAUTIFICATION PLAN

7.1. Description of eco-friendly areas like water bodies; beels; forests; and heritage areas

There are few eco-friendly water bodies within Sapatgram master plan area, around four hundred years back due to certain geo physical changes the river Sankoch that flowed on the eastern side changed its course completely and merged with river Gangia to flow on the western side of present day Sapatgram Town. Sapatgram master plan area is Surrounded by Tipkai hills on the bank of river sankoch, which is also known as tipkai river. It is the major river surrounding the entire western side of the master plan area. There are water bodies, natural lowlying depression area (beels). There is one beel on the eastern side of the master plan area called as talumalubeel. These water bodies are the natural storage basin for catchment areas within master plan boundary. There are many numbers of low lying water bodies within Master Plan area, their surroundings have been considered as Eco Zone within the Master Plan. Existing green belt areas have been marked, where all construction activities should be restricted.



Source: - Author Generated

Figure 37:- Beel

7.2. Plan/measures for protection and conservation of environmentally- friendly zones

All developmental activity in Eco zones, in the low-lying area have been proposed to be freeze. Restrictive measures on development control have been proposed through imposition of green belt zone. In addition, existing land uses in the form cultivation has been encouraged, agriculture/ paddy zone has been marked in semi urban areas in this master plan.

7.3. City Beautification Plan/ Proposals

7.3.1. Roadside plantation

The road side plantation along edge of the footpath at Major district roads (MDR) and other district roads (ODR) in town area has been proposed.

7.3.2. Urban agriculture and urban forestry

Urban agriculture is already in existence within some parts of Sapatgram town as shown in the existing land use map. Urban forestry has not been proposed in the municipal area, however as restrictive measures, green belt area has been proposed in the municipal area specially along stretches in the flood prone river bank.

Similarly urban forestry can be promoted in the Eco zones of the master plan area.

7.3.3. Public Rain Water Harvesting Scheme

In all public buildings, provisions are to be checked before giving approval to the project. In all group housing project and multi storied building if constructed, rain water harvesting system to be installed. This provision is being applied while issuing permission of multi-storeyed building and group housing project. Currently there are very few multi-storeyed buildings in Sapatgram town.

7.3.4. Development of parks and recreational spaces

Though there are non-availability of suitable developed and level ground, even then recreational centers and organized open spaces have been proposed in the land use map. There are very few play grounds within the master plan area of Sapatgram.

Therefore parks, playgrounds and recreational centres have been proposed near to residential areas and major roads to ensure good connectivity.

7.3.5. Identification and demarcation of multi-purpose open spaces for sports, cultural functions, fairs, circus etc.

Within the town area a multi-purpose open space has been proposed for sports, cultural functions, fairs, and circus. In addition to that few organized vacant spaces have been marked in the proposed land use and zoning map for future development purpose. Those areas will also serve the purpose of organizing Fairs and Circus.

7.3.6. Beautification of major transit zones (major junctions, bus depot, railway station, market zones etc)

The public transit stations, bus stands, railway stations are in serious need of improvement and beautification with adequate open space, plantation and solid waste disposal system. The improvement of roads with side drains have been proposed in this area. The Railway station area to be maintained by Railway authority and this is to be maintained as per railway norms and guidelines.

7.3.7. Road signage and street furniture

Road signages must be provided along Major district roads at every 500 mts. In other district roads, informatorily and cautions signage to be placed at appropriate locations.

The adequately raised footpath (1.5 mts width at MDR and ODR), the street lights and properly laid out road junction with rotary and divider form the important components of street furniture, which has been proposed in circulation map.

Three number of rotaries at three important road junctions within master plan area have been proposed showing appropriate lay out and dimension. The layout sare shown in proposed circulation map of the Master plan.

Chapter 8: LAND USE PLAN

8. LAND-USE PLAN

Urban growth and development are often conditioned by the natural landscape like hills, waterbodies, forests and man-made impediments like railway line, major roads & canals etc. It is also conditioned by the resources and technology employed in overcoming the impediments and constraints. Land use Distribution is defined as the spatial distribution of activities and functions in setting. The study of land use distribution is of prime importance for the understanding of a city structure and its growth pattern. The land use patterns of a town also reflect the social, economic, and other aspects of the city, land use is one of the most important planning tools related to the allocation of land for the control of physical development. Land use should be properly emphasized for the balanced development of the city and minimum friction. For the planned physical development of the city. zoning is done through which, we divide the city into various land use based on area required by them. Land use plan means the plan indicating all the zones for any of the specific dominant uses of urban functions.

This study aims to investigate the present land use patterns and the emerging issues and opportunities related to such distribution.

8.1. Developable and Non-developable area of the master plan

The developable area of the master plan includes commercial, industrial, open space, recreational, residential, public semi-public and transport. And non-developable area includes water body, agriculture, ecozone, green belt which will either be balanced or remain same to justify the proposed land use plan.

8.2. Existing land use analysis

The functional relationship among the various uses of land depicts the picture of the functional efficiency of and urban area. The inter-relationship between various categories of land use analysis is very important to formulate future policies and to evolve as systematic land use patterns.

Sapatgram master plan area mostly comprises agricultural land in the villages and residential areas within the town. There is no proper delineation of areas between different functional zones within the town. All land uses are mixed and mingled together and developed in an unplanned and uncontrolled manner. A detailed land use survey for the entire Master Plan Area was conducted to find the quantum of land use under

different categories. As per the survey, a land use table is prepared to show the land under a different category of use.

Sapatgram's master plan area is **14322622 sq. m (14.32 sq. km) or 1432.2622 hectares**. The table reveals that out of a total of **14.32 sq. km** of land, agriculture covers the highest percentage of land. The next order comes Residential which occupies 15.17% of the total area and is closely followed by open spaces or recreational spaces. The rest are all negligible percentages compared to the total land.

Table 24:- Existing land use analysis

Land Use	Area in Sqm	Area in SqKM	Area in Ha	Percentage (%) of Developed Area	Percentage (%) of Total Area
Residential	2172515	2.172515	217.2515	52.74%	15.17%
Commercial	108019	0.108019	10.8019	2.62%	0.75%
Industrial	2317	0.002317	0.2317	0.06%	0.02%
Public & Semi Public	99439	0.099439	9.9439	2.41%	0.69%
Recreational	1522261	1.522261	152.2261	36.96%	10.63%
Transportation	214641	0.214641	21.4641	5.21%	1.50%
Developed Area	4119192	4.119192	411.9192	100%	28.76%
Agriculture	6062015	6.062015	606.2015		42.32%
Ecozone	574316	0.574316	57.4316		4.01%
Green Belt	2528846	2.528846	252.8846		17.66%
Waterbody	1038256	1.038256	103.8256		7.25%
Total Area	14322625	14.322625	1432.2625		100%

Source: - Author Generated

8.3. Proposed land use pattern

The proposed land use plan has been prepared according to the URDPFI guidelines, 2015, and by taking into consideration the minimum dislocation of existing land uses with the proposal of a more organized and homogeneous settlement pattern. The proposed land-use pattern was conceptualized first according to the existing road pattern mainly the major district roads and other district roads. The existing development was also taken into consideration for the development of commercial and public semi-public areas. As per the conceptualization a proposed land use table is prepared to show the land under different category of use.

Table 25:- Proposed land use analysis

Category	Area (Sq M)	Area in Sq Km	Area in Hectares	Percentage (%) of developed area	Percentage (%) of Total area
Residential	3512663	3.512663	351.2663	63.29%	24.52%
Commercial	287815	0.287815	28.7815	5.19%	2.01%
Industrial	37843	0.037843	3.7843	0.68%	0.26%
Public & semi public	206083	0.206083	20.6083	3.71%	1.44%
Open space/recreational space	1291286	1.291286	129.1286	23.27%	9.01%
Transport	214641	0.214641	21.4641	3.87%	1.50%
Developed area	5550331	5.550331	555.0331	100.00%	38.75%
Agriculture	5029851	5.029851	502.9851		35.11%
Eco zone	574316	0.574316	57.4316		4.01%
Green belt	2132337	2.132337	213.2337		14.89%
Water body	1038256	1.038256	103.8256		7.25%
Total area	14325091	14.325091	1432.5091		100.00%

Source: - Author Generated

8.3.1. Residential uses

Residential areas are proposed to meet the deficiency of existing requirement as well as to accommodate additional population of about **25329** by 2041. These areas will be developed as self-contained unit with provision of commercial and public semi-public areas. The predominantly mixed residential areas which suffer from overcrowding and lack of amenities should however be taken for reordering. Majorly all the parts of the town area have been converted into residential areas keeping in view the future growth of population and existing land use. Land under this use thus covers about 24.52% of the total Master Plan Area.



Source: - Author Generated

Figure 38:- Residential use

8.3.2. Commercial uses

At present the commercial activities are scattered all over the Master Plan Area but mainly the major retail and whole sale shops are concentrated in the town area of Sapalgram. The road side shopping centers are however growing without parking spaces and insufficient loading and unloading yard. It is therefore, proposed to make this area more functional by providing good accessibility and parking space. Ward no 5 has a major commercial zone developed in the entire area and this ward has been earmarked as

commercial zone for future developments. Land under this use thus covers about 2.01% of the total Master Plan Area.



Figure 39:- Commercial use

Source: - Author Generated

8.3.3. Industrial uses

Industry is an important land use component which accelerates the growth of urbanization as well as to boost the urban economy. The Master Plan Area has very few scopes of development of industries. Sapatgram was mainly known for its timber related business as most of the people were dependent on the timber industry, but after the supreme ban on that sizeable section of people move out of the town, which is reflected in the population figures of the town. The centers proposed for industrial development requires special treatment by way of location, position of services and accessibility. The industrial areas proposed are well connected by proposed road system and well served by other infrastructure like power, drainage etc. The air and water pollution aspects are also fully considered while selecting location etc. Land under this use thus covers about 0.26 % of the total Master Plan Area.

8.3.4. Public and semi – public

Public and semi – public use includes a wide range of activities such as educational institution, Govt. office, health, and cultural centre etc. The Plan proposes an area of about 20.6083 hectares or 1.44 % of the total master plan area for public and semi – public uses.

8.3.5. Waterbodies

All the rivers like Sankoch, Gangia, Hel and Laska coming out of Bhutan hills flowed across plains of Parbatjoar Estate and merged with Brahmaputra. Around four hundred years back due to certain geo physical changes the river Sankoch that flowed on the eastern side changed its course completely and merged with river Gangia to flow on the western side of present day Sapatgram Town also known as tipkai river.

8.3.6. Agriculture

Activities such as crop production, animal husbandry, aquaculture, agro-forestry, and horticulture are marked as land-use areas.



Figure 40:- Agriculture

Source: - Author Generated

8.3.7. Green belt

Sapatgram master plan area is flood-prone because it is present in a low-lying area and surrounding greenery makes it quite habitable. There are huge patches of green land within the master plan area which is very beneficial for the residents of the master plan area.

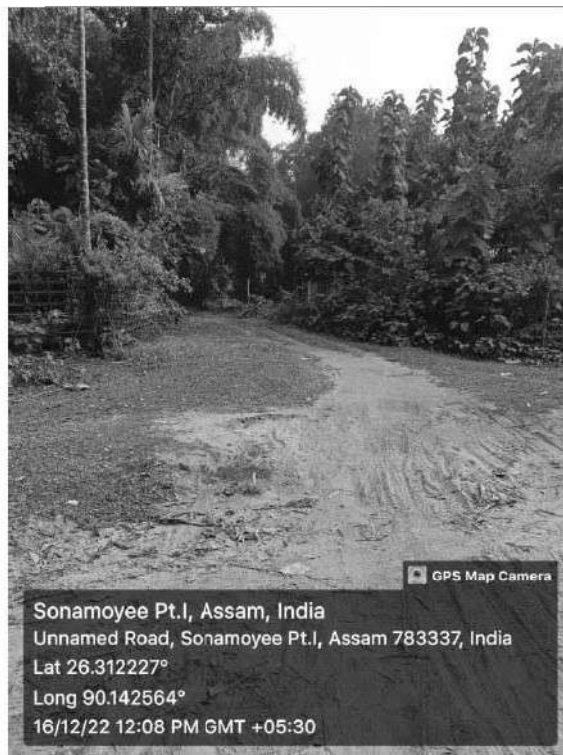


Figure 41:- Green belt

Source: - Author Generated

8.4. Comparison between existing and proposed land use in Sapatgram Master Plan Area

Table 26:- Comparison between existing and proposed land use

Landuse	EXISTING LANDUSE AREA		PROPOSED LANDUSE AREA	
	In Sqkm	Percentage (%)	In Sqkm	Percentage (%)
Residential	2.172515	15.17%	3.512663	24.52%
Commercial	0.108019	0.75%	0.287815	2.01%
Industrial	0.002317	0.02%	0.037843	0.26%
Public & semi public	0.099439	0.69%	0.206083	1.44%
Open space/recreational space	1.522261	10.63%	1.291286	9.01%
Transport	0.214641	1.50%	0.214641	1.50%
Agriculture	6.062015	42.32%	5.029851	35.11%
Eco zone	0.574316	4.01%	0.574316	4.01%
Green belt	2.528846	17.66%	2.132337	14.89%
Water body	1.038256	7.25%	1.038256	7.25%

Source: - Author Generated

8.5. Zoning Regulations

Zoning regulation play a very important role in controlling and promoting urban development on rational lines. They are also useful in limiting urban growth and in a broader sense can also be useful for laying down board directions of growth in a regional plan. Zoning Regulations form an integral part of any Master Plan. These have been used extensively to control development of urban areas. Zoning Regulations also help in controlling density of development and land use in ensuring light and ventilation standards and in providing scope for future in each zone in an orderly manner.

8.5.1. Zoning Regulations for Sapatgram Master Plan Area

8.5.1.1. Scope

- i. The Schedule lays down regulations for the use of land and building built thereon, consistent with maintaining minimum standards of density of building, protection of open spaces, sanitation, and environmental hygiene.
- ii. The zoning regulations should be read in conjunction with the zones proposed in the Master Plan.

8.5.1.2. Definitions

For the purpose of these regulations, the following definitions shall apply.

- i. Words used in the present tense shall include the future, the singular number also include the plural and the plural also the singular.
- ii. "Agriculture" includes horticulture, farming, growing of crops, fruits, vegetables, flowers, grass, fodder, trees of any kind of cultivation of soil breeding and keeping of livestock including cattle, donkeys, mules, pigs, fish poultry and bees, the use of land which is ancillary to the farming of land or any other "agricultural" purpose, but shall not include the use of any land attached to the building of the purpose of a garden to be used along with such building and "Agriculture" shall be construed accordingly.
- iii. "Authority" shall mean local, regional or any other authority appointed by the State Government, the Authority in case of Municipal Areas shall be taken to mean the Municipal Board for the area constituted under the Assam Municipal Act, 1956 (Assam Act, XV of 1957)

- iv. "Basement" shall mean the lowest floor of a building with maximum ceiling height of 2.50 with a minimum height of 1.50 metre from ground level. Basement can be used for can parking and such other uses of the building for installation of electrical equipment's, pump house etc. but not for habitation or any commercial / industrial use.
- v. "Boarding House" means a building or part of a building in which, carried on, wholly or principally the business of supply of meals to the public or a class of the public for consumption on the premises.
- vi. "Building" means any construction for whatsoever purpose and of whatsoever materials constructed and every part thereof whether used as human habitation or not and include foundation, plinth walls, chimneys, drainage work, fixed platforms, verandah, balcony or projection part of a building or anything affixed thereof or any wall enclosing or intended to enclose any land or space.
- vii. "Building of Accessory Use" means a subordinate building use of which is incidental to that of a principal building on the same plot such as garage, coal or woodshed, guard room, power installation, pump house etc.
- viii. "Building Height of" means the vertical distance measured in the case of flat rooms from the average level of the centre line of the adjoining street to the highest point of the building adjacent to the street wall and in the case of pitched roofs, up to the point where the external surface of the outer wall intersects the finished surface of sloping roof in the case of gates facing the road, the midpoint between the eaves level and the ridges Architectural features serving no other function except that of decoration shall be excluded for the taking heights. If the building does not abut on a street the height shall be measured above the level of the ground and contiguous to the building.
- ix. "Building Set Back" means the distance by which any building or structure shall be separated from the boundary lines of the plot.
- x. "Commerce" means carrying on any trade, business or profession, sale, exchange of goods of any type whatsoever and includes the running of, with a view to make profit, nursing homes, vocational educational institutions and includes hotels, restaurants, boarding house not attached to any educational institution and "Commercial" Shall be constructed accordingly.

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- xi. "Commercial Use" includes the use of any land or building or part thereof, for purposes of commerce as defined or for storage of goods, or as an office, whether attached to industry or otherwise.
- xii. "Coverage" is the percentage ration of the plinth area of the main and necessary building to the total area of plot.
- xiii. "Customary Home Occupation" means occupation other than that of an eating or drinking place offering services to the general public carried on by a member of the family residing on the premises and in accordance with which there is no display that will indicate from the exterior that the building utilized in whole or in part of any purpose other than that as a dwelling and in connection with which no article or service is sold or held up for sale except that produced by a member of the family residing on the premises and no mechanical equipment is used except as is customary for purely domestic or household purpose.
- xiv. "Development" means the carrying out of building engineering, mining, or other operation in, on or over the level, of making material change in the use of any building or of land: xv. Provided that the following operations or uses of land shall not be deemed for the purposes of this regulation to mean development of the land that is to says:
- a. The carrying out of works for maintenance, improvement, or other alternative of any building which effect only the interior of the building or which do not materially affect the use and the external appearance of the building.
 - b. The carrying out by a local authority of any works required for maintenance or improvement of road, works carried out on land within the boundaries of the road.
 - c. The carrying out by a local authority any woks for the purposes of inspecting repairing or renewing any sewers, main pipes, cables, or other apparatus, including the breaking open of any street or other land for that purpose.
 - d. The use of any building or other land within the cartilage of a dwelling house for any purpose incidental to the enjoyment of the dwelling house as such.
- I. "Development Scheme" means a development scheme and includes a plan together with the descriptive matter if any relating to such a scheme.
 - II. "Dwelling" means a building or a portion thereof, which is designed or used wholly or principally for residential purposes. This shall not include boarding

or rooming houses, tents, tourist camps, hotels or other structures designed or used primarily for transit residents.

- III. "Floor Area Ratio (FAR)" means the quotient obtained by dividing the total covered area (plinth area) of all floors and 100 by the area of the plot.
$$\text{FAR} = \frac{\text{Total covered area of all floors} \times 100}{\text{Total plot Area}}$$
- IV. "Green Belt Zone" means the area in the periphery of the Master Plan Area to restrict normal urban expansion.
- V. "Ground Level" means the height of the central line of the adjoining developed road.
- VI. "Hotel" means a building or part of a building used for boarding and lodging purposes.
- VII. "Industry" includes the carrying of any manufacturing process as defined in factories Act. 1948 and "Includes "shall be construed accordingly.
 - a. "Industrial Use" includes the use of any land or building or part thereof for Industry as defined.
 - b. "Industry, Clean" means industries which do not throw out any smoke, noise, offensive odour or harmful industrial wastes and employing not more than 10 workers with or without power.
 - c. "Industry, Light" means industry which do not throw out excessive smoke, noise offensive odour of harmful wastes, employing not more than 100 workers and using power of not more than 100 HF, such industries except in the case of foundries and smithies do not consume and solid fuel.
 - d. "Industries, Medium" includes industries which employ more than 100 workers and any use any kind of motive power or fuel, subject of course to noxious features. Factories which are classified as heavy industries under the Factories act, 1948, do not come under this category.
 - e. "Industry obnoxious "are those industries which are associated with such as excessive smoke, noise, vibration stench, unpleasant or injurious fumes, effluents, explosive, inflammable industries etc. and not such other which are hazardous to health and safety of the community.

- f. "Industry obnoxious" are those industries which are associated with such as excessive smoke, noise, vibration stench, unpleasant or injurious fumes, effluents, explosive, inflammable industries etc. and not such other which are hazardous to health and safety of the community.
- g. "Mezzanine" means an intermediate floor in between two main floors having maximum height of 2.20 Mtr. and minimum height of 1.80 Mtr. from the floor and having proper access to it. A mezzanine floor must not cover more than third floor area of the Ground floor.
- I. "Non-conforming building or use" includes a building, structure, or use of any land existing at the time of commencement of those regulations and which do not conform to the regulations pertaining to the zone in which it is situated.
- II. "Occupier" Includes:
- a. A tenant;
 - b. An owner in occupation of, or otherwise using his land;
 - c. A rent-free tenant of any land;
 - d. A licensee in occupation of any land, and
 - e. Any person who is liable to pay to the owner damages for the use and occupation of any land.
- III. "Open Space" means any land whether enclosed or not of which not more than one twentieth part is covered with building and whole of the remainder has been laid out as a public or used for purpose of recreation or lies waste and unoccupied.
- IV. "Owner" includes a mortgagee in possession, a person who for the time being is receiving or is entitled to receive, the rent or premium for any land whether on his own account of or on behalf or for the benefit to any other person or as an agent guardian or for any other person or for religious or charitable institution, or who would so receive the rent or premium if the land were let to a tenant, and includes the head of a Government Department, General Manager of a Railway, the Secretary or other Principal Officer of a local Authority, Statutory Authority or Company, in respect of properties under respective control.
- V. "Parking Space" means an area enclosed or unenclosed sufficient in size to store an automobile or any other conveyance together with a drive way

connecting the parking space with a street or alley and permitting ingress or egress to all such conveyances.

- VI. "Plinth" means the portion of a structure between the surface of the surrounding ground and surface of the floor, immediately above the ground.
- VII. "Plot" means a piece of land occupied or intended to occupy by a main building or use together with its accessory building and uses customary and incidental to it, including the open space required by those regulation and having frontage upon a private way that has officially being approved by competent Authority.
- VIII. "Prescribed" means prescribed by rules and regulations under the Assam Town & Country Planning Act, 1959 (as amended).
- IX. "Prescribed street Line" means the line on one or both sides of any road or street prescribed in enjoyment the master plan or by the authority showing the proposed site limits of the road or street.
- X. "Public and Semi-Public Place" means any place or building which is opened to use and of the public, whether it is used or enjoyed by the public or not, and whether the entry is regulated by any charge or not.
- XI. "Repairs" means any renovation applied to any structure which does not in any way change the specification of the structure but saves the structure from further deterioration.
- XII. "Residence" includes the use for habitation of any land or building or part thereof, includes garden, grounds, garage, stables and out houses, if any appertaining to such building and residential shall be constructed accordingly.
- XIII. "Road and Street" means any Highway, street, Pathway, Alley, Stairway, Passageway, Carriageway, foot way, Square place or bridge, whether a thoroughfare or not over which the public have a right or passage or access or have passed and had access uninterruptedly for a specified period, whether existing or proposed in any scheme and includes all bunds, channels, ditches, storm water drains, culverts , sidewalk, traffic island, roadside trees and hedges, retaining walls, trench barriers and railway, within the road line.
- XIV. "Shop Line" means shops when allowed irrespective of any zone in between the space of the prescribe street line and line drawn parallel to the street which is demarcated as shop line. The maximum depth of shop line should not be more than 6 meters.

- XV. "Site" the portion of a building included between the surface of the floor and surface of the floor next above it or if there is no floor above it, then the space between any floor and ceiling next above, it when measured, the height of a habitable basement extending at least 5 feet above ground level or a habitable attic shall be counted as storey.
- XVI. "Structure" means any combination of material including building constructed or erected the use of which requires location the ground including among other things signboards, fences and wall that are more than three feet height.
- XVII. "To Abut" means to abut on a road such that any portion of the building is on the road boundary.
- XVIII. "To construct" means to create, re-create, make material alteration.
- XIX. "To create" means construct a building for the first time or to reconstruct existing building after demolishing it according to some fresh or revised plans.
- XX. "Total Floor Area" means the area of all floors a building including habitable attics.
- XXI. "To make material alteration" means to make any modification in any existing building by way of an addition or alteration or any other change in the roof, window and door, compound, sanitary and drainage system in any respect whatsoever. Opening of a window and providing inter communication door shall not be considered as materials alteration. Similarly, modification in respect of gardening and white washing, painting. Retailing and other decorative works shall not be deemed to be material. It further includes.
- a. Conversion of building or a part thereof for human habitation as one dwelling house into more than one dwelling house and vice versa.
 - b. Conversion of a building or a part thereof suitable for human habitation into dwelling house or vice versa.
 - c. Conversion of a dwelling house or a part thereof into a shop warehouse or factory or vice versa; and
 - d. Conversion of building used or intended to be used for one purpose such as shop, warehouse, or factory etc. into one or another purpose.
- XXII. "To re-erect" means to construct for a second time or subsequent times a building or a part of building after demolishing it on the same plan as has been previously mentioned.

- XXIII. "Water course" means a natural channel or an artificial one formed by draining or diversion or a natural channel means for carrying storm water either from a single property or several properties draining thereto in combination.
- XXIV. "Warehouse" means a building, the whole or substantial part or which is used or intended to use for storage of goods whether for keeping or for sale for any similar purpose but does not include storeroom attached to, and used for the proper functioning of a shop.
- XXV. "Yard" means an open space on ground level between a building and the adjoining boundary line of the plot unoccupied and unobstructed except by encroachments or structures specifically permitted by those bylaws on the same plot with a building. All Yards measurements shall be the minimum distance between the front, rear and side yard and plot boundaries, and the nearest point of the building including enclosed and covered porches. Every part of every yard shall be accessible from every other part of the same yard.
- XXVI. "Yard Front" means a yard extending across a front of a plot between the side lines and being the minimum horizontal distance between the street line and the main building and any projection thereof other than steps, unenclosed balconies, and unenclosed porches.
- XXVII. "Yard rear" means a yard extending across the rear a plot boundary and being the minimum horizontal distance between the rear plot boundaries and the rear of the building or any other projection, other than steps, unenclosed balconies and unenclosed porches. In a corner plot rear yard shall be considered as parallel to the street upon which the plot faces and the rear yard shall be at the opposite end of the plot from the front yard.
- XXVIII. "Yard side" means a yard between the building and the side line of the plot and extending from the front line to the rear line of the plot and being the minimum horizontal distance between the said boundary line and the side of a building or any other projection other than steps.
- XXIX. The definition of the term which is not covered by this regulation shall be covered by the definition prescribed by the Assam Town and Country Planning Act and the rules framed there under.

8.5.1.3. General Regulations

- i. The requirements of these Regulation within each zone shall be the minimum requirement and shall apply uniformly to each class and each kind or structure or land except as herein and after provided.
- ii. No building, structure and land shall hereinafter be used or occupied and no building or structure or part of the building or structure or part of the building shall hereinafter be erected, re-erected, or materially altered unless in conformity with all the regulations herein specified for the zone in which it is located.
- iii. No building or any other structure shall hereafter be erected or materially altered:
 - to exceed the height
 - to accommodate or a house a greater number of families
 - to occupy a greater percentage of plot area
 - to have narrower or smaller rear yard, front yards, other open space than herein required or in any other manner contrary to provision of this regulations.

non-conforming plots, non-conforming use of land, non-conforming structure and non-conforming use of structure and premises.

- iv. Within the zones established by these regulations or amendments that may later be adopted therein, existing plot structure and use of land and structure which were lawful before regulations came in force or were, amended, but which would be.
- v. Prohibited, regulated, or restricted, under the terms of these regulations or future amendments, shall be permitted to continue until they are removed. Such uses are declared by these regulations to be incompatible with permitted uses in the zone.
 - a. A non-conforming use of a structure, non-conforming use of land, or a nonconforming use of a structure and land shall not be extended or enlarged after coming in to force of these regulations by attachment on a building premises of additional sign intended to be seen from the

premises, or by the addition of the other uses of a nature which would be prohibited generally in the zone involved.

b. Nothing in these regulations shall be deemed to require a change in the plan, construction, or designated use of any building on which actual construction was lawfully begun prior to the coming into the force of this regulation has been differently carried on. Actual construction hereby defined to include the placing of construction materials in permanent position and fastened in a permanent manner; except that where demolition or removal shall be deemed to be actual construction if work shall be diligently carried on until completion of the building involved.

c. non-conforming uses of land where, on the date of coming into force of these regulation or amendments thereto lawful use of land exists that is made no longer permissible under the terms of this regulations as enacted or amended, such use may be continued, so long as it remains otherwise lawful, subject to the following provisions: d. No such conforming use shall be enlarged, or extended to occupy a greater area of land than was occupied on the date of coming into force of those regulation or amendments thereto.

e. No such conforming use shall be moved in whole or in part to any other portion of the lot or parcel occupied by such use on the date of coming into force of these regulations or amendments thereto.

f. If any non-conforming use of land ceases for any reason for a period of more than 30 days, any subsequent use of such land shall conform to the requirements specified by these regulations for the zone in which such land is located.

g. Non-conforming structure where a lawful structure exists on the date of coming into force of these regulations or amendments thereto, that could not be built under the terms of these regulations by reasons of restrictions on area, plot coverage, height, yards or other characteristics of structure of its location on the plot, such structure may be continued so long as it remains otherwise lawful, subject to the following provisions.

- No such structure may be enlarged or altered in a way in which it is nonconforming.

- Should such structure be destroyed by any means to an extent of more than 50 percent of its replacement cost at the time of destruction, it shall not be reconstructed except in conforming with the provisions of these regulations.

- Should such a structure be moved for any reason any distance whatsoever, it shall thereafter conform to the requirements for the zones in which it is located after it is moved.

h. non-conforming uses of structure if a lawful use of a structure, or of structure and premises in combination, exist on the date thereto, of coming into force of these Regulations or amendments that would not be allowed in the zone under the terms of these regulations, the lawful use may be continued so long as it remains otherwise lawful, subject to the following provisions.

- No existing structure devoted to a use not permitted by these regulations to the zone in which it is located shall be enlarged, extended, constructed, reconstructed moved or structurally altered except in changing the use of the structure to the use permitted in the zone in which it is located;

- No such non-conforming use shall be enlarged or increased or extended to occupy a greater area of the building than occupied by use such at the time of the coming in the force of those regulations or amendments to.

- Any structure, or structure and land in combination, in which a non-conforming use is superseded by a permitted use, shall thereafter conform to the requirements of these regulations for the zone in which such structure is located, and the non-conforming use may not thereafter be resumed ; when a conforming use of a structure, or structure and premises in combination, is discontinued or abandoned for a six consecutive months or for a 18 months during any three year period, the structure and premises in combination, shall not thereafter be used except in conformance with the regulations of the zone in which it is located.

- Where non-conforming use status applies to a structure and premises in combination, removal and destruction of the structure shall eliminate the nonconforming status of the land.
- Repairs and maintenance of any building devoted in whole or in part to any non-conforming use, work may be done in any period of 12 consecutive months for ordinary repairs, or on repairs or replacement of on load bearing walls, fixtures , wiring or plumbing, to an extent for exceeding 10 percent or current replacement value of the building, provided that the cubic contents of the building as it existed at the time of coming into force of these regulations or amendments thereto shall not be increased. Nothing in these shall be deemed or prevent or strengthening or recurring to a safe condition of any building or part thereof declared to be unsafe by any official charged with protecting the public safety upon order as such official.
- Uses under exception provisions not non-conforming uses, any use for which a special exception is permitted as provided in the regulations shall not be deemed a non – conforming use, but shall without further action be deemed a conforming use, in the zones which it is permitted.
- “Accessory Use” the term accessory use shall not include:
 - o Any use on the same plot, with the use to which it is accessory, unless authorized by the Authority.
 - o Any use not customarily incident to a permitted use:
 - Any use detrimental to the neighbourhood by reason of emission of smoke, noise, odour, vibration, dust, or fume.
- Storage of more than two automobiles except on an agricultural piece of land;
- A secondary dwelling on the same plot with a main dwelling, unless each building shall have at least open space and plot size as required under these regulations;
- Advertising sign excepting signs not more than 10 sq. ft. or 0.9 sq. Mtr., in total area pertaining to the lease, sale or use of a plot or building on which they are placed. On the plot occupied by a dwelling there shall not be more than two signs with a total area of 2 sq. ft. or 0.18 meter per sign for each family house.

- Years and open spaces: o Each structure hereafter erected, re-erected, or materially altered shall be provided with the front side or rear yard as specified with zoning regulation;
- No open space of plot required for building of structure shall, during its life be occupied or counted as open space for another building of structure;
- On plot occupied by building only not exceeding 30 per cent of the rear yard may be occupied by one storied building as accessory use.
- Special type of building: Subject to the requirement of the setback from prescribed street lines and side and rear yards under the respective rules no building used for theatres, cinema hall, concert or assembly halls, stadium, building intended for religious worship, Hospital , Dispensary building, Market, Exhibition halls or Museum and other such buildings shall have an open space of not less than 25 ft. or (7.5.M) from the front boundary and 15 ft. (4.5 mtr) from the side and rear boundaries of the plot on which such the constructed.
- Visibility at Intersection in residential Zones:
 - on a corner plot in any residential zone, nothing shall be erected, placed, planted or allowed to grow in such a manner as materially to impede vision between a height two and half feet and 10 feet (0.7 M and 3 M) above the centre lines of such plot and the joining points along the said lines 20 ft. or 6.0 meter minimum from the point of the intersection.
 - Building abutting two or more streets: When a building abuts two or more street the setback from the street shall be such as if the building was fronting each such street .
- Means of access:
 - No building shall be constructed on any plot for any use where there is no means of access to such plot.
 - Notwithstanding anything prescribed in the Master Plan, the width or such access or lanes, road etc. to one individual plot or plots whether private or public shall be prescribed by the Authority.
 - The Authority may prescribe a line on one or both sides of any public or private road or street and no person shall construct, re-construct or

materially alter any portion or any part of any building or any structure on land within such prescribed street line.

- If any building or structure or part of a building or structure abutting on a public or private road or street is within such line or the street, the authority may require such building or structure to be a setback beyond such prescribed line to a distance as prescribe in this regulation whenever it is proposed.

- To build such building or structure or to take down such building or structure:

- To remove, re-construct or to make any addition to or structural alteration in any portion or such building or structure which is within such regular prescribed line of the street.

- a. When any building or structure or any part thereof within such prescribed line of the street fall or is burnt or is take down, the authority may at once take possession of portion of land within the prescribe line of the street previously occupied by the said building or structure and if necessary clear the same under the provision of the Assam Town and Country Planning Act, 1959 (as amended).

- b. Land subdivision and layout except as otherwise provided, no land will be developed or sub-divided and no layout of the land shall be prepared, altered, and executed unless in conformity with this regulation therein specified for the zones in which the land is located.

- c. Fences, walls, and hedges:

- Notwithstanding and other provisions in this regulations, Fences, Walls, and Hedges may be permitted in any required yard or long the edge of any yard provided that no fence, walls or hedge alongside or front edge of any front yard shall not be over 1.5m in height from the central line of the nearest developed road.

- Provided in Commercial zone the height of the fences, wall, hedges along the front boundary and up to 3 meters along the said boundary from the edge of the road or from the prescribed street line shall not exceed 3.0" or 0.9m.

- Provided in Industrial building or any other public building requiring special security protection, 2.7 Mtr. 9'-0" grille or wire fencing. a) Off-street parking space for motor vehicles, scooter, cycle etc.
 - Off street parking shall be provided on any plot on which any structures proposed as specified in the table-I and hereafter established and such parking space shall be provided with the adequate vehicular access to a street.
 - Each off-street parking space provided shall not be less than (2.7m x 5.4m.), (2.5m X 1m) and (2m x 0.5m) for car, scooter and cycle respectively. The area of drives, aisles and such other provisions required for adequate access shall not be counted as part of the parking space.
 - Off street parking space provided shall be not less than requirement specified in the Table –I for each type of use.
 - If a vehicle parking space required by these regulations is provided in parking areas by a group of property owners by their mutual benefit, the Board of Zoning Appeal may construe such use of this space as meeting the off-street parking requirements of these regulations.
 - If off street vehicle parking space cannot be reasonably provided in the same plot on which the principal use is conducted, the Authority may permit such space to be provided on their off-street property, provided such space lies within 400 ft or 120 meters of the main entrance to such principal use. Such vehicle parking space shall be deemed to be required open space associated with the permitted use and shall not, therefore be reduced or encroached upon in any manner Permission.
- i. Written permission for development works and Sub-division of land. No person shall use any land, Sub-divide any land, or develop any land or set up any new structure on any land, or create, re-create, or materially alter or change the existing structure of any building or land within the limit of the Master Plan Area without the written permission of the Authority, as defined in the section 13 of the Assam Town and Country Planning Act, 1959 (as amended).

ii. Manner of obtaining permission.

a. For the purpose of obtaining permission for the erection, re-erection, renovation and material alteration of any building or structure the applicant shall submit the following plans, in triplicate and documents together with a application as prescribed by the Authority.

b. A block plan of such building or structure and site, which shall be drawn to the scale of largest revenue survey maps at the time in existence for the locality and shall be shown the position and appurtenances of properties, if any, immediate adjoining streets and the means of access, Dag No, Patta No., Name of village.

c. A site plan of 1 inch to 16 ft. (1 cm to 2 metre.) scale indicating the plot boundaries, and position of the existing structure if any, line plan of the proposed structure with its location, set back, side yard, projection dimensions.

d. For special type of building such as Cinema Hall, Apartment Buildings, Nursing Home Market, Commercial Building etc. parking layout plan and service plan and service plan in detail must be submitted.

e. The detail floor plans for each floor on 1 inch to 8 ft. or 1 cm to 1 metre. scale with projection if any, showing the use of every room or portion of the building or structure and full and detail dimensions of the structure, height, plinth above and below the ground level and each floor and of roof over the staircase.

f. All the plans and sections shall be signed by the applicant.

g. Any other information, documents, required by the Authority.

iii. In case of plans pertaining erection, re-erection, renovation and material alteration of any building or structure, the Authority may either grant or refuse the approval to the plans if it is not in conformity with the Master Plan or Zoning Regulations and shall communicate its decision to the applicant giving the notice within a period of one month from the receipt of the application of such other information as may be called for by the Authority.

iv. For the purpose of obtaining permission for Sub-Division of any plot of land the applicant shall submit the following plans in triplicate together with necessary statement to the authority.

- a. A block plan of such land which shall be drawn to the scale of largest revenue survey map at the time of existence for the locality showing location of the land, boundaries of the proposed land, shown on the map and sufficient description to define the same location, name and present width of the adjacent road and lanes and major physical characteristics of the land proposed to be subdivided, including topography, the location and width of any water course and location of any areas subject to inundation or flood and North line.
- b. A plan of such land which shall be drawn to suitable scale showing the complete layout of the proposed subdivision including location and width of all the proposed streets, dimensions, uses of all plot, location of all drain's sewers and other utilities, building line permissible, and north line.
- c. A key plan drawn on a suitable scale including north line.
- d. Any other items of information which may be required by the authority from time to time.
- e. All the plans shall be signed by the applicant (the seller) and the buyer.
- v. In case of plans pertaining to subdivision of land, the Authority may either grant or refuse the approval of plans or may approve them with such modifications as it may deem fit and thereupon, shall communicate its decision to the applicant giving the notice within two months from the date of submission of the plans to the Authority.

8.6. Classifications and Establishment of Zones

The following land use zones have been prescribed for the Sapatgram Master Plan Area.

- I. Residential Zone (a) Low density
(b) Medium density
(c) High density
- II. Commercial zone
- III. Industrial zone
- IV. Public and Semi – public Zone.
- V. Recreational and open space Zone.
- VI. Green Belt Zone.
- VII. Agriculture Zone.

- VIII. Transport
- IX. Eco zone
- X. Water body zone

NOTE: - No regulation is required to be specified in these Zones, only in land use and zoning maps these zones be specified.

- i. The zone designated under 6.1 above may be further divided into sub-zones by the Authority where it deems it expedient, the designations of such sub-zones being dependent on the special use to which each such sub-zones is being utilized.
- ii. Boundaries of zones: The boundaries of each zone shall be as established in the Master Plan and a copy of the plan shall be kept on record at the official premises of the Authority. Unless otherwise shown on the Master Plan, the boundary line of the zone shall be plotting lines, the centre line of the streets or such line extended the Railway right of way lines or corporate limit lines as it exists at the time of enactments of the regulations.
- iii. All the disputes and differences with respected to the exact boundaries lines of the zones shall be referred to the Director of Town and Country planning, whose decision shall be final and binding.

8.6.1. Regulation for Different Zones

- i. Regulations for different zones regarding size of plots, minimum set back of the building or structure from the prescribed street line, minimum yard width, maximum coverages.
- ii. Regulations for different zones regarding use prohibited shall be s followings. All other use not specifically mentioned herein shall be permissible in respective zones.
- iii. Regulations For Residential Zone: Use prohibited:
 - a) Cinema Theatre
 - b) All industries not covered by Annexure I
 - c) Hospitals, Nursing Homes, and Sanatorium treating contagious disease or Rental patients
 - d) Petrol filling station having a plot area less than 1340 sq. mtr. (1 bigha)
 - e) Show room for motor vehicles and machinery

- f) Coal, wood, and timber depots
- g) Motor repairing garage
- h) Manufacturing unit using more than 5 HP and employing more than 5 persons
- i) Godowns and Warehouses
- j) Bus / Truck parking area
- k) Wholesale shops
- l) Mechanical workshop/ welding shop
- m) Industries creating noise, smoke, odour, vibration, and pollution
- n) Saw mills
- o) Dairy farming and milk processing
- p) Printing press (however, modern offset printing press etc. using less than 5 HP may be allowed)
- q) Storage of Petroleum and other inflammable materials
- r) Bakeries and confectioneries using power other than electricity
- s) Stone crusher and quarrying
- t) Storage and drying of fertilizers and pesticides
- u) Burial ground and cemetery
- v) Junk yards

i. Regulations for General Commercial Zone:

Use prohibited:

- a) Hospitals, Nursing Homes, and Sanatoria treating contagious disease or mental patient
- b) Coal, wood, and timber depots
- c) Manufacturing unit using more than 5 HP and employing more than 5 persons
- d) Wholesale godowns and warehouses
- e) Bus and truck parking area
- f) Wholesale shops
- g) Mechanical workshop / welding shop with motive power more than 15 HP
- h) Industries creating noise, smoke, odour, vibration, and pollution
- i) Saw mills

- j) Dairy farming and milk processing
- k) Printing press (however, modern offset printing press etc. using less than 5 HP may be allowed)
- l) Storage of petroleum and other inflammable materials
- m) Bakeries and confectioneries using power other than electricity
- n) Stone crusher and quarrying
- o) Storage and drying of fertilizers and pesticides
- p) Burial ground and cemetery
- q) Junk yards

ii. Regulations for wholesale commercial zone:

Uses prohibited:

- a) Hospitals and sanatoria treating contagious disease or mental patients
- b) Manufacturing unit using more than 15 HP and employing more than 15 persons
- c) Bus parking area
- d) Mechanical workshop / welding shop with motive more than 15 HP
- e) Industries creating noise, smoke, odour, vibration, and pollution
- f) Saw mills
- g) Dairy farming and milk processing
- h) Stone crusher and quarrying
- i) Burial ground and cemetery
- j) Junk yard

iii. Regulations for Light Industrial Zone Use prohibited

- a) Hospitals and Sanatoria treating contagious disease or mental patients.
- b) Mechanical workshop/ welding shop with motive power more than 75HP.
- c) Industries creating pollution.

d) Burial ground and cemetery.

iv. Regulations for medium industrial zone:

Use prohibited.

a) Sanatoria treating contagious diseases or mental patient.

b) Industries creating noise, smoke, odour, vibration and pollution.

c) Burial ground and cemetery.

Note: - Industry Department norms may be followed.

iv. Regulations For Public and Semi-Public Zone:

v. Use prohibited:

a) Cinema Theatre

b) All industries not covered by Annexure-I.

c) Sanatoria treating contagious disease

d) Petrol filling station having a plot area less than 1340Sq. Mtr. (1 Bigha)

e) Show room for motor vehicles and machinery

f) Coal, Wood, and timber depots

g) Manufacturing unit using more than 5 HP and employing more than 5 persons

h) Godowns and warehouses

i) Wholesale shops

j) Storage of building materials

k) Mechanical workshop/ welding shop with motive power more than 5 HP

l) Industries creating noise, smoke, odour, vibration and pollution

m) Saw mills

n) Dairy farming and milk processing

o) Printing press (However, modern offset printing press etc. using less than 5 HP maybe allowed)

p) Storage of petroleum and other inflammable materials

q) Bakeries and confectioneries using power other than electricity

r) Stone crusher and quarrying

s) Storage and drying of fertilizers and pesticides

t) Junk yards

vi. Regulations for recreational and open space zone:

Use prohibited:

- a) All Industries not covered by Annexure-I
- b) Hospital, Nursing homes and sanatoria treating contagious disease or mental patients
- c) Show room for motor vehicle and machineries
- d) Coal, wood, and timber depots
- e) Motor repairing garage
- f) Manufacturing unit using more than 5 HP and employing more than 5 persons.
- g) Godowns and warehouses
- h) Wholesale shops
- i) Storage of building materials
- j) Industries creating noise, smoke, odour, vibration, and pollution
- k) Saw mills
- l) Stone crusher and quarrying
- m) Storage and drying of fertilizers and pesticides

vii. Regulations for Green Belt Zone Use prohibited:

- a) All the industries other than cottage industries, Horticulture / Agriculture Industries, Dairy farming, and milk processing industries.
- b) Manufacturing unit using more than 5 HP and employing more than 5 persons.
- c) Godowns and warehouses.
- d) Wholesale shops.
- e) Mechanical workshop/ welding shop with motive power more than 5 HP.
- f) Industries creating noise, smoke, odour, vibration, and pollution.
- g) Urban Housing and residences. However, rural residence in existing villages with its normal extension is allowed with connection given in 6.2.8 (h).
- h) When any development is allowed in this zone this should be limited to 35% coverage and 100 FAR with maximum height of 4 metre with minimum plot size of 2.5 katha (567 Sq.m.)

viii. Regulations for agriculture zone:

Use prohibited:

-
- a) Cinema Theatre.
 - b) All industries not covered by Annexure-I
 - c) Show room for motor vehicle and machineries
 - d) Motor repairing garage
 - e) Manufacturing unit using more than 5 HP and employing more than 5 persons
 - f) Godowns and warehouses
 - g) Wholesale shops
 - h) Mechanical workshop/ welding shop
 - i) Industries creating noise, smoke, odour, vibration, and pollution.
 - j) Printing press
 - k) Storage of Petroleum and other inflammable materials
 - l) Tank yard 8.6.4 Exception
 - i. Exception to height yard and set back limits:
 - a) The height limitations of these regulations should not apply to churches, schools, hospitals, and other public and semi-public buildings provided that the minimum depth of front and rear yards and minimum width of the side rear required in the zone are increased by one ft. or 304.8 mm per foot or meter by which the height of such public and semi –public structure exceeds the height limits in the feet or meter prescribed for the structure other structure in the zone.
 - b) Chimneys, elevator, poles, spires, overhead water tanks and other such projections not used for human occupations are allowed to a height not more than 1.5 meter from the minimum permissible height of a building in a particular zone.
 - c) Steps, gallery or balcony, weather frame, sun breaker cornice, caves, window sills or other ornamental projection may project into any yard provided such projections are not more than 0.60 meter from plinth of a building.
 - d) In any zone, on plots less than 60 ft. or 18 meter deep, the rear yard may be reduced by 1% for each foot or 304.8 mm if the plot depth is less than 60 ft or 18 meters.

e) Notwithstanding anything contained in this regulation, the front set back in any zone can be prescribed by the Authority in pursuance of any street schemes.

f) Height of compound walls of any zone modified in these regulations shall not exceed 5.6ft. or 1.65 meter from the ground level.

ii. Group Projects:

a) In case group housing projects containing of a group of twenty or more buildings, notwithstanding anything contained in the regulations, the Authority may prescribe special requirements in harmony with the character of zone.

b) Plinth Height end finished Ground level:

c) The maximum and minimum height of plinth of any structure shall be 2'.6" or 0.75mtr. and 1'.6" or 0.45 metre. Respectively. From the nearest developed road.

d) The maximum height of finished ground level must not exceed 9" or 0.23 metre. from the nearest development road.

iii. Boundary wall / compound wall:

a) Except with the special permission of the Authority the maximum height of the compound wall shall be 1.5 cm above the centre line of the front street. Compound wall up to 2.4m height may be permitted if the top 0.9m. is of open type construction of a design to be approved by the Authority.

b) In the case of corner plot the height of the boundary wall shall be restricted to 0.75 m for a length of 10 m on the front and side of the intersections and balance height of 0.75 m if required in accordance with (a) may be made up of open type construction (though railing) and of design to be approved by the Authority.

c) The provisions of (a) are not applicable to boundary walls of jails, in industrial buildings, electric sub-stations transformer stations, institutional building like workshop, factories, and educational buildings like schools, colleges, including the hostels and other uses of public utility undertakings and height up to 2.4 m may be permitted by the Authority.

d) Compound gate should open entirely inside the property and shall not open any access / path ways/ roads/ street.

8.6.2. Sub Committee on Zoning Appeals

- i. Sub-committee shall be constituted from out of the members or the Authority by the Chairman, and if no Authority is constituted, in such cases by the Director of Town & Country Planning, which shall be called the "Sub Committee on Zoning Appeals."
- ii. The Sub Committee shall consist of at least five members. The Chairman of the Authority, Director of Town and Country Planning or his nominee, the Town Planning Officer and two other members of whom one representing the local. Authority and other member representing commerce and industry (private sector) shall be the members subject to the approval of the Government, when the Authority is superseded, the Administrator, or when no Authority is constituted the Deputy Commissioner / Sub-Divisional Officer or his nominee, and the Director of Town and Country Planning or his nominee. The Town Planning Officer of the Authority and two other members one of whom representing the local Authority and the other presenting commerce and industry (private sector) to be nominated by the State Government shall be the members.
- iii. The Chairman, Administrator, Deputy Commissioner / Sub-Divisional Officer or his nominee or in his absence, Director of the Town and Country Planning or his nominee shall preside over such meeting and the quorum shall consist of all least members.
- iv. The Chairman or the Administrator or when no authority is constituted the Director of the Town and Country planning or his nominee shall convene such meetings of the sub-committee of zoning will normally meet once in a month to consider any cases of zoning Appeals.
- v. The Sub-Committee shall have power to grant variance with respect to front, rear or side yard or building and area requirements if at the time of adoption of this regulation a plot of land is smaller than minimum size specified for the land in which it is located and compliance with front, rear, side yard and height and area regulation is not feasible because of topography or other special consideration, the case may be brought before the sub-committee on Zoning Appeals. This sub-Committee can grant variance and permission given with such modifications as are necessary but should conform as closely as possible to the requirement specified for the zone in which the plot is located. In all cases the particulars reasons for the variance should be recorded by the Sub-Committee.
- vi. The Sub-Committee on zoning appeals shall not have the power, however to grant use variance, where a change of use other than that specified in the zone in which the plot located is permitted.

Chapter 9: PROPOSED PROJECTS' BRIEF AND TENTATIVE FUNDING SOURCE

9. PROPOSED VISION AND PROPOSED PROJECTS

The suggested vision for the master plan is based on research and data acquired from primary and secondary sources for the sectors encompassing demographic, economic physical and social infrastructure facilities. The vision is based on the concept to develop the master plan area in a planned way with adequate infrastructure and social amenities to focus future requirements in concord with ecological system.

9.1. Vision of the project area

The primary goals of master plan are to develop economic potential of the area with the development of infrastructure and other facilities in a sustainable and planned way.

9.1.1. Setting up New Agro Processing Industries

In a classified manner, the master plan area will also concentrate on the growth and establishment of new agro-based industries. Agriculture is a key activity in master plan area. Establishment of small and medium scale Agro-based industries may grow a region's economy and generate employment to landless agricultural labourers and unemployed population from rural areas.

Some examples of Agro-based industries may be developed including food processing industries such as:

- Mustard Oil and Floriculture can be practiced and perfume and other cosmetics can be made using these raw materials.
- Fruit (pulp (puree), juice concentrate, ready-to-drink juice, nectar, wine, jams, jellies, pickles, smoothies, chutney, canned slices, chips, leathers, and powder.),
- Wheat (snacks manufacturing and packaging) cosmetic industries using paddy (skin care and hair care products) and various products can be made from husk, bran and straw of paddy crop.
- Textile industries using jute and wool, the major manufactured products from jute fibre are: Yarn and twine, sacking, hessian, carpet backing cloth and as well as for other textile blends.

- Fresh water fishery development and in addition to fresh water fishes, prawns etc. farming preserving and packaging technology can be developed for sending the produce to different parts of the country.

9.1.2. Shift from Conventional towards Ecological or Organic Farming

India is majorly into the development of agriculture and the environment. Organic farming combines both together. In organic farming, there is a use of bio products which is safe for the soil as well as the environment so both the objectives are achieved.

So organic farming is supported by the government as well in all aspects. In the economic development sector, it also plays a very important role. Food quality and safety are the primary concerns of Indian consumers today. The growing environmental and food safety concerns have created a significant demand for yield from green and sustainable cultivation methods.

Considering this, government and companies are prioritizing organic farming, which is one of the most effective ways to not only provide food security and improve farmer's livelihoods but also eliminate the use of harmful chemicals. An organic agricultural system promotes and enhances the health of the agro ecosystem, including biodiversity, biological cycles, and soil biological activities.

In the project area agriculture is prominent and currently conventional methods of farming is practiced. Farmers in the project area would need to be made aware of the importance and benefit of the organic farming further with the development of food processing industries and logistic hub it will aid the farmers in selling their crop produce and increase their earning potential. Skill training centre proposed will be beneficial in training the farmers in detail in relation to organic farming and how it can be implemented first in small scale and then expanding it.

9.1.3. Development of Skill Training Centre for Increasing Employment

In today's world skill development in India is highly important. Lack of proper education and training restricts people from the opportunities for self-advancement by limiting their access to well-paid employment. Hence this prevents them from making an influential contribution to economic growth and from having opportunities in their lives to build a

satisfying and healthy lifestyle. It is clear that the youth and women in the villages have the ability to learn if they are given the opportunity for support. To this end we are furnishing them with a proper guidance, opportunities, and encouragement to become independent and have a sustainable life. To boost employment in the rural community, there is a need to setup Skill Development Institute. The project area has a low working population rate and population growth rate is low for the last decade majorly due to outmigration and with the development of skill centre people will be trained as per the requirement of the industry and would get employment in the nearby area or could also setup their own businesses.

Following are some examples of common training programs which can be offered through skill development Centre:

- Sewing, stitching, and tailoring
- Woodworking and carpentry training
- Jewellery designing courses
- Bike and car mechanic courses
- Home appliance repair technician training (air conditioning system, refrigerator, air cooler and washing machine repair).
- Mobile, laptop and computer repair training
- Shoemaking and repair training
- Soft toy making
- Pottery, ceramics, and clay classes
- Beekeeping training
- Horticulture and cut flower courses training
- Pisciculture, Canning and Packaging training
- Plumbing, masonry, and electrical training
- Bamboo Products training
- Welding training

- Accounting courses
- Medical lab technician courses
- Physiotherapy courses
- Training related to Agro Processing Industries The main objectives of setting up of Skill Development Centre.
- Improve productivity and creating sustainability to start a micro-entrepreneurship in the village.
- To create an opportunity in the community with various skill development courses and to link them to the market to generate ongoing income.
- Skill training not only provides skills in a particular area, but trains youths/women build and enhance networking, time management, communication skills.

Chapter 10: DISASTER PLAN

10.DISASTER PLAN

10.1. Introduction

Disaster is an undesired calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Disasters are usually caused by nature but in some cases, it can be caused by human actions as well. Disaster can be broadly classified into water and climate related, geology related, and accident related. India has been traditionally vulnerable to natural disasters on account of its unique geoclimatic conditions. Floods, droughts, cyclones, earth quakes and landslides have been recurrent phenomena. About 60%of the landmass is prone to earthquakes of various intensities; over 40 million hectares is prone to floods; about 8%of the total area is prone to cyclones and 68% of the area is susceptible to drought.

At the national level, the Ministry of Home Affairs is the Nodal Ministry for all matters concerning disaster management. The Central Relief Commissioner (CRC) in the Ministry of Home Affairs is the nodal officer to coordinate relief operations for natural disasters. The CRC receives information relating to forecasting / warning of a natural calamity from India Meteorological Department (IMD) or from Central Water Commission of Ministry of Water Resources on a continuing basis. The Ministries/Departments/Organizations concerned with the primary and secondary functions relating to the management of disasters include India Meteorological Department, Central Water Commission, Ministry of Home Affairs, Ministry of Defence, Ministry of Finance, Ministry of Rural Development, Ministry of Urban Development, Department of Communications, Ministry of Health, Ministry of Water Resources, Ministry of Petroleum, Department of Agriculture & Cooperation, Ministry of Power, Department of Civil Supplies, Ministry of Railways, Ministry of Information and Broadcasting, Planning Commission, Cabinet Secretariat, Department of Surface Transport, Ministry of Social Justice, Department of Women and Child Development, Ministry of Environment and Forest, Department of Food.

10.2. Need for Disaster Management

Sapatgram falls under seismic zone v and is prone to earthquake, its effect upon people and its cost to counties, are primary inputs to analyse the temporal and geographical trends in the disaster impact. Disaster losses, provide the basis for identifying where, and to what extent the potentially negative outcomes embedded in the concept of risk is released. They help to understand where, and to whom, disaster risk becomes impact. They also provide the basis for risk assessment processes, a departing point for the application of disaster reducing matures. Development cannot be suitable unless disaster mitigation is built into development process. Investment in the mitigation is more cost effective them expenditure on relief and rehabilitation, prevention and mitigation contribute to lasting improvement in safety and are essential to integrated disaster management. Disaster responds alone is not sufficient as it yields only temporary results at very high cost. So, emphasis must be on disaster prevention, mitigation and preparedness, which help in achieving objectively of vulnerability reduction. As per section 40 of Disaster Management Act-2005 that every department of the State Government shall prepare Disaster Management plan.

10.2.1. Plan objectives

The objectives of the district disaster management plan are:

- Disaster Management in the routine affairs of the department
- To provide technical and humanitarian assistance during disaster
- Promote and effective disaster of departmental responsibilities during disaster situations.
- Ensuring safety of departmental infrastructure, human resource, and other assets
- Ensuring safety of the beneficiaries and others
- Speedy restoration after disaster impact
- To conduct training and Capacity building for effective prevention, mitigation and respond for disaster.

10.2.2. Objectives of Departmental Disaster Management Plan

The objectives behind the preparation of the Departmental Disaster management plan by the Town & Country Planning, District Office, Sapatgram.

- To mitigate impact of natural and manmade disasters through preparedness at the district/town level.
- To provide effective support and resources to all the concerned individuals, groups and departments in disasters.
- To disseminate factual information in a timely, accurate and tactful manner while maintaining necessary confidentiality.
- To develop immediate and long-term support plans for vulnerable areas during disasters,
- To have response system in place to face any eventuality related to disruption of urban infrastructure.
- To ensure active participation with the Government administration, communities, GOs and volunteers at the time of disasters.
- To equip the staff with the knowledge and skills for assessing delineating, strategies and delivering their roles in relation to risk mitigation, prevention and implementation of effective response to the extreme events.
- To enable understanding on the integration of Climatic Change Adaptation (CCA), Disaster Risk Reduction (DRR) and sustainable developments and their associated impacts and challenges in providing infrastructural support to the rescue and rehabilitation team.
- To ensure that, standard code of practices such as National Building Code (NBC), Bureau of Indian Standard (BIS) code, Seismic codes etc. are followed by the department for design and construction of infrastructure to minimizing the effects for disasters.

10.3. Disaster Management Cycle

In multi-hazard response plan, the disaster management cycle has a significant role to play. The four stages of disaster cycle have their own importance in terms of their implementation during, after and before the occurrence of any disaster.

10.3.1. Pre disaster activities

1. Policy development and national, State, District, local level disaster organization formation
2. Vulnerability and capacity assessment
3. Prevention and mitigation
4. Preparedness, planning and training

10.3.2. Emergency activities

1. Warning (beginning before the actual event)
2. Evacuation, search, and rescue.
3. Emergency assistance (relief) — food, water, shelter, medical aid

10.3.3. Post disaster activities

1. Repair and restoration of life lines (power, telecommunications, water supply, transportation)
2. Reconstruction and rehabilitation.

10.4. Main tasks of the department and possibilities of integration of related disaster management aspects

The primary responsibilities/activities of Town & Country Planning, District Office, Sapatgram is to prepare Master Plan for the urban areas of the district. While preparing the Master Plan a few sub-urban areas are also included in the Master Plan to cope up with the increased population load. Very recently it has been decided to incorporate the physical maps like Land use Plan, Zoning Plan, Transportation Plan, etc. In GIS platform. It has also been decided to make the Master Plan more comprehensive and

useful in the field of drainage too and accordingly decided to club Physical Master Plan and Drainage Master Plan together.

Some of the important tasks under this department are as follows:

i) Implementation of Master Plan

It is the responsibility of this Office to guide the growth of the urban areas of the district so that un-haphazard growth may not create chaos in future and the growth restricted within the Master Plan boundary. It provides technical guidance to the Implementing Agency in every aspect related with Implementation of Master Plan.

ii) Enforcement of Zoning Regulations

It is the task of this office to enforce Zoning, Regulations within the Master Plan Boundary and the town boundary as the case may be, by scrutinising land sale and building permission applications on the basis of Proposed Zoning Plan. The cooperation from the implementing agencies like Sapatgram Municipal Board in the district are highly essential in exercising this role.

TRAFFIC VOLUME SURVEY FOR DRAFT MASTER PLAN OF SAPATGRAM

TOWARDS DHUBRI								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUs
1	04-12-2022	9:30AM TO 11:30AM	5	26	114	333	478	423
2	04-12-2022	03:30PM TO 05:30PM	15	36	159	213	423	420

TOWARDS DHUBRI								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUs
1	13-12-2022	9:30AM TO 11:30AM	40	93	274	315	722	746
2	13-12-2022	03:30PM TO 05:30PM	36	85	225	330	676	681

TOWARDS FAKIRGRAM								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUS
1	05-12-2022	9:30AM TO 11:30AM	6	52	190	215	463	454
2	05-12-2022	03:30PM TO 05:30PM	10	40	165	195	410	406

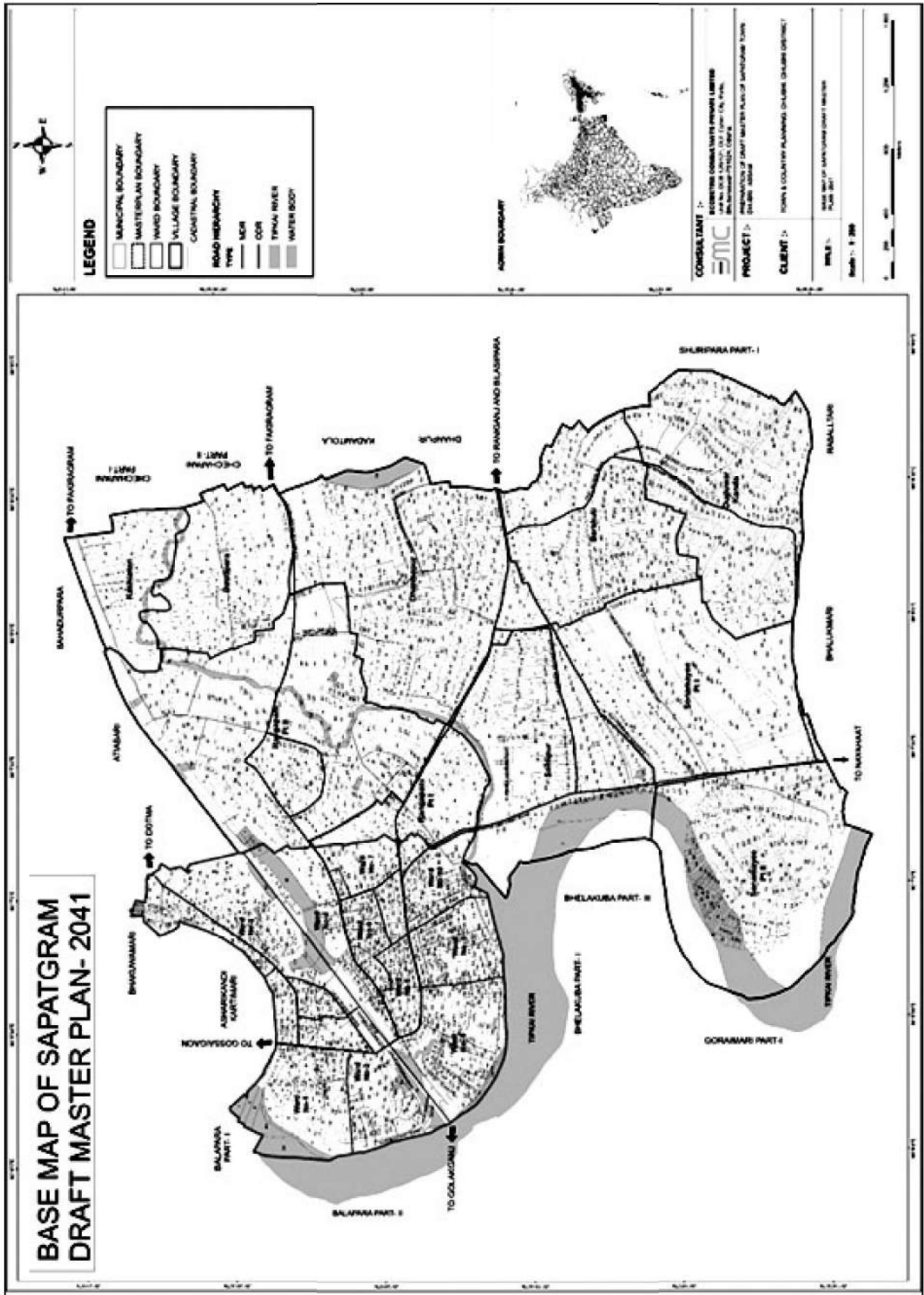
TOWARDS FAKIRGRAM								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUS
1	06-12-2022	9:30AM TO 11:30AM	27	68	285	235	615	645
2	06-12-2022	03:30PM TO 05:30PM	23	60	215	295	593	589

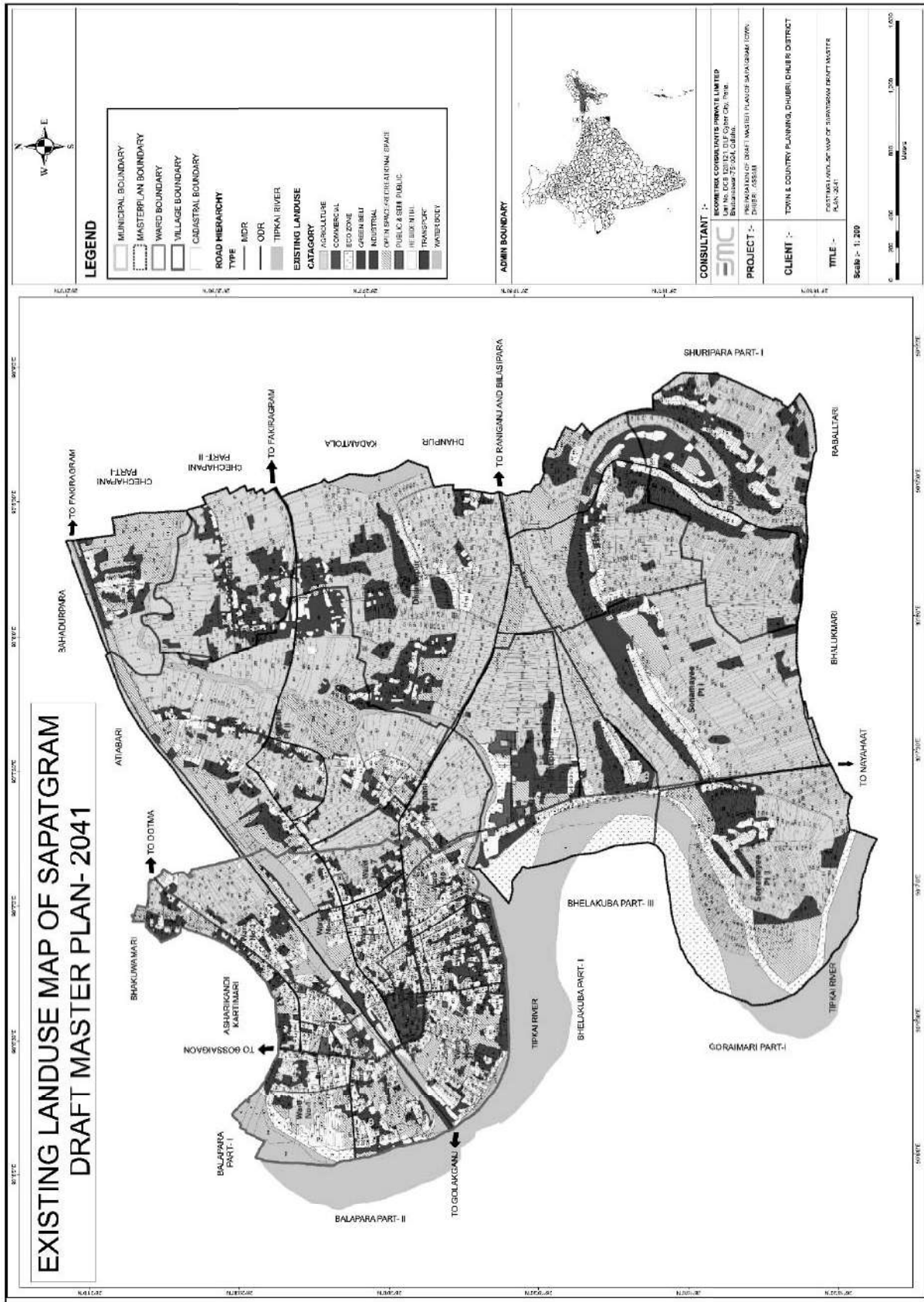
TOWARDS GOSSAIGAON								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUs
1	05-12-2022	9:30AM TO 11:30AM	8	22	160	172	362	360
2	05-12-2022	03:30PM TO 05:30PM	5	27	148	197	377	363

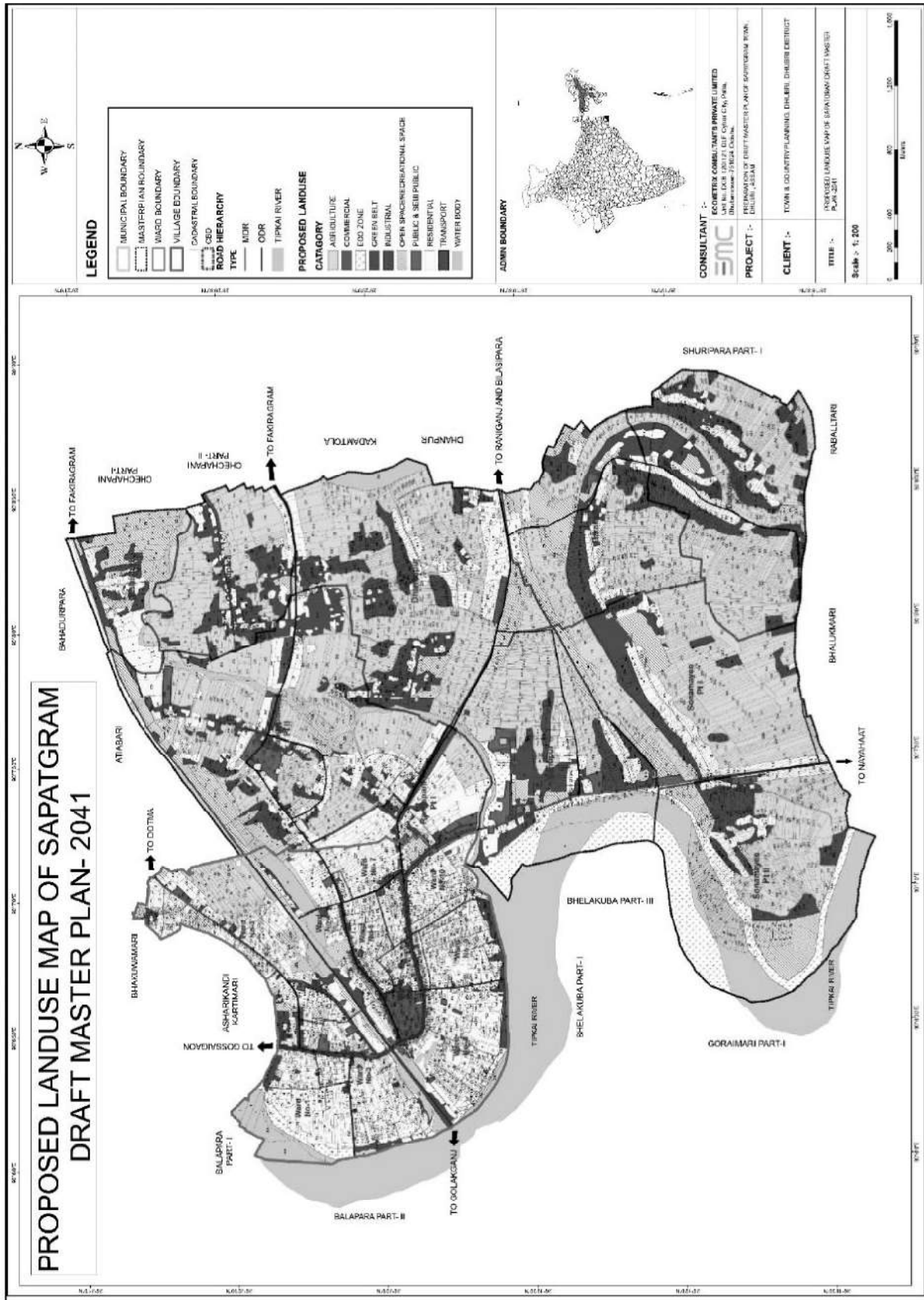
TOWARDS GOSSAIGAON								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUs
1	13-12-2022	9:30AM TO 11:30AM	14	27	315	486	842	800
2	13-12-2022	03:30PM TO 05:30PM	11	23	303	410	747	718

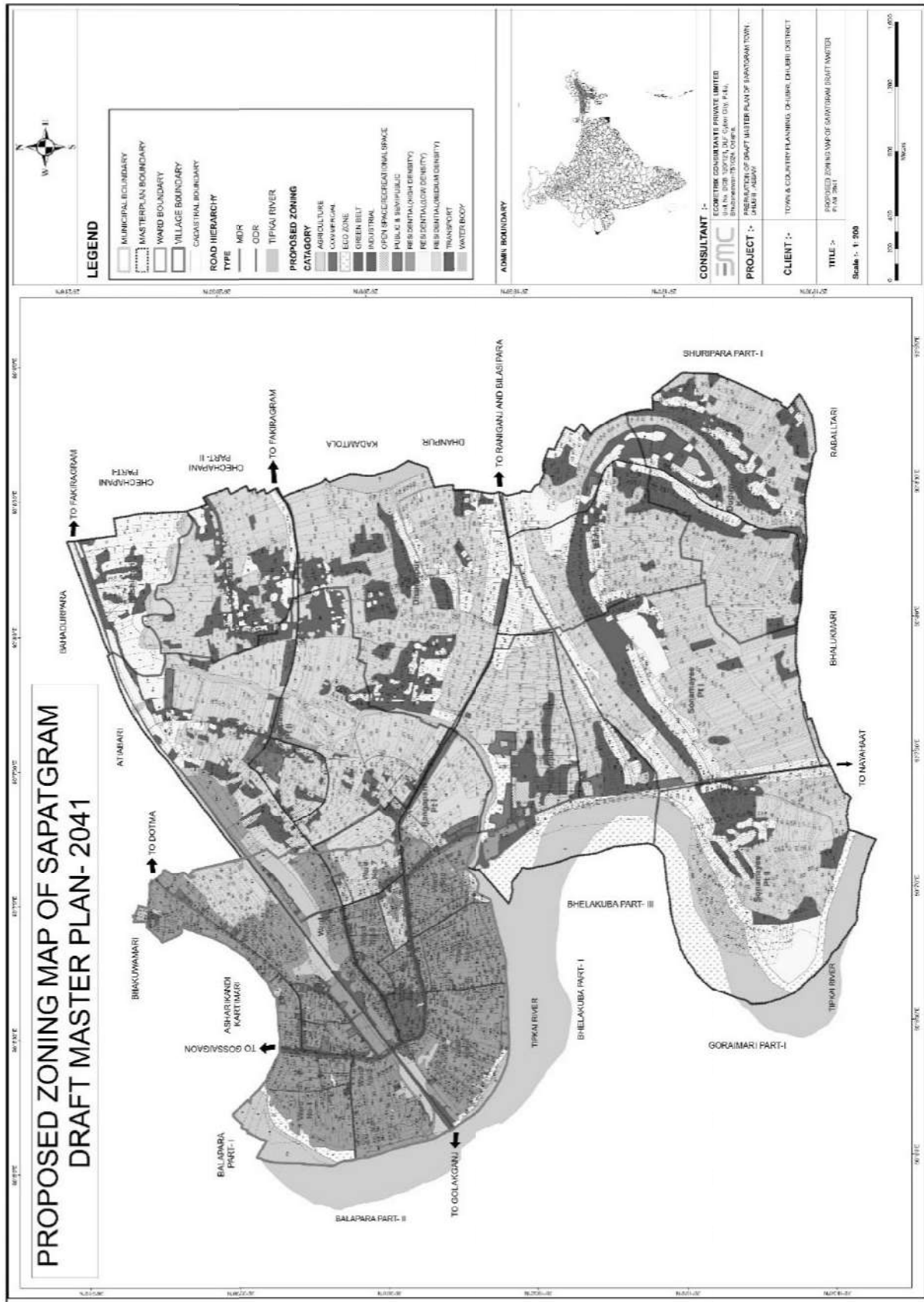
TOWARDS DOTMA								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUs
1	06-12-2022	9:30AM TO 11:30AM	6	20	327	341	694	681
2	06-12-2022	03:30PM TO 05:30PM	8	25	285	409	727	691

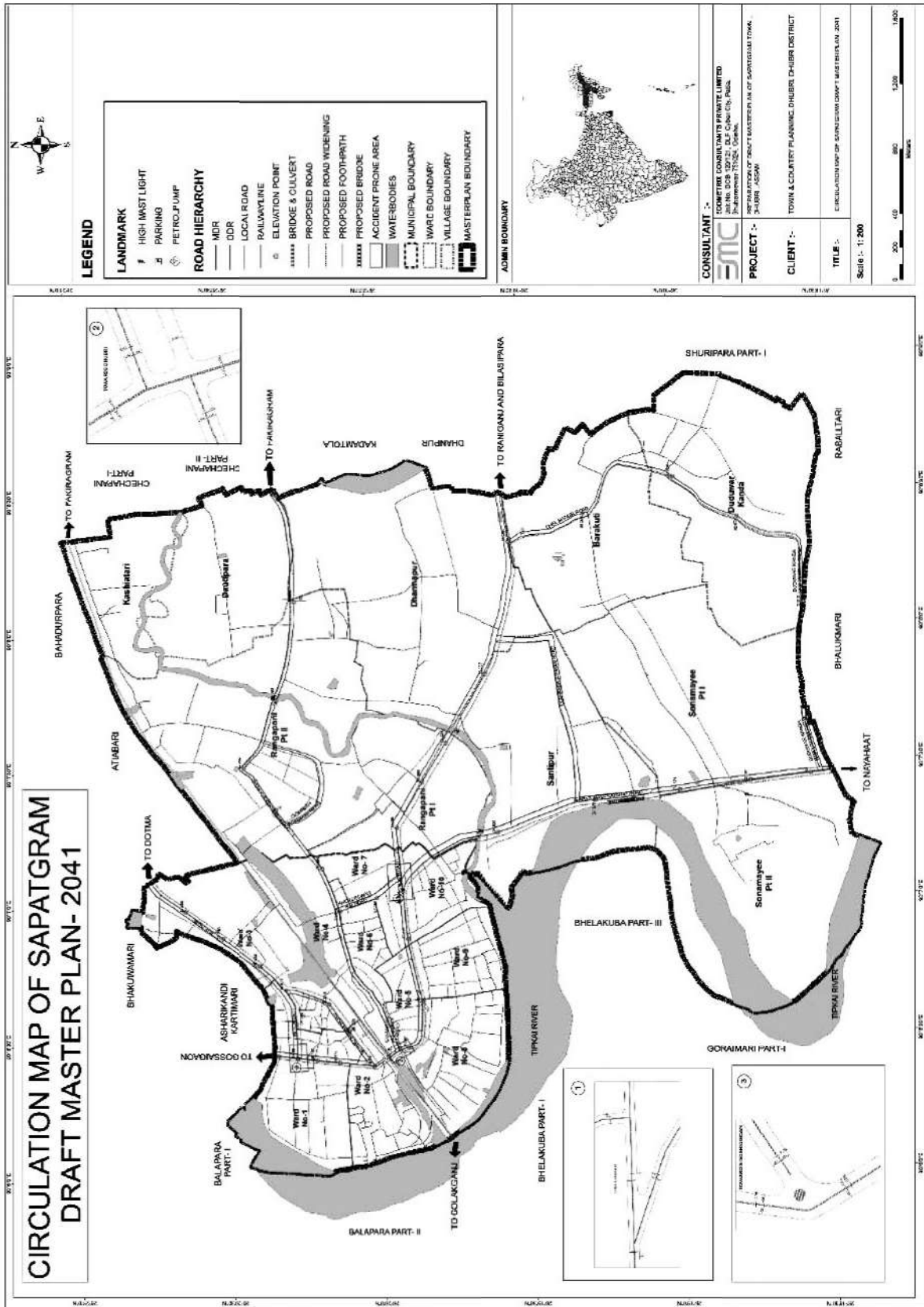
TOWARDS DOTMA								
SLNO	DATE	TIME	HEAVY VEHICLE (TRUCK/BUS)	4-WHEELER	AUTO RICKSHAW/E-RICKSHAW	TWO-WHEELER	TOTAL VEHICLE	TOTAL PCUs
1	13-12-2022	9:30AM TO 11:30AM	7	19	75	148	249	235
2	13-12-2022	03:30PM TO 05:30PM	14	28	120	160	322	322

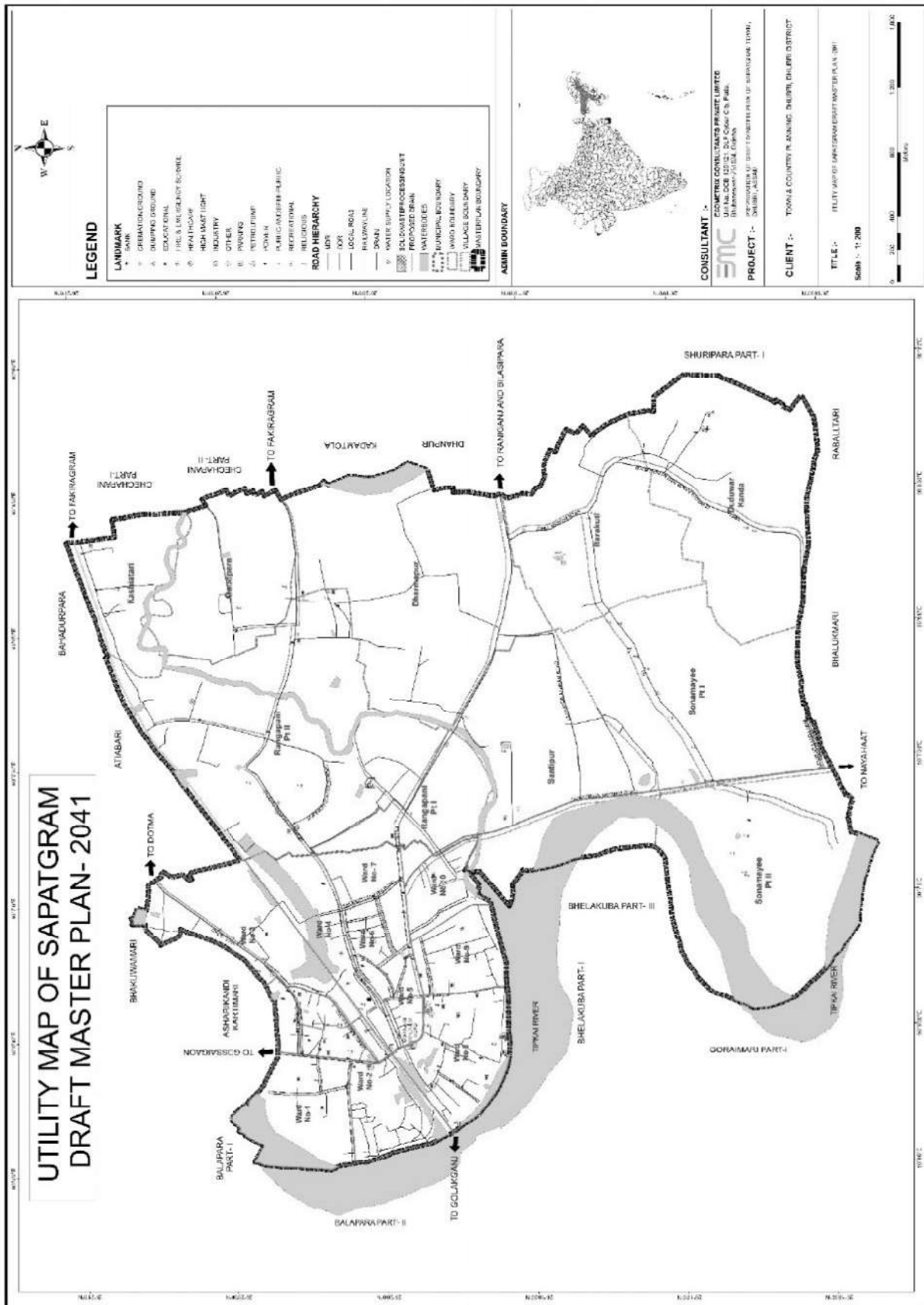












**UTILITY MAP OF SAPATGRAM
DRAFT MASTER PLAN-2041**



LEGEND

- LANDMARK**
- 1. GRAVITATIONAL
 - 2. SURFACE
 - 3. EDUCATIONAL
 - 4. INDUSTRIAL
 - 5. HEALTH
 - 6. RECREATIONAL
 - 7. PUBLIC ADMINISTRATION
 - 8. OTHER
 - 9. PARKING
 - 10. RETAIL
 - 11. COMMERCIAL
 - 12. PUBLIC ADMINISTRATION
 - 13. RECREATIONAL
 - 14. RELIGIOUS
- ROAD HIERARCHY**
- 1. NH
 - 2. OR
 - 3. LOCAL ROAD
 - 4. HALFWAY
 - 5. DRINK
 - 6. WATER SUPPLY LOCATION
 - 7. SOLID WASTE PROCESSMENT
 - 8. PROPOSED DRAIN
 - 9. WATERBODIES
 - 10. CANALS
 - 11. MUNICIPAL BOUNDARY
 - 12. VILLAGE BOUNDARY
 - 13. VILLAGE SOLIDARY
 - 14. WASTEWATER BOUNDARY

ADMIN BOUNDARY



CONSULTANT :-
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 WWW.SMCINDIA.COM

PROJECT :-
 PREPARATION OF DRAFT MASTER PLAN OF SAPATGRAM TOWN,
 CHIRANG DISTRICT, ASSAM

CLIENT :-
 TOWN & COUNTRY PLANNING, CHIRANG DISTRICT

TITLE :-
 UTILITY MAP OF SAPATGRAM DRAFT MASTER PLAN-2041

SCALE :-
 1:10,000

0 200 400 600 800 1000 1200 1400
 METERS

