



# THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

নং 757 দিশপুৰ, মঙ্গলবাৰ, 20 ডিচেম্বৰ, 2022, 29 আঘোণ, 1944 (শক)

No. 757 Dispur, Tuesday, 20th December, 2022, 29th Agrahayana, 1944 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

DEPARTMENT OF HOUSING AND URBAN AFFAIRS

## NOTIFICATION

The 15th November, 2022

**ECF No. 230911.**- 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) and (Assam Act II of 1960) read with Sub-rule (1) of Rules 3 of the Assam Town & 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 the Draft Master Plan for Howly.

Notice for publication of the Draft Master Plan for Howly.

1. It is notified that the Draft Master Plan for Howly prepared by the Directorate of Town & Country Planning, Government of Assam, Town & Country Planning Act, 1959 (as amended) read with Sub-section 1 of Section 10 of Assam Town & Country Planning Act, 1959 (as amended) for the area described in the schedule below is here by published.
2. Any person or persons affected by the Draft Master Plan may submit their objections or opinions in writing to the Director, Town & Country Planning, Government of Assam, Dispur, Guwahati-6 within two months from the date of publication.
3. The Draft Master Plan for Howly with all relevant papers and maps may be inspected free of cost during the office hours at the office of Director, Town Country Planning, Dispur, Guwahati-6, the Deputy Director, Town & Country Planning, District Office-Barpeta, the Circle Office, Howly Revenue Circle, Howly, office of the Chairman, Howly Municipal Board, Howly. Copies of the Draft Master Plan for Howly are available at the office of the Deputy Director, Town & Country Planning, District Office - Barpeta for sale on payment.

## SCHEDULE

### 1) Situation and Area

Location and Area	:	Howly Master Plan Area
District	:	Barpeta
Sub-Division	:	Barpeta
Draft Master Plan area	:	26.91 Sq. km / 2691.00 hectares
Municipal area	:	3.58 Sq. km
Population	:	47608 (as per Census 2011)

### 2) Villages included in the Draft Master Plan for Howly

Sl. No.	Mouza	Village
1	Ghilajari	Ambari, Ghilajari, Kathlijar, Jaypur, Nagarzar, Fulkipara, Hajipara, Moiramara, Itarvata, Howly Town. Moiramara, Itarvata, Howly Town.
2	Howly	Halapakuri, Howly Gaon.

### 3) Description of Howly Master Plan Boundaries

North : Village Barobarijar, Mouza Damka chaka Bausi  
 South : Village Khandakarpara, Village Hatijan, Mouza Bhawanipur  
 East : Village Kaljar, Village  
 West : Village Kurobaha, Village.

**KAVITHA PADMANABHAN,**  
 Commissioner & Secretary to the Government of Assam,  
 Department of Housing and Urban Affairs.

## **1. INTRODUCTION TO THE MASTER PLAN AREA**

### **BRIEF HISTORY OF THE TOWN AND SURROUNDING**

Historically, Howly, along with its neighbouring villages has a glorious past. On the western part of ancient Kamrup, there was an important state named Barnagar with twin cities of Ghilanagar and Bijoypur. At that time the river Manas flowing by the east and north of the state of Barnagar was a live and affluent river. The present Beki river was a stream only known as Borjan. The capital of Barnagar at first at Ghila-Bijoypur and later at present Howly.

The powerful Koch king Biswa Singh annexed the kingdom of Gandharba Rai and the region was named as Bijoypur. Bijoypur is the base of present Barbarijhar, Halapakri, Simlajhar, Raipur and Jaypur to the north west and west of at present Howly town. After Biswa Singh, his son Narnarayan founded Barnagar. His brother Gohain kamal constructed a road from Coochbahar to Narayanpur of Lakhimpur district. The road passes by the north of Ghilanagar and through the middle of Bijoypur and present B.H. College, Howly.

Narnarayan became the Koch king after the death of his father Biswa Singh. Owing to the alleged discovery by his astrologers that he was under the influence of Saturn, Narnarayan left Coochbehar leaving the charge of the state to his brother Chilarai and founded the sub capital at Ghilanagar (present Nagarjhar, kathlijhar and Ghilajhari) a distance of about one mile to the west from present Howly Chariali. At present a part of it falls within Howly Town (ward no. 1 and 4). He remained in this second (sub) capital for twelve years from 1553 to 1565. The name of that Ghilanagar became Barnagar and Nabanagar later. It was thought that after Narnarayan, Chilarai's son Raghudev would become the king. But at last Narnarayan's son Lxmi Narayan succeeded him after his death. At this, being disheartened Raghudev left Coochbehar and had reached Ghila-Bijoypur, constructed his residence at Bijoypur, present Barbarijhar where the Agriculture, Sericulture and Veterinary farms and Barbarijhar high school are there on the high land of western bank of the dead Manas river opposite B.H.College. To pacify the situation Narnarayan divided his state between his son Laxmi Narayan and Raghudev. Raghudev was installed as the king of Koch Hajo. But he used to live at Bijoypur. After the death of Raghudev, his son Parikshit Narayan became the king of Koch Hajo (1603-1613). Parikshit was defeated jointly by Lakshmi Narayan and the Mughal Emperor Jhanjir, was imprisoned by the Mughal where he had died. The Ghila- Bijoypur was destroyed and Barnagar was created. At that time Guwahati was under the Mughals and Satrajit was the Thanadar. The son of Satrajit, Uttam Narayan was installed on the throne of Barnagar as a separate state. During the days of Uttam Narayan and later, many wars were fought between the Koch and Ahom and the Mughal and Koch. Som Narayan, Joy Narayan and Jagan Narayan of this dynasty died in the war. At last Chandi Narayan Barua, the grandson of Jagannarayan became the king of Barnagar. He established the capital (Raj Howly) of the state of Nabanagar (present Howly) on the bank of the river Manas near where Narnarayan had founded his sub-capital.

The Jamindar of Jogirpam (Hatizana Pargana) Halakanta Barua had enmity against Chandi Barua. He had invited the Burmese General Mingimaha Tilowa at the time of 3rd Burmese aggression to take revenge against Chandi Barua. The Burmese defeated Barua, imprisoned him and killed the king in the camp of Moinbari at the age of only 40 years in 1826. Chandi Barua was the last king of Barnagar.

The Burmese destroyed the state of Barnagar and its capital. The period from 1826 to 1897 is the dark period of Barnagar. As a result heavy jungle grew up and forest (jhar) villages were developed later as Simlajhar, Najhar, Barbarijhar, Nagarjhar, Kathlijhar, Ghilajhari etc. The exact

location of the capital and palace of Chandi Narayan Barua at Howly was known as Barujhar , which later on was named Barua Bazar at ward no. 1 and 2 . Several wells, ponds, recently discovered pottaries and various articles of temple authenticate it. Statues of four lions of the throne of Chandi Narayan Barua and the statue of the deity of Madan Mohan along with 42 items of goods were recovered in 1943 while digging a tank on the land of Nrayan Ch. Das in the area .Moreover, coins of gold and silver were found while digging land for construction of National Highway around this area in 1964.

As a consequent of the severe earthquake of 1897 the stream of Barjan became active and affluent river with the name of Beki and the Manas dried up making the land area of Howly area high. The Beki River divided Barnagar as greater Howly to the east and present Barnagar and Sorbhog to the west. Migration of the people started to take place from low land of the region, present Bornagar and the East Bengal district of the country to the high lands of greater Howly .

After the treaty of Yandaboo (1826) Assam was annexed by the British and so Barnagar and Howly. In 1834 Barnagar was incorporated into Kamrup district . In 1840, preparation were made to construct Headquarters of Barpeta Sub Division at Howly, but ultimately it was transferred and constructed at Barpeta in 1841, for enlightening the xatra there. Thereafter a bridge was constructed over the Choulkhowa river and Howly was connected with Barpeta constructing a road. In 1868 Barnagar circle was created and Howly was included in it. When Barpeta district was created in 1983 entire Barnagar circle along with Howly was incorporated in it.

The famous Hat (Bazar) of Howly was started in the year 1900 and the Annal Rash Festival in 1929. At the time of independence of India in 1947 the population of greater Howly increased to a significant extent for migration of people from East Bengal. Chandi Barua Smriti Bhawan (1954), Monomati Library (1954), Madan Mohan Kirtan Ghar (1978-79) and Chandi Barua Stadium (1965) were constructed by the people of Howly for commemoration of Chandi Narayan Barua. Howly Town Committee was formed in 1974 dividing the town into four wards. Dr. Surendra Nath Das, a later Health Minister of Assam and Shri Jadab Ch. Das were elected the first chairman and vice chairman respectively.

## **LOCATION AND LINKAGES**

### ***Regional Linkages***

Howly Town being the commercial town of the District is trying to develop significant road and rail connectivity with the rest of the places.

### ***Roads***

The Town lies beside National Highway 31 .The town is at a distance of 131 km (81 miles) by road from Guwahati , the largest city in the region. National Highway 31 connects Howly Town with rest of the country in the west. Towards the north it has road connectivity with the neighboring country of Bhutan too. The inner arterial and connector roads have wide connectivity with the rest of the neighboring villages and towns. The town is at a distance of 11 km. from the district head quarter of Barpeta District. The town is one of the one of the most important place of western Assam and is ideal place for trade and commerce.

### ***Railways***

Nearest railway station Barpeta road is at a distance of 10 Km. from Howly Town. By Railway the distance is 113 km, covered in two to three hours from Guwahati , the capital city of the state

.It's a good source of transportation of goods to this commercial hub. Direct train service connects the town to Trivandram, Emakulam, Banglore, Chennai ( in the south India ), New Delhi, Kanpur, Lucknow ( in the central India ), and Kolkata, puri, Dibrugarh in east India.

#### *Airways*

Guwahati airport is the largest and the busiest airport nearing this place, which connects Guwahati to major cities in the country as well as to other major cities and towns in Assam. Its approximately 131 kms. from Howly Town.

#### *Waterways.*

The district was once well connected through river Brahmaputra. This route has been virtually closed and only fishermen use their boats for a livelihood though a few ferry services are still available to connect to this district towards the south.

### **GEOGRAPHICAL LOCATION**

Howly Town is located at 91o2' East longitude and 26o30' North latitude. The town is situated at a distance of 131 kilometers west of Guwahati, the Capital of Assam. It is located towards the north-western side of Kamrup district surrounded by Nalbari district in the east, Bongaigaon district on the west. It is 141 feet (43 meters) above the mean sea level.

### **PHYSICAL CHARACTERISTICS**

Various physical characteristics of Howly town are described below in a tabular form

<b>Parameter</b>	<b>Description</b>
Topography	Mostly alluvial plains
Average Temperature	37°C (maximum), 8°C ( minimum)
Extreme Months	July (Summer) and December ( Winter)
Humidity	80% ( Maximum)
Rainfall	2742 MM (Average)
Monsoon Period	May to September

### **URBAN CHARACTER OF HOWLY TOWN AND ITS SURROUNDINGS**

The Howly Master Plan includes total of 11 villages along with the town area of Howly Town. The villages selected to be part of the Master Plan are adjacent to the town of Howly having homogenous characteristics. List of the towns and villages included in the Master Plan is as under-

Table 1- Name of The Villages and Towns along with population included in Howly Master Plan Area.

*Table 1: Villages & its Population in Howly Master Plan area*

<b>Sl. No.</b>	<b>Name of the village/Town</b>	<b>Population (in 2011)</b>
1	Howly Town	18301
2	Howly Gaon	1250

3	Ghilajhari	3375
4	Joypur	1590
5	Nagarjhar	2768
6	Katlijhar	3476
7	Hajipara	5944
8	Phulkipara	1381
9	Ambari	553
10	Moiramara	3094
11	Itarbheta	4299
12	Halapakuri	1577

Source: Census 2011

### NEED OF THE MASTER PLAN

Howly Town, one of the growing commercial centre of Barpeta District, is the most important town in this District as well as the state in terms of its transport connectivity and strategic location. Responding to multifarious developments, internal and external, the town must respond to its existing problems, the new emerging socio-economic forces with a vision of its own. Howly, most importantly being a commercial centre of lower Assam should stand out among other business hubs and the town should perform its functions well an example to the other town of the State. Thus, the vision for Howly Town for its development through 2041 is:

Howly Town To Be:-

- a. One of The Most Admired Commercial Hub Of the state.
- b. With A Unique Image of its Own.
- c. create livelihood to all the sectors.
- d. improvement of the existing infrastructure to facilitate future planning needs.
- e. slum free town.

Vision being a cherished dream, to achieve this vision it is necessary to break it into a number of goals and subsequently to objectives.

The process can be further taken up as sector wise development plans and review of local area plans in subsequent 5 years term.

By proper policy planning and strict adherence of the land use zoning and building byelaws.

By submerging the planning with combing funds from the state as well as the centrally sponsored schemes.

### FUNCTIONS AND NEEDS OF THE PLANNING AREA

The Master plan for Howly has been prepared considering the major functions of the planning area and future needs of the population of the area. Moreover, the influence of whole Barpeta District over Howly planning area as its service area for spill over activities. Above all, the livelihood pattern of the indigenous aborigines are also given due consideration in formulation of the proposed land

use plan to accommodate the future activities, which will meet the functional need of the area, and satisfy the aesthetic and emotional aspiration of the citizens.

**MAJOR FUNCTIONS OF THE PLANNING AREA:**

Based on the studies made over the existing situation and future needs, the Howly planning area can be inferred to have the following major functions. -

- a. To function as a trade and commerce centre.
- b. To function and grow as a growth centre for small scale and household industries.
- c. To function as growth centres for various services.
- d. To function as a recreational area suited for outings from the congestion polluted environment.
- e. To function as transportation node

**PLAN PERIOD:**

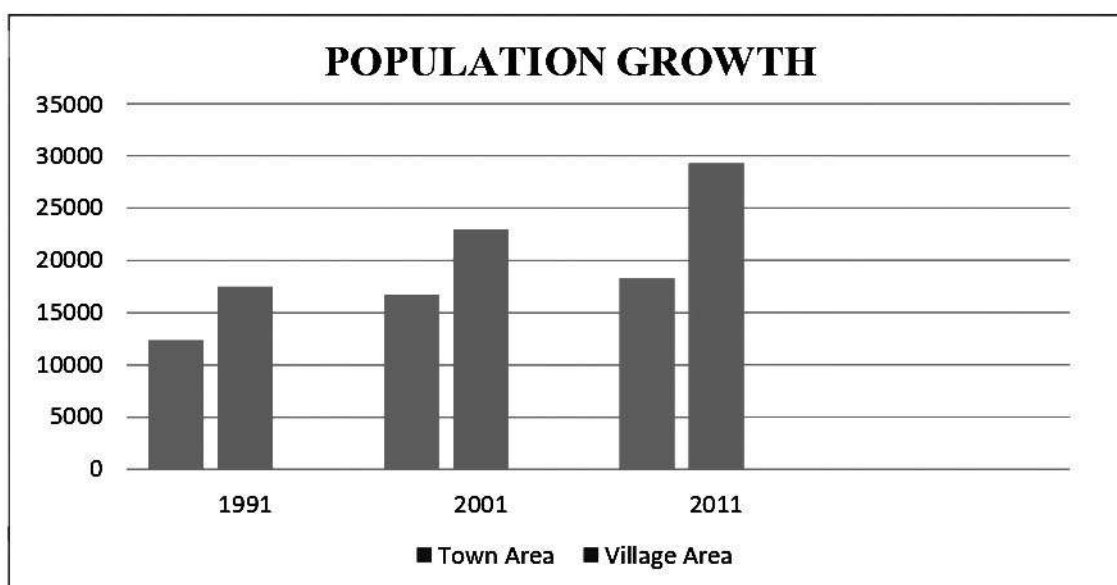
The growth of human settlement being a continuous process and for the purpose of preparation of this master plan, a twenty-year time span up to 2041 AD is adopted to reflect the future requirements and needs of the area in an effective manner. However, it is a fact that the proposals cannot be entirely based on the requirements of the plan period alone, as it is required to function with same or more efficiently even after the plan period with modification, alternations to the existing plan as per the functional requirement of that time.

## 2. PROFILE OF THE MASTER PLAN AREA

### POPULATION GROWTH:

Year	Town Area	Village Area	Total MP Area	AAGR	AAGR	AAGR
1991	12398	17528	29926	Town Area	Village Area	Total MP Area
2001	16730	22977	39707	3.49	3.10	3.26
2011	18301	29307	47608	0.93	2.75	1.98

Source: Census of India



As per the year 1991 census report, the population figure of Howly Master Plan Area was 29926 and in 2001 was 39707. The Average Annual growth Rate for 1991-2001 was 3.26% and for 2001-2011 is 1.98%.

The population of Howly Town as of 2011 India census, was 47608. Males constitute 51.52% of the population and females 48.48%. Howly has an average literacy rate of 61.06%, higher than the national average of 59.5%; with 65.40% of the males and 56.44% of females literate. 15.48 % of the population is under 6 years of age.

### POPULATION (0-6 YEARS)

YEAR	TOTAL POPULATION AGE GROUP (0-6)	MALE	FEMALE
1991	6490	3316	3174
2001	6988	3616	3373
2011	7371	3736	3635

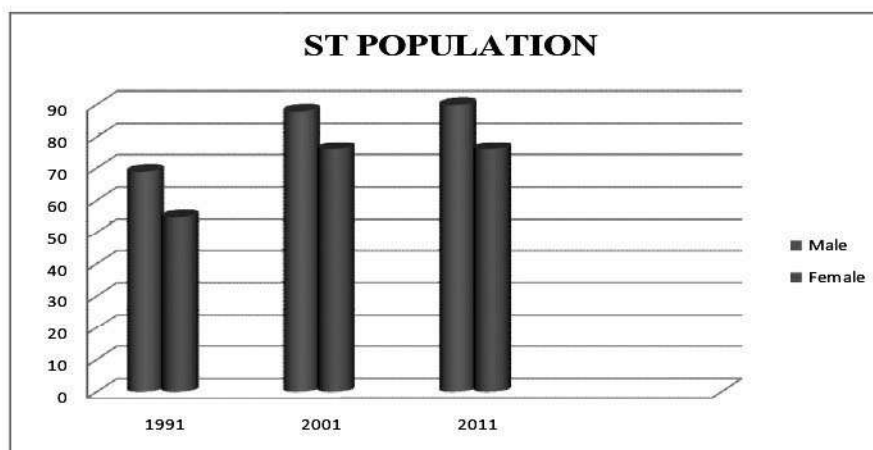
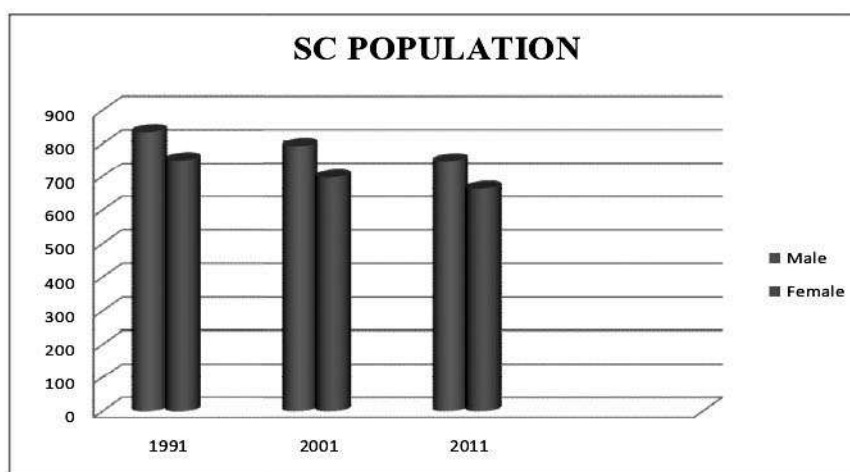
Source: Census Of India.



**SC & ST POPULATION**

YEAR	POPULATION			SC POPULATION			ST POPULATION		
	M	F	T	M	F	T	M	F	T
1991	15489	14437	29926	836	752	1588	69	55	124
2001	20919	18788	39707	794	698	1492	88	76	164
2011	24531	23077	47608	749	664	1413	90	76	166

Source: Census of India

**POPULATION DENSITY**

Study of Age-Sex composition of population shows that the proportion of population in the working age group 15-60 and old age group 60+ is increasing. This is indicative of the increase in the participation rate and need of more and better health infrastructure and recreational activities.

### AGE-SEX COMPOSITION

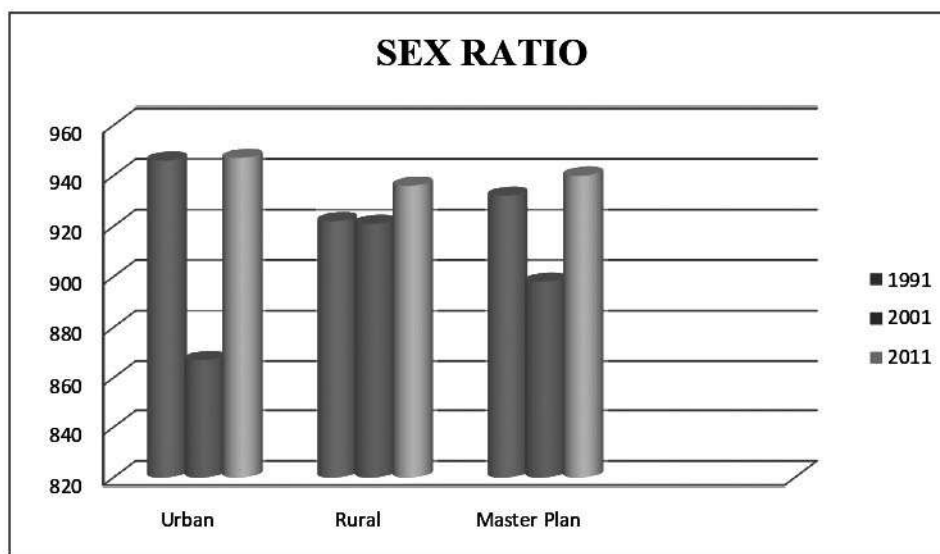
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### SEX RATIO

Defined as the number of female per 1,000 males in a population, the Howly Master Plan Area has an average sex ratio of 940. This is in general lower than the state (958) and higher than the national (901).

Year	Urban			Rural			Master Plan Area			% of Growth AMP
	Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio	
1991	6371	6027	946	9118	8410	922	15489	14437	932	
2001	8963	7767	867	11956	11021	921	20919	18788	898	
2011	9395	8906	947	15136	14171	936	24531	23077	940	4.6

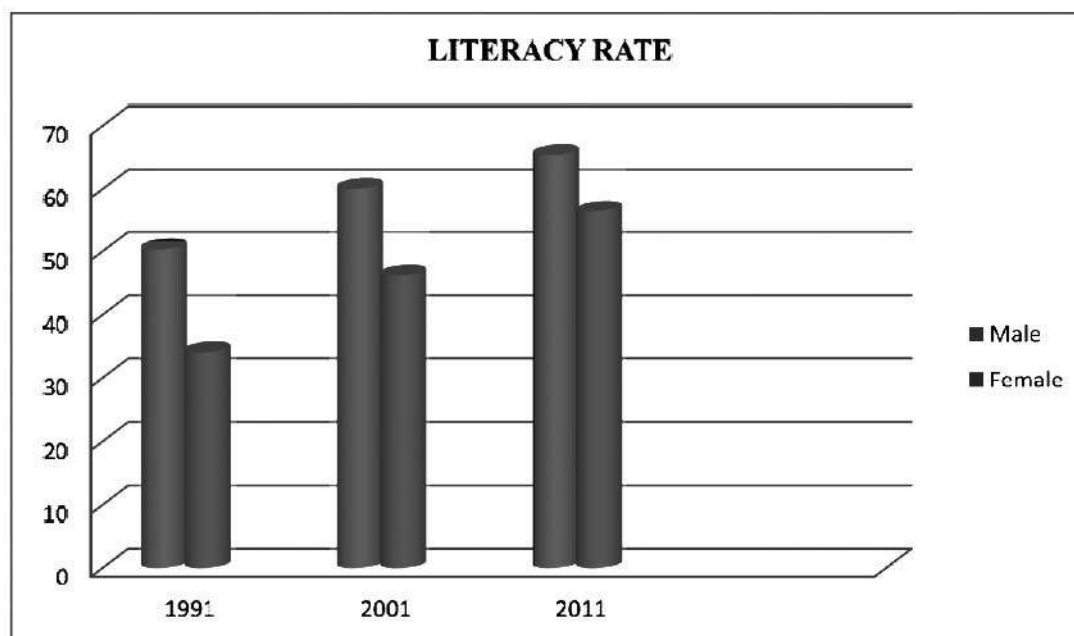
(Graph with ratio over 3 decades.. 1991, 2001, 2011)



### LITERACY

As per the year 2011 census report, Male literacy rate of the town is 65.40% and the female rate literacy of the town is 56.44%. The total literacy rate of the town is 61.06% compared to national urban figure of 59.5%.

YEAR	POPULATION			LITERATES			% OF LITERACY		
	M	F	T	M	F	T	M	F	T
1991	15489	14437	29926	7797	4921	12718	50.33	34.08	42.49
2001	20919	18788	39707	12567	8679	21246	60.07	46.19	53.50
2011	24531	23077	47608	16045	13026	29071	65.40	56.44	61.06



Source: District Census Handbook, Baksa, Census 2011

### WORKING & NON WORKING POPULATION

AREA	TOTAL POPULATION			WORKING POPULATION			NON-WORKING POPULATION			WORKER IN
	T	M	F	T	M	F	T	M	F	%
Howly Town	18301	9395	8906	6217	5341	876	12084	4054	8030	33.97
Howly Gaon	1250	641	609	566	335	231	684	306	378	45.28
Ghilajhari	3375	1749	1626	1027	960	67	2348	789	1559	30.42

Joypur	1590	825	765	504	464	40	1086	361	725	31.69
Nagarjhar	2768	1443	1325	830	780	50	1938	663	1275	29.98
Katlijhar	3476	1834	1642	980	904	76	2496	930	1566	28.19
Hajipara	5944	3022	2922	1600	1505	95	4344	1517	2827	26.91
Phulkipara	1381	720	661	403	387	16	978	333	645	29.18
Ambari	553	283	270	162	146	16	391	137	254	29.29
Moiramara	3094	1593	1501	907	760	147	2187	833	1354	29.31

Source: District Census Handbook Baksa, Census 2011

### MIGRATION POPULATION.

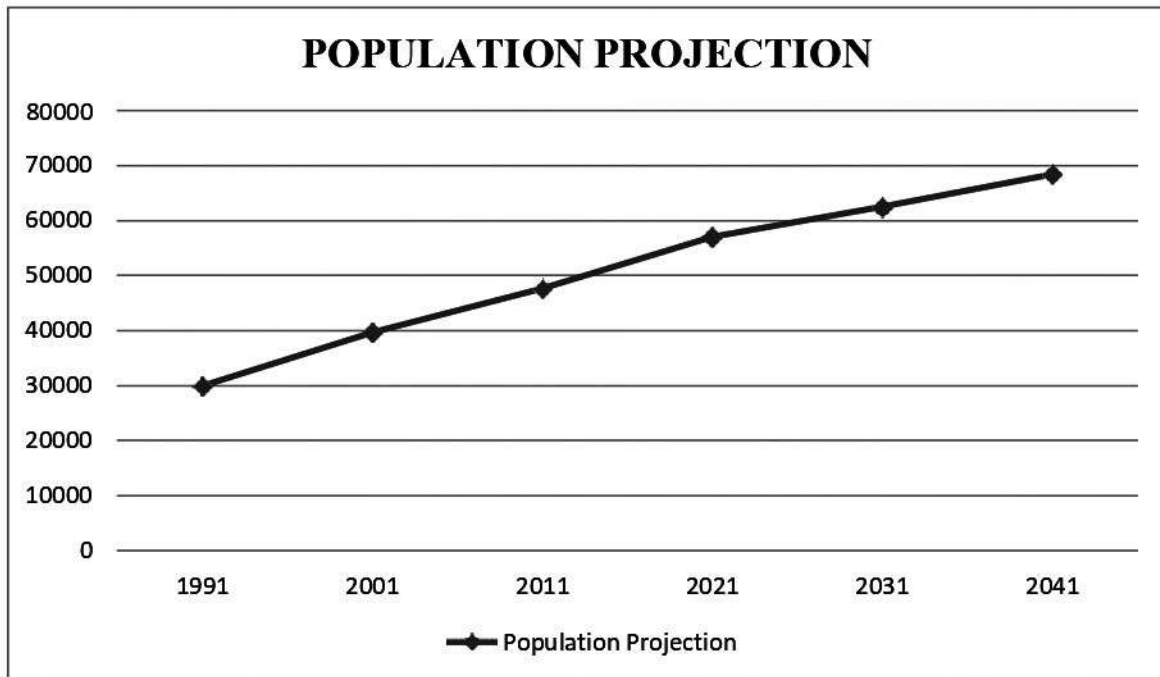
It is observed from the transportation survey that besides the normal population housed in the town, there is a floating population of about 7%, which comes to Howly Town for daytime activities. Thus, the daytime population in Howly in 2011 is estimated as 19,500.

### POPULATION PROJECTION

**Table: Population estimates in Howly MP AREA-2041 at 10 yearly intervals**

Year	Projected Population in Howly Master Plan Area
1991	29926
2001	39707
2011	47608
2021	57068
2031	62488
2041	68422

Source: Calculations based on exponential growth method.



On the basis of the statistics found, it can be concluded that there is a scattered development from the main town area. The density has inched and people prefer to settle in the surrounding villages which is less developed but less from the chaos.

Based on the past population growth trends— low, medium and high – population estimate for Howly Planning Area for the period 2022 to 2041 have been worked out. It is estimated that the population of Howly PA may vary from low of 65,000 to a high of 70,000 in 2041. A medium projection of 68,000 for Howly PA for the perspective year 2041 is adopted and the same is used for the planned development of HowlyPA. Ten yearly estimates of the population are given. Refer to Table above.

### 3. ***ECONOMIC BASE AND EMPLOYMENT***

#### **ECONOMIC SCENARIO OF HOWLY**

The economic growth of Howly has been driven by both Formal and Informal sector of economy. Mainly it can be characterised as a developing market economy.

Economic base of any place refers to companies and any other employers that generate lots of jobs in a local or regional area. These usually include government and civil service department, companies, industries, trade and agriculture etc. More than 86% of the Howly Master Plan Area is rural and 70% of this depends on agriculture.

One of the most vibrant economic Zones is the entire region Howly is a forerunner of the economic activity. Famous all over the region up-to West Bengal for Supari betelnut, Rabi crops and vegetables, The daily transaction of vegetables at Howly wholesale market is to the tune of around 100 Metric Ton. The Town has a number of mustard oil mills and a score of smaller industries. Famous for rice, jute, master seeds. all throughout the region, supplies from Howly go up-to remote corners of Northeast.

The retail business in Howly can be gauged from the number of shops, which is around 700 in number. Howly Municipal Board has a Market of 135 shops. There are also the market for poultry, dairy and fishery products, which are brought from the villages of that area.

#### **FORMAL SECTOR OF ECONOMY**

People working in civil service, public sector units, government service, defence, multinational companies, school, colleges, research institutes, management organizations, bank etc. all belong to Formal Sector. This sector encompasses all jobs with normal hours and regular wages and are recognized as income sources on which income taxes must be paid.

##### ***Offices***

- Howly Post Office
- Ghilajari Mouza Office
- Adhar Centre, Howly Town Committee
- PHED Mairamar
- Howly Regulated Market Committee
- Pachim Howly Gaon Panchayat
- 10 BN CRPF Campus, Barpeta, Assam
- 8. Mouzadar Office, Howly
- Howly Town Committee
- Dairy Development Centre

##### ***Educational Institute -***

SECTOR	TYPE OF INSTITUTE	NO. OF INSTITUTE		NO. OF STUDENT INTAKE	
		GOVT.	PRIVATE	GOVT.	PRIVATE
Elementary	1. Primary	42	4	3797	412
	2. Upper Primary	7	1	985	93

	3. Others	4	6	975(class1--viii)	891(class1--viii)
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Source- Block Elementary Officer, Bhawanipur, Howly.

Sector	Type of Institutions	No. of Institutions		No. of students/Intake		
		Provincialised	Private	Provincialised	Private	
Secondary	<b>High School</b>	4				
	1. Azad high school, howly town.					685
	2. Hazipara high school, Hazipara.					540
	3. Howly girls high school, howly town.					175
	4. Adarsha Vidyapith high school, howly town.	710				
	<b>Private Institution</b>	5				
	1. St. Teresa E.M School, howly town.					335
	2. Holy Child E.M School, howly town.					465
	3. Jatiya Vidyalaya, howly town.					310
	4. St. Xaviers school, howly town.					65
5. Sankardev sishu Niketan, howly town.	560					

	<b>Higher Secondary School</b>				
	1.Howly H.S School, Howly town.	2		665	
	2.Hilapakri H.S School, Hilapakri Joypur.			1210	

Source-Block Elementary officer, Bhawanipur, Howly.

### **Industries:**

Industries are momentum of economic growth. They provide employment to growing population and also bring in other economic activities in their forward and backward linkages.

There are no large-scale industries as such in this town. Few of the industries are operated mostly from the housed within the town area. Those can be continued as far as the environment is not at risk. They are small and medium scale production and packaging industries only.

As per record of DICC Barpeta, following are the category wise registered ongoing industries.

Sl. No.	Sector	Type of Industries	No. of Units
1.	1. AGRICULTURE Howly M. B.Area.	Rice Mill Bakery Uni	1 Nos. 1 N0s.
1.	2. FACTORY Howly M. B.Area.	1.Wooden Furniture 2.Can & Bamboo	4 Nos. 2 Nos.
1.	3. INDUSTRY Howly M. B.Area.	1.Steel Fabrication	4 Nos.
2.	Halapakuri	2.Various	4 Nos.
4.	Joypur	3.Various	1 Nos.
		4.Various	1 Nos.
	4. MINERAL	Nil	Nil
	5. OTHERS	Nil	Nil

Source: D.I.C.C.,Barpeta.



Other industrial units of the planning areas are tailoring, readymade garments, embroidery, handloom, spice grinding, repairing of 4 wheelers and 2 wheelers, DTP works, cement concrete products.

Major industrial activities of diversified nature are developed along the market centre, featuring in, villages. The principal types of industries of this area are manufacturing industries. Different types of industries of the area ranges from medium scale to small scale industries and from Red category industries to green category industries.

There is no earmarked industrial growth centre and commercial estate at present.

### ***Fisheries***

The following villages within the master plan area viz. Howly Town , Nagarjhar, Ambari, Howly Gaon, Moiramara, Fulkipara, Itervita, Halapakuri, Ghilajhari, Katlijar, Hajipara and Joypur have immense potential for fishery development. The existing fishery of the potential villages is as follows.

Sl. No.	Description	Nos.	Total Area(Ha)	Productivity/Capacity	Total Production
1	Ponds & Tanks	399	79.46	2500 /Kg/Ha/Year	198650 Kg.
2	Fish seed Hatchery	1	-	10 million spawn	10 million
3	Nursery tank	132	22.73	20 Lakhs/Ha/Year	154Lakhs

Source: District Fishery Dev. Office.

There are number of tanks for productions of large sized fish seed (fingerling) fair stocking the piscicultural tanks. The present productivity of fishes is only 2500 kg/ha/ year and 20 Lakhs /Ha/Year in Nursury tank, since traditional type of pisciculture is followed in most of the villages. The potential production may be increased to 5000 kg/ha/year if semi – intensive camp culture is adopted.

As per District Fishery Development Officer, Barpeta, to augment fish production and to increase productivity, rearing tank (3 hectare) to produce fingerling and new ponds (10 hectare) of carp culture are to be constructed. Existing ponds& Tank (79.46 hectare) are to be developed and extended. Integrated pig cum fish centre should be encouraged as the areas are suitable for this purpose.

### ***Farming:***

Livestock and poultry occupy important places is the economic life of Howly master plan area. Cattle, buffalo, goat, piggery etc. are the most common livestock animal of the area.

### ***Wholesale Trade***

There are three wholesale market associations dealing in almost all types of trade and business activity in Howly MPA. Wholesale Trade in Howly Planning Area is to be organized for the following activities:

- a) Food grains and perishable items
- b) Fruit & vegetable market
- c) Hardware and Building materials
- d) Motor parts

- e) Timber Market
- f) Wholesale Fish
- g) Wholesale cloth
- h) Jute
- i) Suphari

Their locations and the major related issues are as given in the following table:

Sl. No.	Name & type	Location	Issues/ Remarks
1	Wholesale markets of food-grains and perishable items.	Wholesale market at ward no 5.	Lack of basic services No arrangements for loading-unloading platforms and parking of vacant trucks Intermixing of goods and other traffic. Absence of proper solid waste management.
2	Hardware and Building materials. (Wholesale and retail).	Main town area.	1 .Lack of basic amenities. 2 No proper arrangement solid waste management 3.Congestion and spill over of activities
3	Motor Parts (Wholesale-cum-retail).	NH- 31 both side	Lack of basic services No arrangements for loading unloading platforms and parking of vacant trucks Intermixing of goods and other traffic. Absence of proper solid waste management
4	Rice market	Main market in ward no. 5	1.Lack of basic amenities. 2 No proper arrangement solid waste management 3.Congestion and spill over of activities

5	Whole sale market of Suphari.	Mainly in Ward No. 5 .	No systematic platform arrangement for this purpose. No arrangements for loading-unloading platforms and parking of vacant trucks
6	Wholesale & Retail sale fish market	Near Main market Bazaar area in ward No. 5	Lack of basic services No arrangements for loading-unloading platforms and parking of vacant trucks Intermixing of goods and other traffic.

#### ***Area Requirement of Wholesale Market -2041***

The fundamental objective of wholesale markets is to improve efficiency in the goods distribution. By centralizing transaction at a single location ,reducing the period of transactions , and separating wholesale and retail function in the distribution system , wholesale markets promote greater transparency and better price formation through a clearer interplay of supply and demand.

Total employment in Trade and Commerce is estimated at 30% of the total employment in Howly MPA.

#### ***Haulage Complex cum Wholesale Market***

The Master Plan proposes to develop a new Integrated Haulage Complex including Wholesale Markets near N.H.31 in the northern side of Howly MB Area and near . This location provides appropriate linkages for the incoming goods, outgoing goods and distribution of wholesale goods in the city. In the Haulage Complex, the Wholesale business could be operated more efficiently in a better environment. Basic functions of the Haulage Complex cum wholesale market are.

- To provide facilities for carrier movement;
- To provide warehousing and storage facilities and interlink these with the wholesale markets;
- To provide servicing, lodging and boarding, idle parking, restaurant, and other related functions in the complex.

Sl. No.	Use Type	% of area	Area (ha)
1	Wholesale Market and warehousing	53.0	48.76
2	Transport Agencies	2.0	1.84
3	Commercial and Public & Semi Public	5.0	4.6
4	Utilities & Services	3.0	2.76
5	Parking	12.0	11.04
6	Circulation	25.0	23.00
Total		100.0	92.0

### ***Existing Wholesale Market***

The existing wholesale market of Howly in ward no. 5, plays an very important role in distribution of supply and demand . Till such time the new wholesale market at New Place is developed, the wholesale market activity is to continue from the existing areas. After the development of the new wholesale market, the existing wholesale market area would be used for retail activity, thus not allowing the movement of any heavy and medium commercial vehicles in the central town area.

### ***Retail Trade***

Retail shopping areas are important as these create an image of the city. In Howly MPA retail shops are spread all over the town; however, the core busy area is the major town level retail trade centre.

To accommodate the required shopping, commercial offices, and other activities like cinema, hotel and related facilities, the following three-tier system of commercial development is proposed.

#### **Community level**

#### **Neighbourhood level**

#### **Cluster level**

Tiers I, II and III–Community Shopping Center, Neighbourhood Shopping Centres and Housing Area Cluster Shopping Centres.

The Community/commercial Centre would be a modern commercial centre with multi-storey commercial buildings and shall have major retail shopping areas, multi-storey commercial offices, banks, hotels, restaurants, and cine complexes. The Commercial Centre along with the City Facility Centre and Recreational Centre shall together form the new City-Centre.

Table: Three-Tier Hierarchy of Commercial Activities

<b>Community Commercial Centre</b>	<b>Neighbourhood Commercial Centre</b>	<b>Cluster Centre</b>
Tier I	Tier II	Tier III
<b>Population Served</b>		
About 1 lakh	About 15 thousand	About 5 thousand
<b>Area</b>		
5.4 hectare	0.46 hectare	0.11 ha
<b>Land Requirement Per Thousand Persons</b>		
540 Sqm.	306 Sqm.	220 Sqm.

### **INFORMAL SECTOR OF ECONOMY**

An Informal economy is the part of any economy that is neither taxed nor monitored by any form of Government. Although the informal sector makes up a significant portion of the economics in developing countries that provides employment , livelihoods and income for millions workers and business owners. This relates to its employment potential as well as its role in inclusive growth and poverty reduction.

The town has a Biweekly market in the core area near in ward no.5, which is located just near N.H. 31. The market is held twice in a week. People from the surrounding places go to this market, the specific attention being local goods at cheap prices.

The weekly market, is proposed to function from Facility Centre III after its development. Such other weekly markets could operate from the parking areas of the Commercial Centres on the weekly off-days.

### OCCUPATIONAL PATTERN

#### VILLAGE AREA

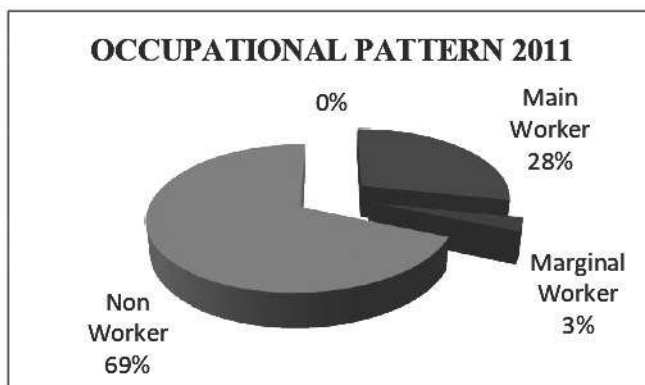
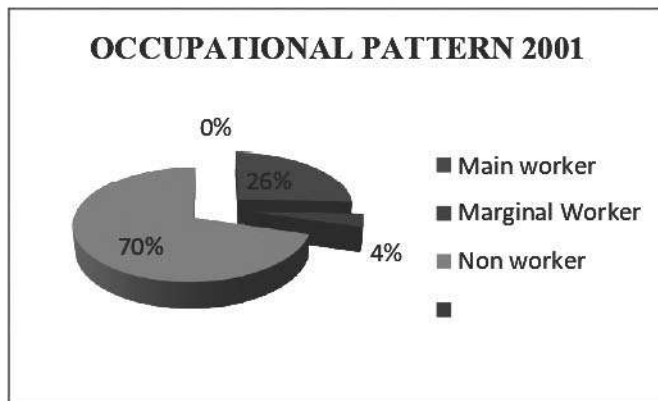
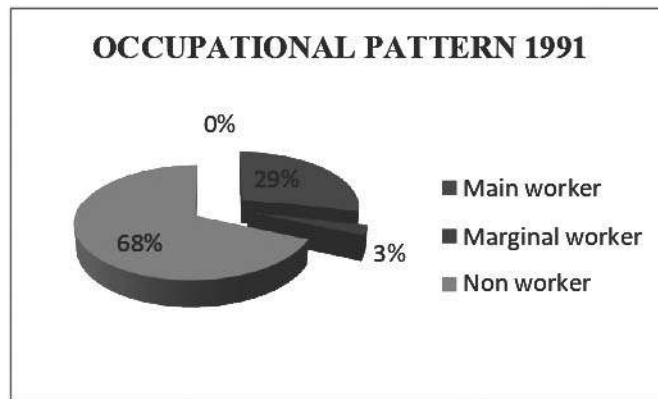
Workers type	1991	%age	2001	%age	2011	%	% of Growth
Main Worker	3513	32.75	5428	23.62	7844	26.76	44.50
Marginal Worker	591	5.51	832	3.62	879	2.99	5.64
Non Worker	6621	61.73	16717	72.75	20584	70.23	23.13
Total	10725	100.00	22977	100.0	29307	100.00	

#### URBAN AREA

Workers type	1991	%age	2001	%age	2011	%age	% of Growth
Main Worker	3108	25.06	4803	28.70	5638	30.80	17.38
Marginal Worker	78	0.62	656	3.92	578	3.15	-11.89
Non Worker	9212	74.30	11271	67.36	12084	66.03	7.21
Total	12398	100.00	16730	100.00	18300	100.00	

#### Master Plan Area:

Workers type	1991	%age	2001	%age	2011	%age	% of Growth
Main Worker	6621	28.63	10231	25.76	13482	28.31	31.77
Marginal Worker	669	2.89	1488	3.74	1458	3.06	-2.01
Non Worker	15833	68.47	27988	70.48	32668	68.61	16.72
Total	23123	100.00	39707	100.00	47608	100.00	



## 4. HOUSING AND SHELTER

### HOUSING SCENARIO

A number of housing clusters have mushroomed in and around various city centres in haphazard and unplanned manner, without a proper layout and devoid of service lines and other essential facilities. These unauthorized developments are encroachments on land parcels belonging to Govt. bodies, public private institutes or areas meant to be green belts. Therefore massive concerted effort need to be made. The remedies would include ensuring that the Master plan as well as Zonal plan and local area plan being made, so that adequate provision is made for the homeless as well as slum dwellers. Should identifying city specific housing shortage and preparing city level Urban Housing & Habitat Action plan for time bound implementation.

To promote in-situ-slum up-gradation with partnership between the central Government, State Government, urban local bodies, self / private Builders etc.

It is a known fact that cities are facing a major problems regarding Housing Affordability among the Low Income Groups (LIG) and Economically Weaker section (EWS). High cost of housing rent and development has forced these group to squat inside the city urban areas who illegally claim uninhabited land, landing to slum development. The housing condition worsens in due course of time, due to un-affordability in maintenance and bad structure, migration to rural to urban areas and income expenditure imbalance.

As per Census 2011, Howly Master Plan area contains 9,454 housing units.

#### Bulding Permission provided by Howly MB of last three years-

Sl. No.	Year	Total no. of houses	A.T	R.C.C
1	2019-20	54	04	50
2	2020-21	15	03	12
3	2021-22	20	4	16

### HOUSING SUPPLY MECHANISM (PRIVATE SECTOR PARTICIPATION)

Privatisation in the form of individuals and builders/developers should be encouraged to participate in the house building activity. The Development Authority could provide land with offsite physical and social infrastructure for the private entrepreneurs to invest in house building and onsite infrastructure development. Also developed individual residential plots could be provided to families where more than one dwelling unit could be constructed.

Housing has four distinct components for its development i.e., Land Assembly, infrastructure provision, building construction and post occupancy management. The following diagram gives an idea how these activities should be distributed amongst the Government, private and cooperatives making the Government a facilitator for housing development.

### ***Concept of land pooling***

As per the survey conducted by Town and Country Planning, Barpeta, it was observed that few neighbourhoods in the villages included in the Howly MP are not deficient of housing but these are cases of non development of these areas may be due to lack of awareness of education. So the people are staying in houses which are made of locally available materials. The economic conditions and livelihood for these families still is agriculture and day to day informal business. The main need of the hour is to impart awareness among these masses that where they are residing in not sustainable and pose a threat to their lives. There is an urgent need to upgrade these houses as they have the tenure ship but their economic progress make it hard for them to do the same.

### **HOUSING-HMP 2041**

#### ***Household Size***

As per census 2011, the average household size in Howly Municipal Area is 4.96 and in Howly Master Plan Area is 5.08.

#### ***Housing Status:***

As per the census records 2011, there are 9,454 numbers of households in Howly Master Plan Area.

<b>Sl. No.</b>	<b>Name Of Town &amp; Villages</b>	<b>No. Of Household</b>
1	Howly M.B..	3686
2.	Howly Gaon	255
3.	Ghilajhari	625
4.	Joypur	333
5.	Nagarjhar	523
6.	Katlijhar	660
7.	Hajipara	1158
8	Phulkipara	265
9	Ambari	109
10	Moiramara	633
11	Itarvita	897
12	Hlapakuri	310

Sousce-- Census 2011

Total 9,454

#### ***Housing Condition***

According to census 2011 total number of households in the Howly Master Plan Area is 9,454 against a population of 47,608 . Out of the total households urban and rural share of households is 3686 (against population 18,301 ) and 5,768 (against population of 29,307) respectively .The average household size of the Howly Master Plan Area is 5.03 .



## SLUMS

### *Existing slum areas*

The Census of India 2001 has proposed to treat the following as 'Slum' areas: -

- All areas notified as 'Slum' by State/Local Government and UT Administration under any Act;
- All areas recognized as 'Slum' by State/Local Government and UT Administration which have not been formally notified as slum under any Act;
- A compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.

According to the information provided by the Howly Municipal Board, Howly, Assam, there are 1 no. of slum pocket in the Howly MBA area about 25 families and its populations are 104, but it is not Govt. identified.

### *National Slum Development Program*

The components of this program include:

- a) Provision of physical amenities like water supply, storm water drains, community bath, widening and paving of existing lanes, sewers, community latrines, street lights, etc.
- b) Community Infrastructure: - Provision of Community centers to be used for pre-school education, non-formal education, adult education, recreational activities etc.
- c) Community Primary Health Care Centre Buildings to be provided
- d) Social Amenities like pre-school education, non-formal education, adult education, maternity, child health and Primary health care including immunization etc.
- e) Provision of Shelter: The Scheme to have a component of shelter up-gradation or construction of new houses as may be required.

### *Concept of City without Slums*

The Asian Development Bank through a study has worked out comprehensive guidelines for the program – 'City without Slums'. One of the major objectives of such a program is eradication or significant reduction of poverty of urban areas. Besides this, the other objectives are to ensure the following:

- a) Security of tenure
- b) Minimum acceptable standards of municipal infrastructure and social services;
- c) Improved employment and income earning opportunities;
- d) Improved education, skills, training and health care;

- e) Better access to credit and other financial services for house/plot purchase, home improvement, enterprise development and livelihood activities, and
- f) Improved level of community organization capacity and empowerment.

The above objectives are inter-sectored and inter-departmental. To facilitate the above, the following is envisaged .

In case of existing slums, which are on Government lands that are not needed for development of any infrastructure or other urban activities, plans for upgrading of slums may be prepared and implemented.

Other slum pockets may be resettled at appropriate areas with due consideration of their distance from work places.

In all new housing schemes, at least 30% of total housing shall be one-roomed houses, part of which will go to the urban poor generally living in slums. These may be provided with cross-subsidy.

In any new land development scheme, 1% of the total land shall be reserved/developed for informal sector/vendor markets, which should be available to the urban poor families to conduct their livelihood earning activities. Such a land can be for informal sector units in food/vegetable/eating stalls and any other activities. Part of the land shall be developed for night shelter where fresh migrants to the city, having no shelter, could be provided with facility to sleep and have sanitation and bathing facilities.

## **URBAN RENEWAL**

### *Central Town Areas*

The Central Town has congested residential and commercial areas, which have high building density on land and high occupancy within buildings. These areas need immediate urban renewal. Refer to map.

### Guidelines for urban renewal

The basic objective of the urban renewal plans are to upgrade the living and working environment by implementing schemes considering the existing physical and socio-economic conditions of the area. The schemes for the urban renewal are to be prepared after a comprehensive study, which should be in the form of a project report and a number of maps and plans. The following sets of plans are considered to be essential to project the existing conditions -

- a) Land Use
- b) Physical condition of structures
- c) Facilities and services
- d) Circulation pattern
- e) Open spaces, park and playgrounds
- f) Special feature (if any)
- g) The plan proposals for the urban renewal should indicate:
- h) clearance areas and areas to be acquired (This would include subsequent plans for redevelopment of these pockets),

- i) population distribution (in relation to holding capacity),
- j) proposed land use,
- k) proposed circulation system (indicating widening of streets, pedestrian streets, parking areas, access of emergency vehicles),
- l) up gradation of facilities and services,
- m) the existing Public and Semi-public uses and services like hospitals, dispensaries, colleges, schools, police stations, fire stations, post offices, local government offices, parking etc. to be retained in their present locations and also additional sites required to be indicated in the Urban Renewal Scheme; and
- n) Recreational areas (indicating totlots, parks, play grounds and other recreational facilities).

Note: Reduced space norms may be adopted for community facilities/ social infrastructure. The concept of Accommodation Reservation i.e. allowing construction of community facilities without counting in FAR may also be applied

The Urban Renewal Plans would be prepared within the framework of the land use of the area as indicated the land use plan. In case of residential areas, the possibilities of mixed use (on ground floor) and street commercial may be explored. Special characteristics and features of the area would be kept in view. As far as possible, the urban renewal project should be self-financing.

## 5. **TRANSPORTATION**

### **THE CONCERN**

Transportation network of an area plays an important role in the area's economic and socio-cultural life. A well laid out road network can provide answer to many problems of human settlement. The growing demand of circulation space calls for scientific assessment of the problems of movement such as circulation pattern, road capacities, inaccessibility, lack of parking space etc, so that remedial measures could be evolved both for short as well as long terms measures.

Passenger and goods transport movement as well as their related concerns in the city transport sector play a critical role enabling productivity of the city system and promoting the welfare of the city and its region. The present transportation exercise is to evolve a transport system best suited to the unique dimensions of the town and to support the social and economic activities taking place there in.

The required traffic surveys and studies have been carried out to appreciate the traffic and travel characteristics, for identifying issues, constraints and potentials and to work out the most appropriate transport system for the town.

### **ROAD NETWORKS OF HOWLY**

The road network of the town is fairly planned and futuristic but needs maintenance. N.H. 31 passes through the Howly Master Plan Area. The Roads in and around the market areas need to be improved. Roads in residential areas are fairly good and barring a select few, which need improvement. Howly MB Areas present network is serving the people with limited financial resources is facing hardship in maintaining the existing road network. The problem with the town is its rapidly growing commercial activity, which has seen a mounting pressure on its roads and habitable space and although the town has stood well against this a master plan needs to be prepared immediately for control and order in future. The vegetable market area, which witness hectic activity during season needs improvement.

- The existing roads in the town are of two categories, Metal roads and
- Roads around the market areas have become congested due to less offsets of structures from the street-line and heavier pedestrian and traffic movement. There is ample scope of improvement of roads in the residential areas with their co-operation.
- Presently though the Howly M.P Area's requirement is paving of roads on a priority basis.
- The most apparent problem associated with the transportation network is the lack of adequate drainage along with the roads. As a consequence of this during rainy season the road get undated by the flood creating traffic problem.

**Records available with the Municipal Board are illustrated in the following table.**

Road Type	Length (KM)
Paver Block	7.5
Surfaced	3.1
Earthen	15.0
Total	25.6

Only 20% of the road length had a carriageway of 7.0 m (2 lanes) and above; 82% of road length did not have footpaths; 80% of the road length did not have drainage facility; nearly 60% of the road length did not have street lighting facility.

### OVERVIEW OF THE CRITICAL ROAD

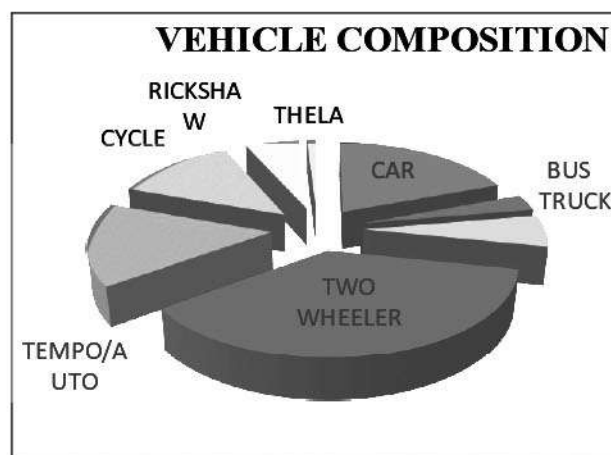
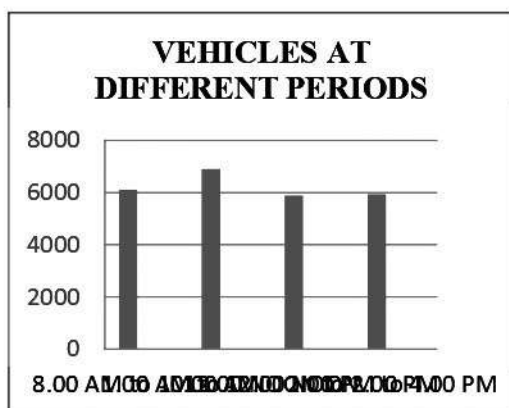
The Howly MP-2041 recommends development of a hierarchy based arterial road network system comprising primary arterial, sub-arterial and collector roads. The main functional roads recommended are:

- a) City Radials/Axials
- b) Alternative Corridors
- c) All Purpose Roads in Central Area

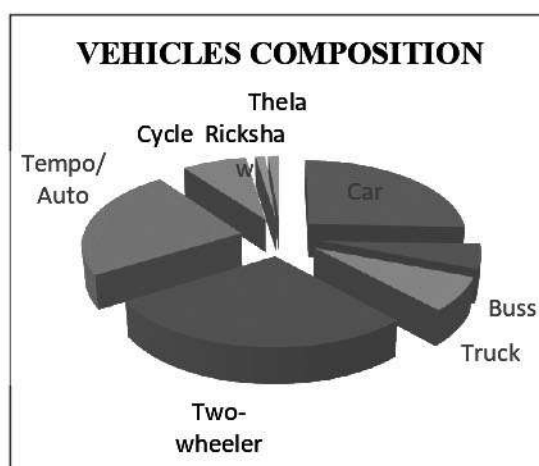
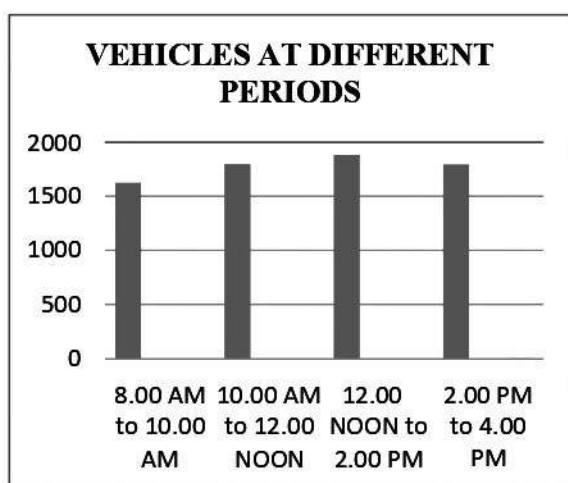
No specific road network has been designed as the condition of the present roads need to be taken care of and after a period of five years a fresh plan will be taken up for this alternative network to improve the transportation system.

Only a few stretches which need to be connected has been proposed primarily in this plan. Refer map -The existing roads.

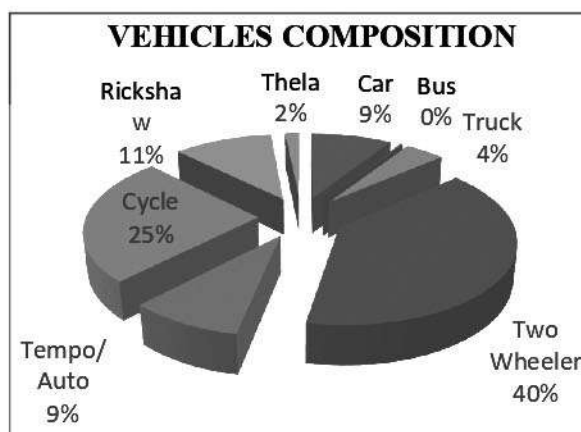
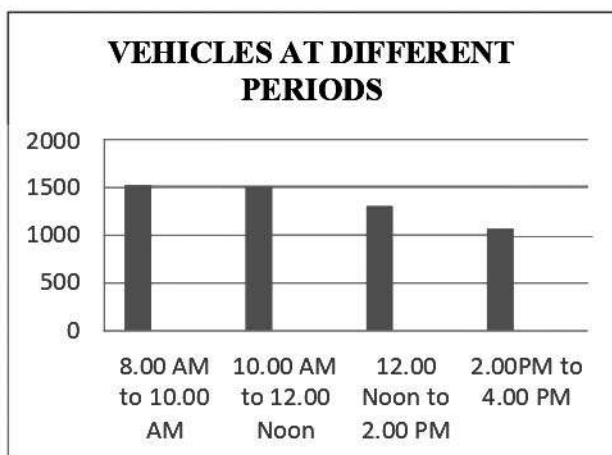
Name of Town: HOWLY TOWN. Time: 8.00 AM to 4.00 PM						
Mode of Vehicle	Mode of time interval				Grand Total	%
	8.00 AM to 10.00 AM	10.00 AM to 12.00 Noon	12.00 Noon to 2.00 PM	2.00PM to 4.00 PM		
Car	1018	1430	1195	1134	4777	19.24
Bus	170	190	138	264	762	3.07
Truck	301	425	345	393	1464	5.90
Two Wheeler	2040	2714	2282	2106	9142	36.82
Tempo/Auto	900	964	962	1005	3831	15.43
Cycle	1063	783	556	808	3210	12.93
Rickshaw	539	311	363	188	1401	5.64
Thela	71	84	49	36	240	0.97
Total	6102	6901	5890	5934	24827	100.00



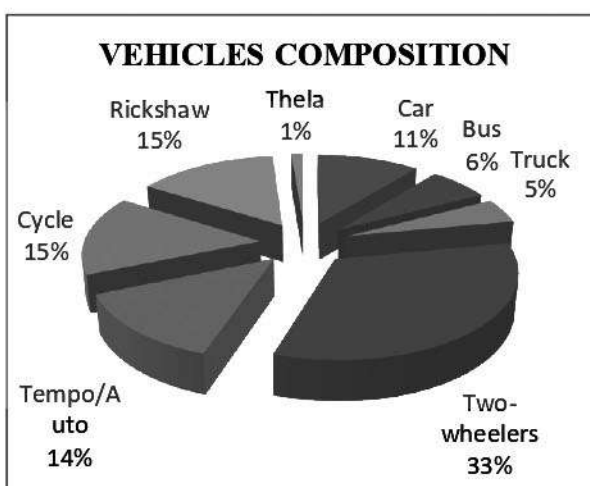
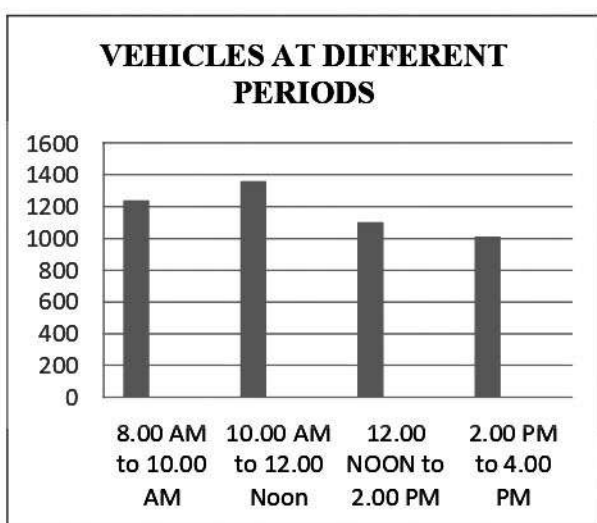
Name of Town: Howly Town	Name of Road:- Howly to Barpeta Road					
Mode of Vehicle	Mode of time interval					
	8.00 AM to 10.00 AM	10.00 AM to 12.00 Noon	12.00 Noon to 2.00 PM	2.00PM to 4.00 PM	Grand Total	%
Car	387	480	492	459	1818	25.63
Bus	75	98	95	106	374	5.27
Truck	115	138	122	137	512	7.22
Two Wheeler	463	490	543	490	1986	28.00
Tempo/Auto	370	398	468	453	1689	23.81
Cycle	190	140	100	112	542	7.64
Rickshaw	10	20	30	22	82	1.16
Thela	14	32	32	13	91	1.28
Total	1624	1796	1882	1792	7094	100.00



Name of Town: Howly Town	Name of Road:- Howly to Joypur Road.					
Mode of Vehicle	Mode of time interval					
	8.00 AM to 10.00 AM	10.00 AM to 12.00 Noon	12.00 Noon to 2.00 PM	2.00PM to 4.00 PM	Grand Total	%
Car	144	130	120	90	484	8.94
Bus	6	2	1	7	16	0.30
Truck	57	65	53	62	237	4.38
Two Wheeler	572	662	478	425	2137	39.49
Tempo/Auto	138	116	134	100	488	9.02
Cycle	390	325	375	280	1370	25.32
Rickshaw	177	175	140	100	592	10.94
Thela	40	32	8	7	87	1.61
Total	1524	1507	1309	1071	5411	100.00



Name of Town: Howly Town	Name of Road:- Howly Town to Bhawanipur Road.						
Mode of Vehicle	Mode of time interval					Grand Total	%
	8.00 AM to 10.00 AM	10.00 AM to 12.00 Noon	12.00 Noon to 2.00 PM	2.00 PM to 4.00 PM			
Car	115	200	125	72	512	10.86	
Bus	48	55	101	100	304	6.45	
Truck	45	88	60	30	223	4.73	
Two Wheeler	313	576	340	330	1559	33.08	
Tempo/Auto	132	152	150	205	639	13.56	
Cycle	235	156	127	200	718	15.23	
Rickshaw	333	115	190	60	698	14.81	
Thela	17	20	8	15	60	1.27	
<b>Total</b>	<b>1238</b>	<b>1362</b>	<b>1101</b>	<b>1012</b>	<b>4713</b>	<b>100.00</b>	



### **THE EXISTING ROADS**

The existing roads are proposed to be upgraded in terms of ROW, capacity and other geometrics. The new roads need to be planned and designed for a higher level of service from their entry into HowlyMP to their meeting with the CBD orbital Road. Within the core area the roads will lose their characteristics and are to be developed as all-purpose roads. The primary arterial roads have a ROW varying between 15 to 30 m. In addition the city level roads comprise sub-arterial roads (10.5 - 18 m R/W), and collector roads (7.5-10 m R/W).

### **BUS TRANSPORT TERMINALS**

1 sub-nodal terminal need to be proposed at the NH-31 and town intersection towards Barpet Road /Guwahati, where all the modes of transport can be organized for a smooth flow into the town areas. The proposal needs to be carried out with the consent of the authorities and a feasibility study to further facilitate it. The sub nodal terminal may be proposed to be developed as multi-use complex, under PPP route.

### **LOCAL AREA MINI TERMINALS**

Every local area (city municipal ward/ new housing development area), as part of Local Area Plans (LAPs) to provide for mini terminal facilities for bus /alternative services serving the area. These terminal facilities could be incorporated as part of the commercial/facilities complex of the Local Area. Hence no separate allocation and reservation of land is made for these terminals. Care to be taken to provide for easy access and exit provisions, convenient bays for them and shelters for the passengers. Such terminals can be provided in the proposed neighbourhood centres

### **PEDESTRIAN FACILITIES**

Walking is a predominant mode in the town. The transport system plan promotes and facilitates walking. The main strategies and measures proposed as part of the plan are as under:

Provision of sidewalks on primary arterials, sub-arterials and collectors on both sides of the road and on at least one side on local roads.

Cross pedestrian facilities to be provided as per the warrants recommended by Indian Roads Congress.

Side walks on all the major roads to be designed for level of service "C"

Improvement measures in terms of pedestrian controlled facilities at intersections , grade separators and widening of sidewalls in the Central Areas and belong major corridors.

### **PARKING POLICY- NEED & DIMENSIONS**

Parking policies have become an integral part of modern urban planning strategies as transportation planner and engineers have recognized the substantial impact they may have on mode choice and travel routes , directly effecting urban mobility characteristics.



Every vehicle trip ends in a demand for parking of the vehicle at its trip ends. The parking of vehicles needs extensive and exclusive land area. Otherwise parking would spill over to other use areas like road carriageway and footpaths, open spaces. In turn they affect safety and environmental quality.

The escalating demand and varied needs of parking in Howly can only be met and organized in the framework of a comprehensive Parking Policy. Parking policy needs to move from 'non-restrictive' to 'restrictive' policy. 'Restrictive' policy would include from banning of parking to restricted provision, regulation and pricing of parking spaces.

strategies for managing and controlling parking in Howly as follows-----

1. Provision for the short range transportation needs of the urban area by making efficient use of existing transportation resources and provision for the movement of people in an efficient manner.
2. Elimination of on street parking , specially during peak period .
3. Provision of fringe and transportation corridor parking to facilitate transfer to transit and other high occupancy vehicle .
4. Strict enforcement of parking restriction .

### **CONGESTION & PARKING ISSUES**

Traffic congestion and road accidents are two external costs of transport and the reduction of their impact is often one of the primary objectives for transport policy makers . As traffic volumes and congestion grows on highways and urban road ways , freight and delivery service operators become increasingly challenged to maintain dependable and reliable schedules .

Traffic Congestion is a condition in transport that is characterized by slower speeds longer trip times and increased vehicular queuing . Traffic Congestion on urban road networks has increased substantially increased travel time caused by traffic congestion imposes costs to road users both in terms of economics loss and also the reduced quality of vehicle and mobility . This increased traffic congestion may lead to more accidents due to increased traffic volume.

To reduce Traffic Congestion ---

- i. Optimize traffic - light management .
- ii. Use C.C T.V. to monitor road condition .
- iii. Enforce existing road traffic laws .
- iv. Improve preception of buses.
- v. Extend residents' parking zone .
- vi. Change for workplace parking.
- vii. Improve cycling infrastructure .
- viii. Improve bus service .
- ix. Develop and refine park- and - ride .
- x. Road parking.

### **TRAFFIC GENERATING NODES**

**Major traffic generating nodes are very few within the planning area.**

1. Howly Barpeta Road Approach on N.H. 31: It is the main transportation and commercial hub of the planning area, as the area passes through N. H. 31. The area consist of many commercial

establishments, wholesale shops and act as a transfer point of passengers and goods. A lot of other urban functionaries are located in the extend portion of this area.

2. Howly Bhawanipur Approach on N.H. 31: It is the main entrance point from east part of Assam to Howly M.B.Area. as the area passes through N.H. 31. It is an extended portion of the Town.

3. Howly Town Chariali: It is the main commercial hub of the planning area. It is major transfer point of passenger and goods .

### **IMPROVEMENT OF ROTARY & JUNCTIONS**

- **Improvement of Intersections**

The transport system plan includes improvement of intersection geometrics including provision of channelisers, acceleration/deceleration lanes, traffic signs, lighting etc and provision of appropriate traffic control systems. It is recommended that all the major intersections, especially those on the arterial and sub-arterials be signalised and in the next level of improvement be linked and integrated and brought under a central Area Traffic Control scheme (ATCs). Grade Separators/Flyovers may be built based on traffic intensity, site conditions and environmental acceptability.

### **STREET LIGHT & PROPOSED IMPROVEMENT PLAN**

The basic idea of Street Lighting is to provide uniform level of illumination on road at horizontal and vertical level and provide a safe and comfortable environment for night time.

Lighting design is basic idea of the selection and the location of lighting equipment to provide improved visibility and increased safety.

Street lighting systems should be designed in a way to avoid significant differences in illumination levels at the light source and on the road areas.

Road lighting provides visual conditions for safe , quick and comfortable movement in the roads.

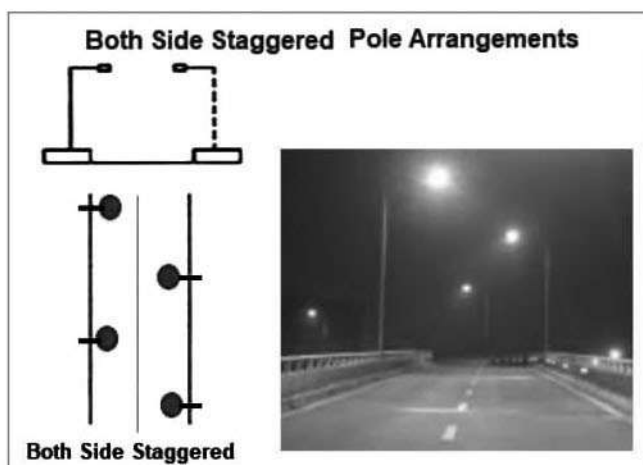
Specification of effective street lighting

1. High lamp efficiency
2. Cost effectiveness.
3. Good colour rendering.

Street light arrangement

1. Arrangement - In one side pole layout all luminaries are located on one side of the road.
2. Bothside Staggered pole layout -- Alternately on each side of the road .
3. Both side opposite pole layout--Luminaries are located on both side of the road one after another.
4. Twin -central pole layout-- Luminaries are mounted on a T-shaped in the middle of the centre island of the road.

5. Pole Height-- The Installation height of the lamp be equal to or less than the effective width of the road.



### **SIGNAGE- AVAILABILITY & REQUIREMENT**

Understanding each and every traffic sign is among the most important aspect for all road user. It is important for all to know about the traffic signs of the road safety signs in order to ensure the safety of himself as well as others. The basic functions of signage include --

1. Inform road users of the distance left to cover to reach a destination
2. Inform road users of the alternative routes to destination
3. Caution road users of hazards near areas such as school and colleges
4. Inform road users of specific locations as parking and non parking

**For Howly Master plan area following points are required regarding availability of signage.**

1. All on-street parking spaces need to be clearly defined by lane markings.
2. Adequate and appropriate signage's to be installed at all places on the street network to identify 'parking' and 'no parking' areas.
3. Off-street parking places to be clearly identified by signs and distinguishing marks.

### **MAJOR PROPOSAL**

Planning for goods movement in an urban area includes three components.

They are:

- Planning for goods generating activities like wholesale markets, major industries, warehousing and storage areas, etc.
- Planning for movement of goods modes and
- Planning for parking and servicing of goods vehicles.

### **PROPOSED ROAD NETWORK**

No such road network has been proposed at this time. Only betterment has been recommended at this time. Black topping and a minimum of 7.5 meter ROW need to be maintained at all levels while preparing the Local area plan. By preparing LAP, macro level details will be met up , rather taking the entire town pattern at the outset.

## 6. INFRASTRUCTURE, PUBLIC UTILITIES & SERVICES

### PHYSICAL INFRASTRUCTURE

#### *Water supply*

- *Present Water Supply Status*

Main source of water is ring well and tube well. Assam Urban Water Supply and Sewerage Board also provides drinking water in the town but due to technical problems supply is not very steady. Wards have been connected for water supply and the supply for the remaining wards is planned within the next few years.

As per Ministry Of Housing and Urban Affairs, 135 lt. per capita per day (lpcd) has been suggested as the benchmark for urban water supply .Presently only .24% of the Howly town area is covered under piped water supply.

It is observed that only .24.% of total population of the master plan is served by piped water supply. Most of the population is dependent on tube wells, wells etc. as their sources of water supply.

#### *Drainage System*

- *Existing Drainage System*

The existing drainage network of Howly town is mostly earthen in nature and is in need of improvement. Main market area and some residential areas have RCC 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 tank. Effluent from the septic tanks is directly discharged in to roadside drains.

#### **Details Of Drain In Howly M.B. Area**

Sl.No.	Details of drain	Length in K.M.
1	R.C.C. Drain	2.80
2	Brick Drain	4.1

#### *Sanitation.*

Sanitation system aim to protect human health by providing a clean environment that will stop the transmission of disease . A sanitation system includes the capture, storage , transport, treatment and disposal or reuse of human excreta and waste water. It also maintain hygienic conditions through services such as garbage collection, industrial /hazardous treatment and disposal.

#### Status of sanitation in Howly Master Plan area

Sl. No.	Type	Total Household	No. of Household Covered	P.C.of Household
1	Sanitary Latrine (IHHL)	9454	4481	51%

2	Service	-	-	-
3	Pit	-	-	-
4	Others	-	-	-

Source: Ex. Eng. ( PHE) ,Barpeta Division.

### ***Sewerage System***

Modern sewerage system falls under two categories. Domestic and Industrial sewers and storm sewers .Sometimes a combine system provides only one network of pipes , mains and outfall sewers for all types of sewage and runoff . The preferred system , however provides are network of sewers for domestic and industrial waste , which is generally treated before discharge , and a separate network for storm runoff , which may be diverted to temporary detention basins or piped directly to a point of river.

- ***Existing Sewerage System***

Presently the Howly MB does not have any integrated sewerage system There are generally septic tanks in the municipal boundary. The effluent is released untreated into the nearby drains and low-lying areas. Similar is the case of industrial wastewater. In case of septic tanks, the soak pits are becoming non-functional in many areas because of high sub-soil water table within a short span of time.

- ***Recommendations:***

- Proper schemes should be brought forward by the authorities to improve the situation and system of drainage and sewerage in the Howly MP area
- The encroachments on existing natural drainage system, which is the main reason for the blockage, should be stopped.
- Existing manholes of drain are inadequate; more manholes and inlet are required for the quick disposal of silt and stagnated water. The size of the inlet holes and their position need to be redesigned.
- Silt pit of proper size should be constructed in suitable areas and provision of periodical cleaning the silt pit should be done to avoid blockage in the drainage system.
- Effective garbage collection system (including domestic and other type of garbage) to be in place so that this does not block the drainage channels.

### ***Solid Waste Management***

- There is no planned solid waste management system or even a landfill site for scientific disposal of the solid waste at Howly.
- Howly Town Committee collect the garbage through manual operation and the dump yard is located 4 km away from the town.
- Presently Howly Town Committee is collecting approximately 11 MT of solid waste with manual loading from road side to trailer tractor and hand craft for transportation

- Required machinery is not available to collect and dispose the garbage. Segregation of the municipal solid waste and bio-medical waste is also not done.

Presently important sources of solid waste generation are (i) Residential areas including slum habitations (ii) Fruit and vegetable market (iii) Hotels and restaurants (iv) Hospitals (v) Drains de-silting (vi) Commercial & Industrial wastes from these areas.

It is therefore recommended that the municipal authority looks for proper landfill sites and then in collaboration with the town and country planning deptt, a suitable sustainable plan is further prepared to serve the present and the future needs of the area.



#### Recommmendations-

1. Solid waste open burning .
2. Solid waste sanitary land fills
3. Incineration method.
4. Composting process .
5. Disposal by ploughing into the field .
6. Disposal by hog feeding .



*Electricity*

SL. NO.	Area	URBAN	RURAL	DOM	COM	IND	GEN (Others)	GENERATED	GOVT. UTILITY	PUBLIC UTILITY	STREET LIGHT	ENERGY CONSUMED PER DAY/MONTH (Kwh)
1	AMBARI	199	186	382	1	0	1	1	1	0	0	21760
2	GHILAZARI	0	417	410	2	0	2	2	2	0	0	25687
3	KATHLIZAR	0	306	295	3	2	5	1	0	0	0	15698
4	JAYPUR	0	387	358	18	4	6	1	2	0	0	19218
5	NAGARJHAR	44	396	416	17	0	7	0	0	0	0	21437
6	PHULKIPARA	0	277	264	10	0	3	0	2	0	0	18568
7	HAJIPARA	5	1062	1026	23	3	8	4	8	2	0	30006
8	MOIRAJHAR	5	822	797	17	4	7	1	2	1	0	30961
9	ITARBHITA	12	293	280	21	3	0	1	2	0	0	12402
10	HOWLY TOWN	838	498	1116	194	15	8	2	7	0	0	94244
11	HALAPAKURI	0	244	230	7	1	4	1	2	1	42	9721
12	HOWLY GAON	16	378	388	5	0	1	0	0	0	0	19072
	Total	1119	5266	5710	318	32	52	14	28	4	42	318774

*Source: APDCL (LAR), Barpeta Road.*

**Electricity:** Assam State Electricity Board provides electrical supply for the town. The Total number of urban consumers in the town are 1119 out of which 318 no. are commercial, 32 no. are industrial, 28 no are Government, 4 no. are public lighting, 52 no. are general and remaining 5710 are domestic. There are 42 numbers street lights and. Energy consumed per month 318774 kwh.(as per February ,2021)

## SOCIAL INFRASTRUCTURE

### *Education*

The Education in the State is classified in the following categories:

Table 7.1: System of Education in the State

Elementary Education	Age 6-14 years	Classes I-VIII
Primary		
Upper Primary		
Secondary Education	Age 14-16 years	Classes IX-X
Higher Secondary	Age 17-18 years	Classes XI-XII
Higher Education		
University		
Institutes of National Importance		
Degree Colleges		
Technical and Vocational Education		
Vocational Institutes		

*Source: Economic Survey of Assam 2003-04.*

There are a few educational schools and colleges like Normal School in Howly, Howly H.S. School , Azad High School , Howly Girls' High School, Junior College, Howly, Adarsh Bidyapeeth High School, Kaljar- Helonar pum- Itarvita High School, Halapakuri High Madrassa, Hajipara High School in Howly MP Area. A few km from Howly, Kendriya Vidyalaya Barpeta, a central government school is situated.

Apart from these educational Institutions the Barpeta Road Howly College (BH College) is a degree level college for science, arts and commerce streams and it is a reputed institute of the region. There are 42 numbers of Govt. Primary School, 7 number of Govt. Upper Primary School and 4 Numbers of other Institutes.

### *Health*

There is one Community health center, one Dispensary and five Sub- Centre in the Howly Master Plan Area.



- **Norms for Health facilities**

The Norms and Standards for provision of Health Infrastructure in urban areas adopted for HowlyMP-2041 are given in Table. This is worked out to provide for 5 beds per 1,000 populations and also to result in a balanced distribution of health facilities throughout the city.

**Table :Planning Norms and Standards for future provision of Health Infrastructure**

Sl. No.	Category	Population Served	Hierarchy	Planning Norms and Standards	
				Population /Unit	Plot Area
1	General Referral Hospital (500 beds)	5 Lakh	District	1 for 2.5 lakh	6.0 ha
2	Intermediate Hospital A (200 beds)	1.0 lakh	Community	1.0 lakh	3.7 ha
3	Intermediate Hospital B (80 beds)	1.0 lakh	Community	1.0 lakh	1.0 ha
4	Nursing Homes, Child Welfare, Maternity Centre, Polyclinics	1.0 lakh	Community	0.45 lakh to 1 lakh	0.2 to 0.3 ha
5	Dispensary	0.15 lakh	Neighbourhood	0.15 lakh	0.08 to 0.12 ha
6	Medical College		City Level	Total City	15.0 ha
7	Speciality Hospital – City Level		City Level	Total City	8.0 ha

### **Recreation and Sports**

Howly has three Institutional playground besides Raax Mandir Complex field. Although Howly town has a few hectares of eco-sensitive area like the some farm lands and open grounds, but a very few developed parks and playgrounds are available. Hence civic bodes need to identify and create and also develop the open spaces into organized spaces like parks and playgrounds. The main drawback for not being able to locate a specific area is for all being private lands. So if the space cannot be acquired for the purpose for some reasons , this way keeps flexibility.

Moreover one community centre and neighbourhood play areas needs to be develop after consultaion with the residents.

There is One Cinema Hall of 370 Sitting Capacity. But seeing the growing demand of movie lovers, a state of the art cinema hall needs to be thought for.

### **Police**

Presently, there is 1 Police Stations and no Police Outposts in Howly MP. The one existing jail, is about 11 kms from the town at the district headquartering.

Provision of police out posts needs to be incorporated at each of the villages added under the main police station for a regulated and crime free area.

***Fire***

Fire Services are needed for protecting people from fire hazards, building collapses, and other unforeseen emergencies. At present, there is 1 Fire Stations in Howly MB area including.

Now that the planning area has increased a need for further 2 fire sub-station within the planning area needs to be accommodated.

***Postal Services***

The town has a 1 post office. Few Courier services has come up recently in the town and trending at a large pace.

***Telecommunication***

Howly has one Telephone Exchange, with 4500 user capacity and present connection is 3150 numbers.

***Distributive facilities***

Distributive Facilities include Milk Distribution, LPG Storage and Distribution and Petrol Pumps.

Norms and Standards and Provision

Planning Norms for Milk distribution and LPG storage are given in Table

Table: Planning Norms and Standards for Distributive Facilities

Sl.No.	Category	Planning Norms and Standards
1.	Milk Booth/Milk and Fruit and Vegetable Booth	One per 5,000 population ( in residential developments)
2.	LPG Godown including Booking Office.	3 LPG Godowns per 1 lakh population in facility centres.

***Cremation and Burial Grounds***

At present there is 1 cremation grounds in municipal area namely Howly Crematorium .There is 1 Burial grounds also.

## **7. ENVIRONMENT & CITY BEAUTIFICATION PLAN**

### **INTRODUCTION**

Environmental and City beautification Plan is a fundamental purpose of urban design at this time .In recent years , cities shows increasing sign of environmental problems due to the negative impacts of urban activities .The degradation and depletion of natural resources , climate change pressure on green areas have become major concern for cities. An extremely important function of an urban ecosystem is to provide healthy and sustainable environments for both natural system and communities .

For Howly Master Plan Area , Environment and City beautification could be describe as a process of making visual improvements in the planning area .This is often involves painting trees , shrubbery and other greenery . It may involve decorative or historic main street development. Beautification is a key aspect of community development and it can be an easy way to bring people together .The most important factors for making human life more pleasant are "creating peace , beautifying the spaces , reducing the pollution and regulating the urban graphics and visual arts, besides protecting the society against psychological harms. It is important for people's good health that community they live in is not only clean and free from rubbish , but that is a comfortable and pleasant place in the other way.

There are a few water bodies around Howly Master Plan Area. Manas National Park and satras are located at a few distances from Howly Maser Plan Areas .

### **PLAN/MEASURES FOR PROTECTION AND CONSERVATION OF ENVIRONMENTALLY - FRIENDLY ZONE**

The concept of eco- sensitive zone is an initiative by Government of India to advocate sustainable development apace with the conservation of natural heritage . The Ministry of Environment and Forests has come out to spawn Eco - sensitive Zones around these protected areas. Environmental protection is the practice of protecting the natural environment by individuals, organizations , and Government .Its objectives are to Conserve natural environment and where possible, to repair damage and reserve trend.

Key Point For Protection And Conservation Of The Environmentally- Friendly Zone Of Howly MPA--

1. Reduce , reuse and recycle .
2. volunteer for clean-up in own community.
3. Educating people.
4. Choosing sustainable.
5. Planting Trees.
6. Safeguarding biodiversity.
7. Maintaining ecosystem balance.
8. Maintaining water quality .
9. Conserving natural resources .

### *Heritage Conservation and Tourism*

- ***Heritage Conservation***

Howly and its surrounding area are rich in cultural and historical heritage. There are a number of important archaeological and architectural sites of historical importance. Strategy for Conservation Built heritage of these places needs to be protected, and nurtured and passed on to the coming generations. For this purpose, a conservation committee (CC) may be established by the administration. The CC shall prepare a list of Heritage sites/buildings based on the following criteria:

- a) The age of the building;
- b) Its special value for architectural or cultural reasons or historical periods
- c) Its relevance to history
- d) Its association with a well-known character or event
- e) Its value as part of a group of buildings
- f) The uniqueness of the building or any object or structures fixed to the building or forming part of the land and comprised within the cartilage of the building. Also refer Section 13.5.

- ***Tourism***

Major Tourist Attractions in and around Howly-

#### **1. Howly Rass Mela**

Howly Rass Mela is the biggest festival of Assam. Millions of people come to see the festival every year in Howly. Howly Rass Mahotsov started in the year of 1928.

#### **2. Howly Rass Mandir**

Howly Rass Mandir is the biggest Temple in howly. There is a beautiful pond near the temple. Millions of people visit this temple every year during Rass Mohotsav.

#### **3. Sericulture Farm**

This farm was started in 1954 in Halapakuri village. The natural scenery of this farm is very beautiful with a huge campus.



Sericulture farm, Halapakuri

#### **4. Chandi Barua Memorial Hall**

The old Chandi Barua memorial Hall was made in the year 19 54. Many famous artist like Kalaguru Bishnuprasad Rabha, Phani Sarma performed their act in this historic hall. The new tiow hall was inaugurated by former chief minister of Assam Sarbananda Sonowal in 2020.

Other major attraction in and around Howly is the Manas National Park and the Satras located at various locations within the district.

Hence the Assam Tourism should aim to position tourism as an engine of economic growth and to harness its multiplier effects for employment generation and economic development around the planning area.

For this to happen infrastructure at local level needs to be improved , as this head in interlinked with the other provisions of the master plan All infrastructure connected with tourism such as good roads, hotels and safari resorts, and information support services needs to be developed.

Basic amenities like clean public toilets, easily accessible telecommunication services, tourist information centres, banks and currency exchange centres, food courts and restraints, hotels and lodges etc. among other services to be provided.

Quality Hotels, recreation and shopping centres, local transportation, taxi services etc.

Development and maintenance of the tourist destinations.

Developing the handicraft and handloom haats.

#### **ENVIRONMENTAL PLANNING .**

Working out ahead of time where schools, playing fields, houses , shops and other building and facilities will be build in city or town is called environmental planning. A good planning proposal for Howly Master Plan Area may be provide for ----

1. Areas such as roadside reserve, playgrounds, gardens and parks which can be made more attractive by planting trees shrubs and grass .
2. Plenty of good places to play and exercise
3. Shady places in which to sit and talk
4. Shops , public toilets , health centres and other important facilities which are easy to reach .
5. Roads , footpaths and street lighting which allow people to get around the community easily and safely .
6. Water and power supplies to every house and public safely
7. Sewage and rubbish disposal systems which will meet the community's requirements.

### ***Benefits of Environment Planning***

- A clean and healthy environment .
- A nice , pleasant place where to live healthier people .
- Plenty of places to play and exercise .

### **CITY BEAUTIFICATION PLAN/PROPOSAL .**

#### ***Road Side Plantation .***

Under severe climatic conditions, selected roadside trees can form wind breaks and shelter belt to protect crops, and help to reduce climatic excesses and soil erosion . They can restore some ecological diversity to areas of agricultural monotony.

For Howly MP area The spacing and arrangements of the trees should be such that they do not create any obstruction in the movement of traffic. The general rules and or guideline for spacing and location of trees are as follows.

- 1.The spacing between two trees in a row along the road should be within 9m to 12m.
- 2.The trees should be planted at least 12 m apart from the centre of the carriageway.
3. In the case of water logged area , the trees should be planted on sufficient high ground.
4. Trees are planted both side of the road .
5. The trees should be planted in such a way that gives better shade on the carriageway through the year. That's why staggered way is most preferable for the planting of trees on road side.

#### ***Urban Agriculture And Urban Forestry.***

Growing the Urban forest, a stated goal of many municipalities often occurs through programs targeting the planting and protection of trees on private residential property. At the same time, backward agriculture is gaining in popularity with the support of municipalities, NGOs etc , while an extensive tree canopy has numerous ecological , social and economic benefits , it also has the potential to shade out other forms of vegetation .

These projects will explore the tensions between Urban forest and backward agriculture in Bapeta Road Master Plan Areas by ----

1. Focusing on tree and food crops.
2. Mapping yard- level location of trees and other agricultural product and linking these datas to large scale patterns using high resolution imagery.

#### **a. Urban Agriculture**

Urban agriculture can contribute to minimizing the effect of climate change by, at the same time, improving quality of life in Urban areas. In order to do so most effectively land use and special planning are crucial, so as to obtain and maintain a supportive green infrastructure.

For, the scope of urban agriculture, thereby is to establish food production sites within the Bapeta Road Master Plan Area as follows ----

- Indoor agriculture .
- Vertical farming .
- Rooftop production .
- Edible walls.
- Edible landscape.
- School garden.
- Community gardens.

#### **b. Urban Forestry**

Urban forest have several environmental benefits. Trees reduces air pollution. Urban forestry provides the most effective air pollution measure for any city .It is the care and management of single trees and tree population in urban setting for the purpose of urban environment .The concept of urban forestry, which advocates the role of trees as a critical part of urban structure , was developed to addresses the issue of impact on forestry by urbanization . Aside from the beautification of the urban environment, they offer physiological, sociological and economic benefits towards society.

For Howly urban area , urban forestry comprises all green elements , such as ---

- Street trees and road plantation .
- Public green areas , such as parks , gardens etc.
- Semi private space , such as green space in residential areas and industrial parks.
- Natural forests under urban influence , such as natural reserves etc.

Five steps to meet the goals and facilitate a successful urban forestry process-

1. Form a team .
2. Analyze the current condition .
3. Engage the community .
4. Create the plan .
5. Implementation.

#### ***Public Rain Water Harvesting Scheme .***

Rain Water Harvesting can be defined as activity of direct collection of rain water and storage of rain water as well as other activities aimed at harvesting and conserving surface water and ground water, prevention of loss aiming at most efficient utilization of the rain water towards best use for the humanity .

The Environmental Benefits Of Rain Water Harvesting Scheme.

- Rain Water Harvesting can reduce storm water runoff from a property .
- By reducing storm water runoff , rain water harvesting can reduce a storm's peak flow volume and velocity in local creeks , streams and rivers , thereby reducing the potential for streambank erosion.
- It is an alternative supply during water restrictions .

### ***Surface Runoff Harvesting***

In urban areas , rain water flows away as surface runoff . This runoff can be caught and used for recharging aquifers by adopting appropriate methods.

### ***Rooftop Rain Water Harvesting***

It is a system of catching rainwater where it falls. It can either be stored in a tank or diverted to an artificial recharge system . This method is less expensive and very useful ,if implemented correctly , helps in augmenting the ground water level of the area.

## **RAIN WATER HARVESTING SCHEME FOR HMP AREA**

There are no any public rain water harvesting scheme for Howly Master Plan Area. The rain water harvesting and conservation technique may be successfully execute at the area , as many of the area get effected during rainy season. The main objectives of the schemes are as follows.

1. Augment the ground water recharge through surplus water available in the area.
2. To arrest the rate of decline of ground water level .
3. To monitor the rate of decline of ground water levels .
4. To develop the technology for artificial recharge, specially in Howly Urban area and also quantify the volume of recharged water .
5. To create awareness in the society for proper management of ground water resources .

For public rain water harvesting scheme , salient feature of artificial recharge to ground are as under.

1. Average annual rainfall to calculate.
2. Total area to be taken .
3. Depth of water level to calculate .
4. Water availability for recharge .
5. Expected recharge .

## **DEVELOPMENT OF PARKS AND RECREATIONAL SPACES.**

Existing parks and recreational places of Howly master plan area.-----

1. Children Park .
2. Howly Rass Mandir Pond
3. Martyrs Column Of Howly.





**Martyrs Column Of Howly.**



**Howly Rass Mandir Pond**

These Recreational facilities are used to provide recreational service to residents in all part of Municipal Area as well as Master Plan Area.. Many programs are targeted toward specific age groups , such as seniors and teens.

Preserve and enhance parks and recreational spaces within the Howly Master Plan Area , to meet active and passive recreational needs , improve environmental quality , enhance the identity and character of district neighbourhoods and provide visual beauty.

The policy may be taken on how existing gaps might be closed and how new facilities can be adopted to meet future needs like recreational and athletic facilities , including play field , tennis court , swimming pool , and other open areas for other sports activities .

Provide for the continuing maintenance , renovation , and upgrading of the parks and recreational facilities to prevent their deterioration and ensure that they continue to meet community needs .

Steps might be taken as follows --

#### 1.RESIDENTIAL YARD.

Recognize the value of Residential yards as a component of city's open space system and discourage increased coverage of such areas .

#### 2.COMMON OPEN SPACE IN NEW DEVELOPMENT.

Provide incentives for new and rehabilitated building to include green roof , landscaped open area and other common open space areas that provide visual relief and aesthetic balance .

#### 3.TRAFIC AND RECREATIONAL PLANNING.

Various traffic congestion , it is observed around recreational facilities when major events are held , because of the concentration of private vehicles before and after the tournaments . Recreational facilities should be well served by public transportation.

#### ***Identification And Demarcation Of Multi- purpose Open Spaces For Sports,Cultural Functions , Fair , Circus etc .***

Open space are the placement of major civic and public gathering , ceremonial spaces for recreation and leisure . These places are an expression of the public culture .

The purpose of identity and demarcation of multipurpose open space required by-----

- a. Identify the current and future needs of Howly Master Plan Area .
- b. Review and analyze the open space and indoor facilities .
- c. Recommend local provision standards for all type of open spaces .

Open space can serve a number of functions within the urban fabric town . For example , the provision for play and informal recreation , a landscaping buffer within and between the built environment and a habitat for the promotion of Biodiversity can all provide valuable amenities for residents and visitors .

Each type of open space has various benefits , depending on its type such as allotment for individuals to grow their own produce , play areas for children, playing pitches for children etc . Open spaces can additionally perform a secondary function , such as cultural functions , circus , fairs in addition to facilitating sports and recreation.

Chandi Barua mini stadium is one and only multipurpose open space within the Master Plan Area . Additionally there are a number of small open spaces in the Municipal area . A balance is needed between different type of open space in order to meet the full spectrum of local needs as follows -

1. Indoor sports facilities - All facilities should be built .
2. Provision for children and young people. - Within an equipped playground , there should be a range of at least five different type of well maintained pieces of equipment .
3. Outdoor sports facilities - Clean litter free sports facilities should be provided with appropriate well drained , well maintained facilities .

The main purpose behind creating an open or public space is that people can gather here during trouble or any event . Also these should centrally locate , so people could access them from anywhere , plus they represent the city's history , culture and become iconic sites of cities .

### **NEW PUBLIC SPACES**

The growth of community - led project is creating public spaces that has a very local and specific uses related to local needs and physical qualities and feature of their local environment . The hosting of events on open spaces has become increasingly popular with local providers . The number of events on city's premier sites , mainly district or sports level events , Bihu function , Shree Krishna Rash festival , Book Fair , Trade fair on these open spaces , as well as ample opportunities for such events on some of the smaller local open spaces in the Municipal areas .

### **BEAUTIFICATION OF MAJOR TRANSIT ZONES.**

#### ***Major Junctions***

1. N.H. 31 junction is located at N.H. 31, 500m away from main bus stop of Howly on both side of town . Both are three leg intersection with arm leading towards Guwahati on east , Bongaigaon on west and Barpeta town on south .It has lot of delay and queue length during office hours . The major objective of this study is to give an alternative and long-term solution for the improvement of the present condition by concept of " congestion Free Corridor ".

#### **OBJECTIVES ARE-**

1. To provide higher level service.
2. To control speed limit.
3. To arrive with a best proposal to reduce traffic congestion, delay and queue length.
4. For other junctions like Howly main Town Junction, Howly Joypur approach road, a beautification plan / proposal may be taken for signal free corridor.

#### ***Bus Depot***

There is no any existing Bus stand in Howly. For over hauling the Government Bus Stand, it will not only be rejuvenated as a hub for long distance and short distance buses but will also offer a slow of facilities to passengers. The existing Road side bus stand, situated at the heart of Howly Town, does not meet the needs and facilities of passengers . The current station of bus depot is neither capable of fulfilling the needs of increasing uses nor clarity of functions / aesthetic qualities .

The purpose is to design a functional and social transportation complex in Howly , by using the potential of land and realize that its nature as a landmark. The terminus will feature a complex transit structure . It will be connected to the nearby Railway station . The structure will feature offices of transport companies , service centre of heavy vehicle manufacturers , shops offering goods and services to bus / truck drivers need and warehouses and godowns for transporters to unload goods and distribute those using smaller trucks . It will be occupied with WI-FI so that transport companies can keep on eye on their vehicles using GPS.

#### ***Market Zones***

- a) Car free zone with only pedestrian movement inside on central market area .
- b) Proper vending zone.
- c) Cleaning of market places
- d) Removal of unauthorized road side kiosks.
- e) proper drainage

#### **BEAUTIFICATION OF SIGNAGE AND STREET FURNITURE.**

##### ***Signage***

Signage system play a number of important role . They provide information and direction for people to find their way around a site , help to maintain the site's image and coherence and encourage learning.

Besides conventional signboards , maps , kiosks and other elements may be use as signs and placing signs at other site amenities like benches , cafes and intersections can help to create mini destinations in the open space.

##### ***Steps***

- a) Regulatory signs for traffic control.
- b) Warning signs for existing and potentially dangerous conditions for bridge , crossing etc.
- c) Information signs to inform visitors about the sites .
- d) Educational signs to get people interested in unique features of sites .
- e) 5.Clearly visible and directional sign should be visible from a distance of at least 20 meter for clear visibility.

## 8. LAND USE PLAN

### EXISTING LAND USE

Land-use planning leads to land-use regulation, which typically encompasses zoning. Zoning regulates the types of activities that can be accommodated on a given piece of land, as well as the amount of space devoted to those activities, and the ways that buildings may be situated and shaped.

The term “planning”, which relates to land use, is historically tied to the practice of zoning. Conventional zoning has not typically regarded the manner in which buildings relate to one another or the public spaces around them, but rather has provided a pragmatic system for mapping jurisdictions according to permitted land use.

Land use planning practices evolved as an attempt to overcome the urban settlement challenges. It engages citizens and policy-makers to plan for development with more intention, foresight, and community focus.

### LAND-USE PATTERN

Land use survey was conducted for the Howly Master Plan area by the Consultant.

*Table 2: Existing Land-use Classification (2022)*

Category (Existing)	Area (Sqkm)	PC to Developed Area	PC to Total Area
Residential	10.186	78.28	37.85
Commercial	0.886	6.81	3.29
Industrial	0.049	2.13	0.18
Public & Semi-Public	0.781	6.00	2.90
Recreational	0.135	1.04	0.50
Road	0.872	6.70	3.24
Park/Open Space/Playground	0.104	0.80	0.39
Total Developed Area	13.013	100.00	48.36
Agriculture	11.598		43.10
Water Body	2.299		8.54
<b>Grand Total</b>	<b>26.910</b>		<b>100.00</b>

It can be seen from the above table that there is no proportionate and adequate distribution of land for various land uses. It is seen that around 64% of land in the whole Master Plan Area is developed land and residential area enjoys the major share i.e. around 50 % of developed area. In the total Master Plan Area around 37.31% of land is under Agricultural land use.

### PROPOSED LAND USE PLAN

All areas under the Howly Master Plan have been designated as one of the following land use-zones, which are residential, commercial, industrial, public- and semi-public, recreational, transportation and agricultural.

#### *Proposed Land-Use Classification*

Category	Are (Sqkm)		% of Land use
Agriculture	9.814	9.814	36.47
Bus/Truck Terminus Proposed	0.024	0.024	0.09
Commercial	0.886	1.078	4.00
Commercial Proposed	0.192		
Industrial	0.049	0.128	0.48
Industrial Proposed	0.079		
Playground	0.104	0.104	0.39
Public & Semi-Public	0.781	0.824	3.06
Public & Semi-Public Proposed	0.042		
Recreational/Open Space	0.150	0.191	0.71
Recreational/Open Space Proposed	0.041		
Residential	10.013	11.590	43.07
Residential Proposed	1.577		
Road	0.873	0.874	3.25
Road Proposed	0.002		
Water Bodies	2.284	2.284	8.49
<b>Grand Total</b>	<b>26.910</b>	<b>26.910</b>	<b>100.00</b>

#### *Land use Distribution HMA*

Landuse	UDPFI Norms	Norms for HMA	Area in Sq KM	PC to Develop area	PC to Total area	Area in Hectare	Land in Hectare allocation per 1000 Population
Residential	45-50	48	11.59	78.8	41.74	1095	16.00
Commercial	2 to3	5	1.08	7.3	3.88	115	1.68
Industrial	8 to 10	10	0.13	0.9	0.46	53	0.77
Public & Semi Public	6 to 8	8	0.82	5.6	2.97	133	1.94
Recreational/ Parks & Play ground and open space	12 to 14	14	0.19	1.3	0.69	140	2.05
Transport & Communication and utilities	10 to 12	15	0.87	5.9	3.15	100	1.46
Bus/Truck Terminus Proposed			0.02	0.2	0.09	20	23.91

		Total	14.7 1	100.0	..... ...	1656	0.0
River/ Water Bodies	.....	..... ..	2.28	..... ..	8.23	126	0.0
Agriculture/	.....	..... ..	9.81	..... ..	35.34	287	0.0
Forest			0.96		3.46	96	0.0
Total		100	27.7 7	100.0	100.0	2165	23.91

Source: Calculated By Town & Country Planning Assam, Dist Office Barpeta

#### **LAND USE PLAN – 2041 FOR HMA HAS BEEN PREPARED CONSIDERING:**

- Accommodating existing and future development.
- Improvement of existing condition of HMA and to develop the urban structure with a population of 68,384 by 2041.
- Proposing need based infrastructural facilities.
- Ensuring orderly transport network for easy accessibility of people and smooth movement of goods and services
- Restructuring of land uses based on sectoral studies.
- Setting up of zoning regulation on the proposed land use basis for controlled growth and development of economic activity and maintaining and upgrading quality of life.

The proposed land use plan has been prepared taking into consideration the minimum dislocation of existing land uses inter – relating the highest order of activities with planning areas and establishing home work place relationship. The plan prepared will determinate a physical base for massive new growth through a major programme of land acquisition and Installation of infrastructures.

## **9. PROPOSED PROJECTS' BRIEF AND TENTATIVE FUNDING SOURCE**

### **INTRODUCTION**

An assessment of future population and its' future characteristics is the basic requirement for preparation of a development plan of a human settlement. However it is equally difficult proposition to work out exact estimates of future population of a settlement, because of the factors, on which the growth depends, cannot be foreseen accurately.

While arriving at the projected figure the following factors were taken into account:

- i) Natural growth of population of the area
- ii) Trend of migration of population from vast rural hinterland and expansion of saturation of adjoining Area.
- iii) Various development projects being taken up in the planning and its adjoining areas.
- iv) Availability of vacant land and existence physical barrier such as low, Marshy flood prone area.

For achieving this, future Urban planning decision need to be based on the judicious deposition of activities along with greater planning expediency to align its role for prosperity and planned urban development. The planning Decision of the Howly Master Plan Area consciously aimed at sustained and planned city development . In order to generate positive urban development, the Master Plan would focus on conscious decisions to provide impetus and support to anticipated urbanization.

### **BASED ON EXISTING CONDITIONS AND PROJECTED REQUIREMENTS OF THE PLANNING AREA, IDENTIFY PRIORITY SECTORS AND PROJECTS**

The Guiding Principles for preparation of Howly Master Plan 2041 are derived from planning experiences and challenges confronted in the city which include as following:

- Environmentally and Ecological Suitable Development
- Local Economic Development
- Sustainable and Integrated Transport System
- Inclusive and Collaborative Integrated Urban Development

#### ***Local Economic And Development***

It is an approach to combine economic development activities, urban planning, infrastructure development and social development activities to improve local conditions. Economic development and growth are influenced by four factors-- Human Resources, Physical Capital, Natural Resources and Technology.

For Howly Master Plan Area, The Goal of Local Economic Development are to create wealth, generate jobs, increase income and ultimately reduce poverty and improve the quality of life for both women and men in the locality.

Small and medium sized rural towns are an integral part of the local economic landscape .A significant and increasing proportion of the rural population lives in this locations. The employment opportunities available in such locations and the standard of living of its population are therefore important dimensions of local economic development. To improve the economic development in this region , promotion of different economic sector has to be carried out for diversification and



strengthening of economic base of the city. Job-oriented land use have to be propagated in the Master Plan so that present level of unemployment in the region is drastically brought down. The social infrastructure of the area has to be emphasized as well so that the youths can be skilled, upskilled and reskilled in accordance with the needs of the present times, converting them into source of demographic dividends.

#### ***Environmental and Ecological Suitable Development***

The topography and drainage system of this region presents a unique challenge towards attaining the perfect balance between resource conservation and utilization. The incorporation of effective environment conservation and sustainability features will be an important aspect in the preparation of this Master Plan. Environment conservation is a major issue that needs to be tackled while planning the development of any area. Efficient measures towards conserving the natural surroundings will be adopted, since the balance between natural and man-made surroundings significantly enhances the quality of life of residents.

Protecting the irrigated and fertile land as well as forest area and development in the less fertile area, will be the aspect of the planning proposal. An appropriate balance between built and un-built areas is proposed to be established so as to provide a good quality of life to the people inhabiting the area.

#### ***Sustainable and Integrated Transport System***

Howly town is fast transforming in its physical and socio-economic dimension. Traffic congestion, faulty parking, insufficient Road widths, decreasing Level of Service (LoS) of most of the roads, inefficient public transport, etc. are some of the problems of urban transport and transport network in Howly town. Keeping all these shortcomings in view, the following proposals have been made in this Master Plan:

- ***Bus Terminus:*** The intercity buses are plying from Baihata Chariali to Bangalipara having stoppage at Howly main Chowk. Currently passengers are boarding buses directly from the that point. Such activities have increased the chances of accidents from high speed vehicles and loss of life and property. A dedicated bus terminus for intermediary stoppages and for better regional connectivity has been proposed near the main Howly-Baihata Road.

- ***Truck Terminus:*** Howly in the past has had a rich history of Agro based Industries. Due to its better connectivity through Road and Rail as well as availability of undeveloped land, it has the potential to become a modern-day industrial hub. A Truck Terminus has been proposed along the main Howly-Baihata Road which will serve the Industrial corridor as well as a parking spot for the vehicles going towards the state capital Guwahati.

- ***Road Widening and Extension:*** The Howly Town has been extended and from its 8 wards to 12 wards. The Howly Feeder Road is the only major Road which connects the North to South of the Howly Master Plan Area. Other alternative roads are either unpaved or narrow in width. Since Howly Municipal boundaries is extended to 12 wards it is proposed that the width of Howly Feeder Road may increase upto 24 meters along with necessary road signages and services.

- ***Fly Over At Howly-Barpeta Road N.H 31 3 leg Junction:*** A fly over is really very necessary for Howly-Barpeta Road N.H 31 at 3 leg junction. It helps to reduce various accidental cases and also to provide safety of human lives.

### ***Inclusive and Collaborative Integrated Urban Development***

The Howly Master Plan Area is spread over 24 revenue villages which are predominantly rural in character. The countryside is viewed as a potential area of urbanization for Howly town in next two to three decades. Being close to the state capital and having good connectivity via road network and railway, the region presents a tremendous scope of growth. Having sound access to raw-materials and skilled and semi-skilled manpower, Howly can be elevated to a manufacturing hub. The basic planning principle is to create a sustainable blend of rural-urban continuum. The growth is proposed to be inclusive of all income groups integrating sectoral vision for holistic development of the region.

### ***Mixed-use Development Policy***

#### ***Concept***

Any building(s) having a combination of more than one use at a specific point of time is said to have 'mixed use'. For example, a building having one use in the ground floor and other use(s) in the upper floor(s) is said to have mixed use. The mixed use shall not be misconstrued with the mixed use of a plot or a parcel of land. It is a vertical land use change of a building across its floors rather than a changeover space laterally. Mixed use is always a combination of main use and the uses which are incidental to the main use. While the main use is defined as the Primary use, the incidental use is construed as Secondary use. It is an important planning tool to accommodate the unforeseen land use changes resulting because of competitive market forces in city centres and along important streets. Mixed use has also become inevitable because of limited scope for horizontal expansion as well as scarcity of land in such areas. For example, commercialisation along main arterials within the residential areas is an illustration of land use conversion resulting because of such factors. The main requisite underlined for the mixed use model is the compatibility of the uses in terms of their type and intensity. In no case, the uses defined as obnoxious or hazardous in this master plan under land use regulations shall be permitted under mixed use category. The secondary use has to be essentially subsidiary or conforming in nature like convenient shopping, primary health and education facilities and basic public services and amenities having manageable impact on the surrounding land use. However, this trend has to be regulated and restricted as prescribed in this Master Plan for numerous benefits and as such, has been for purposes of this Master Plan defined objectively to avoid its misuse while issuing building permissions. For purposes of this Master Plan, mixed use is defined where:

In case of mixed use distribution, the secondary use shall be restricted to one floor only (preferably the ground floor) which is more susceptible to land use changes. While issuing the mixed use permits, care should be taken to consider the Secondary use as ancillary use to the main use in size and scale within the structure.

### ***Composite Mixed Landuse Model***

As a policy measure, the proposed land use is viewed as a Composite Use broadly segregated and integrated across sectoral uses. As an inherent flexibility in the Proposed Landuse Plan, it is proposed to calibrate and to integrate the proposed land use to the hierarchy of road network in a horizontal mix, however, essentially segregating the hazardous and obnoxious uses. The policy is applicable to those uses which have been made permissible in a particular landuse.

In this Master Plan, a Composite Mixed Landuse Model is envisaged along the designated roads based on their proposed RoW.

## **FUND REQUIREMENT FOR EACH SECTOR/PROJECT IDENTIFIED UNDER THE SECTORS**

No fiscal plan has been worked out at this stage. The final Master Plan would provide a basis for preparation of five yearly development programmes and yearly fiscal plans for implementation.

### **IDENTIFY LAND SITE FOR PROPOSALS: IN CASE OF GOVERNMENT LAND, INVENTORY OF MUNICIPAL LAND, STATE GOVT./ GOVT. AGENCY OWNED LAND, ETC. AND PLAN FOR ACQUIRING/LEASING THE SAME**

The revised Master Plan proposes Negotiated Land Acquisition in place of compulsory land acquisition as an innovation in land acquisition procedures for speedy urban development in consultation with various Govt. Depts.

- **Concept of land pooling:** As per the survey conducted by Town and Country Planning, Baksa, it was observed that few neighbourhoods in the villages included in the MP are not deficient of housing but these are cases of non-development of these areas may be due to lack of awareness of education. So, the people are staying in houses which are made of locally available materials. The economic conditions and livelihood for these families still is agriculture and day to day informal business. The main need of the hour is to impart awareness among these masses that where they are residing in not sustainable and pose a threat to their lives. There is an urgent need to upgrade these houses as they have the tenure ship but their economic progress make it hard for them to do the same.

### **INDICATIVE SOURCES OF FUND: SPECIFIC CENTRAL SCHEME FUNDS (10%, NLCPR, AMRUT, INFRASTRUCTURE DEV FUND, ETC) ASSAM FINANCE COMMISSION FUNDS, CM'S SPECIAL PACKAGE, PUBLIC PRIVATE PARTICIPATION, LOAN FROM (EXTERNALLY AIDED PROJECT (JICA-WORLD BANK-ADB), ETC.**

#### **Roads:**

- **National Highways:** The Government of India passed the National Highway Act, 1956, to take the responsibility of building and maintaining the National Highways.
- **State Roads:** These roads are constructed and maintained by the Public Works Department (Roads).
  1. "Assam Road Maintenance Policy" and "Assam Road Maintenance Fund Rules" came into force with effect from 25 September, 2014. Its main objectives are to make available funds to Assam State Road Board (ASRB) on a sustainable and dependable basis for maintenance of State Roads.
  2. "Assam State Roads Project" is an Externally Aided Project (EAP) implemented for by the Public Works Roads Department (PWRD) through the ASRB for improvement of State Highways (SH) and Major District Roads (MDR) in the State.
  3. The Central Road Fund (CRF) was established by the Parliament by law (Central Road Fund Act 2000) in order to fund the development of State highways, Major District Roads, etc. The Fund is utilised for projects relating to the construction and development of State Roads including roads of inter-State connectivity and of economic importance.
- **Village Roads:** Village roads are maintained by the Zilla Parishads and PWD. Pradhan Mantri Gram Sadak Yojana is a notable scheme launched by the Government of India to provide good all-weather road connectivity to all villages in India. In 2015, it was announced

that the Central Government would contribute 60% of the funds and the State Government would contribute 40% of the funds.

***City Beautification:***

City beautification projects like public parks, river front developments, multi-utility buildings can be taken into consideration once the town is covered under City Infra Development Fund (CIDF). PPP models should also be explored to make the projects more sustainable.

Availability of adequate funds is an important determinant for successful implementation of the plan proposals. While conventional pattern of project financing is being in transition, the private investments and public private partnership modes of infrastructure development assumes greater significance. This apart, the programmes of the National Government provides greater opportunities for improving the status of infrastructure and service delivery. Hence, it is the responsibility of every development agency concerned to take initiatives to draw maximum funding for the plan implementation.

***National Programmes and Funding agencies available for the resources in urban area.***

Integrated development of Small and Medium town Programme, is a programme of national importance, which has identified the sectors and projects eligible for assistance, which include:

- i. Water Supply (including de-salination plants) and sanitation
- ii. Sewerage and Solid Waste Management
- iii. Construction and improvement of drains/storm water drains
- iv. Construction/Up-gradation of roads, highways/expressways
- v. Parking lots/spaces on Public Private Partnership basis
- vi. Development of heritage areas
- vii. Prevention & rehabilitation of soil erosion/landslides only in case of Special Category States where such problems are common and
- viii. Preservation of water bodies.

**PROJECT DETAILS IN HMP AREA**

Sl. No.	Name of Scheme	Project Detail
1	14th Finance 2018-19 during Year 2020-21	1. Constr. of drain along Madhu Baisya road. 2. Constr. of drain along Madhya Ambari road. 3. Improvement of Gandhi Nagar road by CC. work. 4. Improvement of Ziratte road by ICBP. 5. Improvement of Mairamara link road (Haloi) by ICBP . 6. Improvement of Mairamara link road (Natun hati) by ICBP 7. Improvement of HJM School road by ICBP.
5	GIA	Development and beatification of water body like pond/walking Zone/Park etc.
6	PMAY(U)	Approved- 2246 no. of House. Grounded - 1800 no. of House.

## 10. DISASTER PLAN

### INTRODUCTION

The District Disaster Management Plan is an effective plan which envisages several measures that can be taken in the event of any kind of disaster. The State Policy recognizes that hazards are inevitable but these need not convert into disasters. This Policy is based on the twin principles of minimizing human suffering during disasters and reduction of financial losses through integration of disaster risk reduction activities into development planning.

Owing to a unique geographical and geo-climatic setting, the State of Assam has witnessed a number of disasters, ranging from incidents of fires to destructive floods and catastrophic earthquakes. The State has witnessed many natural and manmade disasters especially in the 19th and early 20th century. In the wake of recurring disasters, the State has always paid heavily in terms of loss of life and property. Like other parts of the State, Howly Town is a multi-hazard prone area. Multi Hazards which are confronted in the town are detailed in table below-

*Table 3: Multi Hazards Areas Covered*

Sl.No.	Hazard	Areas Covered
I.	Floods	Baksa is one of the flood prone districts of Assam. There are several nos. of rivers and tributaries in Baksa which originates from Bhutan hills. They are Pagladia, Baralia, Nona, Ghagra, Mora Chowalkhoa, Mora Pagladia, Howly and Kaldia etc. They flows through the heart of the district and merges in the river Brahmaputra.
II.	Earthquakes	The tectonics of the Assam region is dominated by convergence of the India, Burma and Eurasian plates and is categorized as Seismic Zone- V which would need special measures to mitigate, minimize and safeguard the life, property and infrastructure which makes structural safety important.
III.	Landslides	Areas along major Riverbank
IV.	Drought	Most of the paddy growing areas depend upon the rainfall. The monsoon commences around the middle of April/May. For timely agricultural operation, a few showers of pre-monsoon rain is absolutely necessary. Regular rainfall till the middle of October can ensure a good harvest. But, if the rainfall at any circumstances will not happen then this will lead to improper agricultural operation and growth of crop and finally the drought will occur. So drought is caused due to failure of rains in season. The areas under drought need recharging and retention of water table for both urban and agrarian activities.
V.	Wind storm	Occasional wind storms is destroying crops, horticulture and houses in Howly & it is prone to high speed winds causing extensive damages to urban infrastructure and urban forestry.
VI.	Hailstorms	Although hailstorms rarely involve loss of lives, their economic impact can be severe. The damage appears to be a function of the intensity and duration of storms and the size of the hailstones, which these produce. The damage itself is often produced not only by the

		impact of falling hailstones, but also by the high winds and torrential rains that is part of the hailstorm.
VII.	Fires	In Assam due to peculiar housing patterns maximum fire accident cases takes place. These houses are of generally mud-built walls with thatched roofs made out of timber, bamboo and straw. They spring up in clusters. In summer fire accident becomes frequent; it destroys houses and properties and causes serious distress to the afflicted people. In Assam, the Harijans, Adibasis and other economically backward group who live in congested localities are the targeted victims of the Fire Accident. However, incidents of fires are recorded in the congested parts of the city and urban poor areas.
VIII.	Human induced disasters	All parts of the Howly Town vulnerable to man-made disasters due to competing urban uses, high cost of land and limited land resource.

District Disaster Management Authority should get area-specific hazard, vulnerability and risk maps prepared using GIS database for mitigation and emergency management. The plans so developed shall be operational, regularly reviewed and updated. This will help in the vulnerability assessment of town after proper zonation. Specific measures like micro-zonation of Howly Master Plan based on disasters and integrating it with the land use planning and zoning regulations, retrofitting of infrastructure and buildings, disaster-safe construction technology and strengthening the capacities of communities shall be promoted in a time-bound manner. The construction work and other activities that that may lead to situations eventually resulting in disasters shall be monitored regularly in vulnerable areas like water-bodies, hill slopes.

Hazards like earthquakes and cyclones do not kill people but inadequately designed and badly constructed buildings do. Ensuring safe construction of new buildings and retrofitting of selected lifeline buildings is a critical step to be taken towards earthquake mitigation. The Building construction, material and design specifications as laid down in the National Building Code-2005 shall have to be a mandatory requirement for important and high rise buildings. In case of areas having moderate to high vulnerability of flash floods and landslides, the buffer zones envisaged in this Master Plan need to be implemented while permitting any development in such areas.

## **SAFETY AGAINST NATURAL DISASTERS**

### ***Earthquakes***

The application for seeking building permit shall be accompanied with a report of Architect/Structural Engineer certifying that the proposed structure has been designed structurally keeping in view the safety measures against earthquakes as indicated in the following Bureau of Indian Standards (B.I.S).

#### **Bureau of Indian Standards (B.I.S).**

- a. IS: 13935: 1993  
Repair and Seismic Strengthening of building guidelines
- b. IS: 1893 (part i): 2002  
Criteria for Earth quake Resistant Design of structure
- c. IS: 4326 1993 (2002-04)  
Earthquake Resistant Design and Construction of building – Code of practice
- d. IS: 13920: 1993

Ductile Detailing of Reinforced Concrete structures subjected to seismic Forces – Codes of Practice

e. IS: 13827: 1993

Improving Earthquake Resistant of Earthen Building – Guidelines

f. IS: 13828: 1993

Improving Earthquake Resistance of low strength Masonry Building Guidelines

#### ***Fire Protection and Fire Requirements***

This part covers the requirements of the fire protection for the multi-storied buildings (high rise buildings) and the buildings which are of 15 mtr. and above in height and low occupancies of categories such as Assembly, Institutional, and Educational more than two storeyed and built-up area exceeds 1000 sq.mt. Business where plot area exceeds 500 sq. mt., Mercantile where aggregate covered area needs 750 sq.mt., Hotel, Hospital, Nursing Homes, Underground complexes, Industrial storage, Meeting/Banquet halls Hazards Occupancies.

**Fire protection requirements:** Buildings shall be planned, designed and constructed to ensure fire safety and this shall be done in accordance with Part IV Fire protection of National Building Code of India. The building schemes as such also be cleared by the District Officer of the Fire and Emergency Services Department before issuance of building permit.

#### **STANDARD OPERATIONAL PROCEDURE (SOP) ON DISASTER: PRE-DISASTER, DURING AND POST DISASTER**

The District Disaster Management Plan-2014 (DDMP) updated by District Disaster Management Authority is an effective plan which envisages several measures that can be taken in the event of any kind of disaster within its territorial limits.

The plan deals with Risk Assessment and Vulnerability Analysis, Identification of disaster prone areas, Response structures, Inventory of Resources, Standard Operating Procedures, Directory of Institutions and key Individuals. The plan is prepared to help the District Administration focus quickly on the essentials and crucial aspects of both preparedness and response.

The Master Plan proposes that the facilities like hospitals, fire services, police, schools, water supply, bridges, flyovers and underpasses, electricity, grid stations are critical in nature for post – disaster management. To ensure functioning of critical facilities, buildings occupying such facilities and falling in Seismic Zone- V shall be retrofitted. District Disaster Management Authority- Baksa, shall develop a clear cut retrofitting strategy at its own level for this purpose. Safety audit of all existing important public and assembly buildings shall be done within one year.

## **11. UNIFORM ZONING REGULATIONS FOR HOWLY MASTER PLAN AREA**

### **PLAN IMPLEMENTATION**

#### ***Zoning Plan***

Zoning means the method of accomplishing a suitable arrangement of different land use components of a town. Although it is an integral part of the overall plan yet it does not mean the only arrangement. Good zoning ensures right use of available land. In order to achieve the goals and objectives of the plan a zoning plan is prepared earmarking different use areas with suitable boundaries. This Zoning plan should be read in conjunction with the land use plan and zoning regulations appended herewith.

#### ***Zoning Regulations***

Zoning Regulations play a very important role in controlling and promoting urban development and redevelopment in rational lines. They are also useful in limiting urban growth and in a broader sense can also be used for laying down broad directives in regional plan. Zoning regulations form an integral part of any Master Plan and these have been used extensively to control development of urban areas.

Zoning Regulations have been widely accepted as legal instrument of control and promotion of development and in fact it is the Zoning regulation that an ordinary developer comes into contact with while undertaking the development within the framework of any Master Plan. Thus, these regulations can do a great service in portraying the intension of the Master Plan and promotion its objectives.

Zoning Regulations would help in controlling density of development and land use in each zone in appropriate manner. Zoning Regulations for Howly Master Plan Area will follow the uniform zoning regulation as approved and notified by the Government vide No.226, Dispur the 16th December, 2000 published in the Assam Gazette Extra-Ordinary on 16th December, 2000.

#### ***Plan Administration***

The Master Plan and Zoning Regulation for Howly as presented here contains the broad policies and programmes for improvement and development of greater Howly area up to the year 2041. The administration of this plan from its initiation to the realization will be carried out within the frame work of the Assam Town & Country Planning Act, of 1956 as amended from time to time.

The Town & Country Planning Organization of the State Government besides preparation of the Master Plan and zoning Regulation for Howly will provide necessary guidance by rendering technical advice and by arranging proper scrutiny of the development schemes so as to ensure that the proposed development of Howly conform to the proposals contained in the Master Plan and Zoning Regulations.

Section 8 of Assam Town & Country Planning Act, 1959 empowers the Government to constitute a Development Authority for the Howly Master Plan area for enforcement control and implementation of development proposals as envisages in the Howly Master Plan. As per Section 13 of the same act



all development to be undertaken within the Howly Master Plan area will be subjected to technical scrutiny and approval from the development authority so as to conform with the Master Plan.

***Fiscal Plan***

There may be some changes of this Draft Master Plan for Howly and therefore, no fiscal plan has been worked out at this stage. The final Master Plan when completed would provide a basis for preparation of five yearly development programmes and yearly fiscal plans for implementation.

***Conclusion***

Planning is a continuous process and the preparation of plan implies its actual translation into reality. The Master Plan for Howly is not just a land use classification elaboration but a vision document to make Howly a more sustainable city. Community participation in decision making process in the implementation of the Master Plan will make it a success.

