

অসম



ৰাজপত্ৰ

THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY AUTHORITY

নং 25 দিশপুৰ, শনিবাৰ, 7 ফেব্ৰুৱাৰী, 2004, 18 মাঘ, 1925 (শক)

No. 25 Dispur, Saturday, 7th February, 2004, 18th Magha, 1925 (S.E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

URBAN DEVELOPMENT DEPARTMENT

NOTIFICATION

The 30th April, 2003

No. TCP.104/92/37.--In exercise of power conferred sub-section (2) of Section 10 of Assam Town and Country Planning Act, 1959 (Assam Act II of 1960) as amended read with Rule 4(2) of the Assam Town and Country Planning (Publication of Master Plan & Zoning Regulations) Rules 1964, the Governor of Assam is pleased to publish the following notice regarding the publication of the Final Master Plan & Zoning Regulation for Mangaldai.

Notification for publication for Final Master Plan and Zoning Regulation for Mangaldai.

1. It is notified that the Final Master Plan and Zoning Regulations for Mangaldai prepared by the Director, Town and Country Planning, Assam and adopted by the State Government under Section 10(2) of Assam Town and Country Planning (Amendment) Act, 1962 for the areas described in the schedule below is hereby published.
2. The Final Master Plan and Zoning Regulation for Mangaldai together with all relevant papers and Maps be inspected free of cost during office hours at the office of the Director, Town and Country Planning, Assam, Dispur, Guwahati-6. The Deputy Director, Town and Country Planning, Mangaldai, The Deputy Commissioner, Darrang District and office of the Chairman, Mangaldai Municipal Board, Mangaldai. Copies of the Final Master Plan and Zoning Regulations Mangaldai are available at the office of the Director, Town and Country Planning, Assam, Dispur, Guwahati-6 on payment.

S C H E D U L E**Situation and Areas :****District :** Darrang.**Sub- Division :** Mangaldai.**Approximate Master Plan Area :** 48 | 2 hectores (48.12 Sq . K.m).**State :** Assam.

Mouzas & Viilages included in the Final master plan for Mangaldai.

<u>MOUZAS</u>	<u>VILLAGES</u>	<u>DAG NO.</u>
Rangamati	Mangaldai Town Part - I	ALL DAGS
	Mangaldai Town Part -II	DO
	Mangldai Town - Part -III	DO
Chapai	Mangaldai Town Part - I to	
	Mangaldai Town Part -X	DO
Rangamati	1.. Mohanpur	DO
	2.. Bamunpara.	DO
	3.. Gerimari Chapari -1	DO
	4.. Gerimari Chapari-2	DO
	5.. Gerimari Chapari-3	DO
	6.. Baghpari Chapari -1	DO
	7.. Baghpari Chapari -2	DO
	8.. Mollapara -1	DO
	9.. Mollapara -2	DO
	10.. Bhebarghat	DO
	11. Upahupara	DO
	12. Konwarpara	DO
	13. Monamari Chapari -1	DO
	14. Hengerajhar	DO
	15. Bezpara -1	DO
	16. Bezpara -2	DO
	17. Kamarpara	DO
Chapai	18. Gadhiapara	DO
	19. Lankapuri	DO
	20. Tengabari	DO
	21. Medhipara	DO
	22. Saloipara -1	DO
	23. Saloipara -2	DO
	24. Bandia Chapari -1	DO
	25. Bandia Chapari -2	DO
	26. Bezpara (A part only)	696 697 698 699 700 701
	1154 1155 1156 1157 1158 1159	

1160 1161 1162 1163 1164 1165
 1166 1167 1168 1169 1170 1171
 1172 1173 1174 1175 1176 1177
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 1548 1549 1550 1551 1552 1553
 1554 1555 1556 1557 1558 1559
 1560

27. Mangaldai Gaon

ALL DAGS

28. Saikiapara

DO

Shymabari

29. Galaidingi

DO

CHAPTER -I

I. INTRODUCTION:

The evils of unplanned growth have caused enormous problems in our town and cities, the heart of our social, Cultural and Economic life. It is now quite urgent to apply new principles of urban planning in order to achieve good living and working environment, where needs of housing, employment, transportation, recreation activities etc. of the whole community are best provided with optimum utilisation of available resource.

In Preparing the Final Master plan for Mangaldai various surveys, such as land use, socio-economic, traffic surveys, were carried out to understand the existing condition of the town in order to suggest the type of action to be taken to guide future growth. The Master plan Area of Mangaldai has been demarcated after studying the present trend of growth of the town, the physical feature of the surrounding areas, future development of commercial network in the region etc. Mangaldai is the headquarter of Darrang District which is the least urbanised district in the state except Dhemaji. Thus it is more a market town, serving the vast agricultural hinter land.

II. LOCATION :

Mangaldai, a trade and commerce-cum service town is located on the northern bank of the river Brahmaputra. Mangaldai, which was originally a sub-divisional head quarter for Darrang district in 1983 and was raised to the status of district head quarter when the original Darrang district was bi-furcated into two districts namely Darrang and Sonitpur. The first town committee for Mangaldai was formed during 1923 which was later elevated to the status of Municipal Board in 1957 with an area of 4.95 Sq. km. comprising 10 Nos of Municipal wards. The town is located at about 68 kms. from Guwahati city and is well connected by roads. The N.H. 52 passing through the town connect important urban centres in the north bank and serves as a major road running east-west connecting Guwahati and Tezpur at a distance of 68 km. and 113 km. respectively. The cardinal point of this town

are 26°28' north latitude and 92°1' East longitude and located at an altitude of 91.20 mtr. above mean Sea level.

The original undivided Darrang District being primarily an agricultural district, Mangaldai has developed as an agro based commercial town. Since, it has become a district head quarter, it become an important administrative centre also. The 1971 census has classified it as a service cum Industry cum trade and commerce town. The Municipal area covers approximately 4.95 Sq. km with a population of 12,150 persons (as per 1971 census). As per 1991 (provisional report) census, the population of Mangaldai area has increased to 20,747 persons and in 2001 its estimated population has increased to 30044 persons.

1.2. MANGALDAI MASTER PLAN AREA:

Considering the trend of growth of Mangaldai town it has been felt necessary to include 29 villages around the town within the Master plan area. The total area thus covered within the Master plan area is 48.12 sq. km. (4812 hectares) including 4.95 sq. km of Municipal area, accommodating a population of 31346 persons as per 1971 census which has increased to 50188 persons as per census report for 1991 and its estimated population in 2001 is 68317

1.3 PHYSICAL FEATURES :

Physiographically, Mangaldai town occupied its position on flat alluvial plain land. The mighty river Brahmaputra flows on the southern side of the town and its two other tributaries-Mangaldai river and Bega rivers are passing through the heart of the Master plan area. During monsoon the Eastern and Southern part of the town and its surrounding rural areas are heavily affected by floods.

1.4. CLIMATE :

The climate of an area affects human activities to a great extent. Mangaldai has similar climatic condition with the rest of the Brahmaputra valley with hot humid summer and cool, dry winter. Mean annual maximum and minimum temperatures of the town are 36.40c and 8.40c respectively. There is sufficient rainfall in the summer

months with an annual average of 1894. 4mm.

1.5 HISTORY :

The name of place is generally associated either with some historical facts or with some legends. The origin of the name Mangaldai is based on such different views.

According to history, Raghudeva was the son of Birchilarai and Parikshit was son of Raghudeva. When Chandra Narayan, the son of Parikshit ruled in Bijni, at that time Balinarayan the brother of Parikshit established the Darrang kingdom at Mangaldai.

Another view is that, when Ahom king Pratapsing married Mangaladevi the daughter of king Parikshit he had gifted Darrang kingdom to king Parikshit and from then Darrang kingdom is known as Magaldai in the mamory of Mangaldevi. The view of another group is that the river Mangaldai flows from ancient times through these place and the surrounding place of the river is known by the name of the river. Again another group would like to say that the word 'Mangaldai' derived from tribal dialect. After the marriage of coach daughter to the Ahom king the word 'Mangaldai' has significant meaning. 'Mangal' means prospect and 'Doi' means water. That means river and rivulets comming from the northern hills and flowing through the plains carrying the prospect of the inhabitants and ultimately mingled with the mighty Brahmaputra.

CHAPTER -II

POPULATION AND CITY FUNCTION :

Growth and decay of a human settlement is influenced by the character and magnitude of functions discharged by the settlement; and its economic and social relationship with the hinter land. The settlement performs a certain set of functions, some of which are of local nature, whereas others have regional and national dimensions. Leaving aside functions of national or state importance, the change in the population of a city, unless some special stimulus are injected, are often correlated to the corresponding change in the hinterland. A study of change in the population and its composition for such an area, therefore, enables to foresee the growth of the urban area during the period for which the Master plan is envisaged.

It is also imperative to study age-sex structure, population growth, occupational pattern etc. in relation to the urban functions which would help to make assessment of various needs in respect of Housing Commerce, Public utilities, Recreation, Amenities etc. The Final Master Plan for Mangaldai would cater to the various needs emerging from these studies in order to meet the aspirations of its residents for whom the plan is prepared.

2.1. POPULATION CHANGES IN STUDY AREA :

2.1.1. POPULATION GROWTH :

The growth rate of the town has been slow. There has been only a jump in 51-61. This was probably due to influx of population from the erstwhile East Pakistan (Bangladesh) and also due to the enlargement of boundary in 1957 after the formation of municipality. The town had been a Sub-Divisional Headquarter of the newly created Darrang District only recently. The decadal growth rate of urban population has actually come down to approx 35% between '71-91 from 42% between '61-'71 (See Table- I). The district is one of the least urbanised districts in the State, only 4.97% of the population are urban according to the 1991 Census. Out of this about 32.44 % of the population reside in Mangaldai town. The population of the Master plan area in 1991 is 50188 (Provisional Census figures). Around 41.33 % of population of Master plan reside in the Municipal Area.

Table -IGrowth of population in MASTER PLAN AREA (MANGALDAI).

Year	Urban population	Decadel variation	Rural Population	variation	Masterplan Area	
					Total population	Decadel Variation
1921	1,023	-----	-----	-----	-----	-----
1931	1,693	673(65.78%)	-----	-----	-----	-----
1941	2,093	397(22.35%)	-----	-----	-----	-----
1951	3,571	1478(70.62%)	-----	-----	-----	-----
1961	8,547	4976(139.35%)	-----	-----	-----	-----
1971	12,180	3633(42.51%)	20813	-----	31346	-----
1991	20,747	8567(70.34%)	29473	8660	50189	18842(60.11%)
2001	30044	9297(76.29%)	38273	8800	68317	18129(36.12%)

Source : Census of India Town Directory.

1991- Provisinal figures of census of India.

2001 – Projected figure.

Note :- Figures in brackets indicate percentage and pertain to 1971-91 Census for 1981 was not conducted in Assam.

2.1.2. POPULATION GROWTH WITHIN THE TOWN :

There is a rapid increase of population in ward II and ward IV (see table -II), the growth rate being 111.24% & 120.92% respectively. Whilst the ward II is a relatively older area, the ward IV is a recently developed area and is within urban fringe. For Mangaldai this ward has great potential for future development. Although smaller like ward II and ward IV show a high growth rate, the overall growth rate ('71-'91) of the town has been low as compared to the growth rate ('71-'91) of urban population of the district which is 98.8% (census '91) or of the state which is 91.66 % (census '91). The setting up of an industry Prag-Bosimi synthetics Ltd. at sipajhar, some 20 Kms. from Mangaldai would spurt up urban activity in Mangaldai to some extent. In addition the creation of a new district of Darrang with the head-quarter at Mangaldai have

has a positive impact on Mangaldai town for urban activity has been to a large extent in Assam restricted to providing administrative services to hinter land. Trade and Commerce comes as a secondary activity supplementing the main function.

2.1.3. SEX RATIO :

The sex-ratio of an urban settlement is often influenced by the migrational trends of working force and the housing situation in that settlement. The male when he ventures out usually leaves his family behind and remains alone in the new settlement until and unless he has acquired a regular employment and some accommodation. Thus an adverse sex-ratio is an indication of high migration rate and short housing supply and thus less consideration of the settlement. The overall sex ratio of the town has increased from 724 in 1971 to 859 in 1991 . Except for a small depression in ward VIII, all the wards show an increase, This substantiates that the town is stagnating or growing very slowly. Only a rapidly growing urban centre would have adverse sex-ratio.

TABLE -II

GROWTH OF POPULATION AND SEX-RATIO OF MANGALDAI TOWN (WARD-WISE) :

WARD	POPULATION		INCREASE (1971- 1991)	SEX-RATIO	
	1971	1991		1971	1991
I	1,126	1985	859(76.29%)	528	736
II	2,207	4662	2455(111.24%)	880	904
III	1,805	2080	225(12.47%)	609	826
IV	1,506	3327	1821(120.12%)	753	870
V	1,376	2062	685(49.78%)	705	932
VI	992	1713	721(72.68%)	800	897
VII	764	1639	675(70.02%)	721	863
VIII	788	1319	531(67.39%)	965	926
IX	588	907	319 (54.25%)	613	741
x	828	1104	276 (33.38%)	683	871
Total	12180	20747	8567(70.34%)	724	859

Source :- Census of India, 1971 and provisional figures of census 1991.

Note :- The figures within the brackets indicate growth rate between 1971-91.

2.2. OCCUPATION AND EMPLOYMENT PATTERN :

2.2.1 PARTICIPATION RATE :

The capacity of an urban area to provide variety of jobs and absorbing its working population in various sector of economy is an indicator of the economic viability of the urban area. The participation rate also gives us an idea of the share of gainfully employed persons against the dependent and non-working population. Normally, the participation rate is generally high in urban areas growing rapidly. The table III shows that the participation rate has decreased from 29.76 % in 1971 to 28.62% in 1991.(Data for the rural area within the Master plan Area is not available for 1991). This conclusively proves that the town is growing slowly or stagnating.

TABLE - III

Changes in occupational structure in Mangaldai Master plan Area :

Category	No. of workers					
	Urban		Rural		Master plan Area	
	1971	1991	1971	1991	1971	1991
Primary Sector						
AI	490(13.52%)	329(5.54%)	.....	.....	.....	.....
II	44(1.21%)	95(1.6%)	.....	.....	.....	.....
III	65(1.79)	247(4.1%)	.....	.....	.....	.....
IV	.....	.....	.....	.....	.....	.....
Total(A)	599 (16.52%)	671 (11.3%)	4221 (82.47%)	.....	4820(55.13%)	.....
Secondary Sector						
B.Va						
V(a)&(b)	538.14(84%)	46(0.78%)& 581(9.79%)	.....	.....	.....	.....
VI	230(6.35%)	460(7.75%)	.....	.....	.....	.....
Total(B)	768 (21.21%)	1087 (18.31%)	280 (5.47%)	.....	1048 (11.99%)	.....
Tertiary Sector						
C.VII	852(23.5%)	1718(28.94%)	.....	.....	.....	.....
VIII	274(7.56%)	338(5.56%)	.....	.....	.....	.....
IX	1.132(31.23%)	2131(35.90%)	.....	.....	.....	.....
Total(C)	2258 (62.29%)	4179 (70.39%)	617 (12.06%)	.....	2875 (32.88%)	.....
Total(A+B+C)	3625 (29.76%)	5937 (28.62%)	5118 (26.70%)	.....	8743 (27.89%)	.....

Source :- Compiled from Census (1971) and provisional data for 1991.

Note :- (I) Data for Rural area is not available for 1991.

(II) Figures in brackets () indicate percentage (%) to the total workers.

2.2.2. OCCUPATIONAL PATTERN :

Since data for the rural areas of the Master plan is not available, the analysis is restricted to only the urban area. Broadly, the tertiary sector has gained at the cost of secondary and primary sector. The share of workers in this sector has increased from 62.29 % in 1971 to 70.39% in 1991. For the similar time period the share in the secondary sector has decreased from 21.21% to 18.31% and for the primary sector has decreased from 16.52% to 11.3% respectively (see Table-III). Within the tertiary sector, it is Government service which has grown the highest with the share increasing to 35.9% from 31.23%. Trade and commerce comes a close second with its share increasing from 23.5% to 28.94%. This supports our contention that it is the growth of the town as an administrative centre that has spurred its growth and the trade and commerce has supplemented it. We believe that the trend would continue with administration being the main function of the town in years to come.

2.2.3. EMPLOYMENT STRUCTURE :

Majority of the workers are either in Government service or other services (35.9%). Trade and commerce comes next with almost 28.94% of the total workers employed in this workers sector. The rural area is predominantly agricultural with more than 82% of the population engaged in this sector, in 1971.

2.3 MAJOR URBAN FUNCTIONS :

Urban areas are attached with intangible values like status, character and function which are very kin to human personality. Activities of the urban dwellers which emerge from the urban- function are manifested in the physical development of the town. A harmonious bending of the 'function' and the Activities leads to a healthy and orderly development of the urban area reflecting its true 'personality' and 'character':

It is universally accepted fact that 'Form' follows function. The clarity of function reveals a true forms . If the functions are not well defined and harmoniously blended the 'Form' may get confused and result in clumsiness and chaos.

2.3.1. ADMINISTRATIVE :

Being the district headquarter administration is going be the major function of this settlement. Even now this constitutes the pre-dominant function of Mangaldai.

2.3.2. INDUSTRIAL :

The town is devoid of industrial activities or manufacturing units. Brick manufacturing and related activities as also some agro-based industries like rice-milling, etc. are the only industrial units. The setting up of Prag-bosimi at sipajhar could induce some small units to locate here serving the parent industry.

2.3.3. COMMERCIAL :

This constitutes the best important function of this town. It serves a vast rural hinter land as also smaller urban settlements like Tangla, Sipajhar etc. This activity should increase in near future.

2.3.4 EDUCATIONAL :

This town is the primary Education Centre of the region. It presently has general college, commerce college, one teacher's training college besides school. All these Institutions serve the surrounding region besides the town.

CHAPTER -III

PHYSICAL GROWTH AND EXISTING LAND USE PATTERNS :

In order to conceive an integrated urban structures for the town of Mangaldai, it is imperative to understand land-use patterns, or in other words the disposition of activities in the town in all its instant, growth trends, physical impendiments etc.

3.1. PHYSICAL GROWTH TRENDS :

The town has generally grown along the major routes. The trend of growth has been along the National highway (52) towards west and along the road to Tangla town towards north. Due to lack of access roads areas just a few metres beyond the main routes are still agricultural. Though all the areas along the major routes in the Municipal area are developed, There are also vast pockets of agricultural land within the Municipal area.

However the present growth trend is towards ward IV, Ward VIII and Ward IX. The trend is expected to continue towards north-west beyond ward IX and Ward VIII. The river Bega along the boundary of Ward IV could be restriction for the development beyond this ward.

3.2. LIMITING FACTORS :

Although the Master Plan area is mostly a plain area, areas to the south of the existing National Highway are low-lying and liable to flooding, However, it is proposed to construct a dyke cum road further south of the present National Highway which would not only serve as a barrier to the flood water but also serve as a major road for the area. This river Bega also forms a smaller barrier along the eastern side of the Municipal area.

3.3. LAND USE ANALYSIS :

Quality of urban life and functional efficiency of a city is dependent on proper disposition of activities, the inter-relationships it offers between the work-centres, living areas and recreational areas. In order to conduct a systematic analysis of the problems regarding disposition of various activities expressed as land-use, a detailed Land use analysis has been done in respect of the Master Plan Area.

3.3.1 LAND USE CLASSIFICATION:

In order to understand problems of Land use and to study quantum of Land under various uses to land has been classified to following. 8 Categories.

1. Residential
2. Public - Semipublic
3. Commercial
4. Industrial.
5. Recreational and openspace
6. Circulation.
7. Water bodies.
8. Agriculture.

The above land - use classification would broadly cover all the land uses in the Master plan area, and would facilitate a comparative - study of existing land-uses and proposed Land uses in the Master plan Area.

TABLE – IV

EXISTING LANDUSE PATTERNS OF MANGALDAI MASTER PLAN AREA IN 1991 (AREA IN HECTARES)(updated in year 2001)

Sl.No	LANDUSE	Within the Municipal area	PC to the Total area	Within the Master plan area	PC of the Total Master Plan area.	PC of the total Developed area within the Master plan.
1	2	3	4	5	6	7
1.	Residential	204.73	41.34	1373.84	28.55	64.98
2.	Public Semipublic	68.40	13.80	227.01	4.72	10.74
3.	Commercial	22.36	4.51	43.36	0.90	2.05
4.	Industrial	—	—	21.22	0.44	1.00
5.	Recreational and open-space	6.24	1.26	30.46	0.63	1.44
6.	Circulation	81.12	16.38	418.27	8.70	19.79
Developed Area		382.85	77.29	2114.16	43.94	100.00
7.	Water bodies	62.41	12.61	258.67	5.37	—
8.	Agriculture	49.94	10.10	2402.88	49.93	—
9.	Tea Estate	—	—	36.29	0.76	—
Total		495.20	100.00	4812.00	100.00	

3.3.2 EXISTING LAND USE PATTERN :

From the above table we find that although Residential use appears to be higher, there is actually a shortage of housing . This is mainly due to two reasons :

(1) Majority of these areas are actually villages. Out of the 1373.84 Hectares of residential use in the Master plan Area, only 204.73 Hectares (14.98%) are urban.

(2) even within the urban areas, the density is extremely low.

Land under other uses like public Semipublic, commercial etc, are also very inadequate. There is no area under industries in the Municipal area. The Industries in the Master plan Area is mostly brickbuilding and some agro-based industries. The town is almost devoid of parks and Playgrounds. Although land under transport is adequate in the Municipal area, the conditions of the roads are extremely poor and the width are much below the norms. As observed, majority of the area is under agriculture (49.93%) .About 7% of the Municipal area is vacant which are mostly the banks of the river left off after the rivers had changed their courses. Ther are also vast tracts of land opposite the present bus station used as fisheries of left vacant. This under utilisation of land within the town has to be reduced if not rectified in the future development of the town on the basis of the Master Plan.

3.4. INTER RELATIONSHIP OF LAND USES :

Almost all the offices are located in the ward No-I leading to a high pressure on the National highway and the road to Tangla. The whole-sale and retail Market being in the same place has caused severe traffic and environmental problems. The retail commercial activities has to be dispersed all around the Master Plan area to increase the efficiency to decrease the pressure in the main area. The jail occupying the prime land has also to be shifted in order to put the area into more intensive use.

CHAPTER -IV

HOUSING :

Housing areas which cover a large portion of an urban settlement at any point of time influence the quality of urban life which in turn affects the efficiency of the settlement . In fact the total urban form and character emerges from the quality of housing areas and the inter - relation of housing areas with work centre and other non-residential areas. Normally the word housing and problems related to it are taken to mean dwelling units in terms of quality and quantity alone. Housing or quality of life is more dependent on other elements of housing areas such as disposition of various working areas, layout development of land, provision of roads, its water supply, sewerage, drainage and provision of basic amenities like shops, school, parks etc. It, is in this context that the problems of housing experienced in Mangaldai has been studied in its totality.

The problems of Housing in Mangaldai is aggravated because of low density of residential units and linear development. This large spread vis-a-vis the population residing stretches the infrastructure and thus increase cost whereas the revenue generated remain very low. This gap between the cost and revenue manifests in very poor or no infrastructure at all, leading to very poor quality of housing. The Master plan would try to rectify the situation by increasing densities within the residential areas. The table below gives us a clear picture of the housing areas in the town. We find that highest concentration of residential areas are in ward II and in contrary the lowest is ward I where most of the land is covered by offices and other public uses.

TABLE -V

Percentage of Residential Areas in Mangaldai Town :

SL. No.	Wards	Residential Areas (In percentage to the total Areas)
1.	I	12.9
2.	II	63.28
3.	III	34.66
4.	IV	47.00
5.	V	30.07
6.	VI	26.08
7.	VII	50.26
8.	VIII	26.99
9.	IX	27.03
10.	X	45.24

Source :- Survey by Town & Country Planning Department, 1991.

4.1. LIVING CONDITION :

Living conditions of residential areas is inter related with the environmental aspect of city life. In order to understand and identify the problems of these areas is essential to examine the living condition of these areas both qualitatively as well as quantitatively. Qualitative aspect of living environment covers study of housing areas in terms of structural conditions, standard of services , relationships of housing areas and work centres, provision of services like education, health and recreation provision of Services like water supply, drainage and transportation linkages, while quantitative aspect covers tenure states, housing shortage, residential density, occupancy rate, etc.

4.1.1. HOUSING AREAS :

Urban housing is mainly restricted to within the Municipal

boundaries. The residential areas shown outside the Municipal boundaries are rural housing. The residential spread or housing within the Municipal areas is around 6.82 Hectares per 1,000 person. Normally the rate of housing spread (of a town of this size) should range between 6-7 Hectares per 1000 persons. The rate of housing spread within the Master plan Area is around 20 hectares per 1000 persons. Thus it is clear that there is very low utilisation rate of residential areas. The Master plan would Sought to rectify that increasing the utilisation rate and consequently increasing densities.

The housing areas are restricted to the Municipal area with main concentration being in the South-East portion . The areas to the east of the river Mangaldai are sparsely habitated. There are 10 nos of slum-pockets within the Municipal areas where the houses are dilapidated.

4.1.2. RESIDENTIAL DENSITY :

The study of residential density enables us to understand various aspects, such as intensity of use of urban land, problems of overcrowding arising out of high occupancy rates, building bulk, provision of open space amenities etc.

The Table -VI reveals that Ward III has the highest concentration of population. This is natural as this is the town centre. At the other extreme end is ward VIII, where the residential density is only 10 persons per hectares.

TABLE - VI**DENSITY OF MANGALDAI TOWN (1991)**

SL. NO.	WARD	DENSITY(in persons /hectars)
1.	I	264
2.	II	124
3.	III	435
4.	IV	90
5.	V	253
6.	VI	121
7.	VII	52
8.	VIII	10
9.	IX	145
10.	X	68
Total	10	Average 112

Source :- Provisional population figures from 1991 census.

Note :- Density = $\frac{\text{population}}{\text{Residential Area}}$

For a more better understanding the wards are classed together into High Density (240 and above), Medium Density (100-239) and low Density (below 100). These ranges are relative because if they are compared to the Indian cities all the above figures are low.

TABLE — VII

DENSITY PATTERN OF MANGALDAI TOWN (1991)

Sl. NO	Density range (in persons/ hectares)	Wards	Population	Residential areas (in hec- -tares)	Population	%Area
1.	240 & above	I, III, V	6076	21.33	29.29	11.51
2.	100-239	II, VI, IX	7282	58.03	35.10	31.31
3.	Below 100	IV, VII, VIII X	7389	105.98	35.62	57.18
Total Municipal area =			20747	185.33	100	100

Source :- Provisional census figures for 1991.

From the table VII we find that more than half of the residential the residential areas.

TABLE - VIII

The occupancy Rate of Mangaldai Town :

Sl. No.	wards	Occupancy Rate	(in persons/ housing unit)
1.	I	13.25	5.91
2.	II	5.65	5.30
3.	III	5.68	6.01
4.	IV	7.46	5.64
5.	V	8	5.40
6.	VI	5.31	5.19
7.	VII	10.48	5.69
8.	VIII	10.94	5.13
9.	IX	5.88	4.40
10.	X	5.14	5.09
Total Municipal Area= 6.85			5.42

Source :- 1971 census figures and provisional census figure for 1991.

4.1.3. STRUCTURAL CONDITION :

The town has mostly Assam type houses either pucca or thatched. RCC houses are few and far between (see Table IX). The thatch houses persist because of 2 reasons - (i) Generally, the income of a settlement increase with increase in its size. Mangaldai being in the lower end, therefore falls in low income category. thus the capacity to invest in housing also is less. (ii) There is also demand of rental housing of this category as the income are lower and hence the affordability is also low.

TABLE - IX**TYPE AND STRUCTURAL CONDITION OF THE HOUSES (1991)**

TYPE OF STRUCTURE			CONDITION		
R.C.C	Assam type	Thatch	Good	Fair	Bad
2.09%	43.38%	54.51%	36.15%	38.48%	25.30%

Source :- Survey by Town & Country Planning Department, 1991.

Notes :- Total houses 3425.

4.1.5. DEVELOPMENT TRENDS :

The housing activities are mostly taking place on the western side of Mangaldai river. After saturation of the ward II and III the growth is slowly spilling over to the ward III which is still largely agricultural. Another area where high income housing is developing the ward IX, X.

CHAPTER - V**COMMERCE, OFFICES AND INDUSTRIES :**

Mangaldai is basically a market and administrative centre for the vast rural hinterland. This is the second most important sector with 28.62 % of the workers in 1991 working in this sector.

The town where people flock from the surrounding region to work, buy and sell their products, and there is an absolute lack of industries. The "Industries" here are mainly rice mills, house hold industries and brick manufacturing units. Since the master plan envisages this town as an administrative and commercial centre, it is imperative that the growth of commerce and offices are provided in a planned manner and for this purpose analysis of existing activities along with this problems and prospects are necessary, so that the Master plan can take care of these.

5.1. COMMERCIAL-CUM-SHOPPING CENTRE :**5.1.1. WHOLESALE TRADE :**

The wholesale trade is generally located in the town centre. This deals mainly in cloth. Since the roads' are narrow and of bad conditions, this is an extremely congested area.

TABLE NO - X
TRADE AND COMMERCE WITHIN THE MANGALDAI
MASTER PLAN AREA. 2001

WHOLE SALE TRADE		RETAIL TRADE
A		B
(a) Agency business-	10 Nos.	(a) There are many retailers in the town Mangaldai dealing on various commodities.
(b) Grocery whole sale	7Nos	
(c) Stationery	8Nos.	
(d) Hardware	12Nos.	
(e) Electronics	5 Nos.	
(f) Clocks & Watches	18 Nos.	
(g) Photo studio	5 Nos.	
(h) Clothes	200Nos.	
Total	265Nos.	

Source :- Survey conducted by T&C.P Mangaldai 2001.

(a) THE WEEKLY GRAIN MARKET :

These market cater mostly in foodgrains. Here traders from the bigger cities come to buy foodgrains sold by the local farmers. Thus this serve as a 'mandi' for buying and selling foodgrains. Presently an open field adjacent to the daily market is used as grain market. Plans are contemplated to shift it to another suitable site with the requisite infrastructures facilities to make it a permanent centre.

5.1.2. CENTRES OF RETAIL TRADE :

(a) TOWN CENTRE :

The town centre consisting the major portion of ward III is the retail centre for the town. There are variety of shops consisting mainly of Cloths, stationery, studio, book shops etc. There are also a few categories catering to mainly the commuters coming this town for various purposes. The existing town centre is devoid of any planned drainage system as well as parking lots due to paucity of land. This should be immediatey taken care of.

(b) NEW MARKET :

In the Dhan market area in the ward No III a new market building complex and a fish market building have been constructed by Mangaldai Municipal Board which will cater to the demand of growing population of the town.

(C) OTHER SHOPING CENTRES :

Smaller neighbourhood centres area located all throughout the Master plan area serving the local residential centres. This mainly consists of a kiosk called locally as "Pan-Dukan" . Which peddes mostly betal-nut and leaves, cigarettes and other essential items like soaps etc. and groceries.

All these commercial places have grown with the growth of the

town. However, the growth of the town as a district headquarter should give positive stimulus for its growth.

5.1.3. PROBLEMS OF TRADE AND COMMERCE :

Studies reveal that the present space under commerce is inadequate. The present town centre is congested and the mixture of wholesale centre with retail has aggravated the problems of congestion. A grain milling centre right on the central portion of the town needs to be shifted immediately. There is high under utilisation of grossly valued land by this mill and the use is also incompatible to the surrounding use. The shifting of this mill would bring a substantial amount of land to commercial use. Plans should be made to pedestrianise the town centre.

5.2. OFFICES :

The main function of this town is administration. With upgradation of this town to district headquarter this function has been further enhanced. This sector employs the largest proportion of the workers (35.9% in 1991). The major portion of these Offices are Government Offices. The total numbers of Govt. offices are 45 (excluding the D.C Court, S.P.'s office). There are also a No. of banks operating here. Most of these offices are scattered. It envisaged to get them near to one another- agglomerating in one place.

5.2.1. OFFICES IN RENTED BUILDING :

The shortage of office accommodation is reflected from the fact that nearly 25 Govt. Offices are housed in rented buildings. All for these require a substantial amount of land. In addition, the offices presently in their own sites needs to be upgraded consequent to the upgradation of the status of the town and thus take cognizance of this fact and provide ample space for the future offices.

5.3. INDUSTRIES :

Industries are momentum of economic growth. They provide the employment to the growing population as also bringing other forward and backward linkages.

Mangaldai is very backward in industries . Except for a few small-scale and household industries no other important and major industries found in the Master plan Area. Industrial activities are consequently very limited. The proportion of workers in the secondary sector has in fact reduced from 21.21% in 1971 to 18.31% in 1991. There is an industrial estate with a few industrial sheds at upahupara village. The only major industry in the master plan area is a flour mill in Tengabari village. The surrounding region being rich agriculturally, a few rice mills and oil mills have come up in the town. Besides these, a number of engineering workshops, furniture workshops, printing press, automobile repair shops have come up. The table XI gives the lists of industrial units by type in Mangaldai Master plan Area. With the establishment of Prag-Bosimi at Sipajhar, a few engineering industries might come up serving the textile mill. The potential for this industries being high, a sepecific package (including finance, land, infrastructural facilities) of proposals needs to be envisaged for the development of this type of industry.

TABLE - XI

INDUSTRIAL ESTABLISHMENT BY TYPE FOR THE YEAR

2001. Whithin Mangaldai

Mangaldai Town area Indusrries			Mangaldai rural areas industries		
Catagory	No of Unit	Total employment	Catagory	No of Unit	Total employment
A. Textile Based Unit	8	32	A. Textile Based & unit	6	33
B. General Engg. Based unit	11	51	B. General Engg. based unit	1	4
C. Food Based Industry	4	26	C. Misc unit	9	76
D. Forest based unit	3	17			
E. Misc unit	19	85			
Town, (Ttoal)	45	211	Rural, (Total)	16	113

Source :- Survey conducted by T&C. P Mangaldai, 2001.

CHAPTER - VI

TRAFFIC AND TRANSPORTATION :-

Transportation network of a city plays an important role in the city's economic and sociocultural life. A well laid out road network can provide answer to many problems of urban life.

The efficiency of the road network needs to be examined both in terms of inter-city and intra-city movement. The growing demand for movement space calls for scientific assesment of the problems of movement, such as circulation pattern, road capacities, inaccessibility, so that remedies could be evolved both for short term as well as long - term measures. This required systematic traffic survey, engineering surveys, which have to be related to existing land- use pattern, points of traffic generaties, age and condition of structure. Due to lack of time the engineering surveys could not be conducted. However, the analysis of the traffic surveys would give us an idea about the problem ever encountered and the scope of immese improvement with minimum disturbance to the existing pattern.

6.1. TRANSPORTATION SYSTEM (REGIONAL) :

The town is connected only by road. The N.H. 52 which links the northern bank of Assam and the state of Arunachal Pradesh with the rest of the country passes through the heart of this town. Another important state road links the town with the nearest railhead, Tangla and Udalguri which is a sub-divisional headquarter. Being the district headquarter, it is well conncted with all parts of the district and surrounding region.

6.1.1. REGIONAL TRAFFIC (PASSENGER BUSES) :

The town is well connected with Guwahati on one side and Tezpur on the other. More than 7 buses of the A.S.T.C. plies regularly to and from Guwahati and Tezpur via Mangaldai. Besides, there are

private buses which runs frequently between these two towns. Private buses also ply to Tangla and the surrounding rural hinter land. Mangaldai being the market town for the surrounding rural areas, a considerable traffic converges in during the morning hours and moves out during the evening. The traffic also consists of considerable amount of commuters. Since the N.H. 52 connecting lower Assam with northern bank of Assam and Arunachal Pradesh passes through this town a large amount of traffic also consists of the throughfare traffic. This plan would sought to rectify that by segregating the regional traffic from the local traffic.

6.1.2. REGIONAL TRAFFIC (GOODS) :

A considerable amount of traffic bound for Arunachal Pradesh and the northern bank of Assam crosses through this town. This large volume of the goods traffic is mainly through fare and would be reduced considerably after the bye-pass is constructed. A small portion also moves north ward to the town of Udalguri and Tangla. As this town also serves as a market town, a few goods traffic also converges in the town centre creating congestion which would be aggregated further in the coming years.

6.2. CIRCULATION PATTERN :

The circulation pattern of the town is radial with three routes fanning out towards North, East and West. The N.H. 52 is tranfered from East to West bifarcating the town into two district portions. The northern portion is where the development is concentrated upon. The southern portion being liable to flooding has not been built-up upon, albeit a few offices has come up. If the problem of flooding is taken care of the southern portion, which is Govt. land, could be built-up in a planned way.

6.2.1. PROBLEMS :

(i) The N.H. 52 passing through the town has been a major hindrance as all the throughfare traffic (both passengers and goods) passes through this centre, congestion.

(ii) The roads are generally narrow with ineffective carriage width, further reducing in the central area with various roads using the some portion in addition to parking of vehicles.

(iii) There is a dearth of parking spaces. The situation would get alarming in future as the roads are used as parking spaces.

(iv) A proper hierarchy of roads is absent in this town. The physical condition are also abysnal. The roads to Tangla needs to be further widened as this town is conceived as a service centre to the surrounding region and this route is envisaged to be taken most of the traffic to and from the surrounding rural hinter land of the district. To relieve the town centre of traffic congestion, it is felt that it should be converted to a pedestrinised traffic is the spot from near the bakery upto the public bus stand.

6.3. TRAFFIC GENERATING NOTES :

6.3.1. WORK CENTRES :

Major traffic nodes (passengers) is an urban settlement are normally work centres, recreation centres and trafic terminals. work centres generates a fairly regular traffic, while the traffic generated by recreational centre is periodic. In order to study the movement of people it is necessary to identify major work centres and traffic terminals in the city and this relationship with the residential areas. The centres are given below.

TABLE – XII

WORK CENTRES (MANGALDAI)

SL No. (1)	Area (2)	Description (3)
1.	Town Centre	This is the commercial hub of the town consisting of the major shops and daily vegetable markets etc. It also has the wholesale market.
2.	D.C. Court	This area encompassing a large area, consisting of all the major offices. Also containing schools and recreational centres like indoor Stadium, Cultural centre and Hospital.

6.3.2. RESIDENTIAL NODES :

In order to study present "work-place" relationship, it is necessary to identify residential areas and this related work centres on the basis of field investigations and observations. The following have been identified as important residential areas and this related work centres.