



सत्यमेव जयते

# MASTER PLAN TURA

1990—2011

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MEGHALAYA : SHILLONG**



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# CHAPTER I

## SCHEDULE

### 1.0 INTRODUCTION AND GROWTH OF THE TOWN

#### 1.1 Location :

Tura, the District Headquarter of West Garo Hills District of Meghalaya, is perhaps the best example of a rapidly growing hill town in a beautiful natural surrounding provided by the Tura Peak, the Valleys, hills and gorges.

The town is located approximately along  $90^{\circ} 9' 30''$  —  $90^{\circ} 19' 00''$  longitude and  $25^{\circ} 33' 30''$  latitude and has an average altitude of 300 metres above mean sea level. The Tura town lies at the foot of Tura Peak, which has an altitude of 1412 metres above mean sea level, and forms the main landmark dominating the eastern boundary of the town.

Tura, has some advantages of being located on the National Highway No. 51 which connects Dudhuai in Assam to Dulu in the South bordering Bangladesh. Further, from Tura, road leads west connecting to towns of Garobadha, Mankachar, etc. Tura, therefore is one of the major connecting link to almost all the towns of the District. Apart from the road link, Tura has also recently been linked by a tri-weekly Helicopter service to Gauhati and Shillong. There is possibility of regular aeroplane service on this route in the near future.

#### 1.2 Planning Area.

In view of the fast expansion of Tura particularly in the last 10-20 years, many villages located on the fringe of the town, now forms a part of the Urban area. Many other villages located in the vicinity of Tura are also experiencing the effect of developmental activities and are gaining semi-urban characteristic. It is therefore, necessary that these villages should be within the purview of planning control, so that these villages ultimately fit in the future planned development pattern of Tura. Moreover, it is necessary that these villages are properly developed so as to provide facilities and amenities for growth of life and develop more meaningful economic and social relationship with the city. The Planning area or the Master Plan Boundary for Tura has, therefore, been provided to meet these objectives and provide for enough land for future growth of the City upto the year 2011. The Master Plan Area contains 10 villages besides the proposed Municipal Boundary of Tura. The villages included within the Tura Master Plan Area are Danakgiri, Badobongiri, Dokmagiri, Agilanggiri, Doldegiri, Deringagiri, Rombagiri, Daggiri, Walbakgiri, Allotgiri, Covering an area of 39.16 Sq.Kms., the schedule of boundary of Tura Master Plan Area is given below :—



SCHEDULE

1.0 INTRODUCTION AND GROWTH OF THE TOWN  
LIMITS OF TURA MASTER PLAN AREA

(Refer Dng. No. 01)

- 1 NORTH (A-I)** :
- A : Confluence of Danak Chiring and Ringri N.
  - A - B : Ringri N.
  - B : Confluence of Ringri N. and Tributary South of track leading to Asibra.
  - B - C : Tributary of Ringri N.
  - C : Confluence of tributary of Ringri N. and road leading to Edenbari.
  - C - D : Edenbari Road.
  - D - F : Municipal Boundary.
  - E - F : Rongkhon Stream.
  - F : Confluence of Rongkhon Stream and Lupa Chiring.
  - F - G : Lupa Chiring.
  - G : Bridge on Tura-Rongram Road over Lupa Chiring at Chachangiri.

- EAST (A-H)** :
- A - B : Follow Municipal Boundary.
  - B : Municipal Boundary touching Rongkhon Chiring.
  - B - C : Rongkhon Chiring.
  - C : Confluence of tributary of Rongkhon Chiring.
  - C - D : Tributary of Rongkhon Chiring.
  - D : Junction of track and tributary of Rongkhon Chiring.
  - D - E : Track.
  - E : Junction of track and high tension line.
  - E - F : Forest Boundary.
  - F : End of Forest Boundary.
  - F - G : Tributary of Rongkhon Chiring.
  - G : Culvert over tributary of Rongkhon Chiring at Baghmara Road.
  - G - H : Baghmara Road.

- SOUTH (A-E)** :
- A : Tributary confluence with Rongkhon river near Dopgiri.
  - A - B : Rongkhon R.
  - B : Confluence of Rongkhon R. and Rongkhon Chiring near Dobakol.
  - B - C : Rongkhon Chiring.
  - C : Confluence of Rongkhon Chiring and tributary.
  - C - D : Tributary of Rongkhon Chiring.
  - D : Boundary Pillar near Rebagiri Road.
  - D - E : Boundary Pillar of I. C. A. R.
  - E : Baghmara Road and Rebagiri Road Junction.



- WEST (A-G) : A : Confluence of Rongri R. and Danak Chiring.
- A - B : Danak Chiring.
- B : Culvert over Danak Chiring on Kutcha Road leading to Danakgiri near Coffee Nursery.
- B - C : Kutcha Road leading to Danakgiri.
- C : Junction of kutcha Road going to Danakgiri and Garobadha Road.
- C - D : Garobadha Road.
- D : Junction of Garobadha Road and Jeepable road leading to Marranggiri.
- D - E : Jeepable road leading to Marranggiri.
- E : Junction of Jeepable road leading to Marranggiri and track to Dopgiri.
- E - F : Track to Dopgiri.
- F : Junction of track to Dopgiri and tributary of Rongkhon R.
- F - G : Tributary of Rongkhon R.
- G : Confluence of tributary of Rongkhon River.

### 1.3 Tura Town Area.

Tura town has undergone tremendous change. The town area of Tura in 1971 comprised of the area which was constituted into a Town Committee area vide a Notification in 1951. But while the Census was being taken the District Council by a Notification enlarged the area of the town which was not taken into consideration in the 1971 publication as urban unit. In 1979 the Government of Meghalaya in the Municipal Department constituted the Municipality of Tura by adding 11 villages of Rongram C. D. Block. Thus the population of Tura from 14,489 in 1971 rose to 35,257 in 1981. The area of the town also increased from 9.09 Sq. Km. in 1971 to 18.32 Sq. Km. in 1981.

### 1.4 Historical Background.

Before the coming of the British, Tura existed in the form of few tribal settlements located among the habitable parts of the valley formed by the Garo Hills. The localities were under the jurisdiction of the 'Nokmas' who administered authority over the areas.



Tura was selected by the British as the official headquarters of the Garo Hills District in 1866 and Lieutenant W. J. Williamson who had shown special aptitude in dealing with the Garo affairs was appointed the first Deputy Commissioner in the same year. But owing to his having to officiate as the Deputy Commissioner of Goalpara during the year 1866-67 and to orders defining his jurisdiction and powers not having been received, he was unable to settle in the Tura Hills until December 1867. Since, then Tura has been the Official headquarters of the Garo Hills District, and a Centre of Education and Culture.

The British Development of Tura was largely initiated by her favourable climate and picturesque landscapes. Today, Tura besides being the district headquarters, also functions as an educational and Cultural centre and a place of regional importance.

### 1.5 Physiography

The main physiography features of the area is the WNW-ESE trending Tura range with steep southern as well as Western faces. This range is a symmetric horst block with an average height exceeding 1000 m and maximum height attained is 1412 m at Nokrek Peak. Tura township is located at an average elevation of 300 metres. Tura Peak is the major water shed of the area and stream descending down this range on Western as well as Southern faces have very steep gradients in the initial reaches which carry very course load. It is possible that the tectonic features, the WNW-ESE thrust on the Southern side and ENE-SSW fault passing almost through Tura town on the Western face of the Tura range might have effected the drainage pattern and young age of these tectonic features could be interpreted.

### 1.6 Geology

In the area surrounding Tura town, Gneisses of Archacan age and sandstone shales of tertiary age are exposed, Gneisses are predominantly granitic gneisses, biotite gneisses and megacrinites with lenses of amphibolites, dolerite dikes and a number of quartzofels-panthic veins. These are exposed in the Western and Southern side of Tura town. Gneisses are also exposed at about 1 Km. North of Rongkhongiri and at Ganol bridge site. These gneisses form the part of basement over which sedimentaries were deposited. The sedimentaries are essentially sandstone with bands of shales which have been classified under Shella formation of Jaintia group. The sandstone were exposed on the Eastern and Northern side of Tura town. Grey and khaki coloured shales are exposed on Tura — Buhmara road near Darengiri. It has also been interpreted that the contact between gneisses and sandstone in Tura town is marked by a prominent NNE-SSW trending fault.

### 1.7 Climate

Climate of an area considerably effects human activities and in turn city life and its functioning. The climatic condition of Tura ranges from sub-tropical to semi temperate at the higher elevation. Fairly high temperature is experienced at certain seasons of the year. November to February are the only cold months in the year, when the temperature is comparatively low and it receive very little or no rainfall during this period. The temperature during this period ranges from 15–20° C. The warm season is from March to May. The temperature remain as high as 25° C. in average and dryness prevails during this season. The rainy season starts from June to October and is influenced by the South West Monsoon. The mean temperature during this season ranges from 26° C. to 30° with an average rainfall ranging from 500 mm to 700 mm.



## CHAPTER — 2

## Population

## POPULATION IN THE MASTER PLAN AREA:—

A study and understanding of the growth, distribution and other characteristics of the population in urban areas is absolutely necessary to assess the various civic needs, amenities etc. and are therefore basis for all long range planning programme. While preparing the Master plan for Tura, this important aspect has been thoroughly studied and the plan has been tailored accordingly to cater to the various needs of its present and future population.

The Tura Master plan area had a population of 36,857 in 1981. In the study year 1938, the population size was estimated to be 49,000. The 1981 Tura Master plan population breakup of the urban rural components showed 35,257 as urban component of Tura Town population and 1,600 as rural component.

## 2.2 POPULATION GROWTH IN MASTER PLAN AREA:—

The Tura Master Plan Area has shown a high of population growth in the last two decades. Having a population of 36,857 in 1981, the Tura Master plan Area had a 85% decadal growth in 1971—81 against 74.41% in 1961—71. The growth of population of Tura Master Plan Area is given in Table 2.1.

TABLE -- 2.1

**Tura Master Plan  
Growth Of Population  
1961—1981**

YEAR	POPULATION	INCREASE/ DECREASE	% INCREASE/ DECREASE	REMARKS
1961	11,425			Master Plan Area <sup>a</sup>
1971	19,930	8205	74.44	includes Turo Town
1981	36,857	16927	15.00	Area & 1 Villages.

Source:— Census of India,



## 2.2 POPULATION IN TURA AREA :—

The Population size as well as the growth in the Tura Master Plan Area has fct, largely been due to Tura Town Area. The Tura Town Area had a population of 35,857 in 1981, which characterised it as a Class III Town. The population size and growth of population of Tura Town is given in Table 2.2.

**TABLE — 2.2**

**Tura Town Area  
Growth Of Population**

YEAR	POPULATION	STATUS	INCREASE /DECREASE	+INCREASE/ DECREASE
1961	8,888	V		
1971	15,489	IV	6,601	74.26
1981	35,257	III	19,768	127.63

Source :— Census of India.

The high decadal increase in 1971—81 of 127.63 % had in fact been due to boundary readjustment at the time of constitution of the Municipality of Tura in 1979, when 11 new villages were added to Tura Town Area.

## 2.3 SEX RATIO :—

The sex ratio of an urban settlement is generally influenced by numerous factors like migrational trends of working force to housing conditions prevailing in the area. Tura shows a relatively low sex ratio of 882 females per 1000 males in relation to the 1981 Urban sex Ratio of the country of 936 females per 1000 males. This is again, quite low in relation to the state sex Ratio of 954 females per 1000 males in 1981. In Tura, it is evident that the low sex ratio is largely influenced by the scarcity of housing accommodation of the rural migrants.

## 2.4 AGE SEX COMPOSITION :—

In absence of adequate data on the age group of the population, it is estimated that for Tura Master Plan Area, two fifth the population may consist of infants and children of age group 0-4 which mainly consists of Primary and High School going children one fifth may consist of youth in the age group of 15-24, the potential work force, a substantial portion of which comprise pre-College and College going population, of the remaining two fifth half is in the age group 25-40 of the work force and the remaining in the age group 40 and above. The age sex factor could not be given adequate consideration while projecting the population in the absence of sufficient information.



2.5 Migration :—

Data on migration for Tura Town was not available. It was however, assumed that Tura being the District Headquarter of West Garo Hills District and more importantly being the only major urban centre for the entire, Garo Hills, migration in future would increase with better economic opportunities in the Town and would largely be rural to urban migration.

2.6 Occupation And Employment Structure :—

The occupational pattern of Tura Town Area and Tura Master Plan area for 1971—81 is given in Table 2.3. However, a comparative picture of the employment in the Primary, Secondary and Tertiary Sector for 1971 and 1981 could not be shown due to the change in format of 1971 and 1981, census. However, the table reveal that both in 1971 and 1981, 93 per cent of the total workers were engaged in categories III,IV,V (b) and VI to IX which are workers in live stock and forestry, Mining and Quarrying, Manufacturing, Construction, Trade and Commerce, Transport and other services. The Table 2.3, further shows the change in occupation pattern for Tura Town Area and Tura Master Plan Area between 1971—81.

Sl. No.	Category	1971		1981	
		No. of Workers	% of Total	No. of Workers	% of Total
1	Primary Sector (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z)	11168	30.84	13723	31.72
2	Secondary Sector (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z)	—	—	—	—
3	Tertiary Sector (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z)	4020	11.50	4428	10.18
4	Total	15188	42.34	18151	41.90
5	Unemployed	—	—	—	—
6	Total Population	35876	100.00	43301	100.00

Occasional Labour to regular employment  
 1971-1981  
 TURA



**TABLE—2.3**

**Occupational Pattern Of Tura Town Area And Tura Master Plan Area**

Sl. No.	Category	1971—1981				T. T. A.		T. M. P. A.		Per Cent to Total Workers		Per Cent to Total Workers	
		Number of Workers		Number of Workers		1971	1981	1971	1981	1971	1981	1971	1981
		1971	1981	1971	1981	T. T. A.		T. M. P. A.		T. T. A.		T. M. P. A.	
I.	Total Main Workers (I-IX)	4,307	10,235	6,406	11,053								
a.	Cultivators (I)	267	470	1,646	1,220	4	4	515	26	11	2	4	
b.	Agricultural Labourers (II)	25	420	99	426	1	1	4	2	2	2	4	
c.	Household Industry Manufacturing Processing Service And Repairs (V a)	76	99	102	103	2	2	1	2	1	2	1	
d.	Other Workers III, IV V (b) And VI To IX	4,039	9,246	4,459	9,304	93	93	90	70	84	70	84	
2.	Marginal Workers	—	192	—	223	—	—	—	—	—	—	—	
3.	Non Workers	11,182	24,830	13,524	25,581	100	100	100	100	100	100	100	

Source : Census of India 1981.



**2.7. Major Town Function:**—Town are attached with intangible values like status, character and function which are very much akin to human personality. Activities of the town dwellers which emerge from the town functions are manifested in the physical development of the city. A harmonious blending of the 'Function' and 'Activity' leads to a healthy and orderly development of the city, reflecting its true 'Personality' and character.

It is an universally accepted tenet that form follows function. The Clarity of functions reveals a true forms. If the function are not well defined and harmoniously blended the form may get confused and result in Clumsiness and Chaos. Tura has largely assumed an Administrative/Institutional-cum-Commercial form the course of its growth.

**2.7.1. Administrative:**—In examining the city functions, the most important of which Tura is committed to is Administrative being the District Headquarter and a Regional Town. Enough care therefore, has to be taken to see that this function gets a predominance over the rest.

**2.7.2. Institutional:**—Being the only major urban centre for both the West and East Garo Hills District Tura has been offering all higher educational and Health facilities for the area and as a result of which Tura has taken the form of an Institutional Town.

**2.7.3. Commercial:**—With the location of District Offices and Offices of various financial and business institution and with rapid increase in trade and Commercial activity, the town is emerging as a Commercial Centre also. Being the only outlet for products from the region, Tura is likely to develop as the Commercial Capital of Western Meghalaya in the years to come.

## CHAPTER 3

### PHYSICAL GROWTH AND EXISTING LAND USE

**3.1. Physical Growth Trend.**—The Urban spread of an area is generally influenced by a number of factors of which the physical impediments plays the most dominant role. The urban spread of Tura accordingly has been influenced by the topographical features of which, the Tura Range dominates the eastern part of the town and the numerous streams originating from the Tura Range flowing westward and leads to the undulating topography with local areas of constraint. This peculiar topography not only influenced the direction of growth but also conditioned the shape of the town.

Physiographically, Tura Master Plan Area can be divided into the following divisions:

- (1) The Tura Ranges on the East.
- (2) The Western Valley of Tura Range.
- (3) The Western Plains of Arai Mile.



Early settlement in Tura presumably was in the valley areas of Tura Range like Chandmari which gradually extended southward and westward. The eastern expansion was restricted by the Tura Range which acted as a barrier. Similarly, the northern expansion also been restricted to a considerable extent by the topographic condition of the area. Presently, the town has grown to such a form that further expansion in the eastern side has been totally restricted and the only potential area left for future expansion is in the west and beyond Arai Mile area and to a very limited extent to the North and South. (Refer Dng. No. 02).

**3.2. Existing land use analysis :—**Quality of urban life and functional efficiency of a town is dependent on proper disposition of activities, the inter relationship it offer between the work centres, living areas and recreational areas. In order to understand and analyse systematically the functional relationship between various uses particularly the places of work living and recreational, a detailed land use Survey of the Planning area was conducted. This land use survey has also helped in identifying the incompatible activities influencing city life and its functions. While the detailed land use analysis of the inhabited areas reflect the problem of inadequacy of urban land for various uses, similar analysis of the planning area presents the picture of available land resources. Remedy to most of the towns problems lie in organising the land use pattern.

### 3.2.1 Land Resources :

The Tura Master Plan area covers 1916 hectares of which 536.40 hec. (14%) is undevelopable or unusable owing to excessive slopes and height of land. The total developed area is 1072.68 hectare which forms 27.39% of the Master Plan area. Although an additional 2306.92 hectare can be brought under future development, 1242.22 hectare or 54% of the developable area under forest cover, 145.60 hectare or 8% under urban agriculture and the remaining 977.13 hectare or 39% of the developable areas as vacant land, Table I shows the extent of present urban spread and the buildable urban land within the Master Plan area.

TABLE—3.1

#### Land Resources — Tura Master Plan Area

Sl. No.	(Land use Refer Dng. No.)	Area	% of Total Area
1.	Developed Area	1072.68 hectare	27.39
2.	Undevelopable Area	536.40 hectare	13.70
3.	Developable Area	2306.92 hectare	58.91
3.1	Vacant land	877.13 hectare	22.40
3.2	Urban Agriculture	187.57 hectare	4.79
3.3	Forest Area	1242.22 hectare	31.72
Total Area		3916 hectare	100.00



### 3.2.2. Existing Landuse Pattern

In order to understand the problem of landuse and to study the quantum of land under various uses the existing landuse has been Classified into the following categories :

- |                           |                      |
|---------------------------|----------------------|
| 1. Residential            | 6. Transportation    |
| 2. Commercial             | 7. Vacant            |
| 3. Industrial             | 8. Urban Agriculture |
| 4. Public and Semi-Public | 9. Forest            |
| 5. Security               | 10. Undevelopable    |

The Public and Semi-Public uses also includes in its fold administrative uses, Institutional uses like land under Education/Health use, Recreational use and land which are use for other public uses like graveyard, cremation ground etc.

The Transportation uses includes land used for Transport depots, land under roads, footpaths etc:

The classification of Undevelopable use includes land which cannot be brought under development owing to excessive slopes and other extreme topographical condition.

Table 3.2 shows the existing landuse pattern of Tura Master Plan Area.

**TABL — 3.2**

#### **Tura Master Plan Area — 1988**

Existing Land Use (Refer Dng. No. 04)

Sl. No.	Use	Area in HEC.	P.C. to total Developed Area	P.C. to total Master Plan Area
1.	Residential	784.12	73.1	20.02
2.	Commercial	13.11	1.22	0.33
3.	Public & Semi Public		17.04	4.67
	I. Administrative	103.49		
	II. Institutional	55.75		
	III. Organised Open-spaces	13.10		
	IV. Graveyards etc.	10.41		
4.	Security	41.53	3.88	1.06
5.	Industrial	1.11	0.10	0.03



1	2	3	4	5
6.	Transportation	49.96	4.66	1.28
	I. Depots	1.02		
	II. Roads	48.94		
	A. Metalled	34.05		
	B. Unmetalled	8.31		
	C. Footpaths/Track	5.98		
7.	Vacant	877.13		22.40
8.	Urban Agriculture	187.57		4.79
9.	Forests	1242.22		31.72
10.	Undevelopable	536.40		13.70
	<b>Total</b>	<b>3916.40</b>	<b>100.00</b>	<b>100.00</b>

It is seen from the above table that more than 70% of the total developed area has been utilised for residential purposes, which constitutes only 20% of the total Master Plan Area. There is a scope therefore of future development. Land utilisation for commercial, industrial and recreational purposes are quite low.

Table 3.3 shows the existing land utilisation rate for Tura Master Plan Area.

**Table — 3.3**  
**Tura Master Plan**

Existing Land Utilisation Rate

Sl. No.	Classification	Percent	Hectare per 1000 persons
1.	Residential	73.1	20.19
2.	Commercial	1.22	0.31
3.	Industrial	0.10	0.02
4.	Public & Semi Public	1.14	4.35
5.	Security	3.88	0.22
6.	Transportation	4.66	1.12
		100.00	25.86

Table 3.3 shows that the urban spread of Tura is at the rate of nearly 20 hectares per 1000 persons, which indicates that the town is being developed at a very low density. With a view to optimise utilisation of urban land and economic of space and activities, it is necessary to examine the intensive use of urban land to achieve a compact urban growth.



## Chapter --4

## Housing

## 4.1 Housing Environment

Housing is one of the basic requirement of human life and the condition of housing influences the quality of urban life and which in turn affects the efficiency of the settlement. Since housing constitutes the largest land use element in a city, it makes significant impact on its proper functioning and urban form. Housing environments eg, Living condition within and outside dwelling units is of considerable importance to human life. While site conditions, water supply, drainage, road network, provision of amenities such as education, health, recreation are important aspect of external housing environment, the dwelling unit space per person, nature of utilises within the house, tenure status, occupancy, age and structural condition are vital aspects of internal housing condition.

In the absence of sufficient data on the housing sector the present analysis will confine to the information obtained from the surveys conducted by the study team. From the study it appear that housing condition in Tura is mainly characterised by low density development, extreme inadequacy of physical amenities that are required for minimum living standard.

## 4.2 Housing Area

For the purpose of study of housing areas in the city it can be grouped into four main areas viz, the high density areas of Fancy Valley, Tura Bazar and its surroundings, medium density areas of Tura Town, the Governmental development in New Tura and the low density development in the outskirts. The town survey of the housing area conducted by the department indicates that average 'Housing Spread' is around 16 hectre<sup>s</sup> per 1000 persons which indicates a very low rate of housing. The survey has revealed that a wide disparity exists between the rate of 'housing, spread' in the different areas within Tura Master Plan boundary. While some areas like Fancy Valley and areas around Tura Bazar shows a high rate of housing spread the larger area of the town remains underutilised in terms of housing revealing inadequacy of organised open spaces and amenities.

## 4.3 Residential Density.

Residential density has been computed by calculating the residential area of each locality, which excludes non-residential uses such as parks, open spaces and major roads from the housing area. The ratio of locality, residential area and its population gives the locality residential density. The result are shown in Table 4.1.



TABLE - 4-I

## TURA MASTER PLAN

POPULATION/DENSITY (LOCALITY - WISE) (Refer Dng. No. 05).

Sl. No.	Name of locality	Total area (Acres)	Non-residential area (Acres)	Population	Residential density (person per acre)
1.	Sangsanggre	67.10	21.47	81	4
2.	Chunmati	37.60	12.03	464	39
3.	Upper Dobasipara	26.60	12.76	758	59
4.	Lower Dobasipara	64.00	31.5	1717	55
5.	Boldak - Adinggre	19.00	12.16	175	14
6.	Songgitalgre	63.25	20.24	212	10
7.	Akonggiri	80.25	44.94	1,758	39
8.	Fancy Valley	19.80	14.25	1496	105
9.	Beldarpara	41.25	25.00	1113	45
10.	Tura Bazar	13.45	9.58	1200	124
11.	Nakham Bazar	16.50	9.24	868	94
12.	Dharam Sala	12.10	7.2	275	38
13.	Songsanghat	85.50	20.52	282	14
14.	Mondal Barrack	24.50	18.39	868	47
15.	Hawakhana	66.25	47.69	2706	57
16.	Nehru Ading	48.35	34.80	792	23
17.	Tetengkol	85.80	54.91	1054	19
18.	Reserve Gittim	128.10	71.74	2061	29
19.	Modynagar	62.70	40.12	615	15
20.	Araimile	66.55	37.26	1703	45
21.	New Tura	22.00	14.96	280	19
22.	Matchakolgre	1.8.20	106.92	314	3
23.	Dakopgre	61.05	36.62	311	8
24.	Upper Colony	28.50	11.45	323	28
25.	Ranggira	140.80	45.06	332	7
26.	Sampalgre	28.90	16.18	300	19
27.	Lower Wadanang	56.40	27.07	606	22
28.	Upper Wadanang	136.70	54.68	350	7
29.	Kalazar Compound	61.90	32.18	852	26
30.	Cheranggiri	122.40	39.16	786	20
31.	Wadanang Tangga	45.40	10.39	199	18
32.	Megonggre (L & U)	218.10	34.89	89	3



1	2	3	4	5	6
33.	Chasinggre (F. Farm)	79.50	38.66	488	13
34.	Boldoren gre	43.20	27.65	185	7
35.	Rorgkhon	173.25	62.37	374	6
36.	Clitoktak	183.15	87.91	610	7
37.	Upper Chandmari	21.20	15.26	795	52
38.	Lower Chandmari	42.10	26.91	518	19
39.	Proper Chandmari	30.25	21.77	638	29
40.	Mohoiipara (R. C. Road)	83.80	30.17	583	19
41.	Bonepa - Atila	65.40	26.16	856	33
42.	A-B Mission Compound	44.30	14.18	685	48
43.	Ringregittim	82.80	39.74	429	11
44.	Forcst Tilla	27.80	23.34	458	34
45.	P. W. D. Colony	24.50	11.76	641	55
46.	Upper Babupara	74.00	29.60	720	24
47.	Lower Babupara	25.60	17.40	1311	75
48.	Brahmanpara	21.20	15.26	1057	70

From the above table, it is seen that the overall population density of Tura Master Plan Area in 1981 has 19 persons per acre. However, as per the survey conducted in 1988, it was found that Gross Residential density in that year had increased to 25 persons per acre and the net residential density to 34 persons per acre. From the table, it may be seen that higher density of population are found only in the localities of Farcy Valley, Tura Bazar and Nakhm Bazar where the net residential density is around 100 persons per acre. Areas like Lower Babupara, Brahmanpara Hawakhana, Lower Dobasi-para and Upper Chandmari and P. W. D. Colony shows moderate density of above 50 persons per acre. The remaining localities and the outgrowth or rural components shows density pattern on a very low side.

Thus Tura, Master Plan Area, has grown at low residential density with only few localities having net density of above 70 persons per acre and the remaining area of the town having a very low density ranging from 3 to 70 persons per acre. The low density pattern has also been affected by the inclusion of a large rural area within the Master Plan boundary.

Table 4.2. shows the density pattern of Tura Master Plan Area in 1988.



**TABLE — 4.2**  
**TURA MASTER PLAN AREA**  
**RESIDENTIAL DENSITY — 1988**

Residential Area		Population 1981	Density Person per/Ac.	
Gross in Hec./Ac	Net in Hec./Ac.		Gross	Net
794.12/1937	588.09/1453	49,010	62/25	83/34

**Source :** Field Survey by Urban Affairs Department, 1988.

#### 4.4 Household Classification And Tenure Status.

As per the 1981 Census, Tura Master Plan Area had 6511 households and 6503 occupied residential house which shows a meagre shortage of housing stock. However, as per the survey a shortage of around 2,000 housing stock was identified. Further, it was found that 73 per cent of the household lived in their own house while the rest 27 per cent lived in rented houses. As per the survey conducted the household have been classified into four different categories according to the size, which is shown in Table 4.3.

**TABLE — 4.3**

#### TURA MASTER PLAN

#### HOUSEHOLD CLASSIFIED BY SIZE AND TENURE STATUS - 1988.

Household size	Own houses	Rented houses
1 persons	17.34	82.66
2 — 3 persons	43.22	56.78
4 — 5 persons	61.34	38.66
6 or more persons	87.26	12.72

**Source :** Field Survey by Urban Affairs Department, 1988.

The above table show that household of smaller sizes occupies more of rented houses which inversely decrease with increase in family sizes. This factor is largely due to migration from the rural area. The survey has also revealed that families on an average paid rents upto a maximum of Rs. 150/-. This indicates that majority of the people living in rented houses can neither pay sufficient house rent for standard housing nor can they afford to build their own houses. This low rent paying capacity coupled with the absence of alternative housing facilities has led to private house owner to either make available sub-standard houses for rental purposes or to sub-let a portion of their own houses.



**4.5. Occupancy Rate** :—As per the survey conducted by the Department it is revealed that above 34 per cent of the population in Tura Master Plan area had less than 5 Sq.m, (50 sq. fit approx.) per capital floor space which appears to be on a lower side. Only about 25 per cent of the total sampled population occupies more than 10 sq. m (100 sq. fit approx.) floor space per persons.

The occupancy i. e., the number of persons having per room area indicate the nature of over-crowding. Study of occupancy rate of Tura Master Plan Areas reveals that almost 63 per cent of the total population live in one or two room houses while only 12 per cent of the people lived more than 5 room houses. Table 4.4 shows that occupancy rate of Tura Master Plan Area in 1988.

**TABLE 4.4.**

**TURA MASTER PLAN**

**Occupancy rate 1988**

	Total	Per centage with				
		1 Room	2 Rooms	3 Rooms	4 Rooms	5 or More
Household	10,639	36%	40%	10.1%	7.4%	6.5%
Population	49,000	25%	37%	14%	12%	12%

**Source** :Field Survey by Urban Affairs Department, 1988.

**4.6. Structural condition** :—The data collected by the Department during land use and Housing Survey indicated that in Tura, large number of houses are Kutcha houses many of which are unauthorised structure on Government land. Further, majority of these structure have been found to have come up in areas environmentally unfavourable for human habitation. In 1985, Tura experienced torrential rains followed by land slides and debris fall which led to considerable destruction and deaths mostly in such areas.

The structural condition of houses in Tura has been classified on the basis of materials use for walls and roofs. Of the total houses in Tura Master Plan Area numbering about 9,000 in 1988. Only 28 per cent are of Pucca and 48 per cent Kutcha type. Table 4.5 shows are structural condition of houses in Tura Master Plan Area in 1988 based on walls and roof materials.



TABLE 4.5.

## TURA MASTER PLAN

## Structural condition of houses 1988

Type	No. of houses	P. C. Total No. of house	Wall and Roof Materials used
(1) Kutchra	3,600	40	(1) Wall made of Bamboo and Roof made of thatch.
(2) Semi pucca	2,880	32	(2) R. C. C. block wall with tin Roof.
(3) Pucca	2,520	28	(3) Whole structure made of R. C. C.
Total :—	9,000	100	

The number of Kutchra structures is increasing alarmingly in Tura Master Plan Area and are mostly encroachments on Government lands. There is a need to regulate and check such constructions to prevent loss of life in future. Since most of these structures are coming up or have already come up in lands having very steep slopes or have come up in hill sides and stream courses. It is, therefore, necessary to specify structural safety conditions, 'Street Lines' 'Floor Area Ratio' in such areas so that safe structures, proper set backs and building content are achieved.

4.7. **Slum Areas:**—In the absence of any concerted effort for Physical planning and any control measures for building construction, a number of Slum Area have emerged in Tura. Characterised by faulty building, inadequate utilities and services and infavourable living condition.

Till 1988, two Slum viz; Lower Hawakhana and Lower Chandmari has been declared as slums. Besides Dobakhol (Lower Dobasipara) Rishipara and Reserve Gittim are also proposed to be declared as slums. Attempts are being made to improve the living condition in such areas through implementation of scheme like Environmental Improvement of Slum Areas, Urban Basic Services, etc.

As per the Survey conducted by the Department, the following areas have been found to have developed into slum and the situation there in calls for immediate consideration. The areas are as follows:—

- A. Hawakhana including areas between Tura - Mankachar and Rongkhon Stream.
  - B. Nakam Bazar - Dharamsala Area.
  - C. Reserve Gittim—Tetengkol Area.
  - D. Dakopgiri Area.
  - E. Chandmari Bazar.
- (Refer Dng. No. 06)



Although numerous areas are emerging into slums in Tura Town, the above five areas require immediate attention. These areas may be taken up for improvement on priority basis a part from the other areas identified by Municipal Board or the Urban Affairs Department, which may also be considered. Emergence of Slum Areas in Tura has largely been brought about by encroachment on Government land where in shanty structures have been built devoid of basic services and facilities.

As per the survey conducted by the Department in 1988 it is estimated that the total slum area account for nearly 31 per cent of the total housing stock of Tura and within such slum areas 80 per cent are Kutcha houses and unfit for human habitation.

A Slum Area Survey was conducted by the Department in 1981 in two areas which has been declared as slum area by the Municipality. The findings are as follows:—

**TABLE 4.6.**  
**TURA MASTER PLAN**  
**Slum area survey**

Item	Lower Hawakhana	Lower Chanlmari
1. Population ...	707	560
2. No. of families ...	115	71
3. No. of Houses ...	91	70
4. Average family size ...	6.14	8
5. Average Monthly Income —		
I. Above Rs. 800 ...	82.51%	81.43%
II. Rs. 600—Rs. 800 ...	11.31%	4.29%
III. Below Rs. 600 ...	6.09%	11.28%
6. Condition of House—		
I. Good ...	10.99%	21.43%
II. Fair ...	7.43%	42.86%
III. Bad ...	17.58%	35.71%
7. Type of Houses—		
I. Assam Type ...	20.88%	47.14%
II. R. C. C. ...	7.69%	2.86%
III. Thatched ...	62.64%	41.43%
IV. Charī ...	8.79%	8.57%



Item	Lower Hawakhana	Lower Chadmari
8. Bath room facilities—		
I. Seperate	21.73%	28.57%
II. Shared	8.70%	21.43%
III. Nil	69.57%	50.00%
9. Latrine facilities—		
1. Sanitary	6.09%	38.57%
2. Pit Latrine	69.56%	47.14%
3. Nil	24.35%	14.29%
A. Seperate	52.17%	50.00%
B. Shared	23.45%	14.29%
C. Public	Nil	Nil
D. Nil	24.38%	14.29%
10. Water Supply facilities		
1. Private	38.26%	64.78%
2. Public	Nil	—
3. Nil	61.74%	35.71%
11. Accessibility		
1. Road	13.04%	28.57%
2. Footpath/Steps	61.74%	50.00%
3. Nil	25.22%	21.43%
12. Tenure		
1. Owned	79.13%	—
2. Rented	20.87%	100%

Source : Field Survey by Urban Affairs Department, 1988.

#### 4.8 Housing Shortage :

The growth of population generally far exceeds the housing availability of any town. Besides the matter is further aggravated by dillapidation and obsolescence of the existing housing stock. The housing stock therefore gets successivity reduced.

The housing stock of Tura has been calculated in the following manner :—

(a) The booklog has been calculated by examining the gap between existing household and existing houses. In case of Tura Master Plan Area, the 1981 census reveals a shortage of about 8 houses.

(b) As per the survey conducted by the Department in 1988, the housing shortage has worked out to 2,000.



(c) The urban Slum area exhibits poor housing condition. Nearly all the Kutcha houses and about 30 per cent of the Assam type houses require replacement.

(d) It is assumed that near 20 per cent of the existing Semi-pucca houses which are mostly Assam Type will also require replacement due to diapidation.

(e) Of the existing Kutcha houses within the Master Plan area but outside the Slum area 50 per cent are uninhabitable as require replacement.

Table 4.7 shows the housing shortage in Tura Master Plan Area in 1988.

**TABLE — 4.7**  
**Tura Master Plan**  
**Housing Shortage — 1988**

Sl. No.	Description	Total	Housing unit reqd. in 1988
I.	Backlog upto 1988	—	2,000
2.	Housee requiring replacement.		
	A. Slum Area		
	1. Kutcha Houses	2,250 @ 100%	2,500
	2. Semi pucca	400 @ 50%	120
	B. Kutcha House outside Slum Area	1,350 @ 60%	810
3.	10% of existing semi Pucca Houses	2,480 @ 20%	496
	<b>Total :-</b>		<b>5,676</b>

The total housing shortage in 1988 within the Tura Master Plan Area, taking account houses which require replacement has been estimated to be nearly 5676 units.

#### 4.9 ENCROACHMENT ON GOVERNMENT LAND

Although encroachment on Government land, road spaces and other open spaces abounds in Tura Town, three major areas of encroachments were identified and examined. They are New Circuit House area at Hawakhana, Jail Compound below Babupara and New Tura Complex. In the New Circuit House, Tura, measuring over 82 acres, 95 per cent of the area is under encroachment by about 244 number of families as per 1984 information available with the Office of the Deputy Commissioner West Garo Hills District. In the Jail Compound Tura, measu-



ring 16 acres about 13 acres or 83 percent is under encroachment by 91 families as per 1986 information from Deputy Commissioner, West Garo Hills District Office. In New Tura Complex measuring 430 acres about 40 acres or 9 per cent is under encroachment by 130 families as per 1985 figures available with Office of Deputy Commissioner, West Garo Hills District. The above figures exemplify the magnitude of the problem.

## CHAPTER — 5

### COMMERCE ADMINISTRATION AND INDUSTRY

#### 5.1 Commerce.

Apart from the capital city of Shillong, Tura is the other town in Meghalaya which shows prospects of Trade and Commercial development. Trade and Commercial activities picked up in the town, although only to a certain extent. There however, is a possibility as well as need for a planned and proper development of Commercial activities in the town. Although Tura primarily developed as an administrative centre, its strategic location from the point of view that Tura is the only major commercial centre for the entire Garo Hills District, has led to a gradual attraction of entrepreneur in Trade and Commercial Activities. There is a need however to analyse the existing economic base in terms of Trade and Commerce, Industries, etc. So that the development plan proposals can take cognizance of this vital sector in a more comprehensive manner.

#### 5.1.1 Commercial - Cum-Shopping Areas.

The Commercial establishments in Tura Master Plan Area are generally of three types viz. Retail, Wholesale-cum-Retail and Services Shops. A general survey of the town reveals that commercial activity presently concentrates entirely in and around Tura Bazar Area with local shopping and retail activities emerging in a very limited size in various other localities. In the absence of any control measures, Commercial activities have developed in a highly congestion and unplanned manner in all commercial area of the town. The Tura Bazar which is the main commercial area of the town is the best example of unregulated development with congested conditions, faulty structure, restricted circulation space, limited parking facilities, etc.

#### 5.1.2 Wholesale Trade.

In Tura, no area as such can be specifically called as a wholesale market although wholesale trading is mostly concentrated in and around Tura Bazar area and Tura-Baghmara road. These areas reveals mixed activities with retail functions also existing there'in. The main type of wholesale establishment are cloth, hardware, food and food stuff.

#### 5.1.3 Work Shops And Repair Shops.

With the increasing growth of vehicles in Tura town over the last few decades, a marked increase of work-shops and repair shops have been noticed. Unfortunately however, such establishments have



come up in the most undesirable location from the points of view that these activities have come up along the main road leading to traffic congestion, traffic jams, etc. The main areas of concentration of such activities are (1) Tura-Baghmara road which is the entry point to Tura Town from the South and (2) the area near Tura Bazar which happens to be the most congested area of Tura Town. There is a need therefore to rationally relocate such activities in areas earmarked to increase the efficiency of these activities and mitigate problems of traffic movement.

#### 5.1.4 Centres Of Retail Trade.

(a) **City Level** :— The Tura Bazar area is the only city level trade and commercial centre. Due to non-availability of alternate and viable shopping areas elsewhere in the town the impact of growth of trade and commerce over the years had to a large extent be absorbed by this area resulting in unorganised development and spilling over of activities as well as invasion of non-conforming uses. Tura Bazar area has narrow roads and limited infrastructural facilities has today reached a point of saturation. This centre shall however, continue to function as the only city level centre provided selective commercial development is allowed and a re-development of the market is undertaken. In the absence of scope for future expansion, a new city level commercial centre will have to be developed in the years to come. As per the survey conducted by the Department, there were 357 stalls inside the market, 19 wholesale and 145 retail shops in and around Tura Bazar.

(b) **Other Shopping Centres** :— There are about six other retail shopping areas functioning in Tura Master Plan Area of which two are of an organised nature but of limited scale, they are; Nakham Bazar and Nazing Bazar, Nakham Bazar can be identified as a specialised market dealing with dry fishes but with chronic shortage of infrastructural facilities. Nazing Bazar was constructed with a view to developing an alternate site for Tura Bazar but the same is yet to function properly and may require a reappraisal. Apart from the above, there are local shopping facilities are Chandmari, Ringre, Arai mile and Dobasipara. All these are unorganised and are in urgent need of redevelopment and organisation.

#### 5.1.5 Growth Of Shops And Commercial Establishment.

In the absence of time series data on Commercial establishments, the trend of growth could not be determined. As per the survey conducted by the Department, it has been found that in 1988 Tura had 783 retail shops, 64 wholesale *cum* retail shops and 36 commercial establishments of various types. It was also revealed by the Survey that the growth of commercial activities has not been able to keep pace with the growth of population and that commercial activities has been highly centralised. All these calls for immediate or early opening up of commercial facilities in various selected localities of the town.

In 1988, the total area under commercial use is 32.38 acres which gives a rate of 0.66 acre per 1000 persons.



### 5.1.6 Problems Of Trade And Commerce.

Studies of commercial areas has revealed that land under commercial use is inadequate, resulting in commercial activities coming up in residential houses or are coming up as encroachments on road spaces.

Tura Bazar is located in one of the major transport links between Tura and Baghmara. In fact the entire entry and exist of traffic to and from Tura from the South has to pass through this highly congested area. In the Bazar area, absence of open space, Hawker space and parking facilities have led to acute congestion and spilling over of activities on roads. Owing to shortage of space and specified areas for wholesale trade and warehousing, these functions have also concentrated in Tura Bazar area. The leading and unloading activities and transportation of good either by trucks, jeep trailers or headloads often creates traffic jams and obstacle for pedestrain movement. These activity need to be provided with space at suitable location.

As regards the other commercial areas in Tura, it has been observed that most have developed either along road sides or at road junction which on one hand creates traffic problems and on the other hands leads to deterioration of environment. The commercial area which is emerging in Arai Mile is entirely encroaching on roads with shanty structure and has developed at a very undesirable location. There is a need to relocate this activity at a more suitable location. The commercial areas at chandmari, Ringri and Dobasipara are characterised by similar problems and require due consideration.

## ADMINISTRATION

### 5.2 Offices.

Ever since Tura become a District Headquarter it has become necessary to organise the District level offices and some State Government Offices in a proper manner. This has become necessary in view of the fact that Government offices were mostly located in rented house and dispersed widely over the town. The recent attempt of the Government to locate all Offices in New Tura near Arai Mile appears to be move in the right direction. Accordingly, two major administrative areas can be identified at Tura. They are (1) New Tura and (2) Deputy Commissioner Office Complex and its surroundings.

#### 5.2.1 Hierarchical Structure Of Offices.

Offices of State Government, State Level, District and Subdivisional Level, Central Government Offices, Business Offices, Banking Institution and similar other offices are located at Tura. Table 5.1 shows the hierarchical structure of offices by location and employment in Tura Master Plan Area.



TABLE 5.1

## TURA MASTER PLAN

## HIERARCHICAL STRUCTURE OF GOVERNMENT OFFICES : 1988

Sl. No.	Hierarchical offices	Total No.	Distribution					Total employed
			Babupara D. C. Court area	Hawakhana	Arai Mile Dakopgrt, etc.	Chaidmari	Other	
1.	State Level	2	—	—	2	—	—	90
2.	District Level	46	13	14	8	3	8	1184
3.	Divisional/Subdivisional level	15	—	4	5	—	6	144
4.	Central	11	2	1	4	3	1	243
5.	Autonomous, etc./ local, etc.	15	3	2	4	1	5	125
	Total	89	18	21	23	7	20	1786

**Source:** Field Survey by Urban Affairs Department, 1988.

The table reveals that there is no major concentration of office in one particular area but largely distributed over areas like Arai mile, Hawakhana and Babupara area. The total strength of Office employees in 1988 is 1786 of which near 80 per cent are State Government employees. Of the total Government Offices numbering 89, it is found near 23 are located in rented houses.

Looking at the specialised need for administrative functions, hierarchical distribution of office complex and necessity of inter-relationship between them, every care needs to be taken to achieve locational efficiency.

### 5.2.2 New Tura.

The State Government in the seventies acquired an area of around 430 acres with a view to setting up a New Tura. This was done with the objective of locating the various administrative offices along with their residential quarters. This was an attempt in the right direction which would on one hand, because of compactness would ensure locational efficiency and on the other hand would create scope for redevelopment of the Tura Town due to decentralisation. Further, a regulated development would be ensured in view of Government control.



As per survey conducted by this department, it was found that development in New Tura has been to a large extent, as per the layout plan prepared by the office of the associate Town Planner, Garo Hills District, Tura. Although many of the Departments have constructed their building and residential quarter and have started functioning therefrom, the pace of development is however yet to pick up. This has resulted in considerable encroachment in the area. As per the information available with the office of the Deputy Commissioner, West Garo Hills District in 1985 about 9 per cent of the total area acquired for the New Tura Complex was under encroachment. The number of encroachment were about 130 families.

As per the Allotment Plan prepared by the office of the Associate Town Planner, Garo Hills, the land use figures are as follows :—

Table 5.2

## New Tura Complex

## Existing Land Use

Uses	Area in Acres	Per cent To Total Area
1. Administrative	130.00	30.23
2. Residential	85.00	19.76
3. Educational	150.00	3.49
4. Commercial	4.00	0.94
5. Recreational	5.00	1.16
6. Transportation	103.50	24.07
7. Vacant	87.50	20.35
Total	430.00	100.00

It may however be noted that land has not been earmarked for commercial activity as such, 4 acres of land shows as commercial land is for setting up of and Ashoka Yatri Newas Hotel. Land earmarked for educational uses is for the setting up of Survey School and a Science Museum. The transportation use apart from roads also include a helipad.

As regards number of Departments allotted land in New Tura Complex it includes 33 State Government Department, of which 21 Department have also been allotted land for residential uses. 5 Central Government Department of which 3 department have been allotted land for residential uses, one Autonomous body, 2 Educational, one each of Transport, Commercial and Recreational.

The above figures reveals that on the whole, about 34 Government Department of various hierarchical order are located outside the New Tura Complex, of these, about 28 Departments need to be provided with Government land.



### 5.3 Industries :

Tura is completely devoid of Medium and large Scale Industries. In fact, till date no area has developed as an industrial area. Industrial development in Tura has been in the form of Small Scale Services, Handloom and Handicraft Industries spread over the town.

Table 5.3 shows the Industrial establishment by Capital Investment and installed capacity in Tura Master Plan Area in 1985.

**Table 5.3**  
**Tura Master Plan**  
**Industrial Establishment By Type — 1985**

Sl. No.	Type	Total No.	Total Capital Investment (in Rs.)	Total Installed Capacity
1.	Textile (Weaving and processing of Wool, Cotton, Synthetic including garments.)	43	Rs. 5,52,941	2,04,969
2.	Food and Fruit processing	17	Rs. 2,82,913	65,703
3.	Misc. group like Saw Mills Furniture, Workshop.	59	Rs. 13,38,414	3,19,530
Total		119	Rs. 21,74,268	5,90,202

**Source :-** State Board for Prevention and Control of Water Pollution.

The table above shows that Tura has a total of 119 registered industrial units. However, information on employment by type, etc. are not available for the area.

#### 5.3.1 Industrial Problem :

Tura is yet to establish an industrial estate and the industrial unit located in Tura as such, do not pose any major problem. It may however be necessary in near future to create an industrial base for Tura Town in view of the fact that wider economic opportunities may have to be created to cater to and sustain the ever increasing population of the town. Although the town has some potential for industrial development, the principal reason for the inadequate development in this sector can be attributed to the following sector :—

- a) Transportation constrains : A part from road linkages Tura is seriously handicapped by the absence of rail, or water linkages.
- b) Suitable land for industrial development is restricted.
- c) Lack of development of propulsive or basic Industries which can regenerate further industries to use regional resources.
- d) Lack of development of market mechanism and inadequate development of tertiary activities other than Government Institutional.



- e) In relation to the industrial complexes in the neighbouring region in Assam, there is no cost advantage in Tura in respect of equipment, transportation costs power and skilled labour.
- f) The availability of skilled labour locally is meagre except for Handloom Industries.

In spite of the above, Tura does have potential for industrial Development being the only outlet for the large rural and rich hinterland and being the only service centre for the area. There is need however to identify and organise this sector keeping in view the resources available in the region and the constraints and potential.

## CHAPTER 6

### TRAFFIC AND TRANSPORTATION

The transportation net work of a town play an important role, and effects intimately the towns economic and socio-culture life. A well laid road net work can solve many problem of urban life. Hill towns generally have a complex road pattern dictated primarily by the topographic features. Tura, besides having all the complexities imposed by the unduallating topography has the added disadvantage of narrow and unplanned road network.

The efficiency of a road net work needs to be examined both in term of inter town and intra town movements. The growing demand of movement space calls for scientific assessment of the problem of movement, such as circulation pattern, road geometries, road capacities, inaccessibility, so that remedies could be evolved both in term of short term as well as long term measures. This requires traffic and transportation survey and Engineering Surveys, which have to be related to the existing land use pattern. These studies bring out problem as well as possibility of improvement with minimum disturbance in the existing pattern.

Tura is handicapped as far as the transportation system is concerned. Being linked by National Highway to Assam on the North and Dalu and Baghmara on the South, the entire system depends on the efficiency of the Highway. Further, there are also state roads which connect the town to Garobadha on the West and Williamnagar on the East. The Town is also linked by a Triweekly Helicopter service to Assam and the state Capital Shillong.

#### 6. Transportation System (Regional).

##### 6.1 Regional Traffic (Passengers/Buses):—

Tura being an Administrative, Commercial and Institutional Centre for Western Meghalaya generates considerable passengers traffic by road. Nearly 52 buses come to Tura daily and above 54 leaves the Town. With increasing activities and specified service being offered in Tura, the regional passengers Bus movement is gradually increasing.



TABLE 6.1

## REGIONAL TRAFFIC (PASSENGERS/BUSES) 1971 - 81

Year	Buses		Passengers	
	Daily average trips	Rate of growth	Daily average trips	Rate of growth
1981	36	—	1800	—
1988	53	47%	2915	62%

Source :— Survey Conducted by Urban Affairs Department, 1988.

The table above shows the growth of daily average bus trips and passengers Trip over a 7 years period from 1981 to 1988. The table is highly reflective of the fact that Tura is truly emerging as a centre of regional importance.

### 6.2 Regional Traffic (Goods).

In the absence of any railway linkages, road connection is the only mode of goods movement in Tura. However, data on volume of goods movement to and from Tura is not available. Presently, however, it has been observed that on an average daily about 115 Trucks enter and leave Tura Town. Of these 115 Trucks, it is estimated that about 35 Trucks or 30 per cent are through movement, destined to and from Garobadha, Dalu, etc.

### 6.3 Circulation Pattern.

There is a complete lack of form of pattern of the existing road net work of Tura Town. The form that has evolved can safely be said to have followed the settlement pattern of the Town and have primarily been guided by the topography of the town. Problem that have arisen out of these factors calls for a careful study and an approach to arrive at a workable solution.

(1) Three roads forms the connecting link between Tura had the rest of the State. They are Tura-Dudnai road, Tura-Dalu road and Tura Garobadha road.

(2) Regional Roads terminates in the town and lose their identity as regional roads. The regional traffic, therefore, distributes along many of the Town roads. There is a mixing therefore, of the regional and local traffic.

(3) The Town and the localities have their own separate road pattern unrelated to each other. This is due to the fact that the various localities of the town have developed at different periods and have different topography.



(4) There is absolutely no effort whatsoever to separate vehicular and pedestrian traffic and local and regional traffic.

### 6.3.1 Road Net Work.

The main road net work is formed primarily by a North-South alignment road connecting Rongram-Dalu which is in fact a National Highway and an East West alignment road connecting Garobadha. Tura Town has in fact developed at the intersection.

The width of these two roads are narrow and restricted, in the Commercial Areas of the Town. This has also led to traffic bottle neck, at the town entries.

Table below shows that length of various categories of road within Tura Master Plan Area.

**TABLE 6.2**  
**TURA MASTER PLAN**  
**LENGTH OF ROAD — 1988**

Sl. No.	Type of Road	Length in K. M.	Percentage
1.	Metalled	38.57	38.66
1.1	National Highway	9.31	9.33
1.2	Town Roads	29.26	29.33
2.	Gravelled Road	3.99	4.00
3.	Kutchha Road	24.87	24.93
4.	Footpaths, etc.	32.32	32.41
Total :		99.75	100.00

**Source :** Survey conducted by Urban affairs Department, 1988.

The above table reveals that the Tura Master Plan Area as a whole has a road density of 2.55 kms. per Sq. km.

This low figure could be attributed to the huge vacant and forested land included within the Master Plan Boundary.

### 6.4. Traffic Generating Nodes.

Major traffic nodes (Passenger) in an Urban Settlement are normally the work centres, recreational centre and traffic terminal. The work centres generate, fairly regular traffic while the traffic generated by recreational centres are periodic. In order to study the movement of people it is necessary to identify major work centres and traffic terminals in the city and their relationship with residential areas. The following table shows the major traffic generating nodes in the Town.



TABLE 6.3

## TURA MASTER PLAN

## TRAFFIC GENERATING NODES, 1988

Location	Type of Nodes	Description	Remarks
1. Tura Bazar Area	Work Centre	The main commercial centre of the Town and covers areas like Nakham Bazar, Fancy Valley etc.	Centrally located but undesirable for development, unless planned and redeveloped with proper infrastructure.
2. D. C. Court Areas (Cover Babupara)	Work Centre	The Seat of District Administration and Institutional Centre.	Suitably located.
3. New Tura Complex.	Work Centre	Administrative centre of the Town.	Suitably located.
4. Hawakhana	Work Centre	Location of various Government office, District council office college and schools	Suitably located.
5. Chandmari	Work Centre	Commercial area with various Government Office and Institutions.	Suitably located.
6. Dobasipara	Work Centre	B. S. F. Headquarter and various Government Office.	Suitably located.
7. Ringli	Work Centre	Institutional and Commercial Area.	Unsuitably located.
8. Tura Bazar Area.	Traffic terminal	Location of M. T. C. Bus stand regional bus terminus, taxi terminus, etc.	The transportation function are highly unsuitably and the commercial area also require redevelopment.

Source : Survey conducted by Urban Affairs Department, 1988.



On an examination of the various traffic generating nodes it has been found that the Tura Bazar area which functions as a work centre as well as a traffic terminal, is highly undesirable. There is an urgent need to shift the traffic terminal function from this area. This is due to the fact that the area is already highly congested and in acute shortage of parking space. Most of the traffic terminal function like Regional Bus Stand and Taxis are operating from here and parking is mainly along road sides.

As regards the residential nodes, it has been observed that there is no specific residential area except the New Tura Complex.

### 6.5 Nodes Of Transportation.

Traffic carrying capacities on Urban roads are intimately related to the modes of traffic in use along these roads. Inter-mixing of different modes, depending on their proportion reduces the traffic carrying capacities of the roads. Traffic studies therefore, is necessary to investigate various modes of traffic and their changing trends.

TABLE 6.4

#### GROWTH OF FAST MOVING VEHICLES

Year	Car Jeep	Vehicles Ownership per 1000 persons	Two wheelers	Bus	Truck	Taxis	Total
1961	121	14	102	37	184	6	450
1971	243	16	232	56	230	12	778
1981	678	16	426	117	395	43	1589

Source: Survey conducted by Urban Affairs Department, 1988.

The above table shows the growth of fast moving vehicles pertaining to the whole jurisdiction of the district Transport Officer. As there are no large Urban Centres like Tura in West Garo Hills District the figures in the table reflects the trend largely of Tura. The trend exhibits doubling of almost all type of vehicles in the last decades. This trend likely to continue in the next decades. Hence creation of Truck terminus, Bus terminus of both Government and Private vehicles, Taxi stands and organised parking spaces shall be required all over the Town. Tura however, is previllaged by the absence of slow moving vehicles.



As regard mass transportation, except a skeleton Bus Service, no other modes exists in Tura. At present, there are two Private Bus and one MTC bus plying within Tura. Also considering the fact that there are only 28 local Taxis plying within town, the mass transportation system is highly inadequate.

Due to increasing population pressure and wide dispersal of activities and expansion of the town, the City bus system needs to be organised and expanded. The present system is highly inadequate to deal with the Town Committee.

## 6.6 Traffic Survey and Problem :

Various traffic survey such as volumetric, origin destination parking and pedestrian, etc. were conducted by the Department so as to identify traffic problem and their magnitude. These studies and their results are briefly indicated below.

### 6.6.1 Traffic Volume :

Study of traffic volume on major arteries and intersection were undertaken at the Peak hours in the Town. These counts have brought out the volume or load on the roads and intersection.

A total of 15 roads were covered under the volume count. The following table gives the values of counts in P. C. U. for fast moving vehicles. The data has been compiled for the Peak hour traffic only.

Table 6.5

### Tura Master Plan

#### Peak Hour Traffic (Refer Dng. 07 and Dng No. 08)

Road Section	In P.C.U.	Remarks
1. Tura Garobadha Road		
1. Near A. O. C.	319	Need for Improvement of junction and construction of footpaths.
2. Near old Circuit House	225	Need for construction of Footpaths and eviction of encroachment on road space.
2. Near Artimile junction	205	Need for junction design and eviction of encroachment on road space and regulatory measures.
4. Near Board of Secondary Education	60	Suggested road widening.



2. Tura Rongram Road		
1. Near Chandmari	227	Need for widening and junction improvement.
2, Near Ringrey	267	Need for junction design construction of footpaths and eviction of encroachment on roads space.
3. Tura-Baghmara Road		
1. Near Dobasipara	125	Need for junction improvement and eviction of encroachment, widening and regulatory measures.
4. Near Old Civil Hospital at Babupara	249	Need for junction improvement construction of footpaths.
5. Hawakhana to Tura Bazar Road	258	Construction of footpath and road widening.
6. New Tura Road	140	Construction of footpaths and road widening.
7. Road behind Tura College	47	Road widening.
8. AOC Point to Rongiri Road	181	Construction of footpath.
9. AOC Point to Babupara Road.	142	Construction of footpath and regulatory measure at intersection.
10. Road to Bonepa Atilla	93	Road widening.

**Source :** Survey Conducted Urban Affairs Department, 1988.

The Peak hour traffic volume was calculated from data collective in the morning between 8:30 to 10:30 A.M. and in the evening between 2:30 to 4:00 P.M. This was done due to the difference in the work timing between the Offices and Schools, in Tura.

The above table reveals that maximum peak hours traffic volume is on the East—West corridor of the town in Tura- Garobadha Road followed by the volume on the National Highway which passes through the Tura Bazar area.

On analysis of traffic volume and the road widths, it was found that the carriage available in all the roads of Tura is sufficient to take the existing traffic load. However, the capacity of the road have been seriously restricted by on-street parking encroachment and spilling over of activities.

### 6.6.2 Parking Surveys :

In the Town growth of activities is related in increase demand for parking space. However, in the absence of any organised facilities for off-street parking vehicles are mostly parked by the road side. Some of the important parking space in the town are listed below.



### Regulated Parking Areas For Regional Buses, Taxis and Trucks :

1. Near Police Reserve : East Garo Hills, Bus stand and Bazar Bus stand.
2. Ananda Math Road : West Caro Hills, Bus Stand and Jeep and Taxi Stand.
3. In front of Saha Motor Spare: For Jeep and Taxi 5 A.M. To 10 P.M. parts shop.
4. In front of Deepa Medical : For Jeep, Taxis only 5 A.M. to 10 P.M. Store.
5. In front of M. T. C, Office : Two Trucks are allowed to Park for Tura Bazar loading/unloading purposes.
6. Near Satsang (Dalu road) : Parking place for heavy vehicles.
7. All along Dalu Road from : Temporary parking for loading/un-Police Point junction upto : loading, near Thakurbari.

The above areas are mostly road side space and highly inconvenient. Except for a parking space for heavy vehicles at Dalu Road, (Dobasipara) which is the only organised off-street parking available, none others are desirable and require organisation.

### B. Regulated Parking Areas For Private Vehicles :

1. Police Hospital junction to : Opposite Ashok Store for two wheeler East Garo Hills, Bus Stand and opposite Mahabir Store for private junction. vehicles.
2. Chandmari B. H. side with- : For Light Vehicles. in parking marks.
3. Near Mission Hospital Gate ,, ,, ,, within parking marks
4. Rengri AOC Road within ,, ,, ,, parking marks.
5. Ringri Bridge Upper Chand ,, ,, ,, mæri Road within parking marks
6. Below E. E., P.W.D., North ,, ,, ,, Division within parking marks.
7. Below D. C's Park ,, ,, ,,
8. Police Club junction within ,, ,, ,, park ng marks,



9. Opposite Apex Bank Ltd., For Light Vehicles within parking marks.
10. Opposite Raju's Garage. ,, ,, ,,
11. Dobanpura junction near ,, ,, ,,  
S.D.O., PWD's Office within parking marks. ,, ,, ,,
12. Arai Mile Road on the same ,, ,, ,,  
side of PHE within parking marks.
13. Dalu Police Point junction ,, ,, ,,  
upto Tumbu Spot.

The above information were collected from the Gazette notification Dated 19th June, 1936 as well as Survey conducted by the Department.

Although the above areas are permitted parking space, they are highly inadequate and undesirable.

Keeping in view the fact scope for widening of roads are limited in Tura on-street parking needs to be prohibited. For this purpose, it is felt that sites be identified for construction of organised parking lots in the emerging areas and in-built parking facilities are ensured in built up areas.

### 6.6.3 Origin Destination Survey :

The study of origin (Map ... 09) destination was conducted during peak hour period along major roads of Tura Town, Zones were identified based on homogeneity of function and locational factors and major links were identified as survey Point. Map shows the origin and destination of trips Zone wise for Tura Town. The study revealed that during peak hour period, the maximum traffic flow occurs between Zones 1 and 5 i.e; between Chandmari and Tura Bazar Area. This movement accounts for about 254 p.c.u.'s and the entire load is taken by Rongram, Dalu Road. Further heavy movement was also found between Zones 1 and 20 and Zones 1 and 13 i.e; between Hawakhana Chandmari and Chandmari-Arai Mile respectively. The study has therefore revealed a high traffic movement between four areas of Tura Town viz, Tura Bazar-Hawakhana Chandmari-Arai Mile. Heavy movement between these areas could be attributed to the fact that major work centre are located in these areas. In the absence of alternate roads the fact that emerges is, parallel roads linking these localities have to be identified and constructed to reduce the heavy load on the two road of Tura Town. Table 6.3. shows the sum of the origin and destination of traffic within the identified Zones in Tura Town.



TABLE 6.6

## Tura Master Plan

## Origin — Destination Survey

Zones	Major Areas	Total PCU (Sum of Origins Destination)
1.	Chandmari	746.17
2.	Forest Tilla, Upper Chandmari	137.70
3.	Upper Babupara	—
4.	Deputy Commissioner's Court	30.00
5.	Bazar Areas	348.25
6.	Fancy Valley	29.07
7.	Boldakgiri, Akonggiri	14.85
8.	Dobasipara	99.20
9.	Border Security Force	18.90
10.	Old Circuit House	—
11.	Arai Mile	57.80
12.	Matchakolgiri	—
13.	New Tura	285.39
14.	Lo-akol	—
15.	Danukgiri etc.	167.40
16.	Alotgiri	—
17.	Cherangiri etc.	157.14
18.	Megonggiri etc.	67.45
19.	Chachanggiri etc.	—
20.	Hawakhana	238.90
21.	Assam Oil Company etc.	114.75
22.	Lower Babupara	99.55

Source : Survey conducted by Urban Affairs Department.

As regard the through traffic in Tura Town the three major entry/exit point of Tura Town viz. Tura-Rongram Road, Tura-Garobadha Road and Tura Baghmara Road were identified as Survey points. The survey revealed that out of the total vehicles entering the town 86.5 per cent are destined for Tura while the remaining are through traffic. Bazar buses constitute 48 per cent, and Trucks constitute 38 per cent of these through traffic.

The magnitude of through traffic in Tura Town presently is not so heavy to warrant the construction of a Bypass. However, alternate roads or link roads require to be identified.



#### 6.6.4. Bottle Necks :

Bottle neck not only reduce the traffic carrying capacity of the roads but also cause accidents and traffic jumps too, Bottle neck have been observe the following major roads.

1. National highway No. 51.  
Rongram Baghmara road.

2. Tura Garobadha Road

The main Bottle Neck Point are as follows :-

- |  |  |
|--|--|
| i) Ganol Bridge  | — Rongram Tura Road National Highway No. 51. |
| ii) Bridge over Ringrey (Near Playground at Chandmari) | — Rongram Tura Road National Highway No. 51. |
| iii) Chandmari Bazar                                   | — Rongram Tura Road National Highway No. 51. |
| iv) Ringrey Bridge                                     | — Rongram Tura Road National Highway No. 51. |
| v) Junction near Parade-ground at Tura Bazar           | — Tura Dalu Road National Highway No. 51.    |
| vi) From Police Point Tura Bazar to Nakham Bazar       | — Tura Dalu Road National Highway No. 51.    |
| vii) Dobasipara junction                               | — Tura Dalu Road National Highway No. 51.    |
| viii) Point near District Council Garage               | — Tura Garobadha Road.                       |
| ix) Arimile junction                                   | — Tura Garobadha Road.                       |

Removal of bottle neck point from the above mentioned road will certainly increase the road capacity.

#### 6.6.5 ENCROACHMENT OF ROAD SPACE :

Owing to pressure of commercial activities the road space is continuously being encroached upon. The typical example being Arimile junction, Tura Bazar Area, Ringrey Dobasipara and Chandmari areas. The roads being narrow and with increasing encroachment, pedestrian are forced to move in the carriage way endangering their life. To achieve an efficient circulation pattern these encroachment will have to be removed.



### 6.6.6 DIAGNOSTIC SURVEY OF ROADS :

A diagnostic survey of the two major roads viz. Fongram Dalu (National Highway) Road and Tura - Garobadha Road were conducted. The findings were similar and as follows :-

1. Road width is narrow with an average width of 15 feet.
2. All road junction is in need of redesigning.
3. Undesirable encroachment on Commercial Areas.
4. Absence of organised off-street parking facilities.
5. Road characterised by Regional and City Level Traffic.
6. Traffic control measures inadequate.
7. Absence of footpaths.
8. Road Geometries are poor.
9. Emerging bottle neck points.

## CHAPTER — 7

### Urban Infrastructure

#### (Urban Service And Amenities)

#### 7.1 Water Supply :

The water supply system of Tura is presently having three main sources viz. Rongkhon Stream, Upper Babupira Stream and Ganol River, of these, the first two are depending on gravity flow while the third depends on pumping to ensure water supply to Tura Town. Although the information of the existing maximum potential of the different sources are not available, the total capacity of reservoir in Tura is about 1.20 million gallons. The location, capacity and areas covered by the reservoir under the existing water supply system of Tura is as follows:—

Table 7.1

#### Tura Master Plan

#### Existing Water Supply Scheme (Refer Dng. No: 10)

Location of Reservoir	Capacity (In Gallons)	Area Covered
1. Upper Chandmari	3.28 lakhs	Lower Chandmari
2. Upper Chandmari	0.50 lakhs	Upper Chandmari
3. Fancy Valley	0.50 lakhs	Fancy Valley & Bazar
4. D. C's. Bunglow	1.63 lakhs	Bazar
5. Near Tura College	1.28 lakhs	Hawakhana and Tetengkl



Location of Reservoir	Capacity (In Gallons)	Area Covered
6. Upper Babupara	1.25 lakhs	Old Circuit House, Babupara Old Civil Hospital
7. Near Father's Compound	1.63 lakhs	Chitrol, Spring Hills.
8. Near Cherangiri	0.50 lakhs	Cherangiri
9. Near Balading	0.50 lakhs	Balading, Upper Babupara, Forest Tilla
10. Near D. C's Park	1.93 lakhs	Akhongiri, A Baudamati Risipara, Beldapara, Navin Patho Dobakol, Akhongiri.
11. Near Stadium	1.00 lakhs	Stadium, Champalgiri, Wadanang.
12. Near New Circuit House.	1.93 lakhs	Molyagar, Hajongpara, Reservegithim, Arai Mile.
13. Dakopgiri	1.22 lakhs	New Tura, Apalangiri, Dakopgiri.
14. Damakgiri (Near I, T. I.)	0.91 lakhs	Matchkolgiri, Sunny Hills, Danakgiri.

**Source :** Executive Engineer, PHE., Division, Tura.

As per the information available with the Public Health Engineering Department, the present supply works out to be about 135 litres per capital daily which appears sufficient. As per the survey conducted by this Directorate, areas like New Tura and Mondol Barrack suffers from acute shortage of water. The same can be attributed to faulty distribution not work and unsuitable gradient conditions.

It is essential, therefore to take immediate measure to provide sufficient water to all the localities of the town. Apart from the surface water resources the ground water potential also need to be examined and utilised. The terrain in Tura being formed of very coarse and loose sedimentary rock the ground water potential is likely to be considerable.

## 7.2 Sewerage and Water Pollution :

The contamination of the sources of water supply is detrimental to the health of the citizen. The sources of water supply is Tura, fortunately is located in the higher reaches and away from the densely build up areas of the Town. However, with the expansion of the Town and continuing deforestation, these sources may be affected. In view of the above upper reaches of Tura Range need to be strictly conserved with strict prohibition of deforestation and building activity.

As regard the Sanitary condition in Tura it is very poor and dominated mostly by latrines with direct discharge to the streams. Although the details are not available it is assumed that over 65 per cent of the residence have similar type of latrine. There is an urgent need to assess the existing situation and convert all latrines into sanitary type.



### 7.3 Storm Water Drains :

The nature Topography of Tura is such that the rain water flows to the stream. Within the Town pucca and semi pucca drains have been constructed in both side of the roads in some areas of the Town. The entire surface water is carried by these drains and discharged directly to the stream.

Most of the area still do not have pucca drains. Sand stone and steep gradient to not allow stagnation of water, and hence after heavy rains the water drains and quickly erodes roads and foot paths. Studies Clearly indicate that the land slides in Tura has been caused by various factors like improper drainage, topographical and man made factors.

### 7.4 Electric Power :

Tura Town is served by Electric Power distribution not work which is received from the Hydel Shillong. According to the information, from Tura Electric Subdivisional the numbers connected by electric connection and power supply to the different use are as follows :—

Table 7.2.1

**Tura Master Plan  
Electric Power Distribution**

Type Of Uses	No. of Connection
1. Commercial	537
2. Government Building	657
3. Private	2206
4. Industrial	1 (L.T. Small Industry)

Source : M. S. E. B., Tura.

Table 7.2.2

**Tura Master Plan**

Type Of Uses	Power Supply
1. Commercial	24262 KWH.
2. Government Building	31210 KWH.
3. Private	86782 KWH.

Source : M. S. E. B., Tura.



It has also been proposed by the Me. SEB. to set up (i) 11 KV line extension within Tura Town. (ii) L. T. Line within Tura Town (iii) New Sub-station Installation and (iv) Augmentation of supply. However, the present source and supply is sufficient to meet the growing need of Electric power.

### 7.5. Health :

Tura Town has the maximum number of Medical facilities in Garo Hills. People from all over the District come to Tura for their medical requirements. However, the town still lacks in facilities for advanced surgery, treatment of mental disorders, etc. :— Presently there are 5 hospitals in the town including two specialised hospitals. Table 7.3 shows the name of Hospitals its managing authority and Total number of beds at each hospital.

**Table 7.3**  
**Tura Master Plan**  
**Hospital and Managing Authority**

Sl, No.	Name of Hospital	Managing Authority	No. of Bed
1.	Tura Civil Hospital	Government of Meghalaya	55
2.	Tura Police Hospital	—do—	10
3.	Tura T. B. Hospital	—do—	25
4.	Leprosy Hospital	—do—	25
5.	Tura Christian Mission Hospital	Private	N.A.

**Source :** District Medical and Health Officer, West Garo Hills, Tura.

According to the information from the District Medical and Health Officer, West Garo Hills, Tura, the total number of out patient registered in 1987 are as follows :

**TABLE 7.4**  
**TURA MASTER PLAN**  
**PATIENT REGISTERED IN 1987**

Sl. No	Name of Hospital	Number of Patients
1.	Tura Civil Hospital	24,959
2.	Tura Police Hospital	3,223
3.	Tura T.B. Hospital	1,381
4.	Tura Leprosy Hospital	106

**Source :** District Medical and Health Officer, West Garo Hills, Tura



Apart from the Hospital there is only one Health centre in Dakopgiri (New Tura). There are no state Dispensaries and Primary Health Centres in the Town.

Owing to its location and favourable climate, the Town has a potential for development of specialised Medical centre for the entire region. Moreover, there is a need to provide dispensaries and to increase the capacity of the existing Civil Hospital.

### 7.5 Educational :

As regard Educational facilities there is some shortage of educational institutions. According to the Survey conducted by the Urban Affairs Department there are around 31 primary schools, 17 Middle Schools, 16 High Schools, 1 College and 1 Institution giving vocational training. Spatial distribution of Educational facilities are given in Table 7.5.

**TABLE 7.5**  
**Tura Master Plan**

#### Special Distribution of Educational Facilities in Tura Town

UNITS	PRIMARY SCHOOLS	MIDDLE SCHOOLS	HIGH SCHOOLS	COLLEGE	OTHER INSTITUTION	TOTAL
Planning Unit I	4	2		X	X	7
Planning Unit II	7	3	4	X	X	14
Planning Unit III	11	9	6	X	X	26
Planning Unit IV	4	2	2	1	X	9
Planning Unit V	4	1	2	X	X	7
Planning Unit VI	1	X	1	X	1	3

Source : Survey conducted by Urban Affairs Department, 1988.

#### 7.6.1 Primary Schools :

The Primary Schools begin from Class A, B, I, II, and upto III. In Class A and B Children are merely introduced to Elementary Education. Formal Education begins from Class I. According to the Survey conducted by this Department the proposed Planning Unit No. III has maximum numbers of Primary Schools. Planning Units No. VI has the least number of primary School as given in Table 7.5.



### 7.6.2. Middle Schools :

The Middle schools begins from Class IV to Class VI. According to the survey there are 17 Middle Schools in Tura town. According to the Table 7.5, it reveals that the Planning Unit III has the maximum number of Middle Schools, where as in Planning Unit VI there is not a single Middle School.

### 7.6.3 High Schools :

As regard High School, there are 16 High Schools. High Schools begins from Class VII to Class X. According to the Survey conducted the Planning Unit No. III has the maximum number of High School, where as Planning Unit No. I and VI has the maximum number of High School. (Table No. 7.5).

### 7.6.4 College :

There is only one college in Tura Town providing Educational facilities to the Student of Pre-University and Three Year Degree Courses for both Science and Arts. The College is managed by the State Government. Tura College is located in Hawakhana in the Planning Unit No. IV.

### 7.6.5 Other Institution :

There is only one Industrial Training Institute in the Town giving training in Motor Machanic, Fitter, Electrician Welder, Carpentry Turner and Stenography. The Institute is managed by the Government. The Institute is located in the Arai Mile Area and in the Planning Unit No. VI. However, it is felt that these type of Institutions should be increased to provide Training opportunities to larger number of people.

According to the Survey it was found that the facilities like play ground for Schools going children is inadequate. There is need to provide adequate playground in Tura Town.

### 7.6.6. Social and Cultural Institutions

Though Tura is District Headquarter and main Centre for both East and West Garo Hills District, the town has a limited number of Social and Cultural Institutions. There are only three Clubs viz. Evening Club located in Lower Babupara, Sports Club in Chandmari and Officer and Employees Club located in New Tura.

Besides, the Town has one District Library run by the Government. There is also one Cinema Hall located in Upper Babupara.

As far as the place of workshop like Churches, Temple, Mosque are concerned, they are adequate in number.



### 7.6.1. Recreational Facilities :

The town has inadequate recreational facilities. There are only two park viz., the D. C's Park located at Babupara and the Children Park in Arai Mile. There was no organised open spaces in and around the Town.

There is also a dirt play grounds in Tura Town. There are 4 (Four) playgrounds located at Chandmari, Parade Ground near Tura main market Arai Mile (New Tura) and a Play ground with a Stadium at Wadanang.

It is therefore apparent that Tura Town has inadequate recreational facilities. There is therefore a need to provide more recreational facilities like Parks, Play grounds, Organised open spaces, e.c, in the Town. Due consideration should be given to the spatial distribution of these activity in the Town.

### 7.7. Other Utilities and Services

#### 7.7.1. Post and Telegraph Offices :

There is one main post and Telegraph Office located in Babupara near D. C. Office. Besides, there are two more branch Offices located in Arai Mile and Chandmari.

#### 7.7.2. Police Station :

The Town is served by a Main Police Station which is located in Babupara near D. C's. Court and three Beat Police Station which are located in Chandmari, Dobasipara and Arai Mile.

#### 7.7.3. Fire Station :

Fire protection service is maintained by the Government located near Tura main Market. It is necessary that the Fire Station be located in such a manner that they can reach the effected spots in shortest possible time. The Town need atleast one site for location of Sub-fire Station.

#### 7.7.4. Burial Grounds :

The Town has sufficient number of Grave Yards. The total area under this use is around 10.41 hectares. It is felt that the Grave Yards needs to be improved and properly maintained to improve the quality of the Environment.

## CHAPTER 8

### Town function and future town needs

The Master Plan for a Town is an effort to evolve a scientific and rational policy to meet the requirements of the Town and to satisfy aesthetic and emotional aspiration of its citizens. Hence systematic analysis has been done based on the problems and inadequacies of the Town, and the assessment of the future needs of the town.



### 8.1. Major city functions :

To decide the future growth of the Town based on the analysis of the subsequent paragraphs and to cater to the inadequacies, understanding of the Major town function is an indispensable fact. Attempts has been made to develop the Town according to the following functions.

- (1) An Administrative Centre for District Administration.
- (2) An important Trade and Commerce Centre of the Region for collection and distribution of commodities.
- (3) Transportation nodes and terminal centre for efficient movement of people and goods.
- (4) Regional Educational and Cultural Centre.
- (5) Tourist Centre.

### 8.2 Plan period :

Growth of an Urban settlement is a continuous process, yet for the purpose of preparation of a Development Plan, it is necessary to assume a 'time span' for the Plan. The time span facilities estimation of various requirements of the town during the period. The Plan Period for Tura has been assumed upto 2011, a period covering 21 years.

The proposals contained in the Development Plan cannot be entirely based on the requirements of the Plan Period. The Town has to function efficiently even beyond the Plan Period.

The Development Plan has been prepared to served the Development needs of the Town for next 21 years, yet it is required to be reviewed every 5 to 7 years so as to modify the same to suit the new and unforeseen requirements and make adjustments accordingly.

The phasing of implementation of the Plan will be related to five years Plan Period so as to facilitate inter-relationship and financial requirement for the plan implementation and financial allocation available under various sectoral heads.

### 8.3. Future population and characteristics

#### 8.3.1. Population estimates :

Population estimates are necessary to assess various needs of the Town including requirement of land for various uses such as Housing Commerce Recreation, Health, Education, Industries and Urban Infrastructure. It is difficult to work out the exact estimate of future population of a city because the factors on which growth of population are dependent cannot be foreseen or forecast with accuracy.

The estimate of future population are based on the past trends. Various method such as Geometrical rate, Arithmetic progression methods and Registrar General method were used to determine the population projection. The projected population of Tura Master Plan area is as per Table No. 8.1.



TABLE 8.1

## TURA MASTER PLAN

## Tura population projection

Year	Census figure	Estimated population
1961	11,425	
1971	19,930	
1981	36,57	
1988		49,000
1991		54,000
2001		76,000
2011		1,02,600

The study was conducted in 1988 and the base year figure was estimated at 40,000. As per projection it was found that for Tura Master plan Area, population size by 1991, 2001 and 2011 will be to the tune of 51,000; 76,000 and 1,02,600, respectively. This increase would be accounted for both by Natural increase and migration. In view of the above facts, it will be reasonable to plan the City for a population size of 1.25 lakhs.

#### 8.4 Occupational Structure :

Occupational structure indirectly reflects composition of various activities thriving in the town. In order to estimate the space demand it is essential to have an idea of changing occupational trend likely to take place during the plan period. With the absence of adequate data and change in the definition of workers adopted by census it is difficult to foresee the distribution of working force in 1991 to 2011. However, an estimation has been done to determine the distribution of working force based on 1971 and 1981 census.

In 1971 and 1981 census the work force was around 32% and 30% respectively of the total population. It is estimated that during 1991, 2001 and 2011 the work force will be around 35%, 39% and 42% respectively. The categories which are likely to increase are Manufacturing, household, Industry, Trade and Commerce, Transport and construction Service. The slight changes of workers in 1971 to 1981 is due to definition of workers adapted by Census Department and also due to migration from the rural areas. It may also be pointed out that the workers engaged in the manufacturing and processing (va-vd) 1981 is 5.4%. By 2011 it is expected to be 15%. Workers engaged in Trade and Commerce (vii) is 22.28 in 1981 and is likely to be 20% in 2011. The workers engaged in construction Transportation and other (VI, VIII, IX) is 54.6 in 1981 and is likely to be 55% in 2011. In view of the increased working force especially under the above categories, the demand of space for residential, offices etc., is likely to increase. The land allocation for different categories is given in Chapter 9.



### 8.5 Housing Requirement :

According to the study conducted by this Department in 1983 there is a shortage of 2000 Housing Stock. Apart from the above it was found that 20 per cent of dwelling units is for 3 families, 50 per cent for 2 families, and 20 per cent for 1 family. As such there is need for additional dwelling unit which work out to be 5364 units. In addition, with the 2000 housing back log the total requirement of dwelling unit by the End of Plan period will be 7264 units.

### 8.6 Housing Type :

To earmark areas for housing for Economically weaker section Lower Income group, Middle Income Group, High Income group it is necessary to break up the requirements in terms of income. Since no information on income group and the data on housing stock in terms of E.W.S., L.I.G., H.I.G., was not available, the following assessment has been made based on surveys carried out by this department.

TABLE 8.6

## TURA MASTER PLAN

## DWELLING UNIT REQUIREMENT BY TYPE

CATEGORY	NUMBER	PERCENTAGE
E.W.S.	2064	28
L.I.G.	2688	37
M.I.G.	1743	24
H.I.G.	799	11
TOTAL	7264	100%

### 8.7 Trade and Commerce :

Tura being the important town of the West and East Garo Hills region requires adequate space for commercial activities of regional importance. This function presently has not grown into its full form and is still in its formative stage. It is necessary to provide space at appropriate location for Trade and Commerce to suit the status of a Regional Town. The present land utilisation of 0.051 hectares per 1000 persons, within the Tura main market is very low. Besides the present location as a Regional Market is not suitable. Alternative site for the future Regional Market is proposed in Arai mile Area (Nazing Bazar). Apart from the above, the land utilisation of the total commercial area within the town is around 0.26 hectares per persons. It is proposed that by the end of the plan period the total land utilisation will be about 0.38 hectares for 1000 persons.



The existing commercial area namely Tura Main Market, Ringrey Lower Chandimari, Nazing Bazar and Nakham Bazar will continue as the commercial areas. As such the Tura Main Market is proposed to be a town level market after re-development. The present Nazing Bazar and Nakham Bazar is to a regional market, remaining Commercial Area will function as the local market. It is proposed that another town level market may be located at the present site of Leprosy Colony. The Leprosy Colony may be shifted to an area preferably outside the master plan boundary. Further, four local markets is proposed to be located in the Western side beyond, the T. V. Tower, North and Arai mile, West of Warlanang and near Cherangiri. The purpose of providing the local markets is for the immediate needs of population residing in these area.

### 7.3 Office Space Requirement :

Tura being a District Headquarter, consideration for earmarking space for Administrative Complex is necessary in the Plan period. The present site for New Tura Complex is in its formative stage; Most of the Office and Residential Buildings (Quarter) are under construction. At present offices and residential quarters for staff is accommodated where even space is available. This has resulted in un-coordinated work place relationship.

The total area of New Tura Complex is around 430 acres or 174.1 hectares out of which land covered under office use is 52.62 hectares which is already allotted to the different Offices. Since 20 more department of various hierarchical need is to be provided extension of the New Tura Complex for Administrative purpose is proposed to the North of New Tura to accommodate the back log and also for future use. Land earmarked for this use is around 75.95 hectares.

### 8.9 Industries :

Industrial Development in Tura has developed in the form of small scale service, Handloom, Handicraft Industries spreading over the Town. Since Tura is devoid of Medium and Large Scale Industries it is difficult to forecast the number of Industries which is likely to come up during the plan period. However, it is expected that the following small scale Industries may come up in the Town namely :-

1. Building Material.
2. Wood Products.
3. Bakery Products.
4. Beverage.
5. Agro Based Industries.

As such an Industrial Estate for small scale Industries has been proposed in the south of Arai mile away from the residential area covering an area of 29.64 hectares.



## 8.10 Urban Infrastructure:

### Traffic And Transportation:

Traffic movement on Roads in Urban Areas have been increasing rapidly. More vehicles are entering the same roads space. The Topography of the town as such makes it difficult for the use of cycle and three wheelers. As such, cars and two wheelers namely scooter and Motor Bise is likely to increase in the future.

Keeping the above fact, the Transportation of Goods and Passenger in the town depends on fast moving vehicles like Taxis, Buses and Trucks. It importance will continue also in the future and the increasing trend of Taxies, Buses and Trucks is expected to be more in the future.

The existing ownership of vehicles per 1,000 population works out to 12 according to 1981. The estimated number of vehicles ownership in the future is 15 vehicles per 1,000 population in 1991, 18 persons per 1,000 population in 2001 and 20 persons per 1,000 population in 2011. It is also estimated that by 2011 the total number of vehicles will be 3,500.

Apart from the above, space needs for regional Bus stand, Truck Terminus and Parking Areas has been proposed.

## 8.11. Services and Amenities :

The population of urban settlements needs services and amenities. Different types of services and amenities is necessary to be provided according to the size of population. The proposal for Service and amenities for the future requirement is spelled out in Chapter 13 for the Town Level as well as Regional Level.

## 8.12. Public Utilities :

### 8.12.1. Water Supply :

The requirement of water supply for the projected population is estimated to be 30.5 lakhs gallon per day. In addition to this 5 per cent of the daily demand would be needed for industrial use and 5 percent for miscellaneous purposes. Thus about 3.35 lakhs gallon more is needed for Industrial and Miscellaneous purposes. This gives the water supply for all purposes at the rate of 32.69 gallon per head per day.

It is imperative to look for another sources meet this demand as the present sources may not be sufficient to meet the above demand.

### 8.12.2. Sewerage :

Tura needs a proper sewerage system for its future development. It is proposed that sewerage lines be provided in the proposed residential areas, industrial areas, administrative areas etc., and this would require treatment plant before its discharge.

In case of built up areas, since laying of sewerage lines would require considerable demolition it is proposed that all the existing service latrines be converted to sanitary latrines. It is however proposed that a detailed study be conducted by some expert agency and the work entrusted to the concerned Department.



## CHAPTER 9

**Proposed Land use Plan**

**9.1. Aims and objectives :—**The Development Plans for Tura town was prepared to achieve the following objectives :—

1. Integration of various areas of Tura town and its region through linkage development.

2. Development of Transportation and communication network to discharge regional functions with efficiency.

The shape of urban structure within the area of Master Plan in the process of its growth and to have self contained Planning Unit in terms of services and amenities.

4. Functional disposition of urban area so as to achieve :—

- (i) Efficient and proper utilisation of land.
- (ii) Harmonious and coherent relationship between various uses and activities.
- (iii) Functional distribution of work centres. Administrative and residential areas, minimum travel distances and increased efficient functioning of activities.
- (iv) Compact Town Development.
- (v) To remove the existing disorder.
- (vi) Efficient Transportation network and circulation system to provide for the growth of the town even after the plan period.
- (vii) Restoration and development of areas of natural beauty and historic importance.
- (viii) Redevelopment of slum areas and rehabilitation of slum population.

**9.2. Basic Consideration :—**The study of land use pattern, like Residential, Transportation, Administration Service etc., contained in the previous chapter, have also brought opportunity available for proper development of Tura Town. The study of the both the problems and opportunities has throw up the following basic points for preparing the Master Plan, of Tura.

- (a) To develop town, Regional market centre, Wholesale market centre to relieve congestion.
- (b) To provide local shopping centres.
- (c) Development of Administrative area to accommodate various public and semi public Offices of District, State, Central and local level.



- (d) Development of Truck Terminals, Regional Bus Stand to relieve congestion and efficiency.
- (e) Provision of proper circulation patterns to enable the through traffic to Bye-pass to the city.
- (f) Earmark the land for Industries in such way that future growth is possible without creating conflict in the land use pattern.
- (g) Provision of infrastructure amenities and services in an integrated manner for the whole Town
- (h) Attempt for rational distribution of residential densities so as to minimise disparities.
- (i) Efficient use of Government land properties by putting them to most proper use.
- (j) To ensure proper Urban Environment by :—
  - (i) Improvement/Clearance of Slum Area by providing Environmental Improvement of Urban Slum Scheme.
  - (ii) To preserve the Catchment areas and the General Environment of Tura, so as to enhance of the natural scenic beauty of the Town.

**9.3. Plan Concept :—**Tura Town comprises of a number of localities. The physical features of the Town as such separates one area with another reducing social and cultural integration in a proper manner. However, to solve these problems a plan has been made to decentralise the different activities namely Residential, Administrative, Commercial etc.

Presently, the Tura town has developed mainly along the National Highway and main arteries of the Town, which is not an appropriate development pattern. As such, the Plan proposes three separate areas namely Administrative, Residential and Commercial areas, which will be interconnected by different categories of roads. The conservation area is proposed to maintain Urban ecology. It has been planned in such a way so as to separate the existing Town and New Tura areas by a Green Belt.

#### **9.4 Planning Units :-**

(Ref. My. II) The Master Plan for Tura has been formulated on the concept of self contained planning units. Attempt has been made that each planning unit will function as an entity in respect to shopping Education, Health, Recreational area to the possible extent. Each planning unit will be linked to the Town Centres, work Centre, town level amenities and traffic Terminals etc. The hierarchy of the Town structure comprise of 6 sectors of planning units covering an area of 39.6 hectares. The planning unit is not Uniform because the area included in a Planning unit is based on the Conformity of land use and physical features. (Ref. Dong No. II)



**Unit No. 1 :—**

The Planning Unit-I lies in the North Eastern part of the Master Plan area. Almost through the middle portion of the planning unit, the river Rongkhon and the National Highway passes through this unit. To the East, North and West is the boundary of the Tura Master Plan, except in the South lies Unit No. 2. The localities falling within this planning unit are Rongkhon, Medangiri and Chechagiri.

**Unit No. 2 :—**

The Planning unit no. 2 is one of the important units as it is one of the oldest area of Tura Town. Within this units number of Educational institutions are located. It is located just South of Planning unit No. 1. To the Eastern part is the boundary of Tura Master Plan. In the South East lies the Planning Unit No. 3, to the West and South West lies the Planning unit No. 4. In the North West is the boundary of Tura Master Plan. The localities falls within this planning unit are, Chandmari, Chitoktagiri, Cherangiri and Wadanangiri.

**Unit No. 3 :—**

The Planning Unit No. 3 is one of the important unit which includes the main Market (Tura Bazar), The Deputy Commissioner's/ Office and other Administrative centres. In the North East is Planning unit No. 2 and in the North West is planning Unit No. 4. In the West is unit No. 6. In the Eastern and Southern side is the Tura Master Plan boundary. This unit includes the following localities, i.e. Upper Babupara, Lower Babupara, Fancy Valley, Jail Complex, Boldakgiri, Akongiri, Dobasipara, Sangsangiri and B.S.F. Camp.

**Unit No. 4 :—**

The planning unit No. 4 is also one of the important units. Within this planning unit the only College is located, besides all the Health centres, some Administrative centres also are located in this unit. It is bounded on the East by planning unit No. 2, in the West by planning unit No. 5. in the South by Planning Unit No. 3 and in the North by the Master Plan boundary. The localities falling within this planning unit are Hawakhana, Ringrey, par of Arai mile, part of Matchakhogiri, A'otgiri,, Medangiri and Samalgiri.

**Unit No. 5 :—**

This planning unit is also one of the important unit which include the New Tura Complex and its neighbourhood locality. It is bounded in the North and North West by the Tura Master Plan boundary. In the South by the Planning Unit No. 6 and in the East by Planning Unit No. 4.



## Unit No. 6:—

The Planning unit No. 6 include the following localities :- Mat-chakolgiri, Dobakol, Davakgiri, Nabakgiri, Badabangiri, Dopgiri, Poma-giri and others. It is bounded in the East by Planning Unit No. 3, and in the North by Planning Unit No. 5 and to the West and South by the Master Plan boundary.

## 9.5 Land Allocation ;—

Land use analysis of the present urban gross density within the residential use is at the rate of 58.66 persons per hectare. It is proposed that the gross density within the residential use will be 95.66 persons per hectare. An additional area of 292.80 hectares for residential use has been proposed. This requirement is exclusive of unsta-ble and unbuildable land.

The Table 9.5 gives the land utilise at present as well as the area earmarked for various uses in the future. The relative per-centage for various land use to the total developable land as well as to the total Master Plan area is given below : (Ref. map 12)

TABLE — 9.5

Existing :—

Total Master Plan area	— 3916 hectares - 100 percent.
Total Developed area	— 1072.68 hectares - 27.39 percent.
Total Developable area	— 2306.92 hectares - 58.91 percent.
Total Undevelopable area	— 563.40 hectares - 13.70 percent.

EXISTING LAND USE				PROPOSED LAND USE (Ref. map-12)			
Sl. No.	Uses	Area in hectares	% to total developed area	% to total Master Plan	Area in hectares	Additional Area (+) (-)	% to total Master Plan Area
1.	Residential	784.12	73.10	20.02	1076.92	+292.80	27.50
2.	Commercial	13.11	1.22	0.33	39.42	+ 26.31	1.01
3.	Public & Semi Public	182.75	17.04	4.67	312.33	+129.58	7.97
	1) Adminis- tative	103.49	—	—	170.45		
	2) Institutional	55.75	—	—	67.04		
	3) Organised open space	13.10	—	—	55.43		
	4) Grave yards	10.41	—	—	10.41		
4.	Security	41.63	3.88	1.06	41.63		1.03



1	2	3	4	5	6	7	8
5. Industrial	1.11	0.10	0.03	30.75 + 29.64			0.79
6. Transportation	49.96	4.66	1.28	94.86 + 41.90			2.42
1) Depot	1.02	—	—	6.61			
2) Road net- Work	48.94	—	—	88.25			
a) Metalled Road	34.65	—	—	85.08			
b) Unmetalled/ kutchha	8.31	—	—	1.01			
c) footpath/ Track	5.98	—	—	2.16			
7. Vacant Land	877.13	—	22.40				
8. Urban Agri- culture	187.57	—	4.79	162.90 - 24.67			4.15
9. Conservation	1778.62	—	45.42	2157.19 + 378.57			55.10
1) Forest	1242.22	—	—	—			
2) Undeve- lopable land	536.40	—	—	—			
	3916 Hc.	100%	100%	3916 Hc.			100%

The proposed additional area to be developed is 523.23 hectares. The proposed additional area to be brought under conservation is 378.57 hectares. More areas has been brought under conservation so as to preserve the catchment area and to afforest the barren lands. Besides additional land has been added to the various land uses except grave yards, and security use as it is felt that the existing land is sufficient till the end of the plan period.

### 9.6 Land Use Pattern :-

Land use pattern for Tura has been evolved on the following :-

1. Mixed land use in and around the Tura Main Market within the planning units No. 3 to maximise use of services and minimise movement.
2. Inter relationship of various land use.
3. De-Centralisation of work centres.
4. Minimum dislocations of present land use.
5. Hierarchical relationship of activity areas.
6. Proper Utilisation of natural form and beauty of the area enriching the aesthetic value of the Urban form.



### 9.6.1 Residential Uses :-

Tura Master Plan envisage a compact development of residential areas, self sufficient in basic needs like educational facilities, health facilities, shopping and parks, open spaces etc :- In order to meet the deficiencies of the existing areas as well as to accommodate the anticipated population of 102600 by 2011 an additional area of 1076.92 hectares is proposed i.e. 27.50% of the Masters Plan Area.

### 9.6.2. Commercial Uses :-

Presently the Tura Market is the C. B. D. of the town. Both the retail and wholesale activities are functioning in the area, leading to congestion. Further some market centre has sprung up along the road sides.

In view of the above the plan proposes a hierarchical set up for its commercial requirements within the Master Plan Area. However the existing Tura market would continue to be the town level market. Apart from this, two more town level markets is proposed, i.e. one at the present site of Nazing Bazar and the other at the present site of leper colony. The existing leper colony is proposed to be shifted to an area outside the Master Plan boundary. An Additional area of 26.31 hectares has been proposed for commercial uses.

### 9.6.3. Public and Semi Public Uses :-

This category of use consist of multiple uses like, Administrative Institutional, Recreational/Organised Open Space, Grave Yards etc.

- i) **Administrative uses :-** Areas within the Administrative uses includes the Government and Semi-Government Offices of various level, like State Government Offices, District and Local Administration etc.

A new District office Complex (New Tura) is already existing on the western side in an around Arai mile. An Additional area of 75.96 hectares is proposed near the New Tura Complex to accommodate all its District level offices. At present many government offices are located in rented houses within the residential area. Shifting of these offices to the New Tura Complex will bring about a better co-ordination among the Offices.

- ii) **Institutional Uses :-** This use includes Educational Institutions like Schools, College, Training Centres, Religious Buildings, Hospitals Clinic, Community Halls, Clubs etc.

The additional area proposed in the Master Plan under the Institutional uses till 2011 is around 11.29 hectares,



- a) The Institutional activities in the town is proposed to be decentralised. In view of the above, one more college is proposed in the planning unit No. 6 by the end the plan period. Similarly, Nursery/Primary Schools, Middle Schools, High Schools is proposed in the different planning units depending on the size of population.
- b) As regards Hospitals, one more Hospital has been proposed within the planning unit No. 6, by the end of the Plan Period. It is also proposed that Primary Health Centre may be provided in the Planning Unit No. 1, No. 2 and No. 5. Similarly, Health Clinic is proposed in all the Planning Unit.
- iii) **Recreational Uses** :— Tura Town is deficient in recreational activities, as such the Master Plan attempts to remove these deficiencies. Keeping the above views, attempt has been made to propose playgrounds in the planning unit No. 1, No. 2 and No. 6 besides, the existing playfield in Lower Chandmari, near Tura market and New Tura maintained open spaces have been proposed within the Tura Master Plan as per the requirement. A Botanical Garden has also been proposed in the Planning Unit No. 6 and as such land for this has already been earmarked.

This additional area proposed in the Master Plan under the recreational uses/organised open spaces till 2011 is 42.33 hectares.

- iv) **Grave Yards, etc.** :— As regards Grave Yards, no new Grave yard has been proposed. It is proposed to improve the existing Grave Yard as the existing numbers of Grave yards is sufficient.

**9.6.4. Security Uses** :— The Security use covers an area of 41.63 hectares and located in the planning unit No. 3, in Dobasipara area. It is felt that no extension for Security uses to be made within the Plan period.

**9.6.5. Industrial Uses** :— The proposed Industrial areas has been earmarked in the Planning unit No. 6 covering an area of 30.75 hectares. The Master Plan for Tura envisages development of medium and small scale Industries within the planning area and such an Industrial estate has been proposed to locate these Industries.

The proposed Industrial Estate will be provided with all the infrastructure like Road, Water and Power Supply. It may also be mentioned that the Industrial Estate is proposed to be located in a place close to conservation area to minimise environmental waste pollution.



### 9.6.6. Transportation :—

Development and prosperity of Tura Town depends on the efficiency of the Transportation system and road net work. The Master Plan of Tura proposes four more categories of roads apart from National Highway, so that a well defined circulation system is attained and the hierarchy of roads is maintained.

The National Highway runs in the North South direction connecting Rongram-Dalu and another Road which run East West direction dividing the Town almost into halves. Besides, there is a net work of Sub-Arterial, Collector street and local road which have been planned in such a way to feed the Arterial roads and to increase the accessibility to residential areas as far as practicable.

The total length and width of the proposed road under different categories is given below :—

Sl. No.	Categories of Roads	Length of road in kms.	Right of way in mts.	Carriage way in mts.
1.	Arterial Roads	17.65	13.00	10.00
2.	Sub-arterial Roads	4.3	12.00	8.8
3.	Collector Street	21.95	10.00	7.00
4.	Local Roads	11.22	9.50	6.50

It is also proposed that all the important roads needs to be improved and widened. It is also felt that road side drains all along the town roads be provided with pucca drains, Culberts and Bridges where ever necessary. All roads along land slide prone areas are to be protected by providing retaining walls.

**9.6.7. Urban Agriculture Uses :—**Agriculture is an important activity in an around the Town. It is felt that some amount of farming and Urban Agriculture will remain within the planning area. However, numerous pockets of Agriculture land have been designated as agricultural land use. Further activities like poultry, dairy farming garden, etc., will also be encourage within the land earmarked for agriculture use. The total land under Urban Agriculture is 162.50 hectares.

**9.6.8. Conservation:**The Master Plan also includes areas meant for conservation. Areas with steep slopes, undevelopable land areas leable to sliding forest areas, etc., has been earmarked as conservation areas. Here activities like growing fruits, gardening, birds sanctuary, Zoological and Botanical garden, etc., can be located. Activities within the conservation areas should be such that they help in the conservation of soil like terracing, afforestation, development of grass land, etc. Conservation areas has been proposed almost all around the town. The area proposed under this use is 2157.19 hectares.



## CHAPTER 10

**Proposed Circulation Plan**

10.1. A workable circulation pattern backed by efficient transportation system is the main stay of economic and socio-cultural life in a town. The development of all activities in the town is very much dependent on the circulation pattern and transportation network. Though a Small Town, yet during the last two decades the growth shows a very high rate to the extent of 74.26 per cent and 127.6 per cent. This high rate of increase in population has caused some changes in land uses from residential to commercial uses like the areas around the Tura Main Market. Thus the road space in the central areas and in areas where commercial activities has sprung up has decreased due to building at utling towards the road, however, to cope with this problems, the circulation pattern has to be designed not only to satisfy the need of immediate future but also to meet the needs of the distant future.

Efficient functioning of this town can be achieved by evolving functionally inter related land use pattern, inter-connected by convenient circulation pattern requiring minimum travel distance. The following factors which have guided the proposals of circulation pattern for Tura Town are :—

1. Effective linkage with the town and its region.
2. Within the constrain of difficult terrain, effective linkage between the planning units.
3. Segregation of regional traffic and town traffic.
4. Seperate pedestrain ways where traffic is excessive.
5. Effective and direct linkage between the work centres and living areas through proper mass transportation.
6. A circulation pattern not only for the plan period but even beyond that.

**10.2. Concept of circulation plan :—**

The road system is dependent on the topography of the town and the period in which they were developed. The regional roads from North-South, North-West, South-West lose their identity after entering the town. This cause inter mixing of through traffic with local city traffic.

In view of problems spelt out in Chapter 6, two ring road (arterial road) is proposed within the Master Plan area, which will connect the National Highway in the North to the Sub-Arterial road in the west (Araimile area). The other ring road proposes to connect the National Highway in the South to the Arterial road in the West (Araimile area). The plan also proposes black topping, widening and new roads of defferent categories.



It is also proposed that the right of way for the arterial road will be 13 metres and the carriage way will be 10 metres. For Sub-arterial road the right of way will be 12 metres and the carriage way will be 8.8 metres. In regards to collector street and local roads the right of way will be 10.00 and 9.50 metres and the carriage way will be 7.00 and 6.50 metres respectively.

Table 10.2. shows the proposed upgradation of roads, new roads and the approximate length and width of the road.

TABLE 10 2 (Ref map) 13

Road No.	Width in Metres		Length in metres	Proposed black topping and new road.
	Right way	Carriage way		
Road No. 1 (a)	13	10	5525	Proposed new Road.
Road No. 1 (b)	13	10	3175	Proposed black topping and Widening.
Road No. 2	13	10	5159	Proposed New Road.
Road No. 3	10	7	5950	Proposed New Road.
Road No. 4	10	7	2975	Proposed Black topping and widening.
Road No. 5	12	8.8	1750	Proposed Black topping and widening.
Road No. 6	10	7	1350	Proposed New Road.
Road No. 7	10	7	1475	Proposed Black topping and widening.
Road No. 8	10	7	2025	Proposed Black topping and widening.
Road No. 9	10	7	1175	Proposed New Road.
Road No.10	10	7	175	Proposed New Road.
Road No. 11	9.5	6.5	550	Proposed New Road.
Road No. 12	10	7	500	Proposed New Road.
Road No. 13(a)	13	10	1800	Proposed New Road.
Road No. 13(b)	13	10	2000	Proposed Black topping and widening.
Road No. 14	9.5	6.5	3050	Proposed New Road.



1	2	3	4	5
Road No. 15	9.5	6.5	1725	Proposed New Road.
Road No. 16	9.5	6.5	700	Proposed Black topping and widening.
Road No. 17	9.5	6.5	825	Proposed Black topping and widening.
Road No. 18	9.5	6.5	575	Proposed Black topping.
Road No. 19	9.5	6.5	1550	Proposed Black topping.
Road No. 20	10	8.8	2550	Proposed Road.
Road No. 21	10	7	3800	Proposed Road.
Road No. 22	9.5	6.5	2250	Proposed Black topping.
Road No. 23	10	7	2000	Proposed Black topping.
Road No. 24	10	7	800	Proposed Road.
Road No. 25	10	7	1325	Proposed Black topping.
Road No. 26	10	7	3000	Proposed Road.

The future road net work is proposed in such a way that it will be provided direct and effective linkage between the residential, commercial and work centres of the town and will regulate the flow of traffic to a considerable extent.

### 10.3. Regional Linkage :

To have an effective linkage, roads and airways are necessary to connect the town with the State capital, District and Subdivisional headquarter.

#### 10.3.1. Road linkages :

Tura is linked by the National Highway No. 51 which run from North to South from Paikan to Dalu. Presently this road passes through the Tura Main Market. To segregate through Traffic and the town Traffic and the Traffic New Road alignment is proposed in the North (Road No. 1) and South (Road No. 2).

#### 10.3.2. Air Linkages :

Recently the town is linked by a tri weekly Helicopter service to Garhathi and State Capital Shillong. It is felt that the land for Helipad be developed in Arai mile.



#### 10.4. Pedestrian Way :

Pedestrian ways are essentially needed for the safety of the pedestrians. A pedestrian way should be such that the pedestrians find it easy to reach the places where amenities like convenient shops, primary schools etc. are provided.

#### 10.5. Terminal Centres :

**10.5.1. Truck Terminus :—** Tura is mainly linked within its region and the State with road Transport System. Movement of Truck is likely to increase further. Attempt has been made to provide two more Truck Terminus, one Truck Terminus will be in West near the road going to Garobadha (Arai mile area) another is on the Northern side.

**10.5.2. Bus Stand (Meghalaya Transport Corporation) :—** The Meghalaya Transport Corporation has its office and Bus stand near the Tura Main Market. The present location is not an ideal location. However, to cope with these problems, the Meghalaya Transport Corporation Bus terminus is proposed to be shifted to New Tura Complex. The present bus stand is proposed to become a car parking space, and a bus stand.

**10.5.3 Regional Bus Stand :—** Since Tura is mainly linked to the rest of the Region and the State by road Transport system, movement of Buses from the different part of the Region is likely to increase in the future. Thus a Regional Bus Stand is proposed in the New Tura Complex near the proposed Meghalaya Transport Corporation Bus Stand.

#### 10.6 Mass Transportation :

There is no provision of Mass Transportation within the Town as such the only means of Inter Town-Movement is the Private Vehicles or on foot.

It is important to introduce some sort of public Transport to reduce transportation difficulties within the town.

#### 10.7 Parking :

Apart from the Truck terminus, Bus stand for Meghalaya Transport Corporation and Regional Bus Stand, Parking space at various places particularly, near the area of concentrated activities is very essential as to avoid use of town street for parking which adds to Traffic congestion. Since, redevelopment of Tura Main Market will be done, it is proposed that the basement of Tura Market be used as a parking space for cars and two wheelers. It is also proposed that the present Meghalaya Transport Corporation Bus stand will be used as a parking spaces. It is felt that there should be a provision for parking within the premises of Administrative and Commercial buildings.



## CHAPTER - II

## MAJOR WORK CENTRES

Major work centres like commercial areas, Administrative areas are centres of activities in the Town. Their disposition is often intimately inter related to each other and place of living in terms of travel time, as these centres happen to be major traffic modes of the town. These centres need special consideration by way of location, provision of service and accessibility.

**II.1 Proposed Commercial Areas :**

The Plan provides for Commercial centres of various hierarchy which cover an area of 39.42 hectares. The nature and hierarchy of commercial activities envisaged in the Master Plan are as follows :-

**TOWN/REGIONAL LEVEL/LOCAL**

1. Town Level Centre,
2. Second level markets,
3. Regional and wholesale market,
4. Local Market,

**II.1.1 Town Level Centres :** The present Tura Market will be developed as the main commercial and business hub of the town and will provide all the Town level facilities. An area of 4.73 hectares has been proposed for this purpose,

**II.1.2 Second Level Market :** Another market with all kinds of commercial activities is proposed at the present site of Nazing Bazar. An area of 7 hectares has been proposed for this purpose.

**II.1.3 Wholesale Market and Regional Market .** Wholesale cum regional market will include specialised commercial services. An area of 10.00 hectares has been proposed for this purpose on the western side of New Tura Complex.

**II.1.4 Local Market :** Local market is proposed in the residential areas to serve the day to-day needs of its inhabitants. Around 4.58 hectares of land has been earmarked for this purpose,

**II.2 Administrative Areas :**

This area (is New Tura Complex) will contain administrative offices of the District, State and Central level. Apart from the above, it will also have residential quarters for the staff of different offices located in this Complex. An area of 75.96 hectares has been proposed for this purpose. However, the existing offices at present located near the Old Town Centre will not be shifted to the above area to avoid concentration at one point.



### 11.3 Industrial Areas :

An industrial estate has been proposed in Planning Unit No. 6. Within this industrial estate small, medium and light industries has been proposed, which will employ less than 100 workers and will use any kind of motive power fuel. As regards the development of Heavy and large scale industries, it has not been encouraged due to factors spelled out in Chapter - 5.

## CHAPTER - 12

### 12.1 Housing :

The study of Housing problem, in term of shortage of dwelling units, structural condition, Slum areas and encroachment in Government land, etc. has been discussed in Chapter - 4.

The future requirements in terms of dwelling units and requirement of land, keeping in view both the present problems and future needs of the Town, the following proposals are made.

1. Land proposed for residential areas is to meet the housing backlog and the future requirements till 2011.
2. Allocation of specific areas for Government residential quarters and general residential areas, it has been proposed that out of 292.80 hectares of additional area for residential use 136.25 hectares has been proposed to be developed by Government agencies and the remaining by Private/Public agencies.
3. Provision of amenities such as schools, shopping, Organised Open spaces in the residential area in a Co-ordinated manner.
4. Integration of villages in the planning area with future Development needs,

The relationship between residential entities such as dwelling unit, residential zones, planning unit and the Town has been maintained by provision of amenities and work centres at various levels while planning for residential areas. These will function as Economic, Social and Cultural inter-links between these units and will foster a sense of belongingness to the community.

### 12.2. Residential Zones :

Residential area is distributed in 20 residential Zones. The residential zones are essentially self contained entity, in respect of basic need of its habitants. The plan ensures proper relationship between Home, work and recreation centres at residential Zones.

The Physical growth trends of the Town could be extended towards the Western side of the Town in the Arat mile area. Since most of the development is proposed towards the west.



### 12.3 Description of Residential Zones :

The 20 Identified residential Zones falls within the 6 proposed planning units. Out of 20 residential Zones seven residential Zones are proposed new residential and the remaining 13 Zones are existing Residential Zones. It is expected that the proposed residential Zones will accommodate the additional population till the end of the plan period.

It is also suggested that the Residential Zone No. 1, 2, 18, and 20 will have low density of population. The Residential Zone No. 3 to No. 9 and Residential Zone 11 to No. 14 and Residential Zone 16 to No. 19 will have a medium density of population. The remaining residential zone ie; No. 15 and 10 will have a high density of population. The Gross residential density proposed in Planning unit No. 1 is 40 persons per acres. In the Planning unit No. 2 No. 3 & No. 4 the gross density proposed in 50 person per acre. In the Planning unit No. 5 the proposed gross density is 49 person per acre and in the planning unit No. VI, the proposed gross density is 65 persons per Acre.

### 12.4. Distribution of Population and Area :

The distribution of population and residential area has been proposed with the following consideration :—

1. Areas of low density range housing are kept minimum to conserve agricultural land around the Town.
2. High and medium density range is proposed in the areas near to work centres and near to market centres, etc. Medium density range is maintained in the existing built up areas.

It is also proposed that the distribution of population within residential Zones of the 6 planning units will be as follows :—

Planning Unit	Population
No. 1	12000
No. 2	27859
No. 3	15139
No. 4	13387
No. 5	7466
No. 6	25707

### 12.5 Integration of Villages :

The Planning area of the Town cover 10 villages. It is essential to provide Urban facilities to these villages. The villages located in the proposed green belt area (conservation area) is proposed to be provided with basic amenities.

### 12.6, Distribution of Population in Residential Zones :

Requirement of house by type and size depends on the capacity of the persons to build a house. An assessment of persons belonging to various income groups is necessary, namely; Economically weaker Section, Low Income Group, Middle Income Group and High Income group. In planning and allocation of areas for various income groups, segregation on the basis of income will be undesirable. Attempt has been made to provide social homogeneity by provision of common amenities and Intermixing of various income groups in each residential zone.



## CHAPTER - 13

## 13. Amenities and Services :

Attempt has been made to provide amenities such as Education, health, Social and cultural, Public Utilities and Services to cover existing inadequacies as well as growing needs of the Town. It is also essential to provide amenities in all the Planning Unit in order to make the Town life convenient and enjoyable.

## 13.1. Health :

Tura has a maximum number of Hospital in the district catering to medical services for the population of the Town and its regions. The Plan for Tura proposes around 12.15 hectares, additional areas for future health needs. The location for a future Hospital has been proposed in the planning Unit No. IV, which will be of a specialised nature.

According to the study conducted by Urban Affairs Department it reveals that around 200 more beds is needed, till the end of the plan period. As regard, the primary Health centres and Health sub-centres it has been proposed that primary Health centres is to be provided within planning Units No. 1, Planning Unit No. 3 and planning Unit No. 5. Since there is only one health sub-centre located in planning unit No. 4, it is felt that it is also necessary to provide one health sub-centres to the rest of planning units. An area of 4.05 hectares has been proposed for primary health centres and Health Sub-centres. The table shows the existing and proposed Health amenities in all the Planning Units.

TABLE 13.1

## Tura Health Amenities

Planning Unit No.	General Hospitals		Town Level				Planning unit Level			
			Specialised Hospitals		Primary Health Centres		Health Sub-Centres			
	Ex.	Pro.	Ex.	Pro.	Ex.	Pro.	Ex.	Pro.		
1	...	...	...	...	...	1	...	...	1	
2	1	...	1	...	...	...	...	...	1	
3	1	...	...	...	...	1	...	...	1	
4	1	...	1	...	...	...	...	...	1	
5	...	...	...	...	...	1	...	...	1	
6	...	...	...	1	...	...	...	1	...	

NOTE :—Ex.—Existing.

Pro.—Proposed.



### 13.2 Educational Amenities :—

Since long, Tura has developed as the district headquarters of Garo Hills and an Educational Centre of the region. Presently Tura has 31 numbers of Primary Schools, 16 numbers of Middle Schools, 16 numbers of High Schools, One College and Two Vocational Institution. Yet the special distribution is uneven. The future educational facilities has been worked out on the basis of TCPO and COPP standards. Table 13.2 shows the special distribution of educational facilities in Tura till 2011.

TABLE 13.2

#### Educational Amenities

Planning units	Town level				Planning unit level					
	Academic College		Other Institutes		High Schools		Middle Schools		Primary Schools	
	Ex.	Pro.	Ex.	Pro.	Ex.	Pro.	Ex.	Pro.	Ex.	Pro.
1	...	...	...	...	1	1	2	...	4	...
2	...	...	...	...	4	...	3	2	7	...
3	...	...	...	...	6	...	6	...	11	...
4	1	...	...	...	2	...	2	...	4	...
5	...	...	...	...	2	1	2	...	4	2
6	...	...	1	1	1	2	1	2	1	5

\*Proposal for Academic College is not given in the table.

Table 13.2 shows the existing and proposed Educational facilities for Tura, though the proposals are according to its future needs the specific location of the different level of Educational amenities has not been identified. It is felt that the department concerned shall have to identify the area for its appropriate location in such a manner that it is easily accessible and within the easy reach of the school going children. However the planning unit in which it is to be located has been spelled out. As per the standard prescribed by the Committee on plan projects (COPP) which was also followed by the Town and Country Planning Organisation (TCPO) one college for a population of 1.50 lakhs has been prescribed. Here Tura does not require another college till the end of the plan period.

### 13.3 Recreational Amenities :—

As mentioned in Chapter 7, the town has inadequate recreation facilities like Play grounds, Parks, Organised Open spaces, etc. Keeping the above facts, the plan proposes for the uniform distribution of this activities in the Town. It has been proposed that around 41.33 hectares additional area is added for Recreational uses against 13.10 hectares of the present area under recreational use. Further Botanical gardens, Parks, Open spaces playgrounds, etc., has also been proposed. It is also proposed to improve to existing D.C's Park located at Babupara.



**(a) Botanical Garden :**

A site covering 12.15 hectares of land has been earmarked within the Planning Unit No. 6 for a Botanical Garden. It is felt that this garden will become a centre of recreational activity in the Town.

**(b) Organised Open Spaces :**

The plan also proposes more open spaces to be provided in all the planning units. Besides, the existing open spaces are proposed to be improved and maintained.

**(c) Playground/Stadium, etc. :**

The existing play grounds are located in the planning units No. 2,3,4 and 5. The playground in the planning unit No. 3 is used as a Parade ground. As regards the playground in planning unit No. 5 ( New Tura Complex ) the Government proposes to use it as a Helipad.

It is also proposed that 3 more playgrounds is to be provided in Planning Unit No. 1,2 and 4 covering an area of 0.81 hectares each. Land for this purpose will be identified by the Department concerned. A Stadium has been proposed within planning unit No.2 for which work has started.

**13.4 Social and Cultural Institution :**

As mentioned earlier in Chapter 7, Tura has a limited number of social and cultural institution. In view of the above the following proposals has been made.

**(a) Cinema Hall :**

Tura Town has only one Cinema Hall which is inadequate to cater to the needs of its citizens. Another Cinema Hall towards the Western side of the Town has been proposed and as per priority Planning unit No. 1 or 6 may be a suitable unit.

**(b) Civic Centre :**

A Civic centre is proposed near Araimile which will have facilities for a library indoor/outdoor games, swimming pool, etc.

**13.5. Public Utilities :****13.5.1 Water Supply :**

The present water supply of the town has been spelled out in Chapter 7. It is felt that the present supply of water to the Town by the end of the Plan period may not be sufficient.

However, to meet water supply for the town population by the end of the Plan period it is proposed that alternative source the tap water may be examined by the Public Health Engineering Department. It is also necessary for the P. H. E. Department, to work out a detailed distribution system for Tura so as to meet the water requirements by 2011. On the basis of the survey conducted by the Geological Survey of India there is a potential for ground water which may be examined by the P. H. E. Department.



### 13.5.2. Sewerage :

At present there is no integrated sewerage system in Tura. It is obvious that Tura requires underground drainage/sewerage system, to check pollution. It is felt that it will not be possible to lay sewerage lines in the existing built up areas as it is densely built up. As per the study conducted most of the latrines in Tura are service latrines the discharged of which falls directly to open drains or to streams, which use pollution and which is detrimental to the health of the citizens. In view of the above facts it is necessary for the service latrines to be converted in to sanitary latrines as an alternative of the sewerage system in the existing built up areas.

As regards the proposed built up areas it is necessary to construct underground drainage facilities. It is proposed that the main sewer line should have a treatment plant before being discharged to the stream. The department concerned should conduct a detailed survey and work out the feasibilities of an efficient sewer system.

### 13.5.3 Power :

The proposed land use pattern and circulation pattern will help the Meghalaya State Electricity Board in designing an efficient distribution system of Electric supply for different uses. They will also work out the power that will be required for different uses.

### 13.6 Other Services :

#### 13.6.1 Post and Telegraph Office :

The town is served by a main post office located in Babupara and branches located in Chandmari and Arai Mile. It is felt that a few more sub-post offices are needed to cater to the needs of its population.

#### 13.6.2 Fire Station :

The town at present is served by one fire station. It is felt that at least two more sub-stations be set up, one at Aramile in Planning unit No.6 and one at Rongkhon Area in planning Unit No.1. The proposed fire station at Aramile should be taken up on first priority basis as this will cover the New Tura complex and its adjoining areas. Moreover, it is felt that a separate line to work as hydrant should be laid and the source of the hydrant will be a spring or a stream. Moreover it is proposed that a group of buildings will have a common underground water tank meant for emergency purpose.

#### 13.6.3 Burial Grounds :

The Town has sufficient number of grave yards till the end of the Plan Period. Hence no new grave yards has been proposed. It may be necessary to improve and maintain the existing burial ground to improve the quality of the environment.



## CHAPTER — 14

## PLAN IMPLEMENTATION AND ENFORCEMENT

The preparation of Master Plan and the Zoning Regulation Plan will not improve the town life in any ways unless sustained efforts are made to enforce as well as implement these Plans. In building a city or Town, a major role is often played by the citizens, individually or collectively by undertaking construction, reconstruction and development of land for various uses. The Urban Affairs Department will provide necessary guidance by rendering, technical advice and ensuring strict and proper scrutiny so as to ensure that the propose Plan will conform to the proposal, contained in the approved Master Plan.

The implementation of the Master Plan will be undertaken by the Urban Affairs, Development Authority, Municipal Board. Besides, Government Department like Public Health Engineering, Public Work Department, Health Department, etc., will also undertake construction within their respective field of activity. The Urban Affairs is also undertaking Schemes for construction of Market and other Development Schemes. Since Housing Department/Housing Board, is engaged in construction of Housing it is hoped that it will under taken schemes for the same. This will add to the process of implementation of the Master plan. It will, however, be desirable to co-ordinate constructional activities of various Government, Semi-Government not only in terms of location, design, etc., but in term of Phasing and Programming as well.

## 14.1 Implementation Of Master Plan :

The Implementation Programme has been divided into four phases, namely the first phase during the plan period 1990-95 and the remaining three phases will be during the plan period 1995 to 2000, 2000 to 2005 and 2005 to 2011. The cost of implementation of various proposals has been estimated at Rs.4022 63 lakhs. This includes cost of land acquisition which has been assessed at Rs. 270,000/- per hectares. Development cost of various land use has been assessed according to the following rate.

Land Use	Rate per Hec. (Rs. in lakhs)
1. Residential	5.5
2. Commercial	5.5
3. Administrative	3.5
4. Institutional	3.5
5. Industrial	5.00
6. Organised Open Spaces	3.5
7. Truck Bus Terminus	4.0
8. Road Net Work	12.29 per km.

The total estimate of Plan Implementation till the end of the plan period covering cost of Acquisition and Development is as follows :-



TABLE — 14.1

## ROAD PLAN IMPLEMENTATION ESTIMATE

Sl. No.	LAND USE	Area In Hectares		Cost of Acquisition Rs. in lakhs	Development Of Land		Total	Remarks	
		Proposed of land	Proposed to be acquired		Rate per Hec. in lakhs	Cost of Development Rs. in lakhs			
1.	Residential	292.8	136.95	360.76	5.5	1610.4	1930.16	The Development cost including the whole Residential area of 292.8 Hec.	
2.	Commercial	26.31	26.31	71.03	5.5	144.71	215.74		
3.	Administrative	75.96	75.96	205.10	3.5	265.86	470.96		
4.	Institutional	11.29	11.29	30.48	3.5	39.52	70.00		
5.	Industrial Organised	29.64	29.64	80.02	5.0	148.20	228.22		
6.	Open Spaces	42.33	42.33	114.29	3.5	148.16	262.45		
7.	Truck Bus Terminus	4.57	4.57	12.33	4.0	18.28	30.61		
8.	Road Net Work	51.16	41.16	151.63	12.29	595.70	747.33		
9.	Footpath	Include above		Include above	Include above		17.16		17.16
							1034.64	2987.99	4022.63

The above figures only show the cost for development of site. As regards water supply, power and sewer, this will be work out in the Zonal/Action Plan by the concerned department.

#### 14.2 First Phase Programme :

The implementation programme during the 1st Plan in the five year Plan period 1990 to 1995. The Total expenditure during the first phase programme works out to be 1332.49 lakhs approximately. This envisage mainly :

1. Acquisition of 333.21 hectares of land at the approximate cost of Rs.1034.64 lakhs.

2. Construction of proposed Road of 24.23 km. half of the total proposed road.

Compensation cost for the acquired land of different uses will be borne by the Government. It is however felt that during the first phase land acquisition for all uses needs to be implemented, and also work of the 24.23 km. length of the proposed road is to be carried out.

The table shows the phase I estimate of Plan implementation covering cost of acquisition and development of roads.



TABLE — 14.2

## FIRST PHASE IMPLEMENTATION AND ESTIMATE

Sl. No.	Land Use	Land Acquisition		Development of Land		Total	Remarks
		Proposed land to acquire in Hec.	Cost of acquisition @ 27 000/ per Hec	Rate per Hec. in lakhs	Cost of Development		
1.	Residential	136.95	369.76	5.5	—	369.76	Remaining works to be taken up in the subsequent phases.
2.	Commercial	26.31	71.03	5.5	—	71.03	
3.	Administrative	75.96	205.10	3.5	—	205.10	
4.	Institutional	11.29	30.48	3.5	—	30.48	
5.	Industrial	29.64	80.02	5.0	—	80.02	
6.	Open Space	42.33	114.29	3.5	—	114.29	
7.	Truck/Bus Terminus	4.57	12.33	4.0	—	12.33	
8.	Road Net Work	56.16	151.63	12.292	297.85	449.48	
9.	Footpath	Include in road Net work					
Total		1034.64				1332.49	

## 14.3 Second Phase Programme :

The implementation programme in the II<sup>nd</sup> Phase during the five year Plan period 1995—2000, the expenditure for executing works out to be Rs.1069.35 lakhs approximately. During the II Phase the implementation Programme is for the following development work, namely :—

- I. Development of the Residential area in Arai Mile which covers an area of 136.95 hectares.
- II. Development of Truck and Bus Terminus.
- III. Construction of the remaining half of the proposed Road 24.23 km. length.

The Development work is mainly for site and services. As regard the detailed development cost for different development schemes such as construction of Housing, Shopping Complex, Institutions, Health services, etc., is not included. The detailed development work will be dealt by the concerned departments.

The Table shows the phase II estimates of work to be under taken during the Plan.



TABLE-14.3

## SECOND PHASE IMPLEMENTATION AND ESTIMATE

Sl. No.	Land Use	Development Land		Cost of development in lakhs	Total
		Area in Hec.	Rate per Hec. in lakhs		
1.	Residential	136.95	5.5	753.22	753.22
2.	Truck & Bus Terminus	4.57	4.0	18.28	18.28
3.	Road net work	24.23 (Km.)	12.29	297.85	297.85

GRANT TOTAL Rs. 1069.35

**14.4 Third Phase Programme :**

The implementation programme for the III Phase in the Plan period 2000-2005 is meant for the development work namely, Commercial, Institutional, Organised Open Space, development of proposed Residential area in the North and the construction of footpath. The cost of the development during this phase programme works out to be Rs. 778.14 lakhs approximately. The development work to be taken up are as follows:—

I. The remaining proposed Residential area in the North covering an area of 155.85 hectares. This proposed Residential area is not be acquired, but to provide site and services. This site is meant for private residential area. During this phase only half of the above area i.e; 77.925 hectares is under taken.

II. The Development of Commercial area covers an area of 26.31 hectares, which include the different categories of markets, viz Town Level Market, Regional and Local Market.

III. Under the Institutional Development this will includes, Educational, Health, etc. which cover an area of 11.29 hectare.

IV. The development of Organised Open Space cover an area of 42.33. Under this development programme it is proposed to developed the Play grounds, Open Spaces, etc.

V. The construction of 800) metres Footpath, within the town. The estimates of works to be implemented during the III Phase is shown in the Table 14.4.



TABLE 14.4

## THIRD PHASE IMPLEMENTATION AND ESTIMATE

Sl. No.	Land Use	Development Land		Cost of Development in lakhs	Total
		Area in Hec.	Rate per Hec. in lakhs		
1.	Residential	77.925	5.5	423.59	428.59
2.	Commercial	23.31	5.5	141.71	144.71
3.	Institutional	11.29	3.5	39.52	39.52
4.	Organised Open Space.	42.33	3.5	148.16	148.16
5.	Footpath	(Includes in Road)	2.145 (per Km.)	17.16	17.16

GRANT TOTAL Rs. 778.14

## 14.5 Fourth Phase Programme :

The expenditure for executing the remaining works during the Fourth Phase Programme 2005-2011 works out to approximately Rs. 842.65 lakhs. This includes half of the Residential area, Industrial area, and Administrative area. The development works of :

I. The remaining half of the propose residential area covering an area of 77.925 hectares.

II. Development of the Industrial area of 29.14 hectares.

III. Development of Administrative area which covers an area of 75.96 hectares.

The estimate of the development works, to be implemented during this Phase is shown in the Table - 14.5.

TABLE 14.5

## FOURTH PHASE IMPLEMENTATION AND ESTIMATE

Sl. No.	Land Use	Development Land		Cost of Development in lakhs	Total
		Area in Hec.	Rate per Hec. in lakhs		
1.	Residential	77.925	5.5	428.59	428.59
2.	Industrial	29.69	5.0	148.20	148.20
3.	Administrative	75.96	3.5	265.86	265.86

GRANT TOTAL Rs. 842.65



To implement the plan the total estimate of Rs. 4022.63 lakhs may be raised through Government Fund, Financial Institution like HUDCO, etc. Recovery against this investment is through the receipt from the sale of developed land for residential, Commercial and others. The total receipt for recovery against the total investment has not been worked out.

#### 14.6 Zoning Regulation :

The Zoning Regulation shall be applicable to the whole Master Plan Area. The Planning area has been divided into 6 Planning Unit and 20 residential zones. Since, the zoning plan has not been prepared, the Regulations prescribed here shall be effective.

#### 14.7 Land Use Zones :

The land proposed for particular use in the Plan such as residential, Commercial, Industrial, Recreational, Institutional, Recreational etc. can only be used for the purpose for which has been earmarked.

#### Coverage and F. A. R.

The F. A. R. prescribed for the entire Master Plan Area ie. 5. Ground coverage will not be more than 50 per cent. Maximum height permissible shall be 1.5. times the road width, except in commercial areas where the F.A.R. will be 1 with a maximum coverage of 60 per cent.

#### 14.8 Industries :

The permissible coverage for the different type of Industries shall be 30 per cent for Medium Industries, 40 to 50 per cent for small scale industries, House hold and service and Agro-based Industries.

#### 14.9 Public and Semi Public :

For the proposed public and Semi-Public uses, the permissible coverage and Floor Area Ratio shall be as follows :—

	Coverages	F. A. R.
1. Primary and Nursery Schools	40%	0.4
2. Colleges, Higher Schools	30%	0.6
3. Hospital	40%	0.8
4. Administrative Building	50%	0.9

These standard may be followed for various Planning Unit till the preparation of the Zoning Plan.

The following chapter deals with the Zoning Regulation for the Tura Master Plan Area,



## CHAPTER - 15

## ZONING REGULATION FOR TURA MASTER PLAN AREA

**SCOPE :-** The schedule lays down regulations for the use of land and buildings built thereon consistent with maintaining minimum standards of density of building, protection of open spaces, sanitation and environmental hygiene.

The Zoning Regulations should be read in conjunction with the zones proposed in the Master Plan.

**1.1. Definition :-** For the purposes of these regulations, the following definitions shall apply.

**1.1.1** Words used in the present tense shall include the future the singular number also includes the plural and the plural also the singular :

**1.1.2. "Agriculture/Urban Agriculture" :-** includes horticulture, farming, growing of crops, fruits, vegetables, flowers, grass fodder, trees of any kind of cultivation of soil, breeding and keeping of livestock including cattle, horses, donkeys, mules, pigs, fish, poultry and bees ; the use of land which is ancillary to the farming of land or any other agricultural purposes but shall not include the use of any land attached to the building for the purposes of a garden to be used along with such buildings and "Agriculture" shall be constructed accordingly ;

**1.1.3. "Authority" shall mean the local, regional or any other Authority appointed by the State Government for the purpose of Administering the Act. Unless otherwise appointed by the State Government, the Authority in the case of Municipal Areas shall be taken to mean the Municipal Board for the area constituted under the Assam Municipal Act, 1956 (Assam Act 1957) as adopted in Meghalaya.**

**1.1.4. "Basement" means the lower storey of a building below or partly below ground level. The ground level in case of sloping plots shall be taken as the middle point between the highest and lowest level of the land ;**

**1.1.5. "Boarding House" means a building or part of a building in which is carried on wholly or partly the business of the supply of meals to the public of a class of the public for consumption on the premises.**

**1.1.6 "Building" means any construction for whatsoever purposes and of whatsoever materials constructed and every part thereof whether used as human habitation or hut and includes foundation plinth wall, chimneys, drainage works, fixed platforms, verandah, balcony or projection, part of a building or anything affixed thereto or any wall enclosing or intended to enclose any land or spaces.**



- 1.1.7. "Building of accessory use" means a subordinate buildings, use of which is incidental to that of a principal building on the same plot such as garage or woodshed quarters, etc.
- 1.1.8. "Building-height of" means the vertical distance measured in the case of flat roofs from the average level of the centre line of the adjoining street to the highest point of the building adjacent to the street wall, and in the case of pitched roofs, upto the point where the external surface of the outer wall intersect the finished surface of the sloping roof and in the case of gables facing the road the mid-point between the eaves level and the ridge. Architectural features serving no other function except that of decoration shall be excluded for the purpose of taking height. If the building does not abut on a street, the height shall be measured above the average level of the ground and continuous to the building.
- 1.1.9. "Building set-back" means the distance by which any building or structure shall be separated from the boundary line of the plot.
- 1.1.10. "Commerce" means carrying of any trade, business or profession, sale or exchange of goods of any type whatsoever and includes the running of, with a view to make profit hospital, nursing homes, infirmaries, educational institutions and also includes hotels, restaurant, boarding house not attached to any educational institution, sarais and "Commerce" shall be construed accordingly.
- 1.1.11. "Commercial Use" includes the use of any land or building or part thereof, for purpose of commerce as defined or for storage of goods, or as an office whether attached to industry or otherwise.
- 1.1.12. "Average" is the percentage ratio of the plinth area of the main and accessory building to the total area of the plot.
- 1.1.13. "Customary home occupation" means occupation other than that of operating an eating or drinking place offering services to the general public carried on by a member of the family residing on the premises and in accordance with which there is no display that will indicate from the exterior that the building is being utilised in whole or in part for any purpose other than that as a dwelling and in connection with which nor articles or service is sold or held up for sale except that produced by a member of the family residing on the premises and no mechanical equipment is used except as in customary for purely domestic or household purposes.



1.1.14. "Development" means the carrying out of building engineering mining or other operating in, on or over the land or making of any material change in the use of any building or on land.

Provided that the following operations or use of land shall not be deemed for the purposes of this Regulation to mean development of the land, that is to say :-

- (a) the carrying out of works for the maintenance, improvement or other alteration of any building which effect only the interior of the building or which do not materially effect the use and the external appearance of the building.
- (b) the carrying out by a local authority of any work required for maintenance or improvement of roads, being works carried out on land within the boundaries of the roads.
- (c) the carrying out by a local authority any works for the purposes of inspecting repairing or renewing any sewers, main pipes, cables or other apparatus including the breaking open of any street or other land for that purposes.
- (d) the use of any building or other land within the curtilage of a dwelling house for and purposes incidental to the enjoyment of the dwelling house such.

1.1.15 "Development Scheme" means a development scheme and includes a plan together with the descriptive matter, if any relating to such scheme

1.1.16 ' Dwelling House' means a building or portion thereof which is designed or used wholly or principally for residential purposes. This shall not include boarding or rooming houses, tents, tourists camps, hotels or other structures designed or used primarily for transient resident.

1.1.17 "Floor Area Ratio" (F. A. R.) means quotient obtained by dividing the total covered area (plinth area) on all floors by the area of the plot.

FAR—Total covered area of all floors ÷ Plot area.

1.1.18 "Industry" Industry includes the carrying of any manufacturing process as defined in the Factories Act 1943 and "Industrial" shall be construed accordingly.

(i) "Industrial, use" includes the use of any land or building or part there for industry as defined.

(ii) "Industry Clean" means industries which do not throw out any smoke, noise offensive odour or harmful industrial waste and employing not more than 10 workers with or without power.



- (iii) "Industry Light" means industries which do not throw out excessive smoke, noise, offensive odour or harmful wastes, employing not more than 100 workers and using power of not more than 100 HP. Such industry except in the case of foundries and Smithies do not consume any solid fuel.
- (iv) "Industry Medium" medium industries are those which employ more than 100 workers and may use any kind of motive power or fuel subject of course to noxious features.

Factories which are classified as heavy industries under the factories Act, do not come under this category.

- (v) "Industry Services" industries which are not engaged in the manufacture of goods or articles, but are mainly concerned repairs maintenance, servicing and of other jobbing work.
- (vi) "Industry Obnoxious" Obnoxious industries are those which are associated with such features as excessive smoke, noise, vibration, stench, unpleasant or injurious fumes, oil lent explosive, inflammable industries, etc. and such other which are hazardous to health and safety of the community.

1.1.19 "Non Confirming building or use" means a building, structure or use of land existing at the time of commencement of these regulation pertaining to the one in which it is situated.

1.1.20 "Occupier" includes—

- (a) a tenant ;
- (b) an owner in occupation of or otherwise using his land ;
- (c) a license in occupation of any land, and
- (d) a rent free tenant of any land.
- (e) any person who is liable to pay to the owner damage for the use and occupation of any land.

1.1.21 "Open Space" means any land whether enclosed or not on which not more than one twentieth part, is covered with building and whole of the remainder has been laid out as a public garden or used for the purpose of recreation or lies waste and occupied.

1.1.22 "Owner" includes a mortgage in possession, a person who for the time being is receiving or is entitled to receive or has received, the rent or premium for any land whether on his own account or an account of or on behalf of or for the benefit or any other person, or as an agent, trustees, guardian or for any other or for any religious or charitable institution, or who would so received the rent or premium or be entitled to receive the rent or premium in the land were let to a tenant, and includes the Head of a Government Department, the Secretary or other principal Officer of a Local Authority Status or Company in respect of properties under their respective control.



1.1.23 "Parking Space" means an area enclosed or unenclosed sufficiently in size to store an automobile or any other conveyance together with a drive way connecting the parking space with a street or alley and permitting ingress or egress or all such conveyances.

1.1.24 "Plinth" means the portion of a structure between the surface of the surrounding ground and surface of the floor, immediately above the ground.

1.1.25 "Plot" a piece of land occupies or intended for occupancy by a main building or use together with its accessory building and uses customary and incidental to it, including the open space required by these regulations and having frontage upon a private way that has officially being approved by the competent authority.

1.1.26 "Plot Width" means the shorter distance from one side of the plot line or the other measured through that part of the plot to be occupied by the building.

1.1.27 "Prescribed" means prescribed by rules and regulations under the Assam Town and Country Planning Act, 1956 (as amended) and as adopted in Meghalaya.

1.1.28 "Prescribed Street Line" means the line on one or both sides of any road or street prescribed in the Master Plan or by the authority showing the proposed site limits of the road or street.

1.1.29 "Public and Semi Public place" means any place or building which is open to the use and enjoyment of the public whether it is actually used or enjoyed by the public or not and whether the entry is regulated by any change or not.

1.1.30 "Repairs means any renovation applied to any structure which does not in any way change the specification of the structure but saves the structure from further deterioration"

1.1.31 "Residence" includes the use for human habitation of any land or building or part thereof including garden grounds, garages, stables and out houses, if any appertaining to such building and residential shall be construed accordingly.

1.1.32 "Road or street" means any highway, street, land pathway, alley, stairway, passageway, carriageway, footway, square place or bridge, whether a throughfare or not over which the public have a right of passage or access or have passed and had access uninterruptedly for a specified period, whether existing or proposed in any scheme and includes are bunds, channels, ditches, storm water drains, culbert, sidewalk, traffic island, roadside trees and hedge, retaining walls, fences, barriers and railways, within the road lines.

1.1.33 "Shop Line" means shop when allowed irrespective of any zone in between the space of the prescribed street line and a line drawn paralal to the street which is demarcated as shop line. The maximum depth of the shop line should not be more than 6 metres.



1.1.34 "Storeys" means the portion of a building included between the surface of any floor and the surface of the floor next above it or if there is no floor above it, then the space between any floor and the ceiling next above it when measured the height of a habitable basement attending at least five (5) feet above ground level or a habitable attic shall be counted as storey.

1.1.35 "Structure" any combination of materials including building construction or erected, the use of which requires location on the ground including among other things signboard, fences and walls that are more than three feet high.

1.1.36 "To abut" means to abut on the road such that any portion of the building is on the road boundary.

1.1.37 "To Construct" means to erect, to erect make materials alterations.

1.1.38 "To Erect" to construct a building for the first time or to reconstruct existing building after demolishing it according to some fresh or revised plan.

1.1.39 "Total Floor Area" the area of all floors of a building including habitable attics and basement.

1.1.40 "To make material alterations" means to make any modification in any existing building by way of an addition or alteration or any other change in the roof, window, door, compound, sanitary and drainage system in any respect whatsoever. Opening of a window and providing inter-communication doors shall not be considered as material alteration. Similarly modification in respect of gardening white washing, painting, retiling and other decorative works shall not be material alterations. It further includes:—

- (a) Conversion of a building or any part thereof for human habitation as one dwelling house into more than one dwelling house and *vice-versa*; and
- (b) Conversion of a building or a part thereof suitable for human habitation into a dwelling house of *vice-versa*; and
- (c) Conversion of a dwelling house or a part thereof onto a shop, warehouse or factory or *vice-versa*; and
- (d) Conversion of building used or intended to be used for one purpose such as shop, warehouse or factory, etc. into one of another purposes.

1.1.41 "To re erect" means to construct for a second time or subsequent times a building or a part of building after demolishing it on the same plan as has been previously sanctioned.

1.1.42 "Water Course" means a natural channel or an artificial one formed by draining or diversion of a natural channel meant for carrying storm water either from a single property or several properties draining thereto in combination.



- 1.1.43 "Ware House" means a building, the whole or substantial part of which is used or intended to be used for the storage of goods whether for keeping, or for sale or for any similar purpose but does not include a store room attached to and used for the proper functioning of a shop.
- 1.1.44 "Yard" means an open space at ground level between a building and the adjoining boundary line of the plot unoccupied and unobstructed except by encroachment or structure specifically permitted by these by laws on the same plot with a building. All yard measurement shall be the minimum distance between the front, rear and side yard plot boundaries as the case may be, and the nearest point of the building including enclosed or covered porches. Every part of the every yard shall be accessible from every other part of the same yard.
- 1.1.45 "Yard Front" means a yard extending across the front of a plot between the side yard lines and being the minimum horizontal distance between the street line and the main building or any projection thereof other than step enclosed balconies and unenclosed porches.
- 1.1.46 "Yard Rear" means a yard extending across the rear of a plot measured between a plot and boundaries and being the minimum horizontal distance between the rear plot boundaries and the rear of the building or any projection other than steps, unenclosed balconies or unenclosed porches. In a corner plot the rear yard shall be considered as parallel to the street upon which the plot has its least dimension, in both the corner and interior plot the rear yard shall be at the opposite end of the plot from the front yard.
- 1.1.47 "Yard Side" means a yard between the building and the side line of the plot and extending from the line to the rear line of the plot and being the minimum horizontal distance between the said boundary line and the sides of a building or any other projection other than steps, unenclosed balconies or unenclosed porches.
- 1.2 The definition of the terms which are not covered by these regulations shall be covered by the definition prescribed by the Assam Town and Country Planning Act, 1959 and the rules frame there under and adopted in Meghalaya.
- 1.3 General Regulations.
- 1.3.1 The requirement of these Regulations within each zone shall be the minimum requirement and shall apply uniformly to each class or kind or structure or land except as here in after provided.
- 1.3.2 No building, structure or land shall herein after used or occupied, and no building or structure or part of the building shall herein after be erected, re-erected or materially altered unless is conforming with all of the regulations herein specified for the zone in which it is located.



1.3.3. No building or other structure shall here after be erected ; re-erected or materially altered :--

(a) to exceed the height.

(b) to accomodate or house a greater number of families.

(c) to occupy a greater percentage of plot area,

(d) to have narrower or smaller rear yards, front yards side yards other open space, than herein required, or in any other manner contrary to provision of these regulations.

1.3.4 Non-conforming plots, non-conforming uses of land, non-conforming structure and non-conforming uses of structure and premises.

1.3.5 Within the zones established by these regulations or amendment that may later be adopted therein, existing plots, structure and uses of land and structures which were lawful before these regulations came into force or were amended, but which would be prohibited, regulated or restricted under the terms of these regulations or future amendments, shall be permitted to continue until they are removed. Such uses are declared by these regulations to be incompatible with permitted uses in the zone involved. Such non-conformities shall not be enlarged upon, expanded nor be used as grounds for adding other structure or used prohibited elsewhere in the same zone.

1.3.6 A non-conforming uses of structure, a non-onforming use of land, or a non-conforming use of a structure and land shall not be extended or enlarged after coming into forces of these regulation by attachment on a building premises of additional signs intended to be seen from off the premises or by the addition of other uses of a nature which would be prohibited generally in the zone involved.

1.3.7 Nothing in these regulations shall be deemed to require a change in the plans construction or disingnated use of any building on which actual construction was lawfully begun prior to the coming into forces of these regulation and upon which actual building construction has been diligently carried on. Actual construction is hereby defined to include the placing of construction materials in permanent position and fastened in a permanent manner, except that were demolition or removal of an existing building has been substantially begun preparatory to rebuilding as demolition or removal shall be deemed to be actual construction provided that work shall be a diligently carried on until completion of the building involved.



1.3.8 Non-conforming use of land where on the date of coming into force of these regulations or amendment thereto lawful use of land exists that is made as longer premissible under the terms of these regulations as enacted or amended. Such use may be continued, so long as it is remain otherwise lawful subject to the following provisions.

(a) No such non-conforming use shall be enlarged or increased non-extended to occupy a greater area of land than was occupied in the date of coming into force of these regulations or amendment thereto.

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

(c) If any such non conforming use of land ceases for any reason for a period of more than 30 days, any subsequent use of such land shall conforms to the requirement specified by these regulations for the zones in which such land is located.

1.3.9 Non-conforming structure where a lawful structure exist on the date of coming into force of these regulations or amendments thereto, that could not be built under the terms of these regulations by reason of restriction of area, plot coverage, height yards, or other characteristic of the structure or its location on the plot, such structure may be continued as long as it remain otherwise lawful subject to the following provisions.

(a) No such structure may be enlarged or altered in a way which increase its non-conformity.

(b) Should such structure be destroyed by any mean to an extent of more than 50 per cent of its replacement cost at the time of destruction it shall not be reconstructed except in in conformity with the provision of these regulations.

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

1.1.10 Non-conformity uses of structure. If a lawful use of a structure or of structure and premises in combination, exists on the date thereto, of coming into force of these regulations or amendment that could not be allowed in the zone under the terms of these regulations, the lawful use may be continued so long as it remain otherwise lawful, subject to the following provisions.

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



(b) No such non-conforming use shall be enlarged or increased or extended to occupy a greater area of the building than occupied by such use at the time of coming into force of these regulations or amendment thereto :

(c) Any structure or structure and land in combination in which a non-conforming use is suspended by a permitted use shall there after conform to the requirement of these regulations for the zone in which such structure is located and the non-conforming use of structure, or structure and premises in combination or abandoned for six consecutive months or for 18 months during any three years period, the structure and premises in combination shall not there after be used except in conformity with the regulations of the zone in which it is located.

(d) Where non-conforming use status applies to a structure and premises in combination, removal or destruction of the structure shall eliminate the non-conforming status of the land.

1.1.11 Repairs one maintenance on any building devoted in whole or in part to any non-conforming use, work may be done in any period of 12 consecutive months for ordinary repairs, or on repair or replacement of non-load bearing walls, fixtures, wiring or plumbing to an extent for exceeding 10 per cent of the current replacement value of the building; provided that the cubic contents of the building, as it existed at the time of coming into force of these regulations or amendments thereto shall not be increased.

Nothing in these regulations shall be deemed to prevent the strengthening or resecuring to a safe condition, of any building or part thereof declared to be unsafe by any official charged with protecting the public safety upon order such official.

1.3.12 Uses under Exception provision for non-conforming use. Any use for which a special exception is permitted as provided in these regulations shall not be deemed a non-conforming use, but shall without further action be deemed a conforming use in the zones in which it is permitted.

1.3.13 "Accessory Use" The term Accessory use shall not include —

(a) Any use not on the same plot with the use to which it is accessory, unless authorised by the authority.

(b) Any use not customarily incident to a permitted use,

(c) Any use detrimental to the neighbourhood by reason or omission of smoke, noise, odour, vibration, dust or fumes ;

(d) Storage of more than two commercial automobile except on an agriculture piece of land.



- (e) A secondary dwelling on the same plot with a main dwelling unless each building shall have atleast the open space an equivalent plot size as required under these regulations.
- (f) Advertising signs excepting not more than 13 sq. ft. or 0.9 square metre in total area pertaining to the lease sale or use of a plot of building on which they are placed on a plot occupied by a dwelling there shall not be more than two signs with a total area of 2 squares feet or 0.18 square metre per sign for each family house.

#### 1.3.4 Yards and Open Space :

- (a) Each structure here after erected, re erected or materially altered shall be provided with the front side rear yard as specified with zoning regulations.
- (b) No open space or plot required for building or structure shall during its life be occupied or counted as open space for another building or structure.
- (c) On plot occupied by building only, not exceeding 30 per cent of the rear yard may be occupied by one storeyed building of accessory use.
- (d) Special type of building. Subject to the requirement of set back from prescribed street line and side and rear yard under the respective rules no building used for Theatres, Cinema Hall, Concert or Assembly Halls, Stadium, building intended for religious worship, Hospital or Dispensary building, Markets, Exhibition Halls or Museum and other such building shall have an open space of not less than 25 feet or 7.5 metres from the front boundary and 15 feet or 4.5 metres from the side and from the front boundary of the plot on which such building are constructed.

1.3.15 Visibility at inter-section in Residential Zones. On a corner plot in any residential zone, nothing shall be erected, placed planted or allowed to grow in such a manner as materially to impede vision between a height of two and a half and ten feet (0.7m and 3m) above the centre line level of the intersecting street in the area bounded by the street line of such corner plot and the joining point along said lines 5.0 feet or 15.0 metres from the point of the inter-section.

1.3.16 Building abutting two or more street. When a building abuts two or more streets the set back from the street shall be such as if the building was fronting each such street.

#### 1.3.17 Means of access.

- (a) No building shall be constructed on any plot for any use where there is no means of access to such plot.
- (b) Notwithstanding anything prescribed in the Master Plan the width of such access or lanes, roads etc. to one individual plot or plots whether private or public shall be prescribed by the authority.



1.3.18 The authority may prescribe a line on one or both side of any public or private road or street and no person shall construct or materially alter any portion of any building or land within such prescribed new street line.

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

- (a) To re-build such building or structure or to take down such building or structure.
- (b) To remove, re-construct or make any addition to or structural alteration in any portion of such building or structure which is within such regular prescribed line of street.

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

1.3.21. Land Sub-Division to lay out. Except as otherwise provided, no land will be developed or sub-divided and no lay out on land shall be prepared altered, done or executed unless or conformity with these regulation herein specified for the one in which the land is locate.

1.3.21.2 Fences, walls and hedges, Notwithstanding any other provision in these regulations, fences walls and hedges may be permitted in any required yard or along the hedge of any yard provided that no fence, wall or hedge along the side front hedge of any front yard shall be over 3 feet or 0.9 metres in height.

1.3.22 Off street parking space or motor space for motor vehicles, scooter, cycle.

(a) off street parking shall be provided on any plot on which the yard specified in the Table 1 are here after establish. Such parking space shall be provided with adequate vehicular access to a street.

(b) Each off-street parking space provided shall not be less than of 2.7m x 3.4m and 2.5 x 1m for car and scooter respectively. The area of driver, aisals and such other provision required for adequate access shall not be counted as part of the parking space.

(c) Off-street parking space provided shall be not less than the minimum requirement specified in the Table 1 for each type of use.



(d) If a vehicle parking space required by these regulations is provided in parking areas by groups of property owners for their mutual benefit, the Board of Zoning Appeals may construe such use of this space as meeting the off-street parking requirement of those regulations.

(e) If off-street vehicle parking space cannot be reasonably provided on the same plot on which the principal use is conducted the Authority may permit such space to be provided on their off-street property; provided such space lies within 400 feet or 120 metres of the main entrance to be used such vehicle parking space shall be deemed to be required open space associated with the permitted use and shall not therefore be reduced encroached upon in any manner.

TABLE I

## MINIMUM NUMBER OF OFF STREET PARKING SPACE

Type of use	One Parking space shall be provided for every	
	CAR	SCOOTER
1 Residential Building. (In case of group house only).	For every dwelling unit exceeding.	...
2 Theatres, Cinema and Auditorium.	40 seats of accommodation.	25 seats of accommodation.
3 Retail Business	93 sq. mts. (100 sq. ft.) of sales area.	46.5 sq. mts. (500 sq. ft.) of sales area.
4 Office building	93 sq. mts. (100 sq. ft.) of Office floor space.	46.5 sq. mts. (500 sq. ft.) Office floor space.
5 Hospital	30 beds of accommodation.	20 bed of accommodation.
6 Hotel	10 beds of accommodation Class I Hotel (as classify by the Authority).	
7 Restaurant	30 seats of accommodation.	15 seats of accommodation.
8 Industrial	20 employees in the industry.	15 employees in the industry.
9 Whole sale Warehouse.	116 sq. m. (1000 sq. ft.) floor area or fraction thereof.	



#### 1.4.1 Permission.

Written permission for development works and sub-division of land. No person shall use any land, sub-divide any land, develop any land or set up any new structure or any land, or erect, re-erect materially alter or change the existing structure of any building of land within the limit of the Master Plan Area without the written permission of the authority as defined in 513 of the Assam Town and Country Planning Act, 1959 (as amended) and as adopted in Meghalaya.

1.4.2.1 Manner of obtaining permission. For the purpose of obtaining permission for the erection, re-erection, renovation and materially alteration of any building or structure the applicant shall submit the following plans, in triplicate together with an application as prescribed by the authority.

- (a) A block plan of such building or structure and site which shall be drawn to the scale of the largest revenue survey maps at the time in existence for the locality and shall show the position and appurtenances of the properties, if any immediate adjoining streets and the means of excess to the building. Dag No., Patta No., Name of village.
- (b) A site plan of 15 feet or 2 metres scale indicating the plot boundaries, position of the existing structure, if any, line plan of the proposed structure with its location, set back, side and rear yard projection, if any distance from any structure if any, etc on the plot in figured dimension.
- (c) The detailed floor plans for each floor on 8 feet or 1 metres scale with projection, if any, showing the use of every room or portion of the building or structure and full and detailed dimension of the structure.
- (d) One or two sections, as the case may be, through the building showing the height of the plinth above and below the ground level and each floor and of the roof over the staircase.
- (e) Any other items or information which may be required by the Authority from time to time.
- (f) All the plans and sections shall be signed by the applicant.

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



1.4.2.3 For the purpose of obtaining permission for such subdivision of any plot of land the applicant shall submit the following plans in triplicate together with necessary statements to the Authority.

- (a) A block plan of such land which shall be drawn to the scale of largest revenue survey map at the time in existence for the locality showing location of the land boundaries of the proposed land shown on the map and sufficient description to define the same location, name and present width of the adjacent roads and lanes and major physical characteristic of the land proposed to be sub-divided, including topography, the location and width of any water course and location of any areas subject to inundation or flood and north line.
- (b) A plan of such land which shall be drawn to suitable scale showing the complete lay out of the proposed sub-division including location and widths of all the proposed streets dimensions and uses of all plots, location of all drains sewers and other utilities building lines permissible and north line.
- (c) Any other items or information which may be required by the Authority from time to time.
- (d) All the plans shall be signed by the applicant.

1.4.2.A. In case of plan pertaining to sub-division of land, the Authority may either grant or refuse the approval of the plans or may approve them with such modification as it may deem fit and thereupon shall communicate its decision to the applicant giving the notice within two months from the date of submission of the plan to the Authority.

## 1.5 Classification and Establishment of Zones,

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

- I. Residential Zone
  - (a) Low density
  - (b) Medium density
  - (c) High density
- II. Commercial Zone
  - (a) Retail Commercial
  - (b) Wholesale Commercial
- III. Industrial Zone
  - (a) Knight Industry
  - (b) Medium Industry
  - (c) O'noxious Industry
- IV. Public and Semi Public Zone
  - (a) Administrative
  - (b) Institutional
  - (c) Security



## V. Recreational and Open Space Zone

## VI. Urban Agricultural Zone and Conservation 'B' Zone

## VII. Conservation 'A' Zone.

- 1.5.2 The zones designated above may be further divided into sub-zones by the Authority where it deems it expedient the designation of sub-zones being dependent upon the special use to which each sub-zone is being utilised.
- 1.5.3 Boundaries of Zones the boundaries of each zone shall be as established in the Master Plan for Tura of the area under the Authority and a copy of the Plan shall be kept on record at the official premises of the Authority unless otherwise shown on the Master Plan of the boundary line of zone shall be plot lines, the centre lines of street, or such lines extended the corporate limit as it exist at the time of enactment of regulations.
- 1.5.4 All dispute and difference with respect to the exact location of boundaries of the zone shall be referred to the Director of Urban Affairs whose decision shall be final and binding.
- 1.6.1 Regulations for different Zones.
- 1.6.2 Regulation for different Zones regarding uses permitted uses permissible on appeal to the Authority and use prohibited shall be as follows.
- 1.6.2.1 Regulations for Residential Zones.
- 1.6.2.1.A. Uses permitted.
- (a) Dwellings.
  - (b) Customary home occupation.
  - (c) Place of worship like temples, namgarh, mosque, church etc. The Church, Temples or Mosque, etc. shall not be within 20 ft. (6 mts) from three sides of the boundary including roadside. Set back for the fourth side should be as per normal set-back as in the case of residential zone.
  - (d) Schools offering general educational course, community halls, welfare centre, public libraries, art, galleries, museum hostels for educational institution offering general courses gymnasium.
  - (e) Medical, eyes, and dental practitioners' clinic.



- (f) Professional Office and studies of a resident of the premises and incidental to such residential use not occupying a floor area exceeding 200 sq. ft. or 18.00 sq. metres.
- (g) Club house not conducted primarily as business public parks and private parks which are not utilised for business purposes.
- (h) Nurseries and general agriculture, horticulture.
- (i) Accessory uses customarily incidental to any principle use.
- (j) Post Office, Police Station and Out Post and Telephone exchange and Fire Station.
- (k) Taxi Stand and Bus stand.
- (l) Research, experimental and testing laboratories not involving any danger of fire explosion not of any obnoxious nature provided the laboratory is kept atleast 50 feet (15 metres) away from any of the boundaries of the site and the accessory residential building.

1.6.2.1.B Use permissible on appeal to the Authority.

- (a) Municipal State and Central Government uses but not offices.
- (b) Public utilities.
- (c) Philanthropic uses, residential hotels, restaurant, cafeteria, milkbars, boarding or lodging houses in independent buildings.
- (d) Air condition cinema theatre with seperate entrance exist to car park and subject to all other regulation applicable to cinema theatre. The cinema theatre itself shall not be within 40 feet from any boundary of the plot. Normally no permission for a Cinema theatre shall be granted within a distance one furlong or 200 metres from the existing cinema hall.
- (e) Clean industry considering (performance characteristic has the following factors :-
  - (i) NOISE (ii) VIBRATION (iii) SMOKE (iv) DUST (v) ODOUR (vi) NATURE OF EFFLUENTS (vii) POWER (viii) EMPLOYMENT (xi) GENERATION OF VEHICULAR TRAFFIC (x) GENERAL NUISANCE (An indicative list of industries which can be permitted in residential area as given in Annexure-A).



- (f) Trade or other similar schools not involving any danger or fire, explosion, Noise, vibration, Smoke Dust, Heat or other objectional effluents.
- (g) Branch Office or Banks and local Offices of any public authority and Telegraphs Office.
- (h) Golf Club and green Houses.
- (i) Market Place with only vegetables, fruits, flowers, fish and meat and other connected day to day requirements
- (j) Theatre, Assembly or concert Halls, Dance and Music Halls and such other places of entertainment.
- (k) Electric Sub-Stations.
- (l) Neighbourhood shopping centre with goods offered for sale for day to day requirement and the use permissible under Cls. 1.6.2.1.C.
- (m) Monuments, Libraries.
- (n) Social and Cultural Institutions with adequate parking facilities.
- (o) Hospital and Sanatoria not treating contagious disease or mental patients, provided that no nuisance created and no part of the buildings except residential purpose is located less than 50 ft. from any plot line.
- (p) petrol filling stations.

1.6.2.1.C A building or premises with a shop line on a street in residential Zone may be allowed only for the following purposes subject to the conditions that:—

- (a) The additional uses permissible hereunder shall be restricted to a depth of 20 ft. or 6.0 metres and only the ground floor of the building in the front position abutting the street on which the shop line is marked.
- (b) Where the building or premises abutted on two or more street, no direct opening of such shops may be permissible on the street on which no shopping line is marked.
- (c) When the ground floor of such building or premises is allowed for shops under this clause the following use may be permitted:—
  - (i) Any use permitted in residential Zone.
  - (ii) Stores of shops for the conduct of retail business.
  - (iii) Branch Office of Banks, professional Offices, Local Offices of any public authority created by law.
  - (iv) Hair dressing Salloon and Beauty Parlours.
  - (v) Shoe repairing and Shinning Shcps.
  - (vi) Laundry and tailoring shops not employing more than five persons.



- (vii) Shop for Goldsmith, Watch and Clock repairs and picture framing.
- (viii) Radio and household appliances repair and Umbrella repair (not employing more than five persons).
- (ix) Tea stalls, Restaurants, and eating houses.
- (x) Uses permissible under (a), (b), (c), (d), (f), (g) and (h) of C/ 1.6.2.1.B.

1.6.2.1 D. Uses prohibited all other uses not specifically permitted herein.

#### 1.6.2.2 Regulation for Retail Commercial Line,

##### 1.6.2.2.A. Uses permitted.

- (a) Any use permitted in residential Zones with shop line.
- (b) Auto Supply stores and show room for motor vehicles and machineries.
- (c) Storage of furniture and household goods.
- (d) Club houses or other recreational activities conducted as business.
- (e) Places of amusement or assembly.
- (f) Places of Worship like Temple, Church, Mosque and Art galleries.
- (g) Dispensaries, Clinic and Veterinary Dispensaries and Hospitals.
- (h) Police Station and Out Post.
- (i) Post and Telegraph Offices and Fire Station.
- (j) Local Offices of any public authority created by law and professional offices.
- (k) Bank and Safe Deposit Vaults.
- (l) Municipal, State or Central Government uses but not Offices.
- (m) Hotels, Boarding and Lodging Houses, eating houses.
- (n) Printing press, book binding and block making with aggregate not more than five persons.
- (o) Cleaning and dyeing establishments.
- (p) Shops of all kinds, business Office and exchanges.
- (q) All other uses permitted under 1.6.2.1.A. and under (a), (b), (c), (d), (e), (f), (g), (h), (i), (j) 1.6.2.1.B and all under 1.6.2.1.C.
- (r) Photograph studios, and laboratories and radio broadcasting studios.
- (s) Pasteuring and milk processing plant not employing more than 10 persons and 25 horse power motive power.
- (t) Accessory building or uses customarily incidental to any permitted principal use including stores upto 50 per cent of the total floor area used for the principal use.
- (u) Public utilities and Municipal facilities.



1.6.2.2.B Uses permissible on appeal to the Authority :—

- (a) All type of industries that is permitted in residential area.
- (b) Petrol filling station and Kerosine stores.
- (c) Electric Sub-Station.
- (d) Coal, Wood and Timber yards.
- (e) Motor repairing garages.
- (f) Repair, Cleaning, Printing or light manufacturing using not more than 20 K.W Motive Power in total and employing not more than 10 persons.
- (g) Whole sale Godown and Ware Houses.
- (h) Taxi, Bus and Truck parking areas.
- (i) Service industries using motive power not more than 25 H.P. and not employing more than 15 persons.

1.6.2.2.C Uses prohibited :— All other uses not specially permitted herein.

1.6.2.3. Regulation for wholesale Commercial Zone.

1.1.2.3.A Uses permitted :—

- (a) Wholesale and Retail Shops.
- (b) Warehousing and godown which do not cause nuisance.
- (c) Residential dwelling and professional establishment.
- (d) All other uses permitted and permissible in the retail commercial Zone except Petrol filling station, Coal, Wool and Timber Yards.

1.6.2.3.B Uses permissible on appeal to the Authority :—

- (a) Truck terminals and parkings.
- (b) Service Industries which do not cause nuisance.
- (c) Petrol filling station, Coal, Wool or Timber Yards.

1.6.2.3.C Uses prohibited :—

- (a) Storage of Petroleum and other inflammable materials causing smoke, odour and other nuisances.
- (b) Storage of any materials causing dust and hazardous to public health.
- (c) Junk Yards.
- (d) All other uses not specifically permitted herein.

1.6.2.4 Regulations for light industry zone,



1.6.2.4.A Uses permitted—All type of Industries that are permitted in residential zone.

- (a) Warehouse and Godown.
- (b) Coal, Wool and Timber Yards.
- (c) Contractors Plant and Storage for building materials.
- (d) Bakeries, Confectionaries Ice Cream factories.
- (e) Automobile Service and repairing stations which motive power not exceeding 20 HP. provided the necessary parking spaces are available.
- (f) Power Laundaries.
- (g) Pasteurisation of milk, cream and butter.
- (h) Mechanical Workshop with lather, drills, grinder, spot, welding data with motive power not exceeding 20 HP.
- (i) Printing, Book Binding, Engraving and Block making.
- (j) Photo process, embroidery and lace manufacturing and cotton and silk printing arts and crafts, toy making, glass cutting, etching and polishing, custom, jewellerying and novelties.
- (k) Supari and masala grinding, cold storage metal polishing travel goods of canvas and water proof materials, steel slate, sewing machine (assembly), writing ink employing not more than 10 persons.
- (l) Handloom weaving, wooden packing cases and boxes wax products, wooling industrial goods basket and matel container, animal feed.
- (m) Iron rolling and wire netting with motive power not exceeding 75 HP.
- (n) Atta Chakki, Oil Mill and Flour Mill with a motive power not exceeding 75 HP.
- (o) Bus and Truck terminals and parking lots.
- (p) Service Industry.
- (q) Any other use in commercial zone except those specifically prohibited here under.
- (r) Accessory building or use customarily incidental to any permitted principal use.

1.6.2.4.B Use permissible on appeal to the Authority.

- (a) Leather products.
- (b) Fruits and Vegetables canning and preservations.
- (c) Saw milling
- (d) Light manufacturing, railing and grills manufacturing.
- (e) Petrol filling station.
- (f) Watchman or Caretaker's lodger.
- (g) Canteen and eating houses serving the industries.
- (h) All other light industry as defined by the Authority not involving any danger or fire explosion, noise vibration, smoke, dust, heat or other objectionable effluents.



1.6.2.4.C Uses prohibited:—

- (a) All uses not specifically permitted herein.
- (b) The Industries Associated with undesirable feature such as excessive smoke, stench, infurious, fumes, effluent and other hazards to health and safety of the people.

1.6.2.5 Regulation for medium industry zone:—

1.6.2.5.A Uses permitted—All use permitted or permissible on appeal to the Authority, in light industry zone.

1.6.2.5.B All other medium industry except those specifically prohibited here under:—

1.6.2.5.C Uses prohibited—The industries with undesirable features such as excessive, Smoke, Stench, infurious fumes, effluents and other hazards to the health of safety of the people.

1.6.2.6 Regulation for obnoxious industry zone.

1.6.2.6.A Uses permitted—All use permitted as per the list in a annexure II and those which are prohibited in other industrial use zone due to hazards to the health or safety of the people.

1.6.2.6.B Uses permissible on appeal to the Authority.

- (a) Public utilities and Municipal facilities.
- (b) Uses incidental to the main use.

1.6.2.6.C Use prohibited—All other uses not specifically permitted herein.

1.6.2.7 Regulation for public and semi public zone.

1.6.2.7.A Uses permitted.

- (a) State and Central Government Offices and other public and semi public building.
- (b) Educational and Research Institutions.
- (c) Social, Cultural and Religious Institutions.
- (d) Local and Municipal Offices.
- (e) Public utilities and Municipal facilities.
- (f) Musuems, Monuments' Arts galaries, Community Halls Libraries.
- (g) Building and uses incidental to the above permitted use.
- (h) Taxi Stand and Bus Stand.



1.6.2.7.B Uses permissible on appeal to the Authority.

- (a) Residence.
- (b) Restaurants, Milk Bars.
- (c) Any other uses incidental to main use and in no way causing any nuisance or hazards.
- (d) Radio and wireless Station.

1.6.2.7.C Uses prohibited—All other uses not specifically permitted herein.

1.6.2.8 Regulation for recreational and open space zone.

1.6.2.8A Uses permitted.

- (a) All public and semi public recreational uses including Parks, Play grounds, Park ways and other special recreational areas.
- (b) Stadium.
- (c) Swimming pools, Club and Gymnasium halls.
- (d) Botanical and Zoological Parks and Gardens.

1.6.2.8.B Uses permissible on appeal to the Authority.

- (a) Restaurant and selling of eatables.
- (b) Public utilities and Municipal facilities.
- (c) Uses clearly incidental to recreational use which will not create nuisance or hazards.
- (d) Residence in the new proposed areas.

1.6.2.8.C Uses prohibited all uses not specially permitted herein, conversion of use in prohibited in case of existing area.

1.6.2.9 Regulation for Urban Agriculture and Conservation 'B'.

1.6.2.9.A Uses permitted.

- (a) All agricultural uses and horticulture.
- (b) Gardens and forestry.
- (c) Golf-links and Club houses.
- (d) Public and Private parks, play fields.
- (e) Dairy and Poultry farming.
- (f) Farms houses and their accessory building and their uses.
- (g) Churches, Mosque, Temples and other place of worship.
- (h) Processing and sale of farm products on the property where produced the servicing and repair of farm machineries and the sale of agriculture products.
- (i) Film studios of temporary nature.
- (j) Fish curing.



- (k) Stone, crusher of quarrying
- (l) Sand, Clay or gravel quarrying.
- (m) Storage and drying of fertilizers.
- (n) In general, those uses which do not require the erection of building, except temporary building for accessory use and when they are obnoxious or offensive by reason of emission of odour, dust, smoke gas, noise, or vibration they shall be located atleast 100 ft. from boundary of plot.
- (o) Tourist facility including lodging and boarding with only 25 p.c. coverage.

#### 1.6.2.9.B. Uses permissible on appeal to the Authority.

- (a) Milk chilling stations and pasturing plants.
- (b) Rural cottages, boarding houses and hostels, scientific and industrial research laboratories not to be operated for production of goods or other materials for sale, except as may be produced by pilot plants, provided there is not nuisance or hazards.
- (c) Cottage industries brick making, excavation of clay, gravel topsoil and other earthen materials sewerage treatment plants, trenching ground.
- (d) Landing fields for plants and helicopters and its necessary appurtenances.
- (e) Utilities and their buildings.
- (f) Area needed for defence purposes.
- (g) Wireless transmitting and weather stations.
- (h) Any irrigation or Flood control works.
- (i) Cemeteries crematorium and burial grounds.
- (j) In case of existing village in this zone the normal expansion of the village including rural housing community facilities and other service facilities would be allow or upto a physical boundary to be fixed by the Authority.

#### 1.6.2.9.C Uses prohibited.

- (a) All use not specially permitted herein.
- (b) The parcelling out of land in this zone for the purpose of Urban housing shall be absolutely prohibited.

1.6.2.9.D Customarily home occupation shall be conducted only by a person resident in the dwelling, the area for such uses shall not exceed 25 pc. of the total floor area of the dwelling, there shall be no public display of goods.

1.6.2.9.E Transient visitors camp shall face on a drive way of atleast 30 ft. or 90 mts. wide and shall have unobstructed, well drained plainly marked and adequately lighted access to a public street. Adequate sanitary and water supply facilities shall be provided for males and females.



- 1.6.9.10 Regulation for Conservation 'A' Zone : No activities other than forestry shall be permitted.
- 1.7 Exception and modification,
- 1.7.1 Exception of height, yards and set back limit.
- 1.7.2.1 The height limitation of these regulation shall not apply to churches, schools, hospitals and other public and semi public building, provided that the minimum depth of front and rear yards and the minimum widths of the side yards required in the zone are increased by 1 ft. or 304.8 mm per foot or metre by which the height or such public or semi public structure exceeds the height limits in feet or metre prescribed for other structure in the zone.
- 1.7.1.2 Chimneys, elevators, poles, spires, overhead water tanks and other such projections not used for human occupation, or appeal to the authority.
- 1.7.1.3 Stops, gallery or balcony, weather frame, sun breaker, cornice caves, window sills, or other ornamental projection may project into any yards provided this will not reduce the required open space in the front, sides and rear as prescribed in these regulations, on appeal to the authority.
- 1.7.1.4 In any zone, on plots less than 60 ft. or 18 mts. deep, the rear yard may be reduced by one percent for each feet or 304.8 mm if the plot depth is less than 60 ft. or 18 mts.
- 1.7.1.5 Not withstanding any thing contained in these regulations the from set back in any zone can be prescribed by the authority in persuance of any strict scheme.
- 1.7.1.6 Height of compound walls in all zones specified in these regulations shall not exceed 5.6 ft. or 1.65 mts. from the ground level.
- 1.7.2 Group project.
- 1.7.2.1 In case of Group Housing Project containing a group of twenty or more building notwithstanding any thing contained in the regulations, the authority may prescribe special requirement in harmony with the character of zone.
- 18 Sub-Committee on Zoning Appeals.
- 18.1 Sub-Committee shall be constituted from out of the Members of Authority by the Chairman and if not authority unconstituted in such cases by the Director of Urban Affairs which shall be called the "Sub-Committee on Zoning Appeals".



- 1.8.2 The Sub-Committee shall consist of atleast five members. The Chairman of the Authority and the Director of Urban Affairs or his nominee, the Town Planning Officer of the Authority and two other members of whom one representing the District head shall be the members subject to the approval of the Authority. When the authority is superseded the Administrator or when no authority is constituted the D.C./S.D.O. or his nominee the, Urban Affairs or his nominee, the Town Planning Officer of the authority and two other members are of whom representing the local authority and the other District convert to be nominated by the State Government shall be the members.
- 1.8.3 The Chairman, Administrator, D.C./S.D.O. or his nominee or in his absence Director Affairs or his nominees shall prescribed over such meeting and the quorum shall consist of atleast 3 members.
- 1.8.4 The Chairman, or the Administrator or when no authority is constituted the Director, Urban Affairs or his nominee shall convene such meeting of the Sub-Committee of Zoning, which will meet once in a month to consider any case of zoning appeals.
- 1.8.5 The Sub-Committee shall have the power to grant varience, with respect to front rear and side yard of building height and area requirement. If at the time of adoption of these regulations a plot of land is smaller than the minimum size specified for the land in which it is located and compliance with front, rear side yard and height and area regulation is not feasible because of topography or other special consideration the case may be brought before the Sub-Committee or Zoning appeals. This Sub-Committee can grant varience and permission given with such modification as are necessary but should conform as closely as possible to the requirement specified for the zone in which the plot is located. In all cases, the particular reason for the varience should be recovered by the Sub-Committee.
- 1.8.6 The Sub-Committee on Zoning Appeals shall not have the power however to grant use varience there a change of use other than that specified in the zone in which the plot is located is permitted.
- 1.8.7 Penalties :- Every person, firm body or Corporation who commits or knowingly permits a break of any specified provision of the Master Plan and Schemes repared there under and foregoing zoning regulations or who neglects or fails to comply with any such provisions, shall be punishable as provided in the Assam Town and Country planning Act, 1959 (as amended) and as adopted by Meghalaya.



## ANNEXURE I

**An indicative list of industries which could be permitted in Residential Zone.**

(As stated in Article 1.6.2.1.B)

1. Cosmetic produces.
2. Agarbatti
3. Writing ink
4. Sealing wax.
5. Watch repairing, pen and spectacles repairing
6. Acrylic sheet button.
7. Plastic covers (Diary, files etc.)
8. Knitted plastic bags.
9. Shoe repairing and manufacture.
10. Rubber stamps.
11. Rubber moulded good.
12. Food products-bakeries etc.
13. Creamery and dairy products.
14. Atta chakki and musala grinding.
15. Repacking of medicines etc.
16. Paper products.
17. Card board boxes, paper bag making, etc.
18. Book binding.
19. Printing press with aggregate motive power not exceeding 10 KW and not employing more than 10 persons
20. Readymade garments.
21. Batic painting.
22. Embroidery.
23. Watch straps (Nylon).
24. Canvas bags or products,
25. Hosiery items.
26. Surgical bandages.
27. Shoe laces etc.
28. Thread reels.
29. Tailors tabs.
30. Mirror and frame making.
31. Decorative glass articles.
32. Chalk sticks.
33. Tailors shop.
34. Cycle repairing shop.
35. Basket making



36. Wire brushes.
37. Umbrella assembly.
38. Wooden toys.
39. Paper pins, gum, clips.
40. Hairpins.
41. Wire staples.
42. Wire stand for kitchen.
43. Wire for curtains.
44. Wire loppers.
45. Decorative key rings.
46. Link Clips.
47. File clips.
48. Shoe and tents eyelets.
49. Brass jewellery.
50. File cover accessories.
51. Garments hooks and eyes.
52. Link chains.
53. Heating elements (for domestic electric appliances).
54. Decoration lighting series.
55. Transistor radio covers.
56. Decorative leather goods.
57. Industrial leather handgloves
58. Manufacture of bidi.
59. Processing of suparis.
60. Laundry, dry cleaning and dying.
61. Cotton cloth weaving and handlooms.
62. Ivory carvings.
63. Metal polishing.
64. Gold and Silver, thread, Zari work, jewellery gold or nit.
65. Manufacture, repairing and tuning of musical instrument.
66. Making of lac bangles.
67. Repairing of electronics instruments.
68. Assembly of furniture units.

#### Use of Map :-

1. Administration Boundaries.
2. Proposed land use.
3. Proposed circulation pattern.
4. Propose Zoning plan.