URBAN DEVELOPMENT DIRECTORATE
MINISTRY OF WORKS
GOVT. OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LAND USE/MASTER PLAN
PIRGANJ PAURASHAVA
THAKURGAON ZILA

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MAY 1991

PROKAUSHALI SANGSAD LIMITED
131, Motijheel Commercial Area
Dhaka-1000, Bangladesh.

TO WHOM IT MAY CONCERN

The under signed has carefully reviewed and checked the Landuse/Master Plan prepared by M/S. Prokaushali Sangsad Limited 131, Motijheel C/A, Dhaka-1000 and found it to be acceptable.

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CHAPTER ONE : INTRODUCTION

1.0 INTRODUCTION

The Government has decided to delegate authority and devolve administrative and development functions at the Upazila level. This is endivisaged to help identification planning and development of project which would ensure orderly upazila development over a period upto 2000 A.D. The implications of the process of decentralisation are : a) reduction of dependence of rural population on National Government for meeting the needs which can be dealt locally, b) mobilisation and utilisation of local resources which have so far remained untapped and c) reducing the direct involvement of the Central Government on planning and implementation of projects which have primarily local significance. The ;Upazila headquarters plan is seen by the Government as a part of appropriate physical plans for all the upazilas. Such physical plan will indicate optimum use of land initially in the upazila headquarters or paurashava.

It is hoped that at a later phase there will be physical plans for the whole upazila reserving necessary land for road and waterway networks, irrigation canals, power supply, educational institutions and commercial and loading establishments [1]. In practical terms the landuse plan would allow for the future guideline/provision of urban services in a planned manner.

---

[1] Manual on Upazila Administration, Govt. of Bangladesh 1983.

1.1 OBJECTIVE

Report IV presents the Final Land Use Plan. The plan aims at providing guidelines for the development of future township of Pirganj Paurashava in Thakurgaon Zila. It also gives a background study of the upazila in respect of population, human settlements hierarchy, services and transportation system in the context of the zila. The present study and the plan shall eventually help the Government's policy of administrative decentralization. According to the local administration, decentralization ordinance (1982) and its amendment (1983) is going to bring about incremental changes in the quality of life of the rural people. The study of population, and certain economic aspects (assumed distributive pattern of the incremental population upto 1990 and beyond 2000 A.D) would provide a preliminary canvas towards more specific objectives of regional planning.

1.2 GENERAL METHODOLOGY

The general methodology of physical planning process can not be over simplified. Spatial features are to be considered in the adoption of methodology. Firstly the logical study area is identified and then the future urban area is defined which will be economically viable and socially acceptable for development.

Identification of Study Area

The study area has been identified by locating urban and semi-urban functions around the Upazila Parishad Complex/Paurashava Office. Generally, this results in a very large study area with low density of population. Further, the cost per capita would be extremely high and therefore not feasible for successful urban development. On the other hand an urban area too small cannot support development process and retard the growth.

This has been resolved by a compromise between the two opposing issues. However, this is difficult. The land use survey map indicating localization of administrative functions, projected population of the study area, population of the catchment area (for a number of cases) within 2.5 to 3 miles, indicate an economically sound gross density level that have been considered in determining the urban planning area within the study area. Sometimes, the limits of the planning area may coincide with the study area.

Identification of Sphere of Influence or the Catchment Area

The Catchment area is the immediate hinterland from where people commute daily for shopping, marketing,, employment, health, education, etc. In rural situation this area falls normally within a radius of 2.5 to 3 miles.

The survey was conducted on the following aspects :

C1. Land Use Survey
C2. Socio-economic Survey
C3. Hierarchy of Settlement Survey
C4. Updating with the help of BWDB contour map, 200 acres of land in and around the upazila complex.

These are briefly discussed in the following sub-paragraph :

a) <u>Land Use Survey</u>

Land use survey was carried out with the help of Mouza Maps (Scale 1" = 330').

The survey included plot to plot survey, locating the following aspects as given in the TOR :

1. Commerce and Industry
2. Education
3. Health
4. Administrative Govt. Depts. Cantonment etc.
5. Recreation
6. Socio-cultural
7. Urban Services
8. Residential
9. Urban Deferred
10. Reserve

b) <u>Socio-economic Survey of Study Plan Area</u>

This survey was carried out with the help of questionnaire and the following aspects were covered :

1. Household size, age, sex, education
2. Occupation, income, expenditure and others
3. Migration
4. Community facilities
5. Transportation facilities
6. Food habits
7. Recreational facilities
8. Clothing etc.

A random sample survey of 10 percent of all occupation groups have been recorded for the study area. The data gives the estimate of the total number of population and their socio-economic characteristics. The survey shall provide a bench mark for future planning and indicate the pattern of land uses that is necessary at present.

c) Hierarchy of Settlement Survey

The Hierarchy of settlement has been determined on the basis of concentralization of services, and population size. In this connection the Upazila Statistical Officer of Bangladesh Bureau of Statistics stationed at the upazila shahar has been consulted. Growth points have been identified with their transport links as available from the recent maps prepared by Roads and Highways Department and the Upazila Engineering Office. In this process scoring method is adopted for analysing different settlements and listing them according to highest scores (Map-2).

d) Updating 200 acres of Land in and around the Upazila Complex with the help of BWDB Contour Map

The map was collected from BWDB for the town service centre (200 acres around the upazila complex/paurashava area) for updating it with respect to both land form and man made structures with all the main buildings identified and named by field checking and sketching on map (Map-4).

Data Processing

Raw data of all socio-economic survey and settlements of hierarchy have been recorded and necessary tables prepared.

Analysis

The analysis is designed towards formulation of ideas and concept building on land use Master Planning. Practically, this means the level of services available : demography, expenditure pattern, human settlements distributive pattern on the basis of socio-economic survey and the spatial distribution of all existing land uses, road network, and local physical conditions.

Forecasting

Population forecasting is calculated by the following methods :

Historical Trend

It is applicable in the sphere of influence or catchment area. The base year considered for the period of 1961 to 1981. For high projection the growth rate period is 1974-81 and for medium projection the period is 1961-81 and for low projection the period is 1961-74.

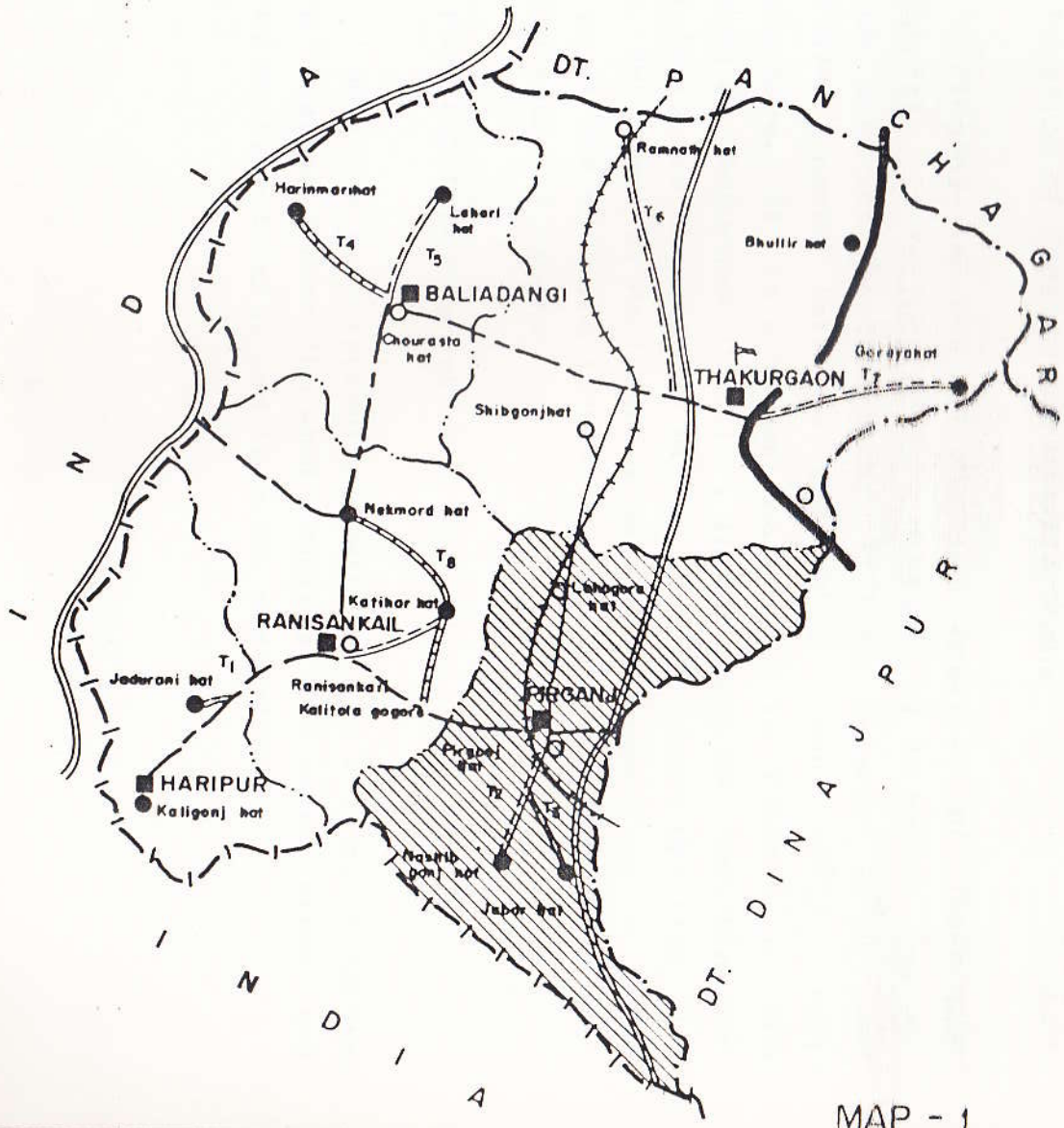
Land Use/Master Planning

Quantum of land for different uses have been sectorally allocated on the guidelines already available. Economic use of land, phased development with road transportation network are woven together with the urban form and structure. Estimates of cost and sources of funds for construction and maintenance have been indicated.

Project Identification

Both economic and population projections throw light on the sectoral and subsectoral development projects. These includes all administrative, physical and social infrastructure, recreation, and transportation.

DISTRICT MAP SHOWING PROJECT UPAZILA(PIRGANJ)
DISTRICT THAKURGAON



MAP - 1

LEGEND

- International Boundary
- District Boundary
- Upazila Boundary
- District Head Quarter
- Upazila Head Quarter
- Growth Centres
- Growth Centres (Proposed for Development)
- Major Rivers
- Railway Line
- R & H Road
- Feeder Road Type - A
- Feeder Road Type - B
- Feeder Road Type - B (Proposed - WBM)
- Feeder Road Type - B (Proposed Carpetting)
- Project Upazila

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SCALE : 1" = 4 MILE

CHAPTER TWO : UPAZILA IN ITS ZILA CONTEXT

2.0 UPAZILA PIRGANJ IN THE CONTEXT OF ZILA THAKURGAON

2.1 LOCATION AND PHYSICAL CHARACTERISTICS OF THE UPAZILA

Brief History

The thana in the original shape came in existence in 1918. In the past, a large number of 'Pirs' (Saints) came to the present place of the upazila in order to preach Islam. It is gernerally believed that the name 'Pirganj' has been derived from the word "Pir".

Location of Upazila and Upazila Shahar

Pirganj is one of the five Upazilas of Thakurgaon district. It is located at a distance of 42 km (26 miles) from district headquarters. It lies between $25^{0}40'$ and $25^{0}59'$ north latitude and $88^{0}15'$ and $88^{0}22'$ east longitude. It is a border upazila and is bounded in the north by Thakurgaon Upazila , in the south by West-Dinajpur of India, in the east by Birganj and Bochaganj Upazilas and in the west by Ranisankail Upazila. It comprises a total area of 384.40 sq.km (148.40 sq. miles) including an area of 2.10 sq.km of river.

Physical Characteristics

Soils of the Piedmont alluvium plains of various series are scattered over the whole Upazila. The mixed brown and grey soils with clay and loam are prevailing.

Population Characteristics

According to 1981 population census the total population of the Upazila was 1,68,367 out of which 87,269 were males and 81,098 females. There are 108 males for every 100 females in the Upazila as against 107 for the district. About 5.3 percent of the district population live in this Upazila in an area of 5.9 percent of the district. The population density of the Upazila as calculated in 1981 census shows that there are 438 persons per sq.km as against 487 persons for the district and 605 persons for the nation. About 48.0 percent of the total population belong to the ages group of less than 15 years, whereas 46.8 percent of the total population are voters or above 18 years of age. Dependency ratio for this Upazila is found to be 103 for every 100 population of the age group 15-64.

Literacy, School Attendance and Broad Occupation

Literacy rates for the age group 5 years and over are 19.0 percent for both sex, 27.9 for male and 9.3 for female as against the district rate of 21.6 percent for both sex, 30.7 for male and 11.8 for female. The literacy rates for all ages are 16.8, 17.2 and 15.5 percent for 1961, 1974 and 1981 respectively. There are 13,060 households (about 43.0 percent) with at least one literate person and 4,382 households (about 14.5 percent) with at least one literate female. The definition of literacy used in 1981 census is stricter than the definition of literacy followed in previous censuses. A person who could write a letter in any language was considered literate in 1981 whereas a person who could only read or write in any language was considered literate in earlier censuses.

School attendance in the age group 5-24 are found to be 19.8, 25.2 and 14.2 percent for both sex, male and female respectively. Main activity classification shows that 37.9, 1.7 and 0.5 percent of population aged 10 years and over are engaged in agriculture, business and manufacturing activities respectively.

Urbanization

The urban area of this Upazila covers 7.8 sq. km of area with 8,437 population. According to 1981 census 5.0 percent of total population of the Upazila live in urban area which is 2.0 percent of the Upazila area. There are 119 males for every 100 females in this urban locality with a density of 1,082 persons per sq.km. The upazila urban population accounts for only 3.1 percent of the district urban population. The literacy rates as found in 1981 census for the age group five years and over are 29.1, 37.1 and 19.3 percent for both sex, male and female respectively.

Transport and Communication

The Upazila is connected with the district headquarters by road. The basic means of transports available in the Upazila are rickshaw, cycle and motor-cycle. The Upazila headquarters is connected with most of the union parishads by kutcha roads. There are 31 km metalled and 702 km unmetalled roads and 8 post offices and 1 telegraph office in the Upazila.

Public Health Facilities

There are 1 hospital, 3 dispensaries/clinics with 10 beds and 17 doctors and 9 paramedics in this Upazila. This shows that there is one doctor, one bed, one paramedic and one clinic available for every 9,904; 16,837; 18,707 and 56,122 persons respectively in the Upazila.

Educational Institutions

There are 1 college, 22 high/junior high schools, 13 madrashas and 85 primary schools in this Upazila. This shows that there is one college, one high/junior high school, one madrasha and one primary school for every 28,003 persons in the age group of 15-24 years; 955 persons in the age group of 10-14 years and 5,991 persons in the age group of 5-24 years respectively. The teacher-student ratios in college, high/junior high school, madrasha and primary school are 31, 25, 29 and 60 respectively.

Hat and Bazar

There are 47 hats/bazars in this Upazila. This indicates that there is one hat/bazar for every 3,582 persons in the Upazila.

Other Facilities

Currently electricity and sanitary facilities are available at the Upazila headquarters. Out of 181 villages of the Upazila, 5 villages have so far been provided with electricity. This indicates that 2.8 percent of the total villages of the Upazila have electricity facilities.

Special Features and Historical Relics

The Upazila is connected by rail and road with the district headquarters. The place borders with the west-Dinajpur of India with some tribal population in it. Rice is abundantly grown here. There is an old tank of historical importance.

2.1.13 The Upazila at a Glance

DESCRIPTION	UPAZILA
1. AREA	
including River	
In sq.km	384.4
In sq. mile	148.4
2. DENSITY	
Including River	
Persons per sq.km	438
Persons per sq. mile	1135
3. HOUSEHOLD	
Number of Household	
Total	30,277
Urban	1,418
Rural	28,859
Size (in dwelling unit)	
Total	5.5
Urban	5.6
Rural	5.5
4. POPULATION	
Total : Both sex	168,367
Male	87,269
Female	81,098
Urban : Both sex	8,437
Male	4,583
Female	3,854
Rural : Both sex	159,930
Male	82,686
Female	77,244
Urban Population (Percent)	5.0
Sex Ratio (100 M/F)	
Total	108
Urban	119
Rural	107

Contd.....

DESCRIPTION		UPAZILA
5.	LITERACY RATE (5 YRS. & OVER)	
	Total : Both Sex	19.0
	Male	27.9
	Female	9.3
	Urban : Both sex	29.1
	Male	37.1
	Female	19.3
	Rural : Both sex	18.5
	Male	27.4
	Female	8.8
6.	EDUCATIONAL INSTITUTION	
	College	1
	High/junior high school	22
	Primary school	85
	Madrasha	13
7.	RELIGIOUS INSTITUTIONS	
	Mosque	330
	Temple	10
	Church	1
8.	COMMUNICATION	
	Road in km	
	Metalled	31
	Kutcha	702
	Rail road in km	19
9.	ADMINISTRATIVE UNIT	
	Union	11
	Mouza	178
	Village	181
	Municipality	-
	Ward	-
	Mahalla	-

2.2 POPULATION AND SETTLEMENT DISTRIBUTION

Population

The following Table-1 shows in a nutshell the position of upazila Pirganj in the context of zila Thakurgaon.

TABLE 1 : STATUS OF UPAZILA PIRGANJ IN ZILA THAKURGAON IN RESPECT OF POPULATION

Zila and Upazila	Area in Sq.Mile (%)	Area in Sq.Mile (%)	Population 1961 (%)	1974 (%)	1981 (%)	Density per (Sq.M/Sq.Km 1981)
1	2	3	4	5	6	7
Zila Thakurgaon	699	1810	412187	633331	817732	1170/452
	(100)	(100)	(100)	(100)	(100)	
Upazila Pirganj	152	394	91560	144669	168367	1108/427
	(21.75)	(21.75)	(22.21)	(22.84)	(20.59)	
All Other Upazilas	547	1417	320627	488662	649365	1187/458
	(78.25)	(78.29)	(77.79)	(77.16)	(79.41)	

Source : Dinajpur District Statistics 1983, Bangladesh Bureau of Statistics, Government of Bangladesh.

Note : Figure in Parenthesis indicates percentage.

From 1961 census period, the population of Thakurgaon Zila has been showing a sharp incremental trend. From Table-1 it is indicated that the population of 1961 shows the increasing trend about double from 412187 (1961) to 817732 (1981). The sharply increasing trend is the result of migration of people to zila and upazila shahar/paurashava.

2 Settlement Distribution

Distribution of settlements has been studied in terms of (1) share of number mouzas and their local government organisation, i.e., number of union parishad and (2) pattern of distribution, in the upazilas, and in the context of zila.

a) Share of Mouzas

The following table shows the share of mouzas by the upazilas in the context of zila (villages are integral parts of revenue mouzas).

TABLE 2 : SHARE OF MOUZAS BY UPAZILAS (1981)

Zila and Upazila	No. of Mouzas	%	No. of Unions	%
1	2	3	4	5
Thakurgaon Zila	651	100	49	100
Pirganj Upazila	180	27.65	11	22.45
All Other Upazilas	471	72.35	38	77.55

Source : Dinajpur District Statistics 1983, Bangladesh Bureau of Statistics, Government of Bangladesh.

b) Settlement Distribution Pattern

There are several aspects. Areas close to the Thakurgaon-Pirganj sparsely developed, while the areas away from the main road have larger settlements. The settlements in the flood plains have grown on raised lands, along the levees of the rivers, and beside the railway line. The urban settlements viz. Pirganj and Thakurgaon and all major settlements occur along the road networks, and along the railway lines.

2.3 CURRENT DEVELOPMENT PROJECT

Zila and Upazila

Current development projects from the sources of the Upazila Parishad and sector agencies (as available at upazila and zila levels) are listed below (Table 3). The development projects are prepared according to the guideline supplied by the Planning Commission. The implementation of the projects are rapid.

TABLE 3 : CURRENT DEVELOPMENT PROJECTS, 1989-90

Sl.No	Name of Projects	Estimated Cost	Progress %
1.	Agriculture and Irrigation	1,09,980.00	90%
2.	Small and Cottage Industries	77,485.00	80%
3.	Transport and Communication	4,90,037.00	80%
4.	Housing Development	96,197.50	75%
5.	Education Development	68,712.50	95%
6.	Health and Social Welfare	68,712.50	100%
7.	Sports and Culture	13,742.50	85%
8.	U.P. Physical Works	3,00,000.00	90%
9.	Miscellaneous	68,732.50	-
	Total :	13,09,000.00	

Source: Office of the Upazila Engineer, Pirganj, Thakurgaon.

2.4 SYNTHESIS : IDENTIFICATION OF HIERARCHY OF SETTLEMENTS IN THE UPAZILA

Indicators of Settlement Hierarchy

In Bangladesh, socio-economic functions are not concentrated in one centre nor they are found completely dispersed. For this reason the hierarchy of settlements should not be determined on centre basis, Mouza-wise consideration of functions will have specific locations. Therefore, it would be better to analyse the data for determination of hierarchy of settlements on Mouza basis.

In determining the hierarchy of settlements, 18 main socio-economic indicators have been selected (Table No. 4). Data on these indicators on Mouza have been collected from the Upazila headquarters. The distribution of socio-economic indicators on Mouza basis has been shown in Table No. 6.

The selected socio-economic indicators have been given assumed weightage for each (Table No. 5). According to the given weights, the gravity of each function located in each Mouza have been calculated (Table No. 5). Finally, the total weight, of each Mouza have been found out. According to the weight ranking has been made. They are connected with shortest road linkages with Upazila shahar.

TABLE 4 : INDICATOR OF SETTLEMENT HIERARCHY AND WEIGHTS

Sl. No.	Infrastructures	Abbreviation	Weight
1.	Public Institution	Pi	5-10
2.	Commerce	Ch	1-5
3.	Industrial Establishment	In	1-5
4.	Police Station	Ps	1-5
5.	Health and Welfare	Hw	1-5
6.	College	Ec	5-10
7.	High School	Eh	3-6
8.	Primary School	Ep	1-2
9.	Post Office	Po	1-5
10.	Telegram and Telephone	Tt	1-5
11.	Electricity	Et	2-5
12.	Religius Institution	Ri	1-5
13.	Road (Pucca)	Rp	1-5
14.	Station (Rail, Water, Bus)	St	1-5
15.	Recreation (Park, Playground)	Re	1-5
16.	Bank	Bk	1-5
17.	Area 500 Acres	Ar	1-6
18.	Population 500 persons	Pn	1-6

Categories of Settlement according to weightage method, (for detail Table 5 may be seen)

i) Category - A (90 and above points)
ii) Category - B (40 to 60 points)
iii) Category - C (24 to 39 points)

Categories of Settlement according to weightage method, (for detail Table 5 may be seen)

i) Category - A (90 and above points)
   a) Jagatha

ii) Category - B (40 to 60 points)

   a) Velatair b) Bhomradaha c) Raghunathpur
   d) Paschim Begunbari e) Uttar Madhabpur

iii) Category - C (24 to 39) points

   a) Uttar Malancha b) Khangaon c) Kasna
   d) Daulatpur e) Chandria

TABLE 5 : DETERMINATION OF HIERARCHY OF SETTLEMENT BY WEIGHTAGE METHOD

Name of Mouzas	Pi	Ch	In	Ps	Hw	Ec	Eh	Ep	Po	Tt	Et	Ri	Rp	St	Re	Bk	Ar	Pn	Total	Rank
Jagatha	10	5	5	5	5	10	6	2	5	5	5	5	4	4	5	4	4	5	94	1st
Bhelatair	8	5	5	-	-	-	5	2	5	-	5	4	-	4	-	4	5	5	57	2nd
Raghunathpur	-	5	5	-	-	-	5	2	-	-	5	4	-	-	4	4	4	4	42	4th
Bhomradaha	-	5	-	-	5	-	5	2	5	-	5	4	-	-	4	4	4	4	47	3rd
Uttar Madhabpur	-	-	-	-	5	-	5	2	5	-	5	4	-	-	4	4	3	3	40	5th
Paschim Begunbari	-	-	-	-	5	-	5	3	5	-	4	4	-	-	4	4	5	3	42	4th
Uttar Malancha	-	-	-	-	5	-	5	2	5	-	4	4	-	-	4	4	3	3	39	6th
Khangaon	-	-	-	-	-	-	5	-	5	-	4	4	-	-	4	4	5	4	35	7th
Chandria	-	-	-	-	-	-	5	-	-	-	-	-	-	-	4	4	4	3	24	9th
Karna	-	-	-	-	-	-	5	-	4	-	-	4	-	-	4	4	2	2	25	8th
Daulatpur	-	-	-	-	-	-	5	-	4	-	-	4	-	-	4	4	2	2	25	8th

TABLE 6 : LIST OF INDICATORS OF SETTLEMENT HIERARCHY

Name of Mouzas	Pi	Ch	In	Ps	Hw	Ec	Eh	Ep	Po	Tt	Et	Ri	Rp	St	Re	Bk	Ar	Pn
Jagatha	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	443	2856
Bhelatair	1	1	1	-	-	-	1	1	1	-	t	1	-	1	-	1	1111	2638
Raghunathpur	-	1	1	-	-	-	1	1	-	-	t	t	-	-	1	1	670	4333
Bhaaradaha	-	1	-	-	1	-	1	1	1	-	1	1	-	-	1	1	1613	4411
Uttar Madhabpur	-	-	-	-	1	-	1	1	1	-	1	1	-	-	1	1	376	526
Paschim Begunbari	-	-	-	-	1	-	1	2	1	-	1	1	-	-	1	1	2414	3495
Uttar Malancha	-	-	-	-	1	-	1	1	1	-	t	1	-	-	1	1	576	1163
Khangaon	-	-	-	-	-	-	1	-	1	-	t	1	-	-	1	1	1002	1804
Chandria	-	-	-	-	-	-	1	-	1	-	-	1	-	-	1	1	1249	1964
Karna	-	-	-	-	-	-	1	-	1	-	-	1	-	-	1	1	422	2167
Daulatpur	-	-	-	-	-	-	1	-	1	-	-	1	-	-	1	1	335	476

CHAPTER THREE : THE UPAZILA SHAHAR/PAURASHAVA

3.0 THE UPAZILA SHAHAR AND SPHERE OF INFLUENCE

3.1 DEFINITION OF THE SPHERE OF INFLUENCE

The sphere of influence is the immediate hinterland from which people commute to the upazila shahar daily for all consumer goods and social services, except housing. In the rural situation this area falls generally within a radius of 2.5 to 3 miles. In the case of Pirganj a 3 miles radius has been adopted. The boundaries of the Catchment Area are not however a complete circle, because of the influence of 'hats' which also have their individual zones of influence, and the transportation corridors through which people commute from places generally over 3 miles. There are 22 mouzas within the sphere of influence of Pirganj as shown on Map-2. Area and population changes during 1961-81 are shown in Table 7.

3.2 DEFINITION OF THE SHAHAR AREA

The headquarter area will be the future planning area or the future upazila shahar/paurashava. This area has been finally determined in chapter-IV (Paragraph 4.3). Population and area included from the constituent mouzas are given in Table 8.

TABLE 7 : POPULATION AND AREA OF INFLUENCE (CATCHMENT AREA)

Name of Mouzas	Total Area		Involved Area		Total Population			Involved Population		
	Acres	(Hectares)	Acres	(Hectares)	1961	1974	1981	1961	1974	1981
Bhelatair	111	(449.62)	625	(252.94)	1428	1620	2638	1428	1134	1484
Birhali	616	(249.30)	616	(249.30)	921	2635	1521	921	2635	1521
Machlandapur	510	(206.40)	510	(206.40)	343	447	516	343	447	516
Chapar	542	(219.35)	542	(219.35)	354	547	722	354	547	722
Guagaon	496	(200.73)	246	(99.56)	381	634	973	192	315	483
Paria	220	(89.03)	220	(89.03)	126	137	213	126	137	213
Bansgara	691	(279.65)	691	(279.65)	390	575	872	390	575	872
Bhakura	725	(293.41)	482	(195.07)	1313	1959	2376	873	1302	1580
Begungaon	538	(217.73)	538	(217.73)	736	947	1227	736	947	1227
Sinuya	452	(182.92)	452	(182.92)	1294	1961	2270	1294	1961	2270
Narayanpur	1017	(411.58)	017	(411.58)	927	1408	1717	927	1408	1717
Khasar Narayanpur	117	(44.35)	117	(47.35)	307	441	475	307	441	475
Durgapur	220	(89.04)	220	(89.04)	309	445	584	309	445	584
Bathpaligaon	774	(313.24)	622	(251.72)	1111	1512	1901	893	1215	1528
Sindulla	284	(114.94)	284	(114.94)	101	148	183	101	148	183
Purba Hajipur	149	(60.30)	149	(60.30)	52	58	113	52	58	113
Bishnupur	446	(180.50)	446	(180.50)	355	512	796	355	512	796
Seguni	572	(231.49)	572	(231.49)	415	528	699	415	528	699
Uttar Noapara	184	(74.47)	184	(74.47)	318	387	493	318	387	493
Joykur	431	(174.43)	431	(174.43)	335	500	494	335	500	494
Basandi	440	(178.07)	440	(178.07)	540	757	900	540	757	900
Total :	9,535	(3,546.17)	8,404	(2,886.34)	12,056	18,158	21,683	11,209	16,399	18,870

Source : Population Census Report of 1961, 1974 and 1981 of BBS, Government of the People's Republic of Bangladesh.

TABLE 8 : POPULATION AND AREA OF THE STUDY PLAN MOUZAS

Name of Mouzas	Total Area		Involved Area		Total Population			Involved Population		
	Acres	(Hectares)	Acres	(Hectares)	1961	1974	1981	1961	1974	1981
Bhelatair	1111	(449.69)	486	(196.68)	1428	1620	2638	629	462	1154
Guagaon	496	(200.73)	250	(101.18)	381	634	973	192	319	490
Mitrabati	315	(127.48)	315	(127.48)	438	892	1248	438	892	1248
Raghunathpur	670	(271.15)	670	(271.15)	1360	3371	4333	1360	3371	4333
Jagatha	943	(381.63)	943	(381.63)	1215	1762	2856	1215	1762	2856
Bhakura	725	(293.41)	243	(98.34)	1313	1959	2376	440	657	796
Bathpaligaon	774	(313.24)	152	(61.52)	1111	1512	1901	218	297	373
TOTAL	5034	(2037.26)	3059	(1237.98)	7,246	11750	16325	4,492	7,760	11,250

Source : Census Report of 1961, 1974 and 1981 of Dinajpur District, BBS, Government of Bangladesh.

3.3 EXISTING LAND USE PATTERN

a) Existing Land Use Pattern:

Map-3 gives detail of existing land use in the study area. Landuses for all the mouza which have been surveyed are shown in the following Table 9.

b) Land Use Analysis

The land use survey reveals that the study area (Table 9) constitute about 3,059 acres or 1,237.98 hectares of land showing different land use characteristics. The survey indicates that a large part of the study area is under agricultural activity. The detail of landuse categories have been described as follows :

i) Agriculture/Forestry

Major portion of the upazila shahar study area is under agricultural activity. It covers about 2,606.58 acres or 1,054.88 hectares of land (85.21 percent) of the total area. The upazila shahar study area is situated in a comparatively low lying plane land. The area is agriculturally surplus Main crops are rice and sugar-cane.

ii) Commerce Industry

There are two market centres in the upazila shahar study area in the mouzas of Jagtha and Raghunathpur. It covers about 10.18 acres or 4.12 hectares of land. There is scope for the growth of commerce due to good transportation network with the zila shahar/paurashava of Thakurgaon. Total coverage in this landuse category is 10.18 acres (4.12 hectares) which is 0.33 percent of the total landuse.

iii) Industry

There are 2 saw mills in the mouza of Jagatha. There are 1 rice mill and 1 oil mill in the mouza of Jagatha. There is scope for the growth and development of Industry in the Pirganj Paurashava. Total coverage accounts for 25.02 acres (10.13 hectares),which is 0.82 percent of the total landuse.

iv) Educational Institutions

There is one high school, one girls high school, 2 - Madrashas and 2 Primary schools in study area. Total coverage is of about 22.17 acres or 8.97 hectares of land or 0.72 percent of total land uses.

v) Health Facilities

There is one health complex with 10 beds. Total coverage is about 7.93 acres or 3.21 hectares of land or about 0.26 percent the total land use, which is very negligible among the total land use.

vi) Administration

There is one upazila complex, one police station, one upazila court in the study plan area which constitutes a total land area of about 33.62 acres or 13.60 hectares and is 1.10 percent of the total landuse. The upazila Headquarters complex is situated in Jagatha mouza.

vii) Socio-Cultural

Three graveyards, five mosques, one orphanage situated in the study area covering about 47.15 acres or 19.08 hectares of land or 1.54 percent of the total land uses.

TABLE 9 : EXISTING LANDUSE PATTERN IN THE STUDY AREA OF PIRGANJ UPAZILA SHAHAR

Name of Mouza	Agril/ Forest	Comm	Ind.	Edu. Inst.	Health Faci.	Admn.	Recrea- tion	Socio. Cul.	Urban Service	Residen- tial	Road Rail- ways	Water Bodies	Total Area	
													Acres	Hectares
Rhelatair	439.28	-	-	0.26	-	3.04	-	0.28	3.27	20.48	16.04	3.35	486.00	196.68
Guagaon	185.82	-	1.65	-	-	-	-	40.31	-	12.01	7.47	2.74	250.00	101.18
Nitrabati	271.28	-	1.05	-	-	-	-	-	-	18.78	8.45	15.44	315.00	127.48
Raghunathpur	568.60	8.12	5.30	2.24	2.38	-	3.70	3.42	-	44.78	5.70	25.76	670.00	271.15
Jagtha	774.47	2.06	17.02	19.67	5.55	30.58	3.18	3.14	0.19	26.75	46.24	14.15	943.00	381.63
Rhakura	226.90	-	-	-	-	-	-	-	-	12.98	2.43	0.69	243.00	98.34
Rathpaligaon	140.23	-	-	-	-	-	-	-	-	6.10	4.93	0.74	152.00	61.51
TOTAL	2606.58	10.18	25.02	22.17	7.93	33.62	6.88	47.15	3.46	141.88	91.26	62.87	3059.00	1237.97
PERCENTAGE	85.21	0.33	0.82	0.72	0.26	1.10	0.23	1.54	0.11	4.64	2.98	2.06	100.00	100.00

Source : Landuse Survey, December, 1989.

viii) Recreation

There is one cinema hall and two playgrounds covering about 6.88 acres (2.78 hectares) or 0.23 percent of total landuse.

ix) Urban Services

There is one Post Office in Jagatha Mouza, one T&T Exchange, one BWD Office in Raghunathpur, and one Railway Station within the Study Area. Total coverage is 3.46 acres (1.40 hectares) or 0.11 percent of the total landuse.

x) Residential

There are about 141.88 acres of 57.42 hectares of land used for residential purposes which constitutes about 4.64 percent of land uses of the total area. A large majority of this land contains traditional housing with concentric pattern of settlement.

xi) Road/Railway Transportation

This covers about 91.26 acres or 36.93 hectares of land or 2.98 percent of the total land uses of the study area. Among the transportation system, railways play a vital role. About 1.54 percent of the land use under this head is occupied by railways. There is railway communication with Pirganj to Thakurgaon and road transportation with Thakurgaon, Dinajpur and other regional towns and the Capital City.

xii) Water Bodies

Water bodies cover an area of 62.87 acres or 25.44 hectares or 2.06 percent of the total land. In this case only canals and tanks, ponds were counted.

3.4 SOCIO-ECONOMIC CONDITIONS OF THE STUDY AREA

According to the TOR, the socio-economic survey for the study area was conducted and completed for 100 households. The main objectives of the socio-economic survey were to find out the social and economic conditions of the study area. The results of analysis of socio-economic data may help locate adequate functions of government's services and facilities of basic needs in the upazila shahar which will bring some significant improvement in the quality of life of rural people. The data collected through socio-economic survey are analysed in the following paragraphs:

Population Characteristics

According to socio-economic survey, 100 households contain 590 persons.

The distribution of population by age group has been shown in Table No. 10. The highest number of population is found in the age group of 11 to 15 years accounting 11.36 percent of the total population. It indicates that the people of younger age group have been concentrated in the Upazila centre for jobs and education. It has also been noticed that beyond the age group of 25 years the number and percentage of population have gradually fallen.

There are 103 males for 100 Females in the study area which indicates the character of urban population. Due to the upgradation of Upazila, economic activities have already been started in the Upazila centre and people of younger generation have been concentrated in and around the Upazila centre for jobs.

TABLE 10 : AGE AND SEX COMPOSITION OF POPULATION OF STUDY PLAN AREA

Age Group (Years)	Male	Female	Total	Percentage
0-5	26	25	51	8.64
6-10	33	30	63	10.68
11-15	35	32	67	11.36
16-20	30	29	59	10.00
21-25	30	28	58	9.83
26-30	28	25	53	8.98
31-35	20	18	38	6.44
36-40	20	18	38	6.44
41-45	20	18	38	6.44
46-50	18	19	37	6.27
51-55	17	18	35	5.93
56-60	16	15	31	5.25
60+above	07	15	22	3.73
Total:	300	290	590	100.00

Source: Field Survey, 1989.

Household Characteristics

In the study area, 100 households containing 590 persons have been surveyed. The size of household is 5.90 which is lower than the district average.

Among the sample household, there are 25 pucca structures, 28 semi-pucca and 38 kutcha structures. In the sample household 09 structures are unclassified. The structural conditions of the study area are poor, details are in Table No. 11.

TABLE 11 : HOUSEHOLD STRUCTURES OF THE STUDY AREA: 1989
(Sample Household)

Household structures	No. of Household	Percentage
Pucca	25	25
Semi-pucca	28	28
Kutcha	38	38
Unclassified	09	09
Total :	100	100.00

Source: Field Survey, December, 1989.

Economic Performance

The total number of population of the sample household is about 590 persons out of which 200 persons or 33.90 percent are employed in different sectors of economic activities. The number of persons unemployed is 310 or about 52.54 percent including housewives and students.

TABLE 12 : EMPLOYMENT STRUCTURES, IN THE STUDY AREA, 1989

Employment Structures	Persons	Percentage
Employed	200	33.90
Unemployed	310	52.54
Invalid	80	13.56
Total :	590	100.00

Source: Field Survey, December, 1989.

Out of 200 persons, 120 persons or 60.00 percent are engaged in agriculture. The number of persons engaged in business is 30 or 15.00 percent. Only 25 persons are employed in service. The total of other professionals amounts to 25 persons or 12.50 percent of the total population.

TABLE 13 : PROFESSION STRUCTURE OF POPULATION IN STUDY AREA, 1989

Professions	No. of Population	Percentage
Agriculture	120	60.00
Business	30	15.00
Service	25	12.50
Others	25	12.50
Total :	200	100.00

Source: Field Survey, December, 1989.

The income and expenditure of 100 households are available. The annual income of 40 households are upto Taka 10,000 only. The annual income of 30 households lies between Taka 10,001 to 20,000. The annual income of 20 households lies between this range. The expenditure of four households lies between Taka 30,001 to 40,000. The expenditure of one household lies between Taka 40,001 to 50,000 and expenditure of zero households lies between Taka 50,001 and above. The maximum expenditure of about 60 Nos. or 60% household lies upto Tk. 10,000 and that of about 25 household or 25 percent lies between Tk. 10,001 to 20,000 (Table 14 and Table 15).

TABLE 14 : ANNUAL INCOME PATTERN OF THE HOUSE HOLD IN THE STUDY AREA, 1989

Range (Taka)	Income	Percentage
+ 10,000	40	40
10,001 - 20,000	30	30
20,001 - 30,000	20	20
30,001 - 40,000	8	8
40,001 - 50,000	2	2
50,001 + above	-	-
Total :	100	100.00

Source: Field Survey, December, 1989.

The main source of income of the people of the study area is agriculture and business. The main field of expenditure is food and clothing.

Small Scale and Cottage Industries

There is one small scale and cottage industry complex in the shahar area which is funded by the Upazila Parishad.

Educational Institutions

There are 2 primary schools and 2 madrashas in the study are of Pirganj Paurashava. The total number of teachers in 2 primary schools are 10 persons. There is one high school for boys and one high school for girls. There is one college in the study area.

TABLE 15 : ANNUAL EXPENDITURE PATTERN OF THE HOUSE-HOLD IN THE STUDY AREA, 1989

Range (Taka)	Expenditure	Percentage
+ 10,000	60	60
10,001 - 20,000	25	25
20,001 - 30,000	10	10
30,001 - 40,000	4	4
40,001 - 50,000	1	1
50,001 + above	-	-
Total :	100	100.00

Source: Field Survey, December, 1989.

Administrative Institution

Administrative institution includes both the government and semi-government offices. There are 19 administrative offices located in the Upazila study area. The commuting distances of officials are 1 to 2 kilometres.

Financial Institutions

There is only 3 bank branches in the upazila headquarters or Paurashava area of Pirganj Upazila.

Health and Welfare

There is a charitable dispensary in the upazila centre. There is only one family planning centre in the study area. The upazila health complex is located within the Paurashava area (Map 3).

Recreational Facilities

There is no notable recreational facilities in the upazila centre. But there are two playgrounds in front of boys high school and college.

Distance of Work Places From Home

The distance of roads of 100 households is within 3 Km. only 50 households lie within one Km. distance.

The working places of most of the households are within 1-2 Km. Approximately 88 percent of the households are located within 0.5 Km distance from the primary schools. About 77 percent of household are located within 0.5 Km radius of the high school. Rest of the households are located within 2 Km radius.

More than 80 percent of the households are located within 0.5 radius of the market. Rest of the households are within 2 Km distance.

Available Facilities

According to the socio-economic survey, 70 percent of the people answered that there is no scope of employment in the upazila. Health facilities are not adequate. The facilities for recreation exists in the upazila. There is telephone service in the upazila headquarters. The upazila is devoid of social and economic facilities. Under this circumstances an upazila shahar can not be developed.

3.5 PROBLEMS AND PECULIARITIES

Peculiarities Identified

The area is almost free from river flooding and erosion. It is possible to plan for an urban growth along the roads. The present pattern of urban growth is almost concentric.

During the recent site visit, it was noticeable that development have been carried out on both the sides of Thakurgaon-Pirganj road and both the side of Upazila Complex to market connecting a pucca road. There is another urban linear growth along the Pirganj-Bochaganj road and Pirganj-Ranisankail road.

Problems Identified

The locational aspects outlined in para under Location of Upazila & Upazila Shahar indicates that Pirganj may have to face a physical planning problem. The price of land is high and haphazard growth started from an early stage. It will be advisable to extend the Upazila Shahar/Paurashava areas one and half times than the existing areas to control the haphazard growth.

A Schematic Concept Plan

The urban growth and its structure are dependent on the size of the design population and local socio-physical conditions as follows :

a) Urban Growth and Size resulting from Population Growth

The base population of the planning area in 1981 has been estimated to be 11,250 only. The forecasts would

suggest the upazila to be a small urban area. This area is expected to grow around the upazila complex area, paurashava office and the hat/bazar in mouza Jagtha, Mitrabati and Guagaon.

b) **Physical Determinants of Urban Expansion**

There is a automatic rice mill and good road network within the planning area. Considering these aspects a Schematic Concept Plan has been prepared and attached as a diagram (Diagram-I).

c) **Internal Road System**

So far the internal road system have been developing in such a way that the man-made drainage pattern is linked with the natural water sourses. Thakurgaon-Pirganj-Haripur road provides for an inter upazila transportation system. Another road is Pirganj-Bochaganj road connecting Dinajpur with capital city Dhaka.

The Schematic Concept Plan has three aspects as follows :

1. Direction of future growth
2. Concentration of employment/central/civic zinc
3. Expansion of housing/community areas.

3.6 LAND VALUE

As per report of the survey, the value of land in and around the Upazila Shahar/Paurashava has rapidly increased due to the upgradation of Upazila.

At present the value of an acre of residential land ranges from Tk. 5 lacs to Tk. 6 lacs. The value of fertile agricultural land ranges from Tk. 1 lac to Tk. 2 lacs. The value of an acre of commercial land varies from Tk. 10 lacs to Tk. 15 lacs.

CHAPTER FOUR : FORECASTS

4.0 FORECASTING OF POPULATION, HOUSEHOLD STRUCTURE AND DENSITY

4.1 FORECASTING IN THE SPHERE OF INFLUENCE

Population and Household Structure

Population : Sphere of influence/catchment area of Pirganj Paurashava has been identified in paragraph 3.1. Because of unforeseen situation in future in terms of structural charges in the economy, family planning measures etc. the population of catchment area has been projected as High Medium and Low level forecasts taking into account the positive effects of population control measures in all assumed growth rates. Table-17 show the growth of population in the Sphere of Influence/ Catchment Area on the basis of historical trends. High, medium and low rates are estimated to be as 2.97 percent 2.64 percent and 2.02 percent. The detail projection has been described in the methodology.

B) Household Structure : Household structure has been explained in terms of number of persons per household distribution in the constituent mouzas of the Catchment Area/Sphere of Influence (Table-16).

TABLE 16 : HOUSEHOLD SIZE CLASSIFICATION IN THE SPHERE OF INFLUENCE, 1985 - 2000 A.D. (MEDIUM PROJECTION)

Sl.No.	1981	1985	1990	1995	2000
1. Total Population	18870	20943	23857	27177	30959
2. Average No.of Persons per household	5.6	5.2	5.1	4.8	4.2
3. Number of household	3369	4028	4678	5662	7371

Note: No.of persons/hh in 1981 is that of Bangladesh Bureau of Statistics; figures for 1985 and onwards are assumptions keeping in view reduction in the number of persons/hh, because the existing rural characteristics would generally be overtaken by modernization.

ABLE 17 : POPULATION PROJECTION OF THE SPHERE OF INFLUENCE, 1985-2000, (HIGH MEDIUM AND LOW PROJECTIONS)

Type of Projection	Existing Popn. 1981	Projected Population			
		1985	1990	1995	2000
Low Projection (Gr. = 2.02)	18870	20442	22592	24968	27593
Medium Projection (Gr. = 2.64)	18870	20943	23857	27177	30959
High Projection (Gr. = 2.97)	18870	21213	24555	28424	32903

TABLE 18 : DENSITY OF PROJECTED POPULATION IN THE CATCHMENT AREA 1985 - 2000 (MEDIUM PROJECTION)

Functions	Year				
	1981	1985	1990	1995	2000
Total Population Area	18870	20943	23857	27177	30959
Acres	8404	8404	8404	8404	8404
Hectares	2886	2886	2886	2886	2886
Density per Acre	2.24	2.49	2.84	3.23	3.68
Per Hectare	6.54	7.26	8.27	9.42	10.73

Note : Medium Population Projection has been considered.

Forecasting in the Upazila Shahar

High, medium and low projections have been made taking into account the growth rate higher than those of the Catchment Area. The rates are Higher growth rate=5.45 percent, Medium rate=4.70 percent and Low rate=4.24 percent. Table 19 show the position. The details of the population projection has been discussed in the methodology.

TABLE 19 : HIGH, MEDIUM AND LOW PROJECTION OF POPULATION IN THE STUDY AREA, 1985-2000 A.D.

Type of Projection	Existing Popn. 1981	Projected Population			
		1985	1990	1995	2000
High (Gr. = 5.45)	11250	13910	18137	23648	30834
Medium (Gr. = 4.70)	11250	13519	17009	21399	26924
Low (Gr. = 4.29)	11250	13311	16422	20259	24995

ABLE 20 : FORECAST OF DENSITY IN THE STUDY AREA 1985-2000 A.D

Functions	Year				
	1981	1985	1990	1995	2000
Total Population	11250	13519	17009	21399	26924
Acres	3059	3059	3059	3059	3059
Hectares	1238	1238	1238	1238	1238
Density per Acre	9.09	10.92	13.74	17.29	21.75

Note :- Medium Population Projection have been taken.

4.3 LAND REQUIREMENTS, PROVISION STANDARD

Project Identification

The projected population of the Paurashava in respect of housing and related services, and social infrastructure has been considered while identifying the following projects. The projects would be implemented on annual, and short-term five year plan basis. The land requirements are shown in the Table 21 below on the basis of identifiable project.

- The estimated population of Shahar/Paurashava ares is about 26,924 upto 2000 A.D.
- The estimated or proposed population of Catchment area is about 30,959 upto 2000 A.D.
- Total proposed population of Shahars + Catchment area is about 57,883 persons.

TABLE 21 : IDENTIFIED PROJECTS, STANDARD AND LAND REQUIREMENTS, 1985-2000 A.D.

Sl. No.	Identified Land Uses	Existing Land Use (1989)	Standard	Design Population	Land Requirements in Acres (ha) As per TOR (1985-2000)	Land Requirements in Acres (ha) Plan Provision (1985-2000)
1	2	3	4	5	6	7
1.	Commerce :	10.18 (4.11)	1.5 Acres/ 1000 people	Upazila Shahar Population 26,924	40.38 (16.36)	35.00 (14.18)
2.	Industry :	25.02 (10.12)	-do-	26,924	40.38 (16.34)	35.00 (14.18)
3.	Education :	22.17 (8.96)	-do-	26,924	23.49 (9.51)	25.00 (10.13)
	- Primary	8.00 (3.24)	2 Acres/ 5000 people	26,924	10.76 (4.36)	10.00 (4.05)
	- Secondary	8.00 (3.24)	5 Acres/ 20,000 People	26,924	6.73 (2.73)	9.00 (3.65)
	- College	6.17 (2.50)	6 Acres/ Upazila Shahar	Upazila Shahar + Catchment Area 57,883	6.00 (2.43)	6.00 (2.43)
4.	Health :	7.93 (3.20)	-	-	12.11 (4.90)	12.00 (4.86)
	- Dispensary Maternity Clinic	-	1 Acre/5000 People	Upazila Shahar Population +	5.38 (2.18)	5.00 (2.03)
	- Health Centre, Hospital	7.93 (3.20)	5 Acres/ 20,000 People	Upazila Catchment Area Population 57,883	6.73 (2.73)	7.00 (2.84)
5.	Adminis-ration/ Judiciary :	33.62 (13.60)	12 Acres/ Upazila Shahar	-	33.62 (13.62)	35.00 (14.18)
6.	Recreation :	6.88 (2.78)	-	-	37.63 (15.24)	14.00 (5.67)
	- Parks/ Open space	3.88 (1.57)	1 Acre/ 1000 People	Upazila Shahar Population 26,924	26.92 (10.90)	6.00 (2.43)

Continued

Continued Table 21

Sl. No.	Identified Land Uses	Existing Land Use (1989)	Standard	Design Population	Land Requirements in Acres (ha) As per TOR (1985-2000)	Land Requirements in Acres (ha) Plan Provision (1985-2000)
1	2	3	4	5	6	7
	- Cinema Hall	0.75 (0.30)	0.5 Acre/ 20,000 People	Upazila Shahar + Catchment Area Popn. 57,883	1.44 (0.59)	2.00 (0.81)
	- Stadium/ Playground	2.25 (0.91)	3 Acres/ 20,000 People	57,883	9.27 (3.75)	6.00 (2.43)
7.	Socio-Cultural:	47.15 (19.09)	-	-	10.77 (4.36)	30.00 (12.15)
	- Community Centre	1.00 (0.41	1 Acre/ 20,000 People	Upazila Shahar Population 26,924	1.35 (0.55)	1.50 (0.60)
	- Graveyard Cemetery	25.00 (10.13)	5 Acre/ 20,000 People	26,924	6.73 (2.73)	25.00 (10.13)
	- Religious Facility	21.15 (8.57)	0.5 Acre/ 5,000 People	26,924	2.69 (1.09)	3.50 (1.42)
8.	Urban Services :	3.46 (1.40)	-	-	9.61 (3.89)	7.00 (2.84)
	- Post Office	0.50 (0.20)	0.50 Acre/ 20,000 People	Upazila Shah Catchment Area Popn. 57,883	1.44 (0.59)	1.00 (0.41)
	- Telephone Exchange	0.50 (0.20)	-do-	57,883	1.44 (0.59)	3.00 (1.22)
	- Police	2.46 (1.00)	2 Acres/ 20,000 People	Upazila Shahar + Catchment Area Popn. 57,883	2.69 (1.09)	3.00 (1.22)
	- Fire	-	2.0 Acres/ 20,000 People	57,883	2.69 (1.09)	1.00 (0.41)
	- VDP & Ansar	-	1 Acre/ 20,000 People	57,883	1.35 (0.55)	1.00 (0.41)

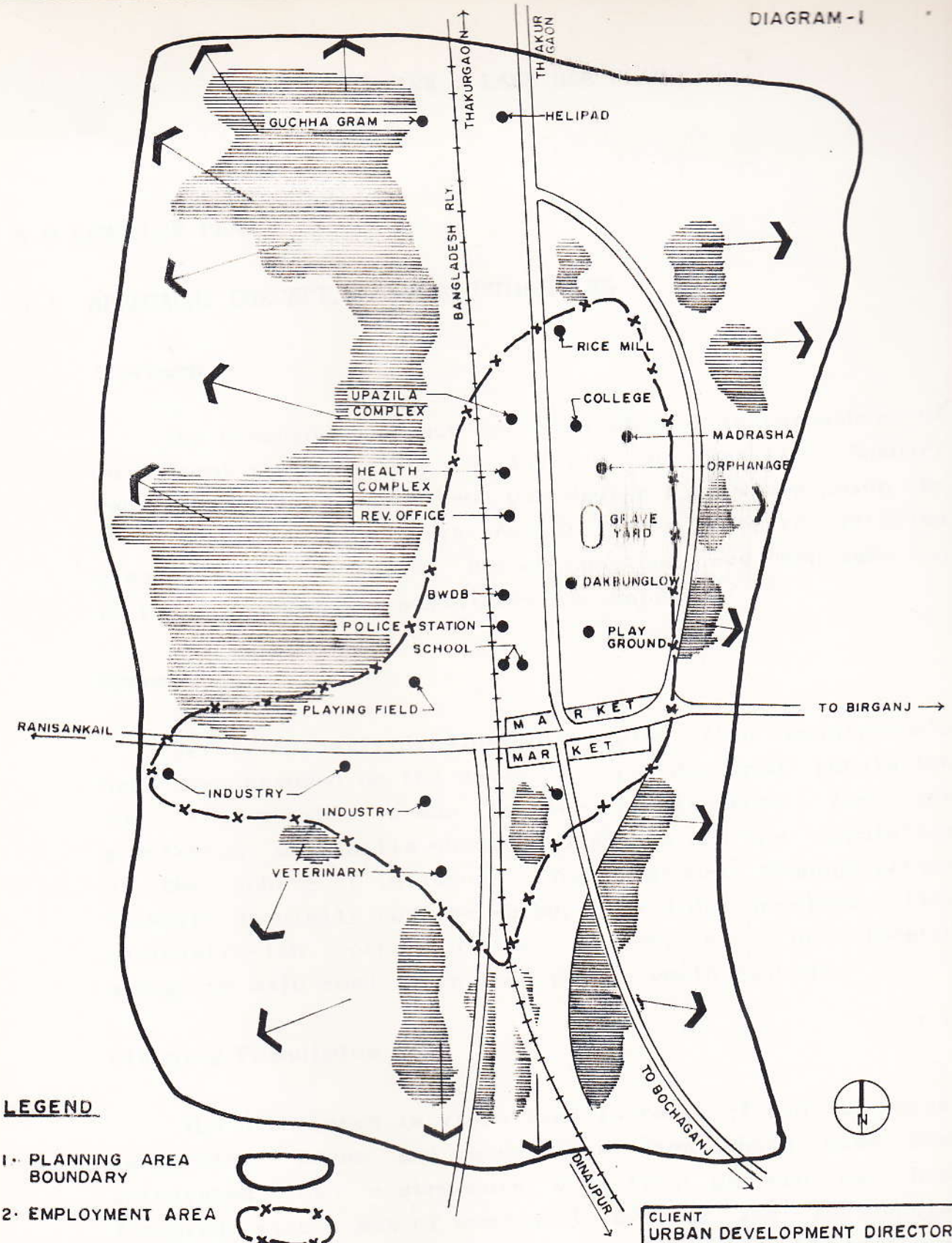
Continued

Continued Table 21

Sl. No.	Identified Land Uses	Existing Land Use (1989)	Standard	Design Population	Land Requirements in Acres (ha) As per TDR (1985-2000)	Land Requirements in Acres (ha) Plan Provision (1985-2000)
1	2	3	4	5	6	7
9.	Housing/ Residential :	141.88 (57.45)	-	-	460.73 (186.60)	437.00 (176.98)
	- General Housing/ Residential	141.88 (57.45)	1 Acre/ 60 People	Upazila Shahar Population 26,924	448.73 (181.74)	425.00 (172.13)
	- Housing Estates	-	12 Acres/ Upazila	26,924	12.00 (4.86)	12.00 (4.86)
10.	Roads/Rail :	91.26 (36.96)	6% of Total Area	7% of Total Land	214.00 (86.72)	200.00 (81.00)
					Total Built-up Area = 830.00	
11.	Urban Deferred :	-	10 percent of Total Built-up Area	10 percent of Total Built-up Area	83.00 (33.62)	83.00 (33.62)
12.	Water Bodies :	62.87 (25.44)	-	-	62.87 (25.46)	60.00 (24.30)
13.	Agriculture Poultry and Cattle Farm :	-	-	-	10.00 (4.05)	10.00 (4.05)
14.	Agriculture Forestry :	2606.58 (1055.66)	-	-	2033.79 (823.68)	2076.00 (840.78)
TOTAL :		3059.00 (1237.97)			3059.00 (1237.97)	3059.00 (1237.97)

Note :- This table shows only estimates which are finalized considering local conditions in paragraph 5.2. The figure in the parenthesis indicate hectares.

DIAGRAM-I



LEGEND

1. PLANNING AREA BOUNDARY
2. EMPLOYMENT AREA
3. RESIDENTIAL AREA
4. DIRECTION OF URBAN FLOW FROM THE EMPLOYMENT AREA

CLIENT	URBAN DEVELOPMENT DIRECTORATE
PROJECT	LANDUSE PLAN FOR PIRGANJ PAURASHAVA
	SCHEMATIC CONCEPT PLAN
	PROKAUSHALI SANGSAD LTD. 131, MOTIJHEEL C.A. DHAKA - 1000
PLANNER	
SCALE	N.T.S
DRAWN	KAZI
DRG. NO.	05

5.0 LAND USE PLAN

5.1 APPROACH, CONCEPT, PLANNING PRINCIPLES

Approach

The planning approach has been adopted in pursuance of Government's decision to develop the Upazila Shahar/ Paurashava. The present Land Use Master Plan would guide the Upazila Shahar/Paurashava Authority to prepare detailed plans for implementation. Recommendations have been made in respect of legal and administrative matters.

Concept

Before actually drawing up the plan, land requirements have been assumed on the basis of : (a) designed population and (b) overall urban service requirements for the population of upazila shahar/paurashava and the population of the sphere of influence. The regional transportation network specially road networks, city-wide services, like administration, other offices, market, etc. are located along the main road where land prices would be high.

Planning Principles

The urban area is visualized in terms of central area, residential areas and recreational areas which have been integrated into a structure. Grid-iron pattern has been favoured with a mix of concentric overlay. For residential areas a maximum number of 5,000 population, which require at least one primary school, has been considered to be an urban neighbourhood. In order to ensure minimum cost, land

acquisition except for road, has been limited. Existing social facilities have been proposed to be augmented. Five year phased development of new facilities and upgradation of exiting facilities are described in Table-23.

Land Use Criteria

A total of 3059.00 acres of land has been identified for the township of Pirganj Paurashava by the year 2000. According to the Plan Provision about 14.29 percent of land is proposed to be utilized for housing purpose. Both for commercial and industrial purposes a ratio of 1.14 percent and 1.14 percent has been earmarked. Educational institutions by 2000 will need about 0.82 percent land. In health sector, dispensary, maternity clinic, hospital and health centre, etc. will be established and expanded and land requirement for these facilities will tend to be around 0.39 percent. With the expansion of township, more administrative set-up will be required to be built up. For that, adequate provision of 1.14 percent land has been kept. The small township of today will grow as a model one for which necessary provision of parks, cinema hall stadium, open space, etc. has been made on 14.00 acres of land which is 0.46 percent of total land area. In a sprawling township socio-cultural side cannot be ignored and community centre, cemetery, religious facilities have to be created to meet the basic needs of the town dwellers. This will be taken care of with a provision of 0.98 percent of land. The other important sector is road for which considerable provision 6.54 percent has been provided in the land use plan. With this growth the Upazila has to maintain a few security personnel like Police, VDP, Ansar, Fire-men,etc. and land use plan has also allocated sufficient land for their housing as well as activities. The land use plan has practically

visualised all the relevant activities of a modern town but still there might be more urgent need in future. To address this need about 2.71 percent of land has been kept as reserve/urban deferred. Each category of proposed land uses is described below :

5.2 PLAN DESCRIPTION AND PHASED GROWTH

A scenario of land use Plan by 2000 A.D at Pirganj Paurashava has been summarised at Table-23. The land use plan as described in the earlier chapter is not proposed to be materialised without studying the pros and cons of such plan. A careful growth model has been used to arrive at this growth by 2000 A.D. The growth has been phased out at three distinct period. The first phase will run through 1985-90. The second phase will cover the period from July 1990 to June 1995 while the terminal phase has been taken for the remaining period upto June 2000 A.D. Among other considerations of population, growth model has been the prime influential factor for land use plan. There are three population projections for each of the mouzas of Pirganj Paurashava. Medium projection has been considered to be most acceptable one and based on this projection the land use plan has finally emerged. In the medium projection the population will increase from the existing to over 17009 by 1990 and another 4390 will be added by 1995 which will reach about 26924 by the year 2000. This population increase trend has given an insight which forms a basis for land use plan. Each category of proposed land uses is described below in brief.

i) Commerce

With the increase of population commercial activities will increase and for this activity additional land requirement will be limited to 14.18 hectares or 35 acres for commercial use.

ii) Industry

With the increase of population and increase of urban trends in Pirganj Paurashava an additional 35 acres of land is essential for industrial use. Which will cover the need of the people upto 2000 A.D.

iii) Education

Physical planning for establishment of educational institutions has been viewed on the ground that within a limited space a considerable number of students shall have to be accommodated and from an area of 22.17 acres it will be increased to 25.00 acres by the year 2000 A.D.

iv) Health

More clinics and dispensaries are expected to be established by the year 2000 A.D and there will be a need for 12.00 acres of land to accommodate such facility. The growth from the existing to 1995 will be normal but from the next phase the growth will get momentum in this sector.

v) Administration/Judiciary

The total need of infrastructural facilities will be fully met by 1990 and this will be maintained in 2nd and 3rd phases.

TABLE 22 : LANDUSE IN THE PLAN (ACCORDING TO PLAN PROVISION)

Categories of Land Uses	Existing Area		Proposed Area		Percentage (%)
	Acres	Hectares	Acres	Hectares	
1. Commerce	10.18	4.11	35.00	14.18	1.14
2. Industry	25.02	10.12	35.00	14.18	1.14
3. Education :	22.17	8.96	25.00	10.13	0.82
o Primary	8.00	3.24	10.00	4.05	0.33
o Secondary	8.00	3.24	9.00	3.65	0.29
o College	6.17	2.50	6.00	2.43	0.20
4. Health	7.93	3.20	12.00	4.86	0.39
5. Administration/ Judiciary	33.62	13.60	35.00	14.18	1.14
6. Recreation	6.88	2.78	14.00	5.67	0.46
7. Socio-Cultural	47.15	19.08	30.00	12.15	0.98
8. Urban Services	3.46	1.40	7.00	2.84	0.23
9. Housing/Residential	141.88	57.45	437.00	176.94	14.29
10. Roads/Rails	91.26	36.96	200.00	81.00	6.54
11. Urban Deferred	-	-	83.00	33.62	2.71
12. Water Bodies	62.87	25.44	60.00	24.30	1.96
13. Agriculture/(Poultry and Cattle Farm)	-	-	10.00	4.05	0.33
14. Agriculture/ Forestry	2606.58	1054.88	2076.00	840.78	67.87
TOTAL :	3059.00	1237.97	3059.00	1237.97	100.00

Source : Data taken from land requirement Table No.21

vi) Recreational

Among the recreational facilities park, open space, cinema hall and stadium get prominence. By 1990 all these facilities will occupy about 8.00 acres of land. These facilities will, however, be expanded and modernised in subsequent period with an earmarked area of 14.00 acres of land by year 2000 A.D. A fullfleged stadium on about 6.00 acres of land is proposed to be completed by 2000 A.D. The cinema hall will not need much space and an area of 2.00 acres has been set-aside to establish a cinema hall including its catchment area. With the growth of the shahar the necessity of adequate open areas and parks will be felt to facilitate breathing space for the dwellers and an area of 6.00 acres is proposed. Like other factor of land use planning, all recreational facilities will be developed in phases.

vii) Socio-Cultural

Under socio-cultural facilities, necessary provisions for community centre (1.50 acres) cemetery/graveyard (25.00 acres) other religious places (30.00 acres) have been made in the first phase (1985-90) of the plan. These facilities may be further expanded in the second (1990-95) and third (1995-2000) phases and a total of 30.00 acres are proposed to be finally reserved for socio-cultural activities of the paurashava.

viii) Urban Services

Pirganj paurashava will continue to remain a small township in the foreseeable future. Like other big urban cities it will not get all urban character even by year 2000 A.D. So the proposed urban services will be limited to providing telephone exchange, post offices, etc. and for these services initially 5.00 acres of land will be necessary which will be increased to 7.00 acres by 2000 A.D. However, one thing can not be ruled out that with passage of time there may be need for more urban services. Adequate thought has been given to this aspect and under urban deferred necessary provisions have been kept to meet such situations.

ix) Housing/Residential

As indicated earlier, Housing for residential purpose will consume lion's share of the total land area of Pirganj Paurashava. About two-thirds of the land earmarked for residential will be required by the end of first phase and in the remaining phase over 437.00 acres of land will be needed to give minimum housing facilities to the projected population of the Shahar. The landuse will not un-necessarily block land from the very beginning of spatial planning. It will go by phases so that the unutilized land may be gainfully utilized elsewhere.

x) **Roads**

Road becomes an important aspect in any township. In a planned town every household should be linked with road connection. The Land Use/Master Plan has therefore made adequate provision for building roads and in order of priority it is being closely equated with housing sector. 6.54 percent of land of the shahar has been set aside for road against 14.29 percent in case of housing accommodation. The town plan should basically start with road building and other activities should come up around the roads. Construction of roads should be completed within the first phase on 64.80 hectares of land and in subsequent phases areas for roads should be maintained.

xi) **Urban Deferred/Reserve**

Over 2.71 percent of the land of the proposed township area will be reserved for future requirement. Many unforeseen requirements may drop up in future and to meet such a situation 2.71 percent reserved land seems reasonable. But due care has been given so that no unauthorised construction takes place on the deferred/reserved areas.

xii) **Water Bodies**

During the physical survey in the area it was found that an area of 60.00 acres remained under different water bodies namely, tanks, ponds, khals etc. which will remain unchanged by the year 2000 A.D. These water bodies though not utilized for physical infrastructure but are accuring immense benefits to the town dwellers for ecological balance of life.

The benefits are not quantifiable and it is accuring in the form of maintaining ecological balance, rearing of fishes, supply of water (other than drinking) for various uses, practicing of swimming etc. While preparing the Land Use Master Plan status quotas, thus, been maintained.

xiii) Poultry/Cattle Farm

Agricultural Cattle Farm/Poultry Culture is essential for the dwellers of Pirganj Paurashava. To fulfill the requirement upto 2000 A.D about 10 acres of land is needed.

xiv) Agriculture/Forestry

Agriculture is a primary occupation and it is quite incompatible with township. Agriculture should be practiced outside the town area. Since, Pirganj paurashava did not grow in a modern concept. Agriculture exists side by side with urbanisation. Agriculture occupies more than 2203.00 acres of land in the paurashava area. The agricultural land will decline to about 2128.00 acres by the terminal year, the size of agricultural land will be limited to little over 2076.00 acres and this will be put solely under crop farming and do not used for poultry and cattle rearing. Demand for poultry and dairy products will continue to increase with increase of urbanisation. Hence, necessary provision has been made to establish poultry and dairy farming in the vicinity of paurashava.

CHAPTER SIX : PROGRAMMING AND IMPLICATION

6.0 PROGRAMMING

6.1 PRIORITY ACTIONS, COST IMPLICATIONS

Priority Actions

In order to energise the economy of Pirganj paurashava, certain employment oriented economic activities have to be identified. One of these may be establishment of industrial units in the centre. Construction of roads and improvement of communication system may be the another action oriented step for economic improvement of the upazila base. The Land Use/Master Plan is a guideline for the orderly development of the upazila shahar depending on the size of design population. The Local Government Administrative Reorganisation Ordinance 1982 has brought about this thrust of development by implications. There are 17 functions enumerated in the second schedule. Some of these relate to generation of non-agricultural activities and employment at the Paurashava. In the gradation of urban places, Paurashava of Pirganj is probably at the lowest level. The level of township should be considered as a potential place in the next 10 to 15 years, considering urbanization as a mechanism to the improvement of the quality of life. The Rice and Rabicrops sources in this part of Bangladesh will probably provide an impetus to the growth. The sectoral development priorities are assumed to be as follows consequent upon the discussion below:

1. Drainage channels within the upazila shahar are to be maintained and implementation of such activities should be given priority.

2. The low lying areas within the shahar area to be developed in such a way that there is a trade-off between costs of development and income in the long run.

3. Investment for the upazila shahar Paurashava should be made in such a way that achievements would generate associated developments. Such basic developments have been proposed in terms of commercial developments and small scale industries utilising resources of the upazila. The design of physical and social infrastructure has been made cost-effective on the basis of assumed growth of tax base with the increase of population.

Cost Implication

In the initial period of execution of different projects as visualized in the Land Use/Master Plan, cost would be met by the users of these services. In the plan due attention has been given so that additional/unnecessary cost is not incurred due to infilling of land in order to build up certain services at distant places. However, it is suggested that certain income-generating projects need to be established for enhancing the financial capability of the paurashava authority responsible for implementing this Land Use/Master Plan.

6.2 PHASING, URBAN DEFERRED

The plan should be implemented in some phases at an interval of 5 years upto 2000 A.D. which should be related to the national 5-year Development Plans. The following table shows the phasing of development activities according to the plan (Table-23).

TABLE 23 : PHASING OF INFRA-STRUCTURE DEVELOPMENT 1985-2000 A.D.

SECTORS	1ST PHASE		2ND PHASE		3RD PHASE		PERCENTAGE
	1985-90		1990-95		1995-2000		(3rd Phase)
	Acres	Hectares	Acres	Hectares	Acres	Hectares	
1. Commerce	20.00	8.10	28.00	11.34	35.00	14.18	1.14
2. Industry	25.00	10.13	30.00	12.15	35.00	14.18	1.14
3. Education	20.00	8.10	25.00	10.13	25.00	10.13	0.82
4. Health	10.00	4.05	12.00	4.86	12.00	4.86	0.39
5. Administration/ Judiciary	35.00	14.18	35.00	14.18	35.00	14.18	1.14
6. Recreation	8.00	3.24	12.00	4.86	14.00	5.67	0.46
7. Socio-Cultural	20.00	8.10	25.00	10.12	30.00	12.15	0.98
8. Urban Services	5.00	2.02	6.00	2.43	7.00	2.84	0.23
9. Housing/Residential	400.00	162.00	425.00	172.13	437.00	176.99	14.29
10. Roads/Rails	160.00	64.80	180.00	72.90	200.00	81.00	6.54
11. Urban Deferred	83.00	33.62	83.00	33.62	83.00	33.62	2.71
12. Water Bodies	60.00	24.30	60.00	24.30	60.00	24.30	1.96
13. Agriculture/(Poultr and Cattle Farm)	10.00	4.05	10.00	4.05	10.00	4.05	0.33
14. Agriculture/Forestry	2203.00	891.28	2128.00	860.90	2076.00	840.78	67.87
TOTAL :	3059.00	1237.97	3059.00	1237.97	3059.00	1237.97	100.00

6.3 DEVELOPMENT CONTROL

An effective development control system has been proposed under the existing legal system. Upazila/Paurashava parishad may seek technical services related to spatial consequences of sectoral developments from government agencies concerned or through consultancy services supervised by the concerned government agencies. All sectoral development proposals should be implemented through the Upazila/Paurashava parishad.

The plan is an indicative one. It should be reviewed after a certain period of years, considering the population increase and developments. So, the plan should be recast, if necessary. Initially detail plans indicating internal road network and services should be prepared for the areas which are to be developed in the third five year period. Similarly, all other areas should be incorporated in subsequent plan periods.

6.4 MONITORING REVIEW

Monitoring

As various sectoral agencies will be involved in the execution of services and facilities for nation building projects at the upazila shahar level, the upazila/paurashava parishad as the local agency will monitor all such activities envisaged in the plan. At present, under the annual development programme (ADP), the upazila parishad/paurashava receives considerable amount of grant to carry on all the development programmes within the upazila level, and this needs to be elaborated in the proposed Land Use/Master Plan.

Review

Since this Land Use/Master Plan has been prepared on the basis of certain assumptions and projections, it requires modifications/revision from time to time. For this, land use plan should be reviewed/evaluated preferably every five years as number of indigenous and exogenous factors may alter its' effectivity by incorporating the changes that may occur. This can be done by the Urban Development Directorate, Ministry of Works and initiated by the upazila parishad/paurashava.