

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

LANDUSE PLAN/MASTER PLAN
GURUDASPUR UPAZILA SHAHAR
NATORE ZILA

MAY, 1991

URBAN DEVELOPMENT DIRECTORATE
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

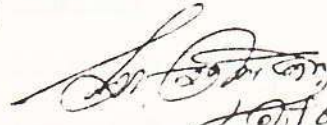
LANDUSE PLAN/MASTER PLAN
GURUDASPUR UPAZILA SHAHAR
NATORE ZILA

MAY, 1991

BUILD CONSULT INTERNATIONAL LIMITED
129, BANKER'S ROW (1ST FLOOR), NAKHALPARA WEST,
TEJGAON, DHAKA - 1215

অনুমোদন পত্র
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গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের পূর্ব সম্প্রদানদ্বারা নগর উন্নয়ন অধিদপ্তর
কর্তৃক নিয়োগিত বিনড কম্পানী ইন্টারন্যাশনাল লিমিটেড কর্তৃক প্রস্তুতকৃত গুরুত্বপূর্ণ
উপজেলা শহরের ভূমি ব্যবহার প্রািন আয়ামের নিকট সম্মতায়নক হইয়াছে এবং ইহার
বাস্তবায়নের জন্য অনুমোদন করা হইল।


১৫/১২/১৯৭২

চেয়ারম্যান

উপজেলা পরিষদ, গুরুত্বপূর্ণ
নাটোর।

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CHAPTER - I

INTRODUCTION

1.1 Introduction

In the Government's policy of overall administrative re-organization, the upazila has been recognized as the most significant tier of administration. Each upazila centre will be the focal point of all upazila level administrative activities. Thus the development of upazila centre is the Government's key strategy for social, economic and infrastructural upliftment of the upazila region. This also reflects the national policy of bringing the development activities to the door step of vast majority of rural population. The administrative re-organisation has delegated more power to the upazila authority for planning, programming, implementing and controlling development activities within the upazila region. It is expected that with geared up administrative, social and economic activities the upazila head quarters will gradually emerge as sprawling urban centres. It is evident that most of the urban centres of the country have already grown in an unplanned way leading to a jumbling of civic problem. The newly created upazila headquarters can be relieved from the curse and ills of unplanned growth through the preparation and implementation of the land use plan.

The upazila headquarters is conceived as focal point of development of the upazila as a whole. The activities performed in the headquarters will act as propulsive factor for generating development trends in the upazila. The land use plan prepared for the headquarters will serve as a guideline for a planned and coordinated development of prospective headquarter town upto the year 2001. When successfully materialised, the land use plan will bring in orderly growth of the town and its land uses. It will provide efficient transport network, promote development of commerce and industries, extend marketing facilities resulting in generation of more employment opportunities and will indicate more rational use of scarce land resources. The plan will reserve all provisions necessary for modern civil life.

The plan is a proposal for the potential dwellers of the headquarter for a healthy, pleasant and functionally efficient living environment. Preparation of land use plan is the first step of the programme for bringing the whole of the upazila under planned development. It is expected that other important alternative settlements of the upazila based on hierarchy of settlement will be taken up soon for planning and development to render them healthy, pleasant and growth generating centres.

Planned development is the prime objective of the land use plan. However, there is a common feeling that planning means a total development involving huge volume of fund. But such an idea is not fully correct. Planned development, to a large extent, can be ensured through effective enforcement of development control

regulations. But before regulations are formally passed the land use plan itself will require to be given legislative validity in the form of act.

In the light of the above circumstances, it is felt that the upazila centre should grow up expeditiously and the preparation of land use plan for such centre is of utmost importance for better utilization of regions, land, people and natural resources. With this end in view, the Government has planned to engage consultants for preparation of land use plan for some of the upazila shahars of Bangladesh.

1.2 Methodology of Planning

The objectives and scope of services for preparing the land use plan for upazila shahar have been stated in section-2 and section-3 of the terms of Reference (TOR) respectively. To fulfill the requirements of objectives and scope of services it was necessary to go through the following methodology for preparation of land use plan.

1.2.1 Existing Land Use Survey

Mouza maps in the scale of 1 inch equal to 330 feet were collected from the D.L.R. covering whole of the designated study area and was traced out with plot boundaries. Thus the field survey sheets were prepared. A plot to survey of current uses of land were marked on the survey sheets. The survey for current uses was completed for the whole of the designated shahar area.

1.2.2 Preparation of Existing Land Use Map

The survey sheets were compiled in the office and existing land use map were prepared in colours. The land use map was examined and analysed and finally shahar area was delineated. From the survey sheet a base map of existing land uses was prepared.

1.2.3 Existing Land Use Analysis

A table on existing land uses were prepared from the survey map. The area of different uses were measured with planimeter. The percentage of different land uses were also calculated.

1.2.4 Socio-Economic Survey and Data Analysis

A questionnaire containing four pages was prepared and administered to collect the data on socio-economic condition of the people of the study area. Five percent of the total households were interviewed by field investigators on random basis. The data thus collected were tabulated and analysed to find out the socio-economic characteristics of the shahar area.

1.2.5 Detailed Land Use Survey of Core Area

A detailed land use survey was conducted and completed by the survey team for 200 acres of core area (town service) of upazila shahar (scale of R.F. 1:1000). Layout of man-made structures was plotted to the correct scale. The level of land and flood zones were demarcated through physical verification. Contour maps were collected from the BWDB and compared with the survey map and finally the contours were interpreted on the survey map in a correct scale.

1.2.6 Determination of Hierarchy of Settlements

The hierarchy of settlements were determined on mouza basis depending on population, economic activities, social infrastructure provisions, transport linkage and related other characteristics. In order to determine the hierarchy of settlements, necessary socio-economic indicators were selected. Data and information on selected indicators were collected during the field survey from the upazila headquarters. These data were tabulated and they were given assumed weightage to find out the importance of each mouza. According to the weights ranking of mouza have been made.

1.2.7 Determination of Catchment and Shahar Area

To determine the sphere of influence of the shahar area, data on commuting distance and catchment area of the upazila shahar were collected during the field survey. The physical features in and around the upazila shahar study area were analysed. The catchment area was determined and delineated through studies on commuting distance. Service area and physical features of the upazila headquarters and surroundings. The shahar area was determined on analysis of existing land use survey. Trend of development of settlements, availability of buildable land physical features of surroundings have been given due consideration.

1.2.8 Forecasts

The projections of population and labour force would be made for the year 1986, 1991, 1996 and 2001 A.D. The population and labour force of 1981 were used as base year data. The past trend of rate of growth of population and labour force, the rate of migration and specially the induced population due to upgradation of the upazila would be given due consideration. Thus the low, medium and high projections would made.

1.2.9 Planning the Landuse/Master Plan

The requirements of land would be calculated on the basis of guidelines on planning provisions standards as specified in the pages 8 to 11 of TOR. As the guidelines do not have legal enforcement, enough reasons would be provided during allocation of lands for various urban functions. A new type of land use plan would be developed which would be realistic and implementable in the present day circumstances. The methodology applied in forecasting the private land use involves forecasting in intensification on existing land use and extension of new lands.

1.2.10 The Final Plan

A comprehensive and integrated land use plan/master plan would be prepared for the development of the upzazila shahar. Special attention would be given in organizing the functional uses of land.

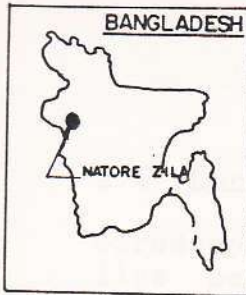
LEGEND

- 1. ROAD NETWORK
- 2. CANAL NETWORK
- 3. RIVER
- 4. CANAL
- 5. ROAD
- 6. CANAL
- 7. RIVER
- 8. CANAL
- 9. ROAD
- 10. CANAL

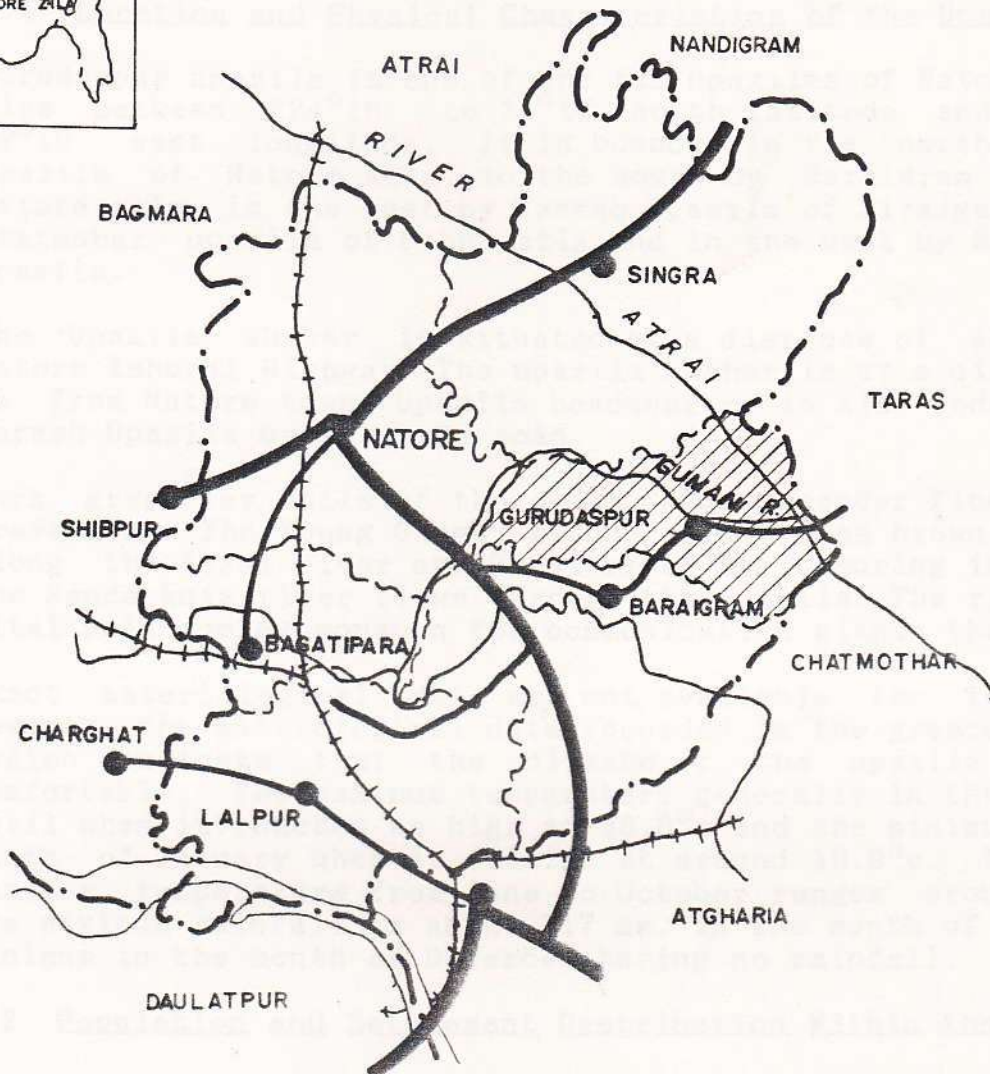
GURUDASPUR UPAZILA	
LOCATION MAP	
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DATE	
BY	
FOR	
APPROVED BY	
DATE	

LOCATION MAP OF GURUDASPUR UPAZILA

89°30' MAP.-I

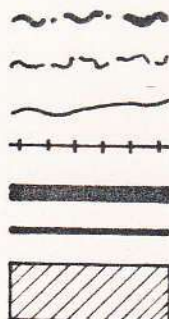


SCALE : 0 2 4 6 8 MILES
0 3 6 9 12 KMS



LEGEND

ZILA BOUNDARY
UPAZILA BOUNDARY
RIVER
RAILWAY
HIGH WAY
OTHERS ROADS
GURUDASPUR UPAZILA



URBAN DEVELOPMENT DIRECTORATE
MINISTRY OF WORKS
GOVERNMENT OF THE PEOPLES REPUBLIC OF BANGLADESH

LOCATION MAP

ZILA : NATORE

BUILD CONSULT INTERNATIONAL LTD.
129, BANKERS ROW NAKHALPARA WEST, TEJGAON DHAKA-1215

SR. PLANNER : HAROON-UR-RASHID

PLANNER : NAWSHAD AHMED

DATE : MAY, 1991

SCALE : 1" = 8 mile

MAP - I

89° 00'

89° 30'

CHAPTER-II

THE UPOAZILA IN ITS ZILA CONTEXT

2.1 Location and Physical Characteristics of the Upazila :

Gurudaspur upazila is one of the six upazilas of Natore zila. It lies between $24^{\circ}18'$ to $24^{\circ}17'$ north latitude and $89^{\circ}04'$ to $89^{\circ}19'$ east longitude. It is bounded in the north by Singra upazila of Natore zila, in the south by Baraigram upazila of Natore zila, in the east by Tarash Upazila of Sirajgaonj zila and Chatmohar upazila of Pabna zila and in the west by Natore sadar Upazila.

The Upazila shahar is situated at a distance of 42 km. from Natore Ishurdi Highway. The upazila shahar is at a distance of 60 km. from Natore town. Upazila headquarter is also connected with Tarash Upazila by a kutcha road.

Dark grey clay soils of the older Ganges meander floodplans are prevailing. The Young Ganges meander floodplans brown silty clays along the Atrai river and Baral river are occurring in the east. The Nanda kuja river flows through the upazila. The river plays a vital role during monsoon for communication within the upazila.

Exact materiological data are not available for the upazila. However, the materiological data recorded in the greater Rajshahi region indicate that the climate of the upazila is fairly comfortable. The maximum temperature generally in the month of April when it reaches as high as 38.8°C and the minimum is in the month of January when it remains at around 10.9°C . The average maximum temperature from June to October ranges around 34.7°C . The maximum rainfall is about 317 mm. in the month of August and minimum in the month of December having no rainfall.

2.2 Population and Settlement Distribution Within the Zila :

Natore zila consists of 6 upazilas, 51 unions, 1272 mauza & 1353 village. It has a total area of about 1864 sq. km. and total population of 10,67,058 (1981 census). The population density is highest in the Gurudaspur upazila & lowest in the Singra upazila. Gurudaspur covers 10.7% of the zila area having 12.7% of the zila population. The average population density of Natore zila is 573 persons per sq. km. (1981 census). The population distribution within the zila has been shown in the table 2.1.

Table - 2.1.

Population Distribution in Natore Zila, 1981

Sl. No.	Upazila	Area in		Total Population	Density per	
		sq. mile	sq. km.		sq. mile	sq. km.
1.	Bagatipara	53	138	86890	1633	631
2.	Baraigram	116	300	170737	1476	570
3.	Gurudaspur	77	200	135899	1763	681
4.	Lalpur	114	296	175862	1539	594
5.	Natore	155	401	272820	1761	680
6.	Singra	204	529	224850	1101	425
	Natore Zila	719	1864	1067058	1484	573

Source : Rajshahi Zila Statistics Census 1987, B.B.S.

With in the Upazila :

Gurudaspur Upazila consists on 8 unions, 105 mauzas and 117 villages. It has a total area of 200 sq. km. and density of population is 681 per sq. km. Out of total population 50.9% (69183) are male and 49.1% (66716) are female. The unionwise population distribution of the upazila has been shown in table 2.2.

TABLE - 2.2

Unionwise Population Distribution in Gurudaspur Upazila, 1981

Sl. No.	Union	Area in		Total Population	Density per	
		Acres	Hectares		sq. mile	sq. km.
1.	Nazipur	10,640	4306	25,684	1545	597
2.	Biaghat	10,649	4310	26,598	1599	617
3.	Gurudaspur	3,726	1508	22,513	3357	1494
4.	Moshinda	6,332	2563	20,269	2049	791
5.	Dharabarisha	7,833	3170	19,149	1565	604
6.	Chapila	8,746	3539	21,686	1587	613
Gurudaspur Upazila		47,926	19396	1,35,899	1763	681

Source : Bangladesh Population Census, 1981, B.B.S.

The population density is the highest in the Gurudaspur union as the upazila headquarter and markets are situated in this union. The population density is lowest in the Nazipur union. The upazila is a thriving rural centre of trade and commerce. It produces high yielding variety of rice and watermelon. There is an old mosque constructed during the reign of mughals.

Migration :

It is very difficult to assess the migration at the upazila and zila level. Information of the migration pattern of former Rajshahi District is the only information.

In the Gurudaspur union which accomodates Upazila headquarter, the rate of growth of population from 1961 to 1974 was 3.62% and from 1974 to 1981 was 2.98%. the national growth rate was 2.52% for the year 1961-1974 and 2.6% for the year 1974-1981. From above analysis it is found that the immigration was dominant between the year 1961 to 1981.

2.3 Economic Performance :

Natore is an agricultural zila. High yielding variety of rice and watermelon are produced in this upazila. The cropping intensity of the zila is 148% as against 153% for Bangladesh. The main reason of low cropping intensity is the inadequate water for irrigation during dry season.

Out of total 47,926 acres of land of the upazila, 21,041 are single cropped, 13,350 are double cropped and 2,261 are tripple cropped land. The important agricultural crops of the upazila are paddy wheat, potatoes, pulses, splices, oilseed, watermolen, etc.

Zila

The total number of person at the age group of 10 years above is 6,95,791 persons out of which 2,92,830 persons or 42.08% employed in different sectors of economy. Amongst the employed 72.41 percent are in agriculture, 1.65 percent in manufacture, 7.42% in business and 18.48 percent in other sectors.

Upazila :

The total number of persons of Gurudaspur Upazila at the age group of 10 years above is 87,645 persons, out of which 38,952 persons or 44.44 percent are employed in different sectors of economy. Amongst the employed 78.44 percent are employed in agriculture, 0.97 percent in manufacture, 7.26 percent in business and 13.31 percent in other sectors. For more details Table No. 2.3 may be seen.

TABLE - 2.3

Occupational Classification of Population (10 years and above) 1981.

Name of the Upazila	Not Working		Household		Agriculture		Manufacturing		Business		Other		Total
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	
Bagatipara	12540	22.21	21266	37.71	14873	26.38	201	0.36	1556	2.76	5976	10.59	58452
Baraigra	20318	18.60	24565	38.97	36324	33.26	323	0.03	2221	2.03	7463	6.83	109214
Gurudaspur	16682	19.03	32011	36.52	30553	34.86	377	0.43	2637	3.24	5185	5.92	87645
Lalpur	27055	23.46	42092	36.50	30605	26.54	2530	2.19	3963	3.45	9046	7.84	115311
Natore	36714	20.42	67902	27.77	50089	27.86	1072	0.60	7407	4.12	16591	9.23	179775
Singra	28451	19.30	55345	37.55	49582	33.64	331	0.22	3739	2.54	9892	6.71	147394
Natore Zila	141760	20.37	261201	37.54	212046	30.48	4834	0.69	21734	3.12	54153	7.78	695791

Source : Upazila Statistics of Bangladesh; Aug. 1988, B.B.S.

2.4 Transport Linkage :

Gurudaspur Upazila headquarter is connected with the district headquarter by a pucca road. The distance of upazila centre from Natore Ishurdi highway is 42 km. The basic means of transport available in the Upazila are bus, ricksaw and cart. The upazila headquarter is connected with most of the union parishads by kutcha roads. Bullock carts play a vital role in transportation during the dry season. For details of transport linkage and transport system table 2.4 may be seen.

Table - 2.4

Length of Different Types of Roads and Railway (1987)

Sector	Gurudaspur Upazila		Natore Zila	
	Mile	Km.	Mile	Km.
Railway	00	00.00	64	102.98
Pucca Road	04	6.44	108	173.77
Semi Pucca Road	05	8.05	62	99.76
Kutcha Road	97	156.07	1042	1676.58

Source : Zila Rajahahi Statistics, 1987, B.B.S.

2.5 Social Infrastructure

Most of the higher order of social facilities are available in Rajshahi or Bogra town which is within a short distance of Natore Zila headquarter and Gurudaspur Upazila headquarter. People of Natore Zila depends on Natore town for higher order social service like education, medical treatment, recreation, etc.

Markets/Commerce :

There are 26 hats/bazars in this upazila, out of which 9 are daily bazars and 17 are weekly/biweekly hats. One hat/bazar serves every 5,226 persons in the upazila.

Education :

There are 1 college, 12 high/junior high school, 44 madrashas and 48 primary schools in this upazila. One high/junior high school serves 11,325 persons on the average. There are one madrasa for 3,089 persons one primary school serves 2,831 persons. The teacher-student ratio in college, high/junior high school, madrasa and primary school are 18,26,24 and 57 respectively.

Health :

There are 1 hospital, 16 family planning clinics and 2 doctors in this upazila. This shows that there is one doctor and one family planning clinic available for 67,950 and 8,494 persons respectively.

Urban Services & Utilities :

Currently electricity and sanitary facilities are available at the upazila headquarter. Out of 117 villages of the upazila, 23 villages have been so far provided with electricity. This indicate that 19.7 percent of the total villages of the upazila have electricity facilities.

But Gurudaspur Upazila shahar does not have good social infrastructure facilities. These facilities fall short of even the standard of social services followed by the government. One upazila health complex, 1 hat/bazar, one degree college, 1 boys high school, 1 girls school, 1 primary school are situated in the upazila shahar. The other parts of the upazila have poor communication facilities.

Different social infrastructure facilities in Natore zila and Gurudaspur Upazila are shown in the following tables.

Table - 2.5

Number of Educational Institution

<u>Educational Institution</u>	<u>Gurudaspur Upazila</u>	<u>Natore Zila</u>
Madrasha	44	100
Primary School	48	471
Secondary School	12	135
College	01	11

Source : Rajahahi Zila Statistics, 1987, B.B.S.

Table - 2.6

Position of Hospital Facilities (1985)

Hospital Facilities	Gurudaspur Upazila	Natore Zila
Upazila Health Complex	01	05
Union Health Centre	00	13
Family Planning Clinic	16	84

Source : Rajahahi Zila Statistics, 1987, B.B.S.

Table - 2.7

Number of Hat, Bazar (1984 - '85)

Hat/Bazar	Gurudaspur Upazila	Natore Zila
Daily Bazar	09	25
Weekly/Biweekly	17	141

Source : Rajahahi Zila Statistics, 1987, B.B.S.

Table - 2.8

Number of Cinama Hall, Registered Club,
Public Library and Orphanage (1984 - '85)

Type of Facilities	Gurudaspur Upazila	Natore Zila
Cinema Hall	02	08
Registered Club	15	97
Public Library	02	06
Orphanage	00	01

Source : Rajahahi Zila Statistics, 1987, B.B.S.

Table - 2.9

Number of Post Office, Telegraph Office, Bank Branch
Dakbanglow/Resthouse (1984 - '85)

Type of Office	Gurudaspur Upazila	Natore Zila
Post Office	8	66
Telegraph Office	1	5
Bank Branch	8	62
Dakbanglow/Resthouse	1	12

Source : Rajahahi Zila Statistics, 1987, B.B.S.

Table 2.9 reveals that 16,987 persons are served by one post office and 1,35,889 persons are served by 1 Telegraph Office in Gurudaspur Upazila. Bank branch are enough for the Upazila where one branch serving 16,987 persons.

2.6 Synthesis - Hierarchy of Settlements :

To determine the hierarchy of settlements all of the settlements area in the Upazila should be identified first. Physical identification of all settlement areas was not possible because of the time and budgetary constraints. On the other hand, the map collected from various source do not identify the settlement areas, they only identify mauza boundaries. But in almost all cases the mauza boundaries differ and in some cases few mauzas are combined together to form one settlement area.

For these reasons mauzawise distribution of population and service facilities have been examined first and then identification of settlement areas have been made for the purpose of hierarchy determination. The methodological approach for the hierarchy determination area as follows.

The mauza have been weighted based on different indicators viz, population, administrative function, educational institution, industrial and commercial importance, efficiency in transport linkage, etc. The weightage of different indicators are shown in table 2.10.

Table 2.10

Indicators with weightage

Sl. No.	Indicators	Weightage	
		Main head	Sub head
1.	Population	15	
	a) Upto 1000		5
	b) 1000 and 2000		10
	c) Above 2000		15
2.	Education	12	
	a) Madrasha		1
	b) Primary School		1
	c) Secondary School		3
	d) College		7
3.	Health Facilities	10	
	a) Hospital		8
	b) Clinic/Dispensary		2
4.	Bank	5	
5.	Post Office	5	
6.	Govt. Establishment:	15	
	a) U.N.O. office, Upazila Complex		12
	b) Other Office		3
7.	Market:	10	
	a) Daily		4
	b) Bi-weekly		6
8.	Roads:	5	
	a) Pucca		4
	b) Semi Pucca		1
9.	Bus Stopage	8	
10.	Electricity	3	
11.	Godwons	2	
12.	Industry	5	
13.	Cinema Hall	5	
		100	

Preliminarily 20 settlements areas (mauzas) where some concentration of services and facilities are present were identified.

The weightage of the services and facilities of those mauzas have been shown in table 2.11. We have classified these settlement zones as below with categories having specified weightage.

Category A 65 and above
Category B 45 to 64
Category C 25 to 44
Category D 24 and below

Accordingly, Chanchkoir (78), Khamarnachkoir (73), are categorised as category A and Mosinda (52), Kachikata (45), Dharabarisha (45), Gurudaspur (53), Khobjipur (50), Nazirpur (45) are under category B, Naribari Uttarpara (33), Biaghat (30) under C category settlements and the rest are D category settlements.

Map - 2 shows the different categories of settlement found from table 2.11.

Table 2.11

THE WEIGHTAGE OF SERVICES AND FACILITIES

Sl No.	Indicators	Name of Mauza																			
		Mouyda	Kachhikata	Shaha Pur	Bamankola	Dharabarisha	Palsura	Gurudaspur	Chunchkoir	Khumarnachkoir	Pargurudaspur	Naribariuttarpura	Hamlakel	Naribari Dakshin para	Biaghat	Khobjipur	Jogendra nagar	Nazir Pur	Ber Gangarampur	Brichapila	Khamar Pathuria
1.	Population:	15	5	10	5	10	15	5	15	5	5	5	5	5	10	10	10	5	5	5	5
2.	Education:																				
a)	Madrasa	1	1	-	1	1	1	1	1	1	-	1	1	1	1	1	1	1	-	1	1
b)	Primary School	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1	1	-
c)	Secondary School	3	3	-	-	3	-	-	3	3	-	3	-	-	-	3	-	3	-	-	-
d)	College	-	-	-	-	-	-	-	7	-	-	-	-	-	-	7	-	-	-	-	-
3.	Health Facilities:																				
a)	Hospital	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-
b)	Clinic/Dispensary	2	2	-	-	2	-	-	-	2	-	-	-	-	-	2	-	2	-	-	-
4.	Bank:	-	5	-	-	5	-	5	5	5	-	-	-	-	-	5	-	5	-	-	-
5.	Post Office:	-	5	-	-	5	-	5	5	-	-	-	-	-	-	-	-	5	-	-	-
6.	Govt. Establishment:																				
a)	U.N.O. Office	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
b)	Other Office	3	3	-	-	-	-	3	3	3	-	3	3	3	-	3	3	3	-	-	-
7.	Market:																				
a)	Bi-weekly	6	6	-	-	6	-	6	6	4	-	-	-	-	4	4	-	4	-	5	-
b)	Daily	4	4	-	-	4	-	4	4	6	-	-	-	-	6	6	-	6	-	-	-
8.	Roads:																				
a)	Pucca	-	-	-	-	-	-	4	4	4	-	4	-	4	-	-	-	-	-	-	-
b)	Semi-Pucca	1	-	-	-	-	-	1	1	1	-	1	1	-	-	-	-	-	-	-	-
9.	Bus-Stopage:	3	-	-	-	-	-	3	3	3	-	8	-	-	-	-	-	-	-	-	-
10.	Electricity:	3	3	3	3	3	3	3	3	3	3	3	-	3	3	3	3	3	3	3	3
11.	Godowns:	-	2	-	-	-	-	2	2	2	-	-	-	-	-	-	-	2	-	-	-
12.	Industry:	5	5	5	5	5	-	5	5	5	-	5	-	5	5	5	5	5	-	5	5
13.	Cinema Hall:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL :		52	45	19	15	45	20	53	73	63	9	33	11	22	30	50	23	45	9	15	14

2.7 Socio-Economic Condition of the Shahar Area:

The Shahar area has a total population of 12943 (1981 census). The number of households surveyed during socio-economic survey are 40 which contain 330 persons. It is found from socio-economic survey that average size of the household is 8.25 persons. And 5.00% of the household have 1 to 3 persons and 52.50% of the household have 4 to 7 persons. The number of households by sizes are shown in table 2.12.

Table 2.12

Number of Household by Size

Size of Household	No. of household	percentage of household	Total population
1-3	02	5.00	06
4-5	09	22.50	43
6-7	12	30.00	75
8-9	02	5.00	16
10 - table	15	37.5	190
Total	40	100.00	330

Average size of household = 8.25.

Source: Field survey, 1989.

Table 2.13 shows the literacy rate and level of education. It is found that 43.33 of the population are literate in the Gurudaspur Shahar area. Education is more in primary level (18.18%) than in secondary level (16.97%).

Table 2.13

Population Distribution by level of Education

Level of Education	No. of Population	Percentage of Population
Primary level	60	18.18
Secondary level	56	16.97
Above secondary	27	8.18
Illiterate	142	43.03
Children	45	13.64
Total	350	100.00

Source: Field Survey, 1989.

Table 2.14 shows the occupational classification of the population. It shows that about 31.51% are employed.

Table 2.14

Occupational classification of the Population

Occupation Category	No. of Population	Percentage of Population

Agriculture	30	9.09
Business	37	11.21
Service	07	2.12
Labour/Worker	30	9.09
Student	113	34.24
Unemployed/Dependent	78	23.64
House Wife	35	10.61

Total	330	100.00

Source: Field Survey, 1989.

Household income is shown in table 2.15. About 32% of the household have monthly income less than taka three thousand.

Table 2.15
Distribution of Household by Income Range

Household income range (monthly) Taka	No. of Household	Percentage of Household
Upto - 1000	00	00.00
1000 - 2000	05	12.50
2000 - 3000	08	20.00
3000 - 4000	09	22.50
4000 - 5000	06	15.00
5000 - 6000	01	02.50
6000 - above	11	27.50
Total	40	100.00

Source: Field Survey, 1989.

Monthly Expenditure patterns of household is shown in table 2.14. It is found that the households have to spend almost the whole income on food and clothing. People spend very less on health and recreation.

Table 2.16

Monthly Expenditure Pattern of Households

Item of Expenditure	Percentage of Household by range of Expenditure (in tk.)						Total
	Upto Tk.100	100 to 250	250 to 500	500 to 1000	1000 to 1500	Above 1500	
Food	00.00	00.00	00.00	10.00	10.00	80.00	100.00
Clothing	02.50	20.00	42.50	32.50	00.00	00.00	100.00
Housing	27.50	37.50	27.50	07.50	00.00	00.00	100.00
Education	17.50	10.00	30.00	15.00	05.00	10.00	87.50
Health and Recreation	65.00	30.00	05.00	00.00	00.00	00.00	100.00
Transportation	35.00	22.50	35.00	07.50	00.00	00.00	100.00
Others	42.50	27.50	27.50	02.50	00.00	00.00	100.00
Savings	02.50	07.50	10.00	07.50	02.00	22.50	52.50

Source: Field Survey, 1989.

Table 2.17 shows the household by type of structures. Only 10% are pucca, 50% are semi-pucca and rest are kutcha.

Table 2.17

Household by types of structure

Types of structure	No. of structure	Percentage of structure
Pucca	04	10.00
Semi-Pucca	20	50.00
Kutcha	16	40.00
Total	40	100.00

Source: Field Survey, 1989.

The distance of different facilities from household are shown in table 2.18. It shows that except college most of the other facilities are located at convenient distance.

Table 2.18

Distance of Different Facilities from Households

Facilities	Number of households having facilities within (in km.)					Total
	Upto 2	Above 2 : Below 1	Above 1 : Below 2	Above 2 : Below 4	Above 4	
Primary School	33	07	00	00	00	40
Secondary School	27	12	01	00	00	40
College	22	18	00	00	00	40
Post office	29	11	00	00	00	40
Market	37	03	00	00	00	40
Hospital	27	12	01	00	00	40
Place of work	14	12	12	01	01	40
Bus station	22	17	01	00	00	40
Main Road	34	06	00	00	00	40

Source: Field Survey, 1989.

Table 2.19 shows that there is no water supply system in the upazila. People depends mostly on hand tubewells for drinking water.

Table 2.19

Distribution of Households by Available of Water Facilities

Type of water supply facilities	Number of household taking water for		Percentage of household taking water for	
	Drinking	Bathing	Drinking	Bathing
Hand tubewell	40	15	100.00	37.50
Open-well	00	00	00.00	00.00
Pond/River/Khan	00	25	00.00	62.50
Total	40	40	100.00	100.00

Source: Field Survey, 1989.

2.8 Current Development Projects

A) The major on going development projects in the Gurudaspur Upazila are:

Sl No.	Name of the Projects	Name of the Union	Doner	Cost (Tk. in laks)	Duration
1.	Construction of 40 ft. RCC 'T' beam bridge in the sahapur-pipla road.	Moshinda	Care-04	7.79	1988-'89
2.	Construction of 30 ft. RCC 'T' beam bridge in the shidhaci shonabaju road.	Dhara Barisha	Care-03	7.22	1989-'90

B) Work Under Food-for-Work Programme during 1988-'89 and 1989-'90

Sl No.	Name of the Scheme	Name of Union	Donor	Amount of wheat in M. Ton.	Amount of wheat at for PHR(1989
1.	Re-construction of Bilbaspur to Mashinda road.	Moshinda	WFP	61.29(1988-'89)	6.12
2.	Re-construction of Chitla para to Garishapara road.	Gurudaspur	WFP	78.05(1988-'89)	7.41
3.	Re-construction of Nazirpur to Kusumhati road.	Nazirpur	WFP	50.22(1988-'89)	5.07
4.	Re-construction of Khubjipur-Atrai branch to Sripur khal road.	Biaghat	WFP	44.80(1988-'89)	4.30
5.	Re-construction of Pipla to Jogendra nagar road.	Biaghat	CARE (Normal)	90.91(1988-'89)	4.08
6.	Re-construction of Charkadaha Primary school to Sharipur road.	Dhara Barisha	CARE (Normal)	119.29(1988-'89)	9.89

Sl No.	Name of the Scheme	Name of Union	Donor	Amount of wheat in M. Ton.	Amount of wheat at for PMR(1989-'90) in M.Ton.
7.	Re-construction of Kumarkhali Ferighat to Mohishari road.	Biaghat	CARE (Special)	60.13(1988-'89)	4.96
8.	Re-construction of Nazmul Haque road to Daripara road.	Dhara Barisha	CARE (Special)	57.61(1988-'89)	4.84
9.	Re-construction of Copinathpur to Maharajpur road.	Nazirpur	WFP	79.24(1988-'89)	-
10.	Re-construction of Kalakandar to via pergurudaspur and Narayanpur Haribhanga bil road.	Gurudaspur	WFP	68.25(1989-'90)	-
11.	Re-construction of Binnabari to Uttar Naribary via Singpara and Dakkhin Naribari.	Gurudaspur	WFP	43.99(1989-'90)	-
12.	Re-construction of Chittra para to Hansmari road.	Dhara Barisha	WFP	59.78(1989-'90)	-
13.	Re-construction of Charpara to Last Boundary of Moshinda (upto Dhamahi).	Moshinda	WFP	41.74(1989-'90)	-
14.	Re-construction of Noapara (Nearupal shahar) to Halsha road of Ahmed pur.	Chapila	CARE	118.90(1989-'90)	-
15.	Re-construction of Kumarkhali to shabgari via Biaghat road.	Biaghat	CARE	129.10(1989-'90)	-

CHAPTER III

THE UPAZILA HEADQUARTER

3.1 Determination of Sphere of Influence of Attractiveness

The sphere of influence or attractiveness of Gurudaspur Upazila centre is affected by the nearness of the Natore zila town. The upazila centre lies only 60 km. from the Natore zila town. Daily communication from this zila town to Gurudaspur is possible.

As an upazila administrative headquarter it's sphere of influence covers whole of upazila. As the road network within the upazila is poor and most of the internal roads are kutcha, the sphere of influence of the upazila centre for other different activities and functions are limited to areas in and around the upazila centre.

The upazila is a thriving centre of trade and commerce. It produces high-yielding variety of rice and watermelon. Rice, jute, cattle and watermelon are distributed to other parts of Bangladesh from this upazila.

The catchment area of the Gurudaspur upazila is considered to be intermediate hinterland within a distance of 3 to 4 km. Map - 2 shows the catchment area. Details of catchment area is given in table 3.2.

3.2. Determination of the Upazila Shahar Area

During the determination of the Shahar area all existing urban and semi-urban areas including the probable future expansion have been considered. The main urban activity is concentrated in and around the upazila parishad i.e. in the Khamar Nachkair Mauza. Upazila Headquarters, BADC office, Upazila Complex, Veterinary hospital, Girls School, Gono Unnayan Academy, One Godown, Police Station, central graveyard, Krishi Bank, Janata Bank, a number of Rice Mills, Helipad, Telephone Exchange, Dakbungalow are in the Khamar Nachhair Mauza. Balika Dakhil Madrasha, Eidgah, Primary School, Cinema Halls, Daily Market, Rice and Jute Market, Cattle Market, Boiler Mill, Godown and Boy's High School are situated in the Chanchkoir Mauza. Revenue office, Mondop, Mosque, Old Mosque and a densely populated residential area in the Gurudaspur Mauza. One High School, Union parishad cum community centre, one Primary school and densely populated residential area in the Nari Bari Uttar para mauza.

There is one densely populated residential area and one madrasha in the Par-Gurudaspur mauza. Other area included in the shahar area is Narayanpur.

Map - 2 and Table 3.1 shows the detail of shahar area.

TABLE 3.1

Details of Shahar Area

Sl. No.	Name of the Union/Mauza	Total Area		Involved Area		Total Population			Involved Population		
		Acre	Hectare	Acre	Hectare	1961	1974	1981	1961	1974	1981
1.	Surudaspur	51	21	51	21	1035	1515	1270	1035	1515	1270
2.	Chanckoir(P)	1382	559	910	363	5812	10037	11751	3827	6609	7738
3.	Khamar Nach Koir	290	117	290	117	855	1382	1764	855	1382	1764
4.	Naribari Uttar para(P)	413	167	265	107	713	1139	1504	457	731	965
5.	Narayanpur(P)	380	154	101	41	842	1336	1559	224	355	414
6.	Pergurudaspur (P)	360	146	130	53	379	620	792	379	620	792
Total :		2876	1164	1747	707	9636	16029	18640	6777	11212	12943

Note : 1. 'P' Indicates part of Mauza.

2. Total Population of Pergurudaspur Mauza Concentrated within the Shahar Area.

TABLE 3.2

Details of Catchment Area

Sl No.	Name of the Union/Mauza	Total Area		Involved Area		Total Population			Involved Population		
		Acre	Hectare	Acre	Hectare	1961	1974	1991	1961	1974	1981
a) Gurudaspur Union:											
1.	Narayanpur(P)	380	153.78	279	112.91	842	1336	1559	618	981	1145
2.	Haalaikol	309	125.05	309	125.05	549	809	949	549	809	849
3.	Naribari Uttar para(P)	413	167.14	148	59.89	713	1139	1504	256	408	539
4.	Binnabari(P)	432	174.83	217	87.82	333	642	795	167	322	399
5.	Naribari Dakkhinpara	342	138.41	342	138.41	243	471	615	243	471	615
6.	Panchsisha	146	59.09	146	59.09	220	381	585	220	381	585
7.	Chanchkoir(P)	1382	559.29	472	191.02	5821	10037	11751	1958	3428	4013
b) Moshinda Union:											
1.	Sahapur	711	287.74	711	287.74	1205	1879	2556	1205	1879	2556
2.	Bamankola	493	199.51	493	199.51	1059	1540	1807	1059	1540	1807
c) Dharabarisha Union :											
1.	Charkadaha(P)	920	372.32	388	157.02	968	1485	2421	408	625	1021
2.	Chalanali	590	238.77	590	238.77	640	978	1236	640	978	1236
d. Biaghat Union:											
1.	Biaghat(P)	1134	458.92	79	31.97	1397	2242	2785	97	156	194
TOTAL :		7252	2934.85	4174	1689.20	13990	22939	28463	7450	11978	14959

3.3 Existing Land Use facilities and Utilization characteristics:

Like other upazila in Bangladesh, Gurudaspur Upazila shahar has expected a linear growth pattern. The main development has taken in Khamar Nachikair Mauza. Table 3.3 shows the existing land use of the shahar area.

TABLE 3.3

Existing Land use of Gurudaspur Upazila Shahar (Shahar Area)

Sl No	Land Use(Existing)	Area in		Percentage
		Acres	Hectares	
1.	Agriculture, Forestry	1027.52	415.63	58.83
2.	Commerce	10.89	4.41	0.62
3.	Industry	18.04	7.30	1.03
4.	Health	7.89	3.19	0.45
5.	Education	16.42	6.65	0.94
6.	Adminstrative Govt. Deptts.	23.87	9.66	1.37
7.	Recreation	0.21	0.08	0.01
8.	Socio-culture	14.18	3.28	0.81
9.	Urban Services	4.43	1.79	0.25
10.	Roads	53.61	21.70	3.07
11.	Residential	441.89	181.29	25.29
12.	Water Bodies	128.05	51.82	7.33
	Total :	1747.00	706.80	100.00

Source : Field Survey, 1989.

Agriculture, Forestry :

Out of the total land of the shahar area, 58.83% (1027.52 acres/415.73 hectares) is under agriculture. These include mainly paddy fields, sugarcane, watermelon, scattered vegetable patches, etc.

Commerce :

Charchkoir market is the main commercial centre in the designated shahar area. Daily bazar & biweekly hat take place in this area. This market area consists of 0.62% (10.89 acres/4.40 hectares) of the shahar area.

Industry :

There is no big industry like cotton, jute or textile mills. But a Biscuit factory, some rice mills and sawmills are located in Khamar Nachkair and Chanchkoir mauza. These together occupy an area of 1.03% (18.04 acres/7.30 hectares) of the shahar area.

Health

Upazila Health Complex and Veterinary hospital are situated in the Khamar Nachkoir Mouza. The total area under health service is 7.89 acres (3.19 hectares) i.e. 0.45% of the shahar area.

Education :

There are one college, two boys high schools, one girls high school and five primary schools which together occupy about 0.94% (16.42 acres/6.64 hectares) of the shahar land. College, one high school and three primary schools are situated in Chanchkoir mauza. Girls high school is at Khamar Nachkoir and one high school and one primary school are situated at Naribari Uttarpura.

Administrative & Govt. Departments :

Total 23.87 acres(9.66 hectares) of land are under this category, which is about 1.37% of the total shahar area. The main administrative and Govt. offices (U.N.O. Complex) are situated in the Khamar nachkoir mauza and revenue office is situated in the Guruasapur mauza.

Recreation :

There are two cinema halls at Chanchkoir mauza. The land under recreational facilities is only about 0.01% (0.21 acres/0.08 hectares) of the shahar area.

Socio-cultural :

Masjid, mondop and graveyard occupy approximately a land area of 14.18 acres/5.73 hectares (0.81%) of the shahar area.

Urban services :

Post office at Gurudaspur mauza, Police station at Khamar nachkoir mauza and Tahasil office at Chanchkoir mauza together occupy only about 0.25% (4.43 acres/1.79 hectares) of the land of shahar area.

Roads :

The main pucca road is Natore-Gurudaspur road. Other roads are mainly semi-pucca and kutcha. Roads occupy 53.61 acres/21.69 hectares (3.07%) of shahar area.

Residential :

Approximately 25.29% (441.89 acres/178.79 hectares) of land of shahar area is being used for residential purpose.

Water bodies :

There are several tank/ponds in the shahar area. Several khals are also passes through the shahar. These water bodies occupy about 7.33% (128.05 acres/51.8 hectares) of land of shahar area.

Map-3 shows the existing land use of the shahar area and table 3.4 shows the mauzawise land use pattern.

Table 3.4

Existing landuse of Gurudaspur Shahar (Mouza wise) Area in acre/Hectare

Mouza	Commerce	Industry	Education	Health	Office	Recreation	Socio- (Culture)	Urban Services	Residence	Paddy field land Agri.	Roads	Water Bodies	Total
Gurudaspur	0.67 (0.27)	0.11 (0.05)	-	-	0.37 (0.15)	-	0.78 (0.32)	0.45 (0.18)	23.97 (9.70)	6.49 (2.63)	2.45 (0.99)	15.71 (6.36)	51 (20.65)
Chanchoir	9.45 (3.82)	14.40 (5.83)	10.36 (4.39)	-	0.70 (0.29)	0.21 (0.08)	9.92 (4.01)	-	255.42 (103.34)	512.99 (207.56)	28.70 (11.61)	67.36 (27.25)	910 (368.17)
Khasarnach- koir	0.77 (0.31)	2.24 (0.91)	0.70 (0.28)	7.39 (3.19)	22.28 (9.01)	-	1.51 (0.61)	2.82 (1.14)	37.51 (15.18)	184.07 (74.47)	10.61 (4.29)	19.50 (7.93)	290 (117.32)
Naribari Uttarpara	-	1.29 (0.52)	3.79 (1.53)	-	0.52 (0.21)	-	1.32 (0.53)	1.16 (0.47)	53.99 (21.84)	174.96 (70.79)	7.27 (2.94)	20.70 (8.38)	265 (107.21)
Narayanpur	-	-	1.07 (0.43)	-	-	-	0.65 (0.26)	-	37.63 (15.23)	57.32 (23.19)	2.85 (1.15)	1.48 (0.60)	191 (77.29)
Pergurudaspur	-	-	-	-	-	-	-	-	33.37 (13.50)	91.70 (37.10)	1.73 (0.70)	3.20 (1.29)	130 (40.86)
Total :	10.89 (4.40)	18.04 (7.31)	16.42 (6.64)	7.89 (3.19)	23.87 (9.65)	0.21 (0.08)	14.18 (5.73)	4.43 (1.79)	441.89 (178.79)	1027.52 (415.74)	53.61 (21.68)	129.65 (51.81)	1747 (706.81)
Percent :	0.62	1.03	0.94	0.45	1.37	0.01	0.81	0.25	25.29	58.83	3.07	7.33	100

3.4 Physical Opportunities and Constraints :

One of the most important characteristics of the Upazila shahar is that it consists of three different categories of land. These are high land, medium high land, and low land. Most of the high land in the urban area is under utilization, either office, market or home stead. The medium land occupying sugarcane, watermelon and paddy fields. The low lying area also occupying paddy fields, canal, pond/marshy land etc. The physical opportunities and Constraints for preparation of the land use plan/master plan are shown in diagram-1.

The land value within the shahar area varies according to location and type of land. The land adjacent to upazila headquarter cost Taka 12,00,000 to 13,50,000 per acre. The Medium high land cost Taka 2,40,000 to Taka 2,70,000 per acre. The low land cost Taka 90,000 to Taka 1,22,000 per acre.

There are some important things which should be considered during the planning of the shahar area.

a) With the completion of the Jamuna Bridge, the Dhaka-Natore highway may pass through Gurudaspur Upazila shahar as per plan of roads and Highways Department. The existing road from Gurudaspur to Tarash is kutcha and from Tarash to Dhaka-Bogra highway is semi-pucca.

b) In every Boro season the Upazila Parishad constructs a temporary earthen dam over the river Gumani and Stores Water at the upstream for irrigation at the Chalanbil area. Chanchkoir is a trade centre with navigation facilities from areas like Natore, Chandpur and Chittagong. In Boro season this navigation temporarily stops from downstream.

c) The existing market at Chanchkoir is actually the centre of all urban activities and is a very congested area. It has good transport linkage with the remote regions of the upazila through waterways like khals and rivers.

3.5 Concept Plan

As the Tarash Natore road is connected to Dhaka-Rajshahi highway it will be very busy road after the completion of proposed jamuna bridge. So, no industrial and commercial activities have not been proposed along this road. Rivers, ponds and ditches are kept reserved for drainage channel and fisheries projects. Since the present market at Chanchkoir is very congested four new commercial centres are proposed away from the existing market. One industrial area is proposed and a new road is also proposed for the industrial area. After the completion of proposed bridges on Gumani River and Gur River most of the development activities will take place on the northern side of the rivers.

A schematic concept plan is shown in Diagram - 2 which indicates future township.

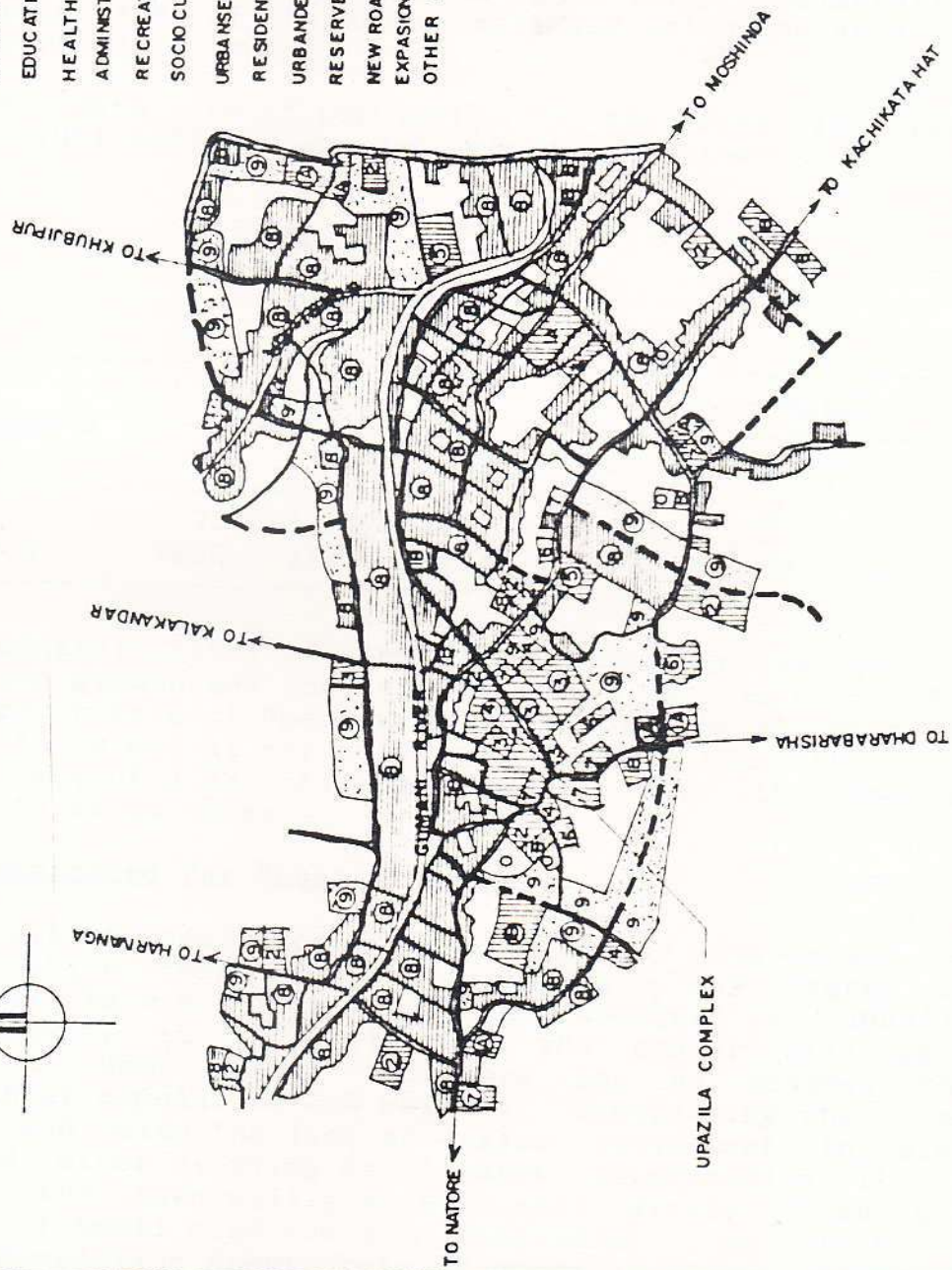
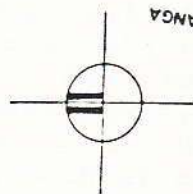
DIAGRAM -2

LEGEND

- 1 AGRICULTURE
- 2 COMMERCE
- 3 INDUSTRY
- 4 EDUCATION
- 5 HEALTH
- 6 ADMINISTRATION
- 7 RECREATION
- 8 SOCIO CULTURAL
- 9 URBAN SERVICE
- 10 RESIDENTIAL
- 11 URBAN DEFERRED
- 12 RESERVE
- 13 NEW ROAD
- 14 EXPANSION OF EXIST. ROAD
- 15 OTHER ROAD

CONCEPT PLAN OF
GURUDASPUR UPAZILA SHAHAR

NOT TO SCALE



Signature
HAROON-UR-RASHID
SR. PLANNER
KASHAF-UR-RASHID
JUNIOR PLANNER

CHAPTER - IV

FORECAST

4.1 Population, Density and Household Structure:

4.1.1 Population

For determining future growth of population three growth levels namely high, medium and low have been taken into consideration. Population projections of the shahar area and catchment area have been done separately.

The trend of growth rate of population for the years 1961-1974, 1974-1981 and 1961-1981 are shown in the table below:

TABLE - 4.1

Growth Rate

Gurudaspur Upazila Shahar	Population			Growth Rate		
	1961	1974	1981	1961-74	1974-81	1961-81
Shahar Area	6777	11212	12943	3.95	2.07	3.29
Chatchment Area	7450	11978	14959	3.72	3.23	3.55

The recent decentralization of administration is expected to have an effect on the growth and composition of the upazila town. But the extend growth rate of Upazila shahar may not be as high as medium size towns but it may be slightly higher than the long term growth rate of 3.29. An assumption of 4.00 the upazila shahar may quite be in order.

Growth Rate Considered for Upazila Shahar

The future growth of population of upazila shahar will depend on many factors which cannot be predicted with any degree of precision. But in view of the importance assigned to upazila shahar development, it is likely that the shahar will gain population. The best growth therefore may be assumed the national growth of population 2.6 percent. Considering the size of the town and also the lack of major investment in e.g. industries and other planning development intervention it is expected that the town will grow at a rate greater than the average rate of small size towns in Bangladesh. As discussed earlier the population growth rate of upazila shahar is more likely to be past trend of growth rate. We may disregard the 1974-81 or 1961-74 growth rate because of proximity of the year 1974 to the upheaval of 1971 which have distorted the trend. For importance of development of upazila shahar the following growth rate may be assumed.

TABLE - 4.2

Growth Rate Assumed for Projection of Future Population

Gurudaspur Upazila Shahar	Low	Medium	High
Shahar Area	3.50	4.00	4.50
Catchment Area	3.00	3.50	4.00

Table 4.3, 4.4 and 4.5 show the low, medium and high projections of population of the shahar area, catchment and both shahar and catchment area combined.

TABLE - 4.3

Projected Population 1986-2001 A.D. of the Shahar Area

Level of Projection	Growth Rate	Population of 1981 (base year)	Projected Population			
			1986	1991	1986	2001
Low	3.50	12943	15,372	18,257	21,684	25,754
Medium	4.00	12943	15,747	19,159	23,310	28,360
High	4.50	12943	16,129	20,100	25,048	31,215

TABLE - 4.4

Projected Population 1986-2001 A.D. of the Catchment Area

Level of Projection	Growth Rate	Population of 1981 (base year)	Projected Population			
			1986	1991	1986	2001
Low	3.00	14,959	17,342	20,104	23,306	27,018
Medium	3.50	14,959	17,767	21,101	25,062	29,765
High	4.00	14,959	18,200	22,143	26,940	32,777

TABLE - 4.5

Population Projection 1986-2001 A.D.
For Shahar Plus Catchment Area

Projection	Pop. of 1981	Pop. of 1986	Pop. of 1991	Pop. of 1996	Pop. of 2001
Low	27,902	32,714	38,361	44,990	52,772
Medium	27,902	33,514	40,260	48,372	58,125
High	27,902	34,329	42,243	51,988	63,992

According to the medium population projections the population of the designated shahar area, catchment area and shahar plus catchment area will be 28,360, 29,765 and 58,125 persons respectively. In estimating the requirements of land for various functional use, the provisional will be multiplited by the number of population of medium projections.

4.1.2 Density

The land use survey for the designated shahar area was completed at the beginning of 1990. At the rate of 4.00 percent growth rate the estimated population of 1990 will be 18,422 persons. In 1990 the residential area covers 441.89 acres. Therefore the net density is $18,422/441.89=42$ persons per acre. If the density of population is raised to only 100 persons per acre no more new land will be needed for residential purposes.

4.1.3 Household Structure

The present average size of household in the shahar area as per field survey is 8.25 persons and from 1981 census the average size of household for Gurudaspur Upazila was 6.40. Considering 8.25 will be the household size for shahar area and 6.40 catchment area, the number of household for low medium and high level projection are shown in Table 4.6.

TABLE - 4.6

No. of Households for Shahar and Catchment Area

Level of Projection	Population		Population	
	Shahar Area	Catchment Area	Shahar Area	Catchment Area
Low	25,754	27,018	3,122	4,222
Medium	28,360	29,765	3,438	4,651
High	31,215	32,777	3,784	5,121

4.1.4 Aspects of Migration

Migration data at upazila level are not available. Information available by local survey are insignificant on temporary migration due to employment or due to education of children and life time migration due to marriage. However, regarding the aspects of migration it is well known that there is migration from rural to urban.

It has been found that the of growth in population for the Shahar area between 1961-'74 and 1974-'81 are 3.85 and 2.07 respectively and for the catchment area the rate of growth in population between 1961-'74 and 1974-'81 are 3.72 and 3.23 respectively. Total gain/loss includes natural increase in/out migration. The rate of national growth is 2.6. So, the in-migration was dominant in the shahar area for 1961-'74 and out migration was dominant in this area for the year 1974-'81. In-migration was dominant in the catchment area for 1961-'74 and 1974-'81.

4.2 Labour Force and Employment

With rapid development of upazila shahar and changes in the nature of functions it is expected that there will be growth of labour force in the upazila shahar and employment structures will undergo a substantial changes from the present one.

The proportion of agricultural employment within the upazila headquarters will decrease. But service and business sector are likely to absorb the surplus agricultural labour force and form an important source of employment generation.

In the growth of labour force in the shahar and catchment area it is assumed that there may be some increase in the rates of female participation in future. It is also assumed that the population composition by age group, sex activity rate will remain same throughout the period.

It is recorded in the Upazila statistics that 67.19 percent of total population are labour force and out of which 44.44 percent are employed in different sectors of economy.

The World Bank estimates that the national rate of growth of labour force per annum in Bangladesh in 1977-2000 A.D. is 2.7 percent as compared with the respective rate of population growth of 2.6 percent (World Bank Development Report 1979, p. 162). According to the medium projection the labour force of the shahar and catchment area will be 37,214 in 2001 A.D. as shown in Table 4.7.

TABLE - 4.7

Projection of Labour Force of Shahar and Catchment Area

Projection	Labour Force 1981	Rate of growth	Labour force 1986	Labour force 1991	Labour force 1996	Labour force 2001
Low	17,994	3.20	21,063	24,656	28,862	33,785
Medium	17,994	3.70	21,579	25,877	31,032	37,214
High	17,994	4.20	22,104	27,152	33,354	40,972

4.3 Land Requirements and Provision Standards

The standards of provision mentioned in the guidelines of the TOR are considered to be quite reasonable. In estimating the requirements of land for residential, park, play ground, primary school and graveyard the Shahar area population 28,360 (medium projection for the year 2001 A.D.) has been taken into consideration.

The land requirements for all other services except those stated above have been calculated for the projected population 58,125 (Shahar and Catchment area population medium projection for the year 2001 A.D.).

Table 4.8 shows the land requirements for Gurudaspur Upazila Shahar.

TABLE 4.8

Land Requirement as per Provision Standard

Category of Land use	Provision Standard as per TOR	Land requirement as per TOR		Existing landuse		Land proposed in the plan (including existing)		
		Acres	Hectares	Acres	Hectares	Acres	Hectares	Nos.
1.A. Commerce	1.5 acres per 1000 pop.	87.19	35.27	10.89	4.41	43.11	17.44	
1.B. Industry	1.5 acres per 1000 pop.	87.19	35.27	18.04	7.30	41.04	16.60	
2. Education	-	40.40	16.35	16.42	6.64	34.26	13.86	
i) Nursery & Primary/Madrasha	2 acres per 5,000 Pop.	11.34	4.59	3.33	1.35	7.33	2.97	9
ii) Secondary School	5 acres per 20,000 Pop.	14.53	5.88	7.34	2.97	13.34	5.40	7
iii) College	5 acres per 20,000 Pop.	14.53	5.88	5.75	2.33	13.59	5.50	2
3. Health	-	26.16	10.58	7.89	3.19	20.10	8.13	
i) Dispensary/Maternity/child care/Veterinary	1 acre per 5,000 Pop.	11.63	4.71	1.35	0.55	7.00	2.83	4
ii) Health Complex (Hospital)	5 acres per 20,000 Pop.	14.53	5.88	6.54	2.65	13.10	5.30	1
4. Administration/Judiciary	-	26.50	10.72	23.87	9.66	26.37	10.67	
i) U.N.O. Complex	12 acres per upazila	12.00	4.89	16.64	6.73	16.69	6.75	
ii) Other Govt. Office	12 acres per upazila	12.00	4.86	7.23	2.93	7.23	2.93	
iii) Jailkhana	2.50 acres per upazila	2.50	1.01	-	-	2.50	1.01	
Recreation	-	38.53	15.59	0.21	0.08	17.89	7.24	

Category of Land use	Provision Standard as per TOR	Land requirement as per TOR		Existing landuse		Land proposed in the plan (including existing)		
		Acres	Hectares	Acres	Hectares	Acres	Hectares	Nos.
i) Parks, open space	1 acre per 1000 Pop.	28.36	11.47	-	-	12.00	4.86	2
ii) Cinema, Closed space	0.5 acre per 20,000 Pop.	1.45	0.59	0.21	0.08	0.21	0.08	2
iii) Sports stadium	3 acres per 20,000 Pop.	8.72	3.53	-	-	5.58	12.30	1
5. Socio-cultural	-	15.81	6.40	14.18	5.74	15.18	6.55	
i) Community Centre/Club	1 acre per 20,000 Pop.	2.91	1.18	-	-	2.00	0.81	4
ii) Religious facility (Mosque/Mondir)	0.5 acre per 5,000 Pop.	5.81	2.35	3.09	1.25	3.09	1.25	12
iii) Graveyard	5 acres per 20,000 Pop.	7.09	2.87	11.09	4.49	11.09	4.49	6
1. Urban services	-	20.33	8.23	4.43	1.79	10.98	4.44	
i) Post Office	0.5 acre per 20,000 Pop.	1.45	0.59	0.45	0.18	1.00	0.40	1
ii) Telephone Exchange	0.5 acre per 20,000 Pop.	1.45	0.59	1.06	0.43	1.06	0.43	1
iii) Police station	2 acres per 20,000 Pop.	5.81	2.35	1.76	0.71	1.76	0.71	1
iv) Bus station/ Ghat	2 acres per 20,000 Pop.	5.81	2.35	-	-	4.00	1.62	2
v) Other (fire brigade, elec. substation, water supply).	2 acres per 20,000 Pop.	5.81	2.35	1.16	0.47	3.16	11.28	3
8. Residential	100 persons per acre	28.60	11.57	441.97	178.78	466.89	189.90	
9. Urban Deferred	10% of the built up area	174.80	70.68	-	-	175.00	70.81	

Category of Land use	Provision Standard as per TOR	Land requirement as per TOR		Existing landuse		Land proposed in the plan (including existing)		
		Acres	Hectares	Acres	Hectares	Acres	Hectares	Nos.
10. Reserves including ponds, water bodies.	-	-	-	128.05	51.81	128.05	51.81	
11. Roads	Major road 100 ft, 60 ft wide, secondary roads 40 ft. wide & local roads 24 ft. wide.	-	-	53.61	21.69	138.65	56.10	
12. Outlying Agriculture	-	-	-	1027.52	415.73	628.48	254.28	
TOTAL	-	-	-	1747.00	706.94	1747.00	706.94	

CHAPTER-V

LAND USE PLAN/MASTER PLAN

5.1 Approach, Concept, Planning Principles

5.1.1 Approach :

Due to delays in the institutionalization of planning and development control in the smaller towns it was agreed that past planning approach aiming at optional using of urban land could not be followed but a new type of plan should be development which would be realistic and implementable in the present circumstances. Since there was no effective legislative basis to control the use of private urban land nor the means to enforce such a control, it was decided that the plan should not be a land use plan which would regulate the type and intensity of private residential and commercial development in the traditional zones of development control. Instead the plan could realistically aim at achieving only planned and controlled development of public sector projects for which purpose legislative provisions and institutional framework exists.

However, it was felt that private residential and commercial development could be forecast in terms of location and intensity of development. It was realized that forecasting of private land use development together with planned public sector development projects mainly roads, water supply, industrial estates, public housing and community facilities could produce an minimum land use plan. This plan would not create an optimal urban land use development but would probaly bring out a development which would from the environment, accessibility, shelter and services point of view be much more rational than the present uncontrolled and uncoordinated development. The main features of the adopted land use planning approach are then :

- 1) Forecasting of land use development and,
- 2) Identification and locational planning of public sector projects on the basis of the present and future needs.

The methodology applied in forecasting private residential land use involves forecasting of intensification of the existing land use by mauza in terms of likely increase in persons per acre density as well as forecasting land use extension in terms of increases in the residential acreage. It may be noted that the location of the projected new residential development should allow later detailed optimal land use planning of the extension area should opportunity for that arise. The techniques based 1) on the use of approximate density standards derived from the analysis of the present land use pattern, 2) on the analysis of

the physical capacities of the areas to absorb additional development and 3) on the analysis of the physical growth pattern of the settlement during the last 20-30 years.

In regard to project identification an effort was made to prepare sector analysis and projections in order to establish present and future needs and to identify required projects on that basis including also the projects already in the implementation pipelines.

5.1.2 Concept

The land use planning of upazila headquarters means the land use plan/master plan of the upazila shahar. In the Government's policy of administrative re-organisation, the upazila has been recognized the most significant tier of the administration. And each upazila shahar will be the focal point of all upazila level administrative activities. It will plan and develop all social, economic, administrative and infrastructural services for the upazila region.

According to the Government's policy, it is needed to determine the hierarchy of settlements within the upazila as a whole, based on population, economic activities, social infrastructure provisions, transport linkages and related characteristics.

Emphasis on sectoral development of economy such as agriculture, industries, transportation, education, health and rural electrification etc. in the upazila region will result in diversification of activities and also urban and regional development at this level. This requires identification and development of probable activities and services not only for the shahar itself but also for the upazila region. The upazila will be nodal point in a well articulated system for linking urban and rural functions providing facilities for administrative, socio-economic infrastructural services.

5.1.3 Planning Principles

The planning of upazila includes the land use zoning plan of the upazila shahar in the context of regional planning. Practically it encompasses the entire field of urban and regional planning. To start with it was, therefore, necessary to analysis traditional land use and then rationalise the future use of land through planning approach.

The site for upazila headquarters has been selected before the preparation and formal approval of the land use plan. It is now needed to prepare an intergrated urban land use plan/master plan for the upazila shahar. Due to the pre-selection of the site for upazila administrative zone it has become difficult to organize the rational urban land use in the upazila shahar, because some of the functions are found dispersed.

In land requirement estimation, the approval terms of reference of Urban Development Directorate has been followed. Based on the population projections, land requirement for functional uses have been calculated.

5.2 Plan Description :

By 2001 A.D. the projected population of the Upazila shahar will be 28,360 persons (medium projection). This Population and the necessary functions and services will be accommodated within a designated area of (1,747 acres/706.84 hectares). The existing build up areas, the physical opportunities and constraints have been considered for future growth of the town.

Different functional areas have been proposed to be arranged in different blocks of land uses for their efficient functioning.

Map - 3 shows the proposed land use plan of the Gurudaspur Upazila shahar.

Table 5.1 shows the proposed land uses in the plan.

TABLE - 5.1

Land use in the plan upto year 2001 A.D. for Gurudaspur Upazila Shahar.

Land Uses	Area		Percentage
	Acre	Hectare	
Commerce	43.11	17.44	2.47
Industry	41.04	16.60	2.35
Education	34.26	13.86	1.96
Health	20.10	8.13	1.15
Administrative/ Judiciary	26.37	10.67	1.51
Recreation	17.89	7.24	1.02
Socio-culture	16.18	6.55	0.93
Urban Services	10.98	4.44	0.63
Residential	466.89	188.90	26.73
Roads	138.65	56.10	7.94
Urban Deferred	175.00	70.81	10.02
Reserve	128.05	51.81	7.33
Agriculture	628.48	254.28	35.97
Total :	1747.00	706.84	100.00

Following are the salient features of the land use :

Commerce

The existing commercial land use covers an area of 10.89 acres (4.41 hectares). The main commercial activities are in Chanchkoir mauza. For future requirement another 32.22 acres (13.04 hectares) have been proposed in Naribari Uttarpara, Khamar Nachkoir and Chanchkoir mauza, in five different locations. In Naribari Uttarpara mauza the location in western side is proposed for supermarket and in Naribari Uttarpara and Khamar Nachkoir mauza hats are proposed. Near proposed in Chanchkoir mauza bus stand, supermarkets and commercial offices are proposed. In Chanchkoir mauza in other side of Baral River hats/markets are proposed.

Industry

Industry occupies an area of 18.04 acres (7.3 hectares). New industrial plots (23.00 acres/9.31 hectares) has been proposed in Naribari Uttarpara mauza in western side of the shahar. A new road has been proposed for industrial area which connects the Notore Gurudaspur road. The land are high in this proposed location.

Education

Existing educational land use covers an area of 16.42 acres (6.64 hectares). For future requirements two additional primary schools (4.00 acres/1.62 hectares) of which one at Naribari Uttarpara and other at Chanchkair mauza, two high schools (6.00 acres/2.43 hectares) of which one at Chanchkair and other at Narayanpur mauza and one college (6.00 acres/2.43 hectares) in Khamarnachkoir mauza have been proposed for expansion by 1.84 acres (0.74 hectares)

Health Facilities :

Upazila health complex, one veterinary hospital and one maternity/childcare occupy 7.89 acres (3.19 hectares) of land. For future requirements two dispensary (4.00 acres/1.62 hectares) at Pergurudaspur and Chanchkair mauza have been proposed. The existing upazila health complex and veterinaty hosiptal have been proposed for expansion by 6.56 acres (2.65 hectares) and 1.65 acres (0.67 hectares) respectively.

Administrative :

The Upazila Complex is located in Khamarnachkoir mauza (16.64 acres/6.73 hectares). Other Government offices comprise an area of 7.23 acres (2.93 hectares) located in Gurudaspur and Khamarnachkoir mauza. One Jail (2.5 acres/1.01 hectares) has been proposed in Naribari Uttarpara mauza. For Upazila Complex no additional land is proposed.

Recreation :

Existing recreational land uses cover only 0.21 acres (0.085 hectares) of land which includes two cinema halls. For future requirements one stadium (5.68 acres/2.30 hectares) in Khamarnachkoir mauza and two parks (12.00 acres/4.86 hectares) one at Khamarnachkoir mauza and other at Chanchkair mauza have been proposed. Parks are proposed in two oppante side of the rivers in adjaecnt to residential area.

Socio-cultural :

Existing socio-cultural land uses cover 14.18 acres (5.74 hectares) of land, which includes Masjid, Mondirs, Graveyards, Eidgah, Club and Samity. For future requirements two community centres (2.00 acres/0.81 hectare) at Naribari Uttarpara and Chanchkoir mauza have been proposed.

Urban Services :

The present land use for urban services is 4.43 acres (1.79 hectares) which includes one post office, one telephone exchange, one police station and one electric substation. For future requirements one truck stand (2.00 acres/0.81 hectare) and one fire brigade (1.00 acre/0.41 hectare) at Naribari Uttarpara and one bus station (2.00 acres/0.81 hectare) and one water supply (1.00 acre/0.41 hectare) at Chanchkoir mauza have been proposed. The existing post office has been proposed for expansion by 0.55 acres (0.22 hectare).

Roads :

It has been proposed that Natore-Tarash road connected to Dhaka-Rajshahi Highway to be expanded to 100 ft wide. There will heavy traffic when Jamuna bridge will be constructed as per Roads Highways Plan. On this road two bridge one on Gumani River and another on Gur River are proposed.

The road net work of the Upazila shahar has been proposed in such a manner that they provide adequate access for vehicular and pedestrian traffic and form an efficient system of inter communication between all parts of the shahar. As far as possible the road layout has been proposed to conform with the existing road layout. Major roads proposed in the plan are 60 ft with the secondary roads 40 ft and locals 24 ft. The major roads will be the means of intra regional inter communication, the secondary roads will link different functional zones of the shahar while local roads will serve the purpose of internal circulation in the functional zones. The road net work of the shahar will occupy about 138.85 acres (56.1 hectares).

Residential :

The existing average residential density of Gurudaspur Upazila shahar is 42 persons per acre. The additional population expected in the shahar will have an effect on density of the area. The average residential density of the shahar will be about 64 persons to an acre. One planned residential area 25.00 acres (10.12 hectares) have been proposed in Khamaranchkoir mauza at southern part of shahar. This planned residential area will provide a new out-look to upazila shahar.

Urban Deferred :

About 10% of the urban land (175.00 acres/70.81 hectares) have been marked as urban deferred for future expansion that may be required in the event that the population at 2001 A.D. turns out to be greater than projected population. These should be distributed in different sectors of land use plans. These lands may be developed with garbage disposal and sanitary land fill as proposed in the plan.

Reserve and Other Land Uses :

An area of (128.05 acres/51.81 hectares) of total to be retained as reserve. These includes mostly rivers and ponds for drainage and fisheries development.

Agricultural land covers another (628.48 acres/254.28 hectares) .

Table 5.2 shows the mauzawise proposed landuses in the landuse plan.

TABLE - 5.2

Land use in the plan upto year 2001 A.D. for Gurudaspur Upazila Shahar (Mauza wise) Area in Acres (Hectares)

Mauza	Commerce	Industry	Education	Health	Office	Recreation	Socio-cultural	Urban Services	Residential	Urban Deterred	Water Bodies (Reserves)	Roads	Agriculture	Total
Gurudaspur	0.67 (0.27)	0.11 (0.04)	-	-	0.37 (0.15)	-	0.78 (0.32)	1.00 (0.41)	23.97 (9.70)	-	15.71 (6.36)	4.73 (1.91)	3.66 (1.48)	51 (20.63)
Chanchokir	32.04 (12.96)	14.40 (5.83)	17.70 (7.16)	2.00 (0.81)	0.70 (0.28)	6.21 (2.51)	10.92 (4.42)	3.00 (1.21)	255.42 (103.24)	59.04 (23.89)	67.36 (27.25)	69.78 (28.23)	371.43 (150.28)	910 (368.19)
Khanamach-kori	1.37 (0.55)	2.24 (0.91)	6.70 (2.71)	16.10 (6.51)	22.28 (9.01)	11.68 (4.73)	1.51 (0.61)	2.94 (1.15)	62.51 (25.29)	46.90 (18.99)	19.80 (7.92)	22.06 (8.93)	74.21 (30.03)	290 (117.33)
Maribari Uttarpara	9.03 (3.65)	24.29 (9.83)	5.79 (2.34)	-	3.02 (1.22)	-	2.32 (0.94)	4.14 (1.68)	53.99 (21.84)	50.06 (20.06)	20.70 (8.38)	27.40 (11.09)	64.26 (25.999)	265 (107.22)
Marayanpur	-	-	4.07 (1.65)	-	-	-	0.65 (0.26)	-	37.63 (15.23)	7.58 (3.12)	1.48 (0.60)	7.21 (2.92)	42.28 (17.12)	101 (40.86)
Pargurudas- pur	-	-	-	2.00 (0.81)	-	-	-	-	33.37 (13.50)	11.32 (4.58)	3.20 (1.29)	7.47 (3.02)	72.64 (29.39)	130 (52.60)
Total :	42.11 (17.44)	41.04 (16.60)	34.26 (13.86)	20.10 (8.13)	26.37 (10.67)	17.89 (7.24)	16.18 (6.55)	10.98 (4.44)	466.89 (188.90)	175.00 (70.31)	128.05 (51.81)	138.65 (56.10)	628.48 (254.28)	1747 (706.84)
Percentage	2.47	2.35	1.96	1.15	1.51	1.02	0.93	0.63	26.73	10.02	7.33	7.94	35.97	100.00

CHAPTER - VI

PROGRAMMING AND IMPLEMENTATION

6.1 Priority Actions and Cost Implications

As the population in the Upazila Shahar is increasing the construction of structures is also increasing day by day. Those constructions of structures will create problems in maintaining the road alignment unless land for the purpose of roads proposed and expansion of existing roads in widths is acquired immediately or a reserve is created where by the new constructions maintain the required set back from existing road.

Some urban services such as pure water supply, drainage, sanitation, gas supply etc. are to be provided on priority basis for increasing population. Development of industrial and commercial plots should be given priority as these will create jobs and improve the revenue base of the shahar.

The Upazila administration is still under a process of organization and the required physical facilities are to be provided on priority basis for efficient functioning of upazila administration.

Cost Implications

The cost that will be required for land use plan/master plan depends on the cost of land that has to be acquired, cost of new schemes to develop the necessary infrastructures and social services ect. The land required for industry, commerce, education, recreation, health, administration, socio-cultural, urban services and roads is about 225 acres (91.04 hec.). The present cost of which is about Tk. 11.25 crore considering average cost Tk. 5.00 lac per acre. Actual cost implication can be made only after proper identifications of projects and their costing.

6.2 Phasing and Urban Deferred :

The proposed plan has to be implemented phasewise. The phasing is proposed to correspond to the National Five Year Development Plans extending over 1990-'96 and 1995-2001 A.D. The on going schemes should be put on priority basis for early completion. It is proposed that all roads should be completed and all industrial and commercial plots to be developed by first phase. One primary school and one high school to be completed in first phase and remaining are to be completed by the 2nd phase. Healths centres

are to be built in 2nd phase. Parks and land for the Stadium are to be developed in first phase and stadium to be constructed in 2nd phase. Bus station, jail and community center are to be constructed in first phase and another community centre and truck stand, water supply proposed to be completed in the first phase and other 50 percent in the 2nd phase.

In fact the plan has adequate flexibility to accommodate the changes taking place during the period of implementation. The priorities of implementation of schemes have to be reviewed and adjusted from time to time see the prevailing condition and in keeping the overall objectives in view.

6.3 Development Control

Development control will be the most important instrument in implementation of plan especially in a situation where resource is limited. It is desirable that planning control in accordance with the land use plan should be exercised of control might result in some proposals being endangered.

On housing sector the most important task will be the development of standards such as height of buildings, site coverage, density per acre, preservation of trees, realisation of fees and taxes etc. and introduction of and effective system of regulation so that all construction activities are carried out in conformity with the general land use and physical plan of the Upazila Shahar.

For effective development control all public and private development scheme should first have to be approved by the Upazila administration. The BC ACT of 1952 may be enforced for upazila building construction and development control and laws and bye laws to control development should be framed. One experienced town planner should have take the development control of planned upazila shahar.

6.4 Monitoring and Review

A Considerable portion of the development budget of the Upazila comes from the national budget. The allocation of fund is linked with the priorities of the schemes at Upazila level and the total fund requirement at a particular time. The allocation also depends upon the proper utilization and performance of each upazila. For this reason in time review and monitoring of the implementation of the plan is necessary.

The present land use plan/master plan is a broad guide line for the development of Gurudaspur Upazila Shahar. The proposals in the plan are made on the basis of existing situation and expected trend in growth and their future projections and estimates. Any significant change in any of these basic criteria may make it necessary to revise some of the proposals of the plan. Hence, the plan should be periodically reviewed.

The Upazila administration should develop and inbuilt mechanism within its administrative set up to keep the plan in continual review and updating with changing circumstances. This will require a physical planning cell in the Upazila level of administration, which will also guide, control and implement land use plan/master plan.