

MASTER PLAN
for
BARISAL DIVISIONAL TOWN
(2010-2020)

VOLUME-II
URBAN AREA PLAN

JUNE, 2010



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বাংলাদেশ গেজেট
অতিরিক্ত সংখ্যা
সরকার কর্তৃক প্রকাশিত

বুধবার, অক্টোবর ১৯, ২০১১

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

গৃহায়ন ও গণপূর্ত মন্ত্রণালয়

পরিঃ শাখা-৩

প্রজ্ঞাপন

তারিখ, ৪ ঠা কার্তিক ১৪১৮ বাং/১৯শে অক্টোবর ২০১১

গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের Organizational Set up, Phase-11, (Departments/Directorates and Other Organizations under them), Volume XV (Ministry of Works), Chapter VI (Urban Development Directorate, June, 1983 এর Allocation of Functions এর ক্ষমতা বলে সরকার সিলেট এবং বরিশাল শহরের জন্য নতুন Master Plan এলাকা নির্ধারণ এবং অত্র এলাকাধীন প্রণীত Structure Plan, Master Plan ও Detailed Area Plan যথাযথ প্রক্রিয়া অনুসরণ করিয়া অনুমোদন করিয়াছে।

অতএব, সরকার অত্র প্রজ্ঞাপনের দ্বারা নতুন Master Plan এর অনুমোদনের বিষয়টি অনুমোদিত Master Plan সহ সংশ্লিষ্ট সকলের অবগতির জন্য প্রকাশ করিল।

বিশেষ দ্রষ্টব্য : অনুমোদিত মাস্টার প্ল্যান এর কপি নগর উন্নয়ন অধিদপ্তর, ৮২ সেগুন বাগিচা, ঢাকা-১০০০ এবং জেলা প্রশাসক সিলেট ও বরিশাল ও সিটি কর্পোরেশন, সিলেট ও বরিশাল -এ জনসাধারণের পরিদর্শনের সুবিধার্থে সংরক্ষিত থাকিবে।

রাষ্ট্রপতির আদেশক্রমে,
মোসাদেক হোসেন
সিনিয়র সহকারী প্রধান
শাখা-২।

PREPARATION OF MASTER PLAN FOR BARISAL DIVISIONAL TOWN

URBAN AREA PLAN 2010-2020

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ABBREVIATION AND ACRONYMS

AC/ac	Acre
ADB	Asian Development Bank
BADC	Bangladesh Agricultural Development Corporation
BCC	Barisal City Corporation
BSCIC	Bangladesh Small and Cottage Industries Corporation
CBD	Central Business District
CUA	Core Urban Area
DIP	Department of Immigration & Passport
DMDP	Dhaka Metropolitan Development Plan
EPZ	Export Processing Zone
EUA	Existing Urban Area
FFT	Fuel Free Transport
GCM	Growth Center Market
GIS	Geographic Information System
GoB	Government of Bangladesh
HYV	High Yielding Variety
LGED	Local Government Engineering Department
MG	Metropolitan Government
MISP	Multi-Sector Investment Plan
NHA	National Housing Authority
NUA	New Urban Area
PT	Public Transport
R&HD	Roads and Highway Department
ROW	Right of Way
ToR	Terms of Reference
TTC	Teachers Training College
UAP	Urban Area Plan
UDD	Urban Development Directorate

GLOSSARY

Bustee	:	Dense slum community, territorially defined by the influence of a leader, with poor environmental and living conditions
Khas	:	State owned land not specifically allocated to any government agency
Pourashava	:	Municipality
Kucha	:	Impermanent structure / building materials
Pucca	:	Permanent Construction / Structure using bricks, cement etc.
Shahar	:	Smaller urbanized area / secondary town
Slum	:	General term, also used to designate urban poor renting private land
Squatter	:	Unauthorized inhabitant of public / government land
Mouza	:	Definite area demarcated and identified by the revenue department with a jurisdiction list number. It may be populated or depopulated.
Village	:	Smallest geographic area of rural area. A village may be same as mouza or there may be more than one village in a mouza. It is always populated
Ward	:	Smallest local administrative (local govt. unit) unit of urban area. For the operational convenience municipalities' area divided into three or more wards. The ward boundaries are specified by gazette. A ward has a ward parishad (council).
Mahallah	:	Smallest identifiable area in municipalities with settlements of homogeneous group of people. For operational convenience statistical mahallas are delineated within wards.
Union	:	Smallest local administrative unit (local govt. unit) of rural area which is composed of mouzas and villages. A union has a union parishad
Upazila/Thana	:	Sub-district Administrative Area
Zila/District	:	District Administrative Area
Dighi	:	Larger ponds/tanks mostly excavated in the past by influential personnel and rulers

Note: Poura Area means the area under pourashava control. Project Area or Planning Area are synonymous as the Landuse Plan Area.

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TERMS AND MEASUREMENTS/EQUIVALENTS

1 lakh	= 1,00,000
1 million	= 10,00,000
1 crore	= 1,00,00,000
1 katha	= 0.05 bighas = 1.65 dec. = 66.9 sq.m. = 720 sq. ft.
1 bigha	= 20 kathas = 33 dec = 0.33 ac.
1 acre (ac)	= 3 bighas = 4000 sq. m. = 60.50 kathas = 100 dec
1 hectare (ha)	= 2.47ac. = 7.5 bighas = 10,000 sq. m.
1 square metre (sq. m.)	= 1.20 sq. yards = 10.76 sq. ft.
1 square kilometre (sq. km.)	= 247.1 ac. = 100 ha.
1 square mile (sq. ml.)	= 259 ha. = 640 ac. = 2.59 sq. km.
1 yard	= 3 feet = 0.9m
1 metre	= 3.281 feet
1 kilometre	= 1000m. = 0.62 miles
1 mile	= 1760 yards = 1.61 km.

Note: Throughout the report the traditional convention of using commas to indicate the division of number into thousands, lakhs, and crores has been used, rather than the English convention of using commas to indicate the division into thousands and millions.

PREAMBLE

Towns and cities have tremendous potential to stimulate economic and social development, especially by creating jobs and innovating ideas and technologies. Such potential, however, cannot be realized if cities and towns are badly managed. The key issue for achieving sustainable urban as well as rural development is appropriate guideline and necessary legislative measures along with appropriate institutional arrangement.

Urban Development Directorate (UDD) under the Ministry of Housing and Public Works prepares and co-ordinates regional plans, urban plans and site plans for the existing as well as the new urban centers. UDD is working to augment the quality of life of the people by improving the environment through planned development activities and to ensure a geographically balanced urbanization.

Without any plan, urban development is likely to result in inefficiencies and inequalities. The purpose of the Barisal city plan, like other urban plans, is therefore to reduce inefficiencies and inequalities. The main objective of the Project is the preparation of a multi-sectoral development plan comprised of Structure Plan, Urban Area Plan and Detailed Area Plans which form a framework for development of sectoral master plans, other development policies and investment program.

The objective of the plan is to ensure that Barisal can accommodate the growth of population and economic activity expected in the future; to encourage the SMEs through development of skill, creativity and self-employment; to guide the spatial distribution of urban development and to extend the provision of urban service and facilities.

The Project was managed by the Technical Management Committee (TMC) headed by the Director, UDD and the Steering Committee headed by the Secretary of the Ministry of Housing and Public Works.

The Master plan has three components the Structure Plan for the next twenty years, the Urban Area Plan for the next ten years and the Detailed Area Plan covering different time span as and when required.

The Structure Plan (2010-2030)

The Structure Plan Provides guidance for development over a large area and a longer period of time, it is of necessity expressed as policy outline. The Structure Plan include sectoral strategies like the economy, the spatial development strategies, housing and slum, traffic and transportation, urban land development strategies, environmental and disaster management strategies etc. It also includes a section on the institutional aspects for the implementation of the plan. The Sector includes discussion on the constraints and opportunities currently exist on the way for plan implementation.

Urban Area Plan (2010-2020)

The Plan provides a midterm strategy for the next ten years for the development of Urban Area and defines the geographic boundaries of the extent of area that will cover during the interim plan period. The Urban area of Barisal has been divided into 26 Spatial Planning Zones (SPZ), each of them needs to be examined and actions related to promotion should be identified.

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Detailed Area Plan

Detailed Area Plan is a separate document covering the issues which requires immediate attention during the early period of the structure plan. It examines, in the context of the structure plan, those items that might be implemented in this period and thus contains more detail on a more limited range of subjects than the structure plan.

Finally it is expected that this plan package will serve as a guideline to the future infrastructure development of the city together with the land use control and effective management of the services and facilities. This will ensure planned, economic and physical growth of the city.

(A.Z.M. Tajul Islam)
Director
Urban Development Directorate

MANAGEMENT COMMITTEE

A. LIST OF STEERING COMMITTEE (SC) MEMBERS

Sl No.	Designation	Organization	Position
1.	Secretary	Ministry of Housing & Public Works	Chairperson
2.	Chairman	Bangladesh Inland Water Transport Authority	Member
3.	Joint Chief	Physical Infrastructure Division, Planning Commission	Member
4.	General Manager	Bangladesh Railway, Sylhet	Member
5.	Chairman	Bangladesh Road Transport Authority	Member
6.	Director General	IMED	Member
7.	Director General	Bangladesh Water Development Board	Member
8.	Joint Secretary	Ministry of Finance	Member
9.	Joint Secretary	Ministry of Water Resources Development	Member
10.	Joint Secretary	Ministry of Communication	Member
11.	Joint Secretary	Ministry of Environment & Forest	Member
12.	Joint Secretary	Ministry of Land	Member
13.	Joint Secretary	Ministry of Local Government, Rural Development & Co-operations	Member
14.	Joint Secretary	Ministry of Civil Aviation and Tourism	Member
15.	Joint Secretary	Ministry of Shipping	Member
16.	Chief Engineer	Sylhet City Corporation	Member
17.	Chief Engineer	Barisal City Corporation	Member
18.	Joint Secretary (Dev)	Ministry of Housing & Public Works	Member- Secretary
19.	Director	Urban Development Directorate	

B. LIST OF TECHNICAL MANAGEMENT COMMITTEE (TMC) MEMBERS

Sl No.	Designation	Organization	Position
1.	Director	Urban Development Directorate	Chairperson
2.	Director General or his representative	Water Resources Planning Organization(WARPO)	Member
3.	Deputy Chief	Planning & Implementation Cell, Ministry of Housing and Public Works	Member
4.	One Representative	Planning Commission	Member
5.	One Representative	IMED	Member
6.	Departmental head or his representative	Department of Urban and Regional Planning, BUET	Member
7.	One Representative	RAJUK	Member

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Sl No.	Designation	Organization	Position
8.	Chief Engineer or his representative	Barisal City Corporation	Member
9.	Superintending Engineer or his Representative	Public Works Department, Barisal	Member
10.	Superintending Engineer or his Representative	Roads and Highways, Barisal	Member
11.	Superintending Engineer or his Representative	Local Government Engineering Department (LGED), Barisal	Member
12.	Superintending Engineer or his Representative	DPHE, Barisal	Member
13.	Superintending Engineer or his Representative	BWDB, Barisal	Member
14.	Superintending Engineer or his Representative	PDB, Barisal	Member
15.	Deputy Director	Department of Environment, Barisal	Member
16.	Concerned Officer	Ministry of Housing & Public Works	Member
17.	One Representative	Bangladesh Porjaton Corporation	Member
18.	One Representative	Bangladesh Inland Water Transport Authority	Member
19.	One Representative	Geological Survey of Bangladesh	Member
20.	Deputy Director (PD)	Urban Development Directorate	Member-Secretary

Chapter- 1

SCOPE AND BACKGROUND OF THE REPORT

Scope of the ToR

This volume contains the Urban Area Plan for Barisal as per the ToR. **Map 1.1** shows the boundary of Structure Plan Area, Barisal City Corporation Area and Urban Plan Area.

Background of the Master Plan

This Report (Final Report) has been prepared as part of the requirement set out in the Terms of Reference under the project "Preparation of Structure Plan, Master Plan and Detailed Area Plan for Barisal divisional town". The Master Plan for Barisal Divisional Town contains a three tier Plan- Structure Plan, Urban Area Plan and Detailed Area Plan. This Volume contains the Urban Area Plan.

Objective of the Urban Area Plan is to translate the worded policies of the Structure Plan into actions and programs for the first ten years of the Structure Plan period. This Urban Area Plan covers the existing urban area and the area which have been identified for immediate development in the first ten years. This Urban Area Plan consists of a report and a map.

Structure of the Report

Chapter-1 explains the scope of the Report and Background of the Master Plan. From Chapter-2 to Chapter-4, this Report translates the Policies of the Structure Plan into guidelines, actions plans and programs for the management of urban development of Barisal for the first ten years, and in a few cases beyond that.

The Urban Area Plan covers an area of approximately 33 sq-km or 8270 acres. The urban area of Barisal has been divided into 26 **Special Planning Zones (SPZ)**, each of them needs to be examined and actions related to promotion need to be identified.

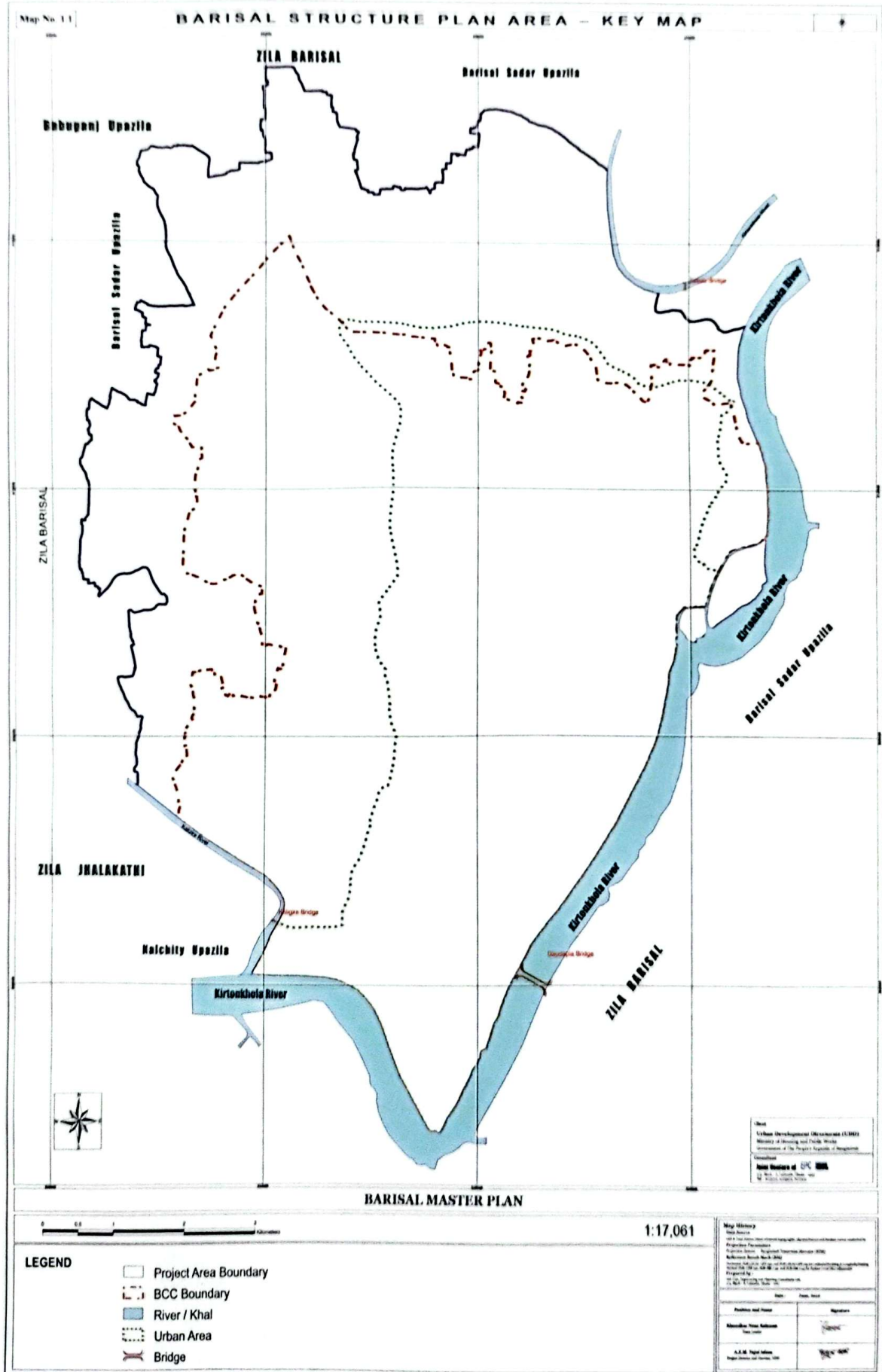
Chapter-2 of the Report covers the Development Promotion functions of the concerned authority. This part contains a series of guidelines which will be required to steer the actions for realization of the promotional role of the implementing authority.

Chapter-3 of report contains the issues relating to Development Coordination and establishment of Metropolitan Government and restructuring of BCC. It identifies the priority programs to be implemented or started within the ten years of the Plan period.

Chapter-4 of the Report covers the Development Control functions to be pursued by the implementing authority. This part contains following four sections:

- Urban Area Guideline
- Transportation Guideline
- Industrial Guideline
- Park and Ecologically Sensitive Area Guideline

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Chapter- 2

DEVELOPMENT PROMOTION

Introduction

Present development trend of Barisal shows dismal demonstration of uncoordinated intervention in the name of development. For a comprehensive urban development some authority or authorities must be given the responsibility to carryout different roles of Development Promotion. Role of Development Promotion will be fourfold, which will be carried out by the concerned authorities:

- Metropolitan Government, the "Higher Tier Authority" must deal with the central government to uphold the importance of investment in Barisal as the regional hub of development and reestablish its role as communication hub, educational and trade center and establish its new role as an Ideopolis City.
- Secondly, the authorities need to market and promote the competitive edges of Barisal for investment and living among the national and international investors.
- Thirdly, to fulfill the objectives of the Structure Plan the authorities need to translate the Policies of the Structure Plan and initiate development programs and projects.
- Fourthly, the authorities need to convince other private parties and government agencies to ensure priority projects are implemented.

Each of the above roles is elaborated in the following section.

The importance of investment in national development

At present the major share of urban investment goes to Dhaka and Chittagong metropolitan Cities. This resulted in unsustainable situation in these two Cities. Two objectives can be fulfilled through concentrating more investment in Barisal; firstly, major investment in Barisal, as a regional hub, will bring more equitable development for the country. Secondly, investment in Barisal and other similar regional centers will bring relief to the social and ecological environment of Dhaka and Chittagong Metropolitan Cities. If the authorities can be successful in this role it is expected to increase the awareness about the contribution of regional cities to the economic growth and social welfare of the country.

Marketing Barisal

The second important promotional role of the authorities is to "sell" Barisal as an attractive location for investment for private investors. "Marketing" should focus primarily on the potentiality of tourism and agro-industry. This focus will bring two fold benefits; firstly, it will help develop employment opportunities and secondly, increase the value addition to the products and services of the existing economic activities.

Restructuring and establishing new institutions with legal and organizational change to cover the work of development promotion is crucial in this regard. The higher tier authority (Metropolitan Government) should establish an Investment Coordination Unit that among its other work can undertake the following activities:

- Initiate discussion with local and foreign investors about the conditions and actions required to create a desirable investment climate.
- To provide counseling services to the existing potential local investors.
- To prepare promotional material illustrating the competitive edge of Barisal, as a destination for investment, over other similar locations.
- To attend and organize local, regional and international trade and investment fairs to establish effective linkage between the investors and the facilitators of Barisal.

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- To coordinate programs for potential investors to visit Barisal.
- To organize seminars, symposium and consultation programs to motivate and guide young entrepreneurs in favour of establishing small and medium enterprises; motivating them to rise as a creative class and eventually ensuring that Barisal turns into an Ideopolis City.
- To coordinate activities with national promotional bodies.

Identification of Projects and Programs

Another important role of promotion is to identify the projects and programs required for the realization of the objectives set in the Structure Plan. To develop Barisal in accordance with the Structure Plan, some of the policies need positive intervention by different government and other agencies.

Projects and programs will be initiated from the following sources:

- Structure Plan Policies
- Specific needs of different areas of Barisal
- Through preparation of Local Area Plans and Detailed Area Plans

Development Promotional Policies of the Structure Plan

Structure Plan Policies which requires promotional actions are listed below:

EUA.01 Promotion of Regional Agriculture

Action Required

Supporting and promoting research for the development of a sustainable agro-economy; supplying farm input at a reasonable price, supporting integrated farm production practice; promoting irrigation to raise intensity of cropping; pursuing concerned agencies for soft credit for farming, and creation of infrastructure and storage facilities for marketing of agro-products.

EUA.02 Developing Growth Center Markets (GCMs) at the Peripheral wards/unions of the City Boundary

Action Required

Nine growth centers outside the main urban area have been identified where small and medium size enterprises and administrative facilities will be located. **Map 2.1** shows the locations of the Growth Centers.

ED.07 Promoting Decentralization Policies at National Level.

Action Required

Negotiating with central government to establish different regional offices with discretion of power in Barisal.

CF.09 Development of Tourism Focusing Regional Resources.

Action Required

Marketing of Barisal as tourist destination is most important task for development of tourism. Development of at least one project, under Detailed Area Plan, to initiate investment in eco-tourism sector would be vital.

[illegible]

CF.04 Encourage private entrepreneur to invest in the community facilities sector.

Action Required

Prepare investment proposal for private sector investment in community facility development. Promote sense of corporate social responsibility to pursue business houses to support development of community facilities.

CF.11 Identify, promote and protect historical and culturally sensitive places.

Action Required

The authorities should take initiative by itself and pursue other concerned agencies and private parties to identify historical and culturally sensitive places and promote them.

FCD.07 Motivate people and grow communal awareness to abide by the drainage channel encroachment law.

Action Required

Organize seminars and symposiums to make the communities and other stakeholders aware about the negative consequence of encroachment of the drainage channels and motivate them to abide by the encroachment law.

EMD.05 Community based waste collection system to be promoted and sustained

Action Required

Promoting and sustaining community based waste collection system need to be done for introducing an effective solid waste management system. In this process separation of organic and inorganic components of the waste can be performed at the source of waste generation, preferably by using separate bins for different types of litters.

Needs of different Areas

The urban area of Barisal has been divided into 26 **Special Planning Zones (SPZ)**, each of them needs to be examined and actions related to promotion have to be identified.

SPATIAL PLANNING ZONES: ISSUES, PROBLEMS, OPPORTUNITIES AND ACTION REQUIRED

NUA.01 Area for Residential Use

Issues and Problems

- Semi-urban area
- Low/moderate density
- Spontaneous development without proper infrastructure provision
- No initiative for provision of infrastructure reserve

Opportunities

- Low density development
- High land
- Proximity to the existing urban area
- Major road and canal forms the boundary

Action Required

- Identify the alignment of proposed road and road those need up-gradation;
- Defer development activities on land reserve required for new road and road up-gradation.
- Initiate community based awareness program to preserve and protect water bodies.
- Initiate community based actions to prepare local development plan.

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- Pursue different government agencies to prepare infrastructure plan before development takes place.
- Initiate dialogue to disseminate the benefits of developing Amanatganj Khal under ESA-03

NUA.02 Area for Low Income Housing

Issues and Problems

- Semi-urban area
- Low/moderate density
- Spontaneous development without proper infrastructure provision
- No initiative for provision of infrastructure reserve

Opportunities

- Low density development
- High land
- Proximity to the existing BSCIC area
- Proximity to Major road (Lakutia road and proposed Kaunia road) and canal.

Action Required

- Identify the alignment of proposed road and road those need up-gradation.
- Identify reserve for implementation of ESA 03 and ESA 04.
- Initiate community based awareness program to preserve and protect water bodies.
- Defer development activities on land required for new road.
- Initiate community based actions to prepare local development plan.
- Pursue different government agencies to prepare infrastructure plan before development takes place.

NUA.03 Area for New Urban Development

Issues and Problems

- Semi-urban area
- Low density
- Spontaneous development without proper infrastructure provision
- No initiative for provision of infrastructure reserve
- Bifurcated by Dhaka-Barisal highway.

Opportunities

- Low density development
- Adjacent to area for terminal and transfer station (NUA 06) at Billah Bari Moar on Lakutia road and transfer terminal at Chahutpur-Kashipu Moar.
- Location for proposed central wholesale market.
- Proximity to the existing BSCIC area
- Proximity to Major road and canal.

Action Required

- Identify the alignment of proposed road and road those need up-gradation.
- Identify reserve for implementation of ESA 02 and ESA 04.
- Initiate community based awareness program to preserve and protect water bodies.
- Defer development activities on land required for new road.
- Initiate community based actions to prepare local development plan.
- Pursue different government agencies to prepare infrastructure plan before development takes place.
- Prepare Local Area Plan on priority basis.

NUA.04 Low Density Residential Area

Issues and Problems

- Semi-urban area
- Low density
- Spontaneous development without proper infrastructure provision
- No initiative for provision of infrastructure reserve
- North, south and west side of the zone is surrounded with ecologically sensitive area.

Opportunities

- Low density development
- Transport corridor and natural setting (ESA01 & ESA 02) marks the zone as high quality residential area.
- Eastern boundary formed by C&B Road, northern boundary formed by proposed up-graded Shere-Bangla Road.

Action Required

- Identify the alignment of proposed road and road those need up-gradation.
- Identify reserve for implementation of ESA 01 and ESA 02.
- Initiate community based awareness program to preserve and protect water bodies.
- Motivate community to maintain pervious ground coverage to a ratio of **Pervious: Impervious = 60%: 40%**
- Defer development activities on land required for new road.
- Initiate community based actions to prepare local development plan.
- Pursue different government agencies to prepare infrastructure plan before development takes place.
- Prepare Local Area Plan on priority basis.

NUA.05 Area for Eco-Tourism

Issues and Problems

- Rural area
- Low density
- Spontaneous development without proper infrastructure provision
- No initiative for provision of infrastructure reserve
- All sides of the zone are surrounded with ecologically sensitive area (ESA 01)
- C&B road passed through the eastern side.

Opportunities

- Low density development
- Canal network surround all side of the zone.
- The zone is surrounded by high quality natural setting.
- High potential area for ecotourism development.

Action Required

- Identify land reserve for implementation of ESA 01.
- Initiate community based awareness program to preserve and protect the ecosystem.
- Initiate community based actions to prepare local development plan.
- Promote and market the zone.
- Pursue different government agencies to prepare infrastructure plan before development takes place.
- Prepare Local Area Plan on priority basis to restore the present character and enhance its market value as tourist destination.

NUA.06 Area for Terminals and Transfer Station

Issues and Problems

- Rural area
- Low density
- Spontaneous development without proper infrastructure provision
- Insufficient road width
- No initiative for provision of infrastructure reserve.

Opportunities

- Low density development
- Located at the junction of road and canal network.
- Located on the northern and southern entry point.

Action Required

- Pursue concerned agency to conduct full length study to design the terminals and transfer station.
- Defer development activities on land required for NUA.06
- Initiate stakeholders consultation to identify the demand and other guiding factors required for design of the terminals and transfer stations.

CUA.01 Conservation Zone

Issues and Problems

- Old part of the city.
- High density development
- Spontaneous development without proper infrastructure provision
- Insufficient and unsafe pedestrian facilities

Opportunities

- Presence of heritage buildings and site.
- Vibrant urban life.
- Criss-crossed by many lanes

Action Required

- Pursue concerned agency to conduct full length study to identify heritage buildings & sites and take initiatives to preserve them.
- Take marketing initiatives of the heritage resources to the potential tourists.
- Negotiate with concerned authority of the central government to relocate the jail outside the Structure Plan Area.
- Pursue concerned agency to identify heritage buildings and structures inside the jail and take proper step to preserve those.
- Initiate stakeholders, specially community, consultation to promote and preserve the value of buildings and sites having architectural, historical and other cultural significance.

CUA.02 Green Zone

Issues and Problems

- High quality government residential area.
- Trend of filling up ponds and open spaces
- Insufficient pedestrian facilities.

Opportunities

- Presence of heritage buildings and site.
- Lush green character.
- Presence of big old trees.
- Presence of Lake and ponds.
- Could be continuation of river side recreation zone.

Action Required

- Pursue concerned agency to conduct full length study to identify heritage buildings & sites and take initiatives to preserve them.
- Take marketing initiatives of the heritage resources to the potential tourists.
- Pursue all to maintain the existing character of low density, low height and green character.
- Pursue concerned agency to replace the existing boundary wall with more see-through/transparent walls to increase the visibility of the area
- Take initiative with other agencies to establish the zone as bird sanctuary.

CUA.03 Pedestrian Precinct Zone.

Issues and Problems

- Major wholesale trading zone.
- Spontaneous dense development.
- Motorized vehicle doesn't match the development pattern.
- Criss-crossed by narrow lanes, which are of pedestrian scale.

Opportunities

- Connected through canals and roads.
- Proximity to main administrative zone.
- Low rise development, which adores to human scale of living and movement.

Action Required

- Start consultation with stakeholders to promote the idea of declaring the zone as precinct.
- Take initiatives to restrict movement of motorized vehicles.

EUA.01 Riverside Activity Zone

Issues and Problems

- Major wholesale trading zone.
- Spontaneous dense development.
- Motorized vehicle doesn't match the development pattern.
- Criss-crossed by narrow lanes; which are of pedestrian scale.

Opportunities

- Land and river connectivity.
- Existing use for fish landing and distribution.

Action Required

- Market the area for private and public investment for the development of fresh water fish processing industry.
- Promote all investors to ensure that the area develops with a positive image of a gateway to Barisal.

EUA.02 Park and Recreation Zone

Issues and Problems

- Mostly vacant
- River front location
- Children park
- Almost the entire zone is occupied by different public agencies and most of the land is underutilized.

Opportunities

- Land and river connectivity.
- Existing use for fish landing and distribution.

Action Required

- Prepare an action plan.
- The area should be designed taking advantage of the magnificent location of the river front.

EUA.03 Mixed Use Zone with Administrative Preference

Issues and Problems

- Predominantly administrative development.

Opportunities

- Land and river connectivity.
- Existing use for fish landing and distribution.

Action Required

- Market the area for private and public investment for the development of fresh water fish processing industry.

EUA.04 Sports Complex Zone

Issues and Problems

- Location of Barisal stadium.
- Existence of slum.

Opportunities

- Present use conform the recommended use.
- River side view.

Action Required

- Prepare plan for development of the area as sports zone.

EUA.05 Institutional Zone

Issues and Problems

- Location of Shere-Bangla Medical College, B. M. College, Baptist Mission, Oxford Mission, Polytechnic Institute. Orphanage constitutes this zone.

Opportunities

- Low density green area dominates the zone.

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Action Required

- Retain the existing prevailing institutional character of the zone.

EUA.07 Mixed Use Zone

Issues and Problems

- Very close to industrial development and spontaneous residential development.

Opportunities

- Low density development dominates the zone.

Action Required

- Motivate community to maintain pervious ground coverage to a ratio of **Pervious: Impervious = 60%: 40%**
- Initiate community based actions to prepare local development plan.
- Pursue government agencies to prepare infrastructure plan before development takes place.
- Prepare Local Area Plan on priority basis.

Chapter- 3

DEVELOPMENT COORDINATION

The integrated planning and development of Barisal cannot be effective except through coordination of the activities of the implementing agencies that have major development responsibilities. The lack of coordinated approach to the setting of priorities and implementation of project is an apparent deficiency in the existing system.

Considering these issues a higher tier authority named Metropolitan Government is proposed in the Structure Plan of the Plan.

Structure Plan Policies for Development Coordination

INSA.01 Formulate 'Higher Tier Authority'

The main objectives of forming a higher tier planning authority is to provide services at a level that caters for the population requirements, enhances the know-how transfer and updates the regulations which contributes to the development of human resources and to increase their efficiency and skills.

INSA.04 Ensure coordination among the organizations working with the same goals and objectives

Co-ordination among different development organizations has to be ensured to have an effective implementation of the Set of Plans. Careful distribution of the tasks among the different organizations and co-ordinate and monitor these regularly will ensure the implementation of the Structure plan as a whole. Coordination will take place through MG. Organizations working in the same field for example in economic or structure field are needed to sit together to work out their plans and programs to achieve the structure plan's goals and objectives and MG should act as a moderator of such meeting to ensure that all projects and programs are following the Set of Plans of the area. MG will also assist different organizations to understand the goals and objectives of the new Set of Plans to identify their future tasks. This will ensure to save time, money and other resources and make sure to use public and private resources effectively and efficiently

There would be a council within the Metropolitan Government. This Council would be chaired by the Mayor of Barisal City Corporation and Chief Town Planner, Local Head of all local Government and the representative of all development agencies would be the councilors. Investment Planning is another important function of this council. A full fledged ordinance needs to be made for Metropolitan Government for ensuring these activities.

Firstly, the objective of the Council would be to seek the cooperation of the implementing agencies in producing a partially integrated development programme by means mutually agreed adjustments to project and programs. Later on the Council can take on a more significant role, by assessing projects and programs of the individual agencies, in relation to each other and in deciding overall priorities for expenditure- i.e. to prepare a Multi-Sectoral Investment Programme (MSIP).

Tasks of the Council

The council can perform a number of tasks to ensure coordination of activities and project programming in the metropolitan area. The general process is outlined below:

1. Identification of on-going and planned projects and programs in the metropolitan area.

A list of all known on-going and planned projects programs from a wide range of government agencies and certain major private sector enterprise would be prepared.

2. Evaluation of the projects and programs to assess conformity with the Structure Plan.

Each of the identified projects and programs would be evaluated to assess its conformity with the objectives and policies of the Structure plan. Where projects and programs are considered to conform to the Structure Plan, reference would be

made, where possible, to the policies which they are seen to support. Where, on the other hand, projects and programs are considered not to conform with the Structure Plan, reference would always be given to the policies to which the projects and programs run counter.

3. Identification of on-going or planned projects and programs that should be stopped.

While undertaking the above evaluation a small number of projects and programs can be identified which should stop due to their conflict with the objectives or policies of the Structure Plan. It is unlikely that the Authority will be able to stop some of these due to their advanced stage of implementation. Others, however, are still at a planning stage and the Government could take the opportunity to reconsider their worth. In future, projects and programs that are found not to conform to the Structure Plan should be identified far earlier, thus preventing unsuccessful work on them.

4. Identification of on-going or planned projects and programs that should continue to be given priority.

Whilst undertaking the evaluation indicated under (2) above, a small number of high priority on-going or planned projects and programs should be identified. Due to their contribution towards realizing the objectives and policies of the Structure Plan, they should continue to be given a high priority.

5. Preparation of a development programme.

Preparation of a development programme for the next five years is an important part of the process. A tentative development programme should be prepared covering the next Five Year Development Plan period - mid 2010 to mid 2015.

The above process can be undertaken by the Council on a regular basis, with there being constant up-dates and, for example, a continuous rolling forward of the development programme.

Over time, the process can be made more sophisticated with, in many instances, the Council leading the actions of the implementing agencies. To accomplish this, it will need to prepare briefs for the agencies. These will assist the agencies, when they are putting their individual projects and programs forward for consideration, to prepare them such that they accord with the overall development objectives of the metropolitan area.

Chapter- 4

DEVELOPMENT CONTROL

Legislative Requirement

Development control mechanism of an urban area ranges from control of building construction, land use change, control on use of natural resources to control of investment size and nature. But at present development control, in Barisal, is limited to control of building construction only. Absence of an urban plan for Barisal town is the main factor behind this ineffective and limited form of Development Control. With the approval of this new set of Plans will open the opportunity to exercise a full length of development control. The set of recommendations and opportunities created in this new Plan demands restructuring of BCC and setting up a new "higher tier authority". Restructuring BCC to address its new role must accompany a revision of its Ordinance in line with its new objectives and responsibilities. A totally new ordinance should be promulgated to form the "higher tier authority".

The following issues are to be addressed strongly in order to control new developments:

1. Development control should be completely separate from the building control system required by the Building Construction Act;
2. Development control should be administered by the Authority;
3. All development should be required to obtain planning consent.
4. The system should be as simple as possible yet able to curb the worst excesses of unplanned development; and
5. Development control should be as least resource demanding as possible, given the shortage of skilled manpower available in government.

Issues to be addressed in the New Legislation

In the new and revised legislation certain terms will need clarification. There are a number of words used in development control which have overlapping meanings in different development documents. Among them the followings are most important:

- The word **"development"** to be used to identify activities related to building, engineering, mining or other operations in, on, over, or under land, or the making of any material change, in the use of any building or other land, or the sub-division of land.
- To identify activities related to the construction, alteration or extension of any type of building with the objective of business to be considered as **"building operation"**. Repair, maintenance, decoration and/or replacement to be excluded from this definition.
- **"Building"** will bear the meaning as assigned to it in section 2(b) of the Building Construction Act 1952.
- **"Natural Water Body"** will mean any type of water body as mentioned in section ২(চ) of মহানগরী, বিভাগীয় শহর ও জেলা শহরের পৌর এলাকাসহ দেশের সকল পৌর এলাকার খেলার মাঠ, উন্মুক্ত স্থান, উদ্যান এবং প্রাকৃতিক জলাধার সংরক্ষণ আইন, ২০০০.
- **"Land Filling"** to mean filling up of any type of water body as mentioned in section ২(চ) of মহানগরী, বিভাগীয় শহর ও জেলা শহরের পৌর এলাকাসহ দেশের সকল পৌর এলাকার খেলার মাঠ, উন্মুক্ত স্থান, উদ্যান এবং প্রাকৃতিক জলাধার সংরক্ষণ আইন, ২০০০.
- **"Heritage Building and Site"** will mean one or more buildings or part of buildings which has value attached to it on ground, such as historical, cultural, environmental, architectural or aesthetic importance and need

conservation and/or protection. Boundary wall and land around these structures which are required for its protection will also be brought under "Heritage Building and Site"

- "Building Code" will mean Bangladesh National Building Code 1993.
- "Land Use" will mean use of land as set by the Structure Plan, Master Plan and Detailed area Plan.
- "Mining operations" will mean the mining and working of minerals in, on or under land including the extraction of brick clay, gravel, stone and sand;
- "Other operations" will include the cutting, razing, terracing, leveling, excavation, filling and raising of any land and other preparatory earthworks of a similar nature; and
- "Subdivision" in relation to land means the division of land, other than buildings, held under one ownership into two or more parts whether the subdivision is by conveyance, transfer or partition, or for the purposes of sale, gift, lease or any other purpose.

Refining the Development Control System

Existing practice of issuing Building Permits as an urban development control mechanism is very narrow interpretation of planning control, when urban development is concern. Clear understanding and demarcation between Building Permit and Planning Permission is required to be set when urban planning documents are prepared.

Development applications which do not departure from the policies and proposals of the Structure Plan, Master Plan (Urban Area Plan) and any Detailed Area Plan (Action Plan) will not require to obtain Planning permission. Those proposals will only need Building Permits.

All categories of activities which will not be considered as "Development" in the new legislation will not require Planning Permission. These types of development will only need to obtain Building Permits; these permits will be processed through **Simple Applications**. Those applications which cannot be handled by the Simple Application procedure will be evaluated through the **Standard Applications**. Standard Application process will apply when:

- the application represents a departure from the policies and proposals of the Structure Plan, Master Plan (Urban Area Plan) and or any subsequent Local Area Action or Detailed Area Plan;
- the application falls within a **Ecologically Sensitive Area (ESA), New Urban Area 05 and Core Urban Area-03 (CUA-03)** as defined by this Master Plan (Urban Area Plan);
- the application requires the subdivision of land;
- the application consists of the construction of any single or related group of buildings comprising 1,000 square meters or above of gross floor area or having a height in excess of four storey; or
- the application involves a class of development which the Master Plan (Urban Area Plan) requires to be dealt with as a standard application.

GUIDELINES FOR GENERAL URBAN DEVELOPMENT - HANDLING APPLICATIONS FOR DEVELOPMENT: THE SIMPLE PROCEDURE

A **Simple Application** will be assessed quickly against a given set of criteria, essentially consisting of the following:

- the proposed development conforms in all respects with the policies of the Structure Plan, Master Plan (Urban Area Plan) and any Detailed Area Plan (Action Plan);
- the usage identified in the application is considered appropriate for inclusion in an area of general urban development. An indicative list of uses considered appropriate is below;

- buildings are a maximum of four storey;
- does not encroach or alter Heritage Building and Site
- not located in **Ecologically Sensitive Area (ESA), New Urban Area 04, New Urban Area 05 and Core Urban Area-03 (CUA-03)**
- no single building or related group of buildings is 1000 square metres or above of gross floor area; and
- access, natural water bodies and utility corridors are not impinged.

Provided that the planning application meets the above basic criteria, the application will be approved and planning permission given.

Planning applications that do not meet the above criteria will be subjected to a more detailed examination as described in Guideline for Handling Applications for Development: **The Standard Procedure**

The following developments and land uses are indicative of those appropriate in general urban development areas:

- residential development (up to maximum of four storey);
- small scale shops (not exceeding **20 sqm** and not placed within **100 meter** of any small or large shop);
- local (primary) schools/kindergartens;
- mosques (or other religious facilities)
- recreational development;
- local health facilities (clinics rather than hospitals);
- small scale office development (not employing more than **15 person**; Office includes- financial and professional services);
- workshops (not employing more than **5 person**; small scale workshops with operations only in daylight hours and low traffic generators; Workshop includes- tailors shop, small bakeries, small car repair shop, handicraft shop, electrical repair workshop, small furniture makers);
- "Hi-tech" or clean industries. (not employing more than **20 person**; research and development centre, information and communication technology)
- open Space (playgrounds, parks etc.);
- access roads;
- utilities; and
- drainage channels.

Such uses could be determined by use of the simple planning application procedures.

GUIDELINES FOR GENERAL URBAN DEVELOPMENT - HANDLING APPLICATIONS FOR DEVELOPMENT: THE STANDARD PROCEDURE

General Issues

When considering a standard planning application within areas zoned for general urban development, the Authority will need to undertake a two stage process. First, before considering site specific issues, the Authority will need, on receipt of the planning application, to consider the wider context and determine issues relating to the overall area into which the application falls. The Authority will need to:

- I. determine the boundaries of the wider area to limit the context to be studied. These will usually be formed by

some distinctive natural or man-made feature.

- II. identify the existing land uses character and density within these boundaries.
- III. identify and assess the existing access and circulation arrangements of the area to ensure that the new traffic demand does not cross the carrying capacity of the infrastructure and doesn't change the traffic character and composition of traffic, as envisaged in the new set of Plans .
- IV. identify the need for community facilities (schools, clinics, religious facilities, open spaces, etc.) or plots for utility services. and
- V. consider areas of high landscape quality in the locality which should be preserved and the potential impact of the proposed development on these areas.

After considering all the above issues the Authority will accept, refuse or delay the application until access and utility provision can be made.

If there is doubt in the mind of the Authority as to the answers to the above general questions, the planning application will require a more detailed assessment.

Site Specific Issues

Secondly, the Authority will need to consider issues relating to the individual site and application. These can only be determined once the overall context of the area has been established. The questions the Authority will need to ask are:

- 1) Can the proposed use of land be considered a "good neighbour", defined in this situation as a use which can be carried out in any residential area without detriment of the amenities of the area by reason of social or physical and chemical pollution?

Is the use likely to generate excessive volumes of traffic which either cannot be accommodated on the existing road system or which are likely to disturb its neighbours safety?

Will the working hours of the use (if non-residential) cause a disturbance to residential neighbours (with working late into the evening or night or 24 hour operations likely to cause a nuisance and therefore not being permitted)?

If yes to any of the above, the application should be rejected and directed to a more suitable location.

- 2) Is the use in conformity with surrounding uses or with those that are compatible with a site in a predominantly residential area?
- 3) Does the proposed boundary of the application impinge upon a road corridor, utility reserve or drainage channel reserve? If it does, it should be relocated outside such a reserve, even if this constitutes a reduction in the overall size of the plot. If excessive land will be lost as a result, implying that the development can no longer proceed, the application will need to be rejected.
- 4) Is the application compatible with the Traffic and Transportation Recommendations of Chapter-4.2 of this Report?
- 5) Will the development destroy landscape unique to the location?
- 6) Is the scale of development proposed in keeping with its neighbours? Does it impinge upon the privacy of others?
- 7) Will the proposed development negatively impact upon utility provision in the area - ie. will it overload the system for some reason (like high electricity demand or high water consumption)? Will pollution from the proposed activities cause a problem in the neighbourhood? Will it put pollution burden on the ecology which will be sustainable?

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- 8) If the application is for a major development, have the utility authorities been contacted to give their assessment and approval for the infrastructure works that will be required?

Given the existing situation in some of the general urban development areas, where for example, access is already poor or there is insufficient space available to provide adequate infrastructure, the Authority will aim to ensure that its decisions will not make the situation worse.

The Authority's Response

The Authority will need to process each application within two months, at the end of which time they will either need to:

- grant the application unconditionally;
- grant the application subject to a number of conditions; or refuse the application.

4.1 Urban Area Guideline

The development control process will require that a planning application is submitted for all new development. This application should be submitted to the Authority on specific forms prepared by them. The forms will need to be accompanied by maps, drawings and descriptive material, as requested by the Authority. The provisions for development control will be applicable for the project area which includes Core Urban Area, Existing Urban Area and New Urban Area. There are guidelines for each section to be administered in order to control new development in the prepared Structure Plan, Master Plan and Detailed Area Plan of Barisal city.

4.1.1 Core Urban Area (CUA01- CUA 04)

Core urban area comprises the older part of the city. This part of the city has been divided into four zones depending on their characteristics and interventions required. These four zones have been shown in the Core Urban Area map (Map 4.1) and discussed below.

Structure Plan Policies for Core Urban Area

CON.01 Identify and preserve Ecologically Sensitive Area (ESA)

Major sights of ecological interest should be immediately identified and declared as ESA. Any development or activity that disrupts the local ecosystem of the area must be prohibited, ESA use any disturbance in these areas can propagate and affect the environment of the entire region.

CON.02 Locate and conserve 'Heritage Sights'

Places of historic interest, both cultural and religious, should be declared as 'Heritage Sights' and any alteration or unauthorized development in these places should be strictly restricted.

TRN.06 Formulating plans and actions that give highest priority to pedestrians

As far as the short trips that are dominant in the project area are concerned, walking forms the most healthy and economically viable choice suited to the locality. Apart from the few roads designed to provide speed and mobility, most of the roads of a city like Barisal are organic in pattern and suits the pedestrians best.

H&S.09 Undertake slum improvement programme and in some cases relocation plan need to be undertaken.

All slum areas need to be identified and proper improvement plan must be taken to improve the living quality of the slum people and to ensure fundamental needs of life. Proper relocation plan needs to be formulated to relocate the slum people in other areas with proper income generation activities. Slum people are also part of the urban life and they provide various urban services which are very necessary to the urban people. So, relocation plan has to focus on this point so that there is no chance to eliminate such services from the BCC area. Income generation activities in the relocated areas are very important and have to be ensured. Otherwise relocated people will come back again in the BCC area and establish new slum.

CUA.01 Conservation Zone

This zone is rich in buildings and monuments with architectural, historical and cultural significance. Such structures should be identified and brought under conservation. The Jail Area deserves special consideration in this regard. It should be relocated from the present site to a place outside the study area. The area would be used for recreational purpose then. However, buildings of historical and architectural interest within Jail Area would be preserved and brought under adaptive reuse such as, restaurant, museum, studio, library, art gallery etc.

Present Condition:

- There are buildings with architectural, cultural and historical values
- Central Jail is located in this area
- One ten storey building inside the area.

Action Required:

- ✓ Important buildings are to be conserved
- Jail should be relocated outside the study area.
- Some of buildings inside jail can be transformed into museum, art gallery and restaurant.
- Some intervention should immediately stop.
- Current office of the City Corporation's office can be turned to the zonal office of 'Zone Kha'.

CUA.02 Green Zone

This zone bears the footprint of Colonial style of urban development with less building ground coverage and more area devoted to greenery. Preservation of this character of the zone has been intended in this plan. Development control in this zone will be aimed at maintaining the area as a low density, low height green zone.

Present Condition:

- Colonial style of buildings with less foot print and more green space
- Presently it's a good residential zone

Action Required:

- ✓ Maintain the area with low density, low height and green zone
- 'Local area traffic management plan' needs in the Jordon Road.

CUA.03 Pedestrian Precinct Zone

Chawk Bazaar and its adjacent area constitute the major wholesale trading area which is situated in the north part of the Core Urban Area. This area has been haphazardly developed with inadequate level of accessibility. As a result it becomes subject to traffic congestion. In order to avoid this situation the area would be declared as pedestrian precinct zone. There would be time constraint on vehicular movement within this zone. Only ambulance and fire fighting vehicles during emergency would be beyond this restriction.

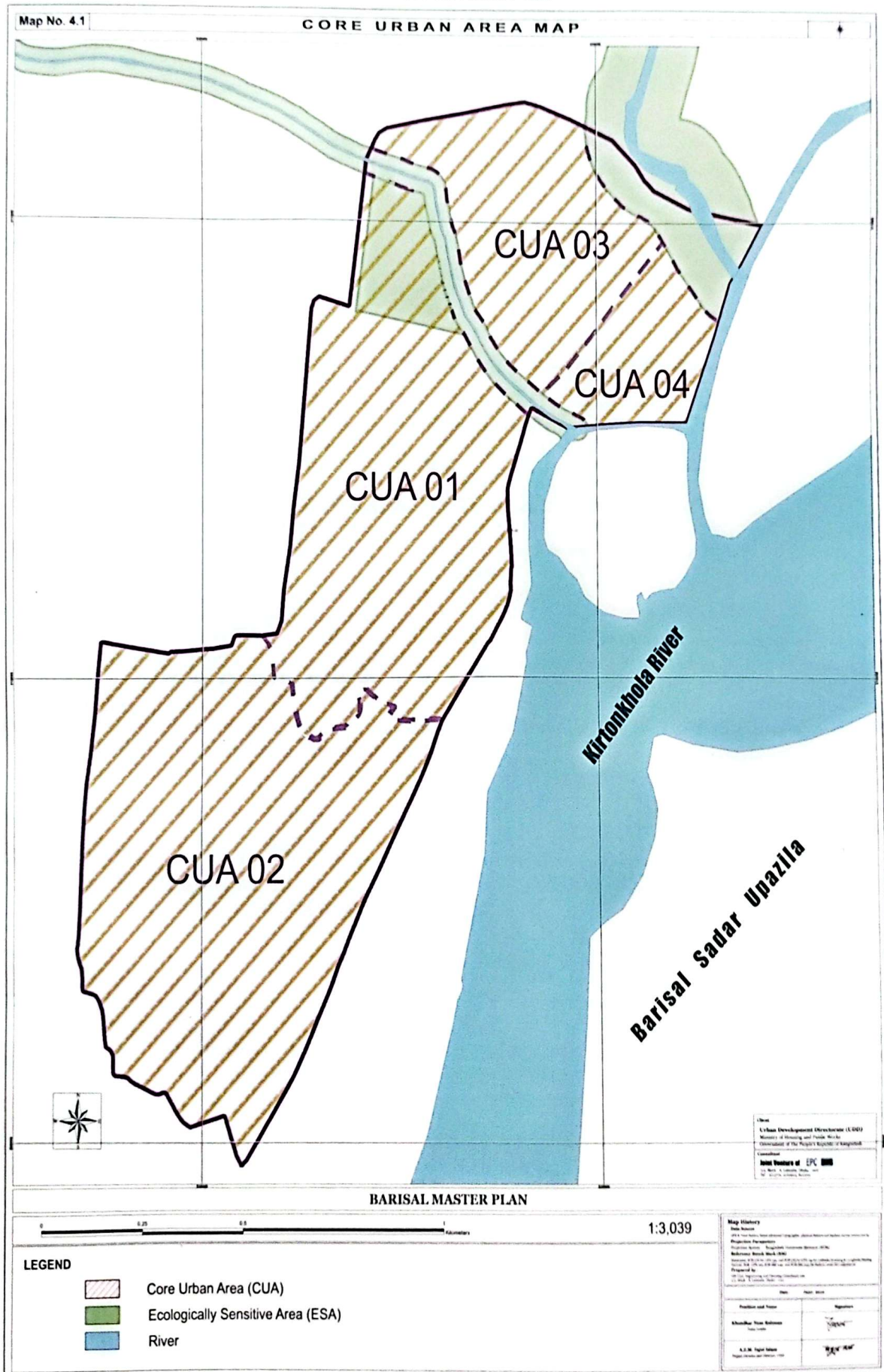
Present Condition:

- Major wholesale area
- Densely built up and inadequate accessibility
- There are some buildings which are not appropriate to the adjacent road width.

Action Required:

- Declaring area as precinct
- Time restriction on vehicular movement

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CUA.04 Land readjustment and urban up-gradation Zone

As the area is densely developed and the roads, drains and other infrastructure has become inadequate and at the same time the area retains its heritage in its look, therefore preferable action should be land readjustment and urban up-gradation rather than large scale demolition or land use change.

Present Condition:

- High population density
- Dense physical development

Action Required:

- Land readjustment programs through community participation will be required for the development of this zone.

Guidelines for Core Urban Area

- GCUA.01 Architectural, cultural and historical buildings are to be conserved with due importance.
- GCUA.02 Central Jail should be relocated outside the project area.
- GCUA.03 Low density and low height should be maintained in CUA.02 with green space.
- GCUA.04 Chawk Bazar with adjacent area is to be declared as precinct.
- GCUA.05 There would be strict time control on vehicular movement in CUA.03.
- GCUA.06 Evicted people are to be resettled in NUA.07
- GCUA.07 For Core Urban Area three storey building is allowed. For constructing a building ground coverage will be 60% of the total land area and floor area ratio will be 1.8. If any development activity fulfills all criteria then it will follow the simple application and if it won't follow one of these criteria then it will follow the standard application.
- GCUA.08 Till the whole Core Urban Area is covered by Detail Area Plan or Action Plan all development proposals in this zone will have to be submitted by Standard Application.

4.1.2 Existing Urban Area (EUA01- EUA 14)

Existing urban area refers to the area outside the city core already designated as urban. This part of the city has been divided into fourteen (14) zones depending on their characteristics and interventions required. These fourteen zones have been shown in the Existing Urban Area map (Map 4.2) and discussed below.

Structure Plan Policies for Existing Urban Area

CF.09 Identify the potential recreational places

The khals are the local natural resources that should be protected against harmful activities. The banks of these channels can be built as recreational sights. People can go there for getting a fresh breath. Suitable places should be identified for Community Parks. Different types of plantation can be done in them. These facilities can be maintained by ward authorities.

CF.12 Create an Education and Research zone

University is a place of knowledge and innovation. It is supported by different institutes and research centers. A designated area will have to be reserved and developed as an education and research zone. This zone should be outside of the core city area and should be easily accessible from different parts of the city. Local scholars can get the chance to show their potentiality and creativity here. It can work closely with local industries and entrepreneurs and act as the think tank for the community.

CF.13 Create a Sports and Recreation zone

Sports and recreational facilities act as the catalyst for healthy living and a friendly environment for the residents in. A zone should be located and regarded as 'sports and recreation zone'. The existing stadium can be turned into a national level stadium and this zone can be built around it. It can include outer stadium, indoor sports complex, gymnasium etc. Different types of international sports can be arranged here and large amount of revenue can be generated.

ED.08 Transforming the BSCIC estate into a commercial & industrial area

The BSCIC estate has been set up much before our independence in 1971 but could not draw optimum number of entrepreneurs till now. The surrounding area of this industrial estate is residential area. If this estate is declared as commercial cum industrial area, then it is expected that trading houses, business centers will be set up and the existing industries also be operated side by side as is found Tejgaon Industrial area of Dhaka. Moreover, some residential quarters may be established for low-income people.

Ed.01 Initiative to improve conditions in existing industries and to ensure utilization of their full capacity

Presently most of the manufacturing and industrial enterprises in Barisal are run by private investors. It is desirable that government's concerned authority would extend cooperation to various private sector entrepreneurs to augment their activities, utilize full capacity of production and thus create more job opportunities and help economic development. The marginal manufacturing units, which do not have legal business/manufacturing documents, should be brought under book and encourage them by providing infrastructural facilities in a specific industrial area and providing them with financial assistance.

H&S.05 Present land division trend need to be discouraged specially restricted for single developer and large built ableland. Emphasis to be given on establishing cluster of housing units

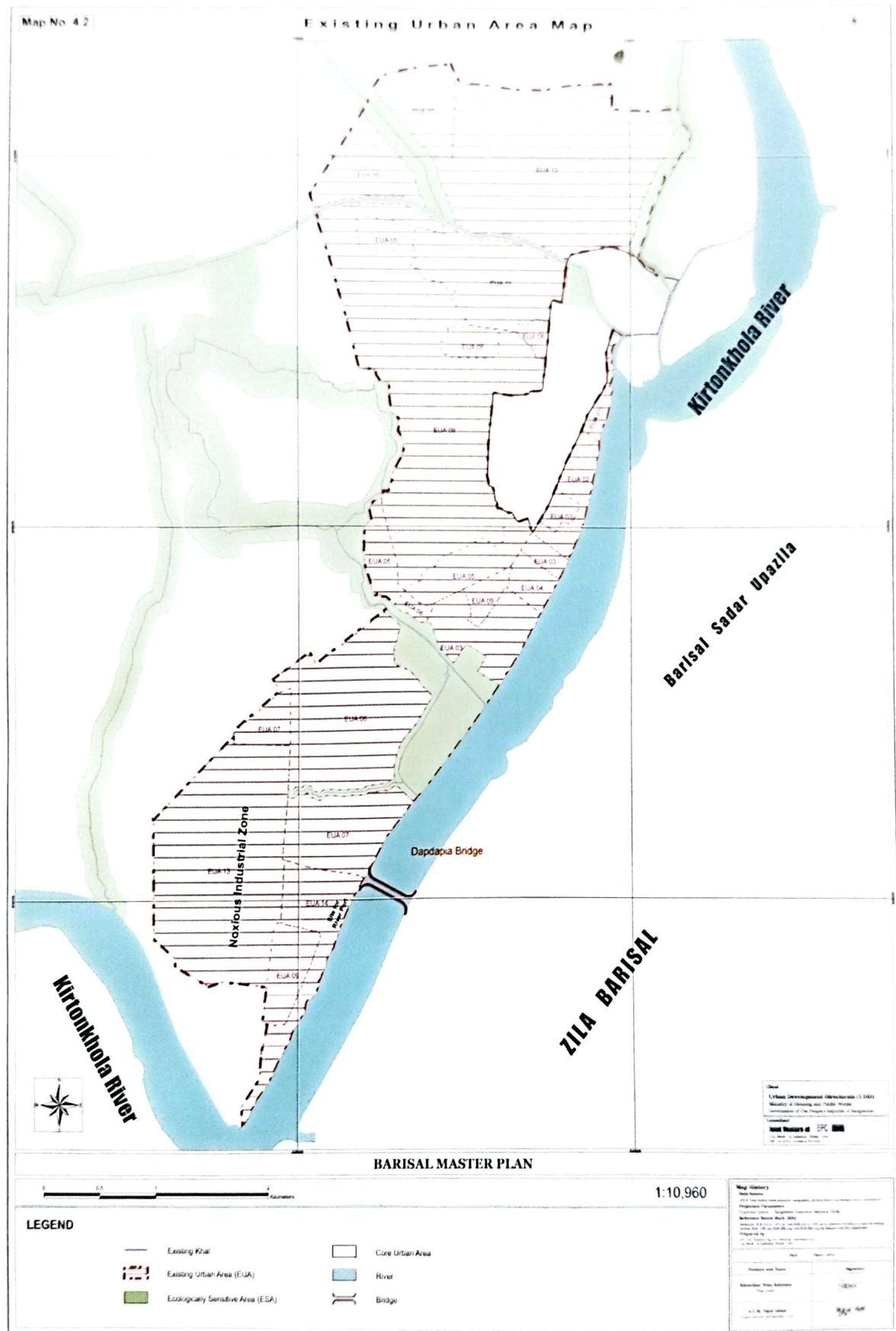
Construction of high rise building will be controlled. Building height restriction will be imposed within the BCC boundary to control the vertical development of the city. However, limited high rise residential building will be permitted in designated areas identified by the planning authority. BCC area will be divided into different height zones and construction permission will be given according to the height zones.

More people can be accommodated in the same area of land if high rise building is encouraged but strict policy has to be taken to accommodate low and middle income group in those towers. Cluster housing can be made in the form of multi storied structures, row house etc instead of land sub-division.

EUA.01 Riverside Activity Zone

This zone has developed as a strip between Bandar Road and Kirtonkhola River. The largest fish wholesale market in Barishal city is located here. But the wholesale business is declining because of its locational disadvantage. The city is situated at a far distance from the sea. On the other hand, a number of wholesale fish markets emerged in the outer coastal regions. Consequently, fishermen do not feel interested to travel such a long distance to Barishal for selling fishes. A number of agro product wholesale markets are also evident here. Based on fish and agro product wholesale markets, many transport agencies are operating here. Without well-defined space for truck stand, vehicles crowd the street all over the day - some busy with loading-unloading and some are just parking on the street. In spite of declining wholesale fish business, this zone has the potential of being developed as fish processing industry zone, with go-down, ice factories and a river port.

Master Plan for Barisal Divisional Town Vol-II: Urban Area Plan



Present Condition

- Wholesale fish market, wholesale agro product market, *port road bazaar*
- Very close to CBD
- Crowded with trucks all day long – both in rest and loading-unloading

Action Required

- BIWTA to complete their River Port development program and take necessary steps for early implementation.
- Determine a specific truck stand outside this zone, but not far from it, and limit loading-unloading operations during night hours in order to reduce congestion here during day time
- Prepare a Detailed Area Plan for this zone to promote fish processing industry and ancillary economic activities
- Prepare a plan to develop Barisal Launch Terminal and adjacent areas as the gateway of the city giving the first impression to the visitors and tourists.
- New Head Office of BCC to be preferably located in the vacant site of BIWTA.

EUA.02 Park and recreation Zone

This zone has very potential riverfront location that can be developed into an area devoted to the recreation and amusement of city dwellers and visitors. Already the zone consists of a children's park and KTC ghat where people gather to enjoy boat riding in Kirtonkhola River. This zone would be earmarked for amusement purposes in the form of park and greenery.

Present Condition

- River front location
- There is a children's park and public place called KTC Ghat
- Almost the entire zone is occupied by different public agencies and most of the land is underutilized.

Action Required

- Prepare an Action Plan for developing the area into a park and recreation zone incorporating vast public land currently underutilized.
- The area should be designed and landscaped magnificently taking advantage of its riverfront location.
- All development proposals in zone will be handled by **Standard Application**.

EUA.03 Mixed Use Zone with Administrative Preference

Existence of LGED Office, Shilpakala Academy, BADC property, West Zone Power Distribution Company Ltd., WAPDA, Office of Police Commissioner, 6th Armed Forces Police Battalion, CSD Godown etc. indicates the supremacy of administrative land use in this zone. Yet other uses can also be found here. Development control measures for this zone would try to preserve its administrative character.

Present Condition

- Existence of Important offices, staff quarters and godowns of different public agencies

Action Required

- ✓ New uses in this area should conform with existing administrative establishments
- Preservation of '71 memorial in a manner to accommodate cultural and ceremonial programs.
- Liberation war museum can be built on a local level around this memorial.

EUA.04 Sports Complex Zone

The existing stadium and the areas surrounding it would form this zone according to Structure Plan Policy CF-13. It would be turned into a national level sports complex incorporating outer stadium, indoor sports complex, swimming pool, and gymnasium etc. so that it can be capable of hosting national/international sports events.

Present Condition

- There is a stadium in this area

Action Required

- Stadium along with the adjacent area should be developed as sports zone.

EUA.05 Institutional Zone

Areas occupied by eminent institutions such as, Sher-e-Bangla Medical College, B. M. College, Baptist Mission, Oxford Mission, Polytechnic Institute, Orphanage etc. constitute this zone. The institutional character of this zone would have to be preserved.

Present Condition

- Characterized by famous institution like B.M. college and Sher-e-Bangla Medical College

Action Required

- Keep up the prevailing character of this zone

EUA.06 Planned Residential Zone

The area falling in this zone is very low density area with dispersed settlements. Rupatali housing estate, which is largely under-utilized, is also included in this zone. The entire zone would be developed as a planned residential zone preferably in the form of multi-storied apartments, cluster housing, row housing etc. Subdivision of land as in Sites and Services technique would have to be avoided. A buffer of dense vegetation would surround the zone in order to keep its residential character undisturbed.

Present Condition

- There is a planned residential area which is under utilized.
- The rest of the zone is having predominating rural character

Action Required

- Site and Services Scheme should be strongly discouraged
- A dense wall of vegetation should be all around the zone

EUA.07 Mixed Use Zone (Residential + Commercial)

Considering the proximity to preferred industrial zone and river, this zone would be developed as a mixed use zone where trade and commerce would dominate. The residential use would be targeted mainly at the middle-income group. This would also be surrounded by dense vegetation buffer which will segregate it from industrial zone.

Present Condition

- The area is very close to industry and river front.
- Existing population density is very low

Action Required

- Targeted residential area for middle-income group people
- Dense vegetation in between industrial and mixed use zone
- Building footprint, pucca road or any other type physical structure which results in impervious ground coverage should not exceed 40 percent of the ground i.e. ground coverage ratio should be- pervious: impervious=60:40

EUA.08 Commercial Zone (Residential + Commercial)

This zone is already having of commercial establishments and the plan intends to retain its commercial character.

Present Condition

- The area is dominated with commercial characters

Action Required

- The plan intends the character to be kept up

EUA.09 Mixed Use Zone (Residential + Commercial + Industrial)

The zone would be promoted as a mixed use area on the basis of compatibility of different uses, that is, only the land use types compatible with each other would be assembled here. The zone is suitable for development of a Muslim graveyard at a location identified through community consultation.

EUA.10 Mixed Use Zone (Commercial + Industrial)

This zone comprises BSCIC Industrial estate which is still largely underutilized since it could not attract the investors. Hence, according to Structure Plan Policy ED.08, trade and commerce would be promoted in this zone alongside the existing industrial establishments.

Present Condition

- This estate is under utilized in terms of industrialization

Action Required:

- Industry as well as commercial activities are to be promoted

EUA.11 High Density Residential and Ancillary Zone

This zone already incorporates spontaneously developed high density localities with inadequate provision of utility services and community facilities. In order to enhance their livability as residential areas, some roads would have to be widened/ upgraded and new utilities and community facilities would have to be provided. These would be achieved by means of urban upgradation and/or land readjustment techniques. These techniques would be applied in consultation with the community.

Present Condition

- High density with inadequate utility services and community facilities.

Action Required:

- Urban up-gradation and land readjustment techniques should be applied.

EUA.12 Low/Moderate Density Residential and Ancillary use Zone

Although the zone falls within existing urban area as per Structure Plan, it demonstrates somewhat rural characteristics. With an intention to preserve its rural character, the zone has been designated as low/moderate density residential and ancillary use zone.

Present Condition:

- Predominating rural characteristics

Action Required:

- Maintain the prevalent distinctive characteristics

EUA.13 Industrial Zone

Discussion on this zone has been incorporated in Section 4.3. City corporation zonal office for 'Zone Ga' is recommended here. Toxic waste processing plants are to be located in this zone.

EUA.14 River Port and Ancillary Use Zone

This zone is adjacent to industrial zone and is situated on the bank of Kirtonkhola River. Thus it bears the potential of being used as a river port.

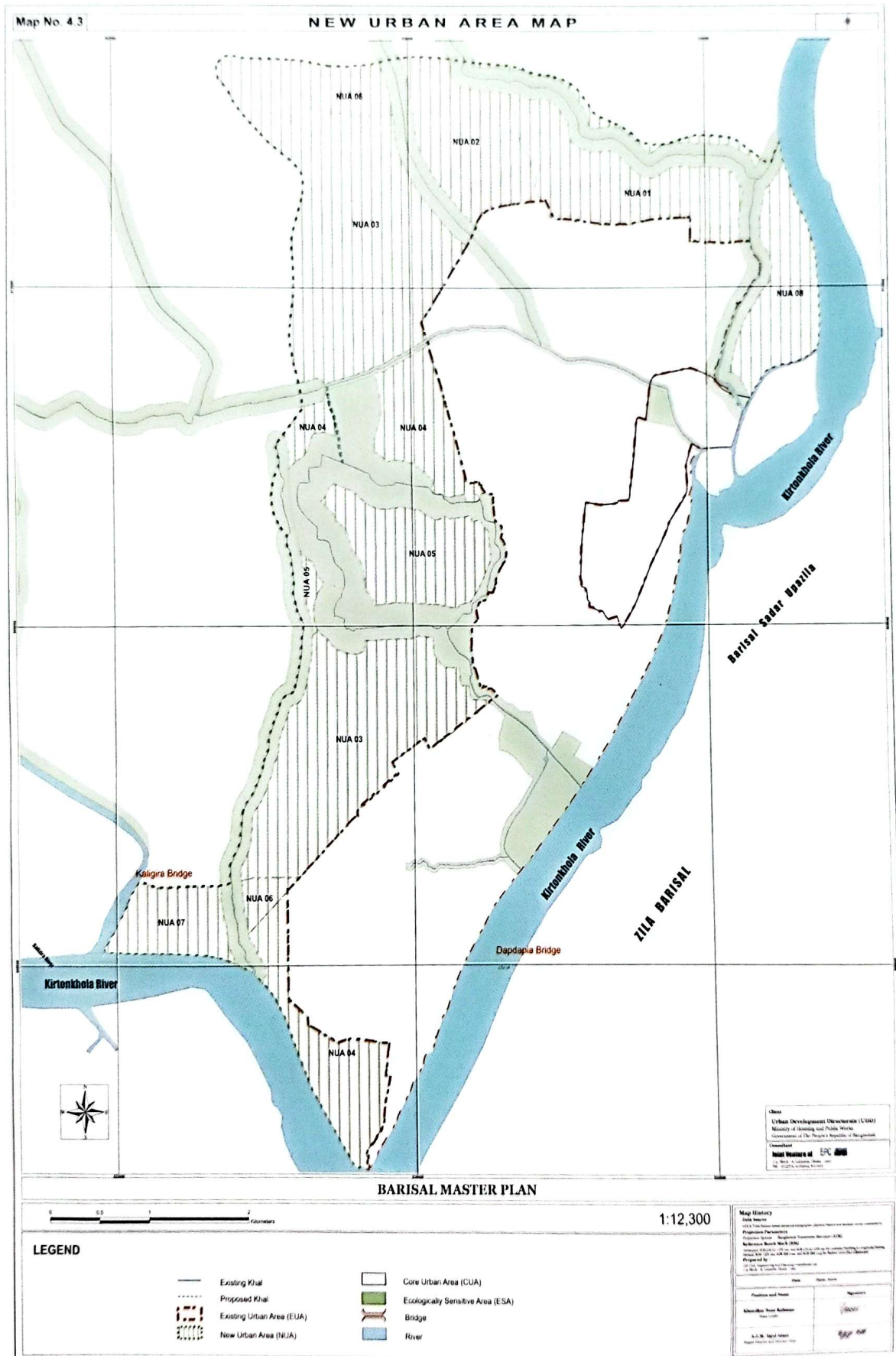
Guidelines for Existing Urban Area

GEUA.01	Develop the area EUA.01 to support the fresh water fish processing industries
GEUA.02	Enlarge the existing recreational area (EUA.02) along the riverside
GEUA.03	New uses in this area (EUA.03) should conforming with existing administrative preference
GEUA.04	Stadium along with the adjacent area (EUA.04) should be developed as sports zone.
GEUA.05	Keep up the prevailing character of this zone with a focus on institutional development
GEUA.06	Site and Services Scheme should be strongly discouraged for housing development at Rupatoli (EUA.06)
GEUA.07	A dense wall of vegetation should be all around the area EUA.06
GEUA.08	Targeted residential area for middle-income group people EUA.06
GEUA.09	Industry as well as commercial activities is to be promoted in area EUA.10
GEUA.10	Urban up-gradation and land readjustment techniques should be applied in area EUA.11

4.1.3 New Urban Area (NUA 01- NUA 07)

These are the areas where future development would be accommodated in case the necessity arises in the period of Structure Plan. The area comprises of seven different parts and they will be utilized only when the existing urban area is unable to provide space for development. These seven parts are shown in Map 4.3.

Master Plan for Barisal Divisional Town Vol-II: Urban Area Plan



Structure Plan Policies for New Urban Area

CON.01 Identify and preserve Ecologically Critical Area (ESA)

Major sights of ecological interest should be immediately identified and declared as ESA. Any development or activity that disrupts the local ecosystem of the area must be prohibited. Because any disturbance in these areas can propagate and affect the environment of the entire region.

H&S.05 Present land division trend need to be discouraged specially restricted for single developer and large built able land. Emphasis to be given on establishing cluster of housing units

Construction of high rise building will be controlled. Building height restriction will be imposed within the BCC boundary to control the vertical development of the city. However, limited high rise residential building will be permitted in designated areas identified by the planning authority. BCC area will be divided into different height zones and construction permission will be given according to the height zones.

More people can be accommodated in the same area of land if high rise building is encouraged but strict policy has to be taken to accommodate low and middle income group in those towers. Cluster housing can be made in the form of multi storied structures, row house etc instead of land sub-division

ULD.09 Provide infrastructure in newly expanding urban areas with two folds objectives: to encourage concentration of development within the newly expanded urban area and to control environmental burden on the ecology at a sustainable level

Infrastructure development plan can be used as an effective tool to increase concentration of development as determined in this Structure Plan. While providing infrastructure it should be kept into account that ecology has a limit to take environmental burden; therefore infrastructure to be provided at a sustainable manner.

NUA.01 Area for Residential Use

This area will be used when the EUA.12 needs extra space to accommodate new population. The area will be provided with adequate infrastructure services and community facilities prior any development. These facilities may include road network, drainage system and so on. There should be strict control over desired population density. The policy of land subdivision should be strongly discouraged here.

NUA.02 Area for Low Income Housing

This area is adjacent to the BSCIC industrial state. The structure plan intends to promote industry along with trade and commerce in NUA.02 which will require labour forces. This section of new urban area is designated for the people who will be working in the EUA.05.

Barisal City Corporation's zonal office for 'Zone Ka' can be placed here in a suitable location.

NUA.03 Area for New Urban Development

The area will be provided with adequate infrastructure services and community facilities prior any development. These facilities may include road network, drainage system and so on.

NUA.04 Low Density Residential Area

This part of the project area is very close to the Ecologically Sensitive Areas. There should be low population density in the area in order to affect the ecologically sensitive areas to a minimum extent. All development proposals in zone will be handled by Standard Application.

Master Plan for Barisal Divisional Town
Vol – II: Urban Area Plan

Building footprint, pucca road or any other type physical structure which results in impervious ground coverage should not exceed 40 percent of the ground i.e. ground coverage ratio should be- **pervious: impervious=60:40**

NUA.05 ~~Area for Eco-Tourism~~

This portion of the project area is bounded by the Ecologically Sensitive Areas. The plans for Barisal City set high priority on local ecosystem. There should be minimum disturbance to the local ecosystem. All development proposals in zone will be handled by **Standard Application**.

NUA.06 Area for Terminals and Transfer Stations

This area comprises of two parts. One of them is near Kashipur Chaumatha and another is at foot of Kalizira Bridge. These two areas will provide mobility for goods and passenger movement being at two different corners of the project area.

NUA.07 Deferred Area for Urban Development

This area will be kept reserve for new urban development. Detailed planning has to be done in this area for proper urban expansion.

NUA.08 Resettlement and Relocation Zone

Carrying out of various development schemes in the course of realization of this plan may necessitate relocating and resettling some settlements. This zone would provide sites for relocation or resettlement of evicted population.

Present Condition

- Very low density of population
- Ample space for new development

Action Required

- This area should be used for relocation and resettlement

Guidelines for New Urban Area

GNUA.01 Areas will be provided with adequate infrastructure services and community facilities prior any development

GNUA.02 Land subdivision in the site and services scheme should be strongly discouraged.

GNUA.03 Ecologically sensitive areas will be protected with strict control

4.2 Traffic and Transportation

This section of the Urban Area Plan (UAP) intends to set out some guidelines for the transport sector development and its relevant institutional setup. The major areas of concern are network and infrastructure, traffic regulations, services, and institutional aspect. Also, different instructions are grouped under individual guidance notes on different topics.

The critical question here is how far the scenario of the future can be predicted with some level of accuracy. Specially, in a sector like transport that is heavily dependent upon technology, the underlying assumptions can shift quickly that can turn much of the decisions invalid. The policies of the Structure Plan that are of special relevance regarding UAP are:

TRN 01	Consider traffic impact of land use and occupancy of structure while giving building construction and land use permit
TRN 07	Priority to pedestrians when planning infrastructure use and road-space sharing
TRN 011	Development & availability of Public Transport (PT)
TRN 012	Preserve and utilize natural network of Khals as Transport Corridors
TRN 014	Provide effective and efficient modal shift
TRN 016	Establishment of 'Road Hierarchy' and 'Traffic Blocks'
TRN 019	Lane-based traffic management
TRN 020	Intersection management

4.2.1 Network and Infrastructure Development

This part deals with the fixed facilities of the system e.g. roads, intersections, transfers etc. A well-coordinated and balanced network can stimulate healthy growth of the transportation of the city.

4.2.1.1 Principles of Network Development

Travel Demand Management (TDM): Developing mixed use community road is a key component in managing demand on transport. These roads would allow major public functions and also collect and distribute traffic from and to major roads.

Hierarchy: The network development strategy basically aims at creating a system of hierarchy in the network components of roads and intersections. This can generate distinct characteristics for the communities. The road use and adjacent land use will also reveal the basic character of the road.

Human-scale Community: A hierarchy of roads created based on their dominant use would consequently produce distinct traffic blocks or enclaves. Blocks would generate strong identities for local areas both visually and functionally. This would also help make localities more humane and safe by cutting out heavy motorized traffic from local level roads.

4.2.1.2 Growth Strategy

i. Core Urban Area

To conserve the nature of this part of the city, the traffic has to be calmed and limited. Sadar road labeled as CE 01 in the road database would be the key element here. All motorized vehicles except public bus would be restricted on this segment and it would be made pedestrian friendly. Although crossing would be allowed between CE 03 and CE 05. Club Road (CU 01) would be upgraded to provide an alternative way to and from the adjacent Bandh Road (PE 03).

ii. Existing Urban Area

Bulk of the development schemes for the network would be carried out here. Mainly the mid-term development projects would be targeted for this part. The objective is to build a strong and designated network of roads forming a strong order for the main commercial and residential centres of the city. Large volume of upgrading (widening and others) would be required for this area.

iii. New Urban Area

This portion is aimed for future growth and shall be pursued once the current mixed use zones demand that kind of expansion. Major developments would be north-south link (PP 01) to cater the future needs of the industrial zone and the city bypass (PP 03) that would relieve the C&B road (PE 02) from external traffic as it becomes a vital part of the city's internal network.

Private motorized vehicles must be discouraged as they waste road space. This is especially relevant for cities of Bangladesh where available road space is limited. Taxation, rationing of road etc can be used in this regard. Three-wheelers should be removed from roads within the first five years of the project by phases with the growth and expansion of public transport. Public transport should be encouraged as they carry large volume of traffic within very limited space. Modes like walking, bicycling would be encouraged for their environmental friendliness. Promotion of these means of mobility can eliminate long-term negative impacts of fuel-based vehicles and enhance health and safety of the inhabitants.

4.2.1.3 Road Hierarchy

A system of hierarchy in the road network distinguishes the roads according to their dominant function. Classification of roads is not an exact science, though. Therefore, its primary use is to make it easier for policymakers to take decisions regarding land use and other relevant issues.

i. Function and Character of Road

Urban level roads of Barisal can be typified in the following way:

a. Primary mobility road: These roads are meant for mobility. This includes C&B road, Hospital road, Bandh road combined with Amanatgonj road etc.

Primary roads have been classified in the following way:

- PE- Existing Primary Mobility Road
- PU- Upgradable Primary Mobility Road
- PP- Proposed Primary Mobility Road

Here 'Upgradation' means physical improvement, mainly widening etc. Existing roads might require other type of development measures.

b. Community level mixed use road: These connect either two primary roads or one primary with a community road, or two community roads. They have highly mixed use character and serve some important access functions in addition to movement needs. The design speed and speed limits will be lower than those in primary roads. These roads can be further classified into

- i. Major road (suitable for public transport) and
- ii. Minor road

This should be determined by their service density and volume level. Community Mixed Use roads have been classified in the following way:

- CE- Existing Community Mixed Use Road
- CU- Upgradable Community Mixed Use Road
- CP- Proposed Community Mixed Use Road

Here 'Upgradation' means physical improvement, mainly widening etc. Existing roads might require other type of development measures.

c. End-level access road: They give access to properties and connect to community level roads. Very few people other than the ones that live on those streets are attracted to them. These are low capacity and low volume streets usually dominated by pedestrians and FFTs (Fuel Free Transport). End-level roads should not directly connect to primary ones except for pedestrian and bicycle access.

HIERARCHY OF ROADS IN URBAN PLAN AREA MAP

BARISAL MASTER PLAN

LEGEND

- Existing Khal
- Proposed Khal
- Existing Community Mixed Use Road
- Proposed Community Mixed Use Road
- Upgradation Community Mixed Use Road
- Growth Center Connector
- Existing Primary Mobility Road
- Proposed Primary Mobility Road
- Upgradation Primary Mobility Road
- Embankment Cum Ring Road
- BCC Boundary
- Project Area Boundary
- Major Modal Transfer Station
- Bridge
- River

Map History

Scale: 1:17,043

Client: Urban Development Directorate (UDD), Ministry of Housing and Public Works, Government of the People's Republic of Bangladesh

Joint Venture of EPC: A.J.M. Sadiq & Associates, Ltd., Dhaka

Map History: Date: 2014, Prepared by: A.J.M. Sadiq & Associates, Ltd., Approved by: A.J.M. Sadiq & Associates, Ltd.

ii. Adjacent Land Use

Primary roads are for movement and speed, but wouldn't completely prohibit access to adjacent lands. They have traditionally served many vital public functions and would continue to do so. But these functions would be of high level urban services catering to the city level needs of people.

Important public functions like schools and markets will be situated along the community roads. They will feed to the community needs like primary schools, local bazaars, play grounds, religious centres etc. Major community roads will also provide public transport. More public the function a land serves, the higher the category of road it is placed on.

The end-level roads need to be safe, low volume roads that usually serve residential plots. Practically some non-residential uses will be placed on them like small corner shops. But anything higher that attracts a large number of people will be prohibited in these local level streets.

iii. Road space sharing

The mobility roads, although of mixed modal character, would be dominated by motorized vehicles, preferably public transport (PT). This would be natural as they are meant for comparatively longer distance movement needs, and higher speed of travel.

Mixed use roads would be a challenge to maintain and manage as they generate high level and often complex functional variety. Major community roads that comprises of PT routes should be free of private motorized vehicles and small vehicles like three-wheelers. The community roads would also form a regular and uninterrupted network for pedestrian movement. The major number of trips comprises of short ones and a large portion of the total trips are made on foot. There needs to be regular data collection and updating of the inventory to determine major road-space sharing decisions.

The end-level roads would attract very low number of trips, usually residents of the area. Considering the nature of trip-making in Barisal, these roads can be expected to carry mainly walkers and rickshaws. Separate walkways would be impractical in these streets though, considering their width.

Vehicular parking is also a major issue in contemporary urban transport planning and management. An elaborate guideline for managing this issue has been prepared and presented in **Annexure-D** of this report.

iv. Standard Road Section Design

The major road types have been assigned some standard cross-sections as illustrated in **Figure 4.1**.

In primary road, the median lane has been considered a bus lane and designated as Lane 01. Lane 02 has considered for other motorized vehicles and the edge has been kept for parking and movement of non-motorized vehicles.

Community roads have the proportion of walkway provision that is close to that in the primary road. The central lane in the major community road is provided for movement of public transport and the edge for fuel free transport. While in the minor community roads, the central lane has proposed assuming movement of smaller motorized vehicles like private cars and three-wheelers. The provision kept for nature strip should be supplied wherever there is sufficient space.

4.2.1.4 Intersections

i. Character

Intersections are generally the points where major traffic congestions originate. Speed decreases here because of turnings and conflicts of angle. In major roads with high volumes of traffic, the consequence is long queues degrading the

flow severely. Management of intersections, therefore, is absolutely critical in keeping the transport network flowing and congestion-free.

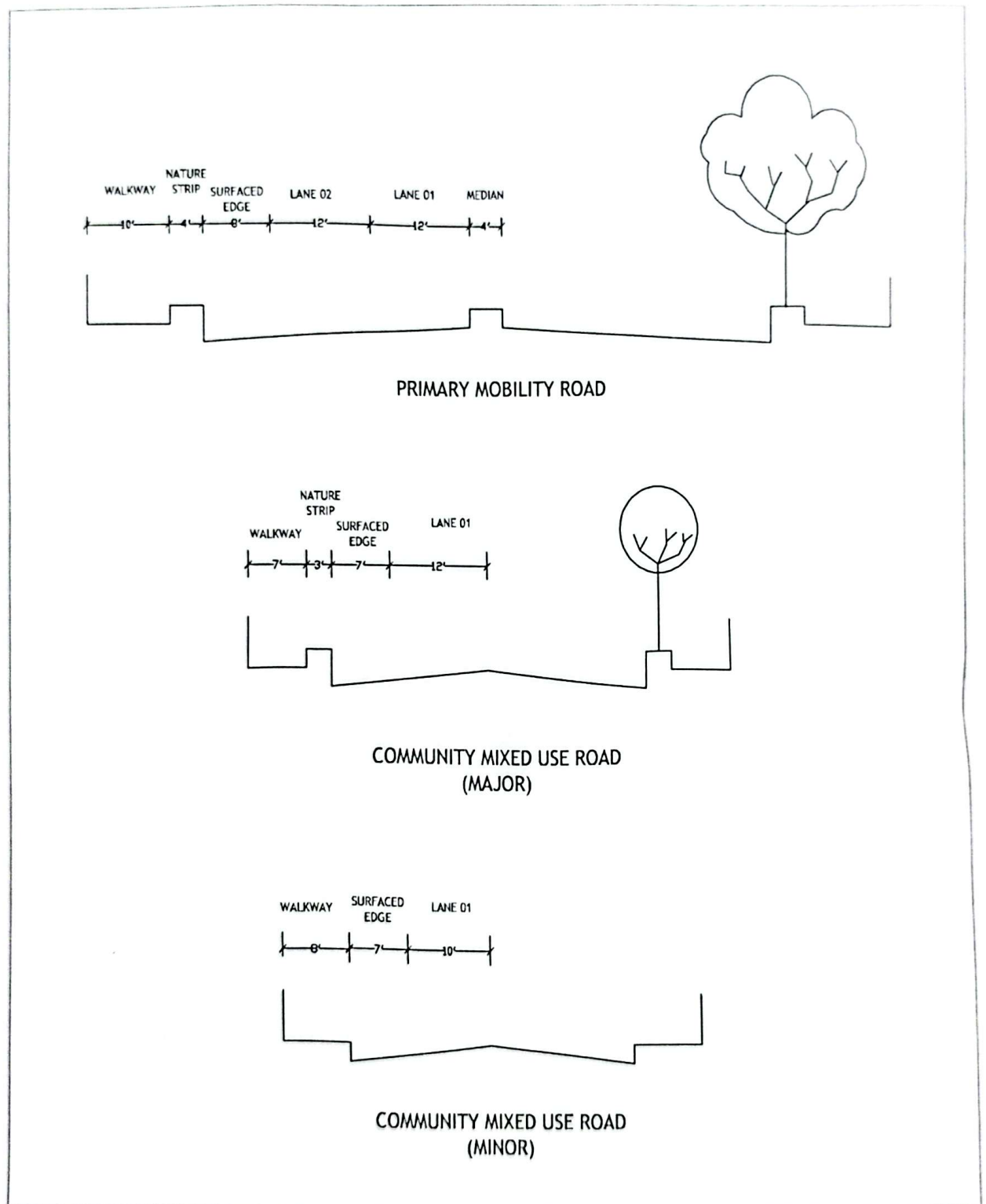


Figure 4.1: Standard Cross-Sections of Different Road Categories

The intersections have categorized according to the significance of their connecting links in the following way:

- 1DE- 1st degree existing, existing major intersections
- 1DU- 1st degree upgradable, potential main intersection that would need upgrading in future
- 2DE- 2nd degree existing, existing intersection of major mixed use roads
- 2DU- 2nd degree upgradable, potential secondary intersection that would need upgrading in future

ii. Design Considerations

Different types of techniques are used to manage traffic flow at intersections including roundabouts, signaled crossing etc. A detailed study of the existing condition along with projected increase in volume will help determine the exact mechanism to be followed at particular points.

Critical attributes to be followed for the intersections are the width, which has to be wider than the usual cross-section as the speed decreases here, and the angles of conflict, which has to be minimized by tactical geometric design.

Some intersections have to be improved on a priority basis. These include Amtola, Chowmatha, Nathullabad, Notun Bazaar, Jail Khana More, and Police Line More. The geometric design has to be developed in a way that it can efficiently discharge high volumes of traffic smoothly.

4.2.1.5 Waterways

i. Effective Network

A comprehensive network of Khals of 43 km (approx.) length including Sagordi, Amanatgonj, Jail Khal, Diapara, Napitkhali, and Bamni Kati Khal has been identified as major corridors of transport. Rest of the Khals will play as minor transport routes (**Map 4.5**). The key issue here is to bring these khals to the forefront and make them count as essential resources rather than treat them as dumping zones.

ii. Functionalities

Establishing the network of Khals as vital corridors of transportation, especially for goods movement would create a viable alternative to road transport and also help preserve this traditional mode. Water transport is usually cheap. And as goods delivery generally has a lead time, waterways can play crucial role in this sector.

It can also serve recreational purposes for the city dwellers. The major khals would be maintained by recovering their rights-of-way from illegal encroachment.

4.2.1.6 Interfaces

i. Levels of Interfaces

- a. **Multi-modal Transfer:** There would be a number of major transfers in the city. These are points where large extent of modal shifts would occur. There would be terminals for major routes but, passenger and freight would also shift from surface transport to waterways and vice versa on these spots.
- b. **Terminal:** Terminals are end points of main PT routes. There should be parking facilities and adequate reserved space for relevant functions at these points. Apart from the bus terminals usually at the end of routes, provision has to be made for truck terminals also.
- c. **Stations:** Stations are points in the network where the major routes meet or cross each other. These places should be carefully pre-designed to carry out large volumes of loading and unloading functions.

- d. **Stoppage:** There would a large number of stoppages in the PT routes to make them effective and convenient for users. They have to be designed in a way so as not to interfere moving traffic.

ii. **Location**

Multi-modal transfers would be located along primary roads but at the same time, have to be adjacent to major khals. Terminals would also be placed beside primary roads or in some cases along community roads outside the core city area. A tentative location for this purpose has been identified along Bandh road east of Chawk Bazaar as it is close to the retail trading centre.

Stations, by their nature, are usually intersections of major roads. Large spaces are to be allocated for this purpose to ensure smooth and nonstop movement of traffic through these points.

Stoppages need to places a little away from major intersections because they create considerable lowering in speed.

4.2.2 Traffic Regulations and Management

Capacity determination

Capacity design should be lane based and the lanes should be clearly demarcated, especially in the primary and major community roads. Lane widths can vary depending on the design speed and other crucial design factors. Proper road design techniques should be followed in this regard. A regular review of the flow condition in main roads has to be carried out. Capacity of the roads must be adjusted accordingly (by redesigning, widening etc.) to maintain smooth flow condition.

Segregation of road space

Road spaces are created by spending precious public money in this country. Therefore, proper mechanisms should be in place to ensure that every inch of road space is utilized optimally.

The first step toward effective road use is the designation of road space for specific intended functions. The space for movement and the space for halt/stops have to be assigned precisely in the major high volume streets as a primary step. Then speed limits should be imposed and clearly displayed for specific lanes. Lanes should form the foundation for flow control and implementing other traffic regulations. Arbitrary change of lanes has to be strictly prohibited and specific spots or openings have to be marked where switch of lanes can be allowed.

As for pedestrians, sidewalks are to be designed properly considering the demand volume. Mixed use roads are the places where this provision is vital. Safety is a vital issue here. Sufficient measures have to be taken in the forms of crossings, access control for vehicles, curbs etc.

Flow Control

i. **Use of Lanes**

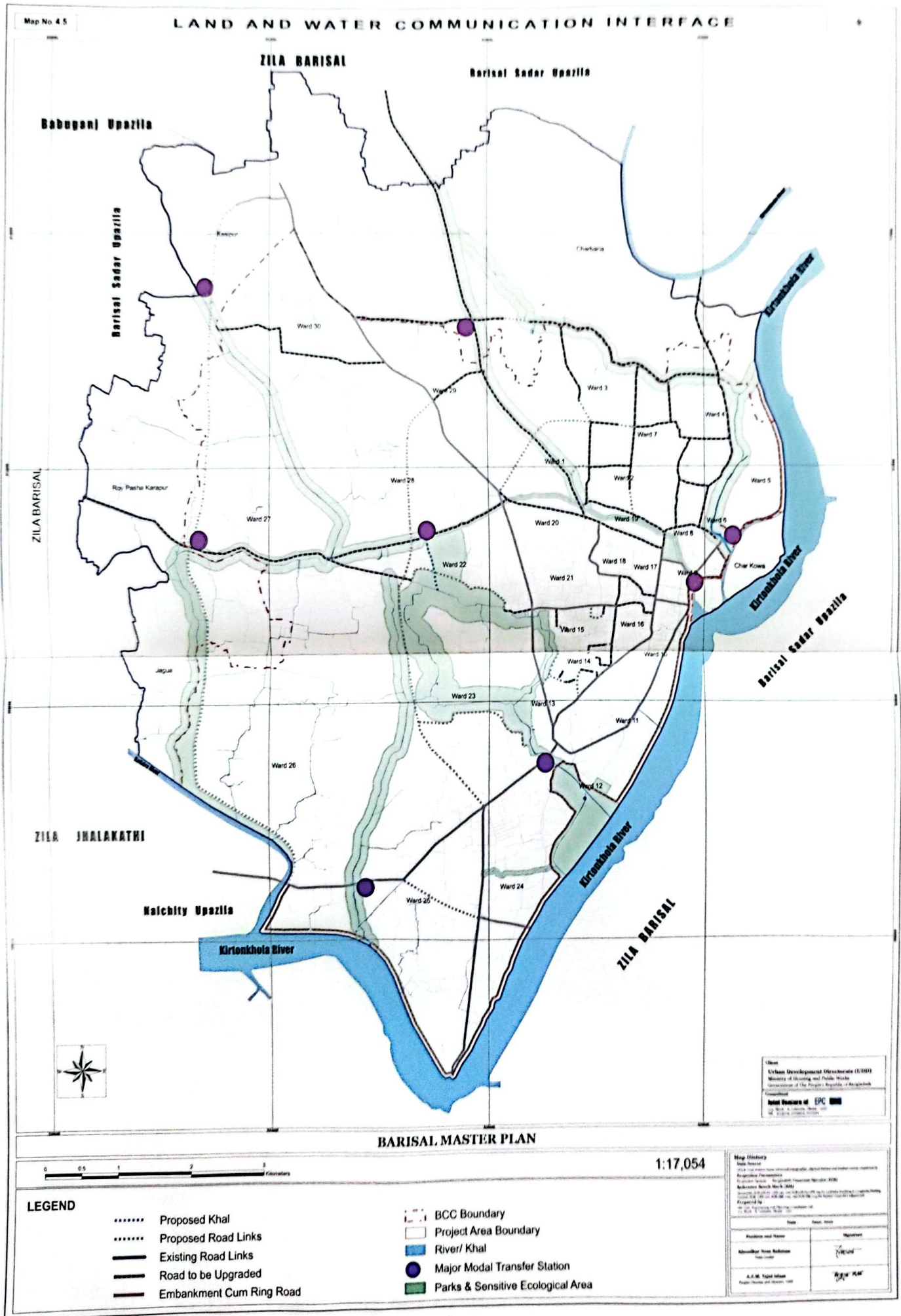
Determining number of lanes on every street and their individual capacity and routing the traffic management and any future expansion on that capacity assessment is vital. Lanes can be designated for different modes. Use of every segment of the road has to be pre-designed and clearly defined e.g. movement, parking, pedestrian crossing etc.

ii. **Turning and Crossing**

Turning control should be a major consideration in effectively managing traffic flow. The points should be specified where U-turning would be allowed and proper arrangements would be made so that it doesn't hamper the regular flow.

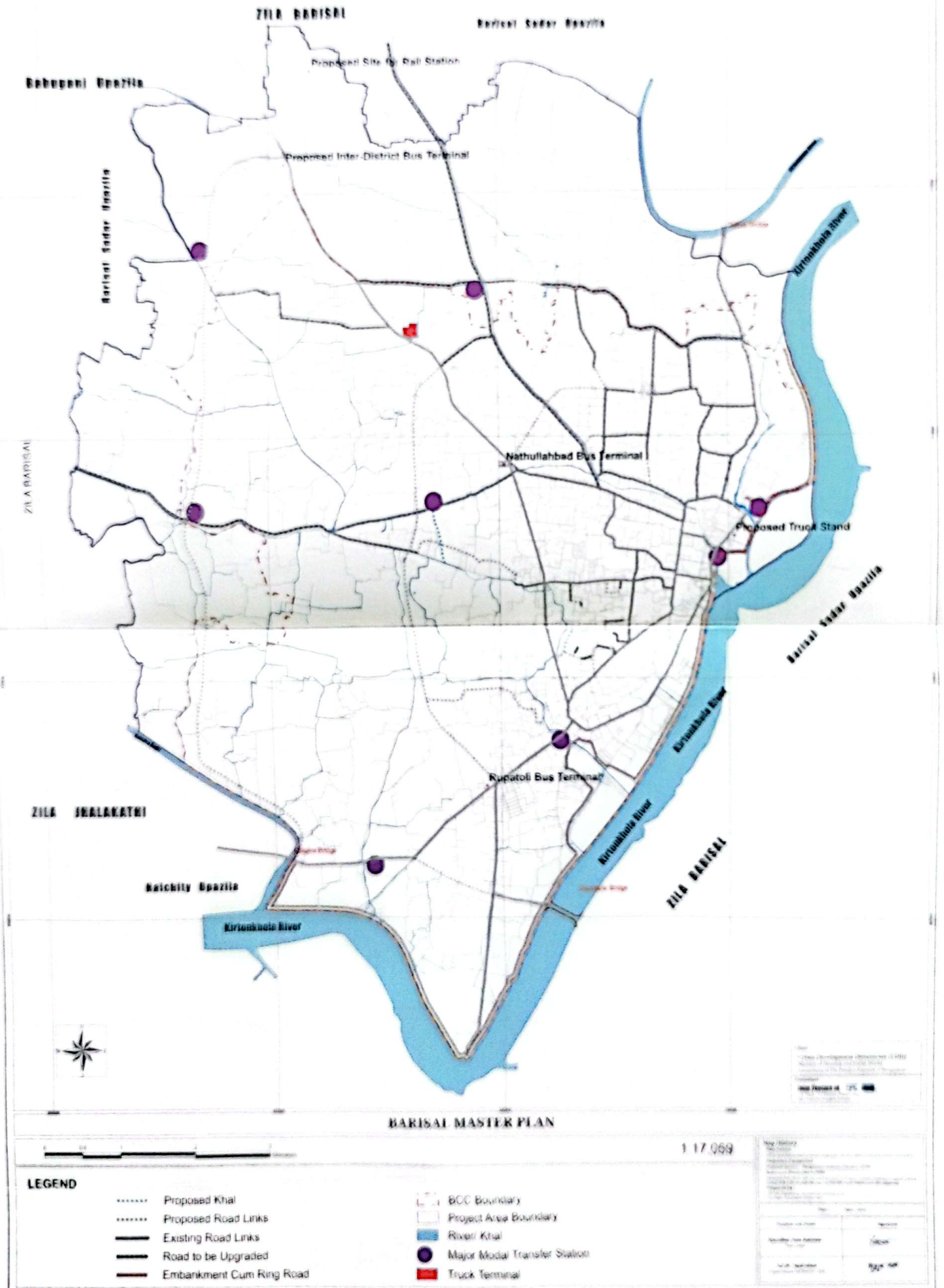
Pedestrian crossing at intersections should be controlled by standard mechanisms like Zebra-crossing which is currently absent in the city.

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Map No. 4.1

MAJOR TRANSFER STATIONS AND TERMINALS



Maintenance

Maintenance of good surface condition for roads and walkways are an essential aspect for keeping them functional and efficient. A regular monitoring system has to be developed under the City Corporation area for its territory. Outside it, the higher tier authority will review the existing condition of roads and allocate resources on priority basis for maintenance and upgradation.

4.2.3 Services

Public Bus Service

This should form the major share of the motorized vehicle. Bus has to be available within comfortable walking distance from any part of the city.

A bus network with extensive coverage that can effectively compensate for private transport and provide maximum accessibility for the dwellers has to be designed as a priority need. It can be initiated and maintained by the City Corporation as a temporary arrangement in the beginning but has to be transferred to private owners eventually. One consortium of individual owners for each route should be formed to make the operation simple.

Terminals and Transfers

These are the points where loading, unloading and modal shifts take place. As a result, they have the potential to create blocks and congestion. So the 'transfers' have to be located and designed with care. This includes the launch and boat 'ghats' as they form a major portion of connectivity for Barisal.

The maintenance and operation these facilities should be leased out to private entrepreneurs and the City Corporation would formulate standard operating measures and keep strong monitoring mechanism in place.

Information

The maintenance of a detailed database of road and walkway inventory should be kept by the higher planning authority for long-term planning and decision making. Relevant information should include road length, width, category, major function, adjacent land use, surface condition, number of lanes, capacity, and peak hour discharge etc. A database regarding travel behaviour of the people needs to be kept in this regard. It would be upgraded yearly by the planning authority. The intention here is to carry out intelligent informed decisions about transport planning and management. This information should also be disseminated among people to make them aware of the kind of actions they take and their consequences on the system.

4.2.4 Institutional Aspect

Hierarchy of Decision Making

i. LATM: Local Area Traffic Management

This is mainly the territory of operation for the City Corporation. This level of decision making is concerned with local issues like management of flow in an intersection or a specific road section, maintenance of road surface, control of movement and all other traffic management decisions. BCC will also carry out directions handed to it by the higher planning authority.

ii. STM: Strategic Transport Management

This involves strategic vision and long-term planning. Major development and policy decisions like creating new links and network development is done at this level. Management policies will be formulated by the 'higher tier authority' and delegated to BCC for execution.

Implementation

Development decisions like road building will be carried out by concerned authorities as standard practice that is followed for the rest of the country. Management policies will be implemented by BCC as directed by the planning authority. A continuous review process of the major policies and decisions and the necessary modification, upgrading will be done periodically to help sustain their relevance and effectiveness.

Awareness Raising

The trip makers has to be made aware to make 'Smart Choices', decisions people take about traveling that help reduce congestion, pollution and create better environmental conditions like using certain space-efficient and sustainable modes, making intelligent route choices etc. They can make best use of time, space, money and all other resources involved. Programs and activities will be designed that aim at raising knowledge of the mass people about traffic laws and regulations. These programs also have to make people aware of how they make choices about traveling and how those decisions affect the traffic system of the city.

Guidance Note 01: Function and Land Use Restriction of Different Road Categories				
Serial No.	Road Type	Major Function	Minor Function	Restricted Use
1	Primary Mobility Road	Longer distance trip (Inter- and Intra-city)	High level access e.g. industry, major public use like auditorium etc.	Access to residential building of less than 5 units of 1000 sqm floor area each or gross floor area of less than 5000sqm and for other land uses less than 3300sqm of floor area will be restricted. Only one access point would be allowed for every 5 units of 1000sqm each or 5000sqm of residential use and 3300 sqm for other uses. Low level commercial access including grocery/stationary/clothes/barber shop, restaurants, shopping complex etc. will be restricted.
2	Community Mixed Use Road (Major)	Intra-city public transport	Important public functions e.g. school/college, office etc.	Red and Orange B industries, hazardous use (noise, fume, odour producing)
3	Community Mixed Use Road (Minor)	Short trip, feeder to the access road	Major commercial activities	All industries except Green, hazardous use (noise, fume, odour producing)
4	Access Road	Access to property	Lowest level commercial/community activities	Everything except residence and commercial services of daily needs e.g. grocery/stationary/pharmacy etc.
Note: 01. Industrial categories of Red, Green etc. are referred to the 'Industrial Guideline' part of the report 02. The land use restrictions are not all-inclusive. The idea is to create and maintain distinct character of the roads. Any addition or deduction can be applied keeping the original objectives in mind as discussed in the Road Hierarchy section				

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Guidance Note 02: Phasing of Road Improvement Projects					
Serial No.	Phase	Time Period	Element	ID	Development Measures
1	Immediate Intervention	Immediate	Road Section	PU 01	Significant widening, surface improvement, land use character shift
			Road Section	CE 01	Movement control, lane marking, walkway construction
			Road Section	CU 01	Widening, lane marking
			Road Section	CU 02	Significant widening, pavement upgrading
			Road Section	CU 03	Significant widening, pavement upgrading
			Intersection	1DE 04	Channelization, widening, signalling/flow control mechanism
			Intersection	2DE 03	Signalling/flow control mechanism
			Intersection	2DE 05	Widening, signalling/flow control mechanism
2	Intermediate Intervention	After 5 years	Road Section	CE 02	Significant widening, walkway construction, land use control
			Road Section	CE 03	Widening some parts, lane marking
			Road Section	CE 04	Surface improvement
			Road Section	CE 05	Surface improvement, lane marking
			Road Section	CE 06	Surface improvement, lane marking, flow control
			Road Section	CU 10	Widening some parts, walkway construction
			Intersection	2DE 04	Widening, flow control mechanism
			Intersection	2DE 05	Widening, signalling/flow control mechanism
			Intersection	2DE 07	Widening, signalling/flow control mechanism, Surface improvement, channelization
3	Long-term Intervention	After 10 years	Road Section	PU 02	Widening, lane marking, flow control, land use control
			Road Section	PU 03	Significant widening, surface improvement, land use character shift
			Road Section	PP 01	To be constructed
			Road Section	PP 03	To be constructed
			Intersection	1DE 01	Significant widening, signalling/flow control mechanism, channelization
			Intersection	1DE 02	Surface improvement, signalling/flow control mechanism, channelization
			Intersection	1DE 03	Significant widening, signalling/flow control mechanism

Note: The elements chosen and the measures proposed are prioritized ones and don't form an exhaustive list.

Guidance Note 03: Prioritized transport sector programs

i. Road Hierarchy Establishment

Guidelines

- Creating the proposed system of hierarchy would require major relocation, reconstruction and other development actions. Implementing the system for the whole network would certainly be expensive. Therefore, gradual execution on a priority basis is essential.
- It is to be remembered that the proposed hierarchy is functional; and not a physical one. So the primary parameter of determining the character of a road is the purpose it serves; not the right-of-way or some other physical factor. As a consequence, a road in a certain category can be wider than another in a higher category. Physical attributes will follow character and not the other way round.

ii. Public Transport Service

Guidelines

- Although mainly the bus service has been emphasized as public transport, minibus and para-transit can also play vital role in this regard. Barisal currently covers a comparatively smaller geographical area as divisional town. These alternative modes can in fact be more viable here than the regular buses.
- Fleet size has to be determined by considering the loop time, the time it takes for a single vehicle in the network to round up the whole route once. The service has to be set up in a way that a bus is available every 5-10 minutes to make the waiting time comfortable. Delays due to congestion and other unprecedented events have to be calculated beforehand.
- Public transport is not an isolated system and can't work alone. The supporting infrastructure and initiatives are as significant to make the service a success. Easy access to the service by necessary roads and availability of different modes are vital for this.

iii. Khal Network Development

Guidelines

- The khal network would be the main mode of goods transportation. The necessary infrastructure has to be provided in this respect by concerned authorities.
- Entrepreneurs would be encouraged and proper monitoring would be maintained to keep the service level very high.
- To make the service attractive, it'd have to be cheap and accessible.
- Necessary excavation and widening, especially of the major khals, would be done to make them suitable for goods movement at any time of the day.
- The target is to bring as much freight as possible to waterways within the city and also to and from other places outside and to create a situation where other modes are distant options and only in case of some major obstruction does the user distract from using the waterways.

iv. Chawk Bazaar Precinct

Guidelines

- The safety and usability of the pedestrian would be the prime concern for this area.
- Although the roads here would carry people around, they would be more than mere means to get to places. They themselves would be the places to be. They would be the destinations, too. And as it happens, the roads would be treated as places of activities- people would meet here, stand, socialize, interact, look around and meet their daily needs. Therefore, a completely different approach has to be taken to design the whole locality as one vibrant centre of rest, movement and activity.

Guidance Note 03: Prioritized transport sector programs

v. Information Propagation & Awareness Building

Guidelines

- The core idea is to melt the barrier between the assumed opposing parties of authority and public and produce a scenario where these two are just different dimensions of a singular entity working to achieve higher levels of efficiency of the system.
- The mechanism is to form regulations where the receptivity of the people for whom it is made is a prime guiding criterion. Changing perspective to view the rules from a user point of view would be critical. It would also reveal hidden patterns in the travel behaviour and their guiding forces, which in turn, would make it easier to transform those patterns. Making the users of the system aware of their actions and consequences would turn them into conscious actors actively participating in the growth and betterment of the structure.

Guidance Note 04: Development of infrastructure and services

- GTRN.01** The khals should be fully navigable at any time of the day wherever bridges are built over them
- GTRN.02** Any road can change its traffic character as a result of policy decisions; therefore, roads can jump up and down the hierarchy rankings
- GTRN.03** Public transport routes should be free of private motorized vehicles and three-wheelers in most parts
- GTRN.04** Community mixed use roads with PT (Public transport) are to be served by – Bus, bicycle, rickshaw and pedestrian facilities and no other modes would be allowed on them; although, specific timings can be set for the regulations
- GTRN.05** All motorized vehicles except public transport would be restricted to enter Sadar Road from northern and southern ends. Only crossing from CE 03 to CE 05 can be allowed.
- GTRN.06** The Bandh Road around the Chawk Bazaar area gets choked by congestion at rush hours. The main reason has been the loading and unloading of goods right next to the busy road at any time of the day, sometimes occupying a big portion of the road itself. Timing of loading-unloading has to be restricted between 10pm-6am in the morning when the traffic load is at the lowest.

4.3 Industrial Guideline

Industrial development strategy for Barisal is focused in favour of higher employment while evaluating its Investment-Employment ratio. SME and service industry usually favours higher employment ratio against investment. SME is favoured to promote local resources like agro-resource, water bodies and a large number of educated work-force with small and medium size investment capability. The Authority would wish to exert control over where in the city different types of industry are located. It would ensure that future industrial development is aimed at in compatible areas of the city. Most important point to be noted here that Small and Medium Enterprises (SME) are allowable for whole urban area.

At present, in Barisal, little control of the location of industrial development is exercised. In future, the Authority will need to exert more control over the siting of differing types of industry, primarily to:

- a. ensure that only those industries that can be considered as "good neighbours" are allowed to develop within the Urban Development Areas (CUA, EUA, NUA & ESA) presented in Map 4.6; "Good Neighbour", is defined as a use which can be carried out in any residential area without detriment of the amenities of the area by reason of social or physical and chemical pollution.

- b. ensure that general large-scale non-polluting industries are able to function in a conducive, non-pollutant environment;
- c. ensure that polluting (but not necessarily noxious) industries are developed in appropriately serviced industrial areas; and
- d. ensure that noxious industries are located on appropriately serviced land where their processes are unlikely to impact upon other land uses.

For any industrial development the list of industrial classification (Table 4.1) prepared by Department of Environment (DoE) will be followed.

Table 4.1: Industrial Classification – Department of Environment (DoE)

List of General industries

1. Green and Orange A Industries

GREEN Category

1. Assembling and manufacturing of TV, Radio, etc.
2. Assembling and manufacturing of clocks and watches.
3. Assembling of telephones.
4. Assembling and manufacturing of toys (plastic made items excluded).
5. Book-binding.
6. Rope and mats (made of cotton, jute and artificial fibers).
7. Photography (movie and x-ray excluded).
8. Production of artificial leather goods.
9. Assembling of motorcycles, bicycles and toy cycles.
10. Assembling of scientific and mathematical instruments (excluding manufacturing).
11. Musical instruments.
12. Sports goods (excluding plastic made items).
13. Tea packing (excluding processing).
14. Re-packing of milk powder (excluding production).
15. Bamboo and cane goods.
16. Artificial flower (excluding plastic made items).
17. Pen and ball-pen.
18. Gold ornaments (excluding production) (shops only).
19. Candle.
20. Medical and surgical instrument (excluding production).
21. Factory for production of cork items (excluding metallic items).
22. Laundry (excluding washing).

ORANGE-A Category

1. Dairy Farm, 10 (ten) cattle heads or below in urban areas and 25 cattle heads or below in rural areas.
2. Poultry (up to 250 in urban areas and up to 1000 in rural areas).
3. Grinding/husking of wheat, rice, turmeric, pepper, pulses (up to 20 Horse Power).
4. Weaving and handloom.
5. Production of shoes and leather goods (capital up to 5 hundred thousand Taka).
6. Saw mill/wood sawing.

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7. Furniture of wood/iron, aluminum, etc., (capital up to 5 hundred thousand Taka).
8. Printing Press.
9. Plastic & rubber goods (excluding PVC).
10. Restaurant.
11. Cartoon/box manufacturing/printing packaging.
12. Cinema Hall
13. Dry-cleaning.
14. Production of artificial leather goods (capital up to 5 hundred thousand Taka).
15. Sports goods.
16. Production of salt (capital up to 10 hundred thousand Taka).
17. Agricultural machinery and equipment.
18. Industrial machinery and equipment.
19. Production of gold ornaments.
20. Pin, U Pin.
21. Frames of spectacles.
22. Comb.
23. Production of utensils and souvenirs of brass and bronze.
24. Factory for production of biscuit and bread (capital up to 5 hundred thousand Taka).
25. Factory for production of chocolate and lozenge. (capital up to 5 hundred thousand Taka).
26. Manufacturing of wooden water vessels.

2. Modified list of orange B

ORANGE-B Category

1. PVC items.
2. Artificial fiber (raw material).
3. Glass factory.
4. Life saving drug (applicable to formulation only).
5. Edible oil.
6. Jute mill.
7. Hotel, multi-storied commercial & apartment building.
8. Casting.
9. Aluminum products.
10. Glue (excluding animal glue).
11. Bricks/tiles.
12. Lime.
13. Plastic products.
14. Processing and bottling of drinking water and carbonated drinks.
15. Galvanizing.
16. Perfumes, cosmetics.
17. Flour (large)
18. Stone grinding, cutting, polishing.
19. Processing fish, meat, and food.
20. Printing and writing ink.
21. Animal feed.
22. Ice-cream.
23. Clinic and pathological lab.
24. Utensils made of clay and china clay/sanitary wares (ceramics).
25. Processing of prawns & shrimps.

26. Water purification plant.
27. Metal utensils/spoons etc.
28. Sodium silicate.
29. Matches.
30. Starch and glucose.
31. Animal feed.
32. Automatic rice mill.
33. Automatic rice mill.
34. Assembling of motor vehicles.
35. Manufacturing of wooden vessel.
36. Photography (activities related to production of films for movie and x-ray).
37. Tea processing.
38. Production of powder milk/condensed milk/dairy.
39. Wood treatment.
40. Soap.
41. Repairing of refrigerators.
42. Repairing of metal vessel.
43. Engineering works (up to 10 hundred thousand Taka capital.)
44. Spinning mill.
45. Electric cable.
46. Cold storage.
47. Tire re-treading.
48. Motor vehicles repairing works (up to 10 hundred thousand Taka capital).
49. Cattle farm: above 10 (ten) numbers in urban area, and above 25 (twenty five) numbers in rural area.
50. Poultry: Number of birds above 250 (two hundred fifty) in urban area and above 1000 (one thousand) in rural area.
51. Grinding/husking wheat, rice, turmeric, chilly, pulses - machine above 20 Horse Power.
52. Production of shoes and leather goods, above 5(five) hundred thousand Taka capital.
53. Furniture of wood/iron, aluminum, etc., above 5 (five) hundred thousand Taka capital.
54. Production of artificial leather goods, above 5(five) hundred thousand Taka capital.
55. Salt production, above 10(ten) hundred thousand Taka capital.
56. Biscuit and bread factory, above 5 (five) hundred thousand Taka capital.
57. Factory for production of chocolate and lozenge, above 5(five) hundred thousand Taka capital.
58. Garments and sweater production.
59. Fabric washing.
60. Power loom.
61. Construction, re-construction and extension of road (feeder road, local road).
62. Construction, re-construction and extension of bridge (length below 100 meters).
63. Public toilet.
64. Ship-breaking.

3. Red Category Industries (modified list of DOE)

1. Tannery.
2. Formaldehyde.
3. Urea fertilizer.
4. T.S.P. Fertilizer.
5. Chemical dyes, polish, varnish, enamel.
6. Power plant.
7. All mining projects (coal, limestone, hard rock, natural gas, mineral oil, etc.)
8. Cement.

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9. Fuel oil refinery.
10. Artificial rubber.
11. Paper and pulp.
12. Sugar.
13. Distillery.
14. Fabric dyeing and chemical processing.
15. Caustic soda, potash.
16. Other alkalis.
17. Production of iron and steel.
18. Raw materials of medicines and basic drugs.
19. Electroplating.
20. Photo films, photo papers and photo chemicals.
21. Various products made from petroleum and coal.
22. Explosives.
23. Acids and their salts (organic or inorganic).
24. Nitrogen compounds (Cyanide, Cyanamid etc.).
25. Production of plastic raw materials (PVC, PP/Iron, Polyesterin etc.)
26. Asbestos.
27. Fiber-glass.
28. Pesticides, fungicides and herbicides.
29. Phosphorus and its compounds/derivatives.
30. Chlorine, fluorine, bromine, iodine and their compounds/derivatives.
31. Industry (excluding nitrogen, oxygen and carbon dioxide).
32. Waste incinerator.
33. Other chemicals.
34. Ordnance.
35. Nuclear power.
36. Wine.
37. Non-metallic chemicals not listed elsewhere.
38. Non-metals not listed elsewhere.
39. Industrial estate.
40. Basic industrial chemicals.
41. Non-iron basic metals.
42. Detergent.
43. Land-filling by industrial, household and commercial wastes.
44. Sewage treatment plant.
45. Life saving drugs.
46. Animal glue.
47. Rodenticide.
48. Refractory's.
49. Industrial gas (Oxygen, Nitrogen & Carbon-dioxide).
50. Battery.
51. Hospital.
52. Ship manufacturing.
53. Tobacco (processing/cigarette/Bin-making).
54. Metallic boat manufacturing.
55. Wooden boat manufacturing.
56. Refrigerator/air-conditioner/air-cooler manufacturing.
57. Tire and tubes
58. Board mills

59. Carpets.
60. Engineering works.
61. Repairing of motor vehicles.
62. Water treatment plant.
63. Sewerage pipe line laying/relaying/extension.
64. Water, power and gas distribution line laying/relaying/extension.
65. Exploration/extraction/distribution of mineral resources.
66. Construction/reconstruction/expansion of flood control embankment, polder, dike, etc.
67. Construction/reconstruction/expansion of road (regional, national & international).
68. Construction/reconstruction/expansion of bridge (length 100 meter and above).
69. Mureate of Potash (manufacturing).
70. Alcatra.
71. Carbon rod.
72. Re-rolling

GUIDELINES FOR INDUSTRIAL DEVELOPMENT

This section describes the general guideline for industrial location for the urban area: core, existing and new areas

Core Urban Area:

CUA 02: This is a high quality government residential zone. It is characterized by lush green open spaces. Water bodies and old trees are main features of the area. To preserve its sanctity no industry would be allowed in CUA 02.

CUA 01, 03, 04: These are core urban area and of heritage value only service industries would be allowed in these zones.

Existing Urban Area:

EUA 01:

Allowable industries:

Sl. No.	Type
1.	Warehouse, Cold Storage, Ice factory for supporting fish processing industry.

EUA 02, 04, 05: As this zone is predominantly under educational and recreational use: So no industry would be allowed in these zones.

EUA 03:

Allowable industries:

Sl. No.	Type
1.	Auto and electrical repairing workshop, Carpentry. Restaurant, Small clinic and doctor's chamber.
2.	"Hi-tech"/ICT or clean industries. (not employing more than 20 person; research and development centre, information and communication technology)

EUA 06, 07, 08, 12:

Allowable industries:

Sl. No.	Type
1.	Laundry, Candle, Artificial flower, Bamboo and cane, Sports good (excluding plastic made item), Musical

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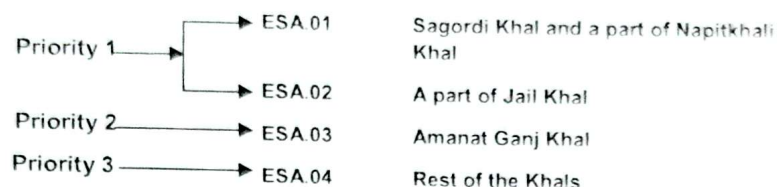
	instruments, office for professional services, Book binding, Rope and mats, assembling of watch, clocks, telephone and toys, Auto and electrical repairing workshop, Carpentry.
2.	Dairy Farm (up to 10 cattle heads or below), poultry (up to 200 fowls), Restaurant, Small clinic and doctor's chamber.
3.	"Hi-tech"/ICT or clean industries. (not employing more than 40 person; research and development centre, information and communication technology)
EUA 09: Allowable industries:	
Sl. No.	Type
1.	Laundry, Candle, Artificial flower, Bamboo and cane, Sports good (excluding plastic made item), Musical instruments, office for professional services, Book binding, Rope and mats, assembling of watch, clocks, telephone and toys, Auto and electrical repairing workshop, Carpentry.
2.	Dairy Farm (up to 10 cattle heads or below), poultry (up to 200 fowls), Restaurant, Small clinic and doctor's chamber.
3.	"Hi-tech"/ICT or clean industries. (not employing more than 40 person; research and development centre, information and communication technology)
4.	Food and beverage manufacturing, Wood and Paper products (excluding paper production), electrical appliance manufacturing and assembling, Major show room, distribution centre,
EUA 10: All types of industries except Red Category Industries are permitted in this zone.	
EUA 11: Allowable industries:	
Sl. No.	Type
1.	Laundry, Candle, Artificial flower, Bamboo and cane, Sports good (excluding plastic made item), Musical instruments, office for professional services, Book binding, Rope and mats, assembling of watch, clocks, telephone and toys, Auto and electrical repairing workshop, Carpentry.
2.	"Hi-tech"/ICT or clean industries. (not employing more than 40 person; research and development centre, information and communication technology)
EUA 13: This zone is designated for noxious industries. Proper treatment mechanisms have to be developed for these industries, preferably a central one to ensure they adhere to the environmental standards.	
EUA 14: This area is marked for river port and its related industries like light marine vessel building.	
<u>New Urban Area:</u>	
NUA 01: Only service industries would be allowed in the zone. Allowable industries:	
Sl. No.	Type
1.	Laundry, Candle, Artificial flower, Bamboo and cane, Sports good (excluding plastic made item), Musical instruments, office for professional services, Book binding, Rope and mats, assembling of watch, clocks, telephone and toys, Auto and electrical repairing workshop, Carpentry.
2.	Dairy Farm (up to 10 cattle heads or below), poultry (up to 200 fowls), Restaurant, Small clinic and doctor's chamber.

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3.	"Hi-tech"/ICT or clean industries. (not employing more than 40 person; research and development centre, information and communication technology)
NUA 02: Allowable industries:	
Sl. No.	Type
1.	Laundry, Candle, Artificial flower, Bamboo and cane, Sports good (excluding plastic made item), Musical instruments, office for professional services, Book binding, Rope and mats, assembling of watch, clocks, telephone and toys, Auto and electrical repairing workshop, Carpentry.
2.	Dairy Farm (up to 10 cattle heads or below), poultry (up to 200 fowls), Restaurant, Small clinic and doctor's chamber.
3.	"Hi-tech"/ICT or clean industries. (not employing more than 40 person; research and development centre, information and communication technology)
4.	Food and beverage manufacturing, Wood and Paper products (excluding paper production), electrical appliance manufacturing and assembling, Major show room, distribution centre,
NUA 03: Allowable industries:	
Sl. No.	Type
1.	Laundry, Candle, Artificial flower, Bamboo and cane, Sports good (excluding plastic made item), Musical instruments, office for professional services, Book binding, Rope and mats, assembling of watch, clocks, telephone and toys, Auto and electrical repairing workshop, Carpentry.
2.	Dairy Farm (up to 10 cattle heads or below), poultry (up to 200 fowls), Restaurant, Small clinic and doctor's chamber.
3.	"Hi-tech"/ICT or clean industries. (not employing more than 40 person; research and development centre, information and communication technology)
4.	Food and beverage manufacturing, Wood and Paper products (excluding paper production), electrical appliance manufacturing and assembling, Major show room, distribution centre,
NUA 04: No industries would be allowed in the zone.	
NUA 05: Only cottage and handicrafts industries are permitted in the zone. Allowable industries:	
Sl. No.	Type
1.	Cottage industries like- Candle, Artificial flower, Bamboo and cane, traditional hand loom, traditional pan cakes.
2.	Dairy Farm (up to 5 cattle heads or below), poultry (up to 20 fowls, local variety only),
NUA 06: Transport sector and its relevant small scale bus, truck and vessel repairing and servicing can be allowed in this area.	
NUA 07: This area is deferred for future urban development.	

4.4 Park and Ecologically Sensitive Area Guideline (ESA01-ESA04)

The Ecologically Sensitive Area of Barisal is presented in the Structure Plan of this project. This area is divided into four parts. Based on implementation of the plan these four parts are prioritized as follows.



These four parts of the area have been shown in the Park and Ecologically Sensitive Area map (Map 4.7) and are discussed below.

CON.01 Sagordi Khal and a part of Napitkhali Khal

Present Condition

- Encroached by some buildings
- Low height of bridges on these khals
- Uneven distribution of Khal width
- Plenty of vegetation on both sides of the khals
- Presence of slums and squatters on some areas beside the khals
- Absent of linkage between Napitkhali khal and Jail Khal

Action Required

- Initiation of encroachment eviction programme
- Redesigning of existing bridges to facilitate navigation
- Excavation programme to widen the width of the khal to ensure passing of two boats easily
- Development of monitoring and control tools so that no development, except recreational structures and facilities, takes place beside the khal.
- Undertaking slum/ squatter relocation programme
- Excavation of proposed khal to provide the linkage between Napitkhali khal and Jail khal.

CON.02 A part of Jail Khal

Present Condition

- High encroachment on khal
- No vegetation beside the khal
- Low height of bridges on the khal

Action Required

- Initiation of encroachment eviction programme
- Redesigning of existing bridges to facilitate navigation

CON.03 Amanat Ganj Khal

Present Condition

- Presence of slums and squatters on some areas beside the khal
- Acceptable Khal width

Action Required

- Undertaking slum/ squatter relocation programme

CON.04 Rest of the Khals

Present Condition

- Encroachment in some places
- Low height of bridge on the khals
- Uneven distribution of Khal width

Action Required

- Initiation of encroachment eviction programme
- Redesigning of existing bridges to facilitate navigation
- Excavation programme to widen the width of the khals to ensure passing of minimum two boats side by side easily

ESA.01 will be developed as a park in the Detailed Area Plan. As an initial step, it must be ensure that the boundaries of the entire park will be delineated. The delineation process must follow the policies from Structure Plan and the guidelines of the master plan. Following are related policies of structure plan for ecologically sensitive area.

Structure plan Policies for Ecologically Sensitive Area

CON.01 Identify and preserve Ecologically Sensitive Area (ESA)

Major sights of ecological interest should be immediately identified and declared as ESA. Any development or activity that disrupts the local ecosystem of the area must be prohibited, ESA use any disturbance in these areas can propagate and affect the environment of the entire region.

CF.09 Identify the potential recreational places

The khals are the local natural resources that should be protected against harmful activities. The banks of these channels can be built as recreational sights. People can go there for getting a fresh breath. Suitable places should be identified for Community Parks. Different types of plantation can be done in them. These facilities can be maintained by ward authorities.

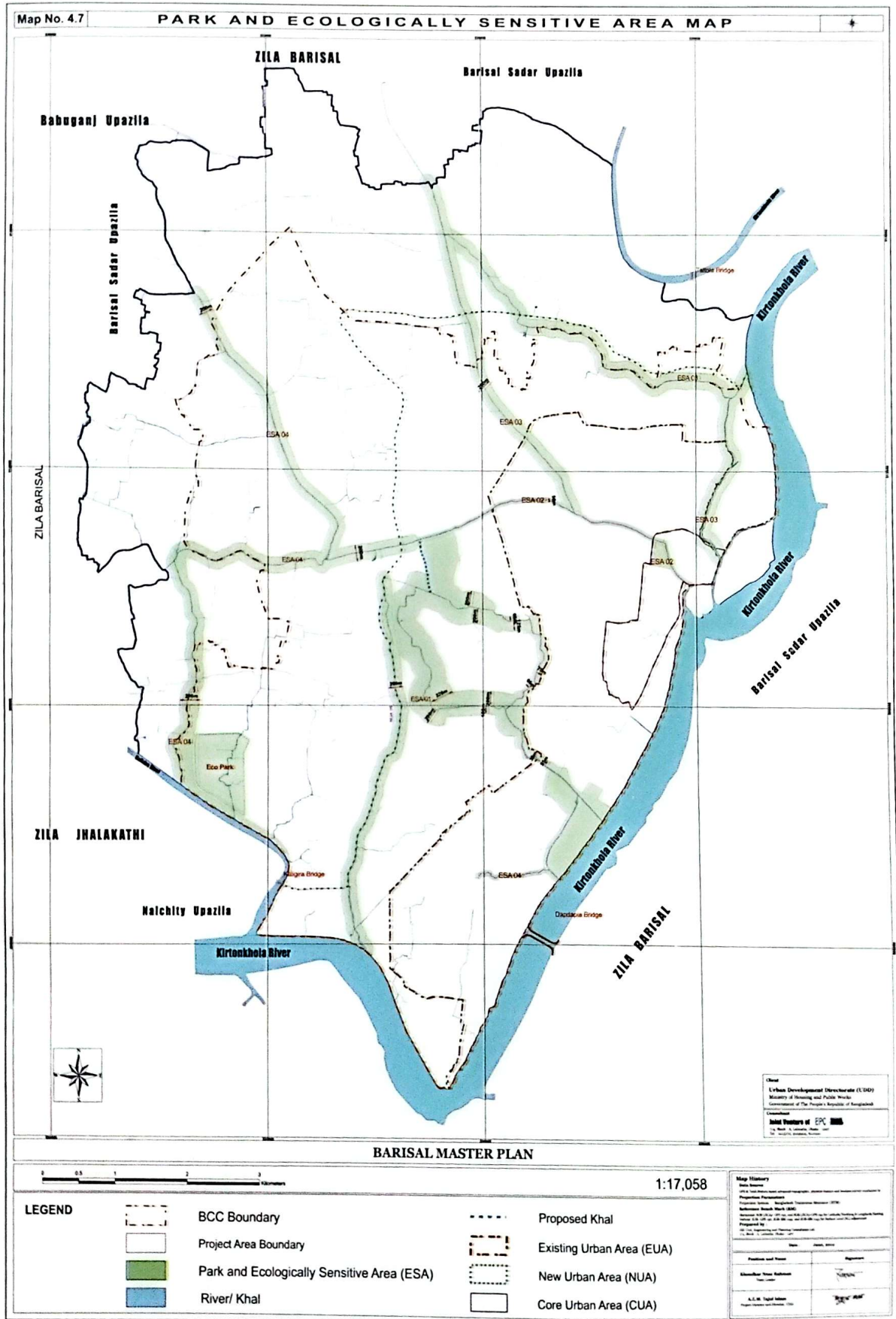
CON.04 Preventing intrusion into the protected areas by identifying and minimizing the root causes of illegal encroachment and occupancy

Natural resources like khals and open spaces are often intruded for financial gains and used for different commercial and industrial purposes. But sometimes the reasons are much deeper. Landless/homeless people from various parts of the city or an evicted group sometimes take shelter in these places. The word 'conservation' means very little to people whose basic needs of food, shelter and security haven't been met. Whatever the reasons are, in-depth analysis can reveal the pattern of intrusion. The findings can be disseminated among the proper authorities for taking action to eliminate the sources of illegal intrusion. This can substantially reduce the recurring need of eviction from critical sights.

CON.05 Bringing up the ecologically and culturally valuable sights into prominence and making them functional

People have to be aware of the presence of these critical areas and be informed about their significance. That way, it'd be harder for them to get lost in oblivion. They also have to be made functional and intertwined with the livelihood pattern of the local people. Natural resources can be used to create parks and recreational facilities and historic sights can be turned to major tourist spots. The socio-economic fabric created this way will naturally protect these resources from dissolution.

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The park will provide active recreational pursuits and rest of the area will remain very much in its natural form.

Before permitting the development in the ecologically sensitive area, authority will first need to prepare a list of development which will be given permission in this area. Therefore, the authority should ensure that any proposed development is in keeping with the location and with its status as a region-wide recreational facility.

Issues that should be considered by the Authority when assessing any proposal include-

- The facilities that are appropriate
 - Pedestrian Walkway
 - Restaurant/ cafeteria
 - Children's play area
 - Picnic spots complete with wooden table and chairs and waste disposal receptacles
 - Hotel (subject to location within the park)
 - Wooden shelter or benches
- The facilities that are not appropriate
 - motorized boating
 - residential development
 - industrial development
 - commercial development
- Access arrangement to/from the park onto the C&B Road should be of a high standard capable of coping with anticipated demand.

Guidelines for Ecologically Sensitive Area (GESA)

- GESA.01** No garbage (solid or liquid) be disposed into the khals/ Ecologically Sensitive areas.
- GESA.02** No drain line be ended into the Khals.
- GESA.03** All khals must be Rehabilitated (Eviction, excavation)
- GESA.04** Identify khals based on two criteria: to keep its original form or to excavate following the mouza map if possible or excavate the khal as possible as the plan required.
- GESA.05** Provide pedestrian walkway on both sides of the khals and only bi-cycle be allowed as a mode of transport
- GESA.06** Preserve natural forests on both sides of khals and take afforestation schemes where natural forest is absent
- GESA.07** Existing bridges must be redesigned considering the tidal effect and the height of water transport
- GESA.08** Provide new bridges as suggested in Detail Area Plan considering the tidal effect and the height of water transport
- GESA.09** Relocation of people who are affected by the eviction and excavation programme with full compensation and gradually preparation of fully fledged Local Area Plan for them
- GESA.10** Excavate proposed khal to provide linkage between Napitkhali khal and Jail khal.
- GESA.11** All development activity in the Ecologically Sensitive area must comply to the points 5 and 6 of "Play field, Open space, Garden and Natural Water-body Conservation Act, 2000" of Municipal Area of Metropolitan, Divisional and District Towns [মহানগরী, বিভাগীয় শহর ও জেলা শহরের পৌর এলাকাসহ দেশের সকল পৌর এলাকার খেলার মাঠ, উন্মুক্ত স্থান, উদ্যান এবং প্রাকৃতিক জলাধার সংরক্ষণ আইন, ২০০০] published on date 18.09.2000 in the supplementary part of Bangladesh Gadget (Annexe-A).

Master Plan for Bakinal Divisional Town M.O. II Urban Area Plan

Map No. 11

R.A.D. (L.D.A.) AREA PLAN NO. 11

TITLE SHEET



BAKINAL MASTER PLAN

LEGEND

1. Main Road	2. Secondary Road	3. Tertiary Road	4. Canal	5. Drainage	6. Water Body
7. Railway	8. Airfield	9. Port	10. Market	11. School	12. Hospital
13. Government Building	14. Private Building	15. Industrial Area	16. Residential Area	17. Commercial Area	18. Public Area
19. Green Area	20. Water Body	21. Canal	22. Drainage	23. Railway	24. Airfield
25. Port	26. Market	27. School	28. Hospital	29. Government Building	30. Private Building
31. Industrial Area	32. Residential Area	33. Commercial Area	34. Public Area	35. Green Area	36. Water Body
37. Canal	38. Drainage	39. Railway	40. Airfield	41. Port	42. Market
43. School	44. Hospital	45. Government Building	46. Private Building	47. Industrial Area	48. Residential Area
49. Commercial Area	50. Public Area	51. Green Area	52. Water Body	53. Canal	54. Drainage
55. Railway	56. Airfield	57. Port	58. Market	59. School	60. Hospital