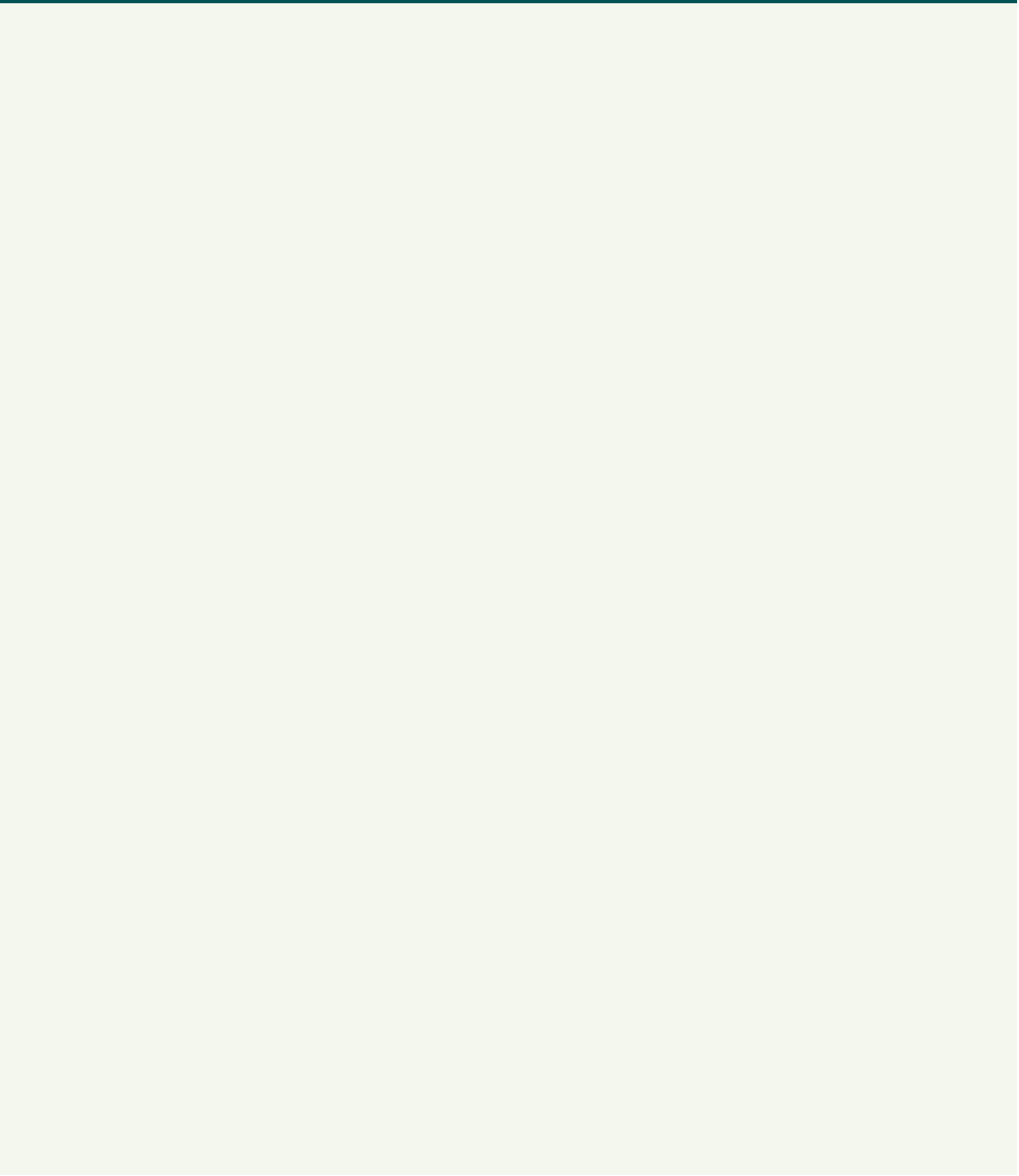
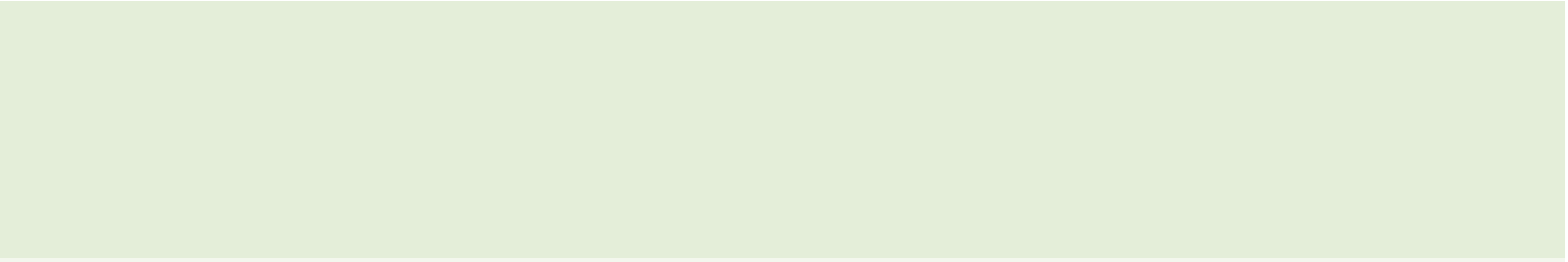


DPZ *10*

MADUNAGHAT - CUET



4.10 DPZ-10: MADUNAGHAT - CUET

4.10.1 EXISTING SITUATION

a) Location and Administrative Boundary:

DPZ-10 is on the northeastern edge of the planning area. It consists of flat plains of the Halda River and Karnaphuli River. To the west side, its boundary is the Halda River and to the east side, its boundary is the Rangunia Thana, and to the north side, its boundary is the Rauzan Thana and to the south side, its boundary is the Karnaphuli River.

The whole of the area covered by the Detailed Area Plan lies within Rangunia Thana and comprises 7 Unions. The total area under this zone is 10,985 acres.

b) Population: As per the BBS census 2001, the population of the Area was 85536 According to the trend of the population projection the total population is estimated to be 115236 in 2015. Density of the DPZ-10 will rise from 8/acre in 2001 to 10/acre in 2015.

c) Land ownership: Most of the land within the area is under private ownership. A significant size of land is under public control as for examples educational institutions. Most of the dwellers have their own private land and they live in their private houses and major portion of the land are being used to agriculture

d) Socio-Economic Condition: The DPZ 10 is situated outside of the Chittagong City which is vastly rural in character. The DPZ 10 area comprises two growth centres like Nowapara & Pahartali (CUET) and a number of union including two growth centres or extended bazaars of Nowapara growth centre and Pahartali growth centre.

Educational status of the DPZ 10 area, it is found that about 25.34% have attained or completed the primary level and 28.50% have completed the secondary level education. Secondary level education has defined as the interim period between after primary to before SSC. (Source: Socio-economic Survey Report of DAP project in March 2007)

Structure in the DPZ 10 area fall into five main categories like pucca, semi-pucca, Katcha, Tinshed

and Jhupri. Regarding the structural quality of housing in the DPZ 10 area Katcha and Tinshed structure are dominated and this is because of the DPZ 10 are is located in the mostly rural area. (Source: Socio-economic Survey Report of DAP project in March 2007)

In order to understand the pattern of household employment and investment activities as well as sectoral contribution to the economy of DPZ 10, it is needed to present an overall profile of economic activities mainly in the industrial sector and agricultural sector. Agriculture as a whole including crops, livestock and poultry and fish cultivation, accounts for around 13.54%; there are about 10.67% day labour and around 4.69% are employed in informal activities (Source: Socio-economic Survey Report of DAP project in March, 2007).

According to the socio-economic survey report of the DAP project 2007, business, trade and agricultural goods are the dominant sources of household monthly income accounting for around 47.91% of the total household monthly income. Income from wages and salaried job accounts for around 17.32%, cottage industry and professional services accounts for around 0.65%, agriculture as a whole, including crops, livestock, poultry and fish cultivation, accounts for around only 12.45%.

4.10.2 EXISTING LAND USE AND DEVELOPMENT STATUS:

As ascertained through field survey 2005-2006, the study area exhibits an admixture of a variety of land uses of rural character. Broadly, the areas, served by good road facilities have experienced spatial growth of rural character comprising housing, commerce, industries, institutions, and services. The inaccessible remote areas away from major roads have remained with their original rural character comprising homestead, farmland, fellow land and areas of water bodies. The table below shows the existing land use features of the study area.

The findings of the land use survey are illustrated

in Table 4.15. From the land use survey it is observed that the present dominant land uses of the study area are agriculture and fisheries, residential and water body. Other dominant lands are hilly land, transport land and vacant land. Figure 4.19 shows the existing land use of the study area.

a) Residential: Residential land occupied an area of 2840 acres (25.85%) of DPZ 10. The survey results indicated that residential category was the major dominated land use in DPZ. There are 14107 dwellings in this area of which 15.61% pucca, 9.56% semi pucca and 74.83% katcha.

b) Industrial: Within the area covered by the

and all categories of ribbon commercial developments along the major road. In the DPZ 10 area, there are a large number of retail shops, bazaars and wholesale markets. Some portion of land 116 acres (1.1%) of DPZ 10 area is covered by this category.

d) Mixed use: Mixed land use area may be mixed up with residential with commercial or commercial with residential with office or admixture of all the three. The small processing plants are also found to co-exist with any one or all the above land uses. However, other admixture of diverse land uses is also found. Around 38 acres (0.35%) of DPZ 10 is covered by this category.

Table 4.15: Existing land use features of DPZ-10

Sl. No	Type of use	Area (in acre)	Percentage
1.	Agriculture and Fisheries	4684	42.64 %
2.	Commercial Activity	116	1.1 %
3.	Education and Research	153	1.4 %
4.	Hilly land	593	5.39 %
5.	Manufacturing & Processing	53	0.48 %
6.	Miscellaneous	47	0.43 %
7.	Mixed Use	38	0.35 %
8.	Office Use	6	0.1 %
9.	Open/Community Space	82	0.74 %
10.	Residential	2840	25.85 %
11.	Restricted	---	---
12.	Service Facilities	6	0.05 %
13.	Transport & Community	291	2.65 %
14.	Vacant Land	353	3.21 %
15.	Water Body	1723	15.68 %
TOTAL		10985	100%

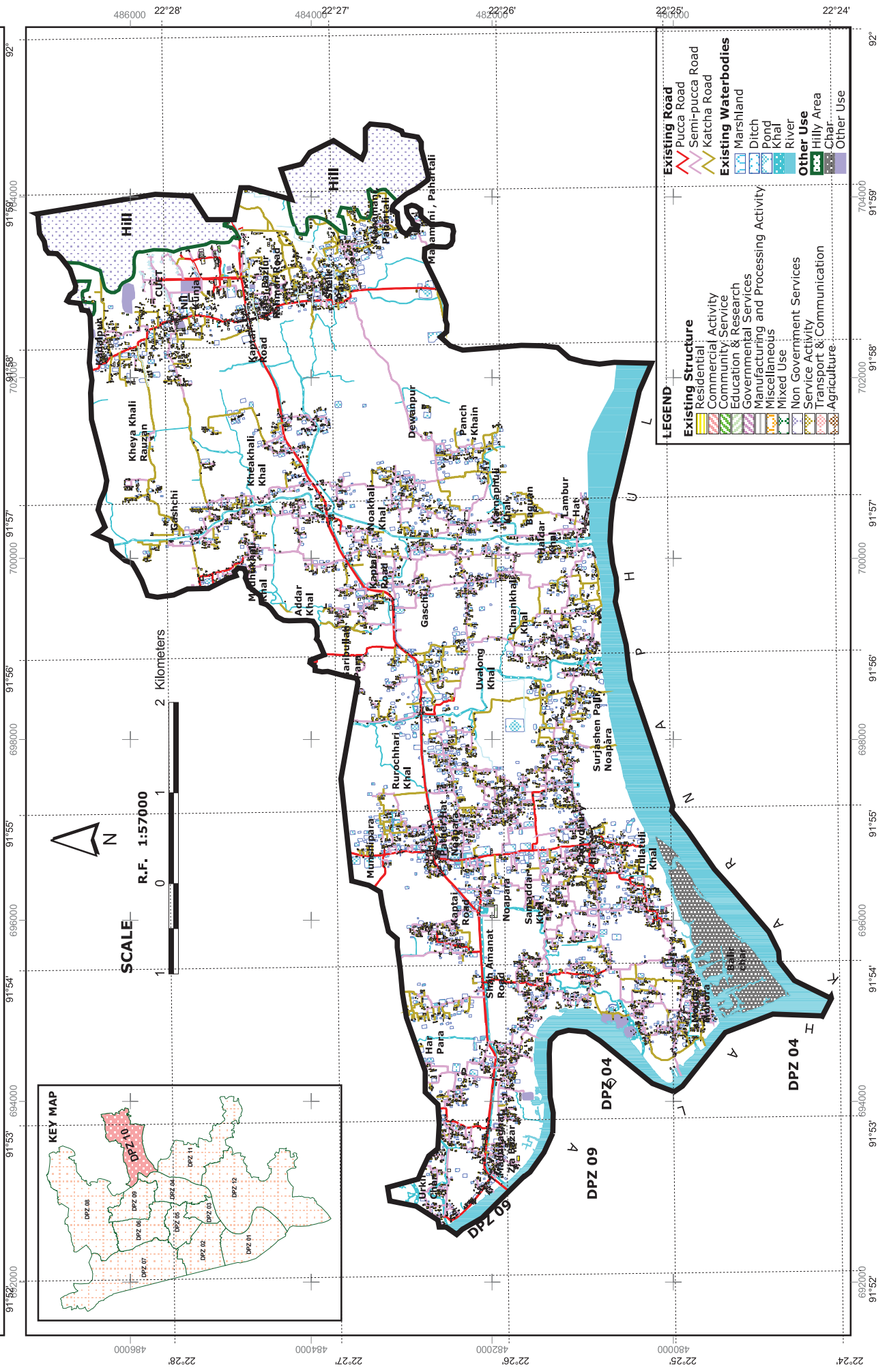
Source: Land use survey, 2006-2007

Detailed Area Plan, many fishing industries are developed along the Halda River and around the Betagi and Pomra union hilly area. These consist of the General Manufacturing Plant, salt crushing mill; saw mill, rice mill and other factory. There are also 117 poultry farm are found in the DPZ-10. A large amount of land 53 acres (0.48%) of DPZ 10 is covered by this category.

c) Commercial: Major land uses under this category were retail and wholesale shopping areas

e) Topography and Drainage: Some area is geologically flat as well as encompasses a large number of Ponds and khals. West side of the area covers flood plain land along the Halda River. Consequently, this portion of the DPZ-10 is flood prone and water remains for few weeks during the rainy season. South side of the area covers flood plain land along the Karnaphuli River. This part of the area is vulnerable to landslides. It is flood prone during the rainy season. Some khals and

FIGURE 4.19: EXISTING LAND USE MAP OF DPZ-10 (Madunaghat-CUET)



branches, which cross the area, are important natural drainage courses. Finally all the khals fall into the Halda River and Karnaphuli River. In addition to the khals a significant number of ponds work as storm water reservoir during the monsoon period.

f) Transport: An analysis of circulation pattern shows that there is no prominent arterial road network in this planning zone. As the proportion of industrial and mixed uses is low and residential land uses are of rural character, transport network has not developed properly. Tertiary and access roads are also inadequate and very narrow. The existing roads do not form any circulation system. This category covers an area of about 291 acres (2.65%) land of DPZ-10.

g) Community Facilities: Community facilities cover all land uses where public gathering mostly. This category of uses includes educational institutions, hospital/clinic/dispensary, park & playground, post office, police station, fire station, town hall, all kinds of assembly hall, prayer halls including mosque, temple, church, pagoda,

community centre, mazaar, graveyards, cemetery, religious sites etc. It constitutes about 82 acres (0.74%) within the DPZ 10.

h) Utility Services: The supply network in the served area is not comprehensive. There are various sources of water supply in the DPZ 10 area. Household owned tube well is predominant. The significant number of household depends on community tube well for safe drinking water. Slum areas generally have little or no piped supply with water sources being shallow tube wells or open ponds. These supplies are often polluted and unclean.

There is no piped sewerage system in Chittagong. Some buildings have septic tanks but the majority of sewage is flushed directly to khals or deposited in open latrines.

There is no proper solid waste management system in this area. People dump waste indiscriminately along the roadside; drain, pond and canal that pollute water body. Such unsanitary condition may lead widespread pollution, which causes health hazard.

Table 4.16: Existing community facilities of DPZ 10

Community Facilities	Existing Features (Unit/No)	Area in acre
Police Box	2	0.15
Post office	2	0.03
Hospital	3	1.95
Clinic	13	2.3
Market	14	5.67
Bank	6	0.7
Cinema hall	2	2.21
Community Centre/Club house	10	0.72
Graveyard	115	15.98
Mosque	182	17.9
Temple	42	5.02
Primary school	67	10.02
Secondary school	18	5.12
NGO school	6	0.029
Madrassa	15	1.09
Playground	4	4.3
Corner shop	487	7.81
Water pump house/Water reservoir	8	0.22
Petrol pump	2	0.3
Total	998	81.52

Source: Land use survey, 2006-2007

i) Agriculture: This category includes all types of agricultural uses e.g. paddy field, cropland, grazing land, orchard, horticulture, fisheries, nursery, farm land, poultry, cattle farm etc. It involves about 4684 acres (42.64%) land of DPZ-10. Irrigation water is comprehensively utilized for cultivation. Approximately 117 poultry farms and a certain number of fisheries keep great role in local economy of DPZ-10.

j) Vacant land: Unused or vacant land is an important characteristics feature of the planning area. This category includes land with no apparent use or unused land, low-lying areas, char land etc. The vacant land constitutes about 353 acres (3.21%) within the DPZ 10 and a little portion of agricultural land is converted of agricultural land by selling it from farmers to non-farmers.

4.10.3 EXISTING ENVIRONMENTAL ISSUES:

Water body is the major environmental issues in the DPZ-10. Water bodies are spreads all over the DPZ-10. Water bodies like river, pond, khal, ditch etc. encompass almost 1723 acres (15.68%) of DPZ-10 as shown in the Table 4.15. A lot of small hilly regions are present in DPZ-10 and covers 593 acres (5.39%) of DPZ-10.

4.10.4 HIGHER LEVEL PLANNING:

a) Structure plan 1995: Structure plan has identified Rangunia and Raozan area as one of the future expansion areas of Chittagong city taking into consideration various policies on population, economy, spatial development opportunity, community facilities, transportation, infrastructure services, flood and drainage, urban land development, environment and prestige projects.

b) Major issues, problems, opportunities and required actions: The following issues, problems, opportunities and required actions have been recognized at DPZ-10 areas, which are clarified through observation.

Major issues and problems

- Susceptibility to cyclonic surges and seasonal flooding near the Karnaphuli River and Halda River.
- Haphazard development of urban fringe areas.

- Presence of slum and squatter housing areas.

Opportunities

- Proximity to the existing urban area.
- Identified in the Structure Plan as one of the preferred locations for peripheral expansion.
- Widening of Kaptai Road link proposed in the DAP Plan to “open up” land for development.

Actions Required

- Implement a slum improvement programme.
- Implement riverside afforestation schemes in association with the new embankment of Karnaphuli River.
- Set of new industrial areas and ensure their full utilization.

Priority Actions Required by Area

- Implement riverside afforestation schemes in association with the new embankment of Karnaphuli River.
- Implement a slum improvement programme.
- Implement the widening of Kaptai Road.

4.10.5 DETAILED AREA DEVELOPMENT PROPOSALS:

The following development proposals have been shown in *Figure no 4.12*.

As a large-scale peripheral expansion of the area, we recommend that the area covered by the Detailed Plan recommended a wide use of industrial and agriculture and fisheries related use. Taking into consideration all the demand for different activities, the present study of DAP recommends around 10,985 acres land in the DPZ-10. The following table shows proposed land use of the DPZ-10.

a) Residential (Housing) & Ancillary: Due to the land scarcity, Chittagong city is now extending to its urban fringe areas and Raozan Thana are the urban fringe area. Day by day fisheries related industries are developed along the Halda River and for this people are coming to live in these areas. As a result, haphazard growths of residential area are developed here. Under the present study of DPZ 10, an attempt is taken to identify the proper

location of future housing development for the workers people with some guidelines.

Here it is mentionable that almost land of these areas are flat, so before taking any housing project land development is necessary as it demands in different parts of the study area. About 1393.37 acres lands are proposed for residential and ancillary use.

b) Mixed Use: Growth centre is such place where economic activities grow. Considering enhancement of economic activities, two growth centers such as Nowapara and Pahartali have been recommended as mixed-use areas. These areas will be focal point of economic activities where predominantly commercial use will be allowed. In addition to that, residential use, small-scale light industry, community facilities and other urban amenities will also be permitted in these areas. Educational based industry (e.g. IT related) will be highly appreciated in a suitable location near to CUET. Required number of access road with proper width, traffic circulation and parking facilities are to be provided.

Nowapara union and Pahartali union are proposed for 3rd category growth centre.

Table 4.17: Proposed land use features of DPZ-10

Sl. No	Type o f use	Area (in acre)	Percentage
1.	Residential & Ancillary	1393.37	12.68%
2.	Industrial	1042.79	9.49%
3.	Mixed Use	1296.05	11.8%
4.	Education	167.63	1.53%
5.	Riverside Afforestation	320.12	2.91%
6.	Agricultural Land	4973.86	45.28%
7.	Reserved Hill	709.23	6.46%
8.	River	1081.95	9.85%
TOTAL		10,985	100%

Source: Land use survey, 2006-2007

c) Industrial: In the study, it is observed that many fish related industry are already exists along the Halda River and this zone is suitable for fisheries related industrial development. Therefore, this study proposes fisheries or related industrial use along the Halda River considering a certain

distance from the bank line of the river. A total of 1042 acres of land have been suggested for fish related industries in DPZ-10.

d) Education: The existing Chittagong University of Engineering Technology (CUET) will remain here as educational institution.

e) Drainage: Storm Water Drainage and Flood Control Master Plan, 1995 did not propose any specific measures to be implemented to alleviate the drainage problem in the DPZ-10 area. The DAP project has identified the drainage works to be done for DPZ-10.

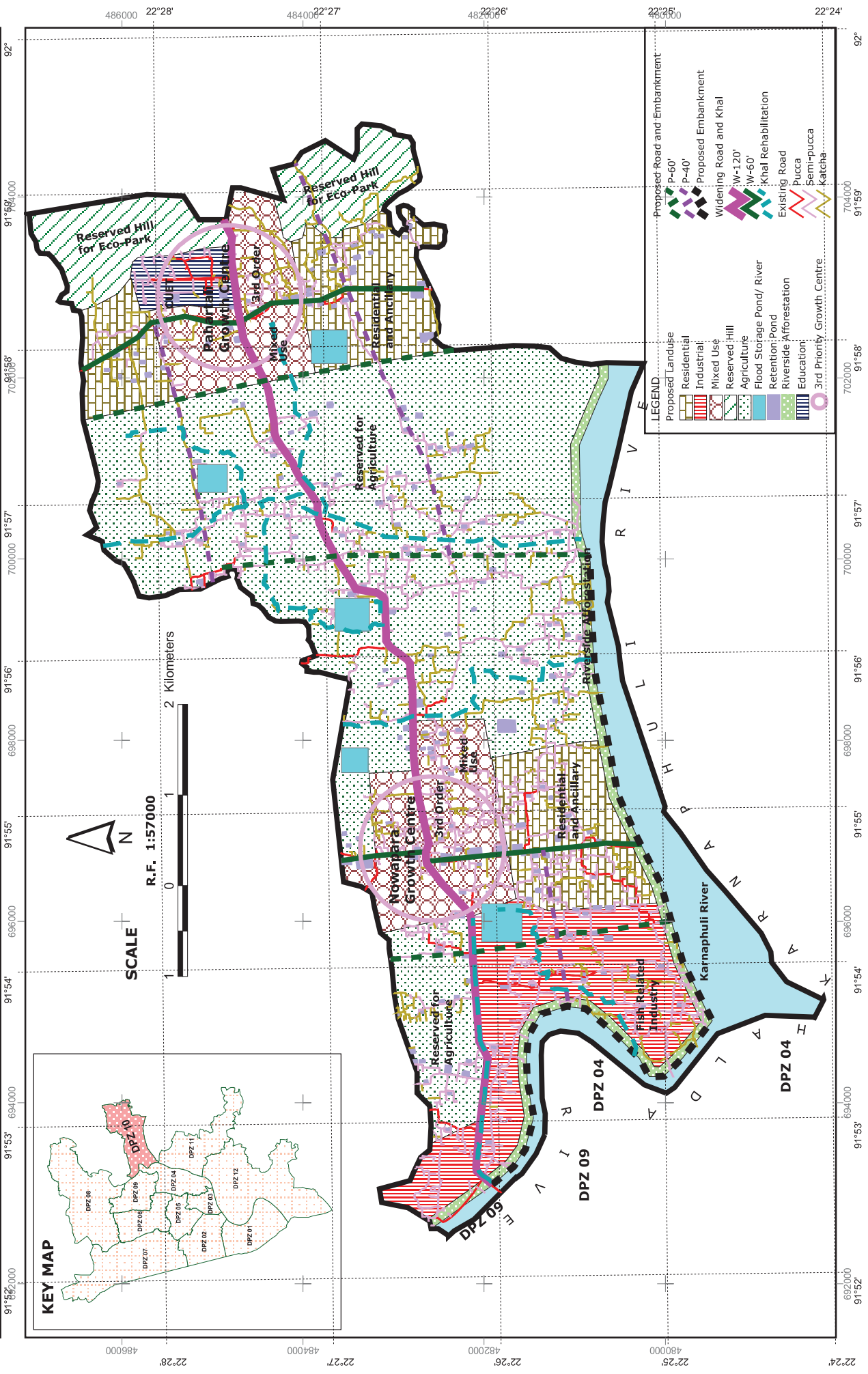
DAP proposals:

1. Rehabilitation of Urkir Char Khal, Razzagati Khal, Uvalong Khal, Noa khal Khal, Tulatuli Khal, Minadihora Khal, Samadoar Khal and Halda River having a total length of about 19.43 km. are proposed. The locations are identified in the proposed land use plan of Figure 4.20.
2. Retaining and preservation of 89 ponds of 0.5 acre and above are proposed. The accumulated size of these existing ponds proposed to be preserved equal approximately 115 acres. The locations are identified in the proposed land use

plan of Figure 4.20.

3. 5 new flood storage ponds / flood plains measuring about 243 acres are proposed. The locations are identified in the proposed land use plan of Figure 4.20.

FIGURE 4.20: PROPOSED LAND USE PLAN OF DPZ-10 (Madunaghat-CUET)



4. Following drainage-guiding principles/guidelines C at page 3-3 remaining drainage networks is proposed and identified in the proposed land use plan of Figure 4.20.

5. Where not shown specifically in the land use map, drainage guiding principles/ guidelines will apply.

f) Transportation: The long-term development strategy for traffic and transportation proposes improvement of the only major road, which passes through the center of this DPZ-10. Figure 4.20 illustrates the proposed primary and secondary roads of DPZ-10. The details are indicated below:

Primary Roads (District Distributor Roads)

It is proposed that the east-west Kaptai Road which is the only major road of this zone be widened to 120 ft ROW

Secondary Roads (Other Distributor Roads)

In order to improve traffic circulation in this zone from Pahartali Growth Centre, a link road, to the north and another to the south up to Karnaphuli River are proposed for widening have a ROW of 60 ft. Two more roads, one from Nowapara Growth Centre to Karnaphuli River in the south and another to the north; and one more road a bit on the west side going to the Karnaphuli River in the south are proposed for widening to 60 ft ROW. In addition, a number of east-west links both around Pahartali and Nowapara are proposed of 40 ft ROW to improve circulation.

g) Utility Services

Ut-06-01: The present DAP study recommends that the responsible agencies for the provision of utility services, will prepare their own detailed plan in respective fields.

h) Agriculture: Because of the fertile land, east side of the Nowapara growth centre and west side of the Pahartali growth centre is proposed for the agricultural land and for this, about 4953 acres of land are reserved for agriculture use.

i) Afforestation: A linear 100m afforestation programme has been proposed along the Halda & Karnaphuli River. This afforestation programme may also incorporate other trees and bamboo for

systemic felling for building purposes.

4.10.6 ENVIRONMENTAL PROTECTION AND ENHANCEMENT:

Some of the guiding principles are as follows:

i) Halda Special Ecological Zone: Along the Halda riverbank, a narrow 100 m wide belt has to be identified as Special Ecological Zone. No development activities, particularly physical change of shoreline would be allowed and must be strictly controlled.

ii) Riverside forest: Considering the spectacular river side view of the Karnaphuli and to enhance physical environmental quality of the city, a river side forest area have been proposed at the confluences with the Halda river. No artificial blockage would be allowed to obstruct the natural inundation of this forest. This forest would be rich in bio-diversity and used as wildlife reserve and sanctuaries. Moreover, a 100m wide green belt is proposed along the Karnaphuli riverfront.

iii) Protection of Water bodies: All the water bodies and ponds of 0.5 acre and above must be preserved under the guidelines of water body preservation (Chapter-3). The environments of some of the water bodies need to be improved by plantation on bank sides. Such pond can be used for community used.

iv) Protection of existing Hill Areas: There are hill landmasses at the eastern part of the zone. Hill cutting and forest clearing would not be allowed in these existing hilly areas. The remaining hill area must be preserved and kept under green forest coverage.

v) Eco-Park: This zone has some outstanding natural beauties such as hilly areas and part of Halda and Karnaphuli River. To promote economic activities as well as recreational facilities, an Eco-park may be developed in this Detailed Planning Zone by enhancing combined hilly areas and part of Karnaphuli River front. This proposed Eco-park will be a attractive place for local people as well as tourist that will play key role in the local economy.