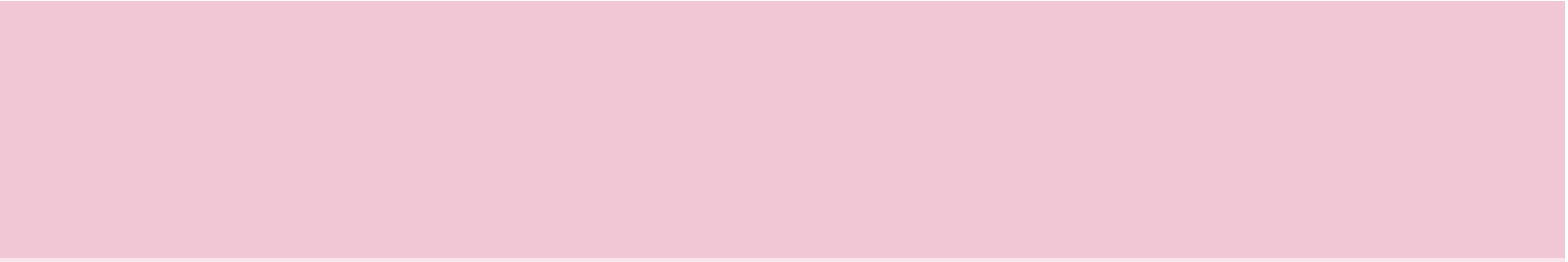


DPZ *11*

BOALKHALI- PATIYA



4.11 DPZ-11: BOALKHALI- PATIYA

4.11.1 EXISTING SITUATION

a) Location and Administrative Boundary: The Boalkhali and Patiya Thana are on the eastern edge of the planning area. It consists of flat plains of the Karnaphuli River on the west. To the west side, its boundary is the Karnaphuli River and to the south side, its boundary is the Anwara Thana. The whole of the area covered by the Detailed Area Plan lies within Boalkhali and Patiya Thana and comprises 11 Unions. The total area under this zone is 15,485 acres.

b) Population: As per the BBS census 2001 the population of the Area was 158759 According to the trend of the population projection the total population is estimated to be 211907 in 2015. Density of the DPZ-11 will rise from 10/acre in 2001 to 13/acre in 2015.

c) Land ownership: Most of the land belongs to local people of this DPZ. A significant size of land is under public control as for examples educational institutions. Most of the residents have their own private land and they live in their private houses and major portion of the land are being used for agricultural purpose.

d) Socio-Economic Condition: The DPZ-11 is situated outside of the Chittagong City which is vastly rural in character. The DPZ-11 area comprises two Upazilla Headquarters like Boalkhali & Patiya and a number of unions including two growth centres or extended bazaars of Boalkhali growth centre and Patiya growth centre.

Educational status of the DPZ-11 area, it is found that about 35.54% have attained or completed the primary level and 23.50% have completed the secondary level education. (Source: Socio-economic Survey Report of DAP project in March 2007)

Structure in the DPZ-11 area fall into five main categories like pucca, semi-pucca, Katcha, Tinshed and Jhupri. Regarding the structural quality of housing in the DPZ-11 area Katcha and Tinshed structure are dominated and this is because of the DPZ-11 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-11, it has to be presented 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 10.54%; there are about 12.97% day labour and around 3.69% 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 56.91% of the total household monthly income. Income from wages and salaried job accounts for around 18.32%, cottage industry and professional services accounts for around 0.95%, agriculture as a whole, including crops, livestock and poultry and fish cultivation, accounts for around only 10.45%.

4.11.2 EXISTING LAND USE AND DEVELOPMENT STATUS:

As ascertained through field survey 2005-2006, the DPZ-11 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.

From the land use survey it is observed that the present dominant land uses of the study area are agriculture and fisheries, water body and residential use. Other dominant lands are commercial activity, vacant land and transport &

economy. Figure 4.21 shows the existing land use of the DPZ-11.

a) Residential: Residential land includes an area of 2540 acres (16.4%) of DPZ-11. The survey results indicate that residential category is the major dominated land use in DPZ-11. There are 14107 dwellings in this area of which 15.61% pucca, 9.56% semi pucca, 18.62% tinshed, 54.83% katcha and 1.48% under construction.

bazaars and wholesale markets. Some portion of land 361 acres (2.33%) of DPZ-11 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

Table 4.18: Existing land use features of DPZ-11

Sl. No	Type of use	Area (in acre)	Percentage
1.	Agriculture and Fisheries	7108	45.9 %
2.	Commercial Activity	361	2.33 %
3.	Education and Research	15	0.1 %
4.	Hilly land	0	0 %
5.	Manufacturing & Processing	66	0.43 %
6.	Miscellaneous	50	0.32 %
7.	Mixed Use	3	0.02 %
8.	Office Use	1	0.01 %
9.	Open/Community Space	120	0.77 %
10.	Residential	2540	16.4 %
11.	Restricted	0	0
12.	Service Facilities	33	0.21 %
13.	Transport	402	2.6 %
14.	Vacant Land	757	4.9 %
15.	Water Body	4029	26.01 %
TOTAL		15485	100

Source: Land use survey, 2006-2007

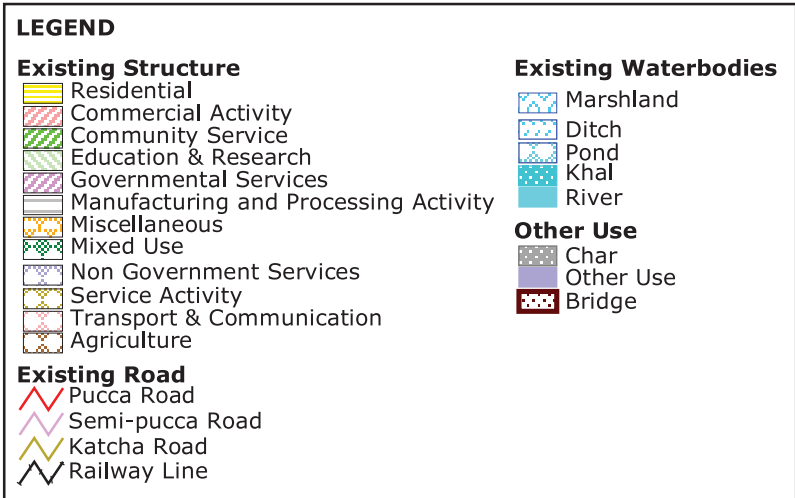
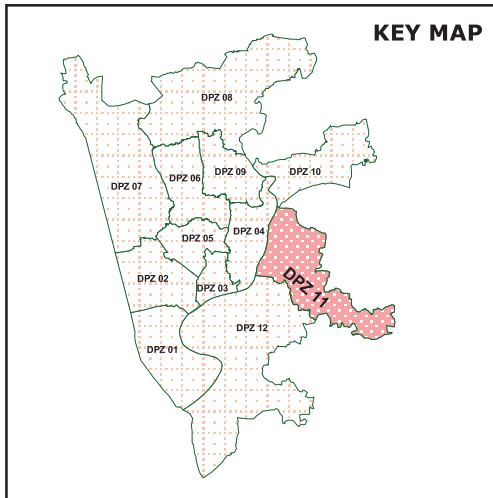
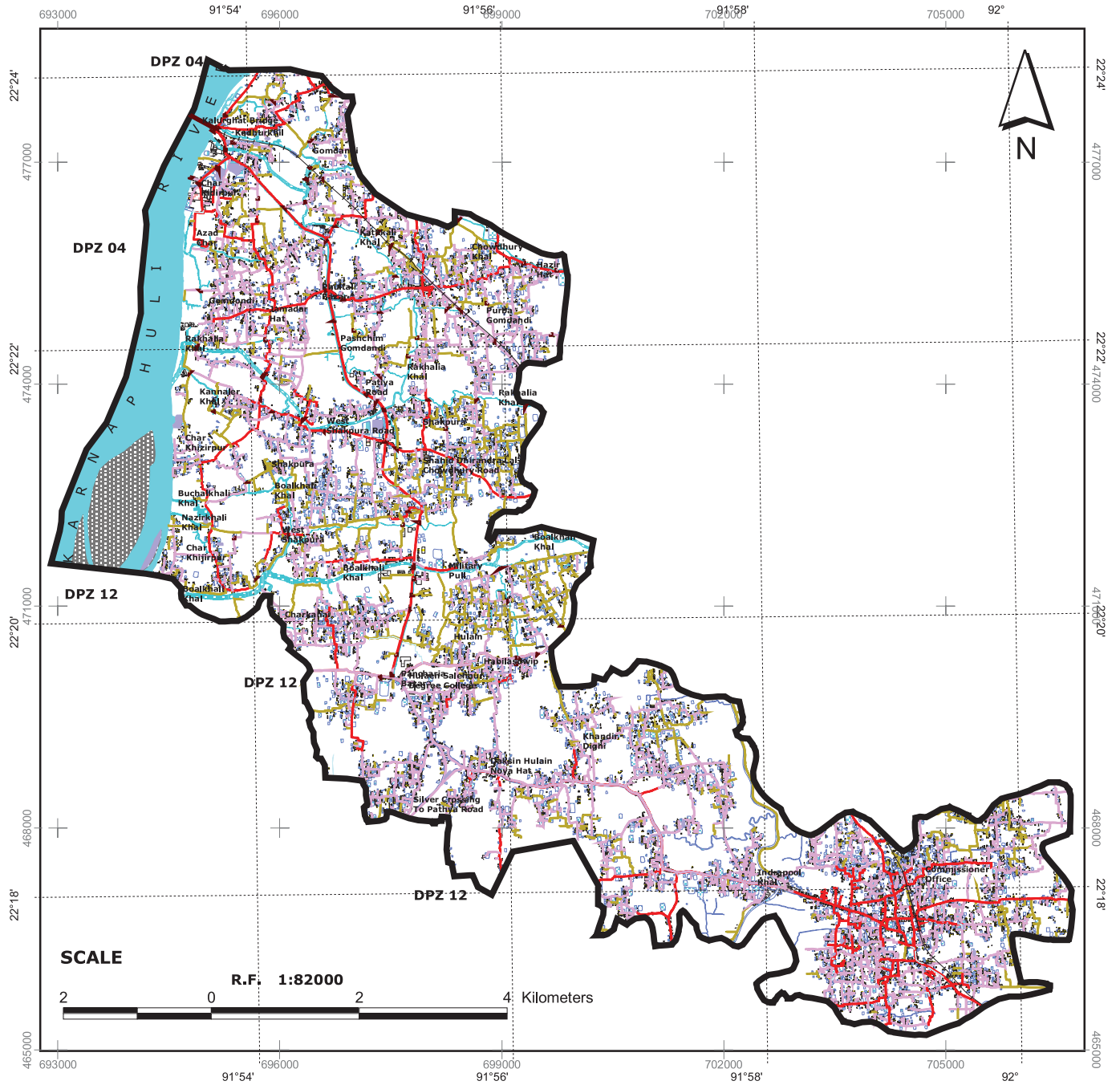
b) Industrial: Within the area covered by the DPZ-11, many fishing industries are developed along the Karnaphuli River. Manufacturing and processing industries include food and manufacturing industries, salt crushing mill; saw mill, sugar mill, rice mill, chemical industry, paper industry, ice factory, cottage industry and other factories. There are also 117 poultry farm found in the DPZ-11 area. A large amount of land 66 acres (0.43%) of DPZ-11 is covered by this category.

c) Commercial: Major land uses under this category were retail and wholesale shopping areas and all categories of ribbon commercial developments along the major road. In the DPZ-11 area, there are a large number of retail shops,

also found. Around 3 acres (0.02%) of DPZ-11 is covered by this category.

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 Karnaphuli River. Consequently, this portion of the DPZ-11 area is flood prone and water remains for few weeks during the rainy season. Some khals and branches, which cross the area, are important natural drainage courses. In addition to the canals a significant number of ponds work as storm water reservoir during the monsoon period. The western area is susceptible to cyclonic surges therefore largely unsuitable for general use without an

FIGURE 4.21: EXISTING LAND USE MAP OF DPZ-11 (Boalkhali-Patiya)



embankment along the river Karnaphuli.

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. Again all of the existing roads do not form any circulation system. There are a bus and truck terminal, ferry ghat and all types of roads like pucca, semi-pucca and katcha etc. This category covers an area of about 402 acres (2.6%) land of DPZ-11. Karnaphuli River at the southern end of the DPZ-11 is extensively used for transporting cargo to and from Chittagong, which is a busy trading and industrial centre. There is a declining trend in the

It constitutes about 120 acres (0.77%) within the DPZ-11.

h) Utility Services:

The supply network in the served area is not sufficient. This zone has various sources of water supply. Most of the households use tube-wells for safe drinking water. There is little or no piped water supply in the existing slum areas rather than they use shallow tube-well or ponds to collect water for their daily needs.

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

Table 4.19: Existing community facilities of DPZ 11

Community Facilities	Existing Features (Unit/No)	Area in acre
Police Box	1	0.06
Post office	2	0.06
Hospital	3	0.33
Clinic	20	1.73
Market	28	4.24
Bank	9	0.68
Cinema hall	1	3.53
Community Centre/Club house	15	0.85
Graveyard	119	25.26
Mosque	216	27.67
Temple	69	5.46
Primary school	88	13.53
Secondary school	26	8.53
College	4	1.56
NGO school	12	2.5
Madrasa	25	3.17
Playground	5	7.98
Corner shop	726	12.62
Water pump house/Water reservoir	15	0.24
Total	1384	120

Source: Land use survey, 2006-2007

handling of cargo by boats. This remains the cheapest mode of transport.

g) Community Facilities: Community facilities cover all land uses where public gathering mostly.

along the roadside; drain, pond and canal that pollute water body. Such unsanitary condition may lead widespread pollution, which causes health hazard.

i) Agriculture: This category includes all types of agricultural uses like paddy field, cropland, grazing land, orchard, horticulture, fisheries, nursery, farm land, poultry, cattle farm etc. It constitutes about 7108 acres (45.90%) land of DPZ-11. Irrigation water is comprehensively utilized for cultivation.

j) Vacant land & Char 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 757 acres (4.9%) within the DPZ-11 area and a little portion agricultural land is transformed into non-agricultural use.

4.11.3 EXISTING ENVIRONMENTAL ISSUES:

Water body is the major environmental issues in the DPZ-11. Water bodies are widely spreads all over the DPZ-11. Water bodies like river, pond, khal, ditch etc. encompass almost 4029 acres (26.01%) of DPZ-11 as shown in the Table 4.18.

4.11.4 HIGHER LEVEL PLANNING:

a) Structure plan 1995: Structure plan has identified Patiya and Boalkhali Thana as one of the future expansion areas of Chittagong city taking into account 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 zone 11 areas, which are clarified through observation.

Major issues and problems

- Susceptibility to cyclonic surges and seasonal flooding near the Karnaphuli 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 three preferred locations for peripheral expansion.

Actions Required

- Implement riverside afforestation schemes in association with the new embankment of Karnaphuli River.
- Improve the conditions of existing 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.

4.11.5 DETAILED AREA DEVELOPMENT PROPOSALS:

The following development proposals have been shown in *Figure no 4.22*

As a large-scale peripheral expansion of the area, we recommend that the area covered by the Detailed Plan should contain a wide use of industrial and agriculture and fisheries related use. Considering all the demands for different activities, the present study of DAP recommends the required proposal for around 15,485 acres land of the DPZ-11. These are shown at Figure 4.22 and discussed in turn below:

a) Residential (Housing) & Ancillary: Day by day industry is developing along the Karnaphuli River and due to that reason people are coming to live in these area. Resulting, spontaneous growths of residential areas are developed here. Under the present study of DPZ-11, a step is taken to identify the proper locations of future housing development for the workers people with some guidelines. Here it is unavoidable to mention that almost land of these areas are flat, so before starting any housing project land development is required as it make any demand in different parts of the study area. About 4354 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 Boalkhali and Patiya 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. Required number of access road with proper width, traffic circulation and parking facilities are to be provided.

locations are identified in the proposed land use plan of Figure 4.22.

3.6 new flood storage ponds / flood plains measuring about 182 acres are proposed. The locations are identified in the proposed land use plan of Figure 4.22

4. Following drainage-guiding principles/guidelines C at page from 3-3 to 3-4 remaining drainage networks is proposed and identified in the proposed land use plan of Figure 4.22.

Table 4.20: Proposed land use features of DPZ-11

Sl. No	Type of use	Area (in acre)	Percentage
1.	Residential & Ancillary	4353.80	28.12%
2.	Mixed Use	1207.39	7.80%
3.	Industrial	3343.72	21.59%
4.	River side Afforestation	177.27	1.15%
5.	Agricultural land	5133.89	33.15%
6.	River	1245.01	8.04%
7.	Transport Related Use (Truck Terminal)	23.92	0.15%
TOTAL		15,485	100%

Source: Land use survey, 2006-2007

Boalkhali Upazilla Headquarter and Patiya Paurashava are proposed for 1st category growth centre.

c) 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-11 area. The DAP study has identified the drainage works to be done for DPZ-11.

DAP proposals:

1. Rehabilitation of Boalkhali Khal, Katakhal Khal, Chanddandi Khal, Chowdhury Khal, Rakhali Khal, Kannater Khal, Buchalkhali Khal and NazirKhal Khal having a total length of about 48.84 km. are proposed. The locations are identified in the proposed land use plan of Figure 4.22.
2. Retaining and preservation of 174 ponds of 0.5 acre and above are proposed. The accumulated size of these existing ponds proposed to be preserved equal approximately 208 acres. The

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

d) Transportation: The long-term development strategy for traffic and transportation proposed widening of one major road to improve traffic movement in DPZ-11. Figure 4.22 illustrates the proposed road networks for the DPZ-11

Primary Roads (Primary Distributor Roads):

The most important road in the zone is the north-south-east Patiya Road, which is proposed to be widening to 160 ft ROW. This is the only primary road of this DPZ.

Secondary Road (Other Distributor Roads):

In order to improve traffic circulation and encourage industrial development and settlement improvement, a good number of north-south and east-west links have been proposed under DAP. Some of these will be widening and other will be a new road to be built on an incremental basis. These roads will have ROW, which will vary between 60 ft to 40 ft. For Details, Please see

FIGURE 4.22: PROPOSED LAND USE PLAN OF DPZ-11 (Boalkhali-Patiya)

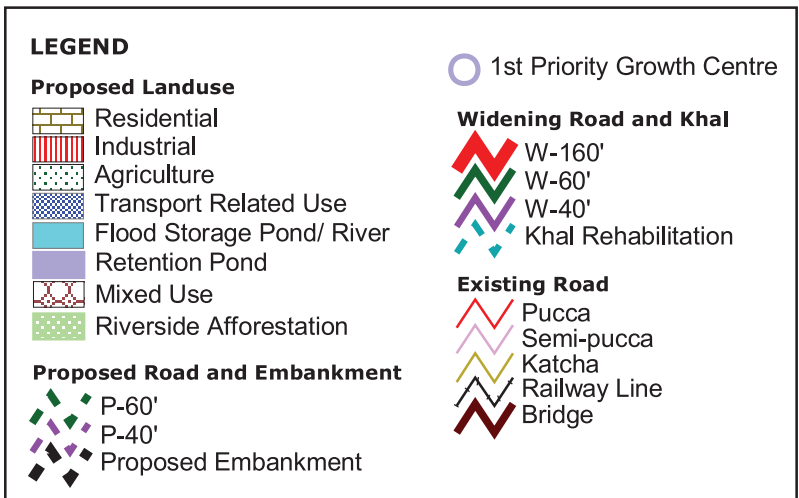
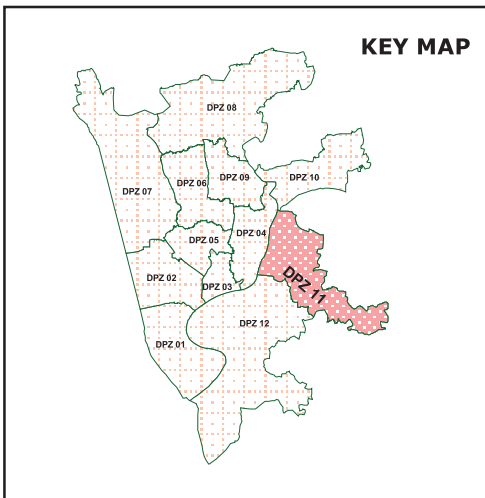
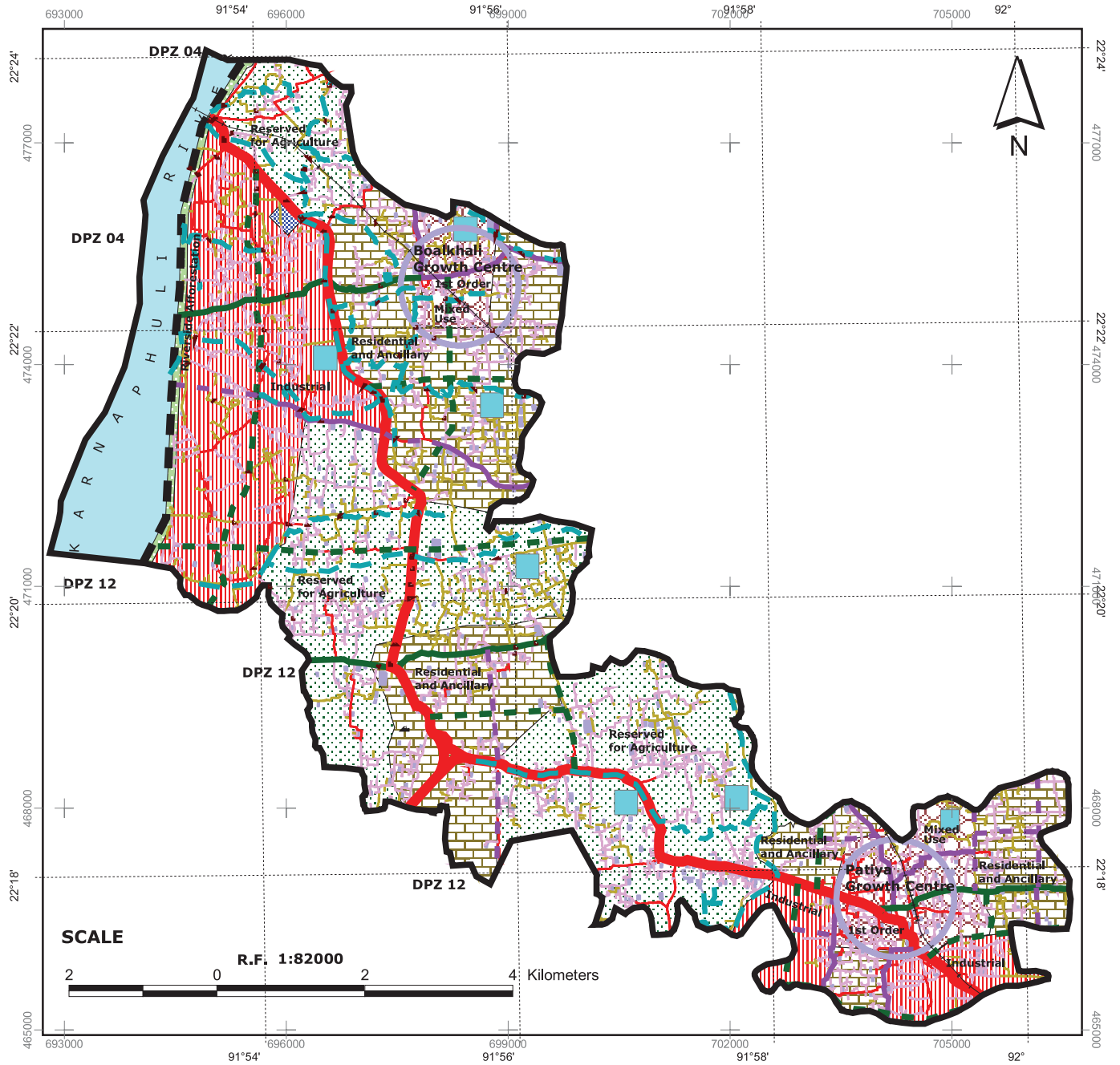


Figure 4.22

Truck Terminal: The site is recommended to set up truck terminal by considering proper traffic circulation and environmental enhancement.

e) Industrial: In this study it is observed that many industrial activities are already remained along the Karnaphuli River and this zone is suitable for industrial development. Finally, the DAP study proposes a total of 3343.72 acres of land along the Karnaphuli River as industrial use.

f) Utility Services: The present DAP study recommends that the responsible agencies for the provision of utility services, will prepare their own detailed plan in respective fields.

g) Agriculture: Because of the fertile land, south side of the Boalkhali Thana and west side of the Patiya Thana are proposed for the agricultural land and this is why, about 5133.89 acres of lands are suggested to reserve for agriculture use.

h) Afforestation: A linear 100m-afforestation programme has been proposed along the Karnaphuli River. This afforestation programme may also incorporate other trees and bamboo for systemic felling for building purposes.

iii) Treatment Plants: Major part adjacent to the left bank of Karnaphuli River down Kalurghat Bridge has been proposed to develop for industries uses. There is always a risk of pollution of the Karnaphuli from this industrial area. All polluting industries must have treatment plant, and must not discharge into the river with out treatment.

4.11.6 ENVIRONMENTAL PROTECTION AND ENHANCEMENT:

Some of the guiding principles are as follows:

i) 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.

ii) Green belt along River and Khal sides: The east bank of the Karnaphuli River needs to be protected by embankment from saline water intrusion. A green belt is recommendation along the embankment. All major khals should be rehabilitated; back lines should be marked and fixed. Along the back line there should be a buffer zone of green belt, up to 100 ft wide on both sides.