Chapter- 2

CRITICAL PLANNING ISSUES

2.1 Existing Development Pattern

2.1.1 General

Dhaka Metropolitan Development Plan area is being the capital of Bangladesh from four hundred year ago (around 1610 A. D) with a great Mughol heritage. Location 9 consists of Uttar khan, Dakshin khan at northeast side of the Dhaka city. The northern part of the planning area developed in an unplanned way. There are three or four growth centers in the planning area on Kachkura Bazar, Dobadia Dakshin Bazar, Gobindapur Bazar, Chamur khan Bazar. On the other hand, southern part of the planning area (Uttar khan, Daskhin Bazar Mouza) and upper side of Purbachal Road developed as private housing.

2.1.2 Socio-economic Profile

a. Family Size

The Table 2-1 shows the distribution of Union-wise male and female population in the project area. The table also presents the distribution of household size of the project area, where the biggest household size (4.9) is experienced in the Beraid Union.

Table 2-1: Union wise Household Size

Union Name	Household Number	Sex		Total	Household Size
		Male	Female		
Dakshin khan	412	884	870	1754	4.26
Beraid	48	123	102	225	4.69
Uttar khan	246	586	545	1131	4.60
Total	**706**	**1593**	**1517**	**3110**	**4.41**

Source: Socio-Economic Survey, 2006

b. Age and Sex Structure

The overall age-sex composition of population of the project area appears to be somewhat different from the national scenario and this is due to population growth and urbanization in the project area. Table 2-2 shows about 41.48 percent of the sample population is 19 years of age or below, what is a significant phenomenon that shows near about half of the population in this project area is between 0 to 19 years of age group. About 21.90 percent population is in between the age group of 20 to 34 years, about 23.22 percent are in the age group of 35 to 49 years, about 13.02 percent population is in the age group of 50 to 64 and the rest 0.39 percent are of age 65 years and above. In this area the significant phenomenon to the age group is that a large number of population are in young age (about 57.60 percent population represent the age group of 0 to 29 years).

Table 2-2: Age Sex Structure

Age Group	Male		Female		Total	
	Number	%	Number	%	Number	%
Below 5	120	3.86	101	3.25	221	7.11
5-14	386	12.41	322	10.35	708	22.77
15-24	326	10.48	377	12.13	703	22.61
25-39	209	6.72	311	9.99	520	16.72
40-59	509	16.37	400	12.86	909	29.23
60 & above	43	1.38	6	0.19	49	1.58
Total	**1593**	**51.22**	**1517**	**48.78**	**3110**	**100.0**

Source: Socio-Economic Survey, 2006

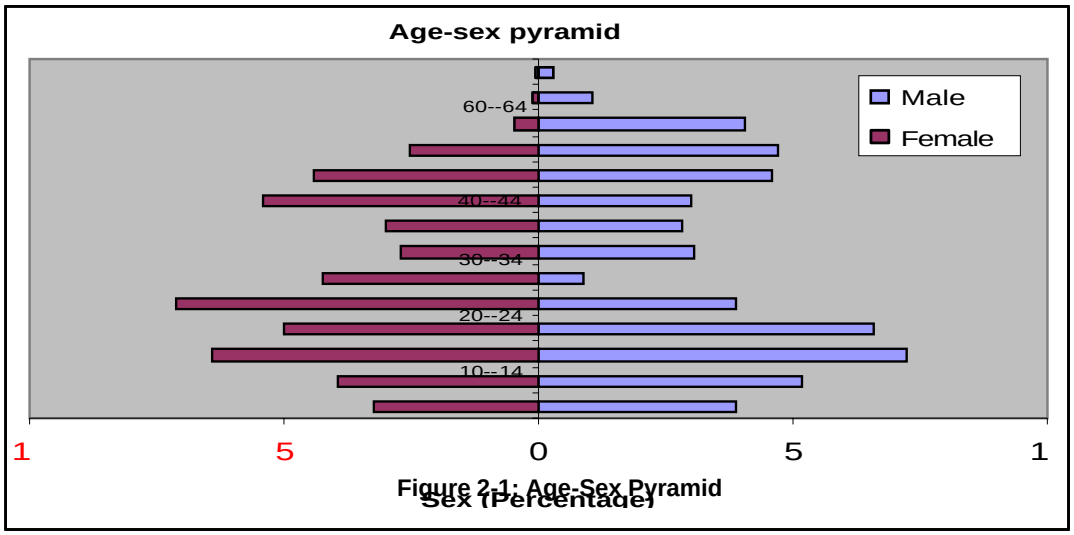


Figure 2-1: Age-Sex Pyramid

Source: Socio-Economic Survey, 2006

The above age-sex pyramid (Figure 2-1) shows a graphic scenario of the age and sex distribution of the project area population. This indicates the project area population to be currently in a state of population transition with birth rate falling, which indicated by the shortening of the base of the pyramid by the adjacent rows above as well.

c. Religious Groups

Table 2-3 shows the religion wise population distribution in the project area. The common prediction regarding the population-religion proportion in the project area was assumed that the Muslim population will be significantly high in the project area and hence the survey result shows about 99.58 percent are Muslims and the rest 0.42 percent are Hindus. In the project area, the survey data do not present any other religious households.

Table 2-3: Household by Religion

Union Name	Religion								Total	
	Muslim		Hindu		Buddist		Christian			
	number	%	number	%	number	%	number	%	number	%
Dakshinkhan	409	57.93	3	0.42	-	-	-	-	412	58.36
Beraid	48	6.80	0	0.00					48	6.80
Uttarkhan	246	34.84	0	0.00	-	-	-	-	246	34.84
Total	**703**	**99.58**	**3**	**0.42**	**-**	**-**	**-**	**-**	**706**	**100.00**

Source: Socio-Economic Survey-2006

d. Educational Status

The Table 2-4 represents the educational status of the population of the project area. Among the surveyed households about 2 percent population are illiterate, 18.46 percent have elementary level of education, 18.33 percent have junior level of education, about 23.83 percent respondents have S.S.C. level education and about 25 percent have H.S.C and higher level of educational qualifications.

Table 2-4: Educational Status of the Project Area

Educational Status	Number Persons	Percentage
Illiterate	56	1.80
Elementary	574	18.46
Junior	570	18.33
S.S.C	741	23.83
H.S.C	399	12.83
Degree	238	7.65
Doctor/Engineer/Advocate	12	0.39
Master Degree and Above	138	4.44
Technical (Diploma)	-	-
Vocational	-	-

Religious Education	1	0.03
Under age	378	12.15
Alim	3	0.10
Others	-	-
Total	**3110**	**100.0**

Source: Socio-Economic Survey-2006

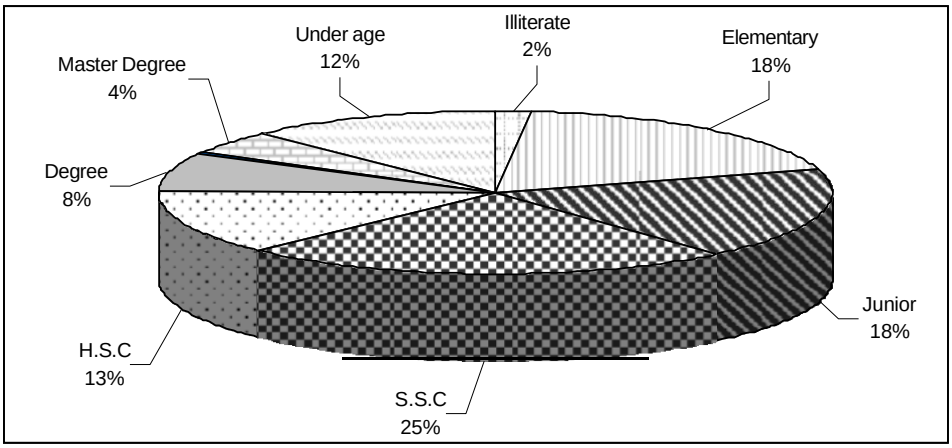


Figure 2-2: Educational Status

Source: Socio-Economic Survey, 2006

The above Figure shows the view of educational qualifications of the population in the project area in a broadly categorized way. The most significant and observable fact is that about 61 percent of the project area's population have school level educational qualification i.e. from elementary to S.S.C. level of education.

e. Occupation/Employment Status

The occupation pattern of the project area's population is very much diversified and dynamic as well. Table 2-5 shows the distribution of household occupation of the project area. Hence, the significant portion of the population is engaged in household work (29.73%). On the other hand, about 8 percent are engaged in different activities of business, whereas about 32 percent are student, about 3 percent are unemployed and about 8 percent are in under age group.

Table 2-5: Occupational Status

Occupation	Number Person	Percentage
Self Employed	5	0.16
Working in Govt./ Autonomous Body	113	3.63
Staff of Non Govt. Office	126	4.05
Business	240	7.72
NGO Staff	15	0.48
Rickshaw/ Van Puller	42	1.35
Car Driver	22	0.71
Skilled Mechanic/ Technician	5	0.16
Industrial Worker	62	1.99
Day Labourer (Non-agri)	7	0.23
Farmer(Land Owner)	139	4.47
Share Cropper	8	0.26
Day Labour (Agri.)	3	0.10
Household work	925	29.74
Unemployed	81	2.60
Student	1001	32.19
Under age	310	9.97
Day Labour(gen.)	2	0.06
Expatriate	4	0.13
Other	-	-
Total	**3110**	**100.00**

Source: Socio-Economic Survey-2006

f. Income and Expenditure Level

Income and expenditure pattern of the population reflects their socio-economic status and the status of the area as well. The income and expenditure pattern also refers to the savings status of a selected population in a certain area. The income and expenditure here presents the monthly income from different sources and expenditure for different items of household and their other common needs. Monthly income Levels and Expenditure Levels have been presented in the Table 2-6 and 2-7 respectively.

Table 2-6 shows the household monthly income is distributed in a situation of unequal status i.e. we find a high-income inequity among the households in the project area. From the survey data, it is significant and unbolted that about 61.71 percent households' monthly income is up to Tk. 8,000, whereas about 33.95 percent of the households' monthly income is Tk. 8,001 to 15,000 and about 4.34 percent of the household earn monthly Tk. 15,000 and above.

Table 2-6: Income Range of the Household

Income Range	Household Number	Percentage
Below 1500	10	1.49
1501-2500	14	1.98
2501-3500	30	4.21
3501-4500	53	7.56
4501-5500	66	9.29
5501-6500	92	13.01
6501-8000	171	24.16
8001-10000	108	15.37
10001-12000	73	10.41
12001-15000	58	8.18
15000 & above	31	4.34
Total	**706**	**100.0**

Source: Socio-Economic Survey, 2006

Table 2-7: Expenditure Range of the Household

Expenditure Range	Household Number	Percentage
Below 2500	20	2.83
2501-3500	66	9.35
3501-4500	84	11.90
4501-5500	109	15.44
5501-6500	111	15.72
6501-8000	115	16.29
8001-10000	130	18.41
10001-12000	41	5.81
12001-15000	19	2.69
15000 & Above	11	1.56
Total	**706**	**100.0**

Source: Socio-Economic Survey, 2006

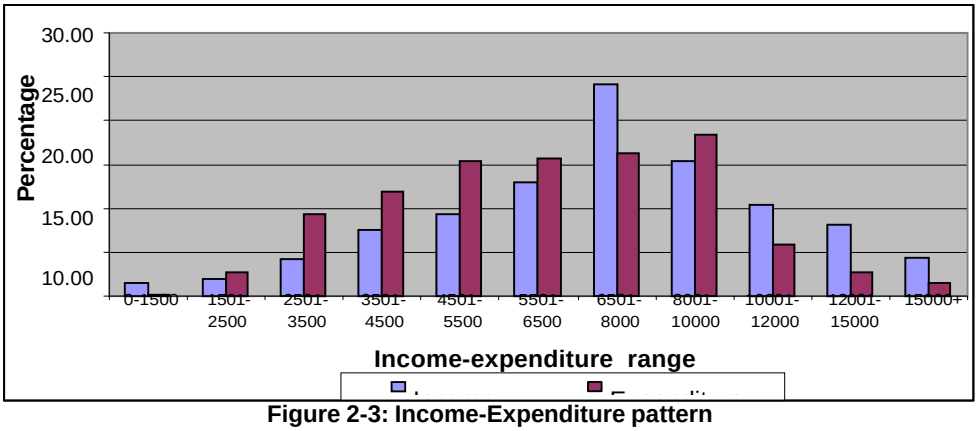


Figure 2-3: Income-Expenditure pattern

Source: Socio-Economic Survey, 2006

The most important significance between income and expenditure pattern of the project area's household is more reflective and clear in the Figure 2.3. What we see from the figure is that the income group of up to Tk. 6500 per month does not have any savings, while they have to manage some part of their expenditure through some other ways, like borrowing or any other informal ways. On the other hand, the income-group of Tk. 6501 to 15,000 per month shows a significant saving except the income group of 8001 to 10,000 and the income-group of Tk. 15,001 and above per month has a handsome saving as well. Another significant phenomenon is that a very small percentage of project areas' population (about 4.34 percent) earns a higher level of income per month. This indicates that there exist the high-income inequity in the project area and that refers to diversified socio-economic classes in the project area as well.

g. Source of Income

The sources of income of the project area's population are very much diversified. Table 2-8 represents the sources-wise monthly income distribution in the Unions of the project area. The major significant income sources of the population are about 45 percent of their income comes from salary (salary from service, both private and public sectors), about 35 percent income comes from business activities, about 22 percent income comes from agriculture and about 11 percent income comes from wages of daily labour. Although the project area is located very close to the Mega city Dhaka but still now a large portion of this area represents rural environment and rural based economy as well. Nevertheless, a large part of income of the population of this area comes from agricultural activities. Thus, this area is less urbanized comparatively to the adjacent Locations of 16 and 11.

Table 2-8: Source of Income

Income Source	Household Number	Percentage
Salary	283	40.08
Income from assets	1	0.14
House rent	32	4.53
Business	250	35.41
Wages (daily)	79	11.19
Agriculture	154	21.81
Poultry/Livestock	8	1.13
Pisciculture	-	-
Cottage Industries/Handicraft	-	-
Remittance	-	-
Total	**706**	**100.0**

Source: Socio-Economic Survey, 2006

h. Migration

About 47 percent households are local in terms of migrational consideration, while about 53 percent households have migrated from the different areas and regions of Bangladesh and settled in the atudy area. Considering the origin of the birthplaces, Uttarkhan Union shows the highest score as 28.19 percent while the Dakshinkhan Union shows the migrated settlers about 44 percent (Table 2-9). In this area, the level of growth by migration is significantly high in the settlement development and urban growth as well.

Table 2-9: Origin of the Respondent

Union Name	Origin of the Respondent				Total	
	Yes		No			
	Number	%	Number	%	Number	%
Dakshinkhan	102	14.45	310	43.91	412	58.36
Beraid	31	4.39	17	2.41	48	6.80
Uttarkhan	199	28.19	47	6.66	246	34.84
Total	**332**	**47.03**	**374**	**52.97**	**706**	**100.0**

Source: Socio-Economic Survey, 2006

For the national economy, the migration to outside the country is very important because of inflow of remittance. The remittance of out-migrated people serving in different overseas countries is one of the main income sources of many households in the project area. The significant phenomenon between in and out migration is that the out-migration rate is comparatively higher than in-migration rate in all the Unions of the project area.

Table 2-10: Migration Status

Union Name	In-migration		Out-migration		Total Population
	Number	%	Number	%	
Dakshinkhan	6	50.00	18	48.65	412
Beraid	2	16.67	7	18.92	48
Uttarkhan	4	33.33	12	32.43	246
Total	**12**	**100**	**37**	**100**	**706**

Source: Socio-Economic Survey, 2006

2.1.3 Landuse

a. Residential Areas

In the project area, most of the houses are semi pucca that reflects most of the respondents are middle-income people; about 45 percent of the houses are semi pucca, which occupied 86.90 acres of land. More than 35 percent of the houses are katcha that reflects many respondents are low-income people and it occupied 46.06 acres of land. Only a few (12.48 percent) has pucca building which occupied 35.02 percent of land. It is not a high density populated area and the area contain 510.08 acres of vacant land. The project area contains a mixture of residential and non-residential buildings. The buildings of this area occupied about 730083.42 square meters.

There are 84.42 percent of the buildings are used for the residential purposes. Some buildings are for mixed uses, which partly used for the residential purposes. Total plinth area used for residential purpose is 578677.61 sq m (**Map 2-1**).

b. Industrial and Commercial Areas

A mixture of residential and non-residential (commercial, industrial, educational etc) buildings are common scenario all over the project area and there is no special zones for the specific purposes like residential, industrial, commercial etc.

In the project area, 562 buildings (3.96 percent of the total building stock) are used for purely commercial purpose. Commercial buildings are spread along the major roads all over the project area but there are some areas, which can be marked as greater agglomeration such as Ajampur, Palar Tek, Chan Para etc. There are 362 buildings of semi-pucca type, 141 of the buildings are katcha and rest 59 buildings are pucca.

There are total 78 structures being used for industrial purpose out of them more than two third are light industries and rests are medium industries. Location 9 is the fringe area and there is no heavy industry in the project area (**Map 2-2**).

c. Non urbanized Areas

Most of the area in location 9 is non-urbanized. So the development course in the area could be regulated in a systematic manner. As most of the area is still in natural form, all the standard of urbanization could be implemented with a vision of sustainable development in the area. Compact residential development could be a better practice of development in this area as it reduces the cost of the utility services.

2.1.4 Infrastructure

a. Circulation Network

The review of land use pattern of Location-9 shows that the most dominant land use is agriculture, which is about 50.92 % of the total land. The second major land use is residential and occupying about 32.79 % of the project area. Beside these, about 9.73 % open area, about 3.54 % water body and others are negligible. Land use under roads is only 1.31 %, which is too insignificant to maintain the proper course of development.

The review of the physical feature survey of existing road networks revealed that various types of road exist having different width and without any proper circulation pattern. The different categories of roads are pucca, semi-pucca and kutcha roads. The total length of pucca roads is 31.52 km. though the condition of all pucca roads is not same in all locations in the project area. Some of these roads are good and some are in poor condition. The next category of the roads is semi pucca or brick soling road, which identified as of almost similar in character in the whole project area. The length of semi pucca roads is about 30.31 km. The significant portion of the roads of the project area is kutcha road, and its length is about 73.22 km **(Map 2-3).**

b. Utility Services

Survey of the existing status of the urban utilities was carried out by collecting information from the concerned utility departments and field survey on utilities like electricity, gas, water supply, sewerage system, drainage, telecommunication etc. People in the project area are using tube well for the supply of drinking water. For other purposes, they use surface water like ponds, ditches, canals and river.

Bangladesh Power Development Board (PDB) supplies the electricity in the project area. The 11 KV lines in the project area supplies the electricity. There is no land phone coverage in the Project area but the area has coverage from different mobile phone operators like Grameen Phone, Bangla link, City Cell, Robi (previously known as Aktel) and Warid Telecom. There is no katcha or pucca drains in the project area, only some natural drains are available which serve as irrigation canals (Water bodies).

Water Supply System

People in the project area are using tube well for the supply of drinking water. For other household purpose, they use surface water like ponds, ditches, canals and river. The household use includes bathing, cleaning of utensils, etc.

Sewerage System

The project area is outside of the jurisdiction of Dhaka City Corporation. So there is no sewerage coverage in the project area. People dispose their sewers naturally.

Recommendations

- The entire area should be included under the network of sewerage system within 2015
- The sewer line in the moholla / lane should be widened according to household population of lane / moholla
- Blockage of any point should be cleared immediately
- Lift stations should be maintained regularly to ensure smooth operation
- Regular clearing of the blockage of sewerage lines
- Monitoring system should be so upgraded that the ward dwellers as well as the cleaners could not neglect their duties
- The concerned authority must give attention to replace the missing covers of the manholes and repair the damaged sewer lines immediately

Gas Supply System

The project area is not under the coverage of gas supply system.

Electric Supply System

Bangladesh Power Development Board (PDB) supplies the electricity in the project area. The electricity is supplied by the 11 KV lines in the project area. The consumption of electricity at location 9 increasing rapidly due to rapid increase of residential buildings and commercial & industrial uses whereas the electricity supplied to city area is less in respect to the demand so, load shedding occurs in supply of electricity to the consumers. There are different types of consumers in the area and the electricity consumed by different type of consumers is measured through energy meters.

Telecommunication System

The telecommunication system at the Dhaka City and surrounding areas including project area of Location - 9 is provided and maintained by BTCL through telephone exchanges. Now days, telecommunication system improved by introducing mobile phone by some private organization like Grameen Phone, Citycell, Aktel, Banglalink, Warid Telecom etc. BTCL also provided mobile telephone named Teletalk. In spite of rapid increase of population in the Dhaka city, the demand of telephone connection for domestic household and commercial purpose has been in a standstill situation due to uses of mobile phone among the people. However, landphone facilities should be increased for the project area in a strategic manner.

i. Infrastructure: Social

Educational Facilities

The Location-9 area is only provided with several Primary, Secondary and Higher Secondary Schools with some Colleges. There is also some Kindergartens and Madrasas on the area. There are 3 Colleges, 11 High Schools, 18 Primary schools, 18 Madrasa and 22 Nos. of other educational institutions exists in this area.

Recreational Facilities

Recreational facilities within the project area include both outdoor and indoor recreation facilities. Outdoor recreation facilities include Parks, Playgrounds and other recreational facilities; indoor recreation facilities include Cinema hall only.

Map 2-4 represents the existing location of education and community facilities.

ii. Infrastructure: Physical

Physical infrastructure of the area is not sufficient to accommodate the future population. At present, the existing population depends on the surrounding area for better facility. Therefore, for the future urbanization, the infrastructural facilities must be developed in a planned manner in the project area to promote better living environment. Extension of various facilities is possible in the area if the population diverted from the core city centre.

2.1.5 Land Ownership and Value

Most of the land of this area is khash land and owned by the local people. Huge water body and depression storages are the prominent features of the project area. The private land developers of the area are making illigal encroachment over this land. Ten private land developers are working in the area. Most of them are filling the low land and declaring illegal ownership. Different types of land value are found in the area from one lakh to five lakh per katha.

2.2 Expected Development

2.2.1 Population

With the growth in core city of Dhaka, the growth trend will increase as the influx of population from core city area will commensurate. As the land is not so available in the Dhaka city, the growth occurs especially in Uttar Khan. The total population of Location-9 area was 74360 in 2007 and it will reach to 86783 in 2015 because the area is potential to develop as commercial and industrial zone in spite of the present residential character without basic services. It is assumed that there will be not much densification. Any raise in density will be coupled with development or availability of basic utility services in the Location-9.

a. Density

The average gross density of population of Location-9 area in 2001 was 10 persons per acre. The projected density for 2015 will be 13 people per acre. The density of Location-9 is very low though it is very near to Dhaka City; but is going to be urbanized spontaneously or in a planned way very fast. As a result, the projected density may not mach with the original but it will be still low compared to the core Dhaka City.

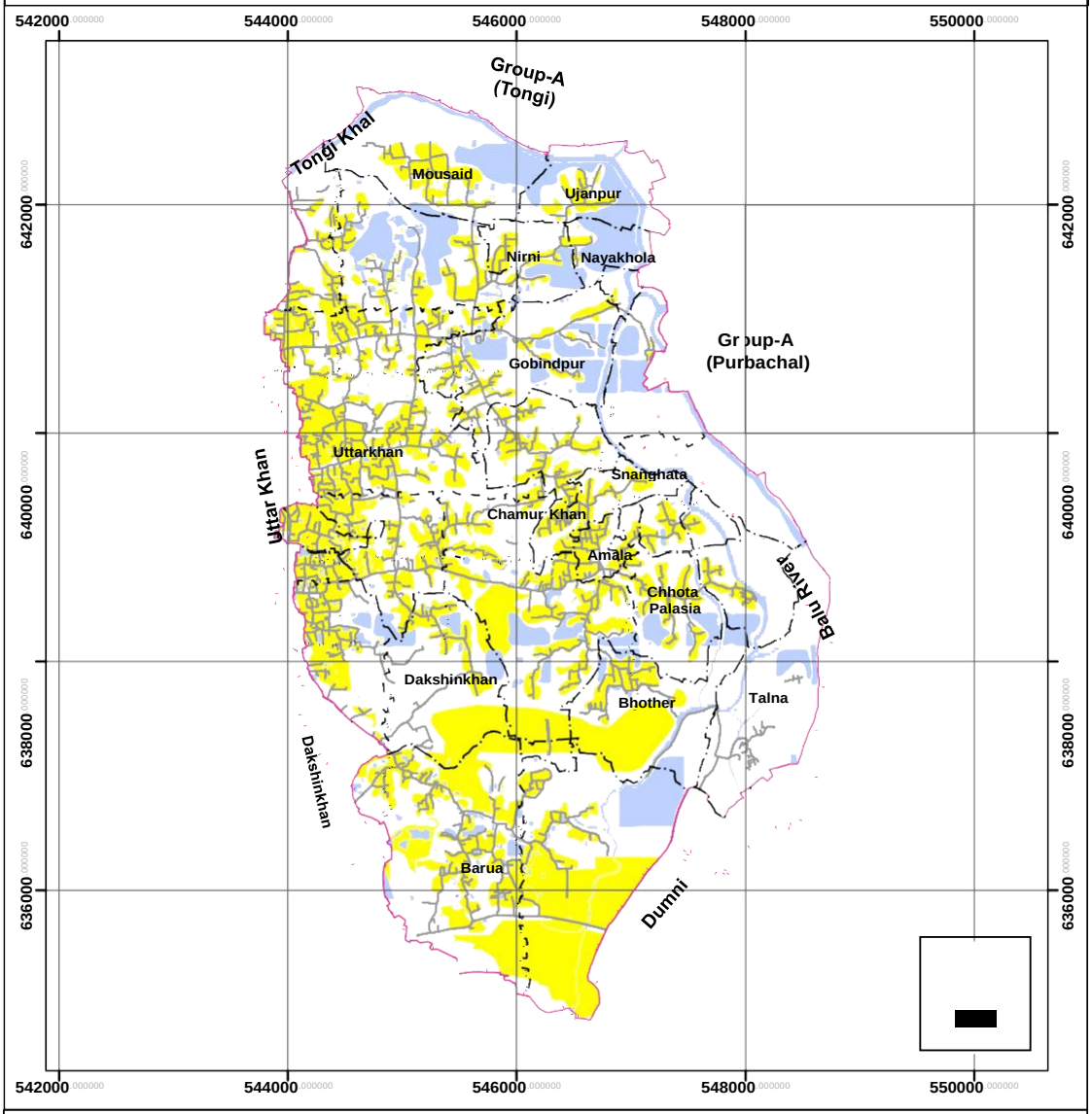
In the implementation process, DAP requires some specific measures to densify the project area population to minimize the continuous pressure of the core city area. However, density may vary from area to area depending on land use composition. For residential areas DAP proposes a maximum net density 300 ppa. It will show that the gross density will be lower and may be close to maximum 125 ppa. However, following table gives an elaboration considering the residential building types of which the net population density per acre will remain as the main controlling figure (Table 2- 11).

Table 2-11: DAP Proposed Density

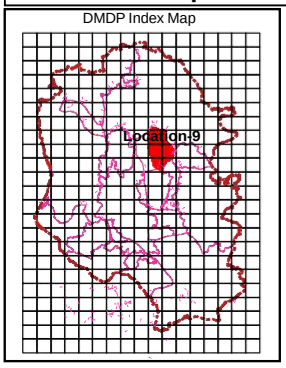
Type of unit	Floor Area Ratio (FAR)	Populationper acre (net density)	Families per residence (acre)	Families per neighborhood acre(gross density)
Single Family	Up to 0.2	48	Up to 8	5
Two Family	0.3	72	10-12	7
Row	0.5	120	16-20	12
Combined flats and row	0.75	150	25-30	16
Three Story walkup	1.0	225	40-45	20
Six Storey elevator	1.4	250	65-75	28
Thirteen Storey elevator	1.8	300	85-95	31

Source: Proposed by Consultants

Map 2-1: Location of the residential areas in the study area



Preparation of Detailed Area Plan (DAP) for DMDP Area (Location-9]



0 600 1,200 2,400 3,600 4,800 Meters

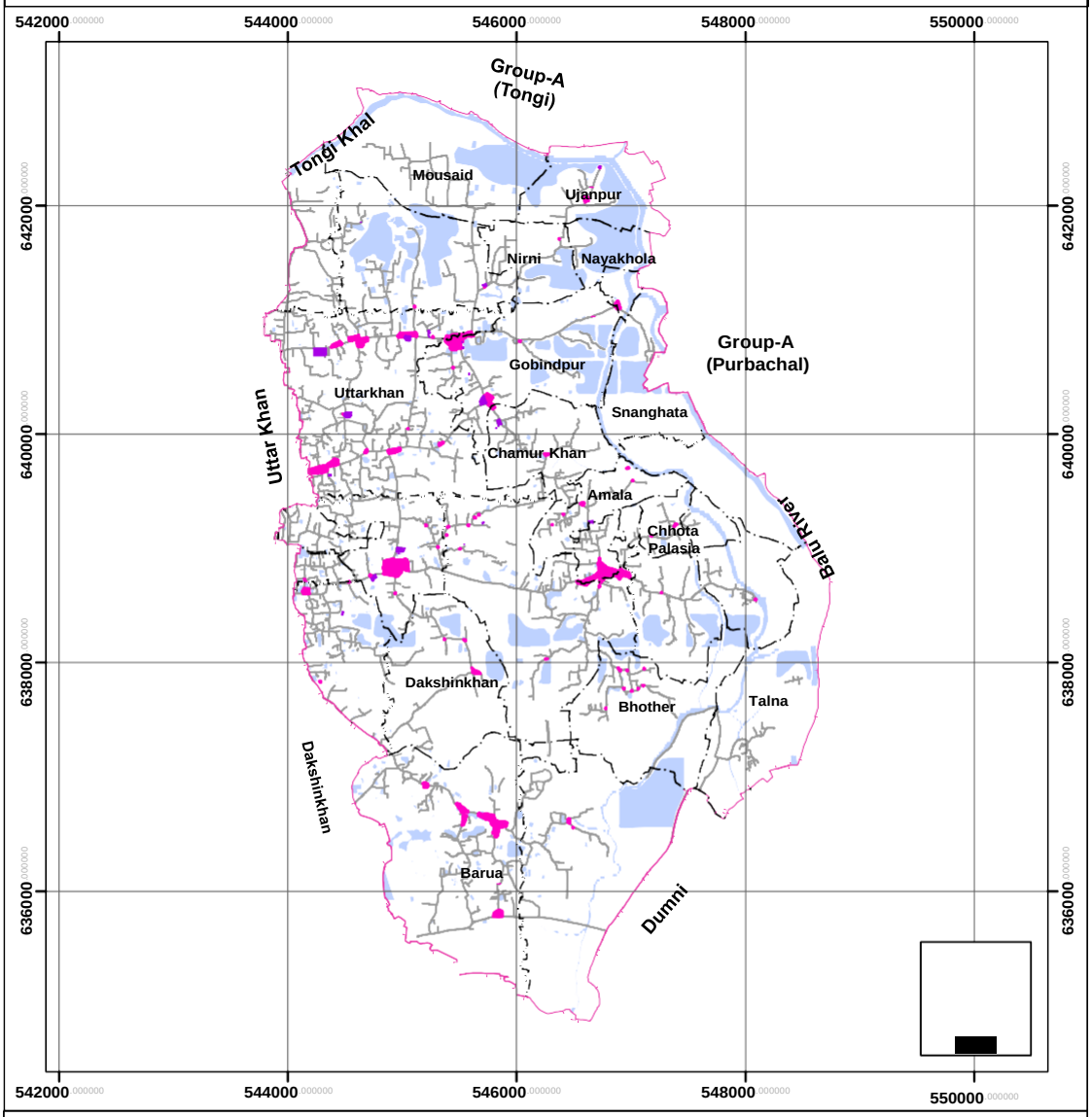
Legend

- Group boundary
- Mauza boundary
- Mauza Sheet
- Existing waterbody
- Existing Road

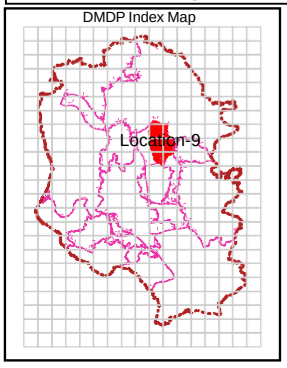
Existing Landuse Categories

- Residential

Map 2-2: : Location of the Commercial and Industrial areas in the study area



Preparation of Detailed Area Plan (DAP) for DMDP Area (Location-9]



0 600 1,200 2,400 3,600 4,800 Meters

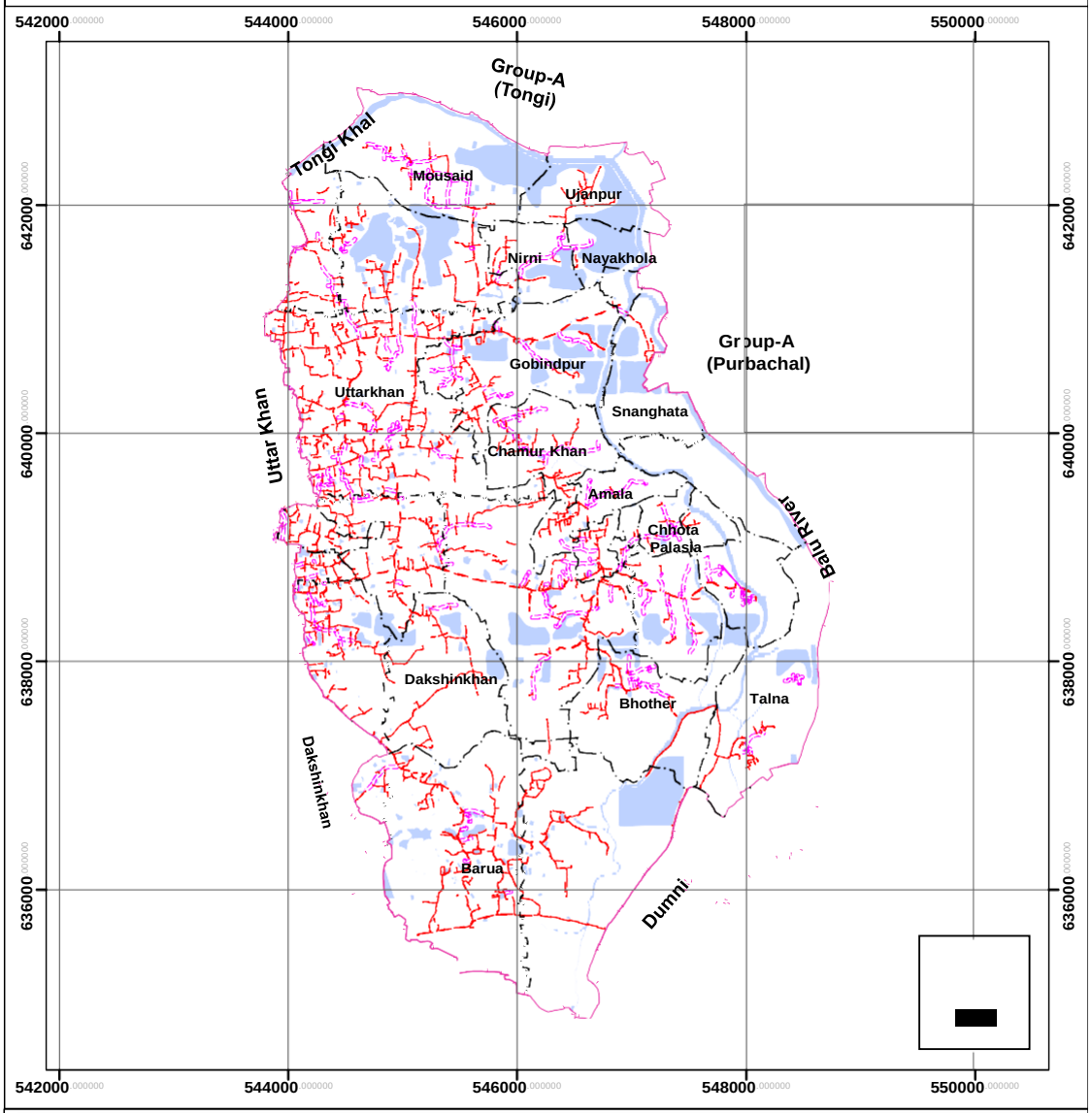
Legend

- Group boundary
- Mauza boundary
- Mouza Sheet boundary
- Existing Road
- Existing waterbody

Existing Landuse Categories

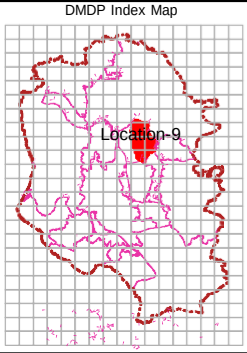
- Industrial Area
- Commercial Activity

Map 2-3: Existing Road Network in the Study Area



Preparation of Detailed Area Plan (DAP) for DMDP Area (Location-9]

DMDP Index Map



0 600 1,200 2,400 3,600 4,800 Meters

Legend

Group boundary
Mauza boundary
Sheet

Road Type

Road (Pucca)
Road (Semi-pucca)
Road (Katcha)
Existing waterbody

However, in case of the project area, if strict zoning is applied, such a densification may not be achieved. Absolute residential use is rare. Therefore, this density issue needs to vary in the mixed use and Institutional use where people may stay. In this relation, the Building Regulations of 2006 may provide a good guide. However, DAP proposes that the FAR, LUI, OSR need to vary from area to area depending on the required density of the areas, and it should be calculated on the basis of area basis instead of plot basis. Such a solution may help to generate open spaces by reducing misuse of space for setback in each plot. DAP uphold the gross FAR for Location-9 to be reasonably low and within 2 feet in order to ensure the control of population densification. Standards for Community facilities also need to be fixed to ensure better condition of urban living. Considering the relevant available standards, DAP proposes the above table for the project area. However, for built up area some of these are revised and a lower standard also being proposed for special cases. In the calculation process, existing Building Regulation of 2006 and average standard of facilities are considered.

2.2.2 Economic Activities

Being very nearer to core Dhaka, Location-9 has the potential to foster economic growth. Its economic base will take a major share; while sale of all types of goods including construction materials (building) and other commodity will be a significant commercial activity. Apart from this, plenty of trading houses may grow over time. Trading involving rice, fish, cattle, fruits, vegetables, and other things will also be carried at the largest wholesale markets, which are anticipated to occur from rural markets situated on the other side of the river.

With the increased economic activity there may develop economic activity of numerous commercial Banks, Insurances etc. The financial institutions of Location-9 area may play a lead role in regulating the commercial activities of the area. There may also arise informal sector trade, which will create considerable financial turnover operating from selected place of the project area.

2.3 Development Problems

2.3.1 Hydrology (Drainage and Flooding)

In implementing various infrastructures for development, drainage is generally given less importance and is normally considered the last or final steps for development. This scenario is particularly true for Bangladesh; although among different types of iinfrastructures, drainage has by far the heaviest impact on physical infrastructure network. As a result, physical environment, health, hygiene and standard of living suffer seriously. In development projects of Government, Semi-government and Public sectors funds allocated for the project are mostly spent on buildings, roads and other tangible infrastructures and drainage comes as the final item of development. By the time, drainage development is beginning to start; there appears shortage of fund, consequently as a matter of policy do little or do nothing situation appears and eyewash is done for drainage development. In case of urban development if drainage is not given due priority, the sufferings of the inhabitants and stakeholders will continuously increase with passage of time. **Map 2-5** shows the flood control and drainage in the project area.

a. Flooding

Flood is a serious hydrologic event, which may cause inundation of geographical areas of a region. Flood may occur due to heavy rainfall for longer duration and sometimes by oncoming of excess floodwater carried by the rivers. In Bangladesh, flood occurs in most cases by over flow of river water coming from upper reaches of major international rivers such as the Ganges, Brahmaputra, Meghna and their tributaries. Serious hazards are experienced due to high magnitude long duration floods. Lives and properties are damaged by floods and living environment becomes intolerable. In Location-9, the 1988 river flood was assessed to be of a magnitude equivalent to a 1:70-year return period. The 1998 river flood is assessed to be a 1:50-year return period and the 2004 river flood are assessed to be a 1:20-year return period.

Location-9 is situated in northeast portion of Greater Dhaka East. Grater Dhaka East consists an area of 124 km2, among these area location-9 consist of 24.98 km2 area. Generally, this area acts as flood flow and sub flood flow zone for the Dhaka. A good number of retention pond and depression storage situated in the area. This retention pond and depression storage is performing lot of functions. Therefore, all the development works should be done in such a way that it does not affect badly on the functions of the retention pond and depression storages of the area.