Local Government Engineering Department
People's Republic of Bangladesh

The Project for Developing Inclusive City Governance for City Corporation

Final Report

Volume 6

ChCC Edition

March 2014

JAPAN INTERNATIONAL COOPERATION AGENCY

PADECO Co., Ltd.

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List of Abbreviations

ADB	Asian Development Bank
ADP	Annual Development Program
BBS	Bangladesh Bureau of Statistics
BDT	Bangladesh Taka
BTTB	Bangladesh Telegraph and Telephone Board
C/P	Counterpart
CBO	Community Based Organization
CC	City Corporation
CD	Capacity Development
ChCC	Chittagong City Corporation
CPU	Comprehensive Planning Unit
CSCC	Civil Society Coordination Committee
DAP	Detailed Area Plan
DG	Director General
DMDP	Dhaka Metropolitan Development Plan
DOE	Department of Environment
DPHE	Department of Public Health and Engineering
ECA	Environment Conservation Act
ECC	Environmental Clearance Certificate
ECR	Environmental Conservation Rules
ED	Engineering Department (of CC)
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GOB	Government of Bangladesh
GOJ	Government of Japan
HD	Health Department
ICGP (Loan)	Inclusive City Governance Project (JICA Loan Project)
ICGP (Prep)	The Technical Corporation Project for Development Planning for Inclusive City Governance (Preparatory project of the above mentioned ICGP(Loan))
ICT	Information Communication Technology

IDPCC	Infrastructure Development Plan of City Corporation
IEE	Initial Environmental Examination
JICA	Japan International Cooperation Agency
LGD	Local Government Division
LGED	Local Government Engineering Department
M/M	Minutes of Meeting
MOEF	Ministry of Environment and Forestry
MoLGRD&C	Ministry of Local Government Rural Development & Cooperatives
NGO	Non-government organization
NOC	No objection Certificate
PAP	Project Affected Person
PD	Project Director
PIUCC	Project Implementation Unit at City Corporation
PS	Pourashava (a type of municipality in Bangladesh)
RAJUK	Rajdhani Unnayan Kartripakkha (Capital Development Authority of the Government of Bangladesh)
R/D	Record of Discussion
RHD	Road and Highway Department
SC	Steering Committee
SCM	Stakeholder Committee Meeting (name was changed from Stakeholder Meeting (SM))
SWM	Solid Waste Management
TLCC	Town Level Coordination Committee
TOR	Terms of Reference
UGIAP	Urban Governance Improvement Action Program
UGIIP	Urban Governance and Infrastructure Improvement (Sector) Project
UPPR	Urban Poor Promotion Project
WASA	Water Supply & Sewerage Authority
WB	World Bank
WG	Working Group
WLCC	Ward Level Coordination Committee
WSS	Water Supply System

PART 1

Infrastructure Development Plan of ChCC

Chapter 1 Introduction

This chapter presents the background and structure of IDPCC management.

1.1 Background of IDPCC

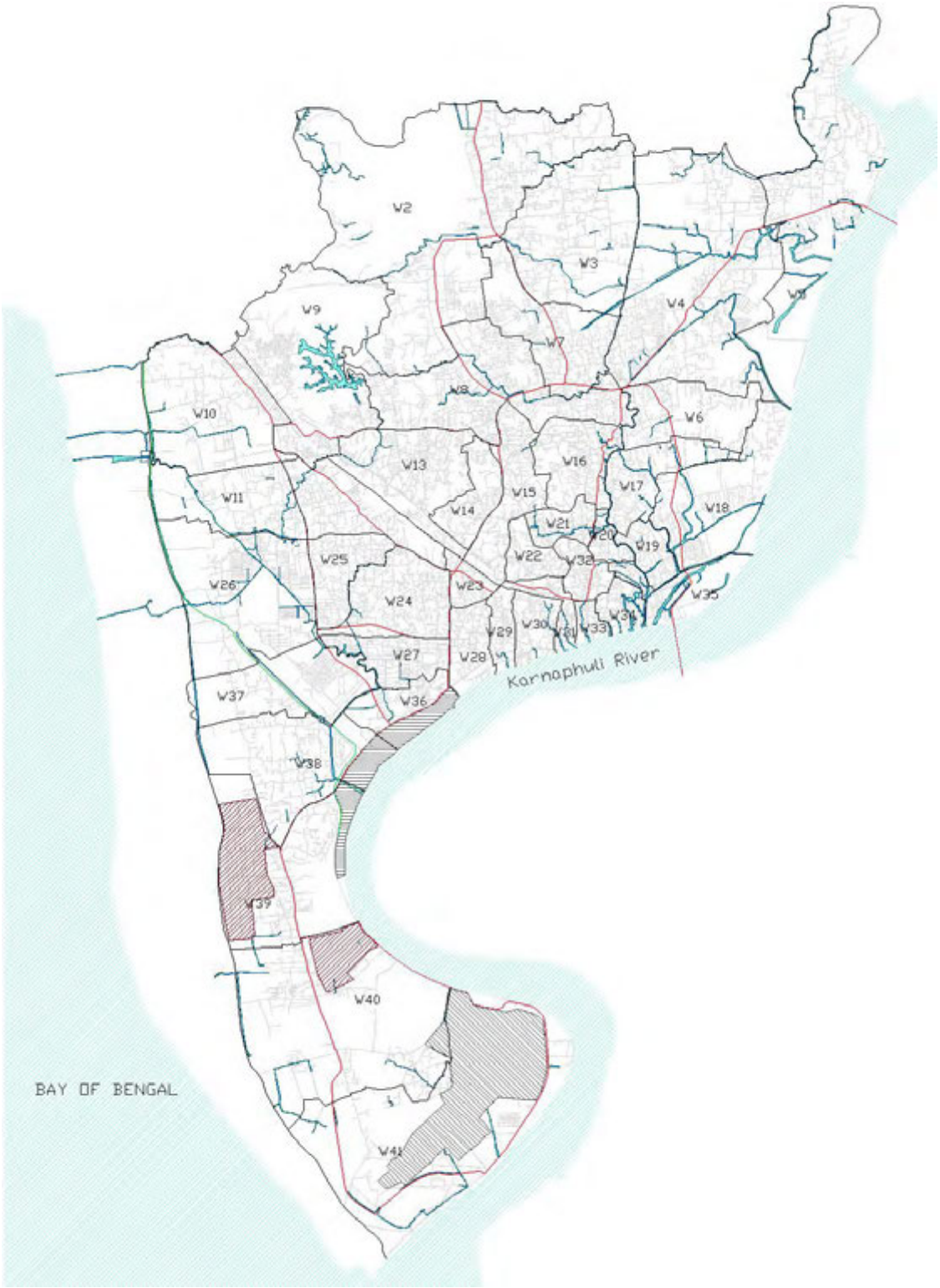
The Chittagong City Corporation (hereinafter referred as ChCC), descended from Chittagong Municipality, was originally founded on 22nd of June 1863. The initial area of the newly formed municipality was around 15.5 km^2 over five wards. Chittagong Municipality was renamed as the Chittagong Paurashava (PS) on the 27th of June 1977, which was then upgraded to a Municipal Corporation on the 16th of September 1982. In 1990, the Municipality was developed as ChCC. Currently the ChCC area is 155 km^2, divided into 41 wards.

Chittagong is the second largest city in Bangladesh, functioning as a main commercial city. Chittagong is blessed with Chittagong Port, the largest port of the country. Chittagong is surrounded by beautiful natural features such as hilly terrain, the Karnaphuli River and the Bay of Bengal. The map of the Chittagong Division is shown in Figure 1-1 with the district marked in red lines.

Source: ChCC Presentation

Figure 1-1: Map of Chittagong Division

The ward map of Chittagong city is shown in Figure 1-2. As explained, 41 wards comprise the administrative area of ChCC that is planning to widen its city area to 310 km^2, which is nearly double of the existing area of 155 km.



Source: ICGP Team

Figure 1-2: Ward Map of Chittagong City

1.2 Institutional Structure for IDPCC Management

Elaboration, implementation and revision of IDPCC need appropriate institutional structure inside of the City Corporation. Figure 1-3 shows suggested procedures to achieve the expected function.

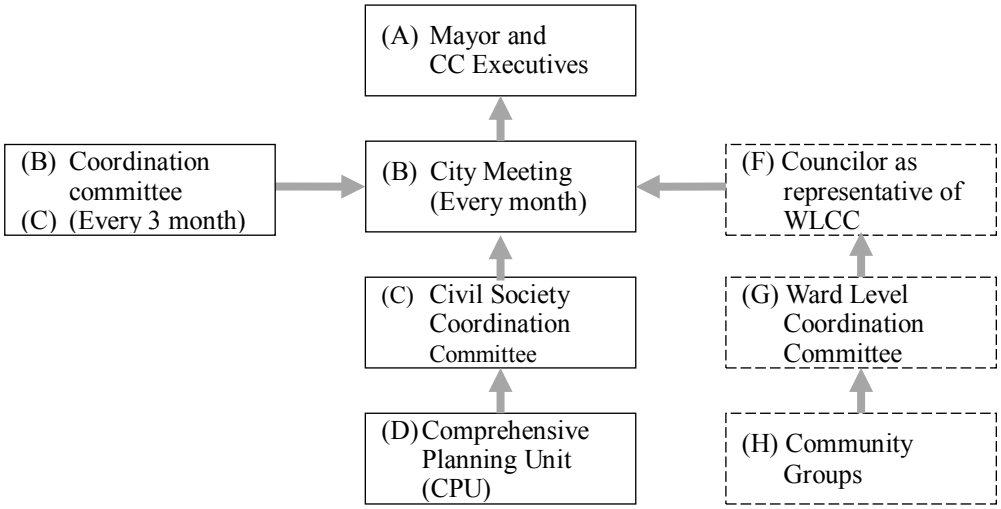


Figure 1-3: Institutional Structure for IDPCC Management

Table 1-1 shows the function of each stakeholder mentioned in Figure 1-3 above.

Table 1-1: Components of the Institutional Structure

	Institutional Component	Function
A	Mayor	The CC mayor chairs Civil Society Coordination Committee (CSCC) and City Meeting. He/she takes overall responsibility of elaboration, implementation and revision of IDPCC.
B	City Meeting	City Meeting is a regular monthly meeting which consists of a mayor, CC's executive officers, councilors and others. This meeting shall endorse the result of CSCC. City Meeting is held every month.
C	Civil Society Coordination Committee (CSCC)	Stakeholder Committee Meeting consists of representatives from various community organizations, standing committees, national government agencies and relevant officers of CC. For the IDPCC related purpose, this meeting examines draft ideas of IDPCC elaboration, execution and revision prepared by Comprehensive Planning Unit (CPU). ICGP has an idea to rename this and keep it as Civil Society Coordination Committee (CSCC). It would be a permanent committee as a part of ChCC's planning system.
D	Comprehensive Planning Unit (CPU)	For the IDPCC related purpose, Comprehensive Planning Unit (CPU) is a taskforce to lead elaboration, implementation and revision of IDPCC. CPU drafts the IDPCC and proposes revision of IDPCC to the CSCC. CPU consists of planner, engineer, health doctor, and relevant CC officers.
E	City Development Coordination Committee (CDCC)	Coordination Meeting consists of member of City Meeting and representative of each relevant national government agency. This is a good occasion to exchange information on IDPCC and relevant projects of the national government agencies. ChCC has held this regular meeting; the format of the Coordination Meeting can be improved.

	Institutional Component	**Function**
F	Councilor as representative of WLCC	As a chairperson and representatives of Ward Level Coordination Committee (WLCC), the counselor shall well comprehend the issues of his/her wards and urge necessary arrangement of the CC administration. In general, capacity of councilors is a very important human resource of ChCC, their capacity should be developed more so that they can take care of the wards properly and, at the same time, take necessary actions for the entire CC community. As an ICGP activity, ChCC has agreed to build two Community Resource Centers (CRC)" in its territory. CDCs at the ward level may facilitate community activities led by the councilor.
G	Ward Level Coordination Committee (WLCC)	Ward Level Coordination Committee is organized in every ward and meets regularly to discuss important issues of the ward including infrastructure and public services. The councilor chairs the meeting and coordinates collaboration between CC administration and community groups.
H	Community Groups	Bigger ward level community groups such as CBO, CDC, Youth Association, Women's Association, etc. work for the common benefit of the community and dispatch representatives to the Ward Level Coordination Committee. Community groups whose activities cover the entire CC may send representatives to CSCC.

The actual IDPCC elaboration with ICGP(Prep) has been done through the (D)→(C)→(B)→(A) procedure in Figure 1-4, since (H)→(G)→(F) organizational structure has not been fully established. However, the linkage between community groups and City Corporation is very important, therefore, (H)→(G)→(F) organizational structure should be set up as soon as possible. ChCC has a successful example of Community Development Committee, and this experience may be applied to establishing general linkage between various community groups and City Corporation.

In some cases, infrastructure development will affect the development plan/project of other governmental agencies. Therefore, coordination and stakeholder meetings are important for the integrated development of the city. The IDPCC should be informed/discussed/coordinated with relevant agencies such as CDA, CWASA, and BWDB.

Chapter 2 Present Condition of ChCC

This chapter covers the existing natural, socio-economic, urban planning and infrastructure conditions in the ChCC.

2.1 Present Natural Condition of ChCC

2.1.1 Weather and Climate

Chittagong has a tropical monsoon climate. From November to March, it is dry and cool while from April to May it is extremely hot during the pre-monsoon season. From June to October, the monsoon season is warm, cloudy and wet. The warmest month is April, the coolest is January, the wettest is July and the driest is January. The annual rainfall was around 3,128 mm in 2011 and around 70% to 80% of the rain falls during the raining season from April to October. The highest annual rainfall during the last ten years (2002–11) was 4,340 mm in 2007, and the lowest was 2,331 mm in 2005. The highest maximum annual average temperature on record was 39.5°C in 2009 and the lowest was 35.4°C in 2011. The highest minimum annual average temperature was 12.5°C in 2008, and the lowest was 9.5°C in 2011.

According to the statistics of wind data from the Bangladesh Meteorological Department Climate Division, wind direction changes by months, but the northwest, south, and northeast winds are predominant.

Average and maximum/minimum temperatures as well as precipitation are shown in Figure 2-1. Monthly and annual humidity is shown in Figure 2-2.

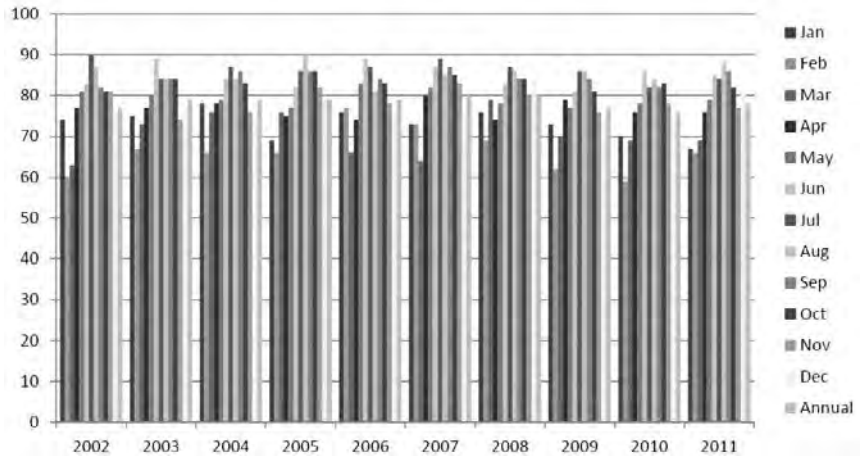
Climate data for Chittagong [hide]

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	34 (93)	37 (99)	40 (104)	43 (109)	40 (104)	38 (100)	37 (99)	35 (95)	38 (100)	36 (97)	34 (93)	33 (91)	43 (109)
Average high °C (°F)	26 (79)	28 (82)	31 (88)	32 (90)	32 (90)	31 (88)	30 (86)	30 (86)	31 (88)	31 (88)	29 (84)	26 (79)	30
Average low °C (°F)	13 (55)	15 (59)	19 (66)	23 (73)	24 (75)	25 (77)	25 (77)	24 (75)	24 (75)	23 (73)	18 (64)	14 (57)	21
Record low °C (°F)	7 (45)	8 (46)	11 (52)	15 (59)	18 (64)	20 (68)	19 (66)	22 (72)	22 (72)	17 (63)	11 (52)	8 (46)	7 (45)
Precipitation mm (inches)	5 (0.2)	28 (1.1)	64 (2.52)	150 (5.91)	264 (10.39)	533 (20.98)	597 (23.5)	518 (20.39)	320 (12.6)	180 (7.09)	56 (2.2)	15 (0.59)	2,730 (107.48)

Source: http://www.bbc.co.uk/weather/world/city_guides/results.shtml?tt=TT002030

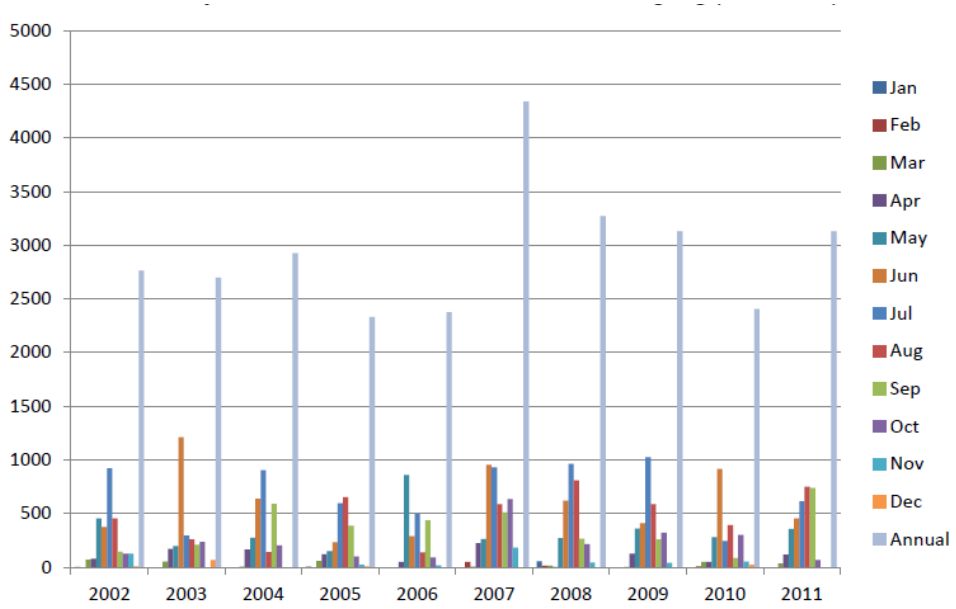
Source: Disaster Risk and Resource Map of Major Cities of Bangladesh from internet

Figure 2-1: Temperature (°C) and Precipitation Statistics



Source: ADB IEE Report of Chittagong UPHSDP, 2013

Figure 2-2: Monthly and Annual Humidity (%)



Source: ADB IEE Report of Chittagong UPHSDP, 2013

Figure 2-3: Monthly and Annual Total Rainfall (mm)

2.1.2 Cyclone and Other Natural Hazards

Chittagong is vulnerable to natural hazards including flash floods, cyclonic winds, and storm surges. These natural phenomena are caused by hot and humid conditions during the pre-monsoon season between March and June. The erosion of coastal and river banks, landslides, earthquakes and flooding are other natural hazards that occur locally and seasonally. Coastal erosion is becoming an issue in the southwest coast near Patenga. Preventive measures such as placement of concrete blocks and/or construction of reinforced concrete embankment were implemented or underway.

Source: Bangladesh Meteorology Department

Figure 2-4: Typical Cyclone Path

2.1.3 Surface Water and Groundwater

Large areas of Bangladesh lie within the floodplains of the Ganges, Jamuna and Meghna rivers, which have a total catchment area of 1.72 million km^2, flowing through India, Nepal, China, Bhutan and Bangladesh. Around 8% of the catchment area is within Bangladesh.

Because of flood-risks and population density, the quality and quantity of surface waters are major issues for the country.

Chittagong is located in the southeast of Bangladesh along the Karnaphuli and Halda rivers which are tributaries of the aforementioned rivers. Karnaphuli is the largest and most important river for the Chittagong Region, which originates in the Lushai Hills in Mizoram State of India.

Like other towns and cities of Bangladesh, residents in Chittagong use both surface water and groundwater. Their principal difference lies in the use of the water supply based on chlorine treatment in Chittagong and other population centers. River pollution is a major issue which is caused by the discharge of industrial wastewater and an inadequate sewage system. Oil, waste materials and other toxic chemicals discharged from ships and factories also cause pollution at the Chittagong Port Channel and mouth of the Karnaphuli River. This river pollution threatens the largest sea port of the country.

There is no proper sewage system in Chittagong. The whole city area is covered by open canals and drains alongside roads. Open drains discharge to the canals and ultimately to the Karnaphuli River. The canals are often clogged with dumped solid wastes and garbage. Water quality of the Karnaphuli and Halda rivers at various locations are shown in Table 2-1.

Table 2-1: Quality of Surface Water in the Karnaphuli and Halda Rivers

Location	pH	Chloride (mg/l)	T. Alkalinity (mg/l)	TS (mg/l)	TDS (mg/l)	SS (mg/l)	DO (mg/l)	BOD5 at 200 C, 5 days	COD (mg/l)
Karnaphuli River	6.36 – 9.86	2 – 13,148	5.64 – 121	46 – 27,700	45 – 20,000	14.4 – 51,000	0.00 – 7.91	0.21 – 9.17	11.39 – 179.87
Halda River	5.65 – 7.34	2.41 – 73.5	6.28– 90.78	100 - 740	30– 200	20 –653	3.02 – 9.90	0.70 – 5.08	14.78 – 49.28
WHO Standard	NYS	600	–	–	–	–	4 – 6	6	NYS

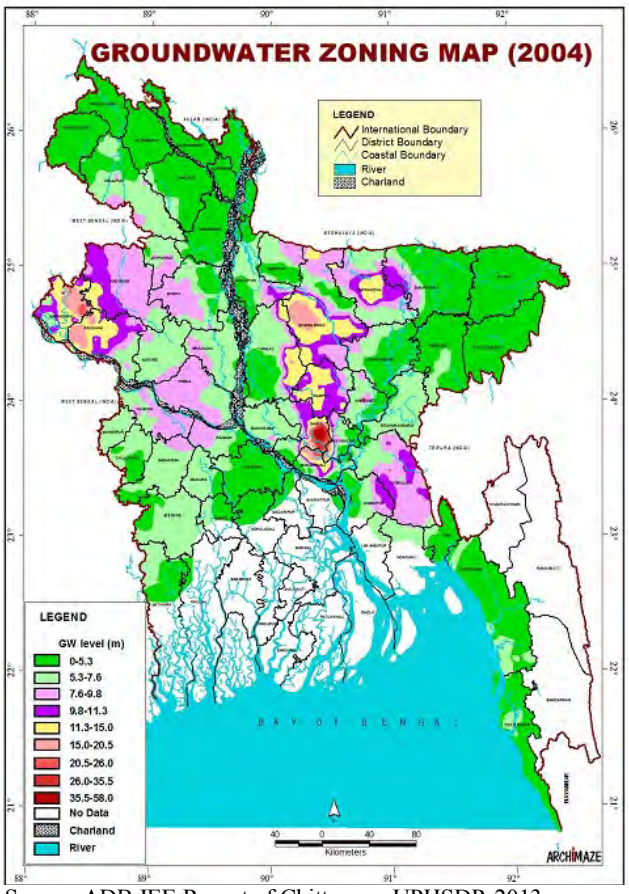
Source: Pak. J. Anal. Environ. Chem. Vol. 11, No. 2 (2010) 1 – 11; NYS – Not Yet Started.

The Chittagong Water and Sewage Authority (CWASA) has a water supply capacity of 273 MLD (million litres per day), with supply pipeline of 610 km in length. Surface water production is 90 MLD from only one treatment plant in Mohara. There are 91 DTWs (deep tube wells) in the entire CWASA area. Groundwater production is 68 MLD.

One-third of the current water supply comes from surface water, while the remaining two-thirds comes from groundwater including that from the deep tube wells. Groundwater in Chittagong contains a high iron concentration (2–8 mg/l); iron bacteria clogs the strainer and the gravel packs of the tube wells and reduces effective production of water. Groundwater in southwest areas of the city contains chloride. It was also found that some of the well water contains manganese and nitrate concentrations to levels exceed the Bangladeshi Standard. Groundwater levels in the city center have also fallen.

To compensate for the insufficient water supply, a number of households and industries have constructed deep tube wells of their own. Due to the extraction of water by CWASA and private tube wells, aquifer groundwater within the Chittagong city area are said to be reaching capacity.

Consequently, it is likely that groundwater will no longer serve as a sustainable water source for the city. The groundwater zoning map for Bangladesh is shown in Figure 2-5.



Source: ADB IEE Report of Chittagong UPHSDP, 2013

Figure 2-5: Groundwater Map of Bangladesh

2.1.4 Geology and Geological Fault

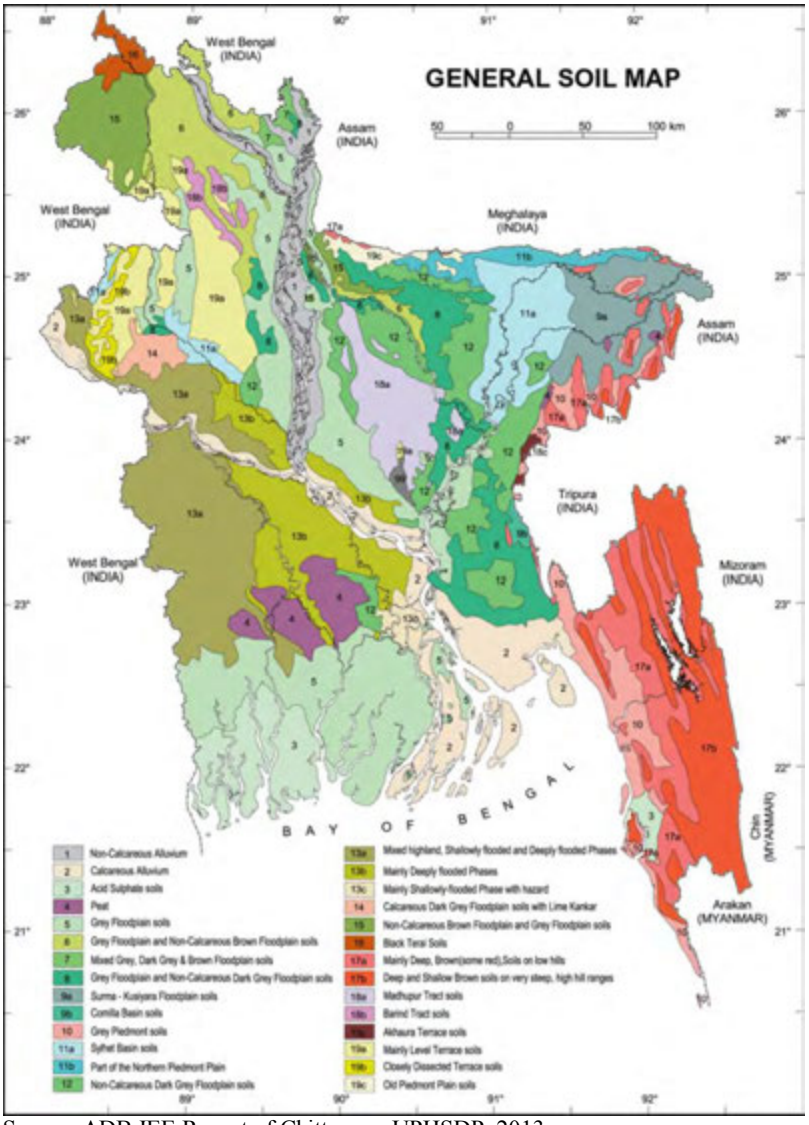
The geomorphic character of Chittagong ranges from undulating hill topography to tidal mud flats. Based on land satellite and SPOT imageries, 3D-aerial photographic interpretation and ground surveys, eight major geomorphic units of the city have been identified: tertiary hills, piedmont and valleys, alluvial plains, old tidal plains, tidal mud plains, supra tidal plains, natural levees and sandy beaches. The general topography of the city can be divided into the undulating north and the plain south.

The predominant soil type in the coastal plains of Chittagong is grey piedmont soils, which occur extensively on the northern and eastern piedmont plains and locally on the Chittagong coastal plain. The other types are acid sulphate soils. This soil contains sulphidic materials, which become extremely acidic if exposed to air. Table 2-2 and Figure 2-6 show the general soil condition of Bangladesh.

Table 2-2: General Soil Types and Distribution

General Soil Type	Features	Prominent Distribution in Chittagong City
Brown Hill Soil	Brown sandy loams to clay loam, slightly-to-strongly acid	Eastern Part of Chittagong
Grey Piedmont Soil	Structured grey sandy loams to clays, strongly acid, developed in piedmont outwash in the piedmont aprons and valleys in areas adjoining or within the North Eastern hilly region.	Valleys of northeastern hills in Chittagong
Brown Piedmont Soil	Sandy and clay loam, strongly acidic constituting upper parts of valleys	Upper part of valleys of Chittagong hills
Calcareous Grey Flood Plan Soil	Structured grey silt loams to silty lays, calcareous from the surface or at shallow depths, turn saline in dry seasons along coastal tracts	Coastal area of Chittagong partly linked with riverine flood plain
Calcareous Alluvium	Loose sandy and silty stratified, massive in the older sections of flood plains, slow presence of calcites neutral to alkaline in coastal area	Coastal area of Chittagong partly linked with riverine flood plain
Non-Calcareous Alluvium	Lose sandy and silt, stratified massive in the older flood plains, neutral to alkaline	Inner part between hills and coasts of Chittagong

Source: EIA Final Report of Chittagong Ring Road by CDA, 2008



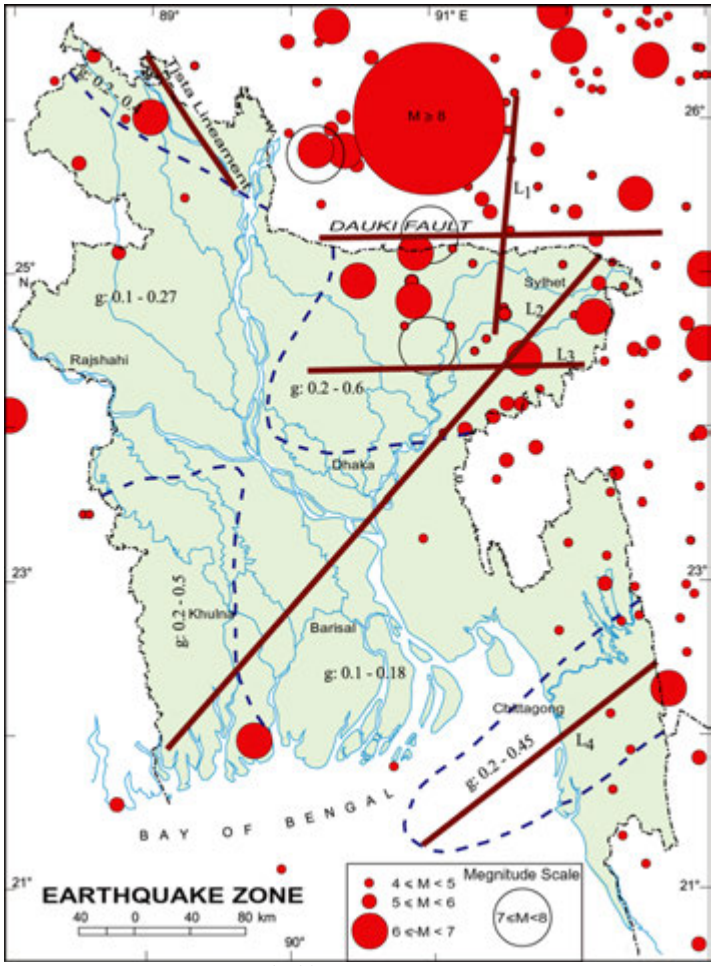
Source: ADB IEE Report of Chittagong UPHSDP, 2013

Figure 2-6: General Soil Map of Bangladesh

The National Seismic Zoning Map produced by the Geological Survey of Bangladesh (GSB) is shown in Figure 2-7. It divides the country into three regions as follows:

- High-risk zone between Mymensingh and Sylhet.
- Medium-risk zone stretching from Rajshahi in the northwest through Dhaka and Comilla to Chittagong and Cox's Bazar in the southeast.
- Low-risk zone in the south and southwest, around Khulna and Barisal.

In the medium-risk zone, quakes of moderate intensity are possible, with a probable maximum magnitude of 6–7 on the Richter scale. Seismic events in Bangladesh are relatively infrequent, but historically have been severe. The 1897 Assam Earthquake was the largest in the region's history with magnitude of 8.7, causing severe damage across Assam, Bengal and Bihar of India.



Source: ADB IEE Report of Chittagong UPHSDP, 2013

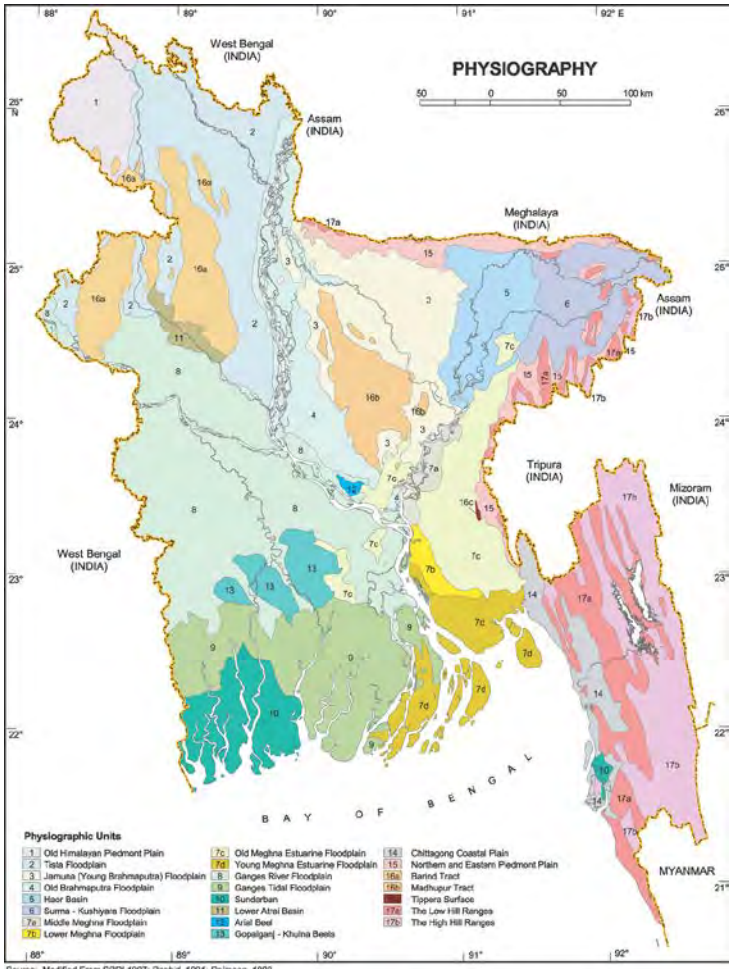
Figure 2-7: National Seismic Zoning Map

2.1.5 Topography

The Karnaphuli and Halda rivers drain large quantities of water from the Chittagong Hill Tracts area and discharge it into the Bay of Bengal. Other rivers in the Chittagong Division include the Rainkhiang, Thega, Kasalong, Ichamati, Bakkhali, Myani, Chingri, Sangu, Matamuhuri, Naf, and Feni rivers.

The landscape of Chittagong is influenced by its hilly topography. It is bordered by the Karnaphuli River in the South and the Bay of Bengal in the west, hills in the north and flood and coastal plains in the middle part of the city extending in a north-south direction. In 1960s, the Government reclaimed land in coastal areas for cultivation. Although the city landscape is unique for its hilly topography, the coastal area is characterized by flood plains and was gradually occupied by human settlement and commercial facilities. A windbreak forest was planted along the seashore and this has protected inland areas.

Along the shores of the Karnaphuli River, mangrove forests remain in part, and it is thought they contribute to the environmental preservation and defense from flood damage. Floodplains, beaches, sandbars/chars, and lakes are the main natural feature in this area. The coastal plain occupying the south and southeast areas is around 2-4 meters above sea level and is susceptible to cyclonic storm surges. Along the seafront, there is a long narrow beach and mud flat. Figure 2-8 shows the physiographical map.



Source: Website of BANGLAPEDIA (http://www.bpedia.org/P_0166.php)

Figure 2-8: Physiographical Map of Bangladesh

2.2 Socio Economic Condition of ChCC

2.2.1 Social Condition

(1) Population

Chittagong city has a population of 2.69 million according to the Community Report of Chittagong Zila, based on the Population and Housing Census of 2011. However, it is said that the population is around 5.5 million. The ratio of males and females is 54.36% to 45.64%, respectively. Population density per square km is 15,276. Islam is the most common religion, with 83.92% of the population being Muslim. Other major religions include Hinduism (13.76%), Buddhism (2.01%), Christianity (0.11%) and others (0.2%). There has been a significant population increase over the last two to three decades.

One of the main reasons is the influx of migrants from rural areas, who are attracted by the prospect of easier lives and higher incomes in urban areas. Many of these migrants result in an increase in the number of urban poor and the expansion of slum areas. Some 35% of the urban population of the country now lives in slums, or nearly 15 million people. In the six cities under the ADB's Urban Public and Environmental Health Sector Development Program (UPEHSDP), there are almost 10,000 slums (55% of which are in Dhaka and 20% in Chittagong).

(2) Income Level

Chittagong city accommodates nearly 3% of the total population of the country. It is also the second most urbanized area in the country. People are engaged in various economic activities such as labor, business, industry, and transport. There are around 200 garment factories employing more than 200,000 people (mainly women). The construction industry is also a large employer. A 2010 ADB study[1] assessed income levels in select regions. The Chittagong region has the highest per capita monthly income of 6,430 BDT followed by Barisal (5,970 BDT), Khulna (5,960 BDT), Sylhet (5,690 BDT), Dhaka (5,540 BDT) and Rajshahi (4,980 BDT).

The main cause of increasing migration from rural to city areas is the lack of secured employment opportunities and sustenance in rural areas. Rural people move to cities where they expect better job opportunities. As mentioned earlier, better job opportunities rarely materialize and results in an increase in urban poor as well as an expansion of the slums. More than 82% of the population of Bangladesh lives on less than USD 2 per day; such people are mainly the urban/rural poor in the slums. Some slum dwellers in the cities have regular employment, but large numbers of them are unemployed. These unemployed have no choice but to obtain their income from the streets. Employed slum dwellers work mainly in the construction industry, in factories, or as domestic servants, rickshaw drivers and street vendors etc.

(3) Education Level

The educational levels of the ChCC citizens are shown in Table 2-3 and Table 2-4.

Table 2-3: Education Level of Chittagong City

Degree	Percentage
Primary	95%
Secondary	75%
Graduate	60%
Postgraduate	45%

Source: Chittagong City Corporation

Table 2-4: Educational Institutions under ChCC

Type of Institution	No.
School	54
College	15
Universities	1

Source: Chittagong City Corporation

Additionally, there are fully government funded universities such as Chittagong University, Chittagong Medical College and Chittagong University of Engineering and Technology (CUET). The University of Chittagong was established in 1966. The university is located in a remote place, some 22 km north of the city, with more than 20,000 students. Chittagong University of Engineering and Technology (CUET) formerly named as Bangladesh Institute of Technology (BIT) was established in 1968. CUET is located along the Chittagong–Kaptai Road, some 25 km away from the city center. The Asian University for Women (AUW) is another famous higher education center, which is being established as a leading institution for higher learning for women.

There are also some private universities such as the BGC Trust University Bangladesh (2002), International Islamic University of Chittagong, University of Science and Technology-USTC

[1] ADB 2010

(1992), Southern University of Bangladesh (1998), Premier University (PU), and University of Information Technology & Sciences. Recently, the Chittagong Government Veterinary College (CGVC) was upgraded to the Chittagong Veterinary and Animal Sciences University (CVASU), consisting of one faculty with 300 students providing theoretical, off-campus work-based learning and excellent scientific and technological education. CVASU is the first university in the country of this type. There are also private medical colleges such as Chittagong Ma O Shishu Medical College, Southern Medical College, Chittagong International Dental College and BGC Trust Medical College etc.

2.2.2 Community Institutions

(1) NGOs of ChCC

NGOs have taken significant initiatives to tackle poverty in Chittagong. Key activities by NGOs include:

- Humanitarian progress and structural development of organization for rural poor
- Employment generation
- Micro credit
- Targeting poor rural women as beneficiaries
- Facilities for poor to enjoy the government owned khas land and properties
- Health, nutrition and hygiene
- Informal and non-formal education
- Innovation of appropriate technology for small and seasonal farmers etc

(2) NGO Network of ChCC

There are several NGOs working in Chittagong. Table 2-5 shows their activities and working areas. Beside this, there are many other international and national NGOs as well.

Table 2-5: NGO Activities and Working Areas in Chittagong

NGOs	Working Area	Program
Chandnaish Society	Hasimpu and Chandnaish Pourashava	Free medical facilities for distressed men and women
Palli Pragati Sangstha	Chandnaish	Non-formal pre-primary education
Behaga Samaj Unnayan Sangstha	Saiedpur, Baroiardhala, Muradpur, Barabkunda, Bashbaria and Kumira	Empowerment of women
Barnaly	Kalagaon, Kusumpura, Shikilbaha and Patia	Programs for development of disabled people
Gono Unnayan Prochesta	Khankanabad and Baharchara	Training on goat-rearing and free goat distribution
Program for Research and Elimination of Poverty	Kodirkhali and Boalkhali	Awareness on the use of sanitary latrines and distribution of sanitary latrines (ringslab)
Young Power in Social Action	Joldi, Sadanpur & Boilchari	Empowerment of women
Rehabilitation Center for Prostitutes & Rootless Children	Kotoali Thana	Rehabilitation of sex workers
Fatema Palli Shikha Sastha Kendra	Mirersarai	Mother and child health care
Tamanna Foundation	Halishahar	Disable development
Samaj Unnayan Sangstha	Boalkhali	Awareness on the use of sanitary latrines and distribution of sanitary latrines (ring-slab)

Source: Bangladesh NGO foundation

2.2.3 Industrial Condition (by Sectors, Agriculture, Engineering, Commercial and Service Industrial)

Chittagong is one of the fastest growing cities in the world, is a commercial and industrial hub of the South Asia region with a GDP of USD 25 billion. As the major commercial and industrial hub of the country, the city has a globally competitive special economic zone (SEZ). Neighboring countries have seen Chittagong as a future regional transit hub with the Chittagong Port being expanded and developed. The Dhaka Chittagong Highway was upgraded into a four lane divided highway, and the Shah Amanat International Airport is being upgraded. The importance of Chittagong for the economic development of landlocked countries in the South Asia region such as Northeast India, Bhutan, Nepal and parts of Southern China as well as Myanmar is well recognized.

Major industries in Chittagong include oil refineries and oil-blending plants, cotton and jute-processing mills, tea and match factories, chemical and engineering works, an iron and steel mill, fruit canning, leather-processing and shipbuilding/breaking.

The economic development of Bangladesh largely depends on the efficiency of the Chittagong Port. Sea-borne exports mainly consist of garments, knitwear, frozen food, jute and jute products, leather and leather products, tea, and chemical products. Ship breaking was introduced to the area in 1969. This industry is concentrated at Faujdarhat, a beach located 20 km northwest of Chittagong that is 16 km in length.

Around 40% of the heavy industrial activities of the country take place in Chittagong. Its adjacent areas including a dry-dock, dock yards, an oil refinery, a steel mill, a power plant, a cement clinker factory, the automobile industry, the pharmaceutical industry, chemical plants, cable manufacturing, textile manufacturing, jute mill, urea fertilizer factory along with other private sector enterprises involved in medium size industrial development and related activities.

A Korean company, Youngone Corporation, has established a special Korean Export Processing Zone (KEPZ) in Chittagong on the western bank of the Karnaphuli River. KEPZ is built on nearly 1,000 hectares areas of land and is expected to attract foreign direct investment worth USD 1 billion. There is also the Karnaphuli Export Processing Zone with the same acronym (KEPZ), which is situated on the eastern bank of the Karnaphuli River, where publically-owned steel mills once operated.

Table 2-6: List of Japanese Firms in Chittagong

No.	Name of the Industry	Address	Category of work
1	Alfpha Industry	212 Baizid Bostami Road, Nasirabad, Chittagong	Steel sheet processing
2	Bengal Fisheries	House#2, Road#3, Khulshi Residential Area, Chittagong	Shrimp trolling
3	Chosi Chittagong Food Corporation	Osman Court (1st Floor) Agrabad, Chittagong	Food processing
4	KAFCO	Rangadia, Karnaphuli, Chittagong	Manufacturing fertilizer
5	Tasim Industries	Jahan Chamber (2nd Floor) Halishahar Road, Chowmohoni, Chittagong.	Manufacturing gas equipment
6	CCK CITY NETWORK, INC	Room No 8–12, 7th Floor, Kader Tower, 128 Jubilee Road, Tin Pool, Chittagong	Data entry and medical transcription services
7	JAPAN SOLARTECH (BD) LTD.	N/A: established on April 20m 2011	Manufacturing solar panels and batteries
8	DAIKEI INDUSTRIES	Karnaphuli EPZ, Chittagong	Plastic products for Vehicle and shipment
9	ATLANTIC STANDARD TIMES CO.	Chittagong EPZ	Garment
10	BMS COMPANY	Chittagong EPZ	Ropes
11	BMS ROPE	Chittagong EPZ	Ropes
12	CBC OPTRONICS	Chittagong EPZ	Electronics and electrical goods
13	COSMO	Chittagong EPZ	Electronics and electrical goods
14	DREAM BENGAL GARMENTS	Chittagong EPZ	Knitting and other textile production
15	EBISAWA CORPORATION LIMITED	Chittagong EPZ	Golf shaft
16	JB Q&Q EQUIPMENT	Chittagong EPZ	Metal products
17	KUROKI CHAIN BANGLADESH	Chittagong EPZ	Metal products
18	LUNA LITE	Chittagong EPZ	Electronics and electrical goods
19	MAMIYA-OP	Chittagong EPZ	
20	MEIJI INDUSTRIES	Chittagong EPZ	Metal products
21	OCEAN ENTERPRISE	Chittagong EPZ	Electronics and electrical goods
22	OP-SEED BD	Chittagong EPZ	Electronics and electrical goods
23	SANKO CORPORATION	Chittagong EPZ	Optical goods
24	SANKO OPTICAL	Chittagong EPZ	Optical goods
25	TOPCON HK (BD) LIMITED.	Chittagong EPZ	Office automation equipment

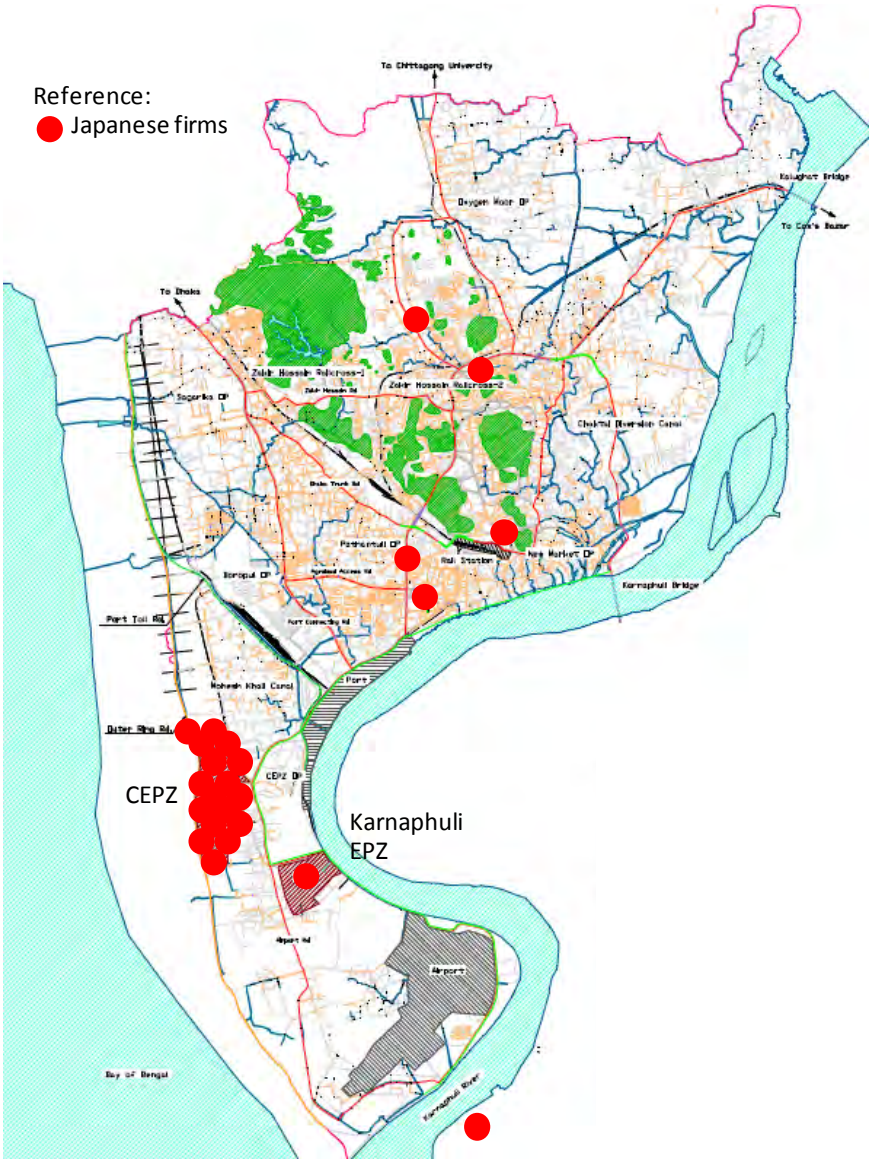


Figure 2-9: Map of Japanese Firms in Chittagong

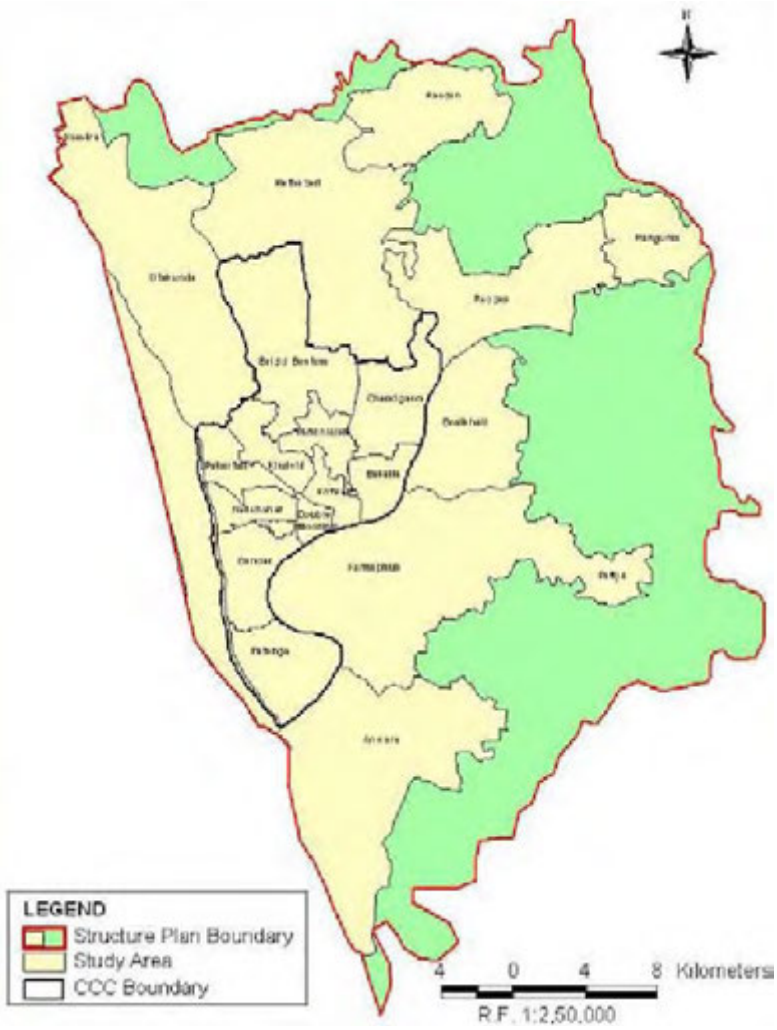
2.3 Present Urban Planning of ChCC

(1) Master Plan of ChCC

The first Master Plan (MP) for the development of Chittagong was prepared in 1961 when the city had a population of around 365,000 and the Municipality had a population of 1,175,000 (East Pakistan Population Census 1961). Afterwards the Chittagong Metropolitan Master Plan (CMMP) was prepared in 1992–95 by the Chittagong Development Authority (CDA) with technical assistance and financial support from the UNDP/UNCHS and Government of Bangladesh (GOB), which was approved by the GOB in 1999.

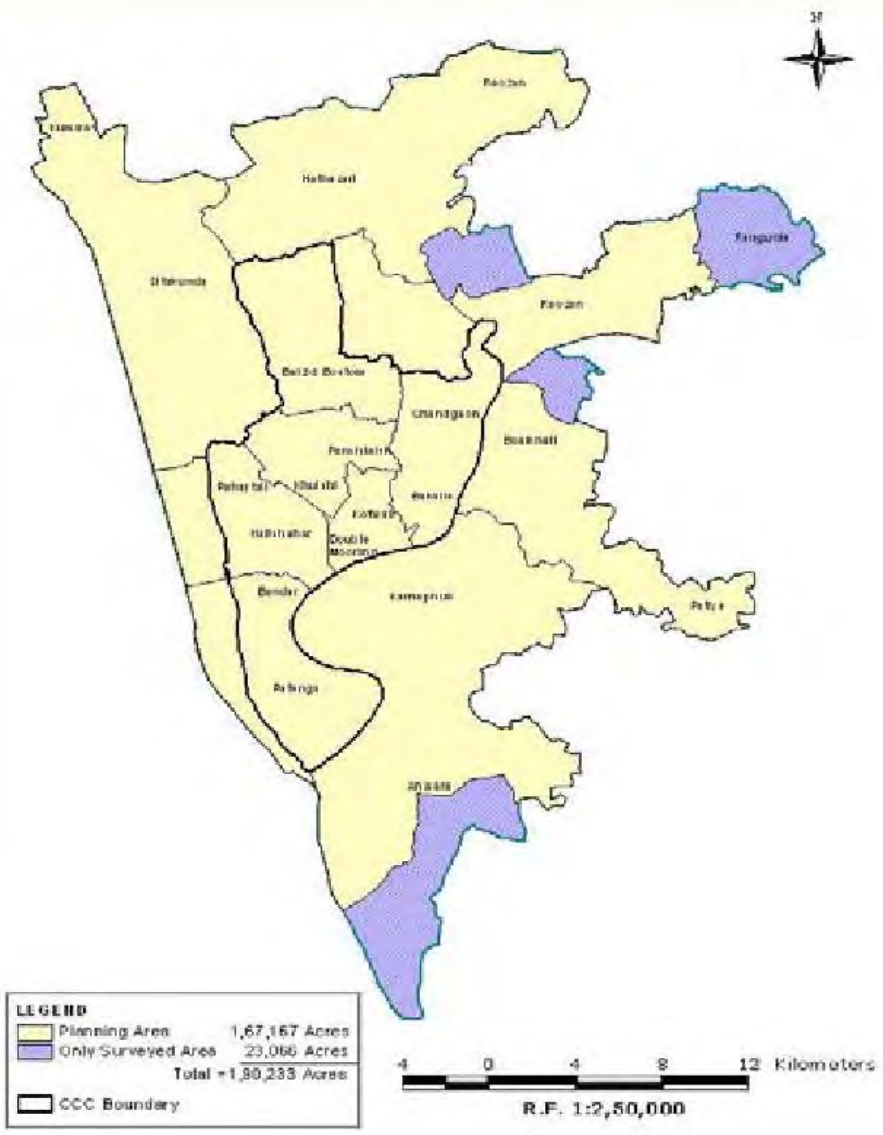
One of the objectives of the CMMP was to prepare a comprehensive set of plans for the development of Chittagong. Accordingly, the Structure Plan (target year of 1995–2015) comprised of a set of policies in 12 sectors and the Urban Plan (target year of 1995–2005) comprised of a broad framework for development promotion, control and coordination were prepared. The targeted area of CMMP is shown in Figure 2-10.

Then in 2008, the GOB prepared a Detailed Area Plan (DAP) for Chittagong on the basis of the Structure Plan and Urban Area Plan in CMMP. The main objective of the DAP was to study each particular area in more detail and set strategies for development, and prepare the detailed guidance for land use, control and management. The study (target) area of DAP is shown in Figure 2-11.



Source: DAP report, 2008

Figure 2-10: Boundary of the Structure Plan in the CMMP, 1995



Source: DAP report, 2008

Figure 2-11: Planning Area and Survey Area in DAP

(2) Historical Changes in Urban Planning

The MP in 1961 was prepared with the aim to establish principles for development rather than to present a detailed scheme. The MP recommended that the proposals be further studied and analyzed before implementation, and that it should be periodically reviewed.

The MP was based on the following four strategies: (i) the port would continue to be important; (ii) the central business area should be retained; (iii) the development of the low-lying area west of the Dhaka Trunk Road and southwards towards the Patenga Area would continue; and (iv) the urban population growth rate would be 2.25%.

Despite the fact that the urban population growth was higher than 2.25%, many peripheral areas proposed for development under the MP were not developed, or have only been partially developed. The large part of the population growth over the last 30 years has occurred within the existing urban area, with limited expansion in peripheral areas.

The MP covered transport, public buildings, population, housing, education, open spaces, coast protection, commerce, industry and public utilities. A network of new major roads was proposed and shown on a key plan. Other key plans showed proposals for residential area development, open space and industrial area development.

The GOB proposed to build a 20ft high embankment along the coastal line. In terms of hill cutting activities, it was highlighted that steep slopes would: (i) lead to excessive erosion; (ii) cause instability of residences; and (iii) cause silting of water courses at the foot of the hills. It was concluded prohibition of hill cutting would be impracticable, therefore it was recommended that planned allocation of cut areas with strict control of development in hill areas is necessary.

The proposed areas for cutting hills are Nasirabad, and two areas to the southwest between the Police Lines and Khulshi Road. Road widths, as well as the provision of extra space for pavement, car parking and trees were discussed, but reserve for drainage channels was not mentioned. Many proposals in the MP have been implemented including the construction of an intermediate ring road (CDA Avenue), the coastal bund, the development of the Agrabad Commercial area, industrial areas at Fouzderhat, Nasirabad, Hathazari and Kalurghat, and residential areas at Agrabad and Halishahar.

Roads that have yet to be implemented include the inner and outer ring roads, the Strand relief road and the east-west link road. A number of the areas designated for housing, open space and industries have been left undeveloped. The MP considered the possibility of developing the left bank of the Karnaphuli River, but concluded that it should not be encouraged unless and until there is the prospect for large industrial enterprises.

In the DAP, major reasons for not implementing the development proposals of MP are identified, including: (i) the lack of importance given to urban planning and management at the policy and operational level; (ii) insufficient financial resources; and (iii) the rigidity of the MP.

At a policy level, less importance was placed on urban planning and management which can be seen in the allocation of funds for urban planning/development and restructuring/strengthening of urban planning institutions. This has impacted the implementation of plans and their timely amendment. The Town Planning Department of CDA was short of manpower to undertake implementation and/or amendments of planned projects. Failure to undertake these initiatives seriously affected the implementation of the development plan. The MP was seen as a collection of development projects, not as a process.

CDA has placed an emphasis on those projects which generate earnings and are expected to be self-financing. Roads and other development projects, which do not generate revenue, are financed by the government. As the planning generates no revenue, it has been given low priority. It must be understood that planning and management should enable orderly growth and leads to acceleration of growth. Therefore, the necessary budget should be allocated for achieving urban planning and management.

The MP is a rigid concept. The lack of planning authority and the formulation of local plans imposed rigidity regarding land uses. Since, it has gradually lost its usefulness. Failure to amend the planned proposals has caused many planned proposals to become obsolete over time.

(3) Current Land Use

Most of the developments in urban areas have not been implemented in a planned manner in terms of land use. Developments are scattered. Building construction has continued in the inner

city, and unplanned hill cutting has continued. These unplanned/uncontrolled developments are one of the causes of disturbance to traffic flow, flooding and landslide-related casualties.

a) Residential Area

The government as well as private companies have been developing residential area as shown in Table 2-7.

Table 2-7: Residential Area Development

Sl. No.	Organization	Scheme	Area (in acre)	No. of plots	Land development
1	CDA	Katalganj	6	51	1960-1961
2	CDA	Agrabad	33	774	1962-63
3	CDA	Chandgaon	41	606	1962-63/1973-74
4	CDA	Chandgaon (2nd Phase)	5.79	83	1978-80
5	CDA	Fouzderhat	13.62	164	1962-63/1980-81
6	CDA	Chandrima	11.97	183	1999-2000
7	CDA	Halishahar	14.80	22	1963-64
8	CDA	Sholashahar	10.25	98	1960-61
9	CDA	Silimpur	98.93	1029	1985-90
10	CDA	Karnaphuli	51.69	516	1991-1996
11	CDA	Kalpalok Phase I	40.00	1700	2005-06
		Phase II	89.42		
12	CDA	Annayana	62	1521	2007
13	NHA	Shershai	33.10	338	1950-51
14	NHA	Feroz Shah	126.13	944	1949-50
15	NHA	Halishahar	536.820	3327	1959-61
16	NHA	Kaiballaydham	41.30	4144	1988-97
17	CCC	Sugandha	18.00	211	1968
18	CCC	Lake City Housing	30.00	520	2003
19	CCC	Kobe Housing	3.00	50	2004
20	CCC	Sayed Shah Road Bakalia Housing	1.00	15	1978
21	CCC	Bakalia Bagarbil Housing	0.54	11	2003
22	CCC	Joy Pahar Housing	0.90	15	2006
23	CCC	Port City Housing, Madarbari	7.24	118	2004
24	CCC	VIP Housing, Dakshin Khulshi	6.00	65	2002
25	PWD	Panchlaish	69.357	136	1950-51
26	The Chittagong Co-operative Housing Society Ltd.	Nasirabad	42.11	165	1956-57
27	The Chittagong Co-operative Housing Society Ltd.	Khulshi	51	170	1961-62
28	The Chittagong Co-operative Housing Society Ltd.	Rosevally R/A, Pahartali	4.74	55	1994-95

Source: DAP, 2008

b) Industrial Zone

Chittagong possesses the country's principal port and represents the second largest commercial and industrial center. The city receives the highest amount of overseas remittances among other districts. Besides three EPZs, major heavy manufacturing industries have been developed by the government in such areas like Patenga, Nasirabad, Kalurghat, Fouzderhat, Mohra, and Sagarika as shown in Table 2-8.

Table 2-8: Major Industrial Zones Development by the Government

Sl. No.	Organization	Scheme	Area (in acre)	No. of plots	Land development
1	CDA	Kalurghat	200.44	58	1961-63
2	CDA	Mohra	76.84	31	1962-63
3	CDA	Fouzderhat/Sagarika	325.98	78	1961-62 1969-70
4	CDA	Sholashahar (light industry)	42.00	37	1960-61
5	PWD	Nasirabad	383.93	396	1950-51
6	CCC	Sagarika	14.14	10	-
7	CCC	Chandgaon FIDC Road	11.551	3	1968
8	BCSIC	Fauzdarhat	32.00	159	1963
9	BCSIC	Sholashahar	14.01	66	1963
10	BCSIC	Kalurghat (Old)	12.00	71	1963
11	BCSIC	Kalurghat (Extension)	31.54	255	1982-1983
12	BCSIC	Patiya	10.54	79	1981
13	Central Govt.	Patenga	-	-	-
14	Central Govt.	Fauzdarhat	-	-	-
15	Central Govt.	Kumira	-	-	-
16	CEPZ	Halishahar	560	-	-
17	KEPZ	Patenga	222	-	-

Source: DAP, 2008

c) Recreation, Leisure and Open Space

It has been recognized that there is a severe deficiency of recreational open spaces, public plazas and amenity spaces in the city. The only nature reserve or leisure/recreation places are Patenga Beach and Foy's Lake. There is no open space policy or leisure policy at the national government level. The CDA and ChCC have little obligation to provide parks and open spaces. Twenty-six proposals for various types of open spaces were recommended in the 1961 Master Plan, although these did not draw much attention. Recently, ChCC became aware of its importance and has been trying to create such spaces for its citizens.

Patenga Beach

Boat Jetty at Foy's Lake

Source: ICGP Team

Figure 2-12: Example of Leisure Space in Chittagong City

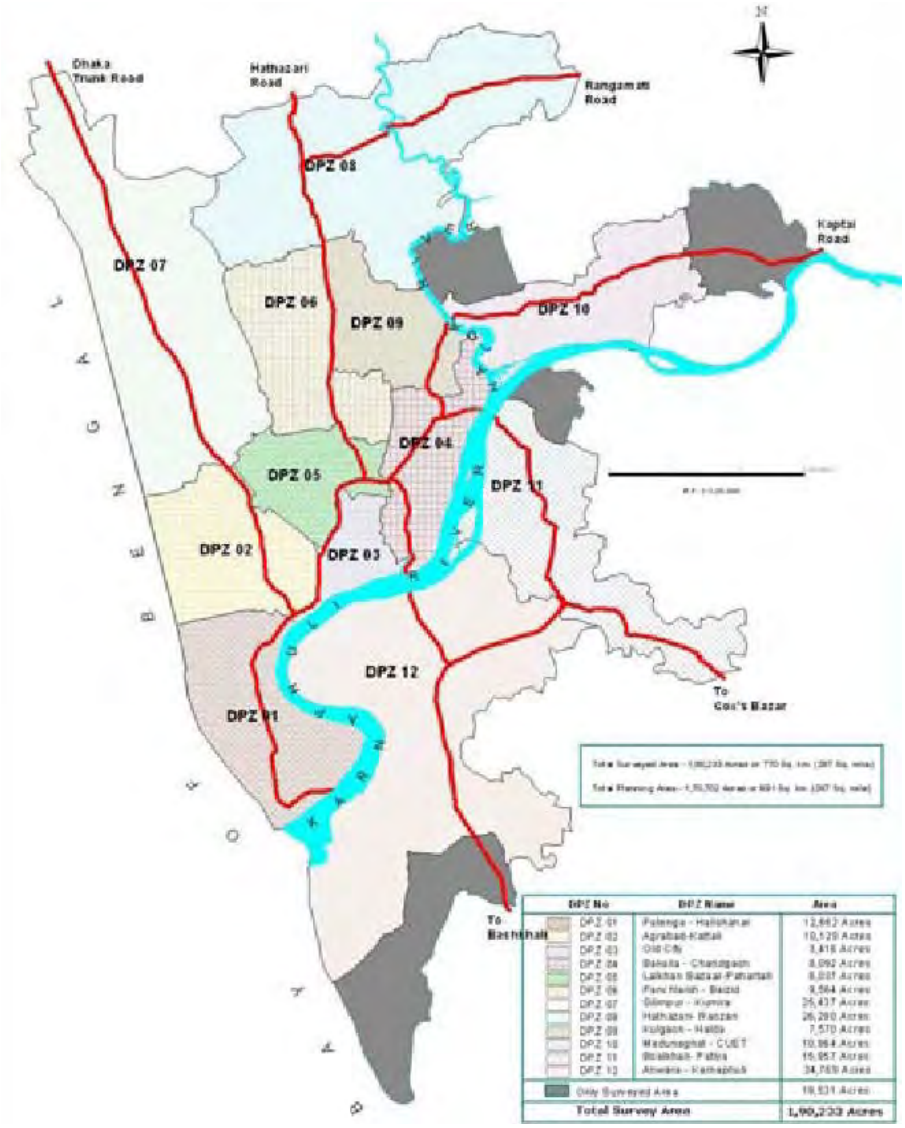
(4) DPZ Area

In the DAP, the entire planning area was 170,702 acres, divided into 12 Detailed Planning Zones (DPZs). Six of these DPZs are under the control of and jurisdiction of ChCC. These DPZs are demarcated on the basis of geophysical character, existing land use and administrative boundaries such as ward boundaries within ChCC area and union boundaries outside the ChCC Area. Table 2-9 summarizes the details of these DPZs.

Table 2-9: List of DPZs in the DAP

ChCC Area		Outside of ChCC area	
DPZ 1:	Patenga – Halishahar	DPZ 7:	Silimpur – Kumira
DPZ 2:	Agrabad – Kattali	DPZ 8:	Hathazari – Raozan
DPZ 3:	Sadarghat – Chawkbazar	DPZ 9:	Kulgaon – Halda
DPZ 4:	Lalkhan Bazar – Pahartali	DPZ 10:	Madunaghat – CUET
DPZ 5:	Bakalia – Chandgaon	DPZ 11:	Boalkhali – Patiya
DPZ 6:	Panchlaish – Bayzid	DPZ 12:	Anowara – Karnaphuli

Source: IGCP team based on DAP, 2008



Source: DAP, 2008

Figure 2-13: Location of DPZs

2.4 Present Infrastructure of ChCC

2.4.1 Transportation

Chittagong is a port city and the main commercial capital of Bangladesh. To ensure port productivity and competitiveness, efficient transport connectivity to/from the hinterland is important. Chittagong port has access to its hinterland countries and regions such as Nepal, Bhutan, Northeast India, Northern Myanmar and Yunnan of China. The transportation system should be efficient and well developed in order for the port to function as a gateway. To this end, the existing transport infrastructure is insufficient. Issues include traffic congestion, flooding, roads and bridges in poor condition, clogged canals and drains etc. The map of major infrastructure of Chittagong is shown below.

Source: ICGP Team

Figure 2-14: Map of Major Infrastructure of Chittagong

(1) Road

In Chittagong, wide avenues and roads exist throughout the city. There are various bus systems operated public and private operators, as well as taxis and CNG taxis (tricycle-structured motor vehicles which run by CNG). Rickshaws are common as well.

The Dhaka–Chittagong Highway is a major arterial highway and is the only way to access the city from Dhaka via land. The highway is currently a two-lane highway and too narrow to cater to large traffic volumes; widening to four lanes with concrete pavement is on-going. There are many heavy trucks and container trailers, many of them going to/from the port. The port connecting road is the main access connecting Dhaka and Chittagong port, and is always busy. The CPA has constructed a dedicated toll road for the trucks and trailers. City roads are extremely congested in general, and overpass construction is on-going by the CDA. The ChCC has been implementing widening of the major roads, as well as rehabilitation of damaged pavement including footpaths and drains.

Existing Dhaka-Chittagong Highway

On-going Highway Widening

Overpass Construction by CDA

Port Connecting Road

Toll Road for Chittagong Port

Crowded Junction in the City

Source: ICGP Team

Figure 2-15: Existing Roads in Chittagong

It should be noted that the port connecting road and Agrabad access road (which connects the city center with the port connecting road) suffers from flooding after heavy rain. Pavement is easily damaged and the ChCC must rehabilitate them through the asphalt overlay method almost every year. Measures to prevent flooding by improving the drain system are necessary. At the

same time, modifications to the pavement design should also be considered. Figure 2-16 shows the flood situation.

Flooding on Port Connecting Road

Example of Damaged Pavement (with Potholes)

Source: ICGP Team

Figure 2-16: Flooding at the Port Connecting Road

(2) Railway

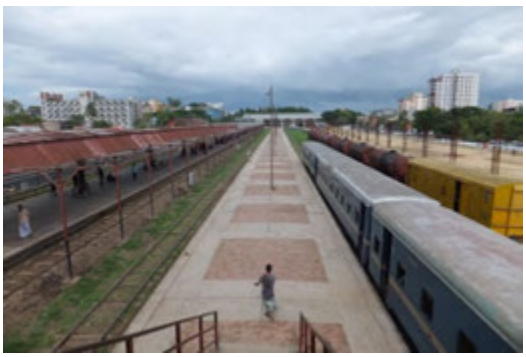
Chittagong can also be accessed by rail on the Bangladesh Railway. There are two main railway stations (the Old and New Central Rail stations) along the Station Road. There are regular intercity passenger and freight services to major cities such as Dhaka, Sylhet, Comilla, and Bhairab.

The service of cargo transport is unreliable, and often faces delays. Road transportation is mainly used for cargo, according to interviews with private manufacturing companies.

In Chittagong city, rail transport is commonly used by commuters and students. Bangladesh Railway also has a plan to enhance commuter services.

Remodeling of the Chittagong Central Rail Station is on-going thanks to financial assistance from the Japanese Government.

Central Railway Station



Exsiting Terminal and New Construction

Source: ICGP Team

Figure 2-17: Central Railway Station

(3) Airport

There is only one airport in Chittagong, Shah Amanat International Airport. The airport was formerly known as MA Hannan International Airport, and subsequently renamed in 2005. It is an international airport and the only route to get in the city by air. The airport road and beach road link the city center and the airport.

It is the second busiest airport in Bangladesh, and has international flights to destinations such as the Middle East (Abu Dhabi, Dubai, Sharjah, Jeddah, Ras Al Khaimah, Muscat and Kolkata). Currently, Middle Eastern low cost carriers such as Flydubai, AirArabia, RAK Airways, and Oman Air operate their services. International routes to other major destinations in Asia such as Singapore, Bangkok, etc. are planned to investment and to provide convenient connections for industry.

Airport Terminal Building

View from the Deck

Source: ICGP Team

Figure 2-18: Shah Amanat International Airport

2.4.2 Bridge / Culvert

Chittagong has the Karnaphuli River and a numbers of canals; there are more than 650 bridges and 1,000 culverts. Over the Karnaphuli River, there are two bridges, the Kalurghat Bridge (north) and Karnaphuli Bridge (south).

The Kalurghat Bridge is a narrow steel structure rail-road-cum bridge that is 239 m long. It was designed by a British engineer and constructed in 1930 as single-track rail bridge. In 1962, the bridge was modified with decking and carpeting. The width of the bridge deck is only 3.05 m, thus it can only handle one-way traffic, causing heavy congestion at both ends of the bridge.

The Karnaphuli Bridge (Shah Amanat Bridge) is an extra-dosed type bridge that is 950 m long and 24.47 m wide. It has four lanes. Two lanes are devoted to high-speed traffic, a 1.5 m lane is designated for low-speed traffic such as rickshaws, vans, and bicycles, and 1.5 m wide walkway for pedestrians is provided. The bridge was constructed by a Chinese company under the direct supervision of the Bangladesh Roads & Highways Department and was opened in 2010.

Kalurghat Bridge

Kalurghat Bridge Deck

Karnaphuli Bridge

Karnaphuli Bridge

Source: ICGP Team

Figure 2-19: Kalghat Bridge and Karnaphuli Bridge

ChCC also constructs many short-span RC bridges, some of which are steel beam structures. These bridges are generally old and deteriorated, and need urgent rehabilitation. Bridges along the airport road (connecting the city and airport) are in particularly poor condition, and the ChCC has temporary installed a steel bridge on top of the existing damaged bridge. This road is an important connection between the airport (and private container depot near the airport) and the city center.

Bridge on Airport Road (1)

Bridge on Airport Road (2)

Source: ICGP Team

Figure 2-20: Bridges on Airport Road

2.4.3 Drainage System

In Chittagong, there are tertiary, secondary and primary drains of various sizes which have are not planned according to the catchments they serve. These drains flow into open channels like *Khals* (or canals) and rivers. A drainage system is crucial to the city, but it has not been properly planned or developed.

(1) Open Channel (Khals & Rivers)

The khals and rivers are natural water bodies and both serve as storm sewers and sanitary sewers with a total length of around 144 km. Cross sections for existing khals and rivers vary in size. Major khals includes the Chaktai, Chakti diversion, Mohesh Kali, Rajakhali and Mirza khal – all eventually reach the Karnaphuli River or Bay of Bengal. Chakti khal is also used for waterway transport in the Asadgonji Area, up to several hundred meters from the Karnaphuli River. It is an important means of transport for small shops selling fish products in the area.
Illegal occupants along the khals and disposal of garbage into the khals have been serious issues. ChCC has been working to construct concrete retaining walls along the khals in order to secure the width and facilitate side roads (footpaths). ChCC excavators remove debris disposed of in khals each year to maintain functionality. However, a huge amount of material is still being dumped at the designated site.

Mohesh Kali khal contributes to draining the western and southern area of the city. A concrete retaining wall has been constructed at some sections, but there is still several kilometers that have yet to be constructed due to lack of budget from the ChCC.

Chakti khal contributes to draining the eastern and central part of the city. The catchment area is large and inflow is too high for Chakti khal to accommodate all. Therefore, ChCC has developed the Chakti diversion khal to reduce the burden on the Chakti khal.

Retaining Wall of Mehesh Kali khal

Illegal Occupants along the Khal

Garbage Stagnating at Chaktai Khal

Chakti Khal Used for Waterway Transport

Source: ICGP Team

Figure 2-21: Mohesh Kali and Chakti Khals

(2) Primary Drains

Primary drains are artificial drains usually constructed along major roads, often made of brick masonry and or concrete. Total length is around 70 km. Primary drains are the main collector to collect discharge from secondary drains and discharge loads to khals.

Source: ICGP Team

Figure 2-22: Primary Drain

The drain size is related to the width of the adjacent road. Drain wide varies from 10-20 feet depending on the width of the road.

Primary drains are open drains, so citizens placed crossing plates made of wood or steel by themselves.

(3) Secondary Drains

Source: ICGP Team

Figure 2-23: Secondary Drain

Secondary drains flow into primary drains and usually run alongside local distributor roads. The structure is typically comprised of masonry and/or concrete, and collects discharge from tertiary drains. Secondary drains have a width of around 8 feet. Some secondary drains are constructed underneath and covered by footpaths along the road.

The total length of secondary drains is around 90 km.

(4) Tertiary Drains

Source: ICGP Team

Figure 2-24: Tertiary Drain

Tertiary drains rank fourth in the drainage hierarchy, and are constructed running parallel to access roads. They have width of 1.5–3.5 feet and are made of masonry and/or concrete just like primary and secondary drains. The total length is around 130 km.

2.4.4 Water Supply

The fresh water supply in Chittagong is provided and maintained by the Chittagong Water Supply and Sewerage Authority (CWASA). Sources include both ground and surface water from deep tube wells and water treatment plants. There are 91 deep tube wells in operation (under the jurisdiction of CWASA), one surface water treatment plant and one ground water treatment plant. Detailed data for existing water resources and supplies by CWASA are shown in Table 2-10. CWASA has a water supply capacity of 273 MLD (million litres per day) with water supply pipeline of 610 km. Pipe diameter varies from 400–1,200 mm. Production from surface water is 90 MLD from the treatment plant in Mohara. The production from ground water is 68 MLD.

Table 2-10: Existing Water Resources of CWASA

Facility	Quantity	Capacity
Surface WTP	1	90 MLD
Ground WTP	1	68 MLD
Deep Wells	91	115 MLD
Pipeline	610 km	-
Reservoirs	14	46,142 ML
HL & Booster	4 & 3	-
Service Connections	54,000	-

Source: CWASA

* WTP: water treatment plant, MLD: million litres per day, ML: million litres

Considering the inadequate water supply available, CWASA has been implementing several projects through financial assistance from international donors such as the World Bank and JICA.

(1) Chittagong WASA Water Supply Improvement & Sanitation Project (CWSISP)

In order to improve sustainable delivery of water, sewage and drainage service to citizens, CWASA received a loan from the World Bank to implement this project. The objectives of the project are to: (i) increase the supply of safe potable water in Chittagong and urban slums by constructing water production, transmission, storage and distribution facilities; (ii) prioritize investments to improve sanitation facilities by updating sewage and drainage master plans and rehabilitating a limited number of existing drainage systems; and (iii) develop institutional and operational capacity of CWASA.

The works includes:

- Design, Build, and Operate (DBO) contracts for a water treatment plant (91 MLD)
- Construction of salinity mitigation measures for water treatment plants (270 MLD)
- Construction of transmission pipelines (diameter of 750–900 mm; 34 km in length)
- Construction of distribution pipelines (various sizes; 130 km in length)

(2) Karnaphuli Water Supply Project (Phase1)

The project is being implemented with financial assistance from JICA. The project consists of three components: (i) constructing a water treatment plant; (ii) constructing a reservoir; and (iii) constructing a distribution pipeline. Upon completion at the end of 2014, these projects will increase the water supply capacity of CWASA by 136 MLD. Contractors are Korean, Chinese and Japanese firms (Kubota-Marubeni JV) for each package.

Reservoir Construction Site

Distribution Pipe

Pipe Installation in the City (1)

Pipe Installation in the City (2)

Source: ICGP Team

Figure 2-25: Construction Status of Karnaphuli Water Supply Project

Phase 2 of this project is under preparation now with a total project cost of around 4,500 Crore BDT (or around USD 540 million), also by JICA loan. The project will further extend/improve the water supply network of the city.

(3) Other Projects

KOICA has already prepared the master plan for water supply and sewage for Chittagong city, and is planning to construct a water treatment plant on the other side of the Karnaphuli River. The water will be supplied to the Korean EPZ as well as to the city by laying pipe under the river bed. A detailed survey has been scheduled.

2.4.5 Sewage System

Sewage management is under CWASA responsibility, but currently no sewage system is available in Chittagong. Throughout the rest of the country, people use a variety of methods including septic tanks, pit latrines, and open defecation.

Septic tanks often malfunction because of inadequate design, construction and/or maintenance. In some cases, high water tables impede the soak-away function (according to DAP, 2008). Many buildings have no sanitation systems and discharge effluent directly into lakes, rivers and drains, which not only damage the city's scenery, but also cause health risks and water pollution.

The preliminary study and implementation of the pilot sewage system project is included in the CWASA Water Supply Improvement & Sanitation Project (CWSISP).

2.4.6 Solid Waste Treatment

Solid waste management is the responsibility of the Conservancy Department of ChCC, while the Army Cantonment, Port Authority and Railway Department have their own clearing services. In most locations, NGOs or CBOs collect and remove waste from houses and offices mainly on cycle-rickshaws. They carry the collected waste to Secondary Transfer Stations (STS) at various locations around the city area. From there, ChCC conveys the waste to final disposal sites by dump trucks (3 or 5 ton) and container movers. ChCC has 1,350 dustbins and 95 metal containers placed on the roadside around the city. The collection is conducted three times per day, with more than 1,000 tons of waste collected and carried to dumping sites.

Dump Truck of ChCC

Container Mover of ChCC

Source: ICGP Team

Figure 2-26: ChCC Waste Collection Vehicle

There are two dumping sites in Halishahar and Alefin Nagar, but no incineration plant. Disposal is by open dumping with little or no management, which makes these areas highly unsanitary and hazardous. New initiatives have been taken to construct sanitary landfill sites including facilities for handling medical waste under the present ADB Urban Public and Environmental Health Sector Development Program (UPEHSDP). Implementation of the UPEHSDP is expected to facilitate safe disposal of STS and slaughter house waste as well as other hazardous waste from the city.

At the Halishahar site, there is one compost plant, but its management is extremely poor and unhygienic. It is expected that new compost plant will be built at the sanitary landfill site, which is planned for development under the UPEHSDP.

Open Dumping Site at Halishahar (1)

Open Dumping Site at Halishahar (2)

Alefin Nagar Site (1)

Alefin Nagar Site (2)

Source: ICGP Team

Figure 2-27: Current Dumping Site for Solid Waste

2.4.7 Electricity Facilities

The Bangladesh Power Development Board (BPDB) is responsible for power generation in Bangladesh, and distributes electricity. Electric power is generated by hydro, steam, gas-turbine and diesel power plants, and the national grid connects all power generating stations.

Karnaphuli Hydro Power Station, located at Kaptai around 50 km from Chittagong city, is the only hydropower plant in the country. It was constructed and commissioned in 1962 as part of the "Karnaphuli Multipurpose Project", with a generation capacity of 80 MW. In later years, capacity was increased in two phases to a total of 230 MW. The Station is not only important for power generation, but also for flood management. There are two other big power stations in the Chittagong Region–Raozan (420 MW) and Sikalbaha (60 MW).

In most urban areas, electric pylons and poles located beside roads provide connections to individual houses. Tariff is based on amount consumed, as measured by meters in individual houses.

Power supply is insufficient for a continuous supply, so providers turn off the supply for a few hours every day. Hotels, businesses and wealthy individuals use their own generators. According to interviews of one manufacturer in the Karnaphuli EPZ, the power is insufficient to maintain a continuous supply, with two cable lines out of seven being turned off during rotating cutoffs.

The list of substations in Chittagong is shown in Table 2-11.

Table 2-11: List of Sub-stations in Chittagong Area

Name of Sub-Station and ID Number	Voltage Level	132/33kV Transformers Capacity	33/11kV Transformers Capacity	Location
Agrabad Sub-Station-01	33/11kv S/S.		2x16/20+1x10/13.33=53.33MVA	Near Karnafully Shisu Park
Bidyut Bhaban 11kV Switching Station-02	11kV Switching Station		-	Bidyut Bhaban Area-PDB
Pahartali Sub-Station-03	33/11kV S/S.		2x16/20=40MVA	A.K.Khan Gate Moor
Halishahar Sub-Stiation-04	132/33/11kV S/S.	2x44.1/63MVA =126MVA 1x25/41.7KVA =41.7MVA	2x10=20MVA	Opposite of Karnafully EPZ
Kulsi Sub-Station-05	132/33/11kVS/S.	2x44.1/63MVA =126MVA	2x16/20=40MVA	Foyez Lake
Jalabad Sub-Station-06	33/11kV S/S.		2x16/20=40MVA	Near Poly Technical Institute
New mooring Sub-Station-07	33/11kV S/S.		2x10/12.5=25 MVA	Near Nayer Hat
Patenga Sub-Station-08	33/11kV S/S.		2x10/12.5=25 MVA	Near Air Force Base
Stadium Sub-Station-09	33/11kV S/S.		2x16/20=40MVA	Near M.A. Aziz Stadium
Pathar ghata Sub-Station-10	33/11kV S/S.		2x16/20=40MVA	Near C&B Colony
Reazuddin Bazar 11kV Switching Station-11	11kV Switching Station		-	Reazuddin Bazar
Solashahar Sub-Station-12	33/11kV S/S.		2x16+1x16/20 = 52MVA	Near Bangladesh Oxyzen Moor
Kalurghat Sub-Station-13	33/11kV S/S.		2x16/2 = 40MVA	Near B.A.D.C Road
Mohra Sub-Station-14	33/11kV S/S.		2x16/20=40MVA	Near Kaptai Road Moor
Bakali Sub-Station-15	132/33/11kV S/S.	2x48/64 MVA =128MVA	2x16/20=40MVA	Naar Bakalia Thana
Madarbari Sub-Station-16	33/11kV S/S.		2x16/20=40MVA	Near Kadamtoli (East Madarbari)
Oxyzen 11kV Switching Station-17	11Kv Switching Station			Oxyzen Moor
Fouzdarhat Sub-Station-18	33/11kV S/S.		2x10/13.33=26.66	North of Fouzdarhat
Hathazari Sub-Station-21	33/11kV S/S.		1x12.5=12.5MVA	Near Hathazari Bus Stand
Fish Harbour Sub-Station-25	33/11kV S/S.		2x10=20 MVA	Near Marine Fisheries Academe
Rampur Sub-Station-28	33/11kV S/S.		2x16/20=40MVA	Near Halishahar K-Block Pole Factory
Muradpur Sub-Station-29	33/11kV S/S.		2x16/20=40MVA	Near Muradpur Moor
Juldah Sub-Station-30	132/33kV S/S.	2x48/64 MVA=128MVA		North of Marine Academy
Grand total		498 MVA	687.196 MVA	

Source: DAP, 2008

2.4.8 Gas Supply System

Gas supply in Chittagong had been operated and maintained by the Bakhrabad Gas System Ltd (BGSL). After the split up of BGSL, the Karnaphuli Gas Distribution Company Ltd (KGDCL) became responsible for the supply of gas in Chittagong including the hill tracts. The Bakhrabad Gas Distribution Company Ltd (BGDCL) is responsible for gas supply in the Comilla and Brahmanbaria regions. A plan to increase gas supplies to Chittagong has been considered for some time, but yet to be implemented. This means Chittagong has no reliable gas producing

fields and no stable transportation backbone. Gas supply to Chittagong is said to satisfy only 50% of demand.

According to DAP 2008, a total of 258,035 gas connection are provided for the residential, industrial and commercial sectors, although deficiencies have been reported in industrial and commercial sectors. The existing consumer gas connections are shown in Table 2-12, while the length of pipeline is shown in Table 2-13, respectively (both figures are from the time of DAP preparation).

Table 2-12: Consumer Gas Connections in Chittagong

Sl. No.	Type of consumers	Nos. of Consumer
1	House holds/ connection	254,675
2	Commercial holds/ connection	2,398
3	Industrial holds/ connection	848
4	Power generating Plant	4
5	Fertilizer factories	3
6	GNG filling station	24
7	Tea Garden	1
8	Capacity. Power	82

Source: DAP, 2008

Table 2-13: Length of Gas Pipelines in Chittagong

Sl. No.	Diameter of Gas pipe line	Total km
1	"24	33.28
2	"20	35.03
3	"16	9.72
4	"12	4.17
5	"10	34.8
6	"8	67.39
7	"6	69.21
8	"4	164.41
9	"3	177.33
10	"2	725.15
11	"1	876.80
12	¾"	453.23

Source: DAP, 2008

2.4.9 Information Communication Technology (ICT)

Most areas of Chittagong city are covered with internet connectivity. Citizens, offices, markets, manufacturing industry and garment business have accessible connections through mobile phones, Banglalion Wimax, Qubee Wimax, broadband and/or internet service providers (ISPs).

When electricity is cut, people still can use Internet service through separate backup power sources (i.e., generators, IPS, UPS, etc.). At the moment, there are no issues with ICT in Chittagong.

The ICT service is provided by both private organizations and government agencies as described below. Private organizations though are the main providers.

- Private Organization – These include Chittagong Online Limited (Colbd), Access Telecom (BD) Ltd (AccessTE), Chittagong Telecom Services Ltd (CTGTEL), Bracknet, Broad Band Telecom and Services Limited (BBTS) etc. Mobile operator companies like Gramophone, Banglalink, Warid, Robi and Citycell also provide internet facilities.

- Governmental Agencies – These include BTCL (Bangladesh Telecommunications Company Ltd.) and Teletalk Bangladesh Ltd (mobile operator).

Chapter 3 Vision and Goal Setting

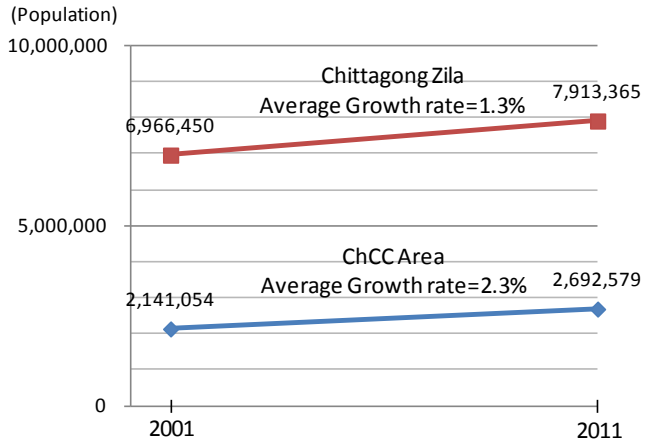
This chapter explains the vision and goal setting for IDPCC. It includes the preliminary analysis, vision, approaches and priority sectors.

3.1 Preliminary Analysis

(1) Projection of Population

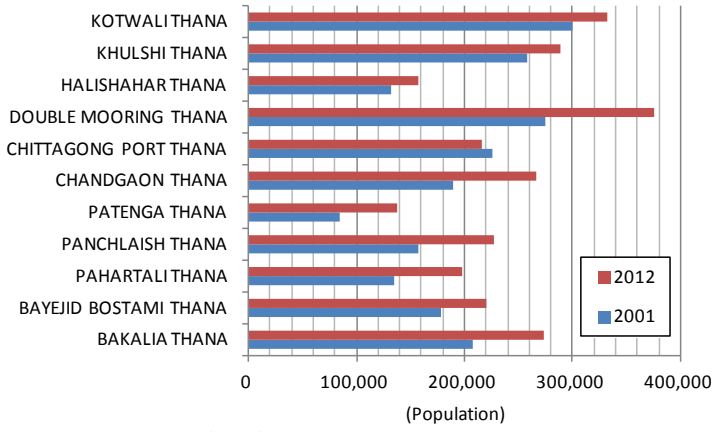
Chittagong zila consists of 26 Upazilas/Thana, 194 unions, 890 mauzas, 1,267 villages, one City Corporation, 46 city wards, 237 city mahallas, 10 PSs, 90 wards and 199 mahallas.

Figure 3-1 shows the compound annual population growth rate of Chittagong zila and ChCC areas. The data is based on the Community Report of Chittagong Zila (June 2012) from the 2011 Population and Housing Census (Bangladesh Bureau of Statistics, Statistics and Informatics Division of Ministry of Planning). According to this, the growth rate in the ChCC area is 2.3%, which is higher than the national level of 1.3%. The ChCC area includes 11 Thanas namely: Bakalia, Bayejid Bostami, Pahartali, Panchlaish, Patenga, Chandgaon, Chittagong Port, Double Mooring, Halishahar, Khulushi and Kotwali. Considering the economic growth and increasing importance of Chittagong Port as well as hinterland development, population growth is likely to continue for some time.



Source: ICGP Team based on Census 2011

Figure 3-1: Population Growth Rate in Chittagong



Source: ICGP Team based on Census 2011

Figure 3-2: Population Growth by Thana in ChCC Area

(2) Resource Analysis

Infrastructure planning is often deficiency-driven. City planners, engineers and citizens request what they do not have and wish to have. In a bigger context, urban planning should be also resource-driven. The following are identified as resources of ChCC.

Table 3-1: Identified Resources of ChCC

	Category	Resources of ChCC
1	Industry	Dry docks, dockyards, oil refineries, steel mills, power plants, cement clinker factories, automobile industries, pharmaceutical plants, chemical plants, cable manufacturing, textiles mills, jute mills, urea fertilizer factories, garments, fish products, industrial zones, etc.
2	Natural Environment	Patenga Beach, coastal areas facing the Bay of Bengal, Hill Tracts etc
3	Man-made Facilities and Resources	Chittagong Port, CEPZ, KEPZ, Korean EPZ, cultural facilities, the cricket stadium, historical heritage, monuments, religious facilities, Foy's Lake, etc.
4	Human Resources	Skilled workers in the EPZ such as garment factories, manufacturing, etc.

Source: ICGP Team

(3) Industrial Layout

ChCC has been a prominent and successful industrial and commercial hub of the country for many decades. Industries are also important recipients of public services and beneficiaries of infrastructure. PIUCC had an initial discussion on this issue, which is summarized in the table below:

Table 3-2: Industrial Projection of ChCC

5 Years	10 Years	20 Years
Development of a garment village at the Kalurghat Industrial Area	Development of an integrated garment village at Fateyabad (on 100 acres of land)	Development of an integrated garment village at Fateyabad (on 100 acres of land) with all the facilities and amenities for the workers and their families
Development of a ship building industry	Development of a ship building zone	Development of a large-scale ship building zone at suitable locations along the Karnaphuli River
Establishment of an IT Park	Development of IT City	Development of an IT City of international scale in the hilly areas of Chittagong city
Development of a leather processing/manufacturing zone	Development of leather processing/manufacturing zone	Development of a leather processing/manufacturing zone for international export.
Fish and food processing industry	Fish and food processing industrial zone	Fish and food processing industrial zone

Source: ICGP Team

3.2 Vision of ChCC as Development Slogan

ChCC has a clear vision towards infrastructure development. It slogan is to "upgrade Chittagong metropolitan city into a "Modern Cosmopolitan City" and become an efficient local government institution capable of addressing future challenges with the increasing demand for better urban facilities and amenities for new generation citizens".

The vision was presented and agreed upon at the Standing Committee of Planning on the 31st of July 2013 under the presence of the Mayor. The General Meeting of ChCC approved this slogan on the 26th of August 2013.

3.3 Approaches of Infrastructure Development

Based on above vision, several objectives were identified:

- Facilitate all urban facilities and amenities to its citizens
- Ensure comprehensive city planning in Chittagong to provide a better working environment for its citizens
- Develop Chittagong as a "3–Dimensional Commercial Capital" of the country where trade/commerce, industry and tourism are encouraged

3.4 Priority for Infrastructure Sub-Sectors and Their Issues

Chittagong city faces three major issues: traffic congestion, flooding and disaster management.

The number of motorized vehicles is increasing rapidly in the city area. Together with large numbers of non-motorized vehicles like rickshaws, serious traffic congestion is generated at some locations. Another cause of congestions is driving behavior (i.e., the lack of discipline and adherence to rules of the road). There is no traffic management system in place with few traffic signals. Traffic officers must guide traffic manually.

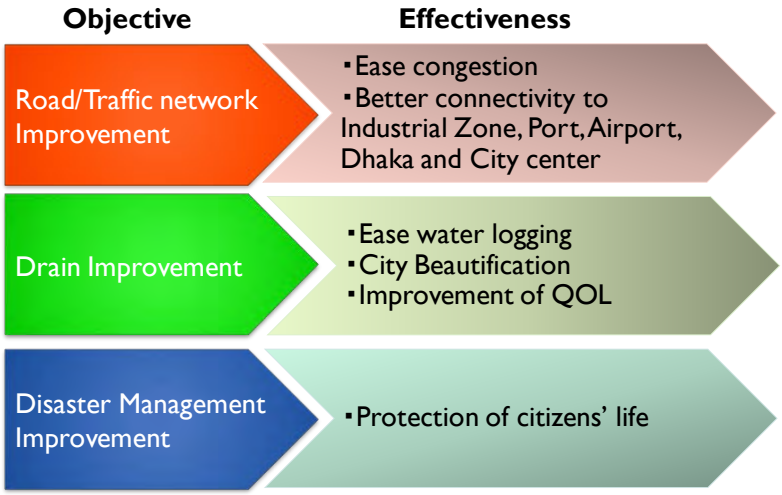
Flooding is also a chronic issue after heavy rains. The major cause of flooding is the inadequate capacity of canals/drains, lack of tidal gates, and illegal disposal of waste/garbage into canals. The pavement on some main roads is easily damaged from flooding and requires yearly rehabilitation.

As previously explained, Chittagong is a cyclone-affected area, and shelters for evacuation from cyclones and floods are needed.

Source: ICGP Team

Figure 3-3: Three Major Issues in Chittagong City

The objectives or priority sectors for requisite infrastructure development/investment and their benefits can be summarized in Figure 3-4. These objectives match with the vision and approach of ChCC. The priority sub-sectors and their issues are presented in Table 3-3.



Source: ICGP Team

Figure 3-4: Priority Sectors for Infrastructure Development

Table 3-3: Infrastructure Sub-Sector Priorities and Issues

SL	Priority Sectors	Issues
1	Road and Traffic Network improvement	• Traffic jam are chronic and serious at some intersections and roads • Overpasses and new road links are necessary to ease congestion and promote industries/business • Upgrading of important roads is needed including rehabilitation of pavement and widening of roads • Some bridges along main roads are deteriorated and need urgent rehabilitation
2	Drain Improvement	• The catchment capacity is insufficient and a major cause of flooding • Illegal occupants use parts of the canal, narrowing the effective width • Illegal dumping of garbage into the drains/canals still occurs
3	Disaster Management Improvement	• There is insufficient evacuation space and facilities • No central disaster management control station has been established • Existing schools-cum-cyclone shelters are old and have inadequate structures

Source: ICGP Team

Chapter 4 Preparation of Inclusive Subproject List

This chapter presents the analysis of existing infrastructure by category, nominated project ideas, and the inclusive list of infrastructure development.

4.1 Analysis of Existing Infrastructure by Category

Discussion on infrastructure issues was conducted by PIUCC from a general perspective. However, the ChCC still needs continuous analysis before the compiling Subproject ideas in the IDPCC; this analysis was conducted by ChCC engineers and city planners.

Table 4-1: Analysis of Existing Infrastructure

	Sub-sector	Analysis
1	Transport	There is a mixture of a long-distance transport (such as buses and trains from Dhaka) and a para-transit network operated by private companies including rickshaws and mid-sized trucks. Constant traffic congestion exists as it does all over Bangladesh. The difference in Chittagong is that congestion is caused by the mixing of large cargo vehicles with passenger vehicle such as buses, CNG vehicles, and rickshaw in the same lane. Construction of overpasses for smooth traffic flow and to separate incompatible vehicle types is needed. The waterway transport exists at the Chaktai khal for loading and unloading of commodities at the market.
	Drain Management	The main flooding area is in the southern area of the city center. No matter whether it is during the rainy season or not, flooding occurs in several areas of the city after rain. The ChCC implements constant maintenance to remove garbage/soil from the drains.
	Solid Waste Management	ChCC has 1,350 dustbins and 95 metal containers in the city, and collects waste three times per day. The demand for collection trucks is much higher than the existing fleet size.
	Water Supply System	Water supply is under control of the CWASA. The World Bank's Chittagong WASA Water Supply Improvement & Sanitation Project (CWSISP) and JICA's Karnaphuli Water Supply Project by JICA are being implemented.
	Sanitation	Sanitation is under control of the CWASA.
	Municipal Facilities	Due to the lack of facilities in the north and northeast areas of the city, ward offices perform many roles. The construction of school-cum cyclone shelters is being implemented for disaster management in the city. These should be continuously implemented and to ensure sufficient quantity to protect citizens.

4.2 Nomination of Project Ideas

Projects are nominated by engineers as presented in the tables below (by category).

Table 4-2: Summary of Existing and Proposed Infrastructure (Transportation)

				Chittagong City Corporation			
					Proposed Quantity		Tentative Cost for Proposed Subproject
No.	**Name of Component**	**Project Type**	**Unit**	**Existing Quantity**	**New**	**Improved**	**(Crore)**
1	Road Improvement	Primary Road (100 ft to 150 ft)	km	59.27	3.50	8.20	120.00
		Second Road (60 ft to 100ft)	km	91.07	10.00	8.87	472.24
		Tertiary Road (20 ft to 60 ft)	km	199.93	6.89	72.89	536.05
		Goli Road (12 ft to 20 ft)	km	249.23	33.71	82.40	1,537.27
		Pedestrian (6 ft to 8 ft)	km	200.00	6.92	10.03	137.34
		Equipment for Road Work	Nos.	390	84.00	0	90.00
		Total Length	km	**799.50**	**61.02**	**182.38**	**2,892.90**
2	Bridge / Culvert	Bridge	Nos.	641	20	7	103.61
		Pedestrian Overpass	Nos.	12	-	-	-
		Flyover	Nos.	3	15	0	1,009.00
		Underpass	Nos.	-	-	-	-
		Culvert	Nos.	1,004	2	2	13.70
		Total Length	Nos.	**1,660**	**37**	**9**	**1,126.31**
3	Traffic Management	Traffic Signal / Signs	Nos.	46.00	-	-	-
		Divider / Island	km	150.00	-	-	-
		Road Marking	km	150.00	-	-	-
		BRT System	km	-	24	0.00	210.00
		Total Length	km	**346.00**	**24.00**	**0.00**	**210.00**
4	River Boat Landing	River Boat Landing	Nos.	15	-	-	-
		Total Sector Cost					**4,229.21**

Table 4-3: Summary of Existing and Proposed Infrastructure (Drain)

			Chittagong City Corporation			
				Proposed Quantity		Tentative Cost for Proposed Subproject
No.	**Project Type**	**Unit**	**Existing Quantity**	**New**	**Improved**	**(Crore)**
1	Khal /Canal/Outfall Drain	km	144.14	0.00	16.81	121.14
2	Primary Drainage	km	70.00	9.74	1.40	75.66
3	Second Level Drainage	km	90.00	0.00	0.50	1.50
4	Third Level Drainage	km	128.00	-	-	-
5	Cleaning Blockage	km	55.00	-	-	-
6	Resectioned Outfall (Earth)	km	68.00	-	-	-
7	Tidal Gate	Nos.	-	2	0	36.00
	Total Drain Length and Sector Cost	km	**555.14**			**234.30**

Table 4-4: Summary of Existing and Proposed Infrastructure (Solid Waste)

			Chittagong City Corporation			
				Proposed Quantity		Tentative Cost for Proposed Subproject
No.	Project Type	Unit	Existing Quantity	New	Improved	(Crore)
1	Transfer Station	Nos.	-	12	-	-
2	Dumping Ground/ Land Fill Site	Nos.	2	1	-	-
3	Compost Plant	Nos.	1	-	-	-
4	Roadside Movable Dustbin	Nos.	95	-	-	-
5	Solid Waste Recycle System (3R)	Nos.	-	1	-	100.00
6	Facility for Clean Development Mechanism Activities	Nos.	-	-	-	-
7	Medical Waste Disposal	Ton	50	-	-	-
8	Electronic Waste	Ton	-	-	-	-
9	Biogas Plant	Nos.	-	-	-	-
10	Equipment including Incineration Plant	Nos.	-	411	-	83.00
	Total Sector Cost					**183.00**

Table 4-5: Summary of Existing and Proposed Infrastructure (Sanitation)

			Chittagong City Corporation			
				Proposed Quantity		Tentative Cost for Proposed Subproject
No.	Project Type	Unit	Existing Quantity	New	Improved	(Crore)
1	Slaughter House	Nos.	8	1	-	-
2	Twin Pit Latrine	Nos.	-	-	-	-
3	Single Pit Latrine	Nos.	-	-	-	-
4	Public Toilets	Nos.	45	41.00	0.00	50.00
5	Wash Station	Nos.	-	-	-	-
6	Transfer Station for Sludge Disposal	Nos.	-	-	-	-
7	Common Septic Tank	Nos.	-	-	-	-
8	Wastewater Treatment Plant (Drain)	Nos.	-	-	-	-
	Total Sector Cost					**50.00**

Table 4-6: Summary of Existing and Proposed Infrastructure (Facilities)

				Chittagong City Corporation			
					Proposed Quantity		Tentative Cost for Proposed Subproject (Crore)
No.	Component	Project Type	Unit	Existing Quantity	New	Improved / Rehabili-tation	
1	Bus Terminal	Terminal building, platform, and internal drainage	Nos.	4	2	0	200.00
2	Truck Terminal	Terminal building, platform, and internal drainage	Nos.	2	2	0	120.00
3	Vehicle Parking	For motor vehicles, CNG vehicles, and rickshaws	Nos.	-	1	1	30.00
4	Market	Kitchen markets and supermarkets	Nos.	16	1	0	5.00
5	City Corporation Office Building	CC main office, community center, ward office and automation of ChCC activities.	Nos.	42	12	3	372.05
6	Auditorium, Public Hall, Cultural center	Auditorium, public hall, and cultural center	Nos.	1	3	3	59.50
7	Open Space	Park and ground	Nos.	6	0	1	7.00
8	Street light (Light and Pole)	Light, pole and solar panel	Nos.	-	-	-	-
9	Landscaping and Beautification	Planting, water body improvement, monument, and tourism	Nos.	-	1	0	200.00
10	Graveyard	Gate and wall, lighting, and drainage	Nos.	2	-	-	-
11	Sports Facility	Gym and stadium	Nos.	2	-	-	-
12	Upgrading Informal Settlement	Rearrangement of informal shops and houses	Nos.	0	22	9	251.80
13	School-cum-Cyclone Shelter	School-cum-cyclone shelter	Nos.	12	17	6	218.50
14	Land Development	Land reclamation	km^2	-	11	0	2,500.00
15	Garment Village	Garment village	Acre	0	12	0	300.00
16	Disaster Management	Equipment for disaster management	Nos.	390	84	0	90.00
17	City Master Plan	City Master Plan	LS	0	1	0	5.00
		Total Sector Cost					**4,358.85**

4.3 Inclusive List of Infrastructure Development in ChCC

The inclusive list of infrastructure development is attached in Annex D-1. A summary of the project list is shown in the following table.

4.3.1 Summary of the Infrastructure List

The following table summarizes the inclusive infrastructure list of the ChCC.

Table 4-7: Summary of Inclusive Infrastructure Development List

Sector	Quantity	Cost (Crore)	Note
Road	175 schemes	2,892.9	• ChCC needs 175 Subprojects in the road component. Three-quarters of the road Subproject list is for rehabilitation. New road Subprojects that need land acquisition are not included. • ChCC proposed procurement of construction equipment. • The Detailed Area Plan (DAP) in the greater Chittagong City area was developed in 2008 with a 2015 target year
Bridge	45 schemes	1,126.3	• Road developments including bridges are as follows. 1. Airport Road 2. Mariner's Road 3. Port connecting road 4. Zakir Hossain Road 5. Agrabad Access Road • Other than those mentioned, some bridges are included as part of canal improvement works.
Drain	31 schemes	234.3	• Canal improvement works consist of the construction of retaining walls along two canals: 1. Mohesh Khali Khal 2. Chaktai Diversion Khal • Installation of a tidal gate requires a proper study prior to implementation.
Solid Waste Management.	One recycling site and 411 pieces of equipment	183	• SWM is the role of the CC. At present, there is no SWM system. The projects below are under implementation by the ADB Urban Public and Environmental Health Sector Development Program (UPEHSDP): 1. Selection of new landfill sites for solid waste disposal 2. Development of 12 secondary transfer stations • Introduction of 3R systems and procurement of equipment (container movers, dump trucks and containers) are also under consideration by JICA.
Water Supply and Sanitation	41 toilets	50	• While WSS is the responsibility of CWASA, ChCC proposes 41 new toilets.
Public Building	22 buildings and 5 terminals	774.6	• ChCC has a plan to build various public buildings, including the CC main office, community center, ward office, auditorium, public hall, and cultural center, as well as the automation of ChCC activities.
Garment Village	12 acres	300	• Construction of a garment village is proposed in the Kalurghat area, with sleeping quarters for employees from suburban areas, to expand the manufacturing area in Chittagong.
Open Space	2 schemes	207	• This project will encourage or facilitate access to the park and a more beautiful city.
Upgrading Informal Settlement	31 houses	251.8	• ChCC has encouraged a better quality of life for low income residents for many years. This proposed project includes a slum house and that for 4th class employees.
School-cum-Cyclone Shelter	24 schemes	230.5	• Included as part of disaster management.
Land Development	11 km^2 of reclamation	2,500	• Land reclamation from the Bay of Bengal outside of the embankment
City Master plan	2 schemes	95	• Includes equipment for disaster management • As the Chittagong DAP has a 2015 target year, a new master plan needs to be developed.
Total		9,055.36	

4.3.2 Information of Infrastructure Projects of Other Agencies

The inclusive subproject list of ChCC should have included infrastructure plans of other agencies at the national level. Even though these agencies work in the territory of the ChCC, they are implementing theirs project independently without sufficient coordination with ChCC. It should be noted that the city has a history of over 150 years and the CWASA and CDA have developed independently. Compared with other CCs and regions outside of Dhaka, these entities have implemented more development projects than other regions with the coordination of donors from all over the world. Hence, these entities carry weight in the city as well as the ChCC, and the jurisdictional area is divided clearly.

There are two categories of agencies at National Level: Category A and B.

(1) Category A

Agencies of this category handle important public services and have a direct influence on the quality of life of residents. ChCC needs close coordination with these national agencies.

a) Chittagong Development Authority (CDA)
b) Water and Sewerage Authority (CWASA)
c) Chittagong Port Authority (CPA)
d) Water Development Board (WDB)
e) Telephone and Telegram (T&T)
f) State Gas Company (TITAS)
g) Local Government Engineering Department (LGED)
h) Department of Public Health Engineering (DPHE)

(2) Category B

Agencies in Category B also deal with public services. However, they are regarded as less relevant to core public services of ChCC.

a) Road and Highway Department (RHD)
b) Bangladesh Railways (BR)
c) Public Works Department (PWD)
d) Fire Brigade

These agencies are unwilling to, or have no custom to inform project plans to ChCC, thus ChCC could not include their project plans in the Inclusive Subprojects List of Infrastructure. However, the ChCC should still be responsible for coordination among public services in its territory.

Consultant team of the ICGP (Loan) will support City Development Coordination Committee (CDCC) as an item of ICGIAP. In this regular committee meeting, ChCC and central government agencies should exchange their information and opinions so that ChCC's inclusive subproject list can include all the relevant project plans by the central government agencies. Records of the CDCC meetings shall be reported to the PD of ICGP so that effectiveness of CDCC can be secured.

Chapter 5 Planning, Implementation, Evaluation and O&M Arrangement

This chapter analyzes the IDPCC in detail: planning, implementation, evaluation of subprojects, and O & M arrangement.

5.1 Planning of IDPCC of ChCC

Planning of IDPCC may have several aspects, and they are as follows;

(1) Relation with Prospective Master Plan

ChCC has decided to allocate budget for preparation of Master Plan in the FY of 2013-14. Once this Master Plan is elaborated with detailed area plan, the major projects ideas should be included in the IDPCC. Master Plan may include many project ideas that target the middle term (10-25years). Therefore, project that should be carried out within 5 years should be secured a position in the IDPCC. In this aspect, IDPCC is an "Action Plan of Maser Plan." Earlier, ChCC will make a master plan in 2014 and this should be realized to coordinate the CDA and LGED,

(2) Leadership of Mayor and Executive Officers

Mayor is the elected manager of the city corporation and executive officers are experts of public administration and infrastructure development. Mayor has elaborated a Concept Vision Plan that shows dynamic future vision of the ChCC. Proposed plan shall be executed with various methods and funding resources. The contents of the Concept Vision Plan will be taken into the proposed Master Plan which may be valid from 2015.

(3) Participation of Stakeholders

Participation of stakeholders is important for development plan elaboration. IDPCC shall be prepared and revised with the following method of participation.

1) PIUCC

Draft IDPCC preparation and revision shall be undertaken by PIUCC, which is a task force assigned by Mayor and include CEO as a chairperson, some councilors, head engineer, planner and relevant offices.

2) Stakeholders Meetings

Stakeholders Meeting is as an advisory committee set up for ICGP (Prep) to discuss vision, strategy, subprojects and their basic designs. Members include representatives of various sectors in the civil society. Draft IDPCC should be explained at the Stakeholder Meeting to improve and finalize the draft. With this procedure the IDPCC gets consensus of the wider segments of the society and facilitate smoother implementation and resource mobilization.

City councilors shall get information of proposed projects that are relevant with his/her ward and discuss at the Ward Level Coordinating Committee. This consensus making will secure a swift progress of the project with no objection group.

(4) Approval and Consensus

1) Approval of City Meeting

Since the IDPCC shows important direction of the city development. It should be approved in the city meeting, so that every councilor and executive officers appropriately recognize the plan.

This approval is necessary to avoid any potential conflict and to facilitate strategic budgeting for implementation of IDPCC.

2) Consensus of relevant organizations

Once IDPCC is authorized, it shall be explained to relevant outside organizations such as LGD and other National Government agencies, Donors, and managers of on-going projects in the city. The coordination meeting held every three months is a good occasion to share the IDPCC ideas and make up consensus with public service provider of the national Government. ChCC needs information on their development plan and the CC development plan. The coordination meeting would be a fruitful occasion to facilitate collaboration.

(5) Priority among the Infrastructure Projects

Since finding partners, such as donors and National government, may have specific priority among sub-sector of infrastructure, ChCC may be able to take limited initiative in funding of the projects. However, it is important to share the common priority among the stakeholders in ChCC.

5.2 Implementation of IDPCC

For an effective implementation of IDPCC and Operation and Maintenance of the infrastructure, ChCC needs various improvements,

- Institutional development and assignment of appropriate officers
- Work demarcation between what is undertaken by ChCC and what is contracted-out
- Human resource development
- Funding
- Equipment and staffing for better Operation and Maintenance

This issue will be further discussed in line with ICGIAP preparation. (Refer to 8.2.1 of Chapter 8 of this Volume 2)

5.3 Evaluation of IDPCC Subprojects

5.3.1 Evaluation of Subprojects

Evaluation of Subprojects is important to examine efficiency, effectiveness, and sustainability. Lessons learned from evaluation shall be applied to the on-going and forthcoming Subprojects.

National government and donors often include an evaluation procedure in their programs. For example, the JICA loan program has an evaluation scheme based on qualitative and quantitative indicators. Table 5-1 shows an example of indicators used to evaluate Subproject two years after completion.

Table 5-1: Suggested Indicators for Subproject Evaluation

	Sub-sector	Qualitative Indicator	Quantitative Indicator	
			Operational Indicator	**Effectiveness Indicator**
1	Road	Paved road becomes more comfortable for pedestrian.	Traffic volume increases (Vehicles/day) , before/ after	Moving hour of Vehicles decreases (Hours/ Year) , before /after Trip cost (fuel) decreases (BDT/ year), after
2	Bridge	People of both sides of the river are more communal.	Traffic volume increases (Vehicles/day) , before/ after	Moving hour of Vehicles decreases (Hours/ Year) , before /after Trip cost (fuel) decreases (BDT/ year), after
3	Drainage	Less flooding secure comfortable commuting	Number of places of bigger drains that overflow decreases (Place/ year), Before/ after	The biggest flooding area of the year decreases (km^2), before /after
4	Solid Waste Management.	Fewer people litter on roads and vacant lands	Volume of waste disposal increases (Ton/day)	Waste collection household ratio increases (% of households), before /after
5	Water Supply	Water fetching works decrease	Volume of supplied water increases (Ton/day), Before/ after Increasing number of water contracts (Numbers of Contract), Before/ after	Water supply coverage increases (% of households), before/ after
6	Public Building	People's relation within the Community becomes more intimate	Number of visitors increases (Person/year), Before/ after	Facility Placement Ratio increases. (% of wards), before/ after For example, 50% of wards have community center.
7	Street light	Going out at night becomes safer	Number of working street lights increases (Person/year), Before/ after	Street lights equipped ratio among municipal roads that are more than 20 feet in width. (% of municipal road), before/ after %
8	Park, Stadium, etc.	Citizen' leisure and amusement time is of higher quality	Number of visitors increases (Person/year), Before/ after	Number or floor of public facilities per person increased. (Number of Facility/100,000 person), before/ after (m^2 of park area /person), before/ after

5.3.2 Evaluation of IDPCC

IDPCC itself should be evaluated and revised every three years so that it can facilitate better progress of infrastructure development of ChCC. Sufficiency of the IDPCC should be measured by following three aspects:

1) Relevance

Relevance is to evaluate whether IDPCC and its contents are all relevant to the vision and the overall development goal of the ChCC and are consistent with other plans. After three years a new master plan will be available, consistency between IDPCC and the coming master plan should be carefully examined. IDPCC should play a role of "action plan" for the prospective master plan.

2) Effectiveness

In three years, some of the project would have been implemented. Then, whether these implementations contribute to the achievement of vision and development goals should be evaluated. If the effectiveness is not enough, IDPCC should be reorganized so that each Subproject contributes to the vision and goals. Every statement of IDPCC, from vision to each Subproject, could be revised if necessary.

3) Sustainability

Sustainability is to evaluate whether the operation and maintenance of the built infrastructure and public services can be maintained by ChCC itself or not.

- Water supply and market places are the examples of paid public services. Tariff should be properly charged and collected. Otherwise, this kind of public services cannot be sustainable.
- ChCC cannot get any direct fee for the services of road, drain, solid waste management, etc. However, ChCC is still responsible for the operation and maintenance of these infrastructures. The more the construction, the more the cost of maintenance. ChCC should make mid to long term financial plans for operation and maintenance.

- For the time being, initial cost of major infrastructure development would be covered by outside funds such as National Government, JICA, ADB, WB, etc. However, this condition cannot be expected for many years. ChCC should make steady efforts to increase the ratio of cost covered by ChCC itself.

5.4 Operation and Maintenance Arrangement

Please refer to Part 2 of this Volume 6.

Chapter 6 Financial Planning of CC

6.1 Overview

A good infrastructure development plan without budget support does not work. IDPCC should be connected budgeting and funding efforts of ChCC.

The first and most important effort ChCC should make is to increase its own revenue. ChCC mayor and executive officers are well aware of this and are carrying out sincere practices to increase holding tax.

Second possibility is getting funds from National Government and donors. Each program has its own concept, approach and specific funding targets. ChCC may appeal its demand of further infrastructure to every possible funding organization with IDPCC as authorized subproject list.

Thirdly, not only Subproject implementation but also planning, operation and maintenance need funding. ChCC shall allocate appropriate budget for these tasks. ChCC budget for 2013–14 includes cost of the New Master Plan. This is a symbolic first step for ChCC to take responsibility of infrastructure development. On the other hand, ChCC would develop huge infrastructure in the next decade, so, investment in and mobilization of human resource for operation and maintenance will become increasingly important. Therefore, the fund for this should be secured from ChCC's own revenue.

6.2 Financial Planning of the City Corporation

In this section, the current financial status of the NCC is examined, then financial planning for the ChCC is examined.

6.2.1 Financial Analysis of Chittagong CC

(1) ChCC Revenues and Expenditures

Table 6-1 shows the revenues and expenditures for ChCC over the past three years.

Table 6-1: ChCC Revenue and Expenditure over the Past Three Years

Unit: BDT

Revenue:						
Particulars	Year					
	2012-13		2011-2012		2010-2011	
Revenue A/C (CC's own source)						
Holding tax	1,629,616,244	② 61%	742,612,802	② 41%	587,415,949	② 37%
Others taxes	542,881,042		585,576,090		575,842,238	
Fees, charges and others	517,449,215		495,528,752		427,686,314	
Sub-total	2,689,946,501	① 78%	1,823,717,644	① 61%	1,590,944,501	① 55%
Development A/C						
CC own fund (surplus)	194,700,544		292,046,621		288,768,952	
Govt. grant (ADP)	570,320,681		889,054,604		1,031,624,000	
Sub-total	765,021,225		1,181,101,225		1,320,392,952	
Total Revenue	**3,454,967,726**		**3,004,818,869**		**2,911,337,453**	
Expenditure :						
Particulars	Year					
	2012-13		2011-2012		2010-2011	
Revenue A/C (Recurrent expenditure)	1,940,345,000		1,584,965,000		1,342,945,000	
Development A/C (Development expenditure)	989,252,000	③ 34%	1,094,500,000	③ 41%	1,123,700,000	③ 46%
Total Expenditure	**2,929,597,000**		**2,679,465,000**		**2,466,645,000**	

Source: ChCC

In order to assess ChCC's public finance situation, the following ratios are analyzed.

① Ratio of CC's ***own source*** to Total Revenues (budget) of CC
② Ratio of ***holding tax*** to CC's own source (revenue account)
③ Ratio of ***development expenditure*** to Total Expenditure of CC

① Ratio of CC's ***own source*** to Total Revenues (budget) of CC

Ratio of CC's own sources to ChCC's total budget has increased gradually from 55% in 2010–11 to 78% in 2012–13.

② Ratio of ***holding tax*** to CC's own source (revenue account)

The share of holding tax to ChCC's own sources gradually increased over the last three years, accounting for 61% in 2012–13.The total amount of holding tax in 2012–13 nearly double from 2011–12.

③ Ratio of ***development expenditure*** to Total Expenditure of CC

Development expenditure was not a primary part of total expenditures over the last three years.

6.2.2 Tax

(1) Holding Tax in ChCC

1) Tax Rate

According to tax regulations, tax rates in the territory of ChCC are determined by the ChCC itself. ChCC has its own holding tax rate as shown in Table 6-2 and imposes a maximum tax up to the ceiling. ChCC does not impost tax on water as water supply services are provided by WASA, not ChCC.

Table 6-2: ChCC Holding Tax Rate

Items	Rate in ChCC	Maximum Ceiling Rate
Tax on building and land	7%	7%
Conservancy rate	7%	7%
Lighting rate	3%	3%
Water rate	0%	10%

Source: ChCC

2) Number of Holdings

The number of holdings registered in ChCC is 147,591 in 2012–13.

Table 6-3: Number of Holdings in ChCC

	2010–11	2011–12	2012–13
Number of Holdings	124,502	141,866	147,591
Final Annual Valuation	9,846,651,596	10,531,357,993	8,511,316,331

Source: ChCC

3) Efficiency of Tax Collection

The table below shows tax collection efficiency in ChCC over the last four years. Collection efficiency for 2012–13 increased over the past four years (from 2009–11 to 2011–12), although it still was only 46.3%.

Table 6-4: ChCC Tax Collection Efficiency in ChCC

Year	Demand (BDT)	Collection (BDT)	Collection Efficiency (%)
2012–13	3,521,098,564	1,630,299,593	46.30
2011–12	5,043,462,021	742,612,802	14.72
2010–11	4,389,223,624	589,111,150	13.42
2009–10	3,993,274,738	499,255,476	12.50

Source: ChCC

According to tax regulations, the valuation of holdings can be made based on two methods: (i) rental fee basis; or (ii) construction cost basis. ChCC calculated the valuation based on the rental fee basis.

Table 6-5: Method of Asset Valuation in ChCC

	Basis of Tax Assessment	
Category	Construction Cost Basis	Rental Fee Basis
Household		✔
Commercial Facilities		✔
Government Facilities		✔
Rental House/Building		✔

Source: ChCC

4) Issues of Tax Assessment and Collection

Capacity of Revenue Section

Currently, the tax assessment section in ChCC has 30 tax assessors and 128 tax collectors under a chief revenue officer. A computerized tax database system is currently under development. A manual for assessors has been established for staff to carry out tax assessments properly.

Collection Efficiency of Holding Tax

Collection efficiency is only 46.3% in 2012–13. This is extremely lower compared to that in the four other CCs. If collection efficiency rates increase to 80%, revenues from holding tax will dramatically increase and contribute to the financial stability of ChCC.

(2) Other Taxes in ChCC

According to tax regulations, the CC can impose taxes on several sources besides holdings including on: (i) the transfer of immovable property; (ii) professions and businesses; (iii) cinemas and entertainment; (iv) vehicles other than motor vehicles or boats; (v) tolls; and (vi) advertisements.

Table 6-6 presents tax items and revenues in ChCC for 2011–12. While the holding tax is the most important tax revenue in ChCC, revenues from other taxes are also considerable. ***Remarkably, tax on the transfer of immovable property is a major tax revenue component***, since property values have increased and purchase/sale prices have boomed in the past several years due to establishment of new CCs.

To date, tax on almost all sources which the CoCC can be levied according to the tax regulation already imposed.

Table 6-6: ChCC Tax Revenues for 2011–12

Unit: BDT

Income Sector	2011–12
1. Holding Tax (Tax on Buildings and Land)	402,500,000
2. Holding Tax (Rate)	
a. Conservancy	332,500,000
b. Lightning	222,500,000
c. Walter	
Total holding tax	957,500,000
3. Other taxes	
Tax on Transfer of Immovable Property	575,000,000
Health Registration and Birth-Death	1,500,000
Profession Business and Calling	95,000,000
Advertisement	22,500,000
Vehicle	5,250,000
Cinema	250,000
Non-motorized transport	250,000
Rickshaw (non motorized)	500,000
Others	2,000,000
Total other tax	702,250,000
Grand Total	1,659,750,000

Source: ChCC

6.2.3 Fees and Charges

(1) Charges for Water Supply in ChCC

Currently water supply in the ChCC is provided by WASA. Users are charged based on a measured rate system in ChCC like other territories covered by WASA. A meter is equipped at each holding. Tariffs are shown in the table below.

Table 6-7: Water Tariff of WASA

Category	Tariff
Residential	29.86 BDT/1,000 liter
Commercial/Industrial	83.69 BDT/1,000 liter

Source: ChCC

(2) Charges for Waste Management

1) Revenues from Conservancy Rate (Holding Tax) and O&M Expenditure

Table 6-8 shows revenues and O&M expenditures for waste management over the past three years. As shown, balances are negative for all prior years. Revenues come from the 7% conservancy rate, which is a part of the holding tax. Revenues, however, have been unable to cover yearly expenditures.

Table 6-8: ChCC Waste Management Revenues and Expenditures

Unit: BDT

	2009–10	2010–11	2011–12
Conservancy Rate	205,073,281	242,575,180	306,212,787
O&M Costs	266,095,472	283,556,831	324,320,820
Balance	−61,022,191	−40,981,651	−18,108,033

Source: ChCC

2) Relevant Department

The Conservancy Department plays a role in waste management. The composition of the department is as follows:

Table 6-9: Relevant Departments for Waste Management

	Section	# of Employees
Central Office	Conservancy Office & Supervisor, others	53
Zonal Office	Cleaning	794

Source: ChCC

3) Issues on Waste Management

The balance of revenues from conservancy rate and the expenditure for O&M was net negative for the past year. In the future, this deficit may become more serious, ultimately undermining financial sustainability of the ChCC.

(3) Other Fees and Charges in ChCC (Rents and Profits from Property)

1) Current Situation with Rents/Lease

Table 6-10 provides information on revenue from fees/charges and revenues in ChCC over the past three years. ChCC has attempted to diversify its revenue sources. For instance, lease revenues (i.e., Haat-bazaar, and ferry port) have contributed to the finances of the CC.

Table 6-10: ChCC Fee Revenues over the Past Three Years

Unit: BDT

	2012-2013	2011-2012	2011-2012
Fees			
Roads digging fee	70,000,000	65,000,000	55,000,000
Summon fee	100,000	50,000	100,000
Students fee	75,000,000	67,500,000	65,000,000
Enlishment of construction farm and renue fee	8,000,000	7,500,000	8,000,000
Maternity and Charity hospital	35,000,000	25,000,000	40,000,000
Asset transfer fee	6,000,000	4,000,000	6,000,000
Application fee	5,000,000	4,000,000	5,000,000
Court fee	50,000	25,000	50,000
Transcript fee	75,000	50,000	50,000
Others	2,500,000	1,500,000	2,000,000
Sub total	201,725,000	174,625,000	181,200,000
Earning rent and income from Asset			
Rent	25,000,000	18,000,000	20,000,000
Haat-bazar/Ferryport lease	185,000,000	165,000,000	185,000,000
Nursery lease and flower selling	600,000	500,000	600,000
Park	6,000,000	4,000,000	5,000,000
Equipment rent	17,500,000	15,000,000	15,000,000
Vehicles rent	1,750,000	1,500,000	1,500,000
Public tiolet	18,000,000	15,000,000	17,500,000
Passenger shed/counter/slaughter house/Car parking	1,500,000	1,000,000	2,000,000
Development charge			
a) Market	50,000,000	35,000,000	40,000,000
b) Flat	100,000,000	120,000,000	50,000,000
c) Plot-	30,000,000	15,000,000	44,000,000
Slab installation	7,500,000	6,000,000	6,000,000
Others	5,000,000	4,000,000	5,000,000
Sub total	447,850,000	400,000,000	391,600,000
Misc. income:			
Septic Tank cleaning/Damping	2,000,000	1,000,000	2,000,000
Goods and Vehicles auction	10,000,000	3,000,000	15,000,000
Income from C.N.G	75,000,000	70,000,000	50,000,000
Tender and misc. from selling	25,000,000	15,000,000	27,500,000
Mothers and child stamp selling	1,500,000	1,000,000	1,250,000
E.P.I	1,000,000	500,000	1,000,000
Vaccination and Tablet for Dog bite and killing	1,000,000	500,000	400,000
Others	5,000,000	2,000,000	15,000,000
Sub total	120,500,000	93,000,000	112,150,000
Grand Total	770,075,000	667,625,000	684,950,000

Source: ChCC

2) Issues in Rent/Lease

Major CC businesses, such as leasing the bus station and market/bazaar, already occurs in CoCC, thus there are still opportunities to expand operating businesses for the CC (such as housing projects, apartment projects, and markets).

6.2.4 Financial Planning of City Corporation

(1) Principle

City corporations including ChCC should have financial autonomy. As a guiding principle, decentralization of government functions has to be accompanied by fiscal devolution as well as capacity building at the local government level to enable them to raise revenue on their own. The extent of autonomy depends on the ability of local bodies to independently raise revenues and allocate resources for expenditure.

ChCC, as service provider, has to bear a portion (possibly all) of the initial cost and, at the very least, all the O&M costs related to public services. City corporations, including ChCC, are responsible for establishing the socio-economic infrastructure and providing public services.

The relevant cost should be covered by CCs' own sources to ensure financial sustainability in not only the CCs, but also for the central government.

To achieve public service cost recovery in sectors such as water supply and waste management, it is important to introduce a "financially independent accounting system". Namely, O&M costs (and part of the initial costs) for water supply should be covered by water rates and tariffs, without other sources or subsidies. For waste management, revenues/ expenditures should be independent from other sources. Furthermore, the relevant cost (at least the O&M costs and part of the initial costs) should be covered by the conservancy rate alone.

Increasing revenues from its own sources is essential for the ChCC to achieve a self-sustainable financial system. ChCC should maximize revenues from its own sources through appropriate revenue management. In addition, the share of revenues from the central government and donors should decrease gradually.

(2) Own Sources

It is essential that ChCC increases income from its own sources. The CC's own sources of income are taxes, fees/charges levied by CC, rents/profits accruing from CC's properties, and revenues received through its services.

i) Holding Tax

The holding tax is the most important source of income of ChCC as decentralized bodies. To maximize earnings from the holding tax, the ChCC should:

- Reassess the number of holdings in the entire territory of ChCC
- Re-evaluate all holdings which are already registered

ii) Other Source of Tax

To maximize earnings from other tax sources, ChCC should:

- Re-identify new tax sources which ChCC can impose in its administrative area (i.e., clinics, lawyers, and other industries) thru the taxation and Tax Realization Standing Committee.

iii) Earnings from Business Operated by ChCC

CoCC should:

- Diversify business operated by ChCC in order to increase earnings in CoCC thru the taxation and Tax Realization Standing Committee.

(3) Finance from the Central Government and Donors

As shown in the sections above, in principle, the share of finance from the Central Government / and donors be gradually reduced. In the short- and mid-terms, finance from the Central Government and donors is necessary.

To meet the financial requirements of the ChCC infrastructure development plan in ChCC, the ChCC might be required to continue discussions with other donors besides JICA.

In the case of donor projects, ChCC's own sources should be allocated to cover a certain part of the initial cost.

Chapter 7 Amendment of Rolling Plan

This chapter summarizes the amendment of the rolling plan: concept, authority, Subproject list, and renewal.

7.1 Concept of Rolling Plan

There are many development plans made by public sector. These plans usually have target year and within that time frame, Subprojects listed in the plan should be implemented.

On the other hand, a rolling plan has no specific target year and Subproject list is always revised and updated. This is a series of repeating seamless activities of "Plan", "Do", "See", and "Re-plan"

7.2 Institution and Authority of Revise

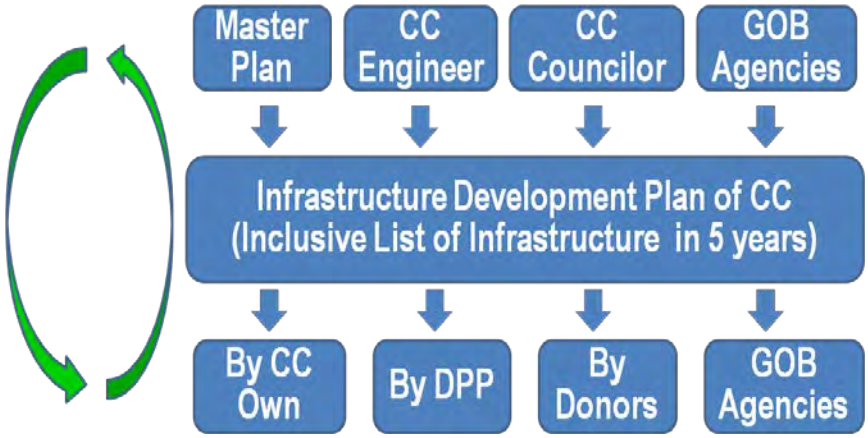
Overall responsibility belongs to the honorable Mayor. However, necessary arrangement and action will be taken based on the "Institutional Structure for IDPCC Management" as shown in Figure 1-3.

The infrastructure development of ChCC involved many other governmental agencies such as CDA, CPA, CWASA. Therefore, sharing of the information and coordination among these concerned parties are essential for effective planning.

7.3 Revising Subproject List of IDPCC

The idea of Subprojects are coming from various sources and stakeholders such as master plan, CC engineers, CC councilors, National Government Agencies etc. These Subproject ideas are examined by PIUCC, Stakeholders Meeting, and CC executives and listed in the IDPCC.

Then some projects are funded by various agencies and implemented. Once funding is secured, the Subproject is not "plan" any more, it is now reality. Therefore such Subproject shall be removed from the list and new project will be considered.

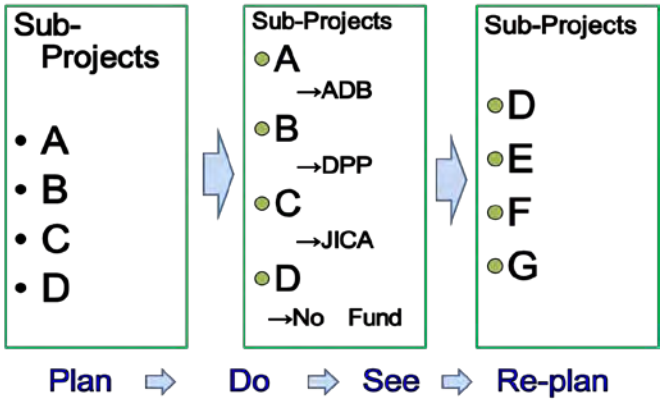


Source: ICGP Team

Figure 7-1: Subproject Ideas and Funding

Suppose there are four Subprojects in the IDPCC. Then three of them (A,B and C) have been funded by ADB, DPP (National Government Fund) and JICA. Subprojects A, B and C will be

replaced by D,E and F, while Subproject D remains because it could not get funding from any resources. Small replacement or re-planning shall be conducted every year. Thus the IDPCC is changing every year and always new. This is why this plan is called "rolling Plan".



Source: ICGP Team

Figure 7-2: Replacement of Subprojects in Inclusive List

7.4 Renewal of IDPCC in Three Years

7.4.1 Reason and Concept of Renewal

Major change or amendment of the entire IDPCC shall be carried out every three year. Because all the major items mentioned in the IDPCC will have been changed and out of date in three years. These items may include, current situation, vision, strategies, short and medium term goal of infrastructure development.

IDPCC, even after the renewal, should keep the following logic and characteristic;

- Vision is consistent with other CC policies and reflect peoples' wish
- Short and medium term goal of infrastructure development is consistent with vision
- If Subprojects are achieved, the short term goal is automatically fulfilled without additional interventions.
- IDPCC should include all the project plan regardless expecting fund resource,
- IDPCC should be always new with recent information and list of Subproject of any fund recourse
- IDPCC should be simple and easy to understand so that every citizen, especially, CSCC members can grasp the whole picture and make fruitful disputation.

7.4.2 Institutional Procedure of IDPCC Renewal

After three years, PIUCC should review the entire IDPCC and draft amended version. This draft shall be discussed by Civil Society Coordination Committee meeting and finally endorsed by general meeting of ChCC. Institutional stricture of renewal is the same with first elaboration of IDPCC.

PART 2

JICA Loan Projects

Chapter 8 JICA Loan Projects

This chapter explains the selection process and results for the JICA Loan Project.

8.1 Selection of JICA Loan Projects

ChCC has selected subprojects to be funded JICA out of the inclusive list. Then ICGP Team selected prioritized JICA subprojects using the method detailed in Section 6.2 of Volume 1 General Edition. The selection results are summarized in this section. Table 8-1 shows the List of JICA Subprojects (JICA Project List) selected from the inclusive list. Costs are estimated by ChCC engineers and the engineering department; they exclude physical contingencies, price escalation, administration costs, and so on.

Table 8-1: JICA Project List from ChCC

No.	Sector	Subproject Name	Cost (Crore BDT)
1	Transport	Internal access road upgrading of Jajalabad Housing Society & South Khulshi Area	7.00
2	Transport	Rehabilitation and upgrading of access road along pucca drain from CTV up to Dhaka Trunk Road	22.36
3	Transport	Rehabilitation and upgrading of Jakir Hossain Road and Pedestrian Overpasses at Wairless	1.50
4	Transport	Rehabilitation and upgrading of Lalkhan Bazar Access Road	8.06
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Dhaka Trunk Road	17.00
6	Transport	Rehabilitation and upgrading of RCC culvert near GEC Circle	14.44
7	Transport	Construction of RCC culvert and road at Palton Road	1.20
8	Transport	Rehabilitation and upgrading of O R Nizam Road & Access Road	4.60
9	Transport	Construction of M.M Ali Road to Kazirdewri Access Road	5.00
10	Transport	Construction of Meah Khan Road and Deputy Access Road	35.00
11	Transport	Rehabilitation and upgrading of Bolour Deghi and Korbanigonj Road	10.00
12	Transport	Rehabilitation and upgrading of Sirajuddowlla Road, Abdus Sattar Road and Jamal Khan Main Road	12.75
13	Transport	Rehabilitation and upgrading of Old Biman Office Road, Nur Ahemed Chy and Momin Road	10.00
14	Transport	Rehabilitation of the rear retaining wall at the ward office	2.00
15	Transport	Rehabilitation and upgrading of Jubilee Road and Access Road	17.00
16	Transport	Rehabilitation and upgrading of Reazuddin Bazar Road with a drain	3.00
17	Transport	Rehabilitation of Anderkilla Road and the surrounding access road	22.51
18	Transport	Rehabilitation and upgrading of Lal Dighee Road and the Access Road	9.00
19	Transport	Construction of Biozoid Bustami Road with drains and footpath	116.00
20	Transport	Rehabilitation and upgrading of access road to Biozoid Bustami Road	299.61

No.	Sector	Subproject Name	Cost (Crore BDT)
21	Transport	Rehabilitation and upgrading of CDA Avenue	31.50
22	Drain improvement	Construction of retaining walls along the Mirza Khal & Chasma	2.00
23	Transport	Widening of the BFIDC Road in industrial area	52.55
24	Transport	Internal traffic improvement rehabilitation in Chandgaon area	183.00
25	Transport	Rehabilitation and upgrading of access road connected to Hatajari Road	44.00
26	Transport	Rehabilitation and upgrading of Khaja Road connected to the bus terminal	85.30
27	Transport	Extension and rehabilitation of Airport Road	126.50
28	Transport	Rehabilitation and upgrading of internal access road to Airport Road	309.00
29	Transport	Rehabilitation and upgrading of internal road network in South Kattoli, North and South Halishaha	56.00
30	Drain improvement	Construction of retaining walls on both sides of Moheshkali Khal with a road and six bridges	56.25
31	Transport	Rehabilitation and upgrading of road in North Kattoli	29.50
32	Others	Land Reclamation from Bay of Bengal outside of the Embankment	5,000.00
33	Transport	Improvement of the Port Connecting Road	70.00
34	Transport	Improvement of Agrabad Access Road	10.00
35	Transport	Rehabilitation and upgrading of Halisahar Rd. and Access Rd to CDA 20 No. Rd near Moheshkali Khal	15.50
36	Transport	Rehabilitation and upgrading of Road of Biswa Colony, Zakir Hossain Diversion Road, Nasirabad Woman College Junction and Eagle Star Mill Road	34.00
37	Drain improvement	Construction of tidal regulator at Moheshkali Khal	20.00
38	Drain improvement	Construction of tidal regulator at Gulgar Khal	16.00
39	Drain improvement	Construction of retaining wall at Moheshkali Khal	38.50
40	Drain improvement	Rehabilitation and upgrading of internal drain in Coast area	5.30
41	Transport	Rehabilitation and construction of Port Peripheral Road from Barik Building to Saltgola Crossing	60.00
42	Transport	Construction of Connecting Rd from Access Rd to Asian Women's University (North-south Rd.)	700.00
43	Municipal Facilities	Construction of a parking lot at Agrabad C/A	10.00
44	Transport	BRT operation in Chittagong	210.00
45	Transport	Construction of a truck terminal adjacent to the toll road	120.00
46	Transport	Construction of a bus terminal adjacent to the toll road	200.00
47	Landscaping and beautification	Tourism development along the Potenga Coastal Belt as per Drainage Master Plan	150.00
48	Transport	Construction of Marinar's Road	34.00
49	Transport	Rehabilitation and upgrading of Sirajuddowlla, Chattashori, Badsha Meah Chowdhury, O. R. Nizam	36.00

No.	Sector	Subproject Name	Cost (Crore BDT)
50	Drain Improvement	Rehabilitation and upgrading of Chak Tai Khal Diversion	33.48
51	Transport	Construction of internal access road in the South Bakalia Area	12.50
52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	15.00
53	Transport	Construction of a station road and footpath	7.50
54	Drain Improvement	Construction of a drain in Kolabagica and Moriam Bebe Khal (Part)	11.00
55	Transport	Rehabilitation of Yakub Nagar, Bangsal, Poet Nazrul Islam, Bridge Ghat, Iqbql, Bandal, Asraf Ali, Asadgonj and New Chaktai Road	20.10
56	Municipal Facilities	Construction of school-cum cyclone shelter, central disaster management control office, library and community center-cum-cyclone shelter	230.50
57	Municipal Facilities	Construction of school / ward office / public hall	298.55
58	Municipal Facilities	Construction of low-income housing	165.80
59	Municipal Facilities	Park implementation (beautification)	11.00
60	Municipal Facilities	Construction of vehicle parking	20.00
61	Solid Waste Management	Incineration plant and equipment for solid waste management	0.00
62	Transport	Construction of Patantully Badamtali Overpass	120.00
63	Transport	Construction of EPZ Over pass	48.00
64	Transport	Construction of Oxyzen Moor Overpass	35.00
65	Transport	Construction of Sagarika A. K. Khan Overpass	70.00
66	Transport	Construction of Jakir Hossain Road Rail Crossing (1)	30.00
67	Transport	Construction of Jakir Hossain Road Rail Crossing (2)	30.00
68	Transport	Construction of New Market Overpass	42.00
69	Transport	Construction of Muradpur Rail Crossing	42.00
70	Transport	Construction of Sholoshahar 2 Overpass	42.00
71	Transport	Construction of Kptai Road Overpass	42.00
72	Transport	Construction of Boropul Overpass	42.00
73	Transport	Construction of Probotak Overpass	42.00
74	Transport	Construction of overpass from Dewan Hat to Potenga Sea Beach	120.00
75	Transport	Construction of overpass from Muradpul to G.E.C.	184.00
76	Transport	Construction of double mooring overpass	120.00
77	Transport	Road construction equipment such as asphalt plants, dozers, pay loaders, cranes and trucks etc.	90.00
78	Municipal Facilities	Garment village	300.00
79	Transport	Riverbank protection embankment-cum-road along Karnaphuli to Kalurghat Bridge	410.00
80	Municipal Facilities	Automation of ChCC activities	90.00

No.	Sector	Subproject Name	Cost (Crore BDT)
81	Transport/ Drain Improvement	Formulation of a City Master Plan (including Urban Planning, Transport Planning and Drainage Planning)	5.00
82	Municipal Facilities	Disaster Management Equipment for CCC	90.00
83	Municipal Facilities	Slum apartments for the rehabilitation of poor people in hilly areas	100.00
84	Municipal Facilities	4th class employee apartments / rehabilitation program	60.00
85	Municipal Facilities	Urban beautification	50.0
86	Solid Waste Management	Solid waste management (3-R method)	100

Source: ChCC

8.2 Selection Results

Based on the method detailed in Section 6.2 of Volume 1 General Edition, the ICGP Team examined the JICA project list shown in Table 8-1.

8.2.1 Stage 1: Eligibility Check for JICA Project

(1) Reorganization of the Projects

Before examination of the projects, the ICGP Team reorganized the projects based on discussions with ChCC engineers. Results are as follows:

Consolidation of Subprojects No. 13 and No. 15

A road included in Subproject No. 13 will be built on the same road identified in Subproject No. 15, as these Subprojects need to be implemented simultaneously to optimize benefit. In the following evaluation, Subproject No. 13 is eliminated from the list and only Subproject No. 15 is evaluated as a consolidated Subproject. The cost of the consolidated Subproject is 27.0 Crore BDT.

Consolidation of Subprojects No. 30, No. 37 and No. 39

Road and bridges included in Subproject No. 30, the tidal regulator in Subproject No. 37 and a retaining wall in Subproject No. 39 will be built along the Moheshikali Khal. Thus, to maximize benefits, these Subprojects need to be evaluated as one Subproject. Thus, Subprojects No. 30 and No. 37 are eliminated from the list and only Subproject No. 39 is evaluated as a consolidated Subproject. The cost of the consolidated Subproject is 114.8 Crore BDT.

Consolidation of Subprojects No. 43 and No. 60

The parking lot included in Subproject No. 43 and the vehicle parking in Subproject No. 60 should be built simultaneously to reduce traffic congestion in the city. Thus, these Subprojects need to be evaluated as one Subproject. In the following evaluation, Subproject No. 43 is eliminated from the list and only Subproject No. 60 is evaluated as a consolidated Subproject. The cost of the consolidated Subproject is 30.0 Crore BDT.

Consolidation of Subprojects No. 83 and No. 84

The municipal facilities in Subprojects No. 83 and 84 need to be selected and evaluated as one Subproject to maximize benefits. In the following evaluation, Subproject No. 83 is eliminated from the list and only Subproject No. 84 is evaluated as a consolidated Subproject. The cost of the consolidated Subproject is 160.0 Crore BDT.

Table 8-2: Reorganized Subproject Number and Cost

No.	New No.	Sector	Subproject Name	Cost (Crore BDT)
5	5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Dhaka Trunk Rd	17.0
13	15	Transport	Rehabilitation and upgrading of Old Biman Office Road, Nur Ahemed Chy & Momin Road	10.0
15			Rehabilitation and upgrading of Jubilee Road and Access Road	17.0
27	27	Transport	Extension and rehabilitation of Airport Road	126.5
30	39	Drain improvement	Construction of a retaining wall on both sides of Moheshkali Khal with a road and six bridges	56.3
37			Construction of tidal regulator at Moheshkali Khal	20.0
39			Construction of retaining wall at Moheshkali Khal	38.5
32	32	Others	Land reclamation from Bay of Bengal outside of the embankment	2500.0
33	33	Transport	Improvement of a port connecting road	70.0
34	34	Transport	Improvement of Agrabad Access Road	10.0
38	38	Transport	Construction of a tidal regulator at Gulgar khal	16.0
40	40	Drain improvement	Rehabilitation and upgrading of internal drain in Coast area	5.3
43	60	Municipal Facilities	Construction parking lot at Agrabad C/A	10.0
60			Construction of vehicle parking	20.0
44	44	Transport	BRT system in Chittagong	210.0
45	45	Transport	Construction of truck terminal adjacent to toll road	120.0
46	46	Transport	Construction of bus terminal adjacent to toll road	200.0
48	48	Transport	Construction of Marinar's Road	34.0
50	50	Drain improvement	Rehabilitation and upgrading of Chak Tai Khal Diversion	33.5
52	52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	15.0
53	53	Transport	Construction of Station Road and footpath	7.5
56	56	Municipal Facilities	Construction of school-cum-cyclone shelter, “central disaster management control office, library and community center-cum-cyclone shelter”	230.5
59	59	Municipal Facilities	Park implementation (beautification)	11.0
62	62	Transport	Construction of Patantully Badamtali Overpass	120.0
63	63	Transport	Construction of CEPZ Overpass	48
64	64	Transport	Construction of Oxyzen Moor Overpass	35.0
65	65	Transport	Construction of Sagarika A. K. Khan Overpass	70.0
66	66	Transport	Construction of Jakir Hossain Road Rail Crossing (1)	30.0
67	67	Transport	Construction of Jakir Hossain Road Rail Crossing (2)	30.0
68	68	Transport	Construction of New Market Overpass	42.0
71	71	Transport	Construction of Kptai Road Overpass	42.0
72	72	Transport	Construction of Boropul Overpass	42.0
73	73	Transport	Construction of Probotak Overpass	42.0

No.	New No.	Sector	Subproject Name	Cost (Crore BDT)
76	76	Transport	Construction of Double Mooring Overpass	120.0
77	77	Transport	Road construction equipment such as asphalt plants, dozers, pay loaders, cranes and trucks etc	90.0
79	79	Transport	Riverbank protection embankment-cum-road along Karnaphuli to Kalurghat Bridge	410.0
82	82	Municipal Facilities	Disaster management equipment for CCC	90.0
83	83	Municipal Facilities	Slum apartment for the rehabilitation of the poor in hilly areas of the city	100.0
84		Municipal Facilities	4th class employee apartments/rehabilitation program	60.0
85	85	Municipal Facilities	Urban beautification	50.0

Source: ICGP Team

8.2.2 Stage 2: Prioritization

(1) Evaluation by Criteria

Based on the criteria for the Stage 1 analysis, the ICGP Team evaluated the Subprojects passing the Stage 1 analysis. The criteria for ChCC in this stage are as follows.

Sector-Level Priority

Referring to ChCC discussions in PIUCC, the ICGP Team defined the following criteria for sector-level priority for ChCC.

- High: Transportation
- Middle: Drainage
- Low: Municipal facilities

Area-Level Priority

As a result of discussions with ChCC engineers, the ICGP Team set the following area-level priorities for ChCC. There are many different characteristics between each area, hence the categorization of area-level priority is not simply done by dividing along geographic boundaries.

The engineers explained that top priority should be on the area along the coast and Karnaphuli River, where traffic congestion from freight/passenger travel exists in highly populated and dense areas. Additionally, areas as categorized as "High" if they are within the potential development areas between the EPZ and Airport. The nature reserve areas and manufacturing areas where EPZs are located were categorized as "Middle" since nature reserves are as a long-term challenge and EPZs have lower priority than the aforementioned areas (also since the Karnaphuli EPZs have just been implemented). Other areas defined as "Low" priority are shown in Table 8-3 and in the map in Figure 8-1.

Based on the prioritization method defined in Section 4.2 (2) of Volume 1 General Edition, ICGP Team evaluated the Subprojects. Scores are shown in Table 8-4.

- High: Ward No. 4, 10, 11, 13, 17, 18, 25–38, 40 and 41
- Middle: Ward No. 1, 2 and 39
- Low: Ward No. 3, 5-9, 12, 14–16 19, and 20–24

Table 8-3: Categorization and Characteristics of Each Area

Category	Area name	Ward No.	Area Characteristics
High	Riverside Area (Bandar and Southern Kotowali)	27–36, 38	This is one of the most congested and mixed use areas. Development potential is high for freight and passenger transport in the near future.
	Western Area along the Coast (Halishahar)	10, 11, 25, 26, 37	Less developed area with various kinds of infrastructure compared to other areas. It is located along the way to Dhaka, connected by both trains and vehicles.
	Southern Area (Patenga)	40, 41	High development potential area located near the EPZs and airport
	Eastern Bakalia	17, 18	Less developed area along the Chaktai khal, located adjacent to a high density area.
Middle	EPZ Area (Southern Halishahar)	39	This area is already developed. Most of the area is controlled by BEPZA.
	Northern Area (Hathazari)	1, 2	Nature reserve area, which is considered a long-term development area.
Low	Panchlaish, Mohra	3, 5–7, 16	This is a low density area.
	Pahartali and Kulshi	8, 9, 12, 14, 15	This hilly area is a residential area, particularly for foreigners. This area is manned by security guards.
	Double Mooring and Kotowali	19, 20–24	The area has been developed since the city was established. Therefore, implementation needs are less urgent here than in other areas.

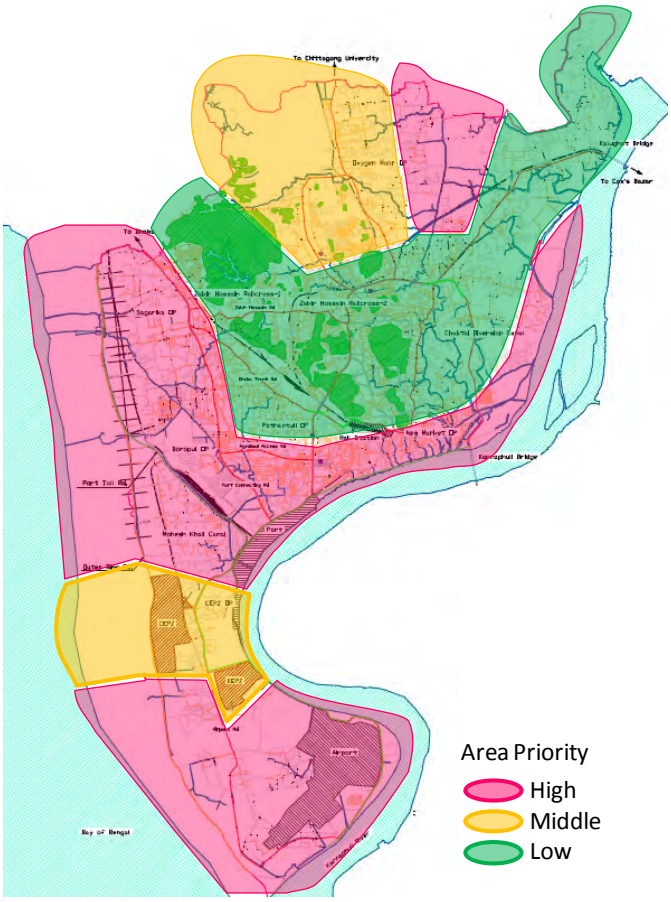


Figure 8-1: Categorized Area-Level Priority in Chittagong

Table 8-4: Priority Evaluation Results

No.	Sector	Subproject Name	EB 0-10	BHN 0-10	OY 0-10	SC 0-10	ECs 0-10	SEPI 0-10	SP 0-10	AP 0-10	CCFE 0-10	OS 0-10	EE 0-10	Total Score 0-110	Cost Crore BDT
27	Transport	Extension and Rehabilitation of Airport Road	10	5	10	10	10	10	10	10	10	5	10	100	126.5
48	Transport	Construction of Marinar's Road	10	5	10	10	10	10	10	10	5	10	10	100	34.0
33	Transport	Improvement of Port Connecting road	10	5	10	10	5	10	10	10	10	5	10	95	70.0
44	Transport	BRT system operation in Chittagong	10	5	10	10	10	10	10	10	10	0	10	95	210.0
50	Drain improvement	Rehabilitation and upgrading of Chak tai Khal Diversion	10	10	10	10	5	10	10	10	5	10	5	95	33.5
56	Municipal Facilities	Construction of school cum cyclone shelter, "central disaster management control office, library and community center cum cyclone shelter"	0	10	10	10	10	10	10	10	5	10	5	90	230.5
39	Drain improvement	Construction of Retaining wall at Moheshkali Khal	5	10	10	10	10	10	10	5	5	10	5	90	114.8
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Woman Collage to Dhaka Trunk Rd	10	5	10	10	5	10	10	10	5	5	10	90	17.0
34	Transport	Improvement of Agrabad Access Road	10	5	10	10	5	10	10	5	5	5	5	80	10.0
62	Transport	Construction of Patantully Badamtali Over pass	10	5	10	5	5	10	10	10	5	0	10	80	120.0
63	Transport	Construction of CEPZ Over pass	10	5	10	5	5	10	10	10	5	0	10	80	48.0
64	Transport	Construction of Oxyzen moor Over pass	10	5	10	5	5	10	10	10	5	0	10	80	35.0
65	Transport	Construction of Sagarika A. K. khan Over pass	10	5	10	5	5	10	10	10	5	0	10	80	70.0
66	Transport	Construction of Jakir Hossain Road Rail crossing (1)	10	5	10	5	5	10	10	10	5	0	10	80	30.0
67	Transport	Construction of Jakir Hossain Road Rail crossing (2)	10	5	10	5	5	10	10	10	5	0	10	80	30.0
68	Transport	Construction of New Market over pass	10	5	10	5	5	10	10	10	5	0	10	80	42.0
72	Transport	Construction of Boropul over pass	10	5	10	5	5	10	10	10	5	0	10	80	42.0
76	Transport	Construction of Double mooring over pass	10	5	10	5	5	10	10	10	5	0	10	80	120.0
52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	10	5	10	10	5	10	10	10	5	5	0	80	15.0
38	Transport	Construction of Tidal Regulator at Gulgar khal	5	10	10	5	5	10	10	10	5	0	5	75	16.0
53	Transport	Construction of Station Road & Footpath	5	5	10	10	5	10	10	10	5	0	0	70	7.5

No.	Sector	Subproject Name	EB 0-10	BHN 0-10	OY 0-10	SC 0-10	ECs 0-10	SEPI 0-10	SP 0-10	AP 0-10	CCFE 0-10	OS 0-10	EE 0-10	Total Score 0-110	Cost Crore BDT
73	Transport	Construction of Probotak over pass	0	5	10	5	5	10	10	10	5	0	10	70	42.0
40	Drain improvement	Rehabilitation and upgrading of internal drain in Coast area	0	5	10	10	5	10	10	5	5	5	5	70	5.3
32	Others	Land Reclamation from Bay of Bengal outside of Embankment	10	5	10	5	0	5	5	10	5	10	0	65	2500.0
15	Transport	Rehabilitation and upgrading of Jubilee Road & Access Road	10	5	10	10	5	5	10	0	0	5	5	65	17.0
71	Transport	Construction of Kptai Road over pass	5	5	10	5	5	10	10	0	5	0	10	65	42.0
45	Transport	Construction of Truck Terminal adjacent to Toll road	0	5	10	5	5	5	10	10	5	0	10	65	120.0
59	Municipal Facilities	Park implementation(Beautification)	10	0	10	10	10	10	5	0	0	0	0	55	11.0
60	Municipal Facilities	Construction of Vehicle Parking	0	0	10	10	10	10	5	0	5	5	0	55	30.0
46	Transport	Construction of Bus Terminal adjacent to Toll road	5	5	10	5	5	5	10	0	5	0	5	55	200.0
77	Transport	Road construction equipments such as asphalt plants, dozers, pay loaders, cranes and trucks etc	5	5	10	5	10	5	10	5	0	10	5	70	90.0
79	Transport	Riverbank Protection Embankment cum Road along Karnaphuli to Kalurghat bridge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	5	10	40.0
82	Municipal Facilities	Disaster Management Equipments for CCC	10	5	10	5	5	10	10	10	5	10	0	80	90.0
83	Municipal Facilities	Slum and 4th. Class Employees' Apartment	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	5	15	70.0
85	Municipal Facilities	Urban Beautification	10	5	10	10	5	10	10	10	5	10	0	85	50.0

ES: Estimated Beneficiary, BHN: Basic Human Needs, OY: Operational Year, SC: Social Considerations, EC: Environmental Considerations, SEPI: Social and Environmental Positive Impact, SP: Sector Priority, AP: Area Priority, CCFE: CC Functional Enhancement, OS: Operation Sustainability, EE: Economic Effect,
Source: ICGP Team

Table 8-5: Preliminary Review on Environmental and Social Consideration

			Environmental Consideration			Social Consideration					
No.	Sector	Subproject Name	Category in GOB	Required Document	Budgets & Capacity of EA	Land Acquisition	PAPs with No.	Required document by donor for involuntary resettlement	PAPs under Construction with No.	Description of Adverse Impacts	Budgets & Capacity of EA
			Green/ Orange A/ Orange B/ Red	NOC/ NOC, IEE& EMP/ NOC, EIA& EMP	Secured or not	Yes (area) or not	Yes (No.) or not	RAP/ ARAP/ RAP-PF/ IPP	Yes (No.) or not	(i.e., loss of jobs, loss of income) and measures	Secured or not
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Dhaka Trunk Rd	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
15	Transport	Rehabilitation and upgrading of Jubilee Road & Access Road	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
27	Transport	Extension and Rehabilitation of Airport Road	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
32	Others	Land Reclamation from Bay of Bengal outside of Embankment	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
33	Transport	Improvement of Port Connecting road	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
34	Transport	Improvement of Agrabad Access Road	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
38	Transport	Construction of Tidal Regulator at Gulgar khal	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
39	Drain improvement	Construction of Retaining wall at Moheshkali Khal	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
40	Drain improvement	Rehabilitation and upgrading of internal drain in Coast area	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
44	Transport	BRT System operation in Chittagong	Orange – A	NOC		No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
45	Transport	Construction of Truck Terminal adjacent to Toll road	Orange – B	IEE	No (*1)	Yes	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
46	Transport	Construction of Bus Terminal adjacent to Toll road	Orange – B	IEE	No (*1)	Yes	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
48	Transport	Construction of Marinar's Road	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
50	Drain improvement	Rehabilitation and upgrading of Chak tai Khal Diversion	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)

			Environmental Consideration			Social Consideration					
No.	Sector	Subproject Name	Category in GOB Green/ Orange A/ Orange B/ Red	Required Document NOC/ NOC, IEE& EMP/ NOC, EIA& EMP	Budgets & Capacity of EA Secured or not	Land Acquisition Yes (area) or not	PAPs with No. Yes (No.) or not	Required document by donor for involuntary resettlement RAP/ ARAP/ RAP-PF/ IPP	PAPs under Construction with No. Yes (No.) or not	Description of Adverse Impacts (i.e., loss of jobs, loss of income) and measures	Budgets & Capacity of EA Secured or not
52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
53	Transport	Construction of Station Road & Footpath	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
56	Municipal Facilities	Construction of school cum cyclone shelter, "central disaster management control office, library and community center cum cyclone shelter"	Orange – A	NOC		No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
59	Municipal Facilities	Park implementation (Beautification)	Orange – A	NOC		No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
60	Municipal Facilities	Construction of Vehicle Parking	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
62	Transport	Construction of Patantully Badamtali Over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
63	Transport	Construction of CEPZ Over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
64	Transport	Construction of Oxyzen moor Over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
65	Transport	Construction of Sagarika A. K. khan Over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
66	Transport	Construction of Jakir Hossain Road Rail crossing (1)	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
67	Transport	Construction of Jakir Hossain Road Rail crossing (2)	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
68	Transport	Construction of New Market over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
71	Transport	Construction of Kptai Road over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
72	Transport	Construction of Boropul over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)

No.	Sector	Subproject Name	Environmental Consideration			Social Consideration					
			Category in GOB	**Required Document**	**Budgets & Capacity of EA**	**Land Acquisition**	**PAPs with No.**	**Required document by donor for involuntary resettlement**	**PAPs under Construction with No.**	**Description of Adverse Impacts**	**Budgets & Capacity of EA**
			Green/ Orange A/ Orange B/ Red	NOC/ NOC, IEE& EMP/ NOC, EIA& EMP	Secured or not	Yes (area) or not	Yes (No.) or not	RAP/ ARAP/ RAP-PF/ IPP	Yes (No.) or not	(i.e., loss of jobs, loss of income) and measures	Secured or not
73	Transport	Construction of Probotak over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
76	Transport	Construction of Double mooring over pass	RED	EIA	No (*2)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
77	Transport	Road construction equipments such as asphalt plants, dozers, pay loaders, cranes and trucks etc	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
79	Transport	Riverbank Protection Embankment cum Road along Karnaphuli to Kalurghat bridge	Orange – B	IEE	No (*1)	No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
82	Municipal Facilities	Disaster Management Equipments for CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
83	Municipal Facilities	Slum and 4th. Class Employees' Apartment	Orange – A	NOC		No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)
85	Municipal Facilities	Urban Beautification	Orange – A	NOC		No	No Legal PAPs	Currently No (*3)	Currently No (*4)	Currently No (*5)	No budget (*6)

*1: Minimum 1 month for outsourcing, *2: Minimum 3 months for outsourcing, *3: Illegal PAPs and required documents can only be determined at the detail design phase, *4: PAPs can only be determined at the detail design phase, *5: can only be determined at the detail design phase, *6: CC staff can only supervise the contractor in case any documents were required
Source: ICGP Team

(2) Environmental and Social Consideration Appraisal of the Subprojects

Based on the Subproject list submitted by the ChCC in July 2013, ICGP experts conducted site visits at some sites with ChCC engineers. The purpose of the visits was to observe existing conditions in at the sites in terms of environmental and social considerations.

Prior to the visit, the ICGP experts provided an initial check form for environmental and social considerations (Table 7-3 of Volume 1, Chapter 7). The list was distributed and explained to all CCs and infrastructure WGs by the ICGP experts. In July, the ICGP experts nominated the Subproject. Table 8-5 summarizes the current environmental and social status.

For the environmental considerations, a few Subprojects are classified in the Red Category, requires an EIA (i.e., overpass construction). Most Subprojects are in the Orange-B Category, which require an IEE (i.e., road and bridge projects). The rest of the subprojects are in the Orange-A Category, which are considered to have minimal environmental impact and only requires an NOC (i.e., road and municipal facilities).

To accelerate implementation of Red Category Subprojects, the ICGP prepared a sample IEE, which progressed to an EIA for the Subproject for the Sagorika Alankar Crossing Overpass (Annex G-3, Volume 1 of this report).

In terms of social considerations, none of the Subprojects require land acquisition or involuntary resettlement according to ChCC experts.

Therefore, Table 8-5 does not mention any Project Affected Persons (PAPs). However, there are possibilities for PAPs, which may go unidentified in the detailed project design phases as those under JICA Guideline – these include illegal squatters and individuals impacted during construction (i.e., lose their jobs/income or suffer adverse social impacts). If adverse impacts are identified, the ChCC needs to take measures to minimize impacts. These measures include considering alternative plans and preparing required JICA documents for involuntary resettlement such as an Abbreviated Resettlement Action Plan (ARAP) and a Resettlement Action Plan (RAP).

The ICGP prepared the Draft Resettlement Action Plan Policy Framework (DRAP-PF), which will guide ChCC in preparing the ARAP and RAP in case these are needed after the ICGP. The DRAP-PF is presented in Annex G-5, Volume 1 of this report.

Although, the JICA Project requires the submission of the aforementioned documents to mitigate adverse impacts upon the project appraisal, compensation funds shall be borne by the Bangladesh side. It is advisable for ChCC to consult with LGED on the Subproject appraisal process as LGED is familiar with the execution of international donor funded projects in the past.

Considering social impacts, the overpass, bridge, and new construction of municipal facilities are Subproject that will be refined to avoid adverse impacts in surrounding areas at the detailed design phase.

(3) Selected Subprojects along Budget Ceiling

Table 8-6 presents the cumulative cost for subprojects by score. If the total budget for this JICA ODA project were allocated evenly to five CCs, the estimated budget ceiling of ChCC would be about 1,000 Crore BDT. Based on this simple assumption, the ICGP Team selected Subprojects scoring 75 or higher in the Stage 2 evaluation for further consideration.

Table 8-6: Priority and Cumulative Cost for Select Subprojects in Stage 2

Score Range	Cumulative Cost (Crore BDT)
90 and above	836.3
85 and above	886.3
80 and above	1,538.3
75 and above	1,554.3
70 and above	1,699.1
(Others)	2,920.0
Total	4,619.1

Source: ICGP Team

Table 8-7: Selected Subprojects in Stage 2

No	Sector	Subproject Name	Cost (Crore BDT)
27	Transport	Extension and rehabilitation of Airport Road	126.5
48	Transport	Construction of Marinar's Road	34.0
33	Transport	Improvement of port connecting road	70.0
44	Transport	BRT system operation in Chittagong	210.0
50	Drain improvement	Rehabilitation and upgrading of Chak Tai Khal Diversion	33.5
56	Municipal Facilities	Construction of school-cum-cyclone shelter, "central disaster management control office, library and community center-cum-cyclone shelter"	230.5
39	Drain Improvement	Construction of a retaining wall at Moheshkali Khal	114.8
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Woman Collage to Dhaka Trunk Rd	17.0
82	Municipal Facilities	Disaster Management Equipments for CCC	90.0
85	Municipal Facilities	Urban beautification	50.0
34	Transport	Improvement of Agrabad Access Road	10.0
62	Transport	Construction of Patantully Badamtali Overpass	120.0
63	Transport	Construction of CEPZ Overpass	48.0
64	Transport	Construction of Oxyzen Moor Overpass	35.0
65	Transport	Construction of Sagarika A. K. Khan Overpass	70.0
66	Transport	Construction of Jakir Hossain Road Rail Crossing (1)	30.0
67	Transport	Construction of Jakir Hossain Road Rail Crossing (2)	30.0
68	Transport	Construction of New Market Overpass	42.0
72	Transport	Construction of Boropul Overpass	42.0
76	Transport	Construction of Double Mooring Overpass	120.0
52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	15.0
38	Transport	Construction of tidal regulator at Gulgar Khal	16.0
27	Transport	Extension and rehabilitation of Airport Road	126.5
48	Transport	Construction of Marinar's Road	34.0
Total			1,554.3

Source: ICGP Team

8.2.3 Stage 3: Assessment of Readiness

(1) Summary of Selected Subprojects at Stage 2

Selected Subprojects in Stage 3 are examined from a readiness perspective. Descriptions of the projects are as follows below.

(2) Evaluation at Stage 3

The readiness analysis for Subprojects noted above is summarized in the following table.

Table 8-8: Readiness Assessment Results

No.	Sector	Subproject Name	Maturity						Emergency		
			Total Score	Cost	Land Acquisition	Necessity of Studies	Social and Environmental procedure	O&M Structure	Quick impact	Quick recovery	Influence to other Subproject
			0-110	Crore BDT	Yes (✔)	Yes (✔)	Yes (✔)	Yes (✔)	Yes (✔)	Yes (✔)	Yes (✔)
27	Transport	Extension and Rehabilitation of Airport Road	100	126.5			✔*8				✔
48	Transport	Construction of Marinar's Road	100	34.0			✔*8		✔		✔
33	Transport	Improvement of Port Connecting road	95	70.0			✔*8			✔	✔
44	Transport	BRT system operation in Chittagong	95	210.0		✔**2	✔*7	✔**4			
50	Drain improvement	Rehabilitation and upgrading of Chak tai Khal Diversion	95	33.5			✔*8			✔	
56	Munincipal Facilities	Construction of school cum cyclone shelter, "central disaster management control office, library and community center cum cyclone shelter"	90	230.5			✔*7		✔	✔	
39	Drain improvement	Construction of Retaining wall at Moheshkali Khal	90	114.8			✔*8		✔	✔	
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Woman Collage to Dhaka Trunk Rd	90	17.0			✔*8		✔		
82	Municipal Facilities	Disaster Management Equipments for CCC	85	90.0		✔**3	✔*8		✔	✔	
85	Municipal Facilities	Urban Beautification	80	50.0		✔**2	✔*8				
34	Transport	Improvement of Agrabad Access Road	80	10.0			✔*8			✔	✔
62	Transport	Construction of Patantully Badamtali Over pass	80	120.0		✔**1	✔*8		✔		✔
63	Transport	Construction of CEPZ Over pass	80	48.0		✔**1	✔*8		✔		✔
64	Transport	Construction of Oxyzen moor Over pass	80	35.0		✔(D/D)	✔*8		✔		✔
65	Transport	Construction of Sagarika A. K. khan Over pass	80	70.0		✔(D/D)	✔*8		✔		✔
66	Transport	Construction of Jakir Hossain Road Rail crossing (1)	80	30.0		✔(D/D)	✔*8		✔		✔
67	Transport	Construction of Jakir Hossain Road Rail crossing (2)	80	30.0		✔(D/D)	✔*8		✔		✔
68	Transport	Construction of New Market over pass	80	42.0		✔(D/D)	✔*8		✔		✔
72	Transport	Construction of Boropul over pass	80	42.0		✔(D/D)	✔*8		✔		✔
76	Transport	Construction of Double mooring over pass	80	120.0		✔**1	✔*8		✔		
52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	80	15.0			✔*8		✔		✔
38	Transport	Construction of Tidal Regulator at Gulgar khal	75	16.0		✔**3	✔*8	✔**4			

**1: Need coordination with CDA, **2: Need detailed surveys, **3: Need detailed observation of tidal record, **4: Need efficient OM plan, Source: ICGP Team

*7: Site Clearance within 30 working days, ECC within 30 working days from the date of application, *8: Site Clearance within 60 working days, ECC within 30 working days from the date of application

Based on the analysis, the ICGP Team removed Subprojects No. 38, 44, 62, 63, 76, 82 and 85 from the shortlist at this stage, as these are not ready for this JICA ODA program. All Subprojects include requisite studies or consultation with CDA, who is responsible for implementing an overpass network. Due to the proposed location of these overpasses, Subprojects No. 62, 63 and 76 are close to the planned location of the CDA facilities, there will be a need to discuss and define the demarcation of construction. Depending on the results of the discussion, there is still a possibility to reorganize the selected list of overpasses. The other removed projects require careful examination from planning, engineering, social and environmental perspectives. If basic studies will be conducted for the projects, it will be impossible to complete these Subprojects before 2019.

As a result, Table 8-9 shows the finalized selected Subprojects for ChCC.

Table 8-9: Selected Subprojects in Stage 3

No.	Sector	Subproject Name	Cost (Crore BDT)
27	Transport	Extension and rehabilitation of Airport Road	126.5
48	Transport	Construction of Marinar's Road	34.0
33	Transport	Improvement of port connecting road	70.0
50	Drain improvement	Rehabilitation and upgrading of Chak Tai Khal Diversion	33.5
56	Municipal Facilities	Construction of school-cum-cyclone shelter, "central disaster management control office, library and community center-cum-cyclone shelter"	230.5
39	Drain improvement	Construction of a retaining wall at Moheshkali Khal	114.8
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Woman Collage to Dhaka Trunk Rd	17.0
34	Transport	Improvement of Agrabad Access Road	10.0
64	Transport	Construction of Oxyzen Moor Overpass	35.0
65	Transport	Construction of Sagarika A. K. Khan Overpass	70.0
66	Transport	Construction of Jakir Hossain Road Rail Crossing (1)	30.0
67	Transport	Construction of Jakir Hossain Road Rail Crossing (2)	30.0
68	Transport	Construction of New Market Over pass	42.0
72	Transport	Construction of Boropul Over pass	42.0
52	Transport	Rehabilitation and upgrading of Majirghat, Sadarghat and Strand Road to Station Road	15.0
Total Cost			**900.28**

Note: Cost is estimation by the CC. Cost of Subproject No.2 includes the bridge section.
Source: ICGP Team

8.2.4 Estimation and Adjustment

After the Stage 3 evaluation, costs of the shortlisted Subprojects are re-evaluated after examining the basic design. Meanwhile, the total direct construction cost was adjusted within loan allocation after deducting indirect costs. For the selection of final candidates from the shortlist, the following aspects were carefully examined with information from the CC and field observations: (i) importance to the CC's development vision; (ii) strategic location and special connectivity; (iii) synergistic impact among the Subprojects; (iv) feasibility at the basic design level; and (v) the overall priority score. In this stage, specific work activities are subject to reconsideration – thus minor activities such as simple rehabilitation and branch sections in Subprojects may be omitted here as shown in Table 8-10.

Table 8-10: Selected Subprojects after Estimation

No.	Sector	Subproject Name	Cost (Crore BDT)
27	Transport	Extension and rehabilitation of Airport Road	60.7
48	Transport	Construction of Marinar's Road	28.8
33	Transport	Improvement of port connecting road	106.5
50	Drain improvement	Rehabilitation and upgrading of Chak Tai Khal Diversion	15.3
56	Municipal Facilities	Construction of school-cum-cyclone shelter, "central disaster management control office, library and community center-cum-cyclone shelter"	77.0
39	Drain improvement	Construction of a retaining wall at Moheshkali Khal	74.3
5	Transport	Rehabilitation and upgrading of Zakir Hossain Road GEC to Woman Collage to Dhaka Trunk Rd	22.4
34	Transport	Improvement of Agrabad Access Road	41.0
65	Transport	Construction of Sagarika A. K. Khan Over pass	95.3
66	Transport	Construction of Jakir Hossain Road Rail Crossing (1)	32.3
68	Transport	Construction of New Market Over pass	32.4
Total Cost			586.1

Note: Cost is estimation as of 20 October, 2013.
Source: ICGP Team

Table 8-11: Sector-wise Summary of Selected Subprojects

Sub-component	Item	Quantity
Transport	Road Improvement	22.6 km
Transport	Overpass construction	3 locations
Drain Improvement	Retaining wall construction	11.4 km
Municipal Facilities	Construction of school-cum- cyclone shelter including central disaster management control office	8

Source: ICGP Team

Figure 8-2 shows the CC's geography, existing infrastructure, priority areas, and location of final Subprojects in this stage. More detailed spatial examination with mapping will follow in the next step of this project.

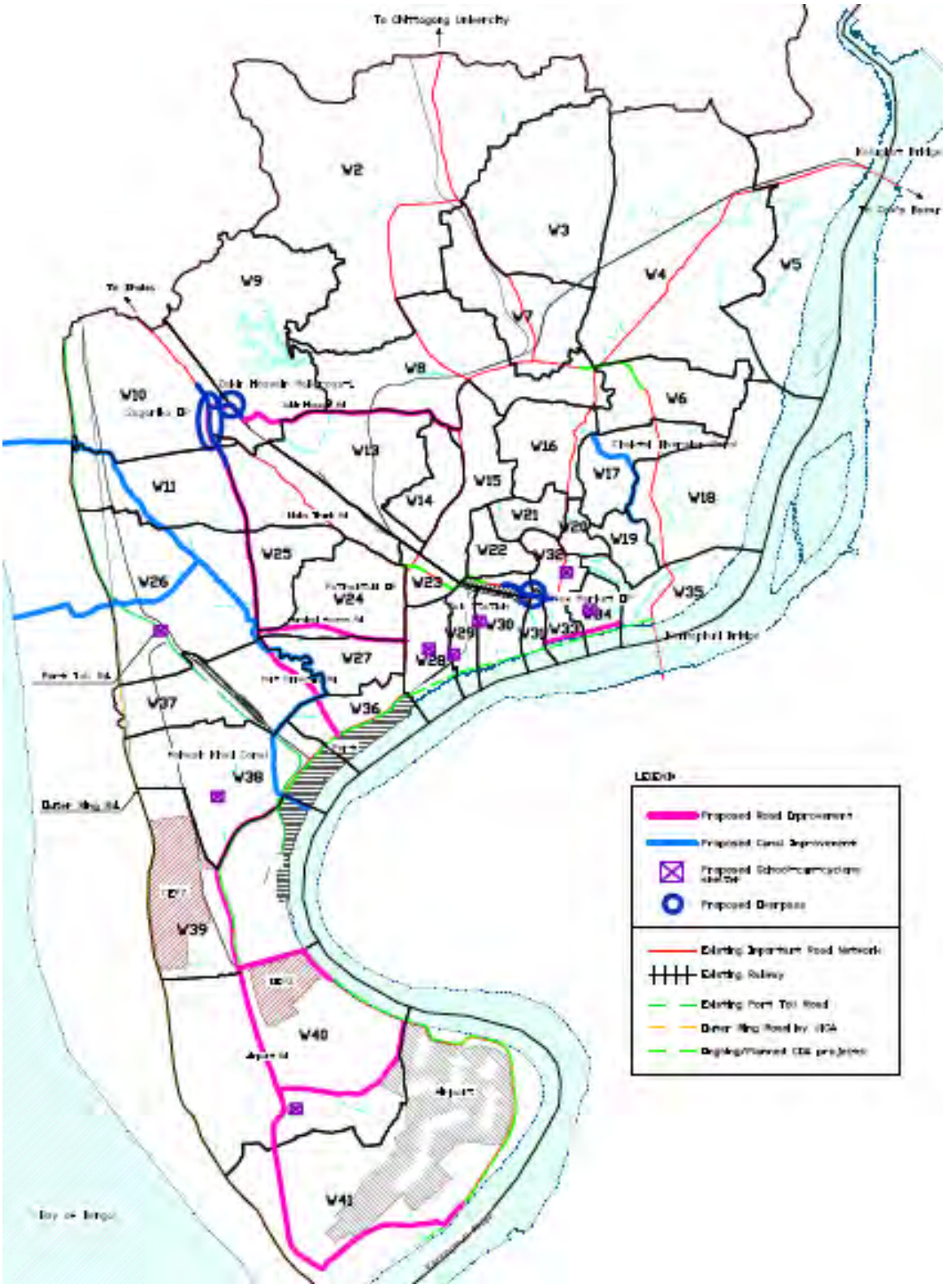


Figure 8-2: Location of Shortlisted Subprojects

Chapter 9 Baseline Survey and Economic Analysis

This chapter summarizes the results of the baseline survey and economic analysis for selected Subprojects of ICGP for ChCC.

9.1 Baseline Survey and Target for Performance Indicator

The sectors of the Subprojects of ICGP for ChCC are as follows.

- Road/Bridge
- Drain Improvement
- Overpass
- Cyclone Shelter

The results of baseline survey are summarized by sector.

(1) Road/Bridge

1) Contents

The selected road/bridge Subprojects are as follows.

Table 9-1: Selected ChCC Road/Bridge Subprojects

No.	Name of Subprojects
5	Rehabilitation and upgrading of Zakir Hossain Road GEC to Woman Collage to Dhaka Trunk Road
27	Extension and rehabilitation of Airport Road
33	Improvement of port connecting road
48	Construction of Marinar's Road
34	Improvement of Agrabad Access Road

Source: ICGP Team

Considering the location and users of the road/bridge, the ICGP Team categorized the Subprojects into three categories: (i) city roads; (ii) connector roads between city and local areas; and (iii) local road.

2) Traffic Count Survey

To evaluate the current traffic situation, a traffic count survey was conducted. As all Subprojects are classified as City Roads, only one traffic count survey was conducted as a baseline survey for the road/bridge projects. The survey was for one weekday (from 6:00AM to 10:00PM) at specific locations.

The results are as follows.

Category: City Road
Location: Jakir Hossain Rail Crossing – GEC Road
Date: 2013 Oct. 24

Count Result

Time	Motorized Vehicles (MT)								Non-Motorized Vehicles (NMT)		Total		
	1 Truck		2 Bus		3 Car		4 CNG / Auto Rickshaw		5 Bicycle / Rickshaw / Van / Push Cart / Animal Cart		Total MT	Total NMT	G. Total
	From	To	From	To	From	To	From	To	From	To			
06:00-07:00	73	58	103	68	70	72	106	99	63	56	649	119	768
07:00-08:00	97	38	182	94	181	250	539	408	420	125	1,789	545	2,334
08:00-09:00	46	29	127	85	267	480	662	816	480	349	2,512	829	3,341
09:00-10:00	79	31	118	66	268	428	530	751	408	585	2,271	993	3,264
10:00-11:00	76	45	127	67	282	268	564	724	347	447	2,153	794	2,947
11:00-12:00	58	47	121	56	238	285	539	562	380	310	1,906	690	2,596
12:00-13:00	64	69	83	66	255	280	490	798	425	392	2,105	817	2,922
13:00-14:00	100	63	90	55	365	369	603	949	301	472	2,594	773	3,367
14:00-15:00	91	99	41	81	246	302	808	715	395	338	2,383	733	3,116
15:00-16:00	103	67	63	50	368	178	615	861	424	397	2,305	821	3,126
16:00-17:00	114	65	78	57	349	265	638	787	410	319	2,353	729	3,082
17:00-18:00	73	64	70	40	323	187	545	747	417	337	2,049	754	2,803
18:00-19:00	83	83	49	41	199	175	558	914	387	412	2,102	799	2,901
19:00-20:00	113	86	60	52	184	167	528	901	340	428	2,091	768	2,859
20:00-21:00	176	100	102	57	163	122	538	720	348	315	1,978	663	2,641
21:00-22:00	173	137	82	73	119	140	470	660	207	238	1,854	445	2,299
Total one way	1,519	1,081	1,496	1,008	3,877	3,968	8,733	11,412	5,752	5,520	33,094	11,272	44,366
Total two way	2600		2504		7845		20145		11272				

3) Driving Time

To assess traffic congestion and existing conditions, the ICGP team conducted driving time surveys at three locations for each road category. Results were as follows:

- Time to drive 1.0 km (from point-to-point): **1.60 minutes**
- Survey location: **Near Jakir Hossain Rail Crossing**
- Date of survey: **24.10.2013**

4) Target for Quantitative Indicator

- Traffic volume will increase by 20% two years after initiation.
- Driving time will decrease by 10% two years after initiation.

(2) Drainage

1) Contents

The selected drainage Subprojects are as follows.

Table 9-2: Selected ChCC Drainage Subprojects

No.	Name of the Subprojects
39	Construction of a retaining wall at Moheshkali Khal
50	Rehabilitation and upgrading of Chak Tai Khal Diversion

Source: ICGP Team

2) Current Situation

Minimal importance was given in planning and implementing storm sewers for the existing drainage network in ChCC. In urbanized areas, tertiary, secondary and primary drains of various sizes exist, but they have no relationship with the catchments they serve. In the DAP now being developed, drainage hierarchy was mentioned, to be implemented in the city drainage network.

Drainage Hierarchy

All drains and khals are divided into five basic categories:

- Open channels like khals and rivers
- Primary drains
- Secondary drains
- Tertiary drains and
- Plot drains

Open Channel (Khals & Rivers)
Existing khals and rivers fall into this category. Khals and rivers are natural water bodies currently used as both storm and sanitary sewers. Cross sections of existing khals and rivers vary in size. New khals have fixed dimensions based on engineering calculations. The Chaktai Khal, Rajakhali Khal and Mirza Khal are a few of the major khals draining the city. These khals eventually find their way to the Karnaphuli River.

Primary Drains
These are constructed drains, often made of brick masonry and/or concrete. Primary drains are the main collector drains of the city and collect discharge from secondary drains. A primary drain discharges its load to a khal (such as Chaktai Khal) or a river (like the Karnaphuli River). Drains running parallel to a primary/district distributor road are defined as primary drains in the proposed DAP. Drains are sized, according to the relation with the adjacent road. The width of a primary drain will be 10–20 feet, depending on the width of the road running parallel. All primary/district distributors will have primary drains on both sides of the road.

Secondary Drains
A secondary drain flows into a primary drain. Drains running parallel to a local distributor road are defined as secondary drains. Secondary drains, in most cases, are made of masonry and/or concrete. Tertiary drains flow into secondary drains. A secondary drain is smaller in size compared to a primary drain, but larger than a tertiary drain. A secondary drain will have a width of 8 feet and will be built on both side of the local distributor road.

Tertiary Drains
Tertiary drains rank fourth in the drainage hierarchy. Tertiary drains are constructed drains and run parallel to access roads. Tertiary drains have a minimum width of 1.5–3.5 feet. Tertiary drains are made of masonry and/or concrete.

Plot Drains
Plot drains are meant to drain a developed/undeveloped plot. In a developed plot, these drains are generally made of brick masonry. Earthen/katcha (or temporary structured) drains are used in undeveloped plots. Plot drains drain the surface runoff from plots to the tertiary drains. Plot owners generally decide the size of these drains.

The restrictions on width mentioned above are applicable to developing areas where the city will expand in the future. In existing densely populated urban areas, since primary, secondary and tertiary drains already exist, width restrictions are not applicable. At these locations, the city will try to increase existing drain sizes to the required levels by offering incentives to plot owners. By utilizing land re-adjustment techniques, city authorities can implement schemes like road and drain widening. In any case, tertiary drains in the existing dense urban areas should be, at the very least, 1.5 feet in width.

Inside the CC area, the Bakalia Thana, Chawk Bazar, Agrabad, Halishahar Thana, Kapash Gola, Solak Bahar and Bahaddar hat areas are low-lying areas and remain flooded during the rainy season. The CC areas mentioned above are inundated for about 30 days during the rainy season (based on assumptions from drainage blockage). The rainy season lasts for three or more months each year.

3) Information as Baseline

- Days of disturbance by flooding: 30 days/year (based on feedback from more than 20 residents per flooded area)
- Number of residents in the flooding area: 479,025 (based on statistical data)

4) Target for Quantitative Indicator

- Days of disturbance by flooding will decrease by 20% two years after initiation.
- Number of residents in the flooding area will decrease 20% two years after initiation.

(3) Overpass

1) Contents

The selected overpass Subprojects are as follows.

Table 9-3: Selected ChCC Overpass Subprojects

No.	Name of the Subprojects
65	Construction of Sagarika A. K. Khan Overpass
66	Construction of Jakir Hossain Road Rail Crossing (1)
68	Construction of New Market Overpass

Source: ICGP Team

2) Traffic Count Survey

To assess the current traffic situation, a traffic count survey was conducted. Surveys were conducted at the closest location to the planned overpass. It is assumed that some portion of the traffic will shift to use the overpass. The survey was for one weekday (from 6:00AM to 10:00PM) at key locations. The results are as follows.

Overpass: Sagarika A. K. Khan Overpass
Date: 2013 Nov. 3
Count Result

Time	Motorized Vehicles (MT)								Non-Motorized Vehicles (NMT)		Total		
	1 Truck		2 Bus		3 Car		4 CNG / Auto Rickshaw		5 Bicycle / Rickshaw / Van / Push Cart / Animal Cart		Total MT	Total NMT	G. Total
	From	To	From	To	From	To	From	To	From	To			
06:00-07:00	198	51	79	146	72	56	228	128	181	84	958	265	1,223
07:00-08:00	213	87	121	142	125	127	211	266	255	223	1,292	478	1,770
08:00-09:00	208	76	136	131	192	155	374	320	310	367	1,592	677	2,269
09:00-10:00	224	112	136	96	181	173	263	384	328	423	1,569	751	2,320
10:00-11:00	178	116	93	95	184	171	264	423	310	467	1,524	777	2,301
11:00-12:00	198	112	100	93	134	162	269	421	255	433	1,489	688	2,177
12:00-13:00	229	172	137	81	204	195	267	492	325	392	1,777	717	2,494
13:00-14:00	287	147	249	94	277	167	344	357	382	421	1,922	803	2,725
14:00-15:00	243	173	243	86	259	177	313	469	281	347	1,963	628	2,591
15:00-16:00	271	157	101	87	130	137	324	540	301	368	1,747	669	2,416
16:00-17:00	317	149	135	84	184	96	294	365	295	364	1,624	659	2,283
17:00-18:00	320	150	123	78	263	129	306	386	318	432	1,755	750	2,505
18:00-19:00	223	143	102	84	124	150	262	480	305	317	1,568	622	2,190
19:00-20:00	282	134	160	75	170	109	298	449	347	416	1,677	763	2,440
20:00-21:00	284	188	153	92	158	120	248	422	246	406	1,665	652	2,317
21:00-22:00	212	177	105	60	105	77	238	316	205	264	1,290	469	1,759
Total one way	3,887	2,144	2,173	1,524	2,762	2,201	4,503	6,218	4,644	5,724			
Total two way	6031		3697		4963		10721		10368		25,412	10,368	35,780

Overpass: Jakir Hossain Road Rail Crossing
Date: 2013 Oct. 24
Count Result

Time	Motorized Vehicles (MT)								Non-Motorized Vehicles (NMT)		Total		
	1 Truck		2 Bus		3 Car		4 CNG / Auto Rickshaw		5 Bicycle / Rickshaw / Van / Push Cart / Animal Cart		Total MT	Total NMT	G. Total
	From	To	From	To	From	To	From	To	From	To			
06:00-07:00	66	61	96	64	57	52	57	39	40	27	492	67	559
07:00-08:00	50	40	99	104	172	276	221	258	105	65	1,220	170	1,390
08:00-09:00	27	20	121	58	171	135	315	385	167	106	1,232	273	1,505
09:00-10:00	57	39	129	71	115	129	480	528	150	166	1,548	316	1,864
10:00-11:00	43	38	96	47	122	117	563	385	265	124	1,411	389	1,800
11:00-12:00	68	35	134	57	145	127	405	553	245	139	1,524	384	1,908
12:00-13:00	61	41	97	48	105	100	384	566	83	112	1,402	195	1,597
13:00-14:00	66	66	123	89	182	131	481	584	124	78	1,722	202	1,924
14:00-15:00	55	46	77	80	97	161	429	467	68	89	1,412	157	1,569
15:00-16:00	76	48	105	64	140	107	515	531	110	138	1,586	248	1,834
16:00-17:00	76	38	92	56	136	82	537	502	130	119	1,519	249	1,768
17:00-18:00	99	61	146	71	178	110	464	460	106	134	1,589	240	1,829
18:00-19:00	85	57	103	48	151	95	398	505	119	122	1,442	241	1,683
19:00-20:00	134	56	106	45	133	59	290	496	94	114	1,319	208	1,527
20:00-21:00	101	106	77	44	77	92	210	411	85	113	1,118	198	1,316
21:00-22:00	126	64	74	53	104	74	171	403	62	96	1,069	158	1,227
Total one way	1,190	816	1,675	999	2,085	1,847	5,920	7,073	1,953	1,742			
Total two way	2006		2674		3932		12993		3695		21,605	3,695	25,300

Overpass: New Market Overpass
Date: 2013 Oct. 24
Count Result

Time	Motorized Vehicles (MT)								Non-Motorized Vehicles (NMT)		Total		
	1 Truck		2 Bus		3 Car		4 CNG / Auto Rickshaw		5 Bicycle / Rickshaw / Van / Push Cart / Animal Cart		Total MT	Total NMT	G. Total
	From	To	From	To	From	To	From	To	From	To			
06:00-07:00	9	8	134	89	93	60	256	209	404	420	858	824	1,682
07:00-08:00	24	7	123	89	133	127	312	316	510	661	1,131	1,171	2,302
08:00-09:00	26	9	129	121	95	86	322	379	495	723	1,167	1,218	2,385
09:00-10:00	10	11	87	130	30	129	200	694	350	1,135	1,291	1,485	2,776
10:00-11:00	1	9	129	106	95	168	380	881	490	1,150	1,769	1,640	3,409
11:00-12:00	13	8	124	102	141	185	440	800	600	951	1,813	1,551	3,364
12:00-13:00	10	19	128	96	124	192	552	855	865	990	1,976	1,855	3,831
13:00-14:00	17	31	97	106	147	199	504	676	765	897	1,777	1,662	3,439
14:00-15:00	25	44	93	88	157	169	409	507	377	485	1,492	862	2,354
15:00-16:00	30	50	89	97	131	156	421	516	690	618	1,490	1,308	2,798
16:00-17:00	27	30	93	93	99	135	406	694	667	635	1,577	1,302	2,879
17:00-18:00	23	39	103	120	95	135	341	566	612	710	1,422	1,322	2,744
18:00-19:00	34	30	90	93	106	134	376	598	790	858	1,461	1,648	3,109
19:00-20:00	40	30	100	109	109	123	406	443	670	888	1,360	1,558	2,918
20:00-21:00	42	28	78	157	91	168	391	340	685	485	1,295	1,170	2,465
21:00-22:00	77	23	63	142	75	141	270	362	518	475	1,153	993	2,146
Total one way	408	376	1,660	1,738	1,721	2,307	5,986	8,836	9,488	12,081	23,032	21,569	44,601
Total two way	784		3398		4028		14822		21569				

(4) School-cum-Cyclone Shelter

1) Contents

The selected Subprojects for the school-cum-cyclone shelter are as follows.

Table 9-4: Selected ChCC School-cum-Cyclone Shelter Subproject

No.	Name of the Subprojects
56	Construction of School-cum-Cyclone Shelter, "central disaster management control office, library and community center-cum-cyclone shelter"

Source: ICGP Team

2) Current Situation

Through cyclones and their associated storms, surges have wreaked havoc on Bangladesh and other South Asian nations for thousands of years. The accumulated impact of these cyclones has transformed the coastal plains into flat, low-lying death-traps for humans and animals. An on-going program of cyclone shelter construction has given hope to the region, while saving lives with every storm. The idea of cyclone shelters is not new. Historically, resources and political institutions were required to build sufficient cyclone shelters to serve all people and livestock – however there were never enough. For this project, cyclone shelters are proposed as school-cum-cyclone shelters only in ChCC area.

3) Information as Baseline

Expected beneficiaries in the area

The area benefitting has been tentatively identified (within a 1.0–1.5 km radius). Some 18,384 people can be accommodated in these shelters. The number of people that can be accommodated by the shelters is summarized in table below.

Table 9-5: Person Capacity of the Cyclone Shelter

SI No.	Location	Area (m^2)	Capacity of Shelter (People)
1	East Bakolia Boy's High School-cum-Cyclone Shelter	2,500	897
2	East Bakolia Girl's High School-cum-Cyclone Shelter	2,500	897
3	Chor Chaktai School and College-cum-Cyclone Shelter	2,000	717
4	Dev. of Lamabazar, Boy's School-cum-Cyclone Shelter	1,700	610
5	Dev. of Lamabazar, Girl's School-cum-Cyclone Shelter	1,700	610
6	Railway Hospital Colony High School-cum-Cyclone Shelter	2,500	897
7	Aparnacharan Girl's High School-cum-Cyclone Shelter	2,500	897
8	Krishna Kumari Girl's High School-cum-Cyclone Shelter	2,500	897
9	Kadam Mubarak School Building-cum-Cyclone Shelter	3,020	1,083
10	Menoka School Building-cum-Cyclone Shelter	2,007	720
11	Bandul Shebak Colony Building-cum-Cyclone Shelter	6,100	2,188
12	Construction of Six Story Building at Patanga Girl High School & College-cum-Cyclone Shelter	3,211	1,152
13	South Patenga School-cum-Cyclone Shelter	1,673	600
14	Jarina Mofzal College-cum-Cyclone Shelter	1,673	600
15	Mohabbat Ali Girl's High School-cum-Cyclone Shelter	1,673	600
16	Construction of Ahmed Mia City Corp. Girl's School-cum-Cyclone Shelter	2,500	897
17	Laldighi Central Disaster Management Control Office, Library and Community Center-cum-Cyclone Shelter	5,500	1,973
18	East Madarbari Girl's High School	2,000	717
19	West Madarbari Girl's High School	2,000	717
20	Patantully Boy's High School	2,000	717
Total for 20 Cyclone Shelters		51,257	18,384

Capacity of Shelter: 21 sq. ft (3 ft × 7 ft) (based on construction plan)

9.2 Economic Analysis

The results of economic analysis are summarized by sector.

(1) Road/Bridge

Quantitative analysis is applied to the road/bridge Subprojects.

1) Benefit

Benefits are as follows:

- Travel time savings for those using the road/bridge Subprojects

2) Assumptions

- Operation period: 30 years
- Subprojects No. 5, 27 and 28 will start operation from 2016, while others will begin in 2019
- Operation and maintenance cost: 3% of initial investment
- Travel time savings after Subproject completion: 0.4 min/km (assumed against current conditions)
- Cost for an average person: 1.01 BDT/person*min (based on statistical data)
- Number of users: 239,100 persons/day (based on results of traffic surveys)

3) Result

Based on the assumptions mentioned above, the Economic Internal Rate of Return (EIRR) of the Subprojects is 21.61%. As the EIRR exceeds 12%, the typical social discount rate and a threshold rate for economic analysis, these Subprojects can be considered economically feasible.

(2) Drainage

The sustainable urban infrastructure project will better integrate urban residents into the economic growth process by removing impediments – especially through the integration of urban areas with the livelihoods of the poor. The Subproject will improve residential access to services such as health, education and a wide range of secondary and tertiary jobs. It will generate two types of benefits:

- Direct benefit from travel time savings, enhanced marketing facilities and commercialization of productive activities.
- Indirect benefits will accrue from economic benefits that cannot be quantified. For instance, the project will foster institutional development in the intervention area and promote equitable distribution of economic and non-economic benefits.

(3) Overpass

Quantitative analysis is applied to the overpass Subprojects.

1) Benefit

Benefits are as follows:

- Travel time savings from using the overpass, which offers a more convenient and direct route

2) Assumptions

- Operation period: 30 years
- Subproject No. 66 will start operating from 2018, while other Subprojects will start operating from 2019.
- Operation and maintenance cost: 3% of initial investment
- Travel time savings after Subproject completion: 10 min/trip for Subproject No. 65, 7 min/trip for Subproject No. 66, and 12 min/trip for Subproject No. 68 (assumed against current conditions)
- Costs for an average person: 1.01 BDT/person*min (based on statistical data)
- Number of users: 417,500 persons/day for Subproject No. 65, 239,100 persons/day for Subproject No. 66, and 210,900 persons/day for Subproject No. 68 (based on results of traffic surveys)

3) Result

Based on the assumptions mentioned above, the Economic Internal Rate of Return (EIRR) of the Subprojects is 87.02% for Subproject No. 65, 138.48% for Subproject No. 66 and 202.33% for Subproject No. 68, respectively. As these EIRRs exceed 12%, the typical social discount rate and a threshold rate for economic analysis, these Subprojects can be considered economically feasible.

(4) Cyclone Shelter

Qualitative analysis is applied for the cyclone shelter Subprojects.

The CC area is 185 km^2 (60 sq. miles). Schools detailed above need to be remodeled, demolished, and/or newly built. Among the cyclone shelters, few will be renovated, whereas most will be reconstructed after demolition. All of these will be convenient for the surrounding local communities. These schools could be used in the future to accommodate cyclone affected people.

The existing condition of these schools is inadequate to handle the needs of impacted people during a catastrophe. Thus, it is proposed that existing school buildings be designed to serve as cyclone shelters. During a catastrophe, these schools can be used as cyclone shelters; people will have safe and secure accommodations. Normally though, these facilities can be used as schools for children, thus students will benefit from new and structurally safe buildings used as educational centers. During calamities, the underprivileged and poorer residents of the CC may quickly run to the shelter for safety and to secure their valuable property.

It is estimated that a total of 18,384 people could be accommodated if all shelters are built.

The main economic benefit of the school-cum-cyclone shelter is to secure the life and property of the inhabitants in the affected area, with a dual-use structure for both educational and community purposes.

Annex D-1: Inclusive List of Infrastructure Development

No.	Sector name	Sub-sector name	Work Category	Scheme name	Level of work	Location	Unit	Qty	Cost (Crore)	Previous	Description
1	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Jalalabad Housing Society Road in/c west Khulshi R/A road	Rehabilitation	ward no-13	m	1463.42	2.5	N/A	No Land Acquisition
2	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Krisnachura R/A Road	New	ward no-13	m	1524.39	2.5	N/A	No Land Acquisition
3	Drain improvement	Drain improvement	Primary drainage	Cons. Pucca drain Starting from CTV up to Dhaka Trunk road	New	ward no-13	m	1585.37	22.36	N/A	No Land Acquisition
4	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of South Khulshi R/A. Road from Zakir Hossain Road up to V. I. P. R/A.	Rehabilitation	ward no-13	m	1524.37	2	N/A	No Land Acquisition
5	Municipal Facilities	City corporation office building	City corporation office building	13 no ward Office Building	New	ward no-13	nos	1	2	N/A	No Land Acquisition
6	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Zakir Hossain Road (Women College Junction to Dhaka Trunk Road)	Rehabilitation	ward no-13	m	3400	13	N/A	No Land Acquisition
7	Transport	2) Bridge / culvert	Bridge	Cons. Of Footover Bridge at wairless Circle	New work	ward no-13	nos	1	1.5	N/A	No Land Acquisition
9	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Bagggona Road (Start from Chanmari rd up to Tigerpass Road)	Rehabilitation	ward no-14	m	914.63	0.96	N/A	No Land Acquisition
10	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Motijorna Road from Motijorna up to Tigerpass road.	Rehabilitation	ward no-14	m	568.9	0.8	N/A	No Land Acquisition
11	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Dev. of Chanmari Road	Rehabilitation	ward no-14	m	1158.53	1.9	N/A	No Land Acquisition
12	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of High Level Road (East and west)	Rehabilitation	ward no-14	m	995.43	0.98	N/A	No Land Acquisition
13	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Tankir Pahar Road	Rehabilitation	ward no-14	m	690.85	0.68	N/A	No Land Acquisition
14	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons of Retaining Wall by the side of Batali Pahar	New	ward no-14	m	85.98	0.94	N/A	No Land Acquisition
15	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Kusumbag Garidullah Sha & Baitul Aman H/S. Road	Rehabilitation	ward no-14	m	1829.26	1.8	N/A	No Land Acquisition
16	Municipal Facilities	Auditorium, Public hall, Cultural center	Auditorium, Public hall, Cultural center	Cons. of Shahidnagar Girl's School at Lalkhanbazar	New	ward no-14	nos	1	6.5	N/A	No Land Acquisition
17	Municipal Facilities	City corporation office building	CC main office, Community center, Ward office	Cons of Ward Office Building at 14 no Lalkhanbazar.	New	ward no-14	nos	1	4.95	N/A	No Land Acquisition

18	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Dev. Of Zakir Hossain Road (G.E.C to Women College jun.)	Rehabilitation	ward no-14	m	1000	4	N/A	No Land Acquisition
19	Transport	1) Road improvement	Second road (60 ft to 100ft)	CDA Avenue (G.E.C Junction up to Tigerpass)	Rehabilitation	ward no-14	m	2439	13.44	N/A	No Land Acquisition
22	Transport	2) Bridge / culvert	Culvert	Cons of R. C. C. Culvert near G. E. C. Circle	Rehabilitation	ward no-15	m	1	1	N/A	No Land Acquisition
23	Transport	2) Bridge / culvert	Culvert	Cons of R. C. C. Culvert and Road at Palton Road	Rehabilitation	ward no-15	m	1	1.2	N/A	No Land Acquisition
24	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Dev. of O. R. Nizam Road R/A Road & Lane bye lane.	Rehabilitation	ward no-15	m	1524.39	2.5	N/A	No Land Acquisition
25	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Amerbag R/A Road.	Rehabilitation	ward no-15	m	1219.52	1.2	N/A	No Land Acquisition
26	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Dev. of Noorbag R/A. Road	Rehabilitation	ward no-15	m	304.88	0.3	N/A	No Land Acquisition
27	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Dev. of Mohd Zaman Road near Gate no-2	Rehabilitation	ward no-15	m	609.77	0.6	N/A	No Land Acquisition
28	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Cons. of Road, Culvert & Footpath at M. M. Ali Road.	Rehabilitation	ward no-15	m	975.61	2	N/A	No Land Acquisition
29	Drain improvement	Drain improvement	Primary drainage	Cons. of Drain & Footpath near Carcite House road up to Kazirdewri 1 no gali Khal.	New	ward no-15	m	457.32	3	N/A	No Land Acquisition
30	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Meah Khan Road & Guard Wall with Drain	Rehabilitation	ward no-18	m	3000	10	N/A	No Land Acquisition
31	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	K. B. Aman Ali Road & Guard Wall with Drain	Rehabilitation	ward no-18	m	1067	4	N/A	No Land Acquisition
32	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Deputy Road & Retaining wall with drain	Rehabilitation	ward no-18	m	609	8	N/A	No Land Acquisition
33	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Azim Road & Guard Wall with drain	Rehabilitation	ward no-18	m	3000	4	N/A	No Land Acquisition
34	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Waijarpara Road	Rehabilitation	ward no-18	m	1200	2	N/A	No Land Acquisition
35	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	East Bakolia Boy's High School cum-Sycolon Shelter	New	ward no-18	nos	1	10	N/A	No Land Acquisition
36	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	East Bakolia Girl's High School cum-Sycolon Shelter	New	ward no-18	nos	1	10	N/A	No Land Acquisition
37	Transport	2) Bridge / culvert	Bridge	Abdul leatifhat bridge with Approch Road	New	ward no-18	nos	1	3	N/A	No Land Acquisition
40	Transport	2) Bridge / culvert	Bridge	Taktar pool Bridge With Aproch Road	New work	ward no-18	nos	1	4	N/A	No Land Acquisition
41	Municipal Facilities	City corporation	CC main office,	18 no. East bakalia ward	New work	ward no-18	sqm	1	10	N/A	No Land

		office building	Community center, Ward office	office building							Acquisition
42	Municipal Facilities	Open Space	Park, Ground	Dev. of Bolour Dighi with walkway	Rehabilitation	ward no-20	sqm	1	7	N/A	No Land Acquisition
43	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dep. of Terribazar road, Bolour deghi road, Korbanigonj road, Katapahar road	Rehabilitation	ward no-20	m	1830	10	N/A	No Land Acquisition
44	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Dev. of Lamabazar, Boy's School Cum- Cyclone Shelter	Rehabilitation	ward no-20	nos	1	12	N/A	No Land Acquisition
45	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Dev. of Lamabazar, Girl's School Cum- Cyclone Shelter	Rehabilitation	ward no-20	nos	1	12	N/A	No Land Acquisition
46	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Sirajuddowlla road (Anderkilla to Didar Market)	Rehabilitation	ward no-20	m	610	3	N/A	No Land Acquisition
47	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	K. B. Abdus Sattar Road	Rehabilitation	ward no-21	m	760	3.5	N/A	No Land Acquisition
48	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Sirajuddowlla road and footpath	Rehabilitation	ward no-21	m	610	3	N/A	No Land Acquisition
49	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Jamal Khan Main Road	Rehabilitation	ward no-21	m	720	3.25	N/A	No Land Acquisition
50	Municipal Facilities	Auditorium, Public hall, Cultural center	Auditorium, Public hall, Cultural center	Kusum Kumari School Building	Rehabilitation	ward no-21	nos	1	10	N/A	No Land Acquisition
51	Municipal Facilities	Upgrading informal settlement	Re-arrangement of informal shops, houses	Jhottla Sabok Collony	Rehabilitation	ward no-21	nos	5	50	N/A	No Land Acquisition
52	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Old Biman Office Road	Rehabilitation	ward no-21	m	600	2	N/A	No Land Acquisition
53	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Nur Ahammed Chy. Road and footpath	Rehabilitation	ward no-21	m	762	3	N/A	No Land Acquisition
54	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Momin Road Footpath and drain	Rehabilitation	ward no-21	m	720	5	N/A	No Land Acquisition
55	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Retaining wall of Ward Office Back side	Rehabilitation	ward no-21	m	121.95	2	N/A	No Land Acquisition
56	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	J. C. Guha Lane with Footpath	Rehabilitation	ward no-22	m	610	2	N/A	No Land Acquisition
57	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Jubilee Road with Footpath	Rehabilitation	ward no-22	m	1525	5	N/A	No Land Acquisition
58	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Neval Avenue Road with Footpath	Rehabilitation	ward no-22	m	915	3	N/A	No Land Acquisition
59	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Battali Road with Drain	Rehabilitation	ward no-22	m	915	3	N/A	No Land Acquisition

60	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Anayet Bazar Road & Buddist Tample Rd with Footpath	Rehabilitation	ward no-22	m	1220	4	N/A	No Land Acquisition
61	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Reazuddin Bazar Road with drain	Rehabilition	ward no-22	m	915	3	N/A	No Land Acquisition
62	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Railway Hospital Colonny High School cum cyclone Shelter	New	ward no-22	nos	1	10	N/A	No Land Acquisition
63	Municipal Facilities	Upgrading informal settlement	Re-arrangement of informal shops, houses	Floating peoples Shelter house	New	ward no-22	nos	1	3	N/A	No Land Acquisition
64	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Aparnacharan Girl's High School cum Cyclone Shelter	New	ward no-22	nos	1	10	N/A	No Land Acquisition
65	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Krishna Kumari Girl's High School cum Cyclone Shelter	New	ward no-22	nos	1	10	N/A	No Land Acquisition
66	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Kadam Mubarak School Building cum- cycloon Shelter	Rehabilitation	ward no-32	nos	1	12	N/A	No Land Acquisition
67	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Menoka School building cum- cycloon Shelter	Rehabilitation	ward no-32	nos	1	20	N/A	No Land Acquisition
68	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Bandul Shebak colony Building cum- cycloon Shelter	Rehabilitation	ward no-32	nos	1	30	N/A	No Land Acquisition
69	Municipal Facilities	Vehicle parking	For motor vehicle, CNG, rickshaw	C. C. C. Library Cum Conventation Hall & Malti Level Car parking	Rehabilitation	ward no-32	nos	1	20	N/A	No Land Acquisition
70	Transport	1) Road improvement	Second road (60 ft to 100ft)	Court Road with Footpath & Drain	Rehabilitation	ward no-32	m	670	3	N/A	No Land Acquisition
71	Transport	1) Road improvement	Second road (60 ft to 100ft)	J. M. Sen Avenue Road with Footpath and drain	Rehabilitation	ward no-32	m	600	4	N/A	No Land Acquisition
72	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Royal Road with Footpath and drain	Rehabilitation	ward no-32	m	182	2	N/A	No Land Acquisition
73	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	K. C. Dey road with Footpath and drain	Rehabilitation	ward no-32	m	760	3	N/A	No Land Acquisition
74	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Jail road/Sha Amanat Road, Footpath and drain	Rehabilitation	ward no-32	m	330	2	N/A	No Land Acquisition
75	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Momin Road Footpath and drain	Rehabilitation	ward no-32	m	900	4	N/A	No Land Acquisition
76	Transport	1) Road improvement	Second road (60 ft to 100ft)	Abdul Aziz Road Footpath and drain	Rehabilitation	ward no-32	m	400	3	N/A	No Land Acquisition
77	Transport	1) Road improvement	Second road (60 ft to 100ft)	Sarawardi Road Footpath and drain	Rehabilitation	ward no-32	m	400	3	N/A	No Land Acquisition
78	Municipal Facilities	Upgrading	Re-arrangement of	Bandul Shebak colony	Rehabilitation	ward no-32	sqm	1	5	N/A	no Land

		informal settlement	informal shops, houses	Renovation							Acquisition
79	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	development of Shah Amanat Mazar Pukur Footpath, drain & R/w	New Construction	ward no-32	m	95	4	N/A	no Land Acquisition
80	Transport	2) Bridge / culvert	Bridge	Lal deghee Road Footpath & drain	New Construction	ward no-32	nos	1	2.509	N/A	no Land Acquisition
81	Transport	2) Bridge / culvert	Bridge	Badarkhali Khal Retaining Wall	New Construction	ward no-32	nos	1	5	N/A	No Land Acquisition
82	Transport	2) Bridge / culvert	Bridge	Lal Deghee Mosque	New Construction	ward no-32	nos	1	8	N/A	no Land Acquisition
83	Municipal Facilities	Upgrading informal settlement	Re-arrangement of informal shops, houses	32 No Anderkilla Ward office building	New Construction	ward no-32	nos	1	7	N/A	no Land Acquisition
84	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Construction of Sayed Kashem Road and tandacchari road	New Construction	Ward No. 1	km	800	12	N/A	No Land Acquisition
85	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Bayozid thana Road, Kunzu Chaya R/A Road, Sangbadik Housing Sociaty road	Rehabilitation	Ward No. 2	km	1380	26	N/A	No Land Acquisition
86	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Shershah Colony Road, Naim Garments road and batalian road	Rehabilitation	Ward No. 2	km	760	18	N/A	No Land Acquisition
87	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Contruction of Chowdhury Nagar, Chandranagar Banglabazar and Tea Board road	Rehabilitation	Ward No. 2	km	2440	54	N/A	No Land Acquisition
88	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Jamshed shah Road Khaza Road and Tupani Road	Rehabilitation	Ward No. 2	km	2040	42	N/A	No Land Acquisition
89	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Industrial road with Drain & Footpth	Rehabilitation	Ward No. 2	km	1830	51	N/A	No Land Acquisition
90	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of link Road from Khaza road to tupani Road	New Construction	Ward No. 2	km	1370	23	N/A	No Land Acquisition
91	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Biozoid Bustami road with drain and footpath	Rehabilitation	ward no-2	km	2750	116	N/A	No Land Acquisition
92	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of road & Retaning wall at Kandakie Sara road	Rehabilitation	ward no-2	km	1220	58	N/A	No Land Acquisition
93	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Construction of chadni chinema road	Rehabilitation	ward no-2	km	350	14	N/A	No Land Acquisition

94	Municipal Facilities	Auditorium, Public hall, Cultural center	Auditorium, Public hall, Cultural center	Construction of Kulgoaw College	Rehabilitation	ward no-2	nos	1	17	N/A	No Land Acquisition
95	Municipal Facilities	Auditorium, Public hall, Cultural center	Auditorium, Public hall, Cultural center	Construction of Volanath monorana school	Rehabilitation	ward no-2	nos	1	13	N/A	No Land Acquisition
96	Municipal Facilities	City corporation office building	City corporation office building	Construction of Imratun nessa school	Rehabilitation	ward no-2	nos	1	14.5	N/A	No Land Acquisition
97	Municipal Facilities	City corporation office building	CC main office, Community center, Ward office	Construction of ward office	New Construction	ward no-2	nos	1	16	N/A	No Land Acquisition
98	Municipal Facilities	City corporation office building	CC main office, Community center, Ward office	Construction of forth Class staffquater at sinnumul area	New Construction	ward no-2	nos	3	208.8	N/A	No Land Acquisition
99	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of different road word no -3 vbolagong road (1500 m), hazeerpull road (1800 m) , abdul barakroad (2000 m), hazee para road (600m) , shadullah khan road (1500m), chand mia sowdagor road (4000 m), jalalabad link road (800 m) road (1500 m), abdul karim munshi road (2200 m)	Rehabilitation	ward no-3	km	4000	25	N/A	No Land Acquisition
99	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of different road word no -3 vbolagong road (1500 m), hazeerpull road (1800 m) , abdul barakroad (2000 m), hazee para road (600m) , shadullah khan road (1500m), chand mia sowdagor road (4000 m), jalalabad link road (800 m) road (1500 m), abdul karim munshi road (2200 m)	Rehabilitation	ward no-3	km	13900	15	N/A	No Land Acquisition
100	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of different road word no -3 Hamidullah road (700m) ,khondaker para to hazi para road (900m), wazadia siddik ahamad road (400m), kolan sha (2200m), Shital zarra	Rehabilitation	ward no-3	km	6500	40	N/A	No Land Acquisition

				rasidential (1800m),Samsu hazee bari Ashakhane AawliaCollege road (500m)							
101	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of road & retaining wall side of shital zarna khal	New Construction	ward no-3	km	600	50	N/A	No Land Acquisition
102	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of shital zarna bridge over shital zarna khala)Tayabia road (15m) b) soyadia Road (15m) c)Pachlaish Road (15m) d) Hazee para Road (15m) e) shadullah khan Road (15m) f)Samadpur Road Road (15m)	New Construction	ward no-3	nos	6	8	N/A	No Land Acquisition
103	Drain improvement	Drain improvement	Primary drainage	a) Construction of Box drain at Charag Ali drain at Chaltatoli	New Construction	ward no-3	m	1500	8	N/A	No Land Acquisition
104	Drain improvement	Drain improvement	Primary drainage	b) Construction of drain at Lalar khal at hajirpul	Rehabilitation	ward no-3	m	1400	10	N/A	No Land Acquisition
105	Municipal Facilities	City corporation office building	City corporation office building	a) Construction of Panchlaish Sclool and College	Rehabilitation	ward no-3	nos	1	20	N/A	No Land Acquisition
106	Municipal Facilities	City corporation office building	CC main office, Community center, Ward office	b) Construction of Panchlaish Ward office	Rehabilitation	ward no-3	nos	1	6	N/A	No Land Acquisition
107	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Baman shahi Bridge over Baman shahi khal a)Nazu mia sowdagor (12 m) b) Monsar pul (12 m)c)kalal pul (12 m) d) feedha khanRoad (12 m) e)Abdul karim munsi Road (12 m) f)Hazeer pul (12 m) g)Khalil shaRoad (12 m)	New Construction	ward no-3	km	4	4	N/A	No Land Acquisition
107	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Baman shahi Bridge over Baman shahi khal a)Nazu mia sowdagor (12 m) b) Monsar pul (12 m)c)kalal pul (12 m) d) feedha khanRoad (12 m) e)Abdul karim munsi Road (12 m) f)Hazeer pul (12 m)	New Construction	ward no-3	km	3	3	N/A	No Land Acquisition

				g)Khalil shaRoad (12 m)							
108	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	a) Development of different road word no -4 Golam ali najir road , Amzad Ali kerani road, tak bazar road to fide khan road, Chandgaon R/A road foridar para road, Chandgaon R/A to Chand meah show link road, shamsher para road,	Rehabilitation	ward no-4	km	6000	12	N/A	No Land Acquisition
109	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	b) Chandrima R/A main Road & internal road, Fida khan road, Bahaddarhat Bus terminal road	Rehabilitation	ward no-4	km	2200	8	N/A	No Land Acquisition
110	Transport	2) Bridge / culvert	Bridge	Construction of Dom Khal(jale para) bridge	New Construction	ward no-4	nos	1	4.05	N/A	No Land Acquisition
111	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Chand Gaon R/A to Arakan road, sadhinata park box drain	New Construction	ward no-4	nos	1000	6	N/A	No Land Acquisition
112	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	a) Development of different road word no -5, BFIDC road, Dawdan Mohosin road , Dawanot Khan road, Abdur rahaman khan road, Bramun para road, mohora sorolia para road, Rajjid uddin ukil road, Ispahani jati road, sorup khan road, Mohora naxes road	Rehabilitation	ward no-4	nos	16000	23	N/A	No Land Acquisition
113	Drain improvement	Drain improvement	Primary drainage	BFIDC road Drain, Ispahani jati road drain sorup khan road	New Construction	ward no-5	m	2600	6	N/A	No Land Acquisition
114	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Development of Dawdan Mohosin road, retaining wall & Dom Khal	New Construction	ward no-5	km	1700	12	N/A	No Land Acquisition
115	Transport	2) Bridge / culvert	Culvert	Development of BFIDC road Box culvart	New Construction	ward no-5	nos	1	1.5	N/A	No Land Acquisition
116	Drain improvement	Drain improvement	Primary drainage	a)construction of box drain Khaja road (shaban gata to bolir hat karnofuli river)	New Construction	ward no-6	m	800	16	N/A	No Land Acquisition
117	Drain improvement	Drain improvement	Second Level drainage	b) construction of box drain at gashia para	Rehabilitation	ward no-6	m	500	1.5	N/A	No Land Acquisition
118	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Development of khaja road (2500 m) , Jibon mistri	Rehabilitation	ward no-6	km	8000	60	N/A	No Land Acquisition

				road(1200 m), Omar Ali matabbar(1000 m), Mofizur Rahaman Housing Society(1000 m) Amin sharif road(1500 m), Ghasia para road (800 m)							
119	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of wildening ,middle strip & footpath in busterminal road	Rehabilitation	ward no-6	km	800	6	N/A	No Land Acquisition
120	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	construction of Retaining wall of Birja khal	New Construction	ward no-6	km	1000	1.8	N/A	No Land Acquisition
121	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of different road word no -7 Co-operative H/A road, Hillview H/A road, Mahammed nagar Baizid Thana & R/A road	Rehabilitation	ward no-7	km	2930	9	N/A	No Land Acquisition
122	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of different road word no -7 Najir para Damua pukur parr Rajgong bill to sadullah khan well food road , Jamea Ahmadia Sunnia mahila Madrasha to Khatiber hat kalar pool road war-simetry , Salimullah shah majar & Momen bag R/A Road, mohammed pur R/A road	Rehabilitation	ward no-7	km	3360	11.5	N/A	No Land Acquisition
123	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of R.C.C retaining wall Tyipure Khal	New Construction	ward no-7	km	1060	10	N/A	No Land Acquisition
124	Municipal Facilities	City corporation office building	CC main office, Community center, Ward office	Construction of Multi - storied building Bibirhat Ward office	New Construction	ward no-7	nos	1	6	N/A	No Land Acquisition
125	Municipal Facilities	Auditorium, Public hall, Cultural center	Auditorium, Public hall, Cultural center	Construction of Mutti - storied building Bibirhat Kacha bazar	New Construction	ward no-7	nos	1	10	N/A	No Land Acquisition
126	Municipal Facilities	Auditorium, Public hall, Cultural center	Auditorium, Public hall, Cultural center	Construction of Mutti - storied building at hill view jahur ahmed chy. Primary school	New Construction	ward no-7	nos	1	3	N/A	No Land Acquisition
127	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Construction of mohammed pur R/A Bridge & Sadullah khan Tripura khal bridge, Salimullah road bridge	New Construction	ward no-7	km	23	1.5	N/A	No Land Acquisition

128	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of different road word no -8, Sholak Bahar, Chasma pahar purnar basan, Nasirabad housing Socity 2,3,4,6 road drain	Rehabilitation	ward no-8	km	2865	5.65	N/A	No Land Acquisition
129	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of different road word no -8, Politecnical , Murgi farm, Tulatali road drain	Rehabilitation	ward no-8	km	2805	4.16	N/A	No Land Acquisition
130	Transport	1) Road improvement	Second road (60 ft to 100ft)	Development of different road word no -8 C.D.A Avenue,footpath, middle-strip G.E.C. To Bahaddar hat jungtion	Rehabilitation	ward no-8	km	3000	17.6	N/A	No Land Acquisition
131	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Development of different road word no -8 Box Culvert Mohammad zamman road to Chasma khal	New Construction	ward no-8	km	823	8.5	N/A	No Land Acquisition
132	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of different road word no -8 Mohammad zamman box culvert with road	Rehabilitation	ward no-8	km	610	5.4	N/A	No Land Acquisition
133	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of different road word no -8 Mozzafar road bridge , Drian to Soudarn Medical College	Rehabilitation	ward no-8	km	1220	3.8	N/A	No Land Acquisition
134	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Development of retaining wall Mirza khal & Chasma	New Construction	ward no-8	km	1400	2	N/A	No Land Acquisition
135	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of khjur tala Rd	Rehabilitation	Ward No-40	km	2000	2	N/A	No Land Acquisition
136	Transport	1) Road improvement	Primary road (100 ft to 150 ft)	Extension of Airport Rd-2 Construction of Footh path & Drain	Rehabilitation	Ward No-40	km	3500	50	N/A	No Land Acquisition
137	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Mokbul Housing society Rd	Rehabilitation	Ward No-40	km	500	1	N/A	No Land Acquisition
138	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Muslima bad Rd of Katgor Rd	Rehabilitation	Ward No-40	km	1500	5	N/A	No Land Acquisition
139	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Katgor & north mijpara Rd & lane bylane.	Rehabilitation	Ward No-40	km	1000	15	N/A	No Land Acquisition
140	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Est Hossing Ahmad para Khalpar Rd	New Construction	Ward No-40	nos	1200	2.5	N/A	No Land Acquisition

141	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of Refinary Rd	Rehabilitation	Ward No-40	nos	700	3.5	N/A	No Land Acquisition
142	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of west Hossain Ahmad para Khal par Rd	Rehabilitation	Ward No-40	nos	1000	5	N/A	No Land Acquisition
143	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of Rab-7 Rd	Rehabilitation	Ward No-40	km	500	1	N/A	No Land Acquisition
144	Transport	1) Road improvement	Second road (60 ft to 100ft)	Development of sea bach Rd (Cutgor to sea bach	Rehabilitation	Ward No-40	km	1000	10	N/A	No Land Acquisition
145	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Retaining wall & Rd. from 9 NO. Gopta Khal bridge to controll more	New Construction	Ward No-40	km	1500	10	N/A	No Land Acquisition
146	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Najir para Foulchory para Rd & bylane	Rehabilitation	Ward No-41	km	1200	3	N/A	No Land Acquisition
147	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of char basti Rd	Rehabilitation	Ward No-41	km	850	3	N/A	No Land Acquisition
148	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Mizpara, Chowdhury para & Abdulla Khan Rd.	Rehabilitation	Ward No-41	km	1500	3.5	N/A	No Land Acquisition
149	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of Doriga Para Rd bylane	Rehabilitation	Ward No-41	km	700	2	N/A	No Land Acquisition
150	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Neamot Ali shah Rd	Rehabilitation	Ward No-41	km	350	1	N/A	No Land Acquisition
151	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of Char para rd.	New Construction	Ward No-41	km	500	3	N/A	No Land Acquisition
152	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of CDA Square Rd	Rehabilitation	Ward No-41	km	2200	4.5	N/A	No Land Acquisition
153	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of MES Rd from (cutgor to ward office)	Rehabilitation	Ward No-41	km	1200	4	N/A	No Land Acquisition
154	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Chadu Chy Rd. including RCC Covered drain	Rehabilitation	Ward No-11	km	2000	5	N/A	No Land Acquisition
155	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Pran Haridas Rd with Covered drain	Rehabilitation	Ward No-11	km	2500	4.5	N/A	No Land Acquisition
156	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Halishar R/A. I /J Block by lane	New Construction	Ward No-11	km	1500	6	N/A	No Land Acquisition
157	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Faillah Tali Bazar Rd	Rehabilitation	Ward No-11	km	2500	5	N/A	No Land Acquisition
158	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Jalapara Rd	Rehabilitation	Ward No-11	km	2700	4	N/A	No Land Acquisition
159	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Ananda bazar to sea beach Rd.	Rehabilitation	Ward No-37	km	1500	3.5	N/A	No Land Acquisition

160	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Abdul latif Rd.	Rehabilitation	Ward No-37	km	1500	3.5	N/A	No Land Acquisition
161	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Amir ali shah Rd.	Rehabilitation	Ward No-37	km	1200	3	N/A	No Land Acquisition
162	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Jalil shah Rd.	New Construction	Ward No-37	km	2400	6	N/A	No Land Acquisition
163	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of main Rd. in north Halishahar (Kaissa Pukur Par to Failla tali Bazar pool)	Rehabilitation	Ward No-26	km	1000	5.5	N/A	No Land Acquisition
164	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Kornel Jons Rd.	Rehabilitation	Ward No-10	km	2134	6	N/A	No Land Acquisition
165	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of I shan mohazon Rd.	Rehabilitation	Ward No-10	km	1860	5	N/A	No Land Acquisition
166	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of link Rd	Rehabilitation	Ward No-10	km	765	2	N/A	No Land Acquisition
167	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Daribil Rd	New Construction	Ward No-10	km	700	2	N/A	No Land Acquisition
168	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of new mosurabad Rd.	Rehabilitation	Ward No-10	km	1219	3	N/A	No Land Acquisition
169	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Zohur Ahamed Cho. Stedium west side Rd & R/A	Rehabilitation	Ward No-10	km	400	2	N/A	No Land Acquisition
170	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Development of Kornel hat CDA R/A Rd.	Rehabilitation	Ward No-10	km	1372	3	N/A	No Land Acquisition
171	Transport	1) Road improvement	Second road (60 ft to 100ft)	Development of Shagorika Comtial Area Rd. & Drain	Rehabilitation	Ward No-10	km	1300	3	N/A	No Land Acquisition
172	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Zakar Ali Rd.	Rehabilitation	Ward No-10	km	765	3.5	N/A	No Land Acquisition
173	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Halishahar Stand Rd. (Esan hat to baker ali Fakir Tek) with drain	Rehabilitation	Ward No-38	km	2000	4.5	N/A	No Land Acquisition
174	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Haji Abul Basar Rd (Dumpara) with drain	Rehabilitation	Ward No-38	km	1000	2.5	N/A	No Land Acquisition
175	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Akmal Ali Rd (Airpirt Rd beri bath)	Rehabilitation	Ward No-39	km	1000	2.5	N/A	No Land Acquisition
176	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of RCC Rataining wall & Rd at saekat khal	Rehabilitation	Ward No-39	km	1000	250	N/A	No Land Acquisition
177	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Development of Foothpath/ Gardend at Airport Rd. (Saltgola to Cement Crossing & old air port Rd.)	Rehabilitation	Ward No-38,39,40,41	km	15150	20	N/A	No Land Acquisition
178	Municipal Facilities	School-cum-	School-cum-	Construction of six stored	New Construction	Ward No-40	sqm	1	5	N/A	No Land

		Cyclone Shelter	Cyclone Shelter	building at Patanga girll high school & College cum Cyclone shulter							Acquisition
179	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	South Patenga school cum syclon shulter	New Construction	Ward No-41	sqm	1	2.5	N/A	No Land Acquisition
180	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Jarina Mofzal College cum Cyclone shulter	New Construction	Ward No-37	sqm	1	5	N/A	No Land Acquisition
181	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Mohabbat Ali Grils High school cum Cyclone shulter	New Construction	Ward No-26	sqm	1	5	N/A	No Land Acquisition
182	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Development of north Kattoli girls school cum Cyclone shulter	New Construction	Ward No-10	sqm	1	3	N/A	No Land Acquisition
183	Municipal Facilities	Market	Kitchen market, Super market	Construction of Shagorika store building	New Construction	Ward No-10	sqm	1	5	N/A	No Land Acquisition
184	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Construction of Ahmed Mia City Corp. girls school cum Cyclone shulter	New Construction	Ward No-38	sqm	1	5	N/A	No Land Acquisition
185	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Construction of girl School cum Cyclone shulter	New Construction	Ward No-39	sqm	1	5	N/A	No Land Acquisition
186	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Construction of Retaning wall at Maijpara khal	New Construction	Ward No-41	km	2500	5	N/A	No Land Acquisition
187	Drain improvement	Drain improvement	Primary drainage	Construction of drain from Airport Boundary to 15 No Bridge	New Construction	Ward No-41	m	1100	5	N/A	No Land Acquisition
188	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Gullu shah mazar Rd. to port rail line conecet Mohes khal	New Construction	Ward No-37	km	3600	10	N/A	No Land Acquisition
189	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Construction of Retaining Wall on both side of Mohesh Khal with Rd.	New Construction	Ward No-26	km	4000	40	N/A	No Land Acquisition
190	Transport	2) Bridge / culvert	Bridge	Construction of RCC bridge beside Rubi cement at air port rd.	New Construction	Ward No-39	nos	1	3	N/A	No Land Acquisition
191	Transport	2) Bridge / culvert	Bridge	Construction of RCC Garder bridge at 9 No Gopta Khal	New Construction	Ward No-41	nos	1	4	N/A	No Land Acquisition
192	Transport	2) Bridge / culvert	Bridge	Construction of RCC Garder bridge at 15 No Khal	New Construction	Ward No-41	nos	1	10	N/A	No Land Acquisition
193	Transport	2) Bridge / culvert	Bridge	Construction of Bridge on Mohesh Khal with Approach Road (near Artillary) in Artillary Rd.	New Construction	Ward No-26	nos	1	3	N/A	No Land Acquisition
194	Transport	2) Bridge / culvert	Bridge	Construction of Bridge (Near B GB & Artillary	New Construction	Ward No-26	nos	1	3	N/A	No Land Acquisition

				south side) on Mohesh Khal in North Halishahar Connecting Rd. with approach Rd (Artillary & port) Connecting Juncting)							
195	Transport	2) Bridge / culvert	Bridge	Construction of Bridge on divertion khal near Biharie grave yard (With approach Rd)	New Construction	Ward No-26	nos	1	3.25	N/A	No Land Acquisition
196	Transport	2) Bridge / culvert	Bridge	Construction of Bridge on Divertion khal near south side of grave yard (with approach Rd.)	New Construction	Ward No-26	nos	1	3.5	N/A	No Land Acquisition
197	Transport	2) Bridge / culvert	Bridge	Construction of Bridge on Ful Chowdhury para Madanin Mosque attached Mohesh Khal with approch Rd.	New Construction	Ward No-26	nos	1	1.8	N/A	No Land Acquisition
198	Transport	2) Bridge / culvert	Bridge	Construction of Bridge in B-Block 15, 16 Bye lane on Mohesh Khal with approch Rd.	New Construction	Ward No-26	nos	1	1.7	N/A	No Land Acquisition
199	Municipal Facilities	Land development	Land Reclamation	Land Reclamation from Bay of Bengal out side of Embankment	New Construction	Ward no. 10, 11,26,37,38, 39,40,41	sqm		5000	N/A	No Land Acquisition
200	Transport	1) Road improvement	Primary road (100 ft to 150 ft)	Widening & Improvement of Port Connecting Road. (from Alanker to Nimtola)	Rehabilitation	Ward No-12, 24, 25, 27, 36	m	6000	60	N/A	No Land Acquisition
201	Transport	1) Road improvement	Primary road (100 ft to 150 ft)	Construction of Agrabad Access Road	Rehabilitation	24, 27 No ward	m	2200	10	N/A	No Land Acquisition
202	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Halisahar Rd. from Beparipara to Boropole.	Rehabilitation	Ward No-27	m	1500	3	N/A	No Land Acquisition
203	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Port Peripherial Rd from Barikbuilding to Saltgola Crossing	New construction	Ward No-36	m	3000	60	N/A	No Land Acquisition
204	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Khal par Rd	Rehabilitation	Ward No-36	m	1500	2	N/A	No Land Acquisition
205	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Connecting Rd from Access Rd to CDA 20 No. Rd near Mohesh khal	Rehabilitation	Ward No-27	m	2000	7	N/A	No Land Acquisition
206	Transport	1) Road	Tertiary road (20 ft	Construction of Biswa	Rehabilitation	Ward No-9	m	2200	5	N/A	No Land

		improvement	to 60 ft)	Colony & Firojshah Colony Rd							Acquisition
207	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Zakir Hossain diversion Rd (Zakir Hossain Rd to Sagarika Rd	Rehabilitation	Ward No-9, 12	m	1500	12	N/A	No Land Acquisition
209	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of connecting Rd. from C & B Colony to Nasirabad woman college junction & box drain	Rehabilitation	Ward No-7, 15	m	1000	12	N/A	No Land Acquisition
213	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Construction of Eagle star Mill Rd.	New Construction	Ward No-9	m	1000	5	N/A	No Land Acquisition
215	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Construction of Connecting Rd from Access Rd to Asion women university (North-south Rd.)	Rehabilitation	Ward No-24, 12, 9,13	m	5000	700	N/A	No Land Acquisition
216	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Construction of Retaning wall from Nimtola Biman Chottor to Abdul latif Rd	new construction	Ward No-36	m	1200	16	N/A	No Land Acquisition
217	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Construction of Retaining wall at Mohesh Khal	new construction	Ward No-27, 36	m	2000	20	N/A	No Land Acquisition
218	Drain improvement	Drain improvement	Primary drainage	Construction of Janarkhil drain	new construction	Ward No-9	m	1500	2	N/A	No Land Acquisition
219	Drain improvement	Drain improvement	Primary drainage	Construction of Malipara drain	new construction	Ward No-9	m	400	0.8	N/A	No Land Acquisition
220	Drain improvement	Drain improvement	Primary drainage	Construction of Kali chora drain	new construction	Ward No-9	m	250	2.5	N/A	No Land Acquisition
221	Transport	2) Bridge / culvert	Bridge	Construction of Bridges at Fakir hat Rd	new construction	Ward No-36	nos	2	2.5	N/A	No Land Acquisition
222	Transport	2) Bridge / culvert	Bridge	Construction of Bridges at Chotopol	Rehabilitation	Ward No-27	nos	1	3.5	N/A	No Land Acquisition
223	Transport	2) Bridge / culvert	Bridge	Construction of Bridges at Mohesh Khal at Port Connecting Rd.	New constructor	Ward No-27,36	nos	1	10	N/A	No Land Acquisition
224	Drain improvement	Drain improvement	Tidal gate	Construction of Tidal Regulator at Mohesh Khal	New construction	Ward No-36, 37	nos	1	20	N/A	No Land Acquisition
225	Drain improvement	Drain improvement	Tidal gate	Construction of tidal Regalator at Gulgar khal	New construction	Ward No-29	nos	1	16	N/A	No Land Acquisition
226	Transport	3) Traffic Management	BRT System	BRT(Bus Rapid Transit) Adaptation at CDA Avenue, Sk. Mujib Road, & Air Port Road with necessary Widening from sholosahar to Poterga Sea Beach	Rehabilitation	Ward No-7, 14, 15, 23, 24, 36, 38, 39	m	18000	180	N/A	No Land Acquisition
227	Transport	3) Traffic Management	BRT System	BRT(Bus Rapid Transit) Adaptation on Port	Rehabilitation	Ward No-12, 24, 27,	m	6000	30	N/A	No Land Acquisition

				Connecting Road from Alanker to Nimtola		36					
228	Municipal Facilities	Truck terminal	Terminal building, platform, Internal drainage	Construction of Truck Terminal adjacent to Toll road	New construction		nos	2	120	N/A	Land Acquisition Required
229	Municipal Facilities	Bus terminal	Terminal building, platform, Internal drainage	Construction of Bus terminal for Dhaka Traffic	New construction		nos	1	100	N/A	Land Acquisition Required
230	Municipal Facilities	Bus terminal	Terminal building, platform, Internal drainage	Construction of Bus terminal for Hathazari Traffic	New construction		nos	1	100	N/A	Land Acquisition Required
231	Municipal Facilities	Vehicle parking	For motor vehicle, CNG, rickshaw	Construction Parking Lot at Agrabad C/A	New Construction	Ward-28	nos	1	10	N/A	No Land Acquisition
232	Municipal Facilities	Landscaping and beautification	MP	Tourism Development at Potenga Coastal belt as per drainage Master Plan	New construction	Ward-40,41	nos	1	150	N/A	Land Acquisition Required
236	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Dev. of Mariner's Road (Starting from Firingee bazar to(Chakti bridge)	New Construction	ward no-33 & 34	km	670	15	N/A	No Land Acquisition
237	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Sirajuddowlla Road	Rehabilitation	ward no-16	km	2134	10.5	N/A	No Land Acquisition
238	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Chattashori Road	Rehabilitation	ward no-16	km	1433	5.7	N/A	No Land Acquisition
239	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Badsha Meah Chowdhury road	Rehabilitation	ward no-16	km	610	1	N/A	No Land Acquisition
240	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	O. R. Nizam Road	Rehabilitation	ward no-16	km	1067	3	N/A	No Land Acquisition
241	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	K. B. Fazlul Quadar Road	Rehabilitation	ward no-16	km	1220	5.8	N/A	No Land Acquisition
242	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/w at diversion khal	Rehabilitation	ward no-17	km	880	5.6	N/A	No Land Acquisition
243	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of road at diversion khal side	Rehabilitation	ward no-17	km	800	1.05	N/A	No Land Acquisition
244	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/w at Birja khal (beside sayed shah road)	Rehabilitation	ward no-17	km	1000	8	N/A	No Land Acquisition
245	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Sayed Shah Road	Rehabilitation	ward no-17	km	300	0.4	N/A	No Land Acquisition
246	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/wall at Shantinagar Khal	Rehabilitation	ward no-17	km	230	1.6	N/A	No Land Acquisition
247	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Dev. of road at Shantinagar khal side	Rehabilitation	ward no-17	km	140	0.15	N/A	No Land Acquisition
248	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/Wall beside the Shorubi R/A. Khal	Rehabilitation	ward no-17	km	285	2	N/A	No Land Acquisition
249	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of Shorubi R/A. Khal side	Rehabilitation	ward no-17	km	152	0.2	N/A	No Land Acquisition

250	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/Wall at Krishok road khal	Rehabilitation	ward no-17	km	143	1	N/A	No Land Acquisition
251	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Dev. of road beside Krishok road khal	Rehabilitation	ward no-17	km	90	0.09	N/A	No Land Acquisition
252	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/wall at Shalbon R/A. khal	Rehabilitation	ward no-17	km	285	2	N/A	No Land Acquisition
253	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of road beside Shalbon R/A.	Rehabilitation	ward no-17	km	150	0.1875	N/A	No Land Acquisition
254	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Dev. of K. B. Aman Ali road.	Rehabilitation	ward no-17	km	1800	2.4	N/A	No Land Acquisition
255	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Match Factory Raod & Drain	Rehabilitation	ward no-19	km	40	3	N/A	No Land Acquisition
256	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Birjakhal Road & Retaining wall	Rehabilitation	ward no-19	km	1000	7	N/A	No Land Acquisition
257	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Abu Jafor Road	Rehabilitation	ward no-19	km	750	1.5	N/A	No Land Acquisition
258	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Munsur Ali Road	Rehabilitation	ward no-19	km	650	1	N/A	No Land Acquisition
259	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Sadarghat Road	Rehabilitation	ward no-30	km	600	1.6	N/A	No Land Acquisition
260	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Strand Road	Rehabilitation	ward no-30	km	615	1.9	N/A	No Land Acquisition
261	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Majirghat Road	Rehabilitation	ward no-30	km	450	1	N/A	No Land Acquisition
262	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Strand road Bridge to near karnafully river (at the side of old custom house)	Rehabilitation	ward no-30	km	185	1.5	N/A	No Land Acquisition
263	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Retaining wall (Laban Factory bridge to Karnafully bridge (main road)	Rehabilitation	ward no-30	km	200	1.8	N/A	No Land Acquisition
264	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Retaining wall with bed from Younus meah maternats toKarnafully River	Rehabilitation	ward no-31	km	488	3	N/A	No Land Acquisition
265	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Retaining wall with bed from Memon Hospital to Karnafully River	Rehabilitation	ward no-31	km	610	3.2	N/A	No Land Acquisition
266	Transport	1) Road improvement	Pedestrian (6 ft to 8 ft) footpath	Hedayat Chattar Box Culvert	Rehabilitation	ward no-31	km	46	1.5	N/A	No Land Acquisition
267	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Reazuddin Bazar Road & Big Drain	Rehabilitation	ward no-31	km	457.17	1	N/A	No Land Acquisition
268	Transport	1) Road improvement	Second road (60 ft to 100ft)	Station Road & Pootpath	Rehabilitation	ward no-31	km	915	5	N/A	No Land Acquisition
269	Transport	1) Road	Tertiary road (20 ft	Kabi Nazrul Islam Road &	Rehabilitation	ward no-31	km	457	1	N/A	No Land

		improvement	to 60 ft)	Pootpath.							Acquisition
270	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Yakub Nagar Road	Rehabilitation	ward no-33	km	609	0.85	N/A	No Land Acquisition
271	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Bangsal Road	Rehabilitation	ward no-33	km	488	0.6	N/A	No Land Acquisition
272	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Poet Nazrul Islam Road	Rehabilitation	ward no-33	km	1036	2.7	N/A	No Land Acquisition
273	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Bridge Ghat road	Rehabilitation	ward no-33	km	290	1.16	N/A	No Land Acquisition
274	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Iqbql Road	Rehabilitation	ward no-34	km	792.5	3.12	N/A	No Land Acquisition
275	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Bundal Road	Rehabilitation	ward no-34	km	792.5	2.7	N/A	No Land Acquisition
276	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Asraf Ali Road	Rehabilitation	ward no-34	km	1220	3.6	N/A	No Land Acquisition
277	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Kolabagica Khal (Part)	Rehabilitation	ward no-34	km	761.96	5	N/A	No Land Acquisition
278	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Moriam Bebe Khal (Part)	Rehabilitation	ward no-34	km	914.38	6	N/A	No Land Acquisition
279	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	Asadgonj Road	Rehabilitation	ward no-35	km	915	1.35	N/A	No Land Acquisition
280	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Nabanur Mosque Road	Rehabilitation	ward no-35	km	183	0.32	N/A	No Land Acquisition
281	Transport	1) Road improvement	Goli Road (12 ft to 20 ft)	New Chaktai 2 old Chaktai Road	Rehabilitation	ward no-35	km	854	1.4	N/A	No Land Acquisition
282	Drain improvement	Drain improvement	Khal /Canal/Outfall drain	Cons. of R/wall Beside Nabanur Mosque	Rehabilitation	ward no-35	km	106	0.7	N/A	No Land Acquisition
283	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Bakalia city corp. stadium road	Rehabilitation	ward no-35	km	610	1.4	N/A	No Land Acquisition
284	Transport	1) Road improvement	Second road (60 ft to 100ft)	Fazal karim Road (Malek shaha near.)	Rehabilitation	ward no-35	km	214	0.2	N/A	No Land Acquisition
285	Transport	1) Road improvement	Tertiary road (20 ft to 60 ft)	Chaktai Shah Amanat New bridge road	Rehabilitation	ward no-35	km	457	1.5	N/A	No Land Acquisition
286	Transport	2) Bridge / culvert	Bridge	Chaktai P. C. Grader Bridge	New Construction	ward no-35	nos	1	8.5	N/A	No Land Acquisition
287	Transport	2) Bridge / culvert	Bridge	Fishereeghat Bridge	New Construction	ward no-34	nos	1	3	N/A	No Land Acquisition
288	Transport	2) Bridge / culvert	Bridge	Jalilgonj P. C. gradder Bridge	New Construction	ward no-34	nos	1	3	N/A	No Land Acquisition
289	Transport	2) Bridge / culvert	Bridge	Tackpara P. C. gradde Bridge	New Construction	ward no-33	nos	1	3	N/A	No Land Acquisition
290	Transport	2) Bridge / culvert	Bridge	Cons. of Bridge over diversion khal	Rehabilitation	ward no-17	nos	1	3.75	N/A	No Land Acquisition
291	Transport	2) Bridge / culvert	Bridge	Cons. of Bridge over Birja	Rehabilitation	ward no-17	nos	1	3.8	N/A	No Land

				khal (Beside sayed shah road)							Acquisition
292	Transport	2) Bridge / culvert	Bridge	Cons. of Bridge over shantinagar Khal (Adjection to Iqbal Mosque)	Rehabilitation	ward no-17	nos	1	1.25	N/A	No Land Acquisition
293	Transport	2) Bridge / culvert	Culvert	Cons. of Box Culvert From Hijra Khal Katalgonj Point to Guljur Junction to Chaktai Khal Duponi Bridge.	New Construction	ward no-16	km	1	10.0	N/A	No Land Acquisition
294	Municipal Facilities	Upgrading informal settlement	Re-arrangement of informal shops, houses	Shabok colony Building two nos building (21.50 m X 13.8 m) (6th storied building) (2 nos)	Rehabilitation	ward no-30	nos	2	13.4	N/A	No Land Acquisition
295	Municipal Facilities	City corporation office building	City corporation office building	Officers Quatar Building (30 m X 12.50 m) (6th storied building) (2 nos)	New Construction	ward no-30	nos	2	21.8	N/A	No Land Acquisition
296	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Chor Chaktai School and colledge cum syclone shelter	Rehabilitation	ward no-19	nos	1	8	N/A	No Land Acquisition
297	Municipal Facilities	Upgrading informal settlement	Re-arrangement of informal shops, houses	Shabok colony Building two nos building (36.58 m X 3.28 m) (6th storied building) (1 nos)	Rehabilitation	ward no-33	nos	1	13.4	N/A	No Land Acquisition
298	Transport	2) Bridge / culvert	Overpass (Flyover)	Patantully Badamtali Over pass	New Construction		km	1	120	N/A	No Land Acquisition
299	Transport	2) Bridge / culvert	Overpass (Flyover)	EPZ Over pass	New Construction		km	1	48	N/A	No Land Acquisition
300	Transport	2) Bridge / culvert	Overpass (Flyover)	Oxyzen Over pass	New Construction		km	1	35	N/A	No Land Acquisition
301	Transport	2) Bridge / culvert	Overpass (Flyover)	Sagarika road Alankar crossing, A. K. khan Crossing	New Construction		km	1	70	N/A	No Land Acquisition
302	Transport	2) Bridge / culvert	Overpass (Flyover)	Jakir Hossain Road Rail crossing (1)	New Construction		km	1	30	N/A	No Land Acquisition
303	Transport	2) Bridge / culvert	Overpass (Flyover)	Jakir Hossain Road Rail crossing (2)	New Construction		km	1	30	N/A	No Land Acquisition
304	Transport	2) Bridge / culvert	Overpass (Flyover)	New Market Crossing	New Construction		km	1	42	N/A	No Land Acquisition
305	Transport	2) Bridge / culvert	Overpass (Flyover)	Muradpur Rail Crossing	New Construction		km	1	42	N/A	No Land Acquisition
306	Transport	2) Bridge / culvert	Overpass (Flyover)	Sholoshahar 2 crossing	New Construction		km	1	42	N/A	No Land Acquisition
307	Transport	2) Bridge / culvert	Overpass (Flyover)	Kptai Road crossing	New Construction		km	1	42	N/A	No Land Acquisition

308	Transport	2) Bridge / culvert	Overpass (Flyover)	Boropul Crossing	New Construction		km	1	42	N/A	No Land Acquisition
309	Transport	2) Bridge / culvert	Overpass (Flyover)	Probotak Crossing	New Construction		km	1	42	N/A	No Land Acquisition
310	Transport	2) Bridge / culvert	Overpass (Flyover)	Fly Over from Dewan Hat to Potenga Sea Beach (4)	New construction	Ward No-23,24, 28,36,38,39, 40,41	km	1	120	N/A	No Land Acquisition
311	Transport	2) Bridge / culvert	Overpass (Flyover)	Muradpul to G.E. C crossing			km	1	184	N/A	No Land Acquisition
312	Transport	2) Bridge / culvert	Overpass (Flyover)	Double mooring			km	1	120	N/A	No Land Acquisition
313	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Chandgaon school-community center-cum cyclone shelter	Rehabilitation	ward no-4	nos	1	26	N/A	No Land Acquisition
314	Municipal Facilities	City corporation office building	CC main office, Community center, Ward office	Laldighi central disaster management control office, library and community center cum cyclone shelter	Rehabilitation	ward no-32	nos	1	12	N/A	No Land Acquisition
315	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	East Madarbari girls high school	Rehabilitation	ward no-30	nos	1	4	N/A	No Land Acquisition
316	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	West Madarbari girls high school	Rehabilitation	ward no-29	nos	1	4	N/A	No Land Acquisition
317	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Patantully boys high school	Rehabilitation	ward no-28	nos	1	4	N/A	No Land Acquisition
318	Municipal Facilities	School-cum-Cyclone Shelter	School-cum-Cyclone Shelter	Rabindra Nuzurul high school	Rehabilitation	ward no-34	nos	1	6	N/A	No Land Acquisition
319	Transport	Equipments for road works		Road construction equipments such as asphalt plants, dozers, payloaders, cranes and trucks etc			nos	84	90	N/A	No Land Acquisition
320	Municipal Facilities	Garment village		Garment village			acre	11.6	300	N/A	No Land Acquisition
321	Transport	1) Road improvement	Second road (60 ft to 100ft)	Riverbank Protection Embankment cum Road along Karnaphuli to Kalurghat bridge			km	10	410	N/A	No Land Acquisition
322	Municipal Facilities	City corporation office building		Automation of CCC activities			LS	1	50	N/A	No Land Acquisition
323	Transport/Drain improvement	City Masterplan		Formulation of City Master Plan (Urban Planning, Transport Planning and Drainage Planning)			LS	1	5	N/A	No Land Acquisition
324	Disaster management	Disaster management	Equipments for disaster	Disaster Management Equipments for CCC			LS	1	90	N/A	No Land Acquisition

			management								
325	Municipal Facilities	Upgrading informal settlement	Slum apartment	Slum Apartment for the Rehabilitation of the Poor people at the Hilly areas of the city			nos	10	100	N/A	No Land Acquisition
326	Municipal Facilities	Upgrading informal settlement	4th Class emploee's apartment	4th. Class Employees Apartment / Rehabilitation Programme.			nos	10	60	N/A	No Land Acquisition
327	Solid waste management	Solid waste recycle system (3R)		Solid Waste Management (3-R method)			LS	1	100	N/A	No Land Acquisition
328	Solid waste management	Equipment including incineration plant		Incineration Plant and equipments for Solid Waste Management			nos	411	83	N/A	No Land Acquisition
329	Municipal Facilities	Landscaping and beautification		Urban Beautification			km2	155.5	50	N/A	No Land Acquisition
330	Sanitation	Public toilets	Public toilets	Public toilets			nos		50	N/A	No Land Acquisition
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