CHAPTER 4: PUBLIC TRANSPORT SYSTEM

This chapter deals with clarification of present condition of the public transport system and identification of performance and issues. Based on the identified issues, it will be discussed and recommend the public transport development plan in Chapter 14.

In addition, the survey results of bus, bus terminal and Rickshaw are presented in Appendix 5.

4.1 Introduction

In this chapter, we will discuss current situation of existing public transport system in DMA in terms of transport network, level of service, users' satisfaction and overall issues. Public transport system being discussed in this chapter includes road transport such as buses, taxis, Auto-Rickshaws and Rickshaws, railway transport and inland water transport in DMA.

Photos for omni bus, mini bus, auto richshaw, rickshaw and passenger boats are shown below.

Omni Bus

Mini Bus

Auto Tempo Lagna

Auto Rickshaw

Rickshaw

Passenger Boat

4.2 Existing Public Transport System

4.2.1 Road Based Public Transport

Transport sector in Dhaka Metropolitan Area (DMA) has plenty of different types of transport modes. These transport modes can be classified into motorized transport mode and non-motorized transport mode. The major transport modes in the former classification include large bus, mini bus, auto-tempo, laguna, maxi and auto-rickshaw. The transport mode of the latter classification is Rickshaw, which is bicycle with passenger. Rickshaw been widely used as public transport mode in Bangladesh. These diverse transport modes often use the same space on the roads. As a result, such mixed traffic flow brings about severe operational disorder, traffic chaos, traffic accident and serious traffic congestions. Quality of service of these public transport modes has been devastated by such traffic chaos and it is more likely that situation has been worsened over time.

4.2.2 Railway based public transport

The nationwide railway line is around 2,900 km. Within Dhaka, there are two railway lines in north-south direction between Narayanganj and Gazipur with the length of 55 km and the other is in east-west direction between Mouchak and Pubail with the length of 17 km. Within Dhaka city, there are 6 railway stations between Tongi and Kamalapur and those stations are connected with a variety of access/egress transport modes like city buses, taxis, auto-rickshaws and rickshaws. The majority of the railway passengers are travelers with long-distance. Their major destinations are Sylhet and Chittagong. Railway commuters in urban area are relatively small number.

4.2.3 Waterway based public transport

As for inland water transport sector, Bangladesh Inland Water Transport Authority (BIWTA) has been in charge of planning and management of river transport service provision in DMA. DMA is surrounded by plural rivers formulating circular shape, which include Turag river in the west and the north, Buriganga river in the south-west and Balu River in the east. So far the

river transport service in Dhaka is mainly provided for cargo transport. In the case of passenger of river transport, people use small boat crossing river in a short distance and in-out Dhaka city in a long distance. Taking account of the geographical shape of the river, circular inland-water transport service may have some possibilities, although no such services are provided until now.

4.3 Current Public Transport Service Provision

4.3.1 Type of Bus Services

(1) Omni Buses

Most omni buses are considered to be ten meters or more in length. Drastic change of the bus composition has occurred since 2003. This trend began with the introduction of 'Sino Dipon' in early 2003. They used to operate four routes through 105 omni buses. 'Green Express' began operations in April 2004 with 100 buses on two routes. 'Bevco' started operation with 20 omni buses on the Uttara to Motijheel route in August 2004. 'Dhaka Paribahan', a major mini bus operator, has recently imported 10 CNG mobilized omni buses from China. The number of CNG omni buses is increasing. This is mainly due to government policy intervention for encouraging the use of CNG buses by giving priority in the award of route permits.

Bangladesh Road Transport Committee (BRTC) operates bus services under immunity from regulation by licensing authorities. As of July 2009, it owns 625 buses: 50 Volvo, 120 Ashok Leyland double decker buses, and 455 single decker buses. Within the city of Dhaka BRTC operates bus services by using mostly double decker buses. BRTC provides other intra-city bus services for women, government employees, destitute and disabled persons. Few services are dedicated to university students at reduced fares. Due to shortage of buses BRTC can not fulfill the demand of the common traveling mass

(2) Mini Buses

Most mini buses are around eight meters in length with locally manufactured bodies on Isuzu, Hino and Tata chassis and engines.

The number of mini buses has increased rapidly since 2000. This trend corresponds to the government policy that encouraged to eliminate two-stroke auto-rickshaw in cities due to serious air pollution. In fact, two-stroke petro fueled auto-rickshaws were targeted for elimination by 2001. This decision subsequently resulted in a large gap between demand and supply. At that moment, a large number of mini bus operators participated in bus service market to fill the gaps. Since April 2004, however, the Road Transport Committee has resolved to limit the permission of new mini bus route because of poor management and operation in many mini bus owners.

(3) Micro Buses

Micro buses are often called as 'human haulers' in Bangladesh. Human haulers are converted from pickup trucks with two benches paralleled have 9 to 15 seats. Most of them have diesel engines, while some are petro-fueled and small numbers are converted to CNG.

The human hauler is classified into auto-tempo, laguna and maxi. The number of human haulers has increased rapidly since 2001 when two-stroke auto-rickshaws were phased out to meet the demand for public transport. The government is, however, currently discouraging new route permit application from human haulers. Road Transport Committee (RTC) and Bangladesh Road Transport Authority (BRTA) are responsible for issuing route permit.

4.3.2 Bus Operators

Most of bus operators are privately owned small companies or individuals. In general the private bus operators can be classified into two categories. The first one is the operators of some omni bus, most of the mini bus and all human hauler. Drivers and crews in this category either own the vehicle individually or rent the bus on daily or monthly basis. Therefore, they operate the vehicle either at their own revenue risk, require many passengers to repay the rental fee, cover fuel expenditure and basic maintenance costs, and make a profit. The operators in this category have neither employment guarantee nor professional management skill. In most cases, the drivers and crews handle all the fare matters on the bus.

Another is professionally managed bus operators. In this category, drivers and crews are employed by the bus company. They are paid their salary according to the number of trips made, but not according to the number of passengers they transported. These operators are distinguished by the fact that they maintain ticket booths in order to collect fares. This allows bus a driver to concentrate on safer driving rather than looking for more passengers.

In current situation of bus sector fragmented individual private bus operators are formulating major field. Such great numbers of individual operators are hard to manage and control properly by the regulatory institutions. The government making efforts for promotion of bus industry consolidation are as follows:

a) Discouraging route permit applications by individuals,
b) Reducing the span of permits from 3 years to 1 year for the more fragmented diesel mini buses and human haulers, and
c) Shifting human haulers and diesel mini buses off the main arterials to the side roads.

The Road Transport Committee is instructing small operators to form cooperatives. Individual applications for a route permit are not encouraged, while company applications are given preference.

Figure 4.3-1 and Table 4.3-1 show recent trend of number of registered buses.

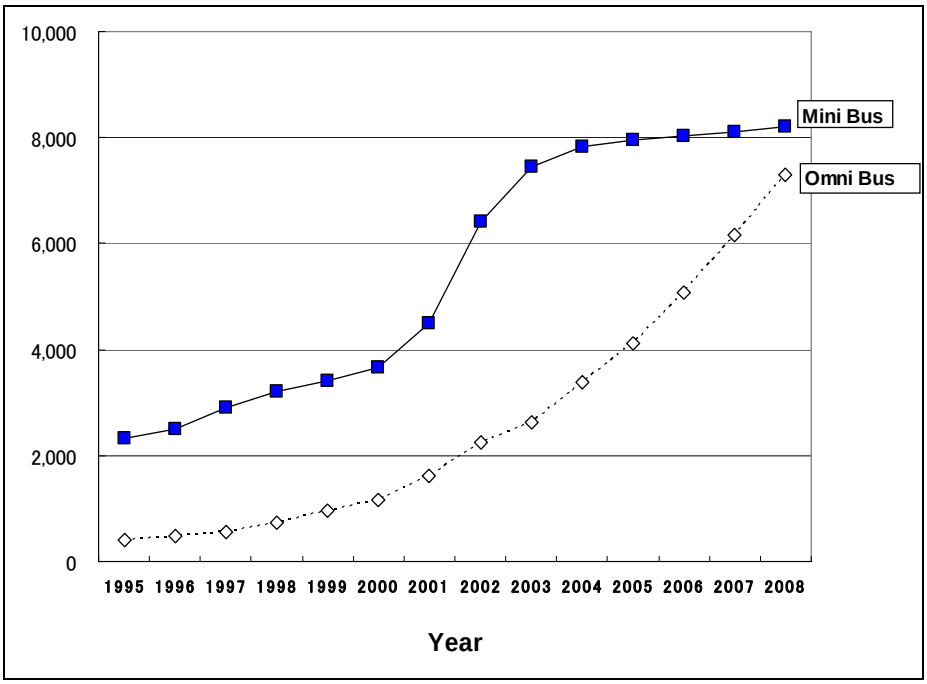


Figure 4.3-1 Recent Trend of Number of Registered Buses

Table 4.3-1 Recent Trend of Number of Registered Buses

vehicle class	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Large bus	414	487	545	729	953	1,155	1,608	2,240	2,614	3,393	4,121	5,070	6,152	7,296
Minibus	2,333	2,500	2,897	3,197	3,412	3,654	4,485	6,409	7,460	7,828	7,946	8,021	8,098	8,205
total	2,747	2,987	3,442	3,926	4,365	4,809	6,093	8,649	10,074	11,221	12,067	13,091	14,250	15,501

4.3.3 Current Bus Service Provision

(1) Number of permitted bus routes and bus vehicles

Bus and mini bus routes tend to be concentrated along with the limited number of arterial roads usually in north-south direction. The distribution of omni and mini bus routes are shown in the following map (Figure 4.3-2 and Figure 4.3-3). In Dhaka city, total number of permitted (omni) and mini bus routes is 152. On the airport road, the maximum number of permitted (omni) bus routes is 60 and the maximum number of buses being allowed to ply on the routes is around 2,500.

This shows that tremendous bus services are provided on the daily basis. However, on the basis of field observation in some areas of Dhaka city, still many people are making long queue standing on the roadside and waiting for bus for a long time every day. This shows that Bus service provision is not enough to meet the passenger demand, although a lot of buses are plying the trunk road.

As for operation of human hauler, which includes maxi, auto-tempo and leguna, they also need

permission in terms of route and number of vehicles plying the routes. The number of permitted routes and vehicles for human hauler is not so many compared to omni and mini buses. However, there are many permitted vehicles allowed to operate on some roads such as Khamarbari Road, Rokeya Sharani, Mirpur Road, Zahir Raihan Sharani and so forth. The maximum number is 337 on the Begum Rokeya Sharani connecting with Agargaon and Mirpur Roads.

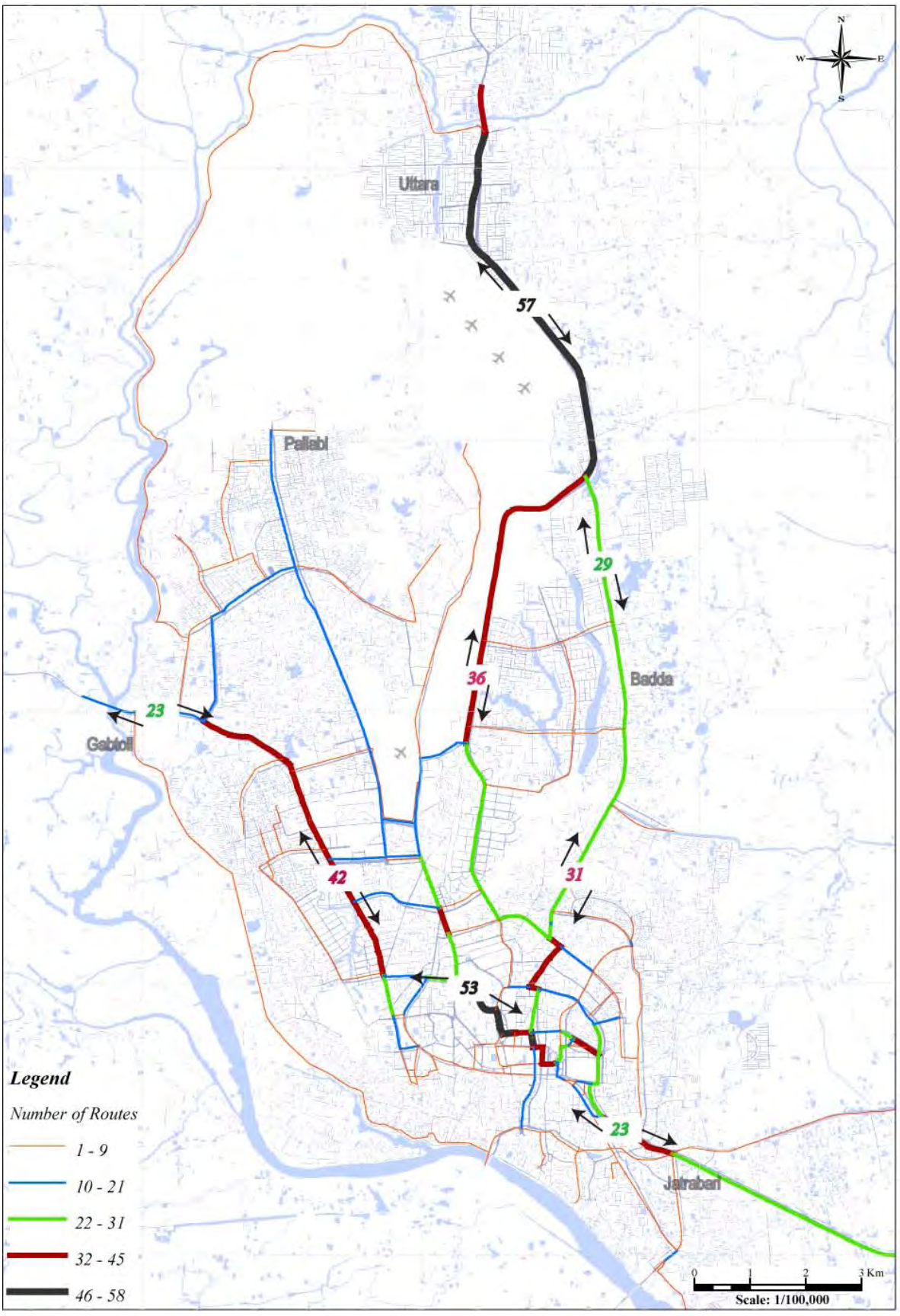


Figure 4.3-2 Number of Permitted Omni Bus/Mini Bus Routes

Source: BRTA, 2009

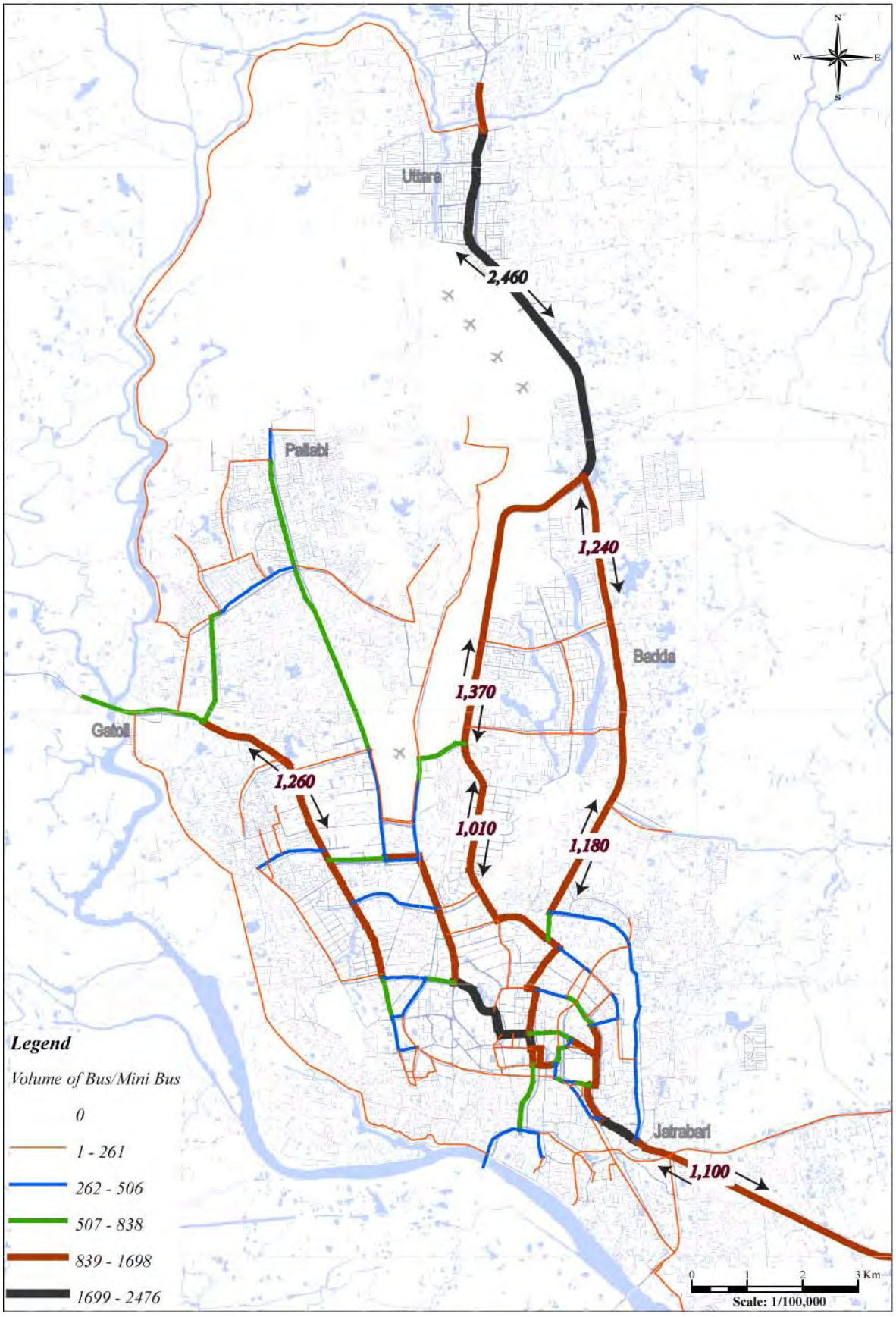


Figure 4.3-3 Number of permitted Omni/Mini bus Vehicles

Source: BRTA, 2009

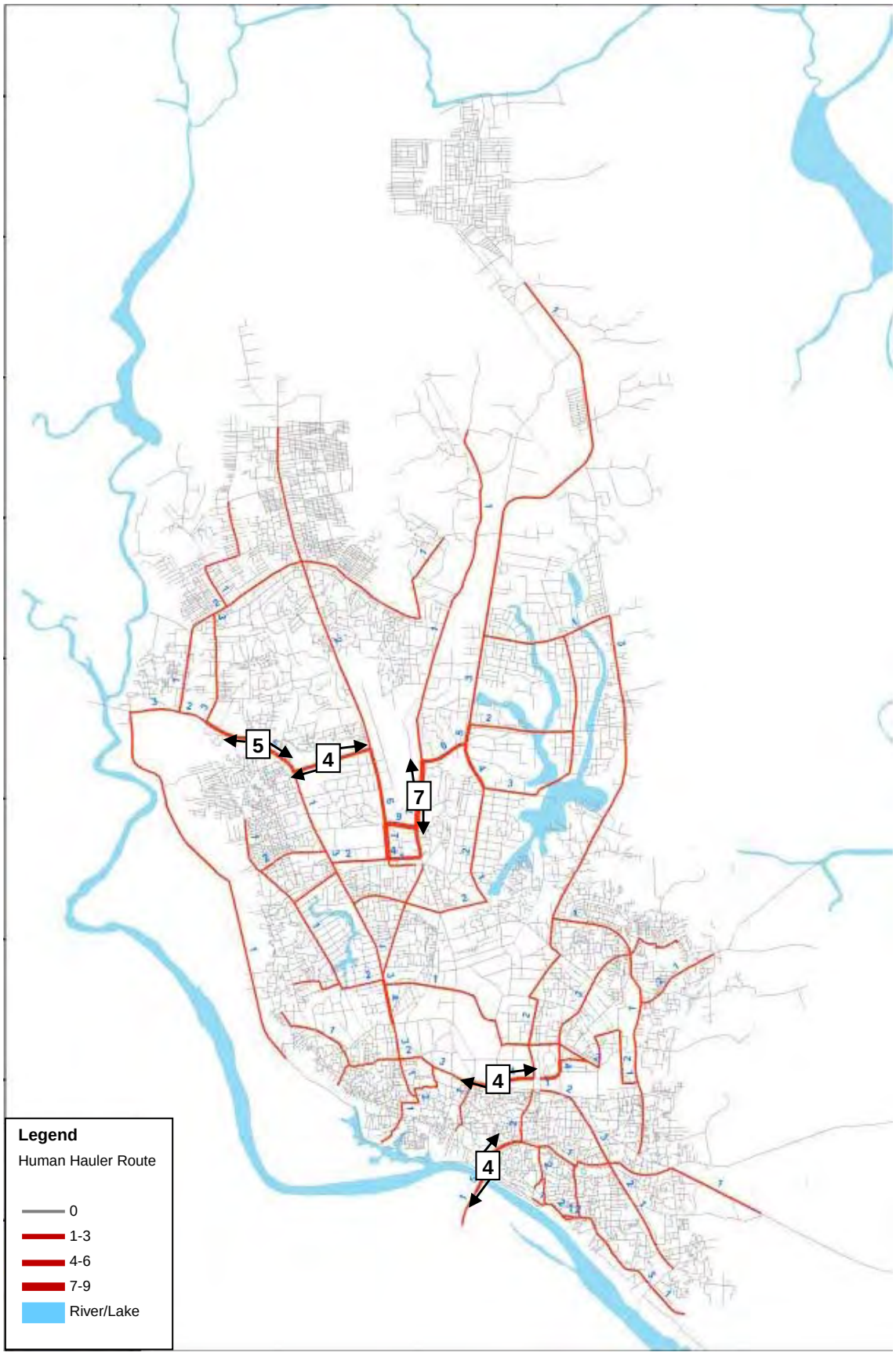


Figure 4.3-4 Number of Permitted Human Hauler Routes

Source: BRTA, 2009

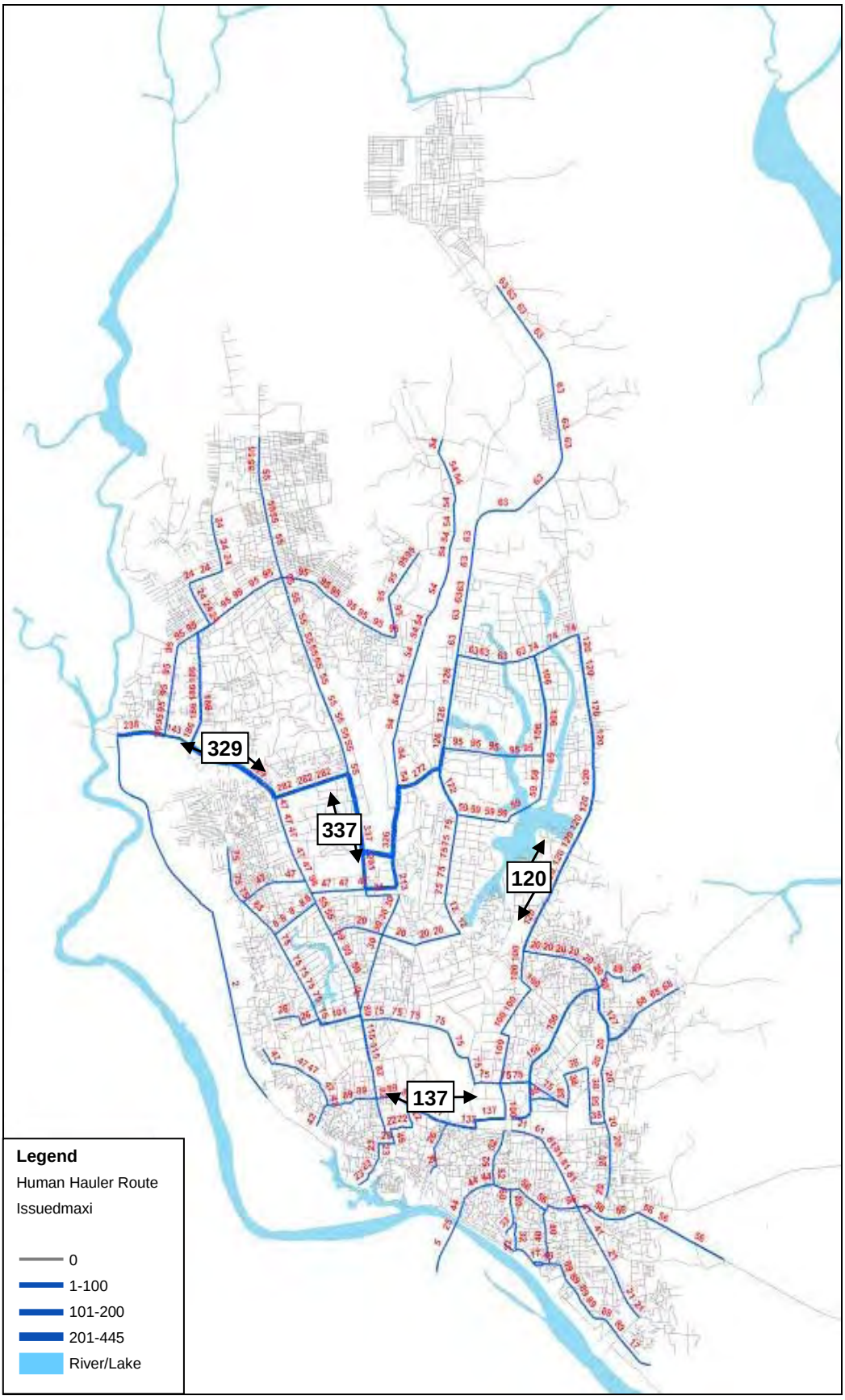


Figure 4.3-5 Number of Permitted Human Hauler Vehicles

Source: BRTA, 2009

(2) Bus travel speed estimate

Travel speed measuring survey at morning/evening peak hour and daytime off peak hour was conducted. The target 20 bus routes are summarized in the following Figure 4.3-6.

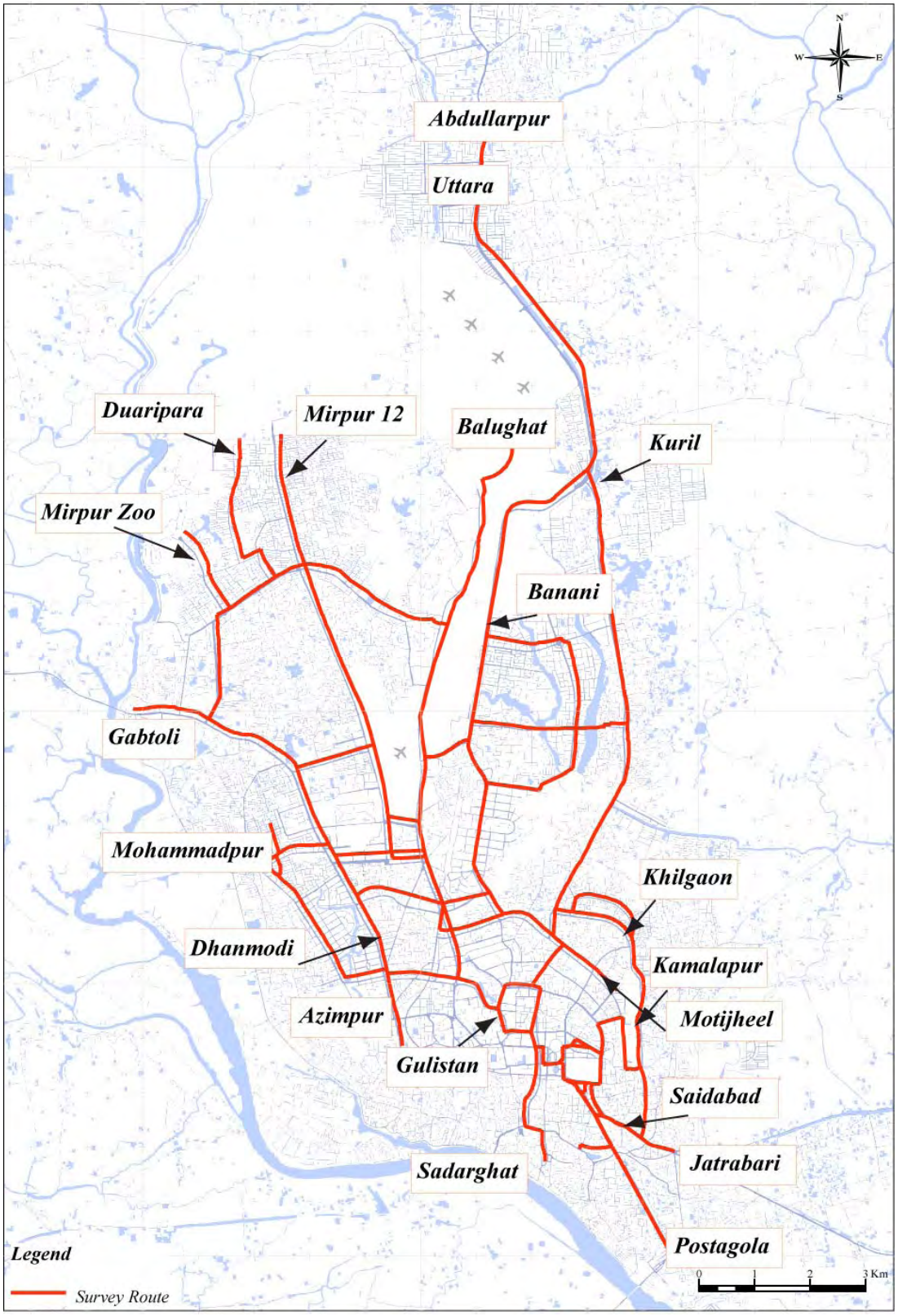


Figure 4.3-6 Bus Routes for which Survey has been Carried out

The measured cruising speed is shown in the following Figure 4.3-7. Average speed of the bus was approximately 17.7 km/hr in case of afternoon off-peak time, while 14.4 km/hr in morning/evening peak time.

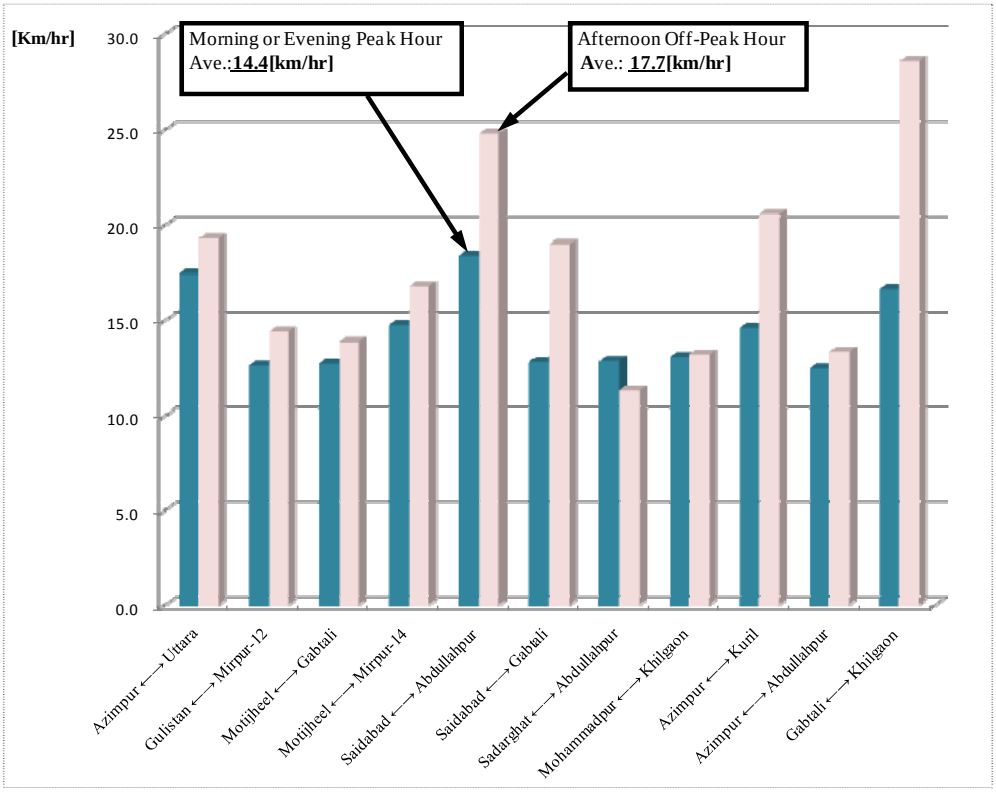


Figure 4.3-7 Average cruising speed of the buses

Source: JICA Study Team

(3) Fare system

Basically, fare of the omni/mini bus is staying at very low level. The fare rate is BDT 1.2 per km in omni bus and BDT 1.1 per km in mini bus. In the past decade, in spite of inflation, rising fuel costs, and deteriorating traffic operating conditions, bus fare have not increased substantially since 2000. Furthermore, in some cases, bus fare even went down. Such declining fare can partially be attributed to competitive markets and the low fares have been cited as a major obstacle to financial sustainability of operations. The fares are reviewed periodically by the government through negotiation with the operators.

4.3.4 Auto-Rickshaw

Auto-rickshaw is a three wheeler vehicle known as ‘baby taxi’ or ‘CNG’. This is a taxi-type service offering motorized door to door public transport. Auto-rickshaws are widely used transport means throughout Dhaka city, particularly for people traveling further distances than normally covered by rickshaws and would prefer convenient door to door service at a lower cost than regular taxis. Auto-rickshaw is a kind of public transport mean. However, no

permission of the fixed service routes is necessary. Only registration is needed.

Prior to December 2001, about 30,000 auto-rickshaws were operated in and around city of Dhaka. Most of them were mobilized by two-stroke petro-fueled engines. Because of the serious air pollution caused by such vehicles the government decided to eliminate all of these vehicles by 2001. The decision was subsequently and effectively implemented. Instead, the government approved the introduction of plenty of four-stroke CNG-fuelled vehicles in January 2002. Since then, the CNG vehicles built by Bajaj Company are coming from India. According to BRTA statistics, the number of registered auto-rickshaw at preset is about 40,000 and this number has been stable in the past several years.

Figure 4.3-8 and Table 4.3-2 show number of registered auto-rickshaw vehicles.

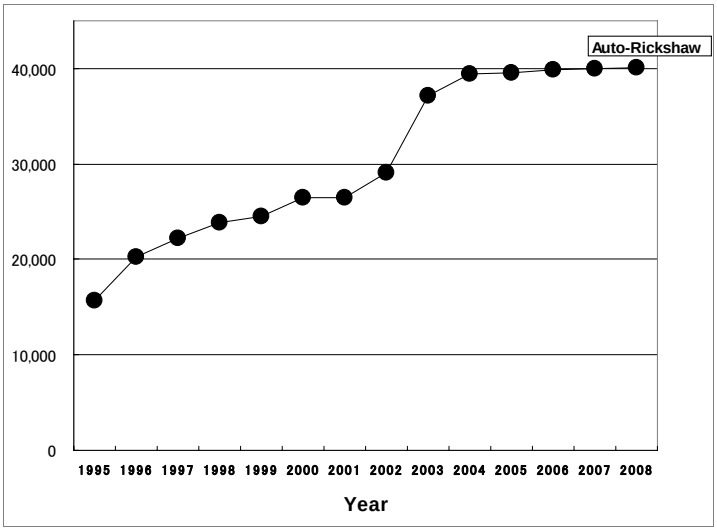


Figure 4.3-8 Number of Registered Auto-Rickshaw Vehicles

Table 4.3-2 Number of Registered Auto-Rickshaw Vehicles

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Auto-Rickshaw	15,660	20,275	22,177	23,866	24,548	26,429	26,504	29,120	37,116	39,460	39,599	39,829	39,950	40,105

Source: BRTA

Basically, fare of Auto-Rickshaw is much more expensive comparing to the Omni and Mini Buses. Actual fares are established by meters installed in auto-rickshaw. However, drivers generally operate based on the negotiated fares and seldom use the meter. The fare table is as follows.

Table 4.3-3 Fare rate of Auto-Rickshaw

Fare rate (km/minutes basis)
・ BDT 14.00 on boarding, up to 2 Km
・ BDT 6.00 per Km or part thereof, for onward travel
・ Waiting/stopping charge → BDT 1.00 per minute.
・ Minimum fare: BDT 18.00

Source: BRTA, 2009

4.3.5 Taxi

In Dhaka, three different colored vehicles i.e., yellow, blue and black are plying. The taxi service in Dhaka city has been provided since 1998. As of 2004, there were approximately 60 taxi companies operating in Dhaka city. However, the taxi companies do not operate taxi cabs directly. Rather, they rent the taxi cabs to individual taxi drivers, who operate a taxi vehicle and pay rental and fuel fees. According to a record in 2004, taxi driver paid BDT 950 for air-conditioned car and BDT 650 for non-air-conditioned car to taxi company as the car rental fee. The number of registered taxi vehicles is relatively small. As of the end of 2008, number of registered taxi cab is approximately 10,000.

Because Taxi Company is not an actual operator, the quality of taxi service completely depends upon individual drivers. In Dhaka city, lack of well qualified taxi drivers is a serious issue. Many taxi drivers have fake licenses. To improve the quality of taxi services and improve driver's conduct and discipline, the Cab Association requested BRTA to introduce a separate licensing system for taxi drivers that include driver training program. However, taxi drivers opposed to such proposal and the requirement was not enforced due to lack of cooperation from the taxi companies. Most of the taxi companies did not establish suitable workshop or repair facilities to ensure proper maintenance. As a result, service life of the vehicles was shortened. The general impression of the taxi service quality in Dhaka city is awful due to the driver's dangerous driving manner and ill maintained dirty vehicles.

The taxi fare is relatively high comparing to other public transport modes such as buses and auto-rickshaws. The fare rate of the air-conditioned taxi service is 8 to 10 times more compared to omni/mini bus services. Initial fare rate is 2 to 3 times and running fare rate is 1.3 to 2 times more compared to auto-rickshaws.

4.3.6 Rickshaw

As a public transport mode, rickshaws are widely used in Bangladesh for short distance trip from home to bus stop or nearby market. Rickshaw has originally two types. One is hand-pulled rickshaw and the other is cycle-rickshaw. Hand-pulled rickshaws were never common in Dhaka, although a very few were used in Chittagong and Rangpur1). Now all the rickshaws in Bangladesh are cycle-rickshaw. The first cycle-rickshaw in Bangladesh appeared in the 1930's and there is a rickshaw licensing system.

Dhaka City Corporation (DCC) is the agency issuing the rickshaw license in Dhaka. Now number of licensed rickshaw is about 90,000. It is, however, said that another 400,000 rickshaws are operating without licenses in the city.

[1])*Source: BOB Gallagher, 'The Rickshaws of Bangladesh', University Press Ltd., 1992*

Rickshaws are operated mostly in residential area and market places, where many people are living or gathering. The government introduced a ban on rickshaws not to operate on major trunk roads since 2004. Those roads where rickshaws are banned are called 'Rickshaw Free' roads as show in Figure 4.3-9 with yellow colored routes.

Owing to ban on operation of rickshaws on major roads, the area of operation has been somewhat constricted. If rickshaws are altogether banned in near future, thousands of rickshaw users would feel inconvenience, but pretty soon they might get used to it. The really affected people will be rickshaw pullers and their family, who earn their livelihood from rickshaws.

Compared to bus fare, cycle-rickshaw fare is rather high because of the short travel distance, apparently the users tend to ignore the high fare rate. While the approved bus fare is in the range of BDT 1.00 – 1.20 per Km, fare of cycle-rickshaws is around BDT 10.00 per Km. The average trip length is around 3 Km. Therefore, the fare paid is more or less limited to BDT 30.00, what most users can afford.

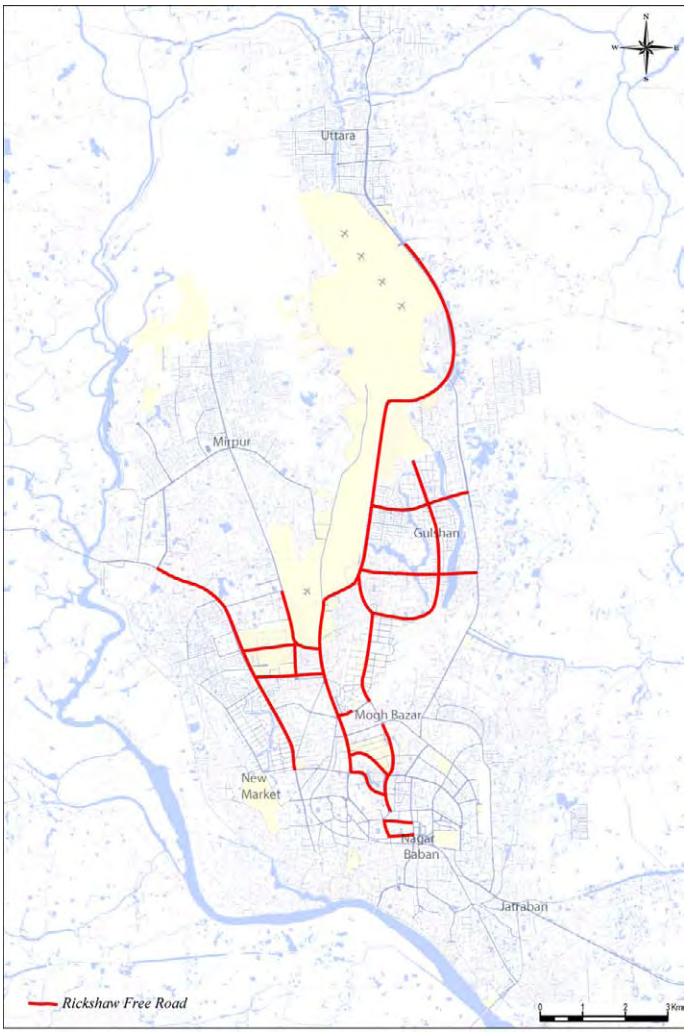


Figure 4.3-9 Rickshaw Free Road

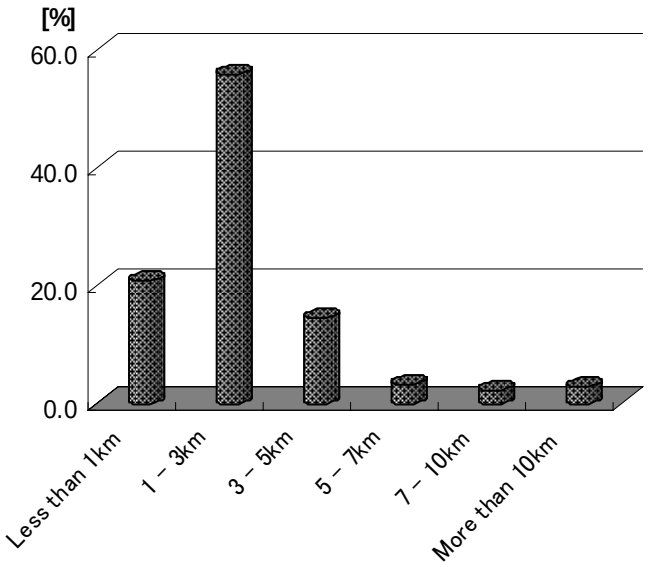


Figure 4.3-10 Travel Distance for Rickshaw

Figure 4.3-10 and Figure 4.3-11 show travel distance and fare paid for rickshaw.

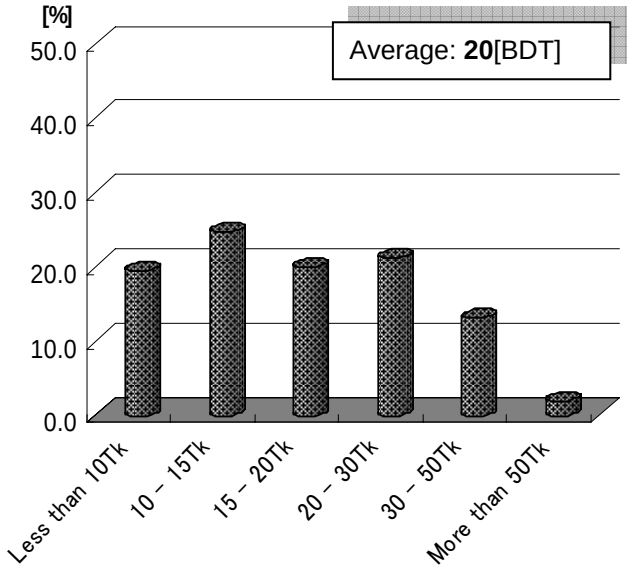


Figure 4.3-11 Fare Paid for Rickshaw

According to the HIS, the number of daily rickshaw trips amount to about 7.9 million. By each trip purpose, 'To Home' is majority with about 3.7 million trips and 'Private' is the second largest with 1.4 million trips. 'Home to work' and 'Home to school' is the third largest with about 1.2 million trips.

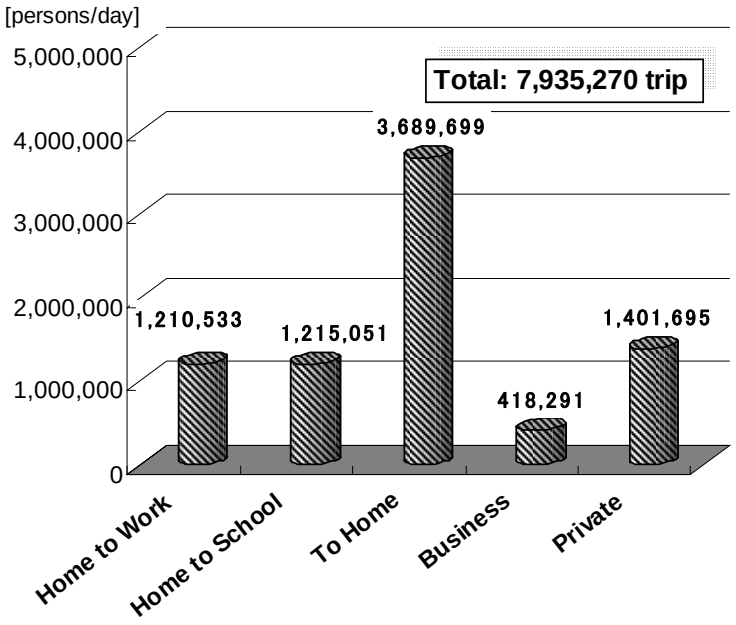


Figure 4.3-12 Number of Rickshaw Users by Trip Purpose

Source: Survey results of Household Interview Survey (HIS), JICA Study Team

Traffic movement study on rickshaw has been conducted to find out the travel pattern characteristics of rickshaw within the Dhaka City. The details are compiled in clause 5.3 of Appendix 5, important features such as 1) working time and running distance, 2) number of

trips and trip distance, 3) number of trips and travel time and 4) number of trips and travel speed are shown below.

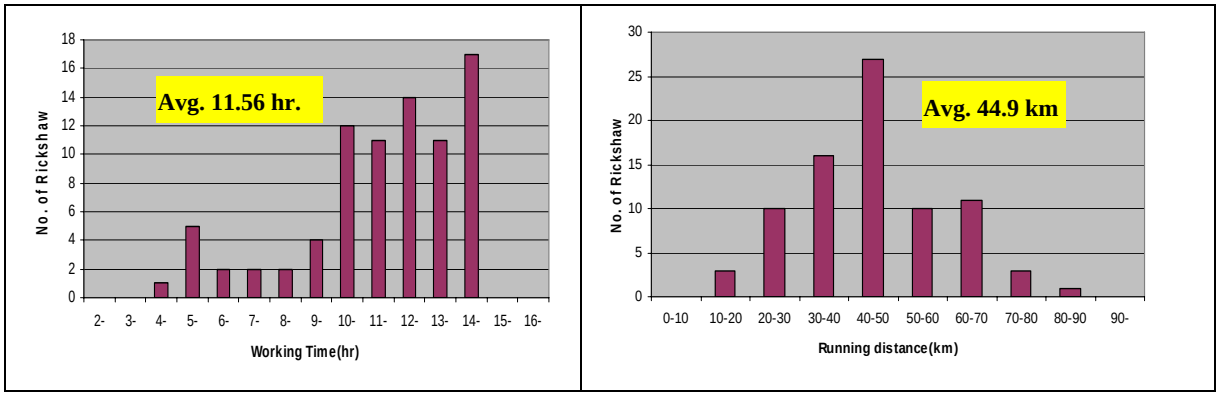


Figure 4.3-13 Working Time and Running Distance

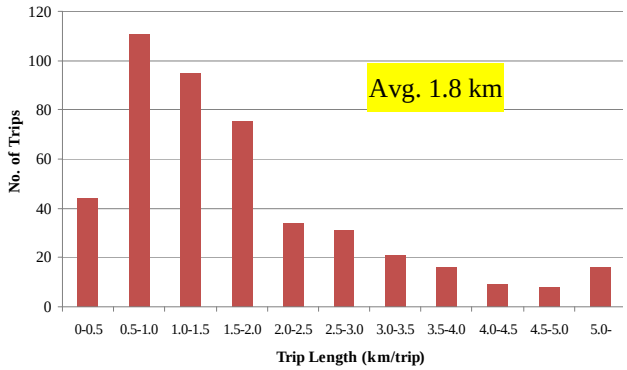


Figure 4.3-14 Number of Trips and Trip Distance

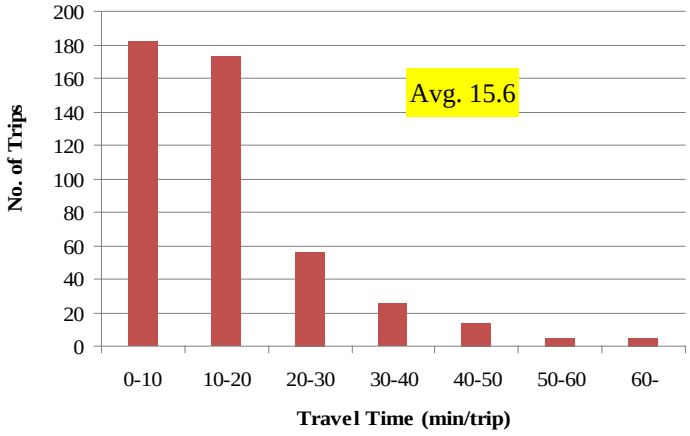


Figure 4.3-15 Number of Trips and Travel Time

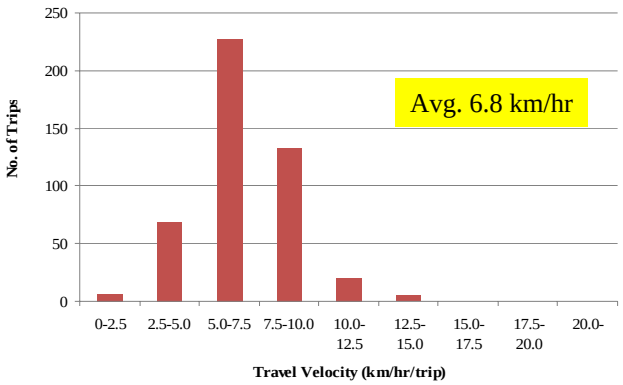


Figure 4.3-16 Number of Trips and Travel Speed

4.3.7 Railway

Railway services in Dhaka are provided, operated and maintained solely by Bangladesh Railway (BR) under administration of Bangladesh Railway Authority, which is a part of the Ministry of Communications. BR has a total of 2,884.67 km railway consists of three different gauges. The Meter gauge - MG (1000mm) and Broad gauge - BG (1676mm) system was established in the country since the beginning and dual gauge (DG) – a mix of MG and BG system has been introduced since 2001. The operated railway length was 2,858 km, and it reduced to 2,656 km in 2006.

In DMA, there are two railway lines: One is the railway in the north-south direction from Gazipur to Narayanganj with the length of about 55km, and the other is the railway in the east-west direction from Pubail to Mouchak with its length of about 17km. In Dhaka city, the railroad passes from Tongi to Kamalapur and six railway stations i.e., Tongi Junction, Airport, Dhaka Cantonment, Banani, Tejgaon and Kamalapur are operating. These stations are served by a variety of access/egress transport means like buses, taxis, auto-rickshaws and rickshaws.

Kamalapur railway station is the main railway station in Dhaka. As of 2004, Kamalapur station had about 28,000 passengers per day. There is Inland Container Depot (ICD) adjacent to the Kamalapur station. Two container trains per day are operated between Chittagong and the ICD. Tejgaon station is also the major destination for all freight railway shipments. Presently, two freight trains per day are being operated from Tejgaon station. There is Tejgaon truck terminal adjacent to Tejgaon station. Due to limited space and the large number of trucks in the terminal, serious traffic congestion can be seen on the surrounding areas.

A relocation project of the existing segments of the railway between Kamalapur and Airport stations were proposed in 2004 and Bangladesh Railway has submitted a Project Concept Paper (PCP) to the Planning Commission. The proposal indicated that the relocated rail line would be elevated on an embankment with a series of grade separated underpasses. A related project creating some uncertainty regarding the future of the current ICD at Kamalapur is a proposed project by BIWTA to construct an Inland Container Terminal (ICT).

4.3.8 Waterway

One of the special transport resources in Dhaka is waterways, because Dhaka is surrounded by the Buriganga, Turag, Balu, and Sitalakkhya rivers. At present, a very substantial amount of water transport activity occurs along the Buriganga River that borders on the southern edge of the old city. There are innumerable small hand rowed boats and ferry with people and goods crossing the river between the Old City and Keraniganj. In addition, there are large passenger launches that transport people to distant locations outside the Dhaka as overnight travel and primarily to the districts south of Dhaka.

Sadarghat on the bank of Buriganga River is the main river port in Dhaka. There are other launch terminals and landing stations. These terminals are located in a congested area of the Old City. Thus, the approach roads to the terminals are narrow and traffic moves very slowly because the roads are occupied by street venders, retail shoppers working on the roadside and parked vehicles.

The Bangladesh Inland Waterways Transport Authority (BIWTA) has conducted the feasibility study regarding Circular Waterways System around Dhaka, for transportation of passengers and goods. The concept of a Circular Waterways System puts an emphasis on the use of water transport as a means to serve the passenger and freight transport needs. The plan envisage a network of landing stations positioned along the Buriganga, Turag, and Balu rivers providing passenger and freight access to a variety of water-borne transport vehicles. In addition to the landing stations, land based transport services, dredging effort to maintain sufficient depth for navigational purposes are required.

An initial study to evaluate the feasibility of such a concept was completed in 2001, for the western section of the Circular Waterway (Ashulia to Sadarghat). The feasibility study included hydrographic surveys, soil investigations, landing station locations and designs, and projected levels of passenger and freight use. BIWTA has initiated another feasibility study for the eastern section of the Circular Waterways System (Ashulia to Demra), including waterway linkages to some of the existing canals.

4.4 Passenger Terminals

Here we discuss current condition of passenger transport terminals including inter-city bus terminals, railway stations and waterway transport stations.

4.4.1 Bus Terminals

(1) Survey Target Locations

Passengers at the bus terminals and bus stand, which includes Gabtali, Mohakhali, Saidabad, Gulistan, Fulubaria and Saidabad, were interviewed during the survey.

(2) Summary of the Survey

Passengers at the bus terminals and bus stand, which includes Gabtali, Mohakhali, Saidabad, Gulistan, Fulubaria and Saidabad, were interviewed during the survey.

a) Frequency of usage

As for a trip purpose, most of the users are for "occasional purpose". Therefore, the majority of the frequency of usage is "Occasionally".

Figure 4.4-1 shows the result of interviews.

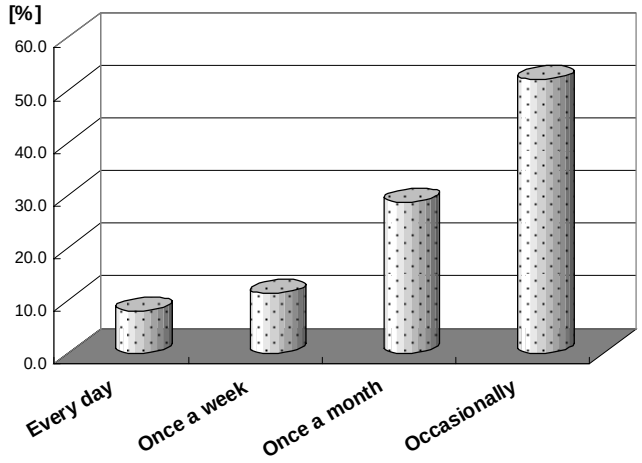


Figure 4.4-1 Frequency of Usage

b) User's monthly income

The users are not poor or very rich. The major monthly income ranges from BDT 5,000 to 20,000, as indicated in the Figure 4.4-2.

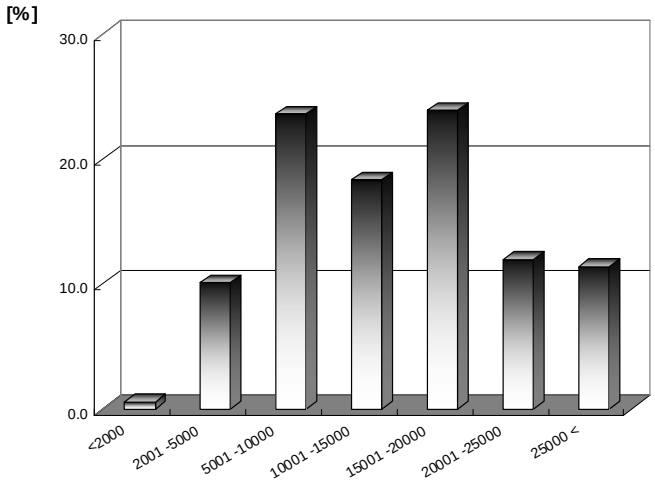


Figure 4.4-2 User's Monthly Income

c) Access/Egress transport mode

Major access transport means are city bus, auto-rickshaw and rickshaws. To the contrary, almost 100% of the egress transport means are city buses.

Figure 4.4-3 and Figure 4.4-4 indicate access transport mode and egress transport mode respectively.

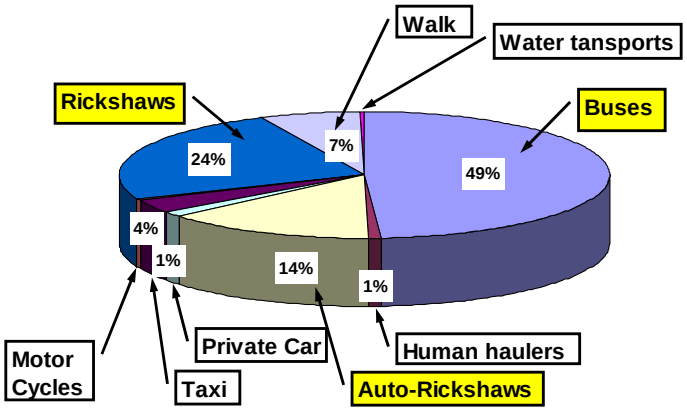


Figure 4.4-3 Access Transport Mode

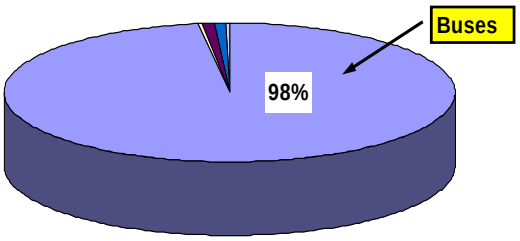


Figure 4.4-4 Egress Transport Mode

d) Waiting time

Waiting time to catch a transport ranges from 10 to 30 minutes, shown in Figure 4.4-5.

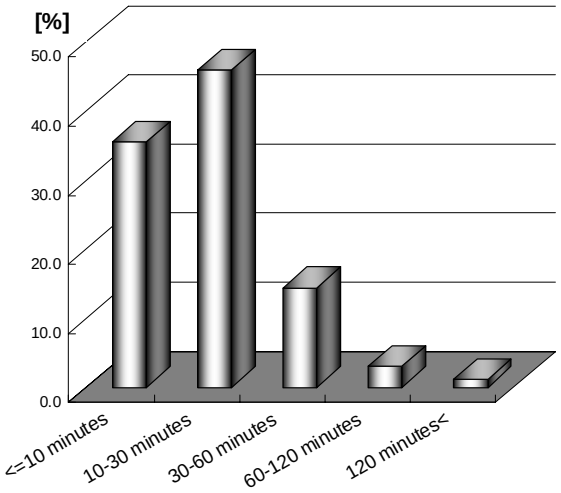


Figure 4.4-5 Waiting Time

e) Level of satisfaction for information service provision

Level of users' satisfaction on information provision is very low. About 85% users are not satisfied with the current level of information service provision.

Figure 4.4-6 shows the result of interviews.

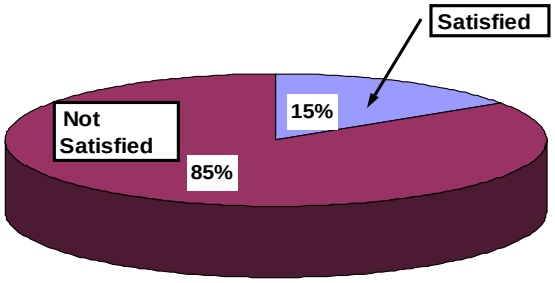


Figure 4.4-6 Level of Satisfaction

f) Evaluation of service rank

Overall estimation of bus terminal is very unsatisfactory. Nobody answered 'Good'.

Figure 4.4-7 shows the result of interviews.

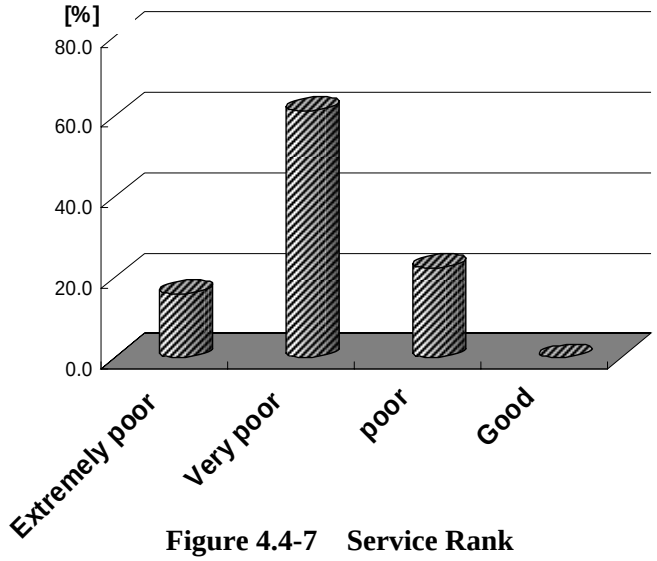


Figure 4.4-7 Service Rank

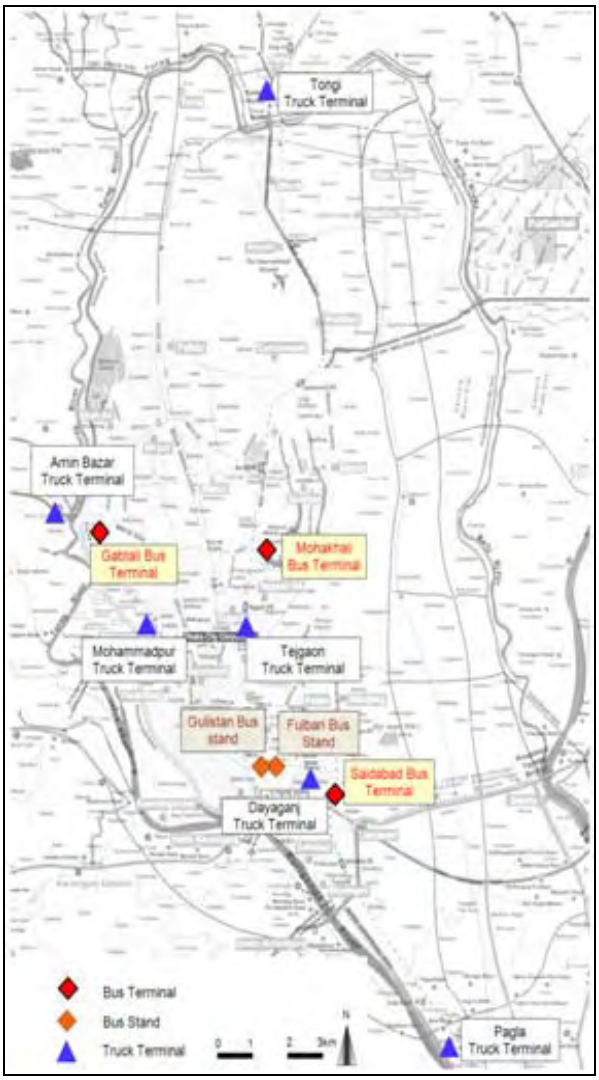


Figure 4.4-8 Location of Passenger Terminals

Source: DCC

4.4.2 Railway Stations

(1) Survey Target Locations

Railway station passengers were interviewed during survey. The survey target stations are Airport Railway Station and Kamalapur Railway Station.

(2) Summary of the Survey

a) Frequency of usage

The majority of the users travel occasionally.

Figure 4.4-9 shows the result of interviews.

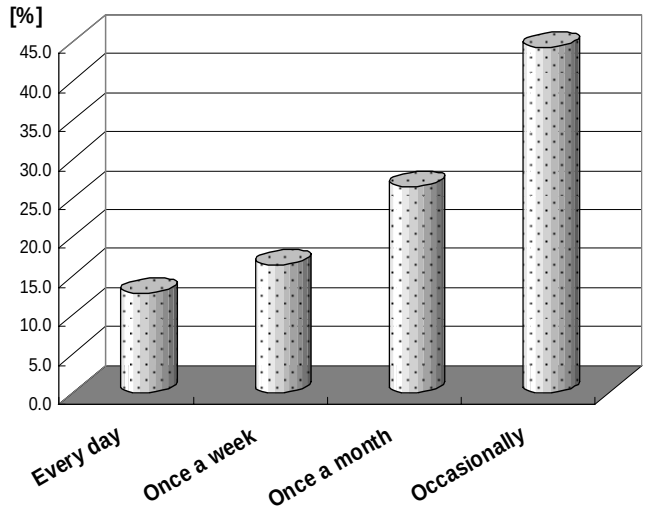


Figure 4.4-9 Frequency of Usa

b) User's Monthly Income

The majority (65%) of the users' monthly income range from BDT 5,000 to 20,000, as indicated in the Figure 4.4-10.

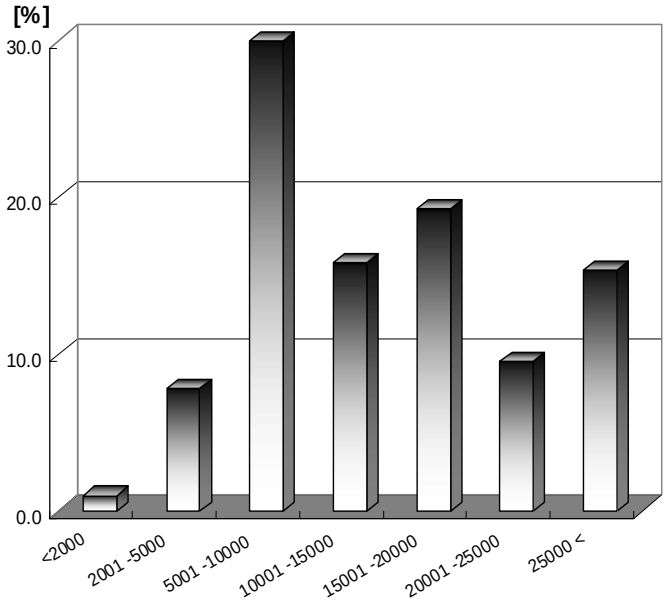


Figure 4.4-10 User's Monthly Income

c) Access/Egress Transport Mode

Major access/egress transport means are city buses, auto-rickshaws and rickshaws.

Figure 4.4-11 and Figure 4.4-12 indicate access transport mode and egress transport mode respectively.

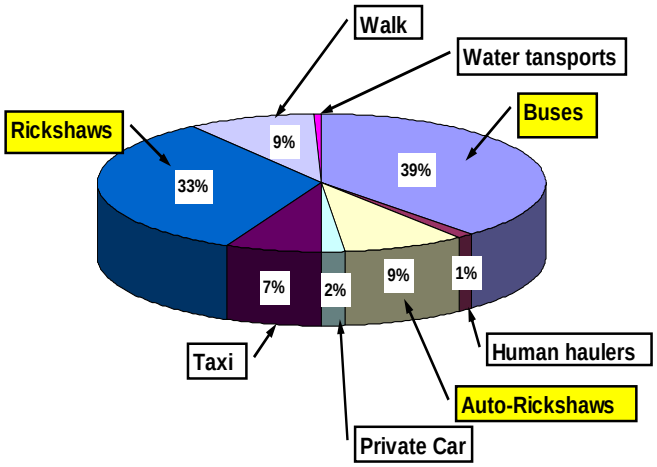


Figure 4.4-11 Access Transport Mode

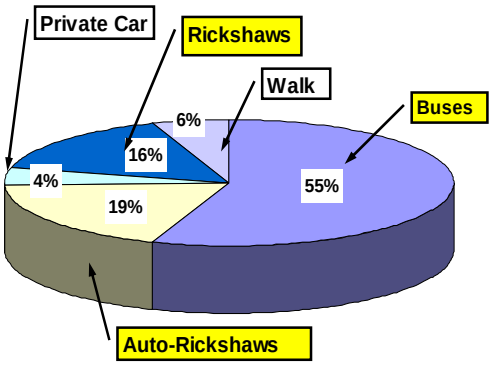


Figure 4.4-12 Egress Transport Mode

d) Waiting time

The waiting time for majority of the passengers ranges from 10 to 30 minutes, shown in the Figure 4.4-13.

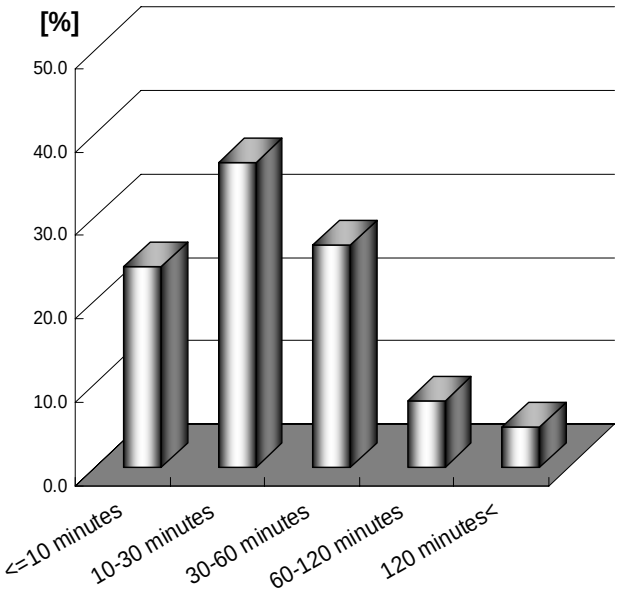


Figure 4.4-13 Waiting Time

e) Level of satisfaction for information service provision

Level of users' satisfaction is very low. About 87% users are not satisfied with the present condition of the service provision at the railway stations.

Figure 4.4-14 shows the result of interviews.

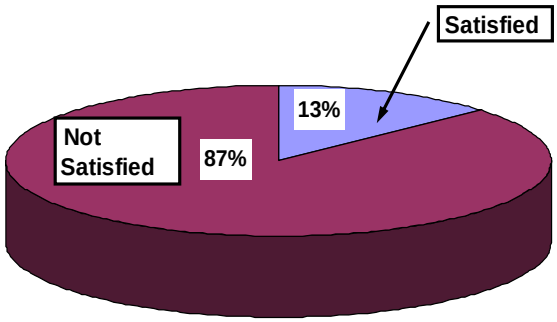


Figure 4.4-14 Level of Satidfaction

f) Evaluation of service rank

Very low level and Most of the users complained about 'poor' railway station services.

Figure 4.4-15 shows the result of interviews.

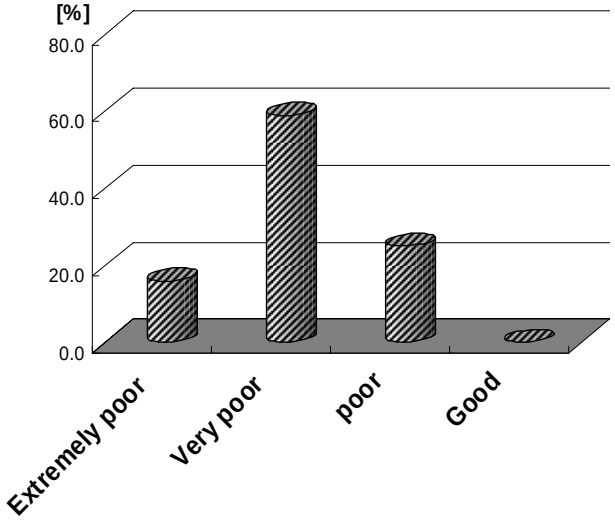


Figure 4.4-15 Service Rank

4.4.3 Inland Waterway Stations

(1) Survey Target Location

Inland water station passengers were surveyed through interview. The survey target station is Sadarghat Launch station.

(2) Summary of the Survey

a) Frequency of Usage

The majority of the user travel 'Occasionally'.

Figure 4.4-16 shows the result of interviews.

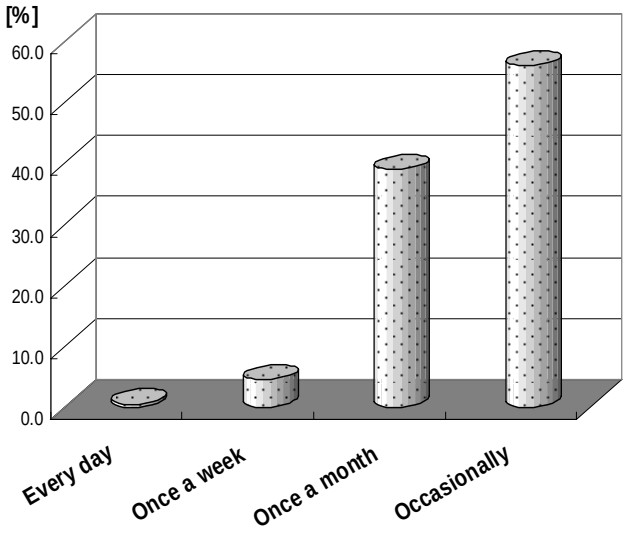


Figure 4.4-16 Frequency of Usage

b) User's Monthly Income

Average monthly income of the users ranges from BDT 5,000 to 15,000, as indicated in the Figure 4.4-17.

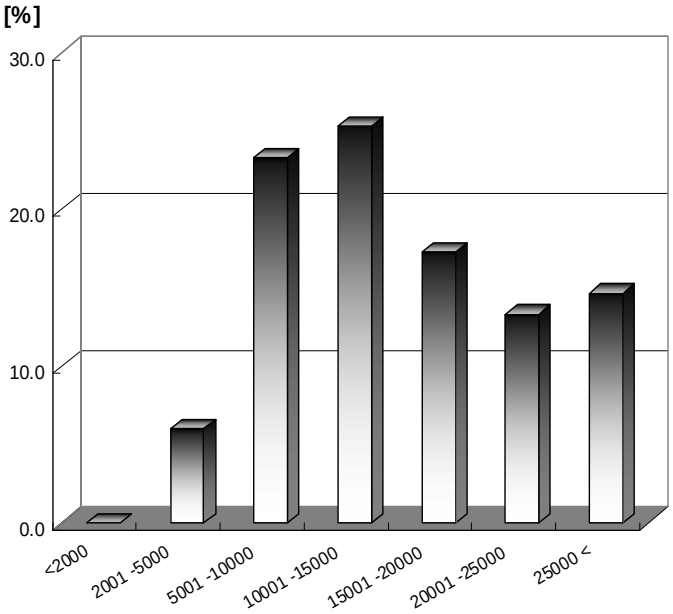


Figure 4.4-17 User's Monthly Income

c) Access/Egress Transport Mode

City buses, auto-rickshaws and rickshaws are the main access/egress transport.

Figure 4.4-18 and Figure 4.4-19 indicate access transport mode and egress transport mode respectively.

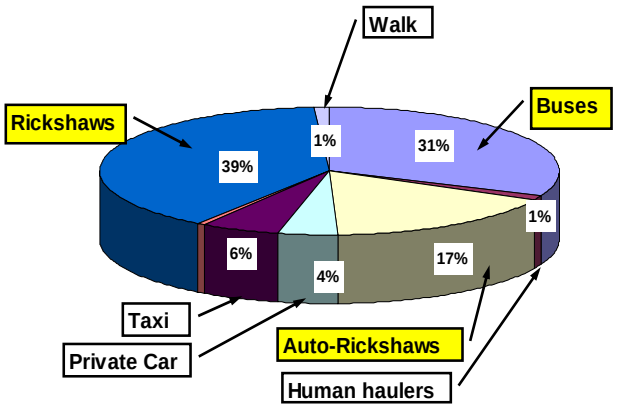


Figure 4.4-18 Access Transport Mode

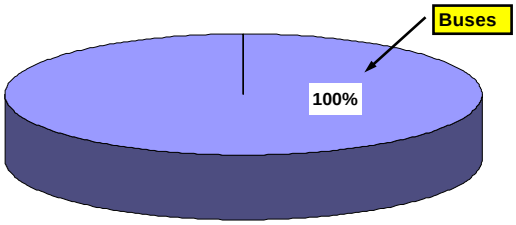


Figure 4.4-19 Egress Transport Mode

d) Waiting Time

The majority of the users' have to wait for 10 to 60 minutes to catch the transport, shown in the Figure 4.4-20.

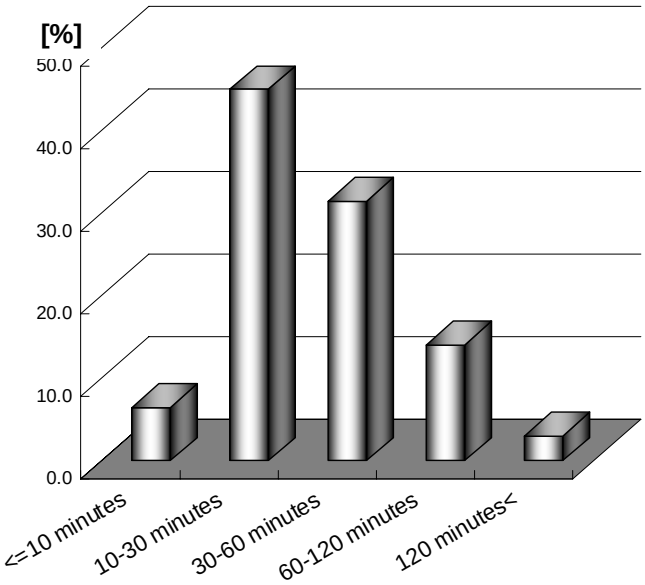


Figure 4.4-20 Waiting Time

e) Level of Satisfaction for Information Service Provision

Level of satisfaction is quite low. About 90% passengers are not satisfied with the present information provision service system at the water transport terminals.

Figure 4.4-21 shows the result of interviews.

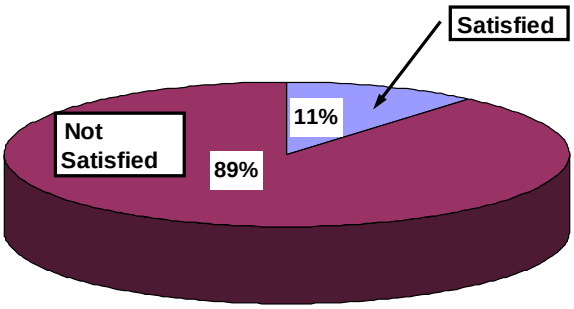


Figure 4.4-21 Level of Satisfaction

f) Evaluation of Service Rank

Service evaluation level is very low. About 90% of the passengers ranked the service status either 'Poor' or 'Very poor'.

Figure 4.4-22 shows the result of interviews.

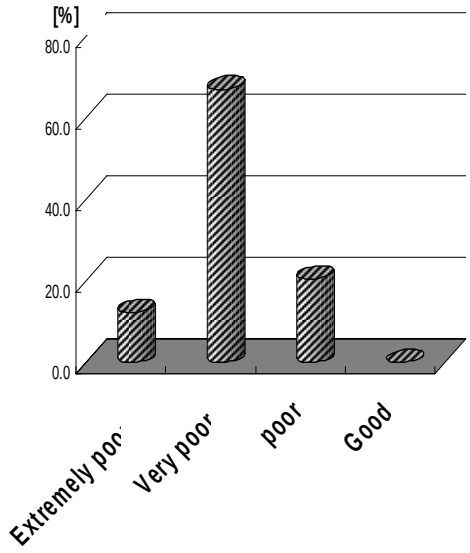


Figure 4.4-22 Service Rank

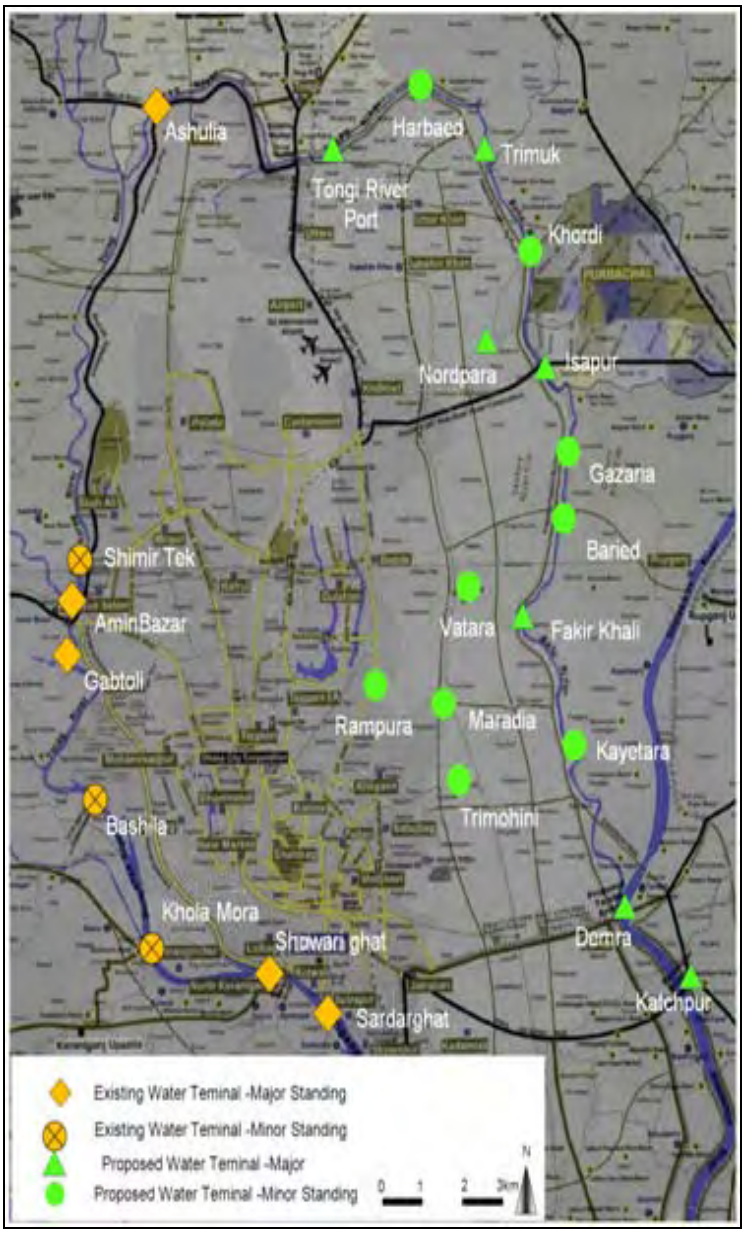


Figure 4.4-23 Location of Inland Water Terminal

Source: BIWTA

4.5 Performance and Issues of Public Transport System

Based on the current situation regarding road, rail and waterway- based public transport system, we discuss the issues from service provider's point of view as well as user's point of view.

(1) Alleviation of road traffic chaos to raise the level of services of the public transport

In Dhaka, serious traffic congestion occurs everyday. The road-based public transport service has been seriously deteriorated due to such heavy traffic congestion, which lasts almost for the whole day and every day except Fridays and Saturdays. As discussed in this chapter, average cruising speed of city bus is about 14 km/hr at peak hours and about 18 km/hr at off-peak hours

as shown in Figure 4.3-7. Such low speed is definitely caused by serious traffic congestion. Not only the low speed bus issue, but unstable time of bus arrival is another important issue. It is so often observed that plenty of passengers are standing on the roadside waiting for city bus arrival. They do not know exact time of the bus arrival especially at the peak hours. Therefore, they cannot expect to reach their destination by the scheduled time.

Figure 4.5-1 Traffic Chaos in Dhaka city

Traffic safety issue is also very important to be addressed. Traffic chaos which is shown in Figure 4.5-1 brings about serious conflicts among various types of vehicles, such as big cars like omni buses versus small cars like mini buses, human hauler and even rickshaws. Sometimes a bus hit a pedestrian who tried to cross the road. Such fatal accidents are more likely to cause heavy traffic congestion and traffic conflicts among various types of vehicles.

The traffic behavior of the bus itself has some problems. Buses often stop on the roadside narrow space to pick up passengers. Even on the middle of the road, they often run at extremely low speed and let the passengers get off. Such bus behavior is one of the major causes of heavy traffic congestion.

Rickshaws often enter into main streets and these low speed vehicles (rickshaws and auto-rickshaws) and taxis / buses (relatively high speed vehicles) presently share in same space. Such mixture is one of causes of traffic congestion.

Comprehensive road traffic management system, which can be expected to contribute to ensure the better road public transport service, should be introduced. More specifically, such system should cover such policy filed as follows;

a) Physical road infrastructure improvement program i.e., establishment of a bus bay together with bus station equipped with a roof, a waiting spot and sign board with bus destination and bus route along the roadside area

b) Proper enforcement of traffic regulation i.e., particularly introduction of obligatory policy for observation of traffic lights accompanied with strict punishment for violators and strengthening traffic monitoring system maneuvered by traffic police

c) Strengthening enlightenment policy for citizens through introduction of periodic traffic safety campaign, introduction of driver training system and introduction of traffic safety education system especially to elementary schools

d) Development of specific strategy for harmonization between traffic control maneuver conducted by traffic police and traffic signal control. Actually, traffic police is now being supervised by DMP while traffic safety infrastructure including mainly traffic signal is established and managed by DCC. Responsibility sharing and harmonization of both of authorities are not properly arranged. Coordination role demarcation and responsibility sharing between these two authorities should be properly arranged for realization of safer traffic in DMA

e) Strict demarcation between high speed vehicles and low speed vehicles shall be introduced.

(2) Provision of appropriate information services in the bus sector

As stated in clauses 4.3.2 and 4.3.3, currently there exist very few bus operators who are providing users with necessary and well qualified information. Necessary information may include a bus route, origin and destination, bus stopping place, time table and places where ticket booths are located.

Some buses have information regarding their destination being shown on the bus body with hand-written characters. However, such buses are not major ones. Most of them have no information regarding final destination and stoppage in between. A conductor hanging on a bar equipped with the cabin entrance is shouting the destination loudly and invites passengers standing on the road. When they would like to confirm whether or not the bus take them to the desired destination, they have to ask the conductor directly. All such communications are generally in Bangla. So, it is almost impossible for foreigners who are not familiar with Dhaka to use the present bus service in the city.

In order to avoid such inconvenience caused by lack of necessary information, appropriate information service should be provided especially for bus users. BRTA is in charge of regulation and proper management of bus industry, although, BRTA's responsibility is not clearly stipulated in such relevant law as Motor Vehicle Ordinance (1983).

(3) Consolidation of huge number of small business entities in the bus sector

As stated in clauses 4.3.3, there are a lot of permitted bus routes in the city, and huge numbers of vehicles are being operated on trunk roads within city. Majority of bus owners are individuals or small business entities, rather than large transport companies having many buses. Therefore the bus industries are highly fragmented.

Individual fragmented bus owners are always confronting serious financial constraints. Such situation brings about harsh competence among bus owners in terms of passenger pick-up and fare discount.

In order to introduce BRT on some of trunk roads in Dhaka, some policies for consolidation of such fragmented small bus owners should be properly introduced. As one of such policies, bus franchising scheme have some possibilities for fulfillment of consolidation of the bus industry. The bus franchising policy was intensively discussed in the "The Bus Franchising Study" in 2003 commissioned from DTCB and target road for bus franchising was specified on Airport Road from Uttara to Azimpur. However, unfortunately, none of the study results was realized and nothing has happened by now. Several authorities such as DTCB, BRTA and BRTC as well as bus association are in charge of this matter. Again proper coordination among these entities is definitely indispensible.

(4) Affordable fare

Current fare of buses, Rickshaws and railway is staying at the low level i.e., bus fare is approximately 1.0 taka per kilometer while Rickshaw fare is almost 10 taka per kilometer, details of which are presented in Appendix 5. It can be said that such low-priced fare is the affordable level being accepted by most of the civilians living in city of Dhaka. However, if we think the introduction of much more sophisticated public transport systems like BRT and MRT, current fare level is not likely to be acceptable from the viewpoint of ensuring financial sustainability.

There definitely exist some possibilities that some people, who are mainly upper middle income and high income earning people, are likely to be willing to pay more than current fare level, if BRT or MRT is served, which are operated in more reliable, comfortable and convenient manner. According to the interview survey being conducted through the study (details are compiled in Appendix 7 Development of a Mode Choice Model for DMA Willingness to Pay Study), most of interviewees responded our questions as much more reliable and faster public transport is desirable to be introduced. This means that most of the existing public transport

users who are bus users are ready to pay more if reliable public transport is available. Also there exist possibility of introduction of segregated fare system i.e., higher fare with higher level of service quality for upper middle and higher income earning groups, while lower fare with normal level of service quality for lower income earning group.

Introduction of appropriate fare system for future public transport is one of key factors to success. The study team has complete the Willingness to Pay survey (as aforesaid) incorporated with Bangladesh University Engineering and Technology (BUET), which is an interview survey asking citizens what amount of fare is acceptable if the more convenient and reliable public transport like MRT comes to be available. Number of target interviewees is more than 1,000 including business persons, students and house wives who are daily bus users, human hauler users and auto rickshaw users. The survey results have been analyzed from the several analytical view points such as income level, travel frequency and trip purpose.

(5) Introduction of appropriate traffic management system ensuring Comprehensive and integrated road, rail and waterway based public transport system

Generally speaking, effective and user-friendly public transport system is far from the single mode of transport. It should be the integrated and multi-modal transport system. However, intensive discussion and careful adjustment among various stakeholders would be necessary on the process of introduction of such comprehensive transport system.

One of the important viewpoints for ensuring seamless, user-friendly and comprehensive public transport system is to address well designed transport connections. In Dhaka city, there already exist some kinds of transport connections. For instance, inter-city bus terminals at Saidabad, Mohakhali, Gabtali, Gulistan and Fulbaria connect inter-city bus passengers with transport that ply within the city. Water transport terminals at Sadarghat and Showarighat and so forth connect long-distance riverine travelers with city transport services. Railway stations are similar to above terminals. However, it can be said that these existing transport connections in Dhaka subject to be much more improvement. Therefore, intensive and continuous investigation and efforts would be necessary to find ways to further improvement.

CHAPTER 5: URBAN ROAD NETWORK

5.1 Existing Road Network Systems

5.1.1 Road Classification

The concept of road classification is widely adopted by road planners in many countries. Under this concept, roads are classified based on their functions. In Bangladesh, a road classification has also been established as shown in Table 5.1-1.

Table 5.1-1 Road Classification in Bangladesh

Domain	Classification	Primary Connection/ Function
RHD	National Highway	Connect the capital city with district headquarters, port cities and international highways
	Regional Highway	Connect between district headquarters, main river/land ports, unconnected with highways
	Zila Road	Connect district headquarters to Upazila headquarters, or between Upazila headquarters, by main single connection with national/ regional highway, through shortest distance/route
LGED in collaboration with Local Government Institutions(LGI)	Upazila Road	Connect Upazila headquarters with growth center(s), or between growth centers by main single connection, or growth center with higher road system (national highways, regional highways and Zila roads) with shortest distance/route
	Union Road	Connect Union headquarters with Upazila headquarters, growth centers or local market
	Village Road (Typ A)	Connect villages to Union headquarters, local markets, farms and ghats, or with each other
	Village Road (Type B)	Connect roads within a village
Municipalities	Municipal Road	Connect roads within urban areas

Source: RMMS Database

Regarding the roads in DCC, it has been recently classified into five categories based on functional hierarchies as shown in Table 5.1-2.

Table 5.1-2 Road Classification for Urban Roads

Road Classification	Function
Primary Roads	Serving high volume through traffic; inter-regional needs; Inter-zonal roads; access control; full restriction of non-motorized traffic and grade separation at major intersection
Secondary Roads	Intra-zonal roads; access control; segregation of motorized and non motorized traffic
Connector Roads	Intra-zonal roads, full frontage access; partial segregation of motorized and non-motorized traffic, and segregation of opposing traffic flow
Local Roads	Full frontage access; no segregation of traffic; and provision for possibility of using some traffic calming measures
Narrow Roads	Short segments providing access to small areas; predominantly for non-motorized traffic and pedestrians; and bituminous, brick paved, and earthen surface.

Source: Dhaka Urban Transport Project, phase 11, 1994 by DCC

5.1.2 Road Network in Bangladesh

The national road network in Bangladesh is summarized in Table 5.1-3. Compared to the roads came under jurisdiction of LGED, the RHD roads have a quite higher rate of paved road, which accounts for 60.1%.

Table 5.1-3 National Road Networks in Bangladesh

Domain	Classification	Surface Type		Total(km)
		Paved(km)	Unpaved(Km)	
RHD	National Highways	3,428	58	3,486
		98.3%	0.7%	100.0%
	Regional Highways	3.717	402	4,119
		90.2%	9.8%	100.0%
	Zila Roads	9,044	4,116	13,159
		68.7%	31.3%	100.0%
	S-Total	12,476	4,576	20,764
		60.1%	39.9%	100.0%
LGED in collaboration with Local Government Institutions(LGI)	Upazila Roads	20,421	15,811	36,232
		56.4%	43.6%	100.0%
	Union Roads	11,014	30,859	41,873
		26.3%	73.7%	100.0%
	Village Roads	10,327	84,160	94,487
		10.9%	89.1%	100.0%
	S-Total	41,762	130,830	172,592
		24.2%	75.8%	100.0%
Total		54,238	135,406	193,356
		28.1%	71.9%	100.0%

Source: RHD Road Maintenance Management System (RMMS) database, 2006
LGED Road Inventory Survey, 2006

(1) Asian Highway Network

To promote the development of international road transport in the region, the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) initiated the "Asian Highway" project in 1959, which is a network of 141,000km roadways crossing 32 Asian countries. Bangladesh has been a member country since 2009. Three routes have been considered and proposed as part of Asian Highways network in Bangladesh.

a) Benapole-Jessore-Dhaka-Kanchpur-Sylyet-Tamabil (AH-1)
b) Baglabandha-Hatikamrul-Dhaka (AH-2)
c) Mongla-Jessore-Kushtia-Hatikamrul//Kanchpur-Chittagong-Cox's Bazar (AH-41)

Presently, the major international border point between Bangladesh and India on the road network could be "Banapol"; while, the border points such as Darsona, Burimar and Sernabadi are regarded as the minor point. Regarding current border point between Bangladesh and Myanmar, they are not connected yet with land surface transport.

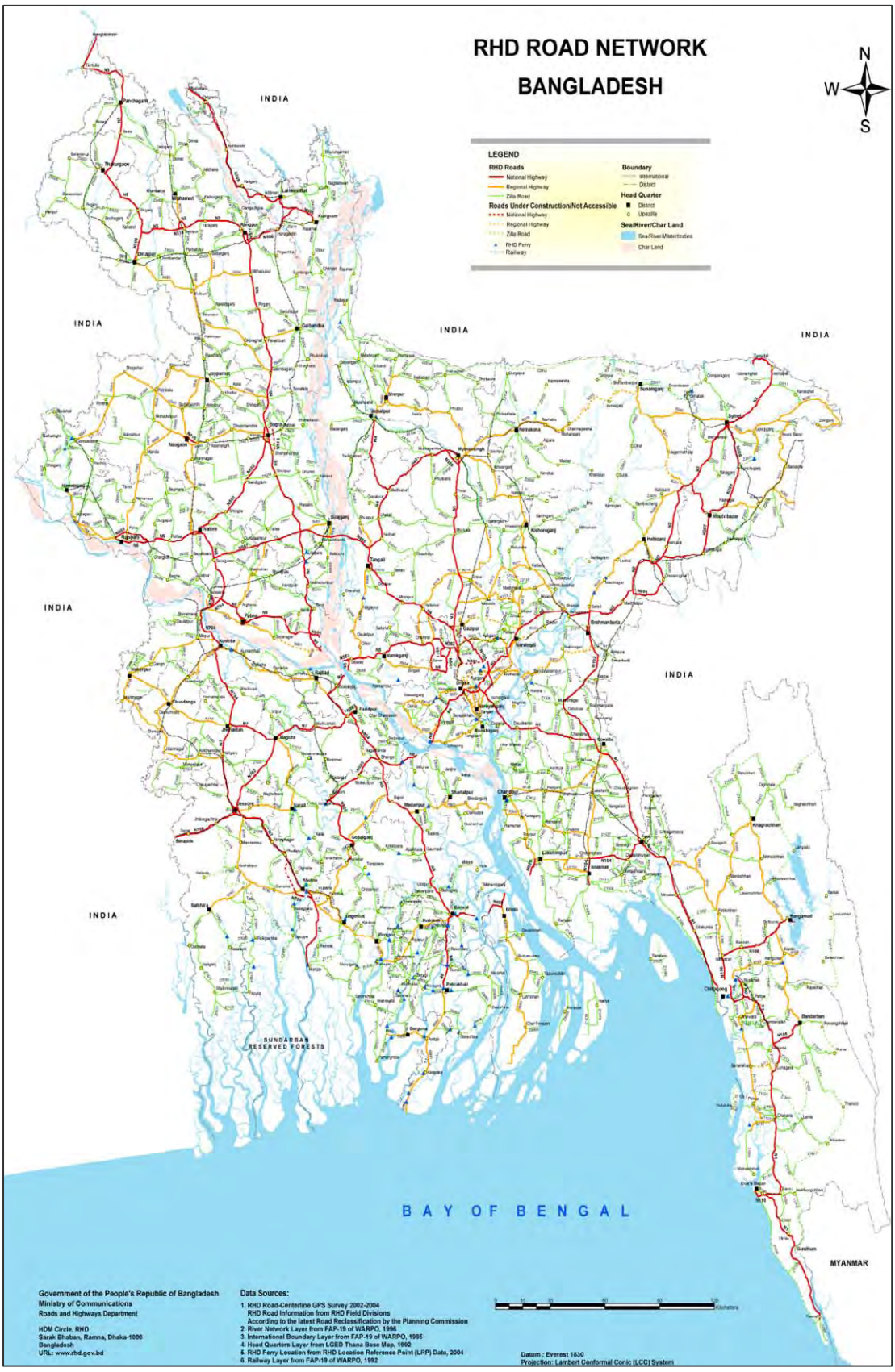
In order to make efficient road network, construction of bridges over major rivers are very important. Jamuna Bridge, Meghna Bridge, and Karnaphuli Bride were already constructed and presently Padma multi-purpose bridge is under construction to complete radial road from / to Dhaka.

(2) National Highway Network

Based on the Statistics published by RHD, there are 67 routes of national highways, which have a function of connecting the capital city with district headquarter, port cities and international highways (economic corridor roads). 114 routes of Regional Highways are designated as main economic transport network. Figure 5.1-2 shows the whole RHD road network.

Source: JICA Study Team

Figure 5.1-1 Proposed Asian Highways Routes in Bangladesh



Source; RHD

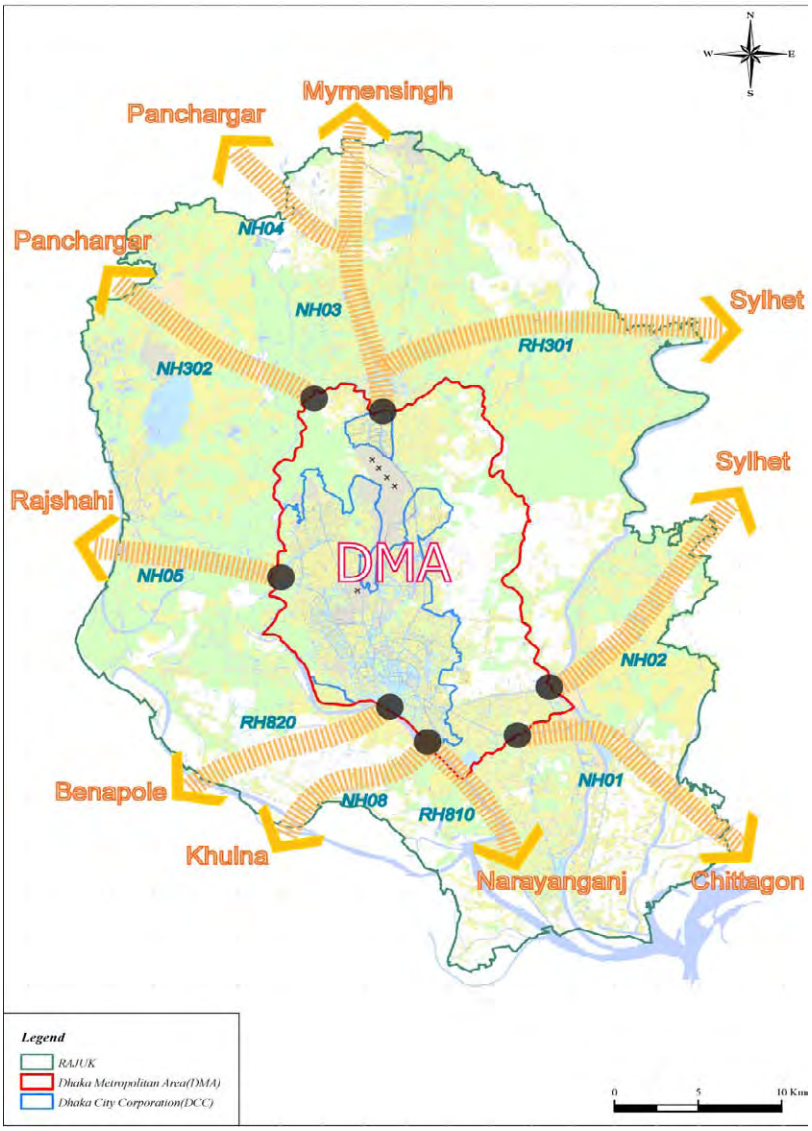
Figure 5.1-2 RHD Road Network

5.1.3 Road Network in the Study Area

(1) Road Network around DMA

The urban road network system in the Study Area can be divided into two major categories. One is the regional network which has a higher capacity or higher design standard to serve for regional traffic movement in the Study Area. The other is the urban network which is to serve for the traffic movement among the urban centers.

Meanwhile, Dhaka Metropolitan Area is located in the middle of the country surrounded by Buriganga River, Turag River and Balu River. According to the road inventory survey as mentioned in Section 6.2, the current pavement conditions on major roads in Dhaka are generally good. As for the road network, there are inter-urban roads connected from Dhaka to the other industrial area in the country as shown in Figure 5.1-3.



Source: JICA Study Team

Figure 5.1-3 Inter Urban Road Network to Dhaka Metropolitan Area

(2) Road Network in DMA

1) Road Jurisdiction

In Dhaka, the road networks are constructed and maintained by different organizations such as RHD, LGED, RAJUK, and DCC. Jurisdiction of road planning, construction and maintenance activities is summarized in Table 5.1-4.

Table 5.1-4 Jurisdiction of Road Planning, Construction and Maintenance

<table>
<tr><th colspan="2">Location</th><th>Planning</th><th>Construction</th><th>Maintenance</th></tr>
<tr><td rowspan="6">DMA & RAJUK Area</td><td>National Highway</td><td colspan="3" rowspan="3">RHD</td></tr>
<tr><td>Regional Highway</td></tr>
<tr><td>Zila Road</td></tr>
<tr><td>Upazila Road</td><td colspan="3" rowspan="2">LGED</td></tr>
<tr><td>Union Road & Village Road</td></tr>
<tr><td>Road related to RAJUK Development</td><td colspan="2">RAJUK</td><td>RHD/LGED</td></tr>
<tr><td rowspan="6">DCC</td><td>Primary Road</td><td colspan="2" rowspan="2">RHD/LGED/DCC/RAJUK</td><td rowspan="5">DCC</td></tr>
<tr><td>Secondary Road</td></tr>
<tr><td>Collector Road</td><td colspan="2" rowspan="3">DCC</td></tr>
<tr><td>Local Road</td></tr>
<tr><td>Narrow Road</td></tr>
<tr><td>Road related to RAJUK Development</td><td colspan="2">RAJUK</td><td>DCC</td></tr>
</table>

Source: JICA Study Team

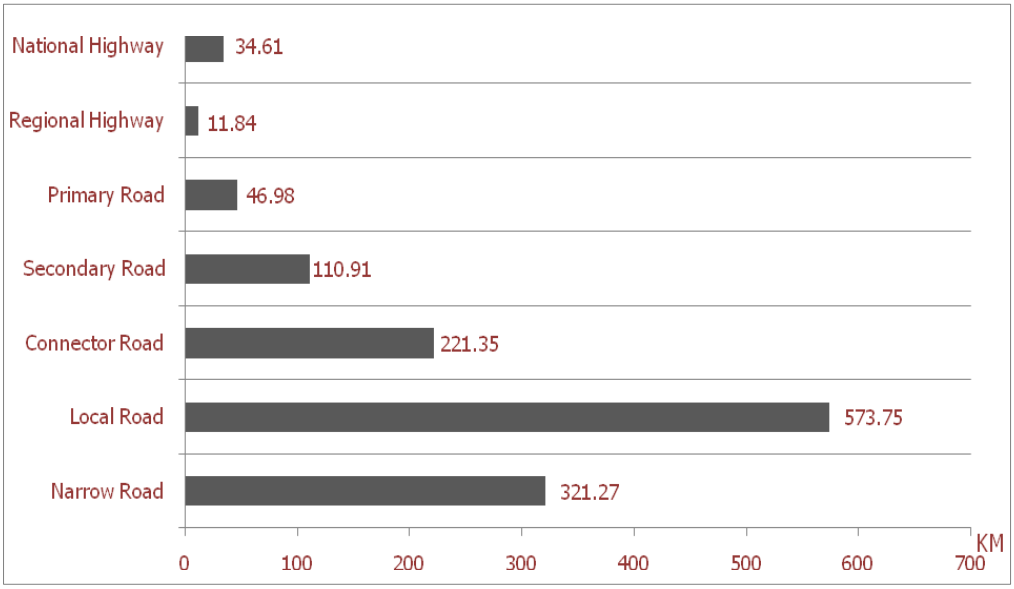
There are many agencies concerning to construct the primary and secondary roads in DCC as RHD, LGED, DCC/ RAJUK. This is due to DCC being only road service agency. It is therefore that major roads are constructed by RHD, LGED, RAJUK or DCC. However, the construction of minor roads such as collector roads, local roads and narrow roads is mainly made by DCC.

2) Road Network

The road network of Dhaka City Corporation comprises of about 1,296 km which has been built and expanded to meet the needs of increasing traffic volume. The condition of road network in DMA is represented as narrowed, and is constructed in the densely populated area of the city without keeping proper provision for widening to cope with the future traffic demand. As the capital city, Dhaka becomes the focal point of all social and economic activities of the country, and it also becomes to cater to the growing needs of the road system evolved gradual incremental extension of the old system.

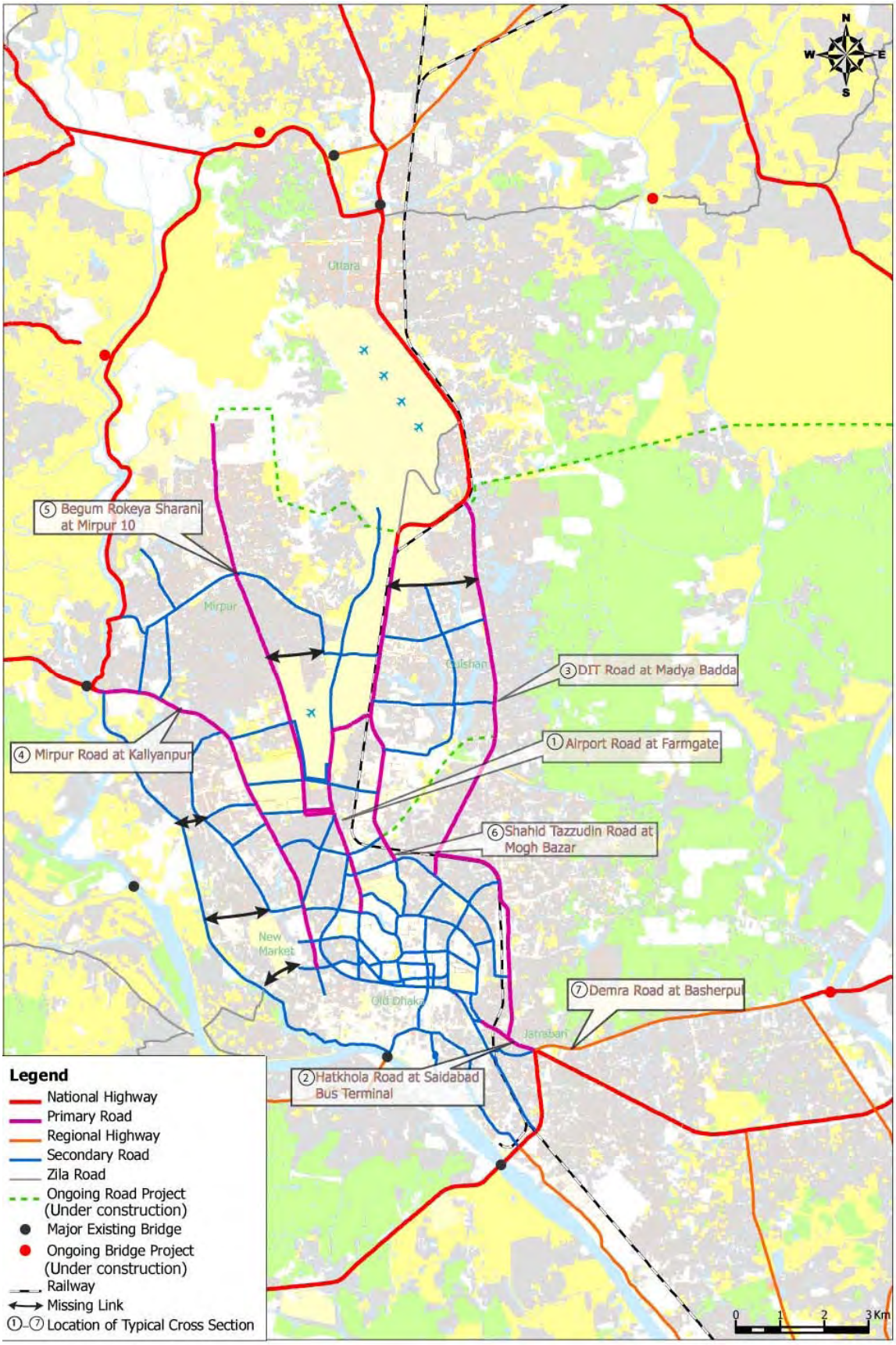
Functional objective of urban road network in Dhaka, which is classified into 5 categories, is to

provide more efficient usage of the road system by giving different priorities to different classes of road network. The ultimate goal would be the traffic enforcement policies and regulations will conform to the criteria of the functional classification so that the maximum mobility can be attained at the higher level of road network. Maximum safety and comfort can be attained to better accessibility at the lower level of road network. Figure 5.1-4 and Figure 5.1-5 show the road length and alignment in DMA. The local road has a dominant share of 44%, followed by Narrow Road (24.8%), Connector Road (17.1%), and Secondary Road (8.6%).



Source; JICA Study Team

Figure 5.1-4 Road Length in DMA



Source: JICA Study Team

Figure 5.1-5 Existing Road Network in Dhaka Metropolitan area

5.2 Road Inventory Survey

5.2.1 Introduction

(1) Objective of the Survey

The objectives of road inventory survey are as follows:

a) To collect data on the present condition of the existing roads and bridges
b) To compile the collected data and prepare road inventory of the road network in the study area
c) To assess the road condition in the study area

(2) Surveyed Roads

To investigate the road conditions, the road inventory survey was conducted in June 2009. The survey area was all roads in DMA.

The selection of roads to be surveyed in the Study Area was determined: sub section of National Highways, Regional Highways, Primary, Secondary and Connector roads in DMA. The surveyed road lengths are shown in Table 5.2-1.

Table 5.2-1 Planned and Actual Survey Length of Roads

Surveyed Road	Planned Survey Length (km)	Actual Survey Length (km)
(1) National Highway	33.25	34.61
(2) Regional Highway	8.91	11.64
(3) Primary Road	45.00	47.00
(4) Secondary Road	108.50	110.91
(5) Connector & Other Road	33.59	28.90
Total	229.25	233.06

Source: Field survey by JICA Study Team

(3) Data Collection

Data collection task is conducted by compiling the latest road inventory data available in DMA and DCC, etc. Based on the existing data, field survey forms are prepared by modifying the inventory format previously prepared in Japan.

(4) Field Survey

The field survey was carried out by using a survey form prepared by DHUTS included the study's outline. At the same time, the bridge inventory survey was conducted for major bridges by field survey and updating the bridge inventory data of DCC and DMA.

(5) Data Recording

All data collected above are compiled in GIS format and presented in Appendix Volume.

5.2.2 Survey Results

After carrying out the survey of road condition mainly in DCC, the results are summarized below.

About 70% of national and regional roads are designed in single carriageway, whereas almost all primary roads are in dual carriageway.

Table 5.2-2 Road Length by Carriageway Type and Road Type

		Single Carriageway	Dual Carriageway	Total
National & Regional Highway	Length	32.03km	14.42km	46.45km
	%	68.95%	31.05%	100.00%
Primary Road	Length	0.64km	46.36km	47.00km
	%	1.38%	98.62%	100.00%
Secondary Road	Length	39.71km	71.20km	110.91km
	%	35.80%	64.20%	100.00%
Total	Length	72.38km	131.98km	204.36km
	%	35.42%	64.58%	100.00%

Source: JICA Study Team

National and regional highways, the inter-city road, are basically constructed with 2-lanes. It means that a single carriageway is mainly consisted of 2-lane road, but a dual carriageway is more than 4-lane.

Moreover, those roads are under unpaved conditions in DMA. Almost all roads in DMA are constructed by asphalt concrete.

Table 5.2-3 Road Length by No. of Lanes and Road Type

		2-lane	4-lane	6-lane & More	Total
National & Regional Highway	Length	29.26km	7.77km	9.42km	46.45km
	%	62.99%	16.73%	20.28%	100.00%
Primary Road	Length	0.00km	1.28km	45.72km	47.00km
	%	0.00%	2.72%	97.28%	100.00%
Secondary Road	Length	30.26km	41.64km	39.01km	110.91km
	%	27.28%	37.55%	35.17%	100.00%
Total	Length	59.52km	50.69km	94.15km	204.36km
	%	29.13%	24.80%	46.07%	100.00%

Source: JICA Study Team

Figure 5.2-1 shows lane number of existing road based on road inventory survey.

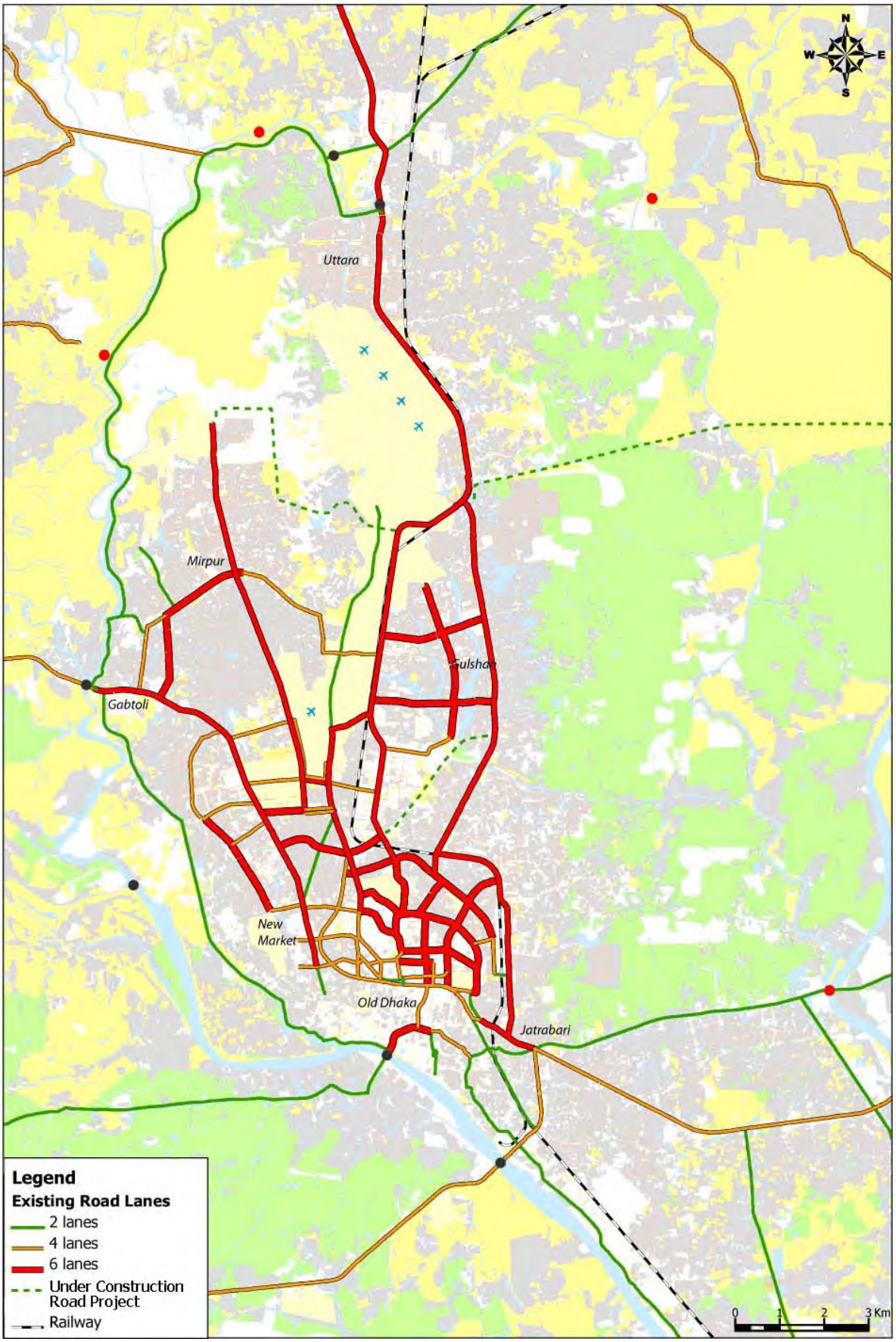


Figure 5.2-1 Existing Road Lanes Based on Road Inventory Survey

Table 5.2-4 Road Length by Pavement Type and Road Type

		Earth	C.C.	A.C.	Total
National & Regional Highway	Length	0.00km	0.00km	46.45km	46.45km
	%	0.00%	0.00%	100.00%	100.00%
Primary Road	Length	0.00km	0.00km	47.00km	47.00km
	%	0.00%	0.00%	100.00%	100.00%
Secondary Road	Length	0.00km	4.98km	105.93km	110.91km
	%	0.00%	4.49%	95.51%	100.00%
Total	Length	0.00km	4.98km	199.38km	204.36km
	%	0.00%	2.44%	97.56%	100.00%

Source: JICA Study Team
Note: Earth (unpaved), C.C.(Cement Concrete), A.C. (Asphalt Concrete)

As shown in Table 5.2-5, more than 65% of all roads keep its surface "Good" condition. Yet, road condition decreases as the hierarchy of road is lowered.

As for the condition of sidewalk installed on the road, national and regional highways which are mostly located in suburban area do not equip a sidewalk. While, on the urban road like primary and secondary road, most of roads has a sidewalk of 0.0 m to 4.0m.

Table 5.2-5 Road Length by Road Condition and Road Type

		Very Bad	Bad	Fair	Good	Total
National& Regional Highway	Length	0.00km	3.44km	9.50km	26.84km	46.45km
	%	0.00%	7.41%	20.45%	72.14%	100.00%
Primary Road	Length	0.00km	0.00km	6.51km	40.49km	47.00km
	%	0.00%	0.00%	13.85%	86.15%	100.00%
Secondary Road	Length	0.00km	4.68km	46.14km	60.09km	110.91km
	%	0.00%	4.22%	41.60%	54.18%	100.00%
Total	Length	0.00km	8.12km	62.15km	134.09km	204.36km
	%	0.00%	3.97%	30.41%	65.61%	100.00%

Source: JICA Study Team

Table 5.2-6 Pavement of Sidewalk along Roads

		With Sidewalk			Without Sidewalk	Total
		0-2m	2-4 m	More than 4m		
National & Regional Highway	Length	0.0km	0.7km	8.7km	37.0km	46.5km
	%	0.0%	1.5%	18.8%	79.7%	100.0%
Primary Road	Length	12.6km	31.3km	0.6km	2.6km	47.0km
	%	26.7%	66.6%	1.3%	5.4%	100.0%
Secondary Road	Length	20.3km	71.0km	2.6km	17.0km	110.9km
	%	18.3%	64.0%	2.3%	15.3%	100.0%
Total	Length	32.8km	103.0km	11.9km	56.6km	204.4km
	%	16.1%	50.4%	5.8%	27.7%	100.0%

Source: JICA Study Team

5.3 Existing Road Conditions

(1) Lane Configuration

In DCC, most of Primary and Secondary Roads are installed with medians in order to separate the opposite traffic. Such roads' carriageways are known as dual carriageways. Single carriageways are seen in the section of Dhaka Mawa Road to Narrayanganj and other secondary, connector roads and minor roads.

The number of lanes varies from 1 to 8 lanes according to the road hierarchies. The primary roads such as Airport Road and Mirpur Road have total lane of about 8 lanes. Meanwhile the secondary roads such as Begum Rokeya Sharani and Shahid Tazuddin Road have about 6 lanes. On the other hand, some section of secondary like Azimpur Road and west embankment roads has two lanes of carriageway.

Based on the survey, most connector roads are not well installed with medians because the roads are not served with heavy traffic volume and too narrow to install. Mainly, connector roads have two lanes of carriageway and one extra lane for non motorized traffic specifically in the central part of Dhaka.

(2) Typical Cross Sections

Cross sections of existing road network in DCC are mainly based on the standard cross section. The primary and secondary roads compose a lane carriageway (3.25m-widths), wide median, sidewalk and space for utilities.

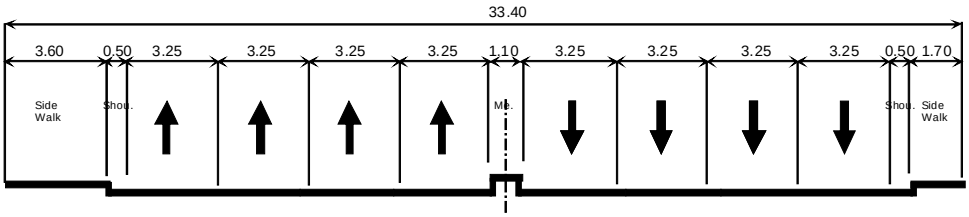
National and regional highways under RHD have a 3.6m wide lane carriageway with hard shoulder or soft shoulder. Figure 5.3-1 and Figure 5.3-2 shows typical cross sections of primary and secondary roads of DCC and a national and regional highway of RHD.

(3) Pavement Type and Conditions

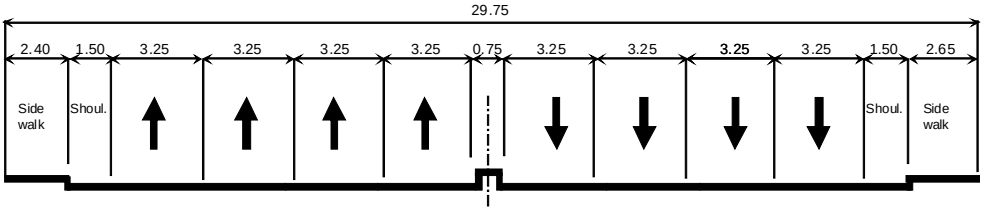
The pavement type are bitumen or asphalt concrete (A.C.), cement concrete (C.C.), herring bone bond (H.B.B.) and earth (unpaved). Regarding the specification of DCC, used material type and method of construction, H.B.B and water bound macadam of varying depth are used for a base and sub-base of the pavement. The damaged C.C and H.B.B are not removed and used for a part of base and sub-base layers while the roads are reconstructed in subsequent stage.

According to the road inventory survey, 98% of all primary and secondary roads are paved by bitumen with good and fair conditions. Only 2 % of the major roads are damaged, and they need to be reconstructed. A section of west bank road from 2nd Burigangar Bridge to Gabtoli bus terminal is destroyed, but it is reconstructed by Cement Concrete. Some minor roads as connector, local and narrow roads are also paved by bitumen and C.C. But earthen pavement of local and narrow road is mostly seen in the central part of Dhaka.

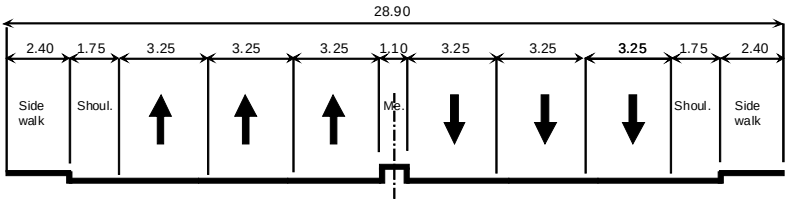
① Airport Road at Farmgate



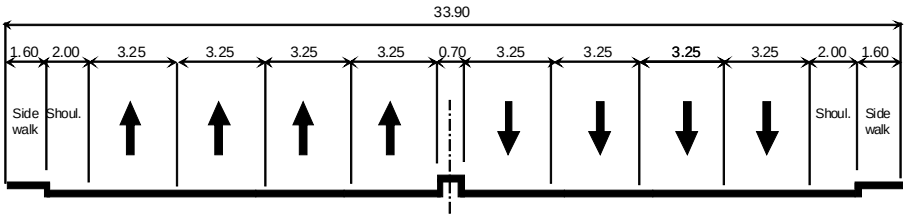
② Hatkhola Road at Saidabad Bus Terminal



③ DIT Road at Madhya Badda



④ Mirpur Road at Kallyanpur



⑤ Begum Rokeya Sharani at Mirpur 10

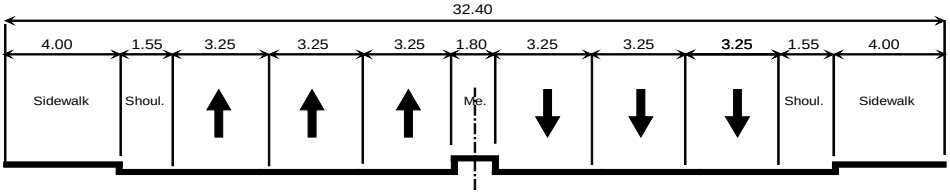


Figure 5.3-1 Typical Cross Section of Existing Roads in DCC

Source: JICA Study Team

Note: Name of road should refer to Figure 5.1-5.

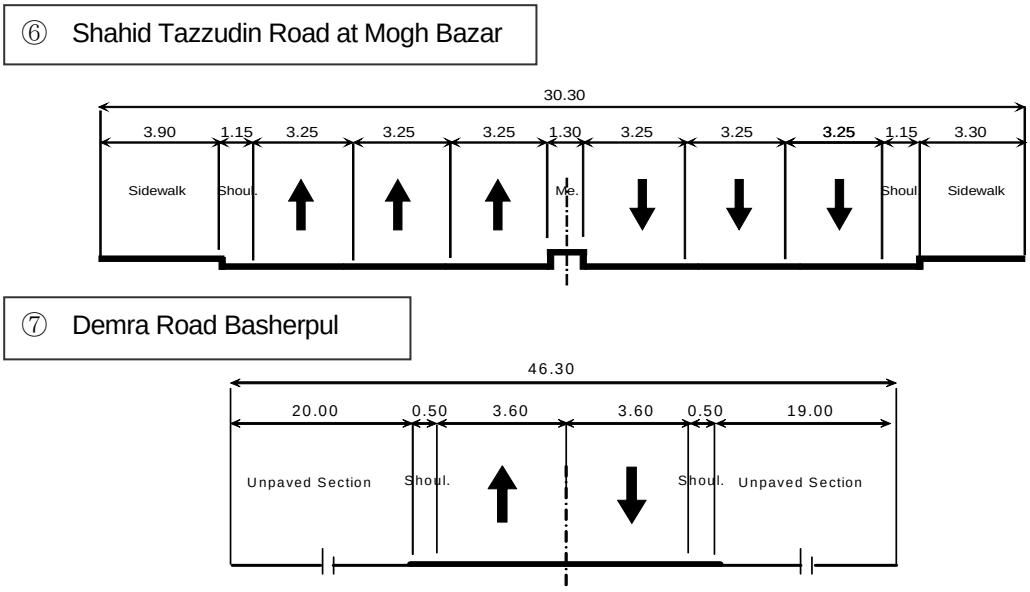


Figure 5.3-2 Typical Cross Section of Existing Roads in DCC

Source: JICA Study Team

Note: Name of road should refer to Figure 5.1-5.

5.4 Issues on Urban Road System

The following issues can be identified in order to formulate future road network;

(1) Chronic Traffic Congestion in the central part of DCC and old Dhaka area

Presently, the chronic traffic congestion occurs on the roads in CBD and Old Dhaka Area. There are many reasons such as insufficient road network, inappropriate road configuration, lack of traffic management etc.

(2) Lack of Road Hierarchy

In the road network in DMA, there is no clear concept to improve the road network based on the Road Hierarchy. Especially, there exists no backbone road so called as a primary road. Therefore, vehicles must pass through the most congested area and old Dhaka area. This could be one of factors of traffic congestion.

(3) Connectivity with Inter-City Road Network

The Government is supposed to strengthen the national road network. In Chittagong, it has been planned to construct Inter-city Expressway by PPP scheme. In Khulna, the Government is now constructing the Padma Bridge together with the improvement of Dhaka – Khulna Road. Therefore, it is necessary to promote the inter-city road network according to its traffic demand.

(4) Urban Expressway

The STP proposed the Urban Expressway network. Within the urban networks, north-south expressway was finally proposed for DMA area. Taking into consideration chronicle traffic congestion in CBD area, it is necessary to construct the Urban Expressway in DMA area in future.

(5) Road Network with New Development Areas

RAJUK has been planning to construct new development areas as follows;

a) Purbachal new urban development
b) Savar new urban development
c) Eastern area development in DMA
d) Uttara Phase 3
e) Karenganj new urban development
f) Jheelmil new urban development project

Within the new urban development areas, the road network has been well developed, however more considerations on road network outside of new urban development area have been planned. It is necessary to carry out another study to plan and construct a road and an intersection to cope with the traffic demand to be generated from new urban development.

(6) Road Network in Urbanized Area

As mentioned in the previous chapter, chronic traffic congestion occurs mainly at urban areas. However, in urban area of Dhaka, there are not enough spaces to widen the existing roads or to construct new road network. This is because many families and inhabitants are affected by the road construction projects. It is, therefore, necessary to limit minor road improvements such as traffic management, construction of flyovers, intersection improvement and construction of missing link.

(7) Missing Link (Refer to Figure 5.1-5)

Although some missing links have been implementing under DUTP project, there still remain missing links in DCC. The missing links will be effectively functioned as an effective network by construction of short section of the road. However, it is difficult to construct the missing links due to the land acquisition problems.

CHAPTER 6: TRAFFIC MANAGEMENT

This Chapter deals with clarification of present condition of the traffic management activities in Dhaka Area and identification of problems and issues. Based on the identified problems and issues, it will be discussed and recommend the traffic management measures in Chapter 17 in Part 2.

6.1 Traffic Flow Operation

6.1.1 Traffic Flow Characteristics

The focus area of the Study in traffic management may be divided into five separated areas, namely a) old Dhaka Area, b) Central Business District (CBD), c) Eastern Fringe, d) Western Suburbs, e) Banani, Gulshan, Baridhara Area. The current situations of each area are described briefly as follows;

(1) Old Dhaka

The Old Dhaka is the traditional old core city of Dhaka. Together with the Old Dhaka covers 11.2 ㎢ (2,764 acres) of land. In this area, share of the Rickshaw traffic is predominant among vehicle trips. This is because width of road being very narrow as 2-3meters width; favorable modes of peoples, and travel convenient. The traffic flow in this area is very slow due to mixture of pedestrian traffic, non-motorized traffic as Rickshaw, and goods carrying carts and motorized traffic.

(2) CBD

The CBD is located at the northern part of Old Dhaka Area where consist of Government and institutional area, and commercial area. This area is about 20.2 ㎢(4,993 acre). On the contrary to Old Dhaka Area, this CBD area has generally been developed with relatively good road infrastructure of the land allocated to the road and transport- related use. There are wide and developed secondary roads and closely interconnecting roads. Many of the major roads are operate divided roads. However, in general, the road network cannot cope with the existing traffic demand so that it can be seen many traffic congested roads. As for traffic, most of the area is shared by motorized vehicles; however, non-motorized traffic is occupied at connector and local roads even if some parts of the major roads. This is caused serious traffic congestions.

(3) Western Suburbs

The Western Suburbs is located at the western part of the DCC. This area consists of planned and spontaneous residential areas, sub-flooded flow zone along West Bank Road, and other mixed use. There are primary roads and secondary roads, so called as Mirpur Road, Dar-Us-Salam Road and Shaymoli Ring Road with operating as divided multi-lane roads. Even if the West Bank Road is very important road, its road structure is only single carriage way with 2-lane road. The other roads are secondary and local roads and these roads are not developed and narrow.

As for the traffic flow, primary roads are mainly operated by motorized vehicles, while the secondary and local roads are operated the mixed traffic.

(4) Banani and Gulshan

The Banani, and Gulshan are located northern part of Dhaka. The former two (2) areas are prime planned residential area of Dhaka. This area is large scale high density apartment construction coupled with other land use development resulted in high density and multi functional activities along main roads. The only spine roads leading north to south and east to west are divided two lane road or single carriageway two lane road creating traffic congestion. The inner circular and local road is generally narrow two lane roads. Major roads are principally Rickshaw free roads while the local roads are the mixed traffic. It can be seen that local roads create sometime heavy traffic congestion due to detour route of main roads.

6.1.2 Traffic Operation

(1) Traffic Operation along Road

Primary roads in Dhaka are mostly operated as dual carriageway multi-lane road. These road has about one (1) meter concrete median. In the mid-block of these roads, open of the median is sometime constructed to serve U-turn traffic. In general, traffic flow along the major roads is efficient except intersection areas but it is interrupted by vehicles running in the wrong direction or low speed vehicles as Rickshaw, and person drawn cart in Rickshaw allowed roads.

The Secondary roads are mostly single carriage two lane road. In general, the traffic flow along the secondary roads is mixed traffic of high speed vehicles and low speed vehicles. It is therefore that the traffic flow of high speed vehicles is largely depending upon that of the low speed ones. In general, traffic flow along collector roads is also mixed traffic of high-speed vehicles with low speed one such as Rickshaw and Auto Rickshaw. However, non-motorized vehicles are comparatively bigger than high speed vehicles.

(2) Intersection Operation

There are about 98 intersection in DCC area of which 77 intersections are signalized and the remaining 21 ones are not signalized. Although there are 77 signalized, non traffic signalized

intersection are around 21 locations. This is due to no maintenance made since the installation.

Table 6.1-1 Grade-Separated and At-Grade Junctions

		Number	Percentage
1	Grade Separated Junction	3	3.06%
2	At Grade Junction	95	96.94%
Total		98	100%

Source: JICA Study Team

Table 6.1-2 Type of Intersections

		Number	Percentage
1	Three Leg Intersection	48	48.98%
	1) Roundabout	5	5.10%
	2) Non roundabout	43	43.88%
2	Four Leg Intersection	46	46.94%
	1) Roundabout	8	8.16%
	2) Non roundabout	38	38.78%
3	More than Four Leg	4	4.08%
	1) Roundabout	2	2.04%
	2) Non roundabout	2	2.04%
Total		98	100%
	1) Roundabout	15	15.31%
	2) Non roundabout	83	84.69%

Source: JICA Study Team

Table 6.1-3 Number of Signalized Intersections

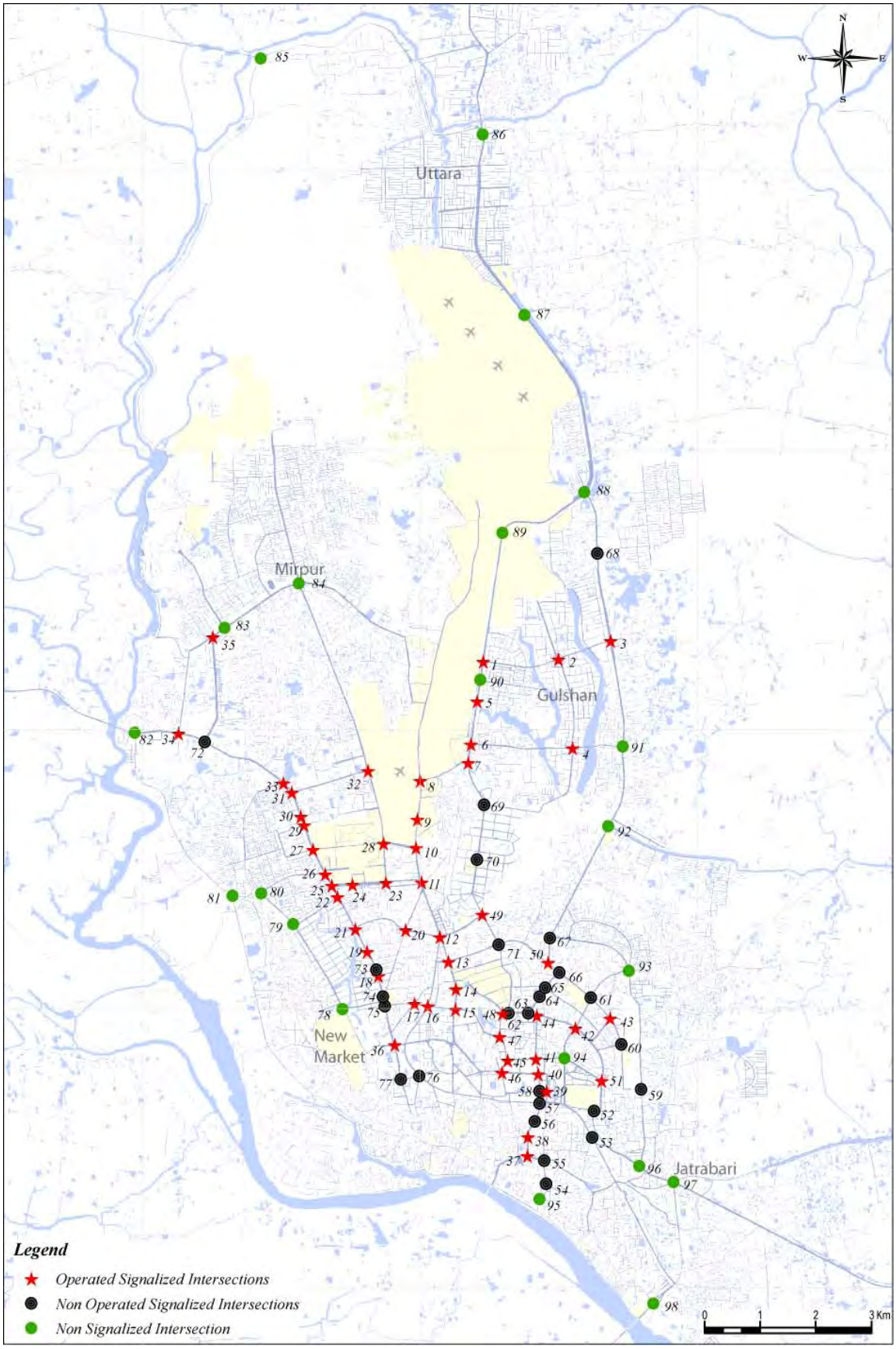
		Number	Percentage
1	Signalized	77	78.57%
	1) Operated	51	52.04%
	2) Not operated	26	26.53%
2	Non Signalized	21	21.43%
Total		98	100%

Source: JICA Study Team

Table 6.1-4 Channelized Intersections

		Number	Percentage
1	Channelized	30	30.61%
2	Non Channelized	68	69.39%
Total		90	100%

Source: JICA Study Team



Source: JICA Study Team

Figure 6.1-1 Location of Intersections

6.2 Current Practices in Traffic Control

(1) Divided Road and One-Way Traffic

As mentioned earlier, multi-lane roads of primary and secondary roads are principally adopted as divided dual carriageway road so that most of major roads are some kind of one-way roads. The one-way system of major roads is only limited at the CBD are such as Hatkhola Road and Folder Street and some other roads.

Recently, Dhaka Metropolitan Police (DMP) has been now adopted as one-way system of collector and local roads. It is believed that such one-way scheme is experimental stage, but not to extend to DCC area.

(2) Turning Restriction

As mentioned earlier, right-turning is allowed at all intersections in Dhaka. This is related to adoption of the one-directional traffic control system in the intersections. In addition to this, median opening points at mid-block of the dual carriageway is allowed at right-turn and U-turn.

(3) Truck Ban

Truck operations in Dhaka are regulated by order of the Metropolitan Police Commissioner. Regulations change periodically in response to changing traffic flow conditions and the operational needs of the truck operators. Current operating regulations restrict trucks and tractor trailers from moving within the DCC limit during 7:00 to 20:00. Covered trucks are prohibited during 7:00 to 10:00 and 16:00 to 20:00.

There are no restrictions on the movement of trucks within the DCC limits on Fridays and other holidays.

The regulation of truck weights is and on-going concern in Dhaka. The general consensus is that trucks are often overloaded but currently there is no apparent means or effort to control it. Government officials are concerned because the overloading contributes to increase numbers and severity of accidents as well as causing serious damage to roads and bridges. Information reveals that the Government has plans to install weigh stations at several locations including Kachpur, Dhaka-Mawa corridor, Mirpur, Ashulia Road, Gazipur Road and Sylhet Road.

6.3 Existing Traffic Management Conditions

6.3.1 Traffic Signal System

(1) Location

In Dhaka City Corporation, there are 77 traffic signals at the congested intersection. At the same time, DUTP has installed traffic signals at 59 intersections along the major corridors in Dhaka. The signals were installed during 2003 and 2005. Due to the subsequent increase in traffic, the preset timings at these traffic signals are found to be not compatible with the current

levels of traffic. There is a need to study the existing traffic conditions and revise the signal timings for synchronized functioning of traffic signals along road corridors.

(2) Operation

As the Dhaka City Corporation traffic become congestion, almost all signalized intersections are not circulated traffic based on traffic signals system controller. But the traffic flow is directed and guided by traffic police officers. The traffic polices use their guidance by noticing the traffic queue length at each approach road, and direct the traffic. However, the skills of the Dhaka traffic polices are still needed improvement to presently catch up such serious condition in Dhaka City.

6.3.2 Road Signs and Marking

Generally speaking, traffic signed is not well installed along the road and intersections / major prohibited / informatics area. Meanwhile, pavement markings need improvement especially on the approach roads near the intersections area. Road sign and marking are the important facilities for traffic direction and drivers' direction, but Dhaka City Corporation does not care much on such improvement. Regarding to median, most part of primary roads is installed by median in order to separate traffic between two opposite directions. But, the medians design is still needed improvement.

6.3.3 Pedestrian Facilities

(1) Overview

Dhaka has large number of pedestrian traveling everyday from one place to others. At the same time, number of pedestrians can be seen in a large volume. So Bangladesh Government has built pedestrian overpass and underpass in order to reduce traffic accidents on pedestrians and travel time at intersection and major roads.

Pedestrian overpasses physically separate the movement of pedestrians from the vehicle flow, but overpasses can sometimes be an inconvenience to pedestrians, particularly to the handicapped and elderly.

In terms of traffic management, a pedestrian underpass has the same benefit as that of a pedestrian overpass. The construction and maintenance cost of a pedestrian underpass is, however, higher than that of an overpass. In Dhaka, 4 locations of pedestrian underpasses have been seen on airport roads near Kawran Bazar, Gulistan Area, In front of Gabtoli bus terminal and in front of Saidabad bus terminal.

(2) Location of FOB and Type of FOB

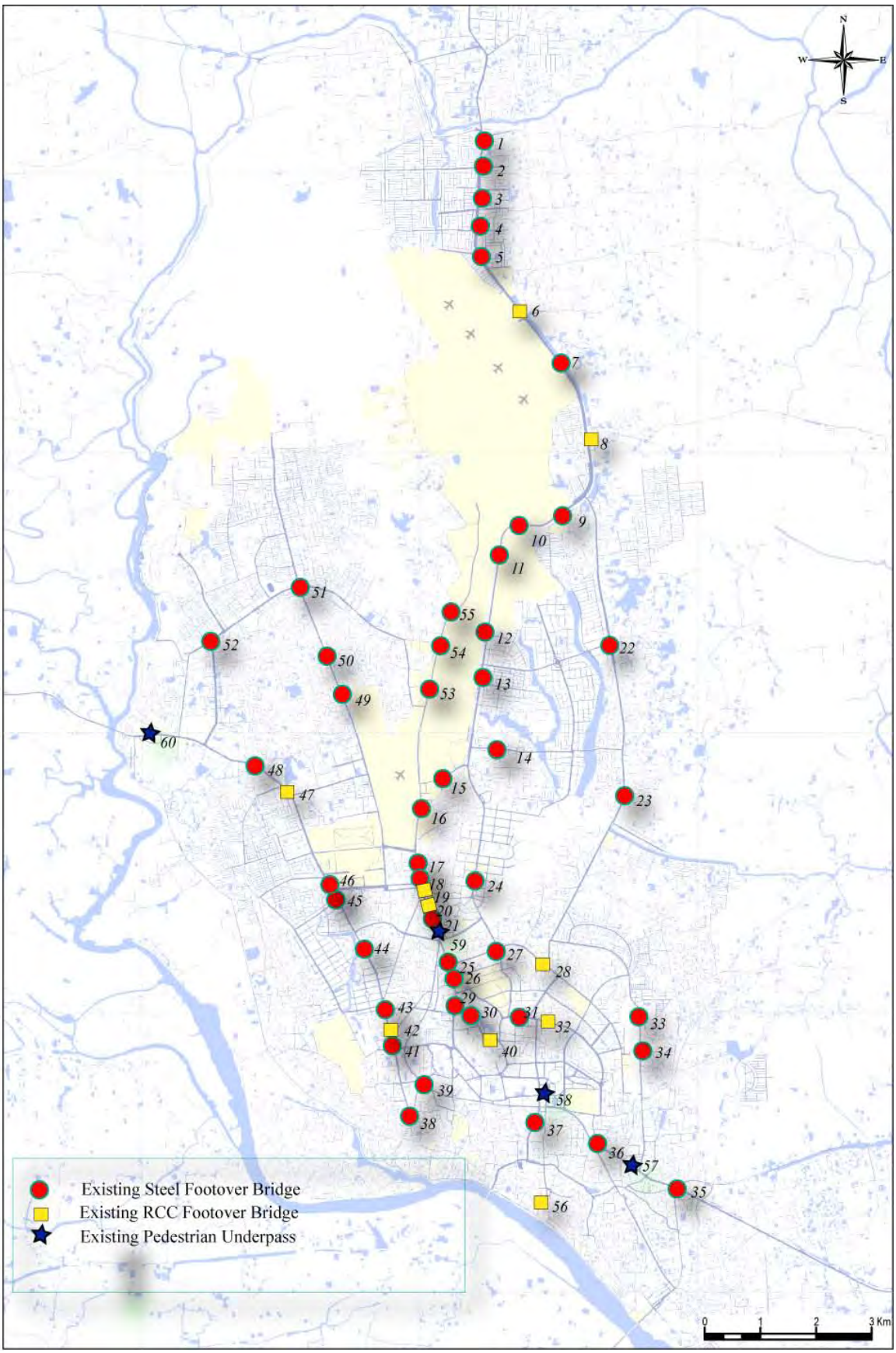
Table 6.3-1 shows the location of pedestrian overpass or foot over bridge in Dhaka Metropolitan Area by types.

Table 6.3-1 Location of Foot Over Bridge

No.	Location of Foot over Bridge	Type of Bridge	Organization
1	Abdullahpur Crossing before Tongi Birdge	Steel	DCC
2	Azimpur Crossing, Uttara	-dit-	-do-
3	Near Uttara H.B.F.C	-dit-	-do-
4	In front of Uttara Rajlokshy Complex	-dit-	-do-
5	Uttara Scholastical Crossing	-dit-	RHD
6	In front of Rail Station on Airport Road	RCC	-do-
7	Kalaw Bus Stand	Steel	-do-
8	Khilket on Airport Road	RCC	-do-
9	JS DOHS (chainage 14th km)	Steel	-do-
10	B.A.F Officers Mess-S.S.F on Airport Road	-dit-	-do-
11	Zia colony (chainage 13th km)	-dit-	-do-
12	Navy HQ (chainage 12th km)	-dit-	-do-
13	Banani, Kakolee, Bus Stand	-dit-	DCC
14	In front of Titumir College Mohakhali	-dit-	-do-
15	In front of Shaheen School & College	-dit-	-do-
16	In front of Public Commission Service	-dit-	-do-
17	In front of Aoload Hossain Market, Farmgate	-dit-	-do-
18	In front of Farmgate Police Box	-dit-	-do-
19	Farmgate Intersection	RCC	-do-
20	Near Anando Cinema Hall at Farmgate	RCC	-do-
21	Tejturi Bazar, Farmgate	Steel	-do-
22	Badda Nattun Bazar Crossing	-dit-	-do-
23	Badda Alatunessa School Crossing	-dit-	-do-
24	In front of Tejgaon Politechnical	-dit-	-do-
25	Baglamotor Crossing	-dit-	-do-
26	Paribag on Kazi Nazrul Islam Avenue	-dit-	-do-
27	Mogh bazar Intersection	-dit-	-do-
28	Mouchak Market	RCC	-do-
29	Shabagh-PG Hospital & Birdem link Bridge	Steel	-do-
30	Shabagh Police Box-Berdem Hospital	-dit-	-do-
31	In front of Wills Little Flower School	-dit-	-do-

No.	Location of Foot over Bridge	Type of Bridge	Organization
32	Baitul Mokarrom Mosque	RCC	-do-
33	Bashabo Charta on Jannapath Road	Steel	-do-
34	Maghdapara on Jannapath Road	-dit-	-do-
35	Jatrabari Intersection	-dit-	-do-
36	Hotel Eleshium on Hatkhola Road	-dit-	-do-
37	In front of Suritula High School	-dit-	-do-
38	Azimpur Girls School and College	-dit-	-do-
39	In front of BUET	-dit-	-do-
40	In front IEB, Ramna	RCC	-do-
41	Baku-Shah New Market	Steel	-do-
42	New Market ,	RCC	-do-
43	New Elephant Road on Mirpur Road	Steel	-do-
44	Kalabagan Bus Stand	-dit-	-do-
45	Dhanmondi Government Boy's School	-dit-	-do-
46	Near Asad Gate	-dit-	-do-
47	Near Shyamoli Cinema Hall	RCC	-do-
48	Kallayanpur Bus Stand	Steel	-do-
49	Shewra Para, Mirpur P&D	-dit-	-do-
50	Kazipara Bus Stand	-dit-	-do-
51	Mirpur 10 Intersection	-dit-	-do-
52	Mirpur 1 Intersection	-dit-	-do-
53	In front of Cantoment Shahid Anower School	-dit-	-do-
54	In front of Adamjee Cantonment School and College	-dit-	-do-
55	Garishon Cinema Hall, Dhaka Cantonment	-dit-	-do-
56	Sadar ghat Intersection	RCC	-do-

Source: JICA Study Team

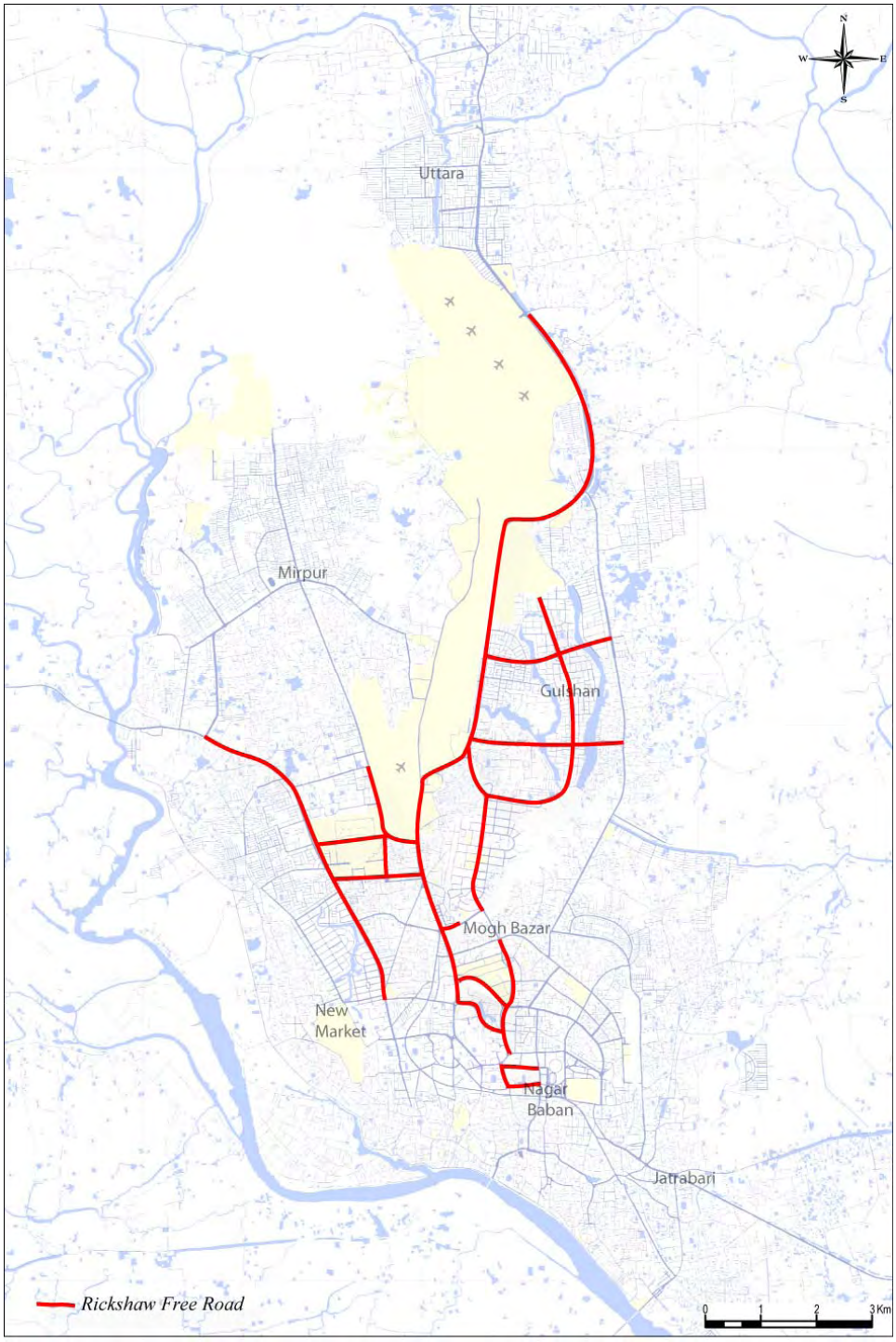


Source: JICA Study Team

Figure 6.3-1 Location of Pedestrian Facilities in Dhaka Metropolitan Area

6.3.4 Existing Rickshaw Free Road

Rickshaws are the transport means in Dhaka City for short distance travel. However, they run under the very low speed comparing to other motorized transport means. The mixed and not properly traffic management have been causing serious traffic jam. To avoid such traffic chaos, Rickshaw is banned to run on the some trunk road. This road is calling Rickshaw free roads. Rickshaws are prohibited from running on the regulated roads as shown in Figure 6.3-2.



Source: JICA Study Team

Figure 6.3-2 Rickshaw Free Road

6.4 Traffic Safety and Accidents

(1) Traffic Accident in Bangladesh

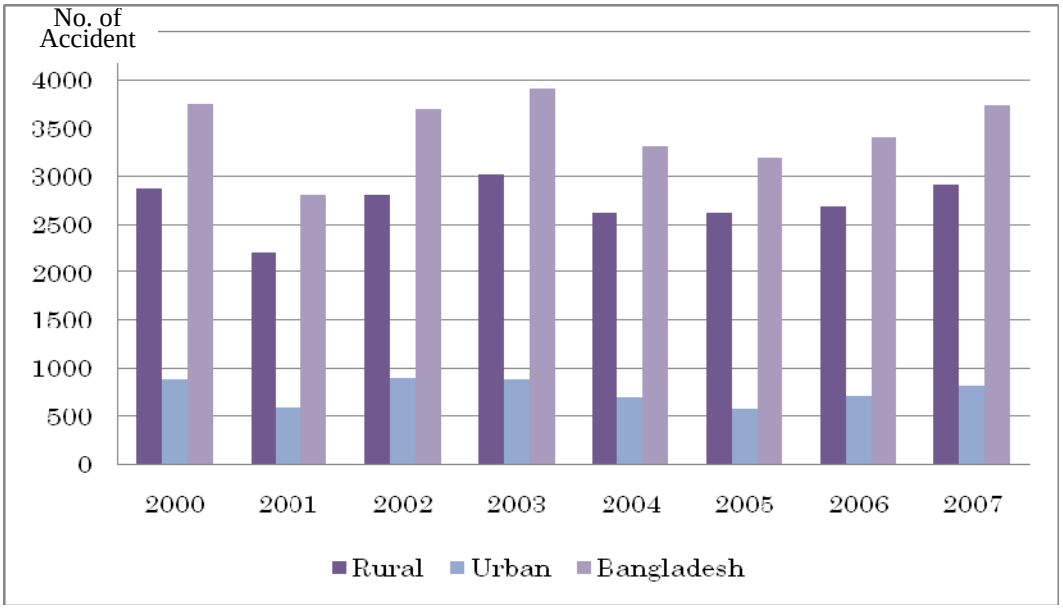
Road accident statistics by Bangladesh Road Transport Authority (BRTA) show that the number of accidents and fatalities in Bangladesh in 2007 recorded 3,744 and 2,893, respectively. The rate of fatalities per 10,000 persons account for 0.278, of which that in urban area (defined as municipality and city corporation area) account for 0.78 and that in rural areas is 0.223.

Table 6.4-1 Number of Traffic Accidents in 2007

	Number of Accidents			Population ('000)	Accident Rate per 1,000 people
	Fatal	Injury	Total		
Bangladesh	2,893	851	3,744	134,500	0.0278
Urban	597	232	829	10,635	0.0780
Rural	2,296	619	2,915	123,865	0.0235

Source: National Road Traffic Accident Report, 2007

The historical trend of traffic accidents since 2000 is shown in Figure 6.4-1 shows the number of traffic accidents is gradually increased by year. This is largely due to increase number of vehicles.

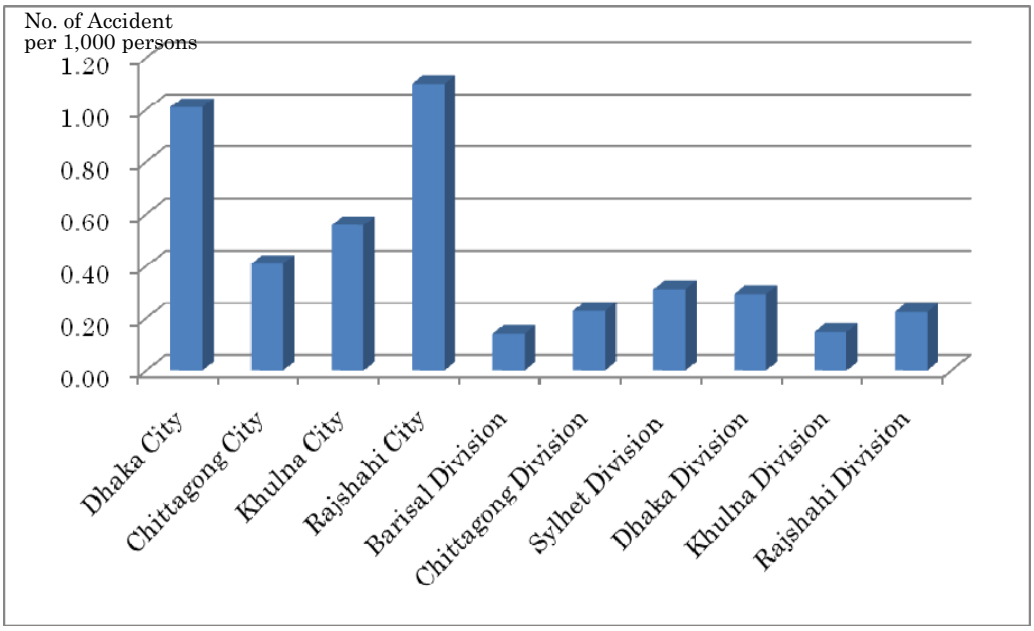


Source: National Road Traffic Accident Report, 2007

Figure 6.4-1 Number of Accidents in Bangladesh (2000-2007)

Figure 6.4-2 shows traffic accident rate by cities and divisions in Bangladesh in 2007. The accident rate is defined as number of accidents per 1,000 persons. According to this figure,

traffic accident rate in Dhaka is the second largest among cities and divisions.



Source: National Road Traffic Accident Report, 2007

Figure 6.4-2 Traffic Accident Rate by Cities and Divisions, 2007

6.5 Traffic Management Organization

(1) Dhaka Transport Coordination Board (DTCB)

Dhaka Transport Coordination Board is responsible for coordination of the planning and implementation of transport schemes in Dhaka City and its environs. The Board of DTCB is located in Dhaka City Corporation and its objectives are:

a) To advise on the creation of a safe and integrated transport system for Dhaka

b) To plan transport infrastructure, taking into consideration the structure plan of Dhaka

c) To develop a strategic transport plan and ensure cooperation and coordination between the various transport related authorities and agencies

d) Amendments of Motor Vehicles Ordinance are currently being considered which would expand DTCB's authority in the bus sector.

(2) Dhaka City Corporation (DCC)

As regard transportation related activities the Dhaka City Corporation (DCC) is responsible for the traffic management under Clause-118 of DCC-Ordinance-1983 in addition to its normal activities including the construction and maintenance of the city roads. The traffic management includes control of traffic, installation, maintenance and operation of street signals, road marking, sign board etc. However, DCC at present does not operate and control the traffic mainly because it does not have adequate number of trained personnel.

Work descriptions below are the responsibility work for DCC

a) Construction of foot over Bridges, underpasses and develop low lying areas
b) Take the necessary action for the proper lighting of public streets.
c) Take necessary steps for watering of public streets for comfort and convenience of public.
d) Plant trees on public streets and other public places
e) Implement the all kinds of development plans
f) Construct and repair of public markets and Infrastructures of DCC
g) Improve the traffic signals and related works
h) Construct, maintain and improve adequate drainage system
i) Set apart suitable places for use by the public for bathing, for washing clothes

(3) Dhaka Metropolitan Police (DMP)

DMP have the major role in enforcing in traffic management system. In existing traffic police framework, it would not be possible to create an environmentally safe traffic management system in Dhaka city.

DMP exercises a strong influence over public transport policy through their chairmanship of the Regional Transportation Committee (RTC) which is responsible for planning routes, establishing limits on the number of buses allowed on routes, allocating the number of vehicles to serve a route; and determining the number and configuration of routes. Its strong influence however does not include service planning.

In addition, DMP officers have responsibility as follows:

a) Control of traffic movement in the city
b) Enforcement of traffic rules in the city area to ensure road safety; and
c) Investigating road accidents and storing them in the Micro-computer Accident Analysis Package (MAAP) followed by the analysis of the accident data.

6.6 Problems and Issues regarding to Traffic Management

Based on the analyses made, the following problems and issues can be identified:

(1) Lack of Traffic Discipline

a) Bus stop near intersections and in all lanes just in front of intersection without paying attention to traffic flow. And buses stop in the middle of the road to pick up and discharge passengers.
b) Motorized vehicles are parked along roads, even if parking is forbidden.
c) Waiting vehicles of right-turning traffic at intersection are spread into the straight traffic lane(s) even if left-turning lane(s).

(2) Poor Pedestrian Facilities

a) Pedestrians walk on the roadway because sidewalks are scarce and used by hawkers, car parking and construction materials. And they always cross wide street everywhere and any time even if vehicle passing through.

b) Pedestrian are walking on the median and are hiding between trees in the middle of the roads.

c) In the roundabout, pedestrians are waking anywhere and anytime when they want.

(3) Not Proper Traffic Operation by Traffic Police

a) The traffic policemen are trying their best to direct traffic at intersections taking into only consideration their intersections or upstream intersections and they direct traffic against traffic signals.

b) Police use wooden sticks which cannot be seen during darkness to direct traffic. And most of traffic police men are not usually wears reflective jackets.

(4) Poor Traffic Management Facilities

a) Road markings are no-existent or out of paint and lane marking are not marked on the roadway. Road signs are very few installed even if on the primary and secondary roads.

b) Channelization at intersections has not been installed at most of intersections although there are available lands.

(5) Inadequate Traffic Signal System

a) No vehicle drivers follow traffic signal phase because the traffic policemen always control for traffic signal even if off-peak period.

b) Some of traffic signal is mull-function.

(6) Not Effectively Use of Road Asset

a) Rickshaws and auto-rickshaws are waiting on carriageway for loading passengers from buses. This is caused by traffic congestion at intersection.

b) Buses and Lagnas are parking on carriageway for waiting loading passengers

(7) Too Many Rickshaw Passing Through Roads on Primary and Secondary Roads in CBD

a) Many rickshaws are passing through on primary and secondary roads in CBD and Old Dhaka.

(8) Poor Drivers' Education

a) People in Bangladesh do not follow the traffic rules properly because most drivers are not trained. They are illiterate and got their licenses by bribery. Thus, they do not even know the traffic rules.

b) There is no motor vehicle driver's education system in Bangladesh.

Figure 6.6-1 (1) A Lot of Rickshaws waiting for Passengers near Bus Stops

Figure 6.6-1 (2) Not Effectively Working Signal System

Figure 6.6-1 (3) A Lot of Buses waiting at Bus Stops

Figure 6.6-1 (4) Obstructions left on Carriageway

Figure 6.6-1 (5) Street Stalls on Sidewalk at Busy Street

Figure 6.6-1 (6) Narrow Sidewalk along Major Roads

CHAPTER 7: ORGANIZATIONS AND INSTITUTIONS

7.1 General

In order to establish an urban transport master plan in Dhaka, it is important to review existing institutional systems from policy making to implementation of various projects in transport sector. In Bangladesh, there are many organizations and institutions in administration of transport sector, including both directly and indirectly related to the sector. For example, land transport, such as roads and bridges, railways, is administered by Ministry of Communication (MOC), and on the other hand, inland water transport is administered by Ministry of Shipping. In addition to these institutions, Dhaka City Corporation (DCC), Dhaka Metropolitan Police (DMP) and Local Government Engineering Department (LGED) under Ministry of Local Government, Rural Development and Cooperatives have played important roles in administration and management of transport sector in Dhaka. This chapter briefly reviews the existing organizations and institutions in transport sector in Bangladesh, particularly in Dhaka.

DHUTS examines new mass transit system to alleviate traffic congestion in Dhaka. For this purpose, we need to examine the capacity of existing institutions in transport sector to operate and manage new public transport system. Dhaka Transportation Coordination Board (DTCB) was established in 2001 under MOC to prepare transportation policy and plan for Dhaka Metropolitan Area. Recently, the Government officially announced that DCTB was renamed to “Dhaka Mass Transit Authority (DMTA)." This organization will take place the functions of former DTCB. Today traffic congestion in Dhaka is beyond the limit and introduction of new mass transit system is urgently necessary.

7.2 Transport Sector Administration

Major administrative organizations in transport sector in Bangladesh are:

a) Ministry of Communications (MOC)
b) Dhaka Metropolitan Transport Authority (DMTA) (Former Dhaka Transportation Coordination Board (DTCB)), MOC
c) Road and Highway Department (RHD), MOC
d) Bangladesh Road Transport Authority (BRTA), MOC
e) Bangladesh Road Transport Corporation (BRTC), MOC
f) Bangladesh Railways (BR), MOC
g) Government Inspector of the Bangladesh Railways (GIBR)

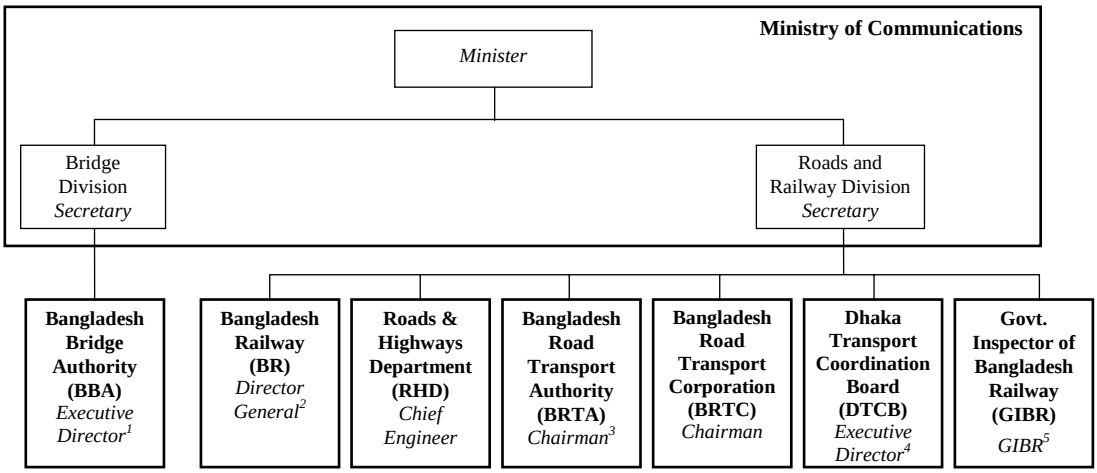
h) Bangladesh Inland Waster Transportation Authority(BIWTA), Ministry of Shipping
i) Bangladesh Inland Waster Transportation Corporation (BIWTC), Ministry of Shipping
j) Dhaka City Corporation (DCC), Ministry of Local Government, Rural Development and Cooperatives
k) Local Government Engineering Department (LGED), Ministry of Local Government, Rural Development and Cooperatives
l) Dhaka Metropolitan Police (DMP)

In the following sections, the objectives, functions and administrative structure of each organization are reviewed.

7.2.1 Ministry of Communications (MOC)

(1) General

Ministry of Communications (MOC) is responsible for development and maintenance of major land transport infrastructure in the country[1]. MOC's main functions are to provide policy decisions and administrative services in land transport. There are two divisions under Minster of MOC: (1) Bridge Division and (2) Roads and Railways Division. Under the umbrella of MOC, there are seven external department/organizations, which are in charge of technical practices. The relationship between the Divisions and the departments/organizations is shown in Figure 7.2-1.



Note: 1: Secretary; 2: Additional Secretary; 3: Joint Secretary, 4: Additional Secretary, 5: Joint Secretary

Figure 7.2-1 Relationship between Divisions of MOC and Attached Department/Organizations

(2) Vision and Missions of Roads and Railways Division

The vision of the Roads and Railways Division is to ensure improvement of socio-economic condition of the people through development, expansion and maintenance of integrated roads

[1] *The functions of the MOC are defined in the Allocation of Business under the Schedule 1 of Rules of Business.*

and railway transportation.

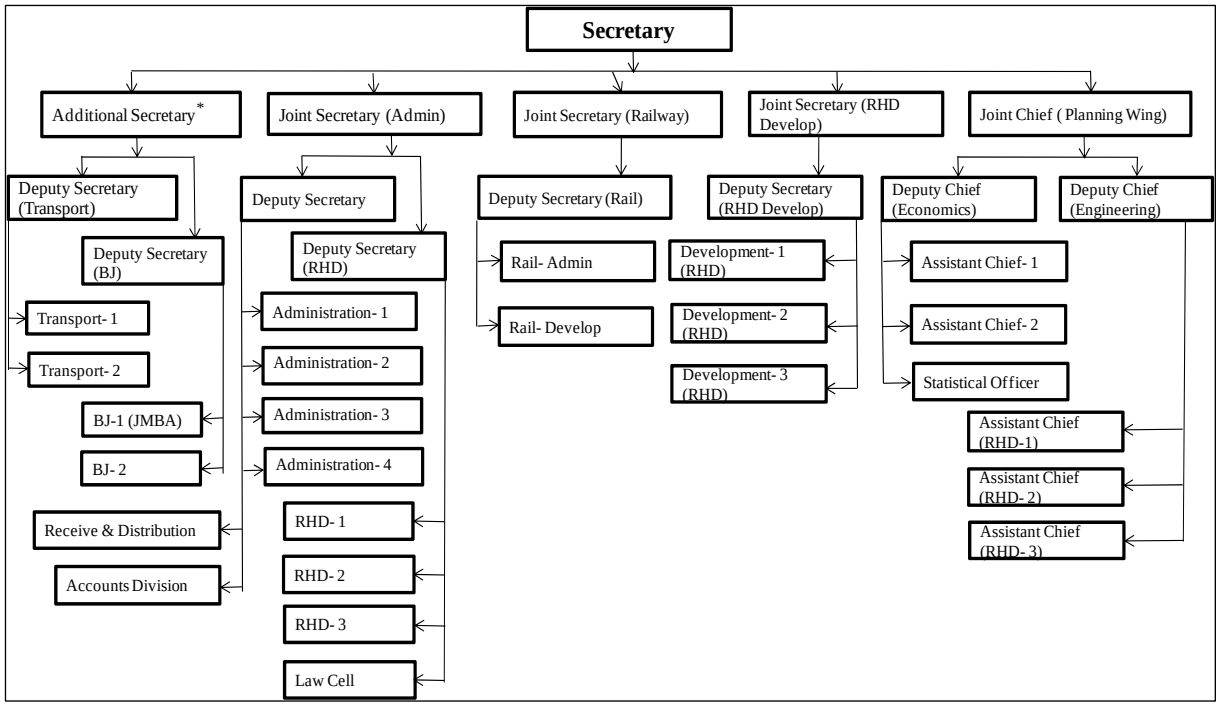
Mission of the Roads and Railways Division are the followings:

a) Formulation of policies regarding roads, road transports and railways.
b) Development, improvement and maintenance of national highways, regional highways, district roads and other important roads, including bridges and culverts.
c) Matters relating to (a) Roads and Highways Department (RHD), (b) BRTC, (c) BRTA, (d) Bangladesh Railway, (e) Office of the Government Inspector of Bangladesh Railway and (f) Dhaka Transport Co-ordination Board.
d) Transport Co-ordination.
e) Monitor Survey in the field of road transport, compulsory insurance of motor vehicles and mechanically propelled vehicles.
f) Promotion of transport cooperation and institutions for development and management of road transport.
g) Administration of BCS (Roads and Highways), BCS (Railway Engineering) and BCS (Railway Transportation and Commercial) cadres.
h) Constitution and reconstitution of BRA.
i) Matters relating to development and investment programs and revenue budget of Bangladesh Railway.
j) Determination and enforcement of safety standards.
k) Secretariat administration including financial matters.
l) Administration and control of subordinate offices and organizations under this Division.
m) Liaison with International Organizations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to this Division.
n) All laws on subjects allotted to this Division.
o) Inquiries and Statistics on any of the subjects allotted to this Division.
p) Fees and tolls in respect of any of the subjects allotted to this Division except fees taken in courts.

(3) Organization Structure

All the posts of MOC are filled by the Bangladesh Civil Service (BCS) officials (administration), except the officials of Planning Wing who are dispatched from the Planning Commission, Ministry of Planning. These BCS officials (Administration) consist of Secretaries, Additional Secretaries, Joint Secretaries, Deputy Secretaries, Senior Assistant Secretaries and Assistant Secretaries. The posts of Planning Wing are to be filled by BCS (Economic or Roads and Highways) consisting of Joint Chief, Deputy Chiefs and Assistants Chief.

The organization structure of the Roads and Railways Division is shown in Figure 7.2-2.



(*) Additional Secretary is responsible for supporting secretary, advice on policies and plan, coordination in transport sector and supervise attached department / organization.

Figure 7.2-2 Organization Structure of Roads and Railways Division of MOC

7.2.2 Dhaka Metropolitan Transport Authority (DMTA) (Renamed from Dhaka Transport Coordination Board : DTCB)

(1) General

The DTCB was created in MOC under Act No. 19 of 2001 and has been responsible for coordination of the planning and implementation of transport schemes in Dhaka City and its environs, that is, Munsigal, Narayanganj, Gajipur,Narsingdhi, Mymensingh and Manik Ganj. The DTCB was recently renamed and reformed to DMTA, which was officially approved by the Cabinet on 5th October 2009.

(2) Aims and Objectives of DTCB

The DTCB is mainly responsible for the formulation of transport policy for the improvement of transport services in the public and private sectors and also for the coordination of transport sector-activities in the DMA.

The aims and objectives of DTCB are described in rule 19 of 2001 as follows:

a) To advise the concerned authority for a safe and integrated Transport system for Greater Dhaka and to take necessary steps for this.
b) To Co-ordinate Vehicles, Transport and related infrastructure development planning with the overall improvement strategy of Greater Dhaka according to the structure plan.
c) To formulate strategic plan for Transport sector in Dhaka and Inter Agency Cooperation.

(3) Activities

Major activities of DTCB are:

a) To formulate Transport regulations to ensure improved transport services with clear directions of Government and non-Government transport system.
b) To coordinate transport system of Dhaka undertaken by concerned different authorities.
c) To manage Transport, vehicles, road side place of Dhaka and formulate parking regulations considering the structure plan and study concerned.
d) To formulate safety regulations of the Pedestrians and coordinate to implement it.
e) Coordinate and monitor the projects implemented by the concerned authority.
f) To formulate policy and guidance related to improved transport service.
g) To formulate policy to control all public transport and prepare guidelines related to implementation of that policy.
h) To formulate regulations for proper implementation of transport project.
i) To guide and assist with a view to evaluate the standard and safety of all classes and types of transport.
j) To advise about tax and other financial matters to achieve the required standard.
k) To identify the location for Transport Engineering scheme.
l) To approve the drawing of different schemes related to parking facilities of different vehicles.
m) To prepare, approve and reconsider transport engineering scheme.
n) To prepare planning of transport infrastructure in Dhaka city and to advise about the implementation of that.
o) To formulate training policy in a view to create expert manpower in the transport sector.
p) To formulate regulations to prepare schemes related to transport.
q) To advise about the fixation of number and type of different transports and ensure implementation of that advice.
r) To assist about the application of vehicle and transport related rules.
s) To protect the environment pollution which is created by the movement of unfit vehicles
t) To carry out any work related to the above mentioned matters.
u) To assume other responsibility given by the Government

(4) Organization structure

The organization structure of DTCB is shown in Figure 7.2-3. Originally, DTCB was established with 112 staffing posts to implement Dhaka Urban Transport Project (DUTP) in 1998, and the DTCB staffs were paid by the project budget allocated by the Government. During the implementation of DUTP, the DTCB tried to change the source for staff salary from the project budget to the revenue budget. When DUTP was finished, the budget source had not been changed. After 2006, many staffs of DTCB were not paid and they left DTCB. Current

organization structure of DTCB was approved on September in 2007 with 70 posts and these staffs are paid by revenue budget.

In the staff at officer level and above, however, only 9 positions out of 18 positions are currently filled, because of rather low remuneration for expertise. In addition, only 17 positions out of 52 positions of office staffs like MLSS and drivers are filled. In order to functionalize DTCB, it is needed to recruit its staff. . It is concerned that the approved payment level is not high enough to attract competent staff to the posts of DTCB. In addition, DTCB requires capacity enhancement of the staff to perform its responsibility and duty effectively and efficiently as a coordination body.

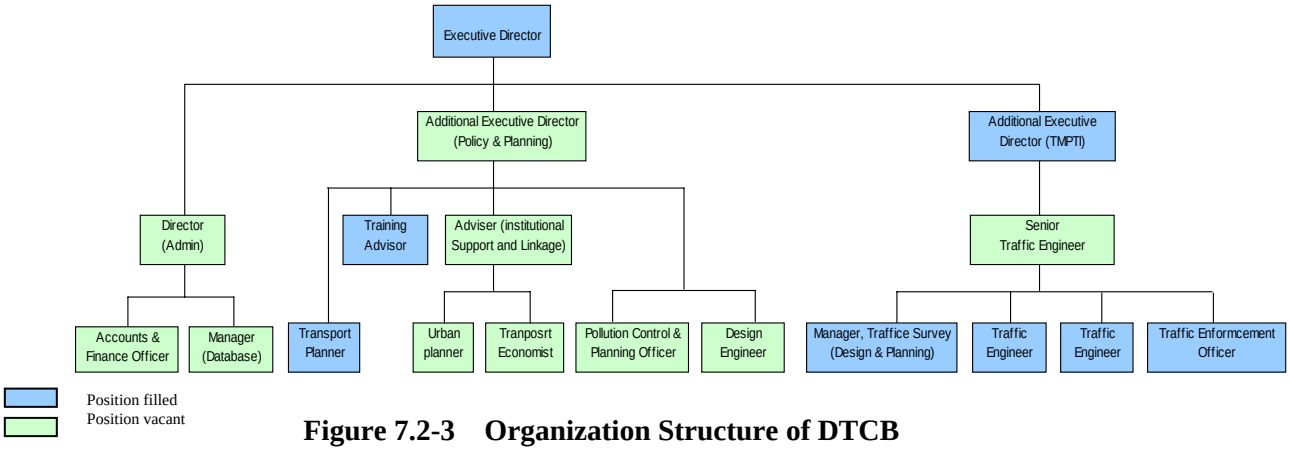


Figure 7.2-3 Organization Structure of DTCB

Source: DTCB

(5) Recent movement related to DTCB

The STP has proposed that DTCB should be restructured and renewed into "a unitary authority" under Prime Minister instead of being under MOC, in order to give more power in formulation of transport policy, plan and implement projects and programs. The proposal, however, was not accepted by the Government and there is no substantial restructuring in the DTCB.

In parallel with these movements, the DTCB Act was amended as shown in Table 7.2-1. Major amendment points are: 1) change Board members including to change Chairman from DCC Mayor to Minster of Communication, and 2) MRT, BRT and Route Franchise are included in Board activities in corporation with Bus, Railway, and inland water transport.

Table 7.2-1 Proposal of Additional Activities of the DTCB Board

Proposal	Remarks
8 (21) In order to provide improved public transport system in greater Dhaka, introduction of MRT, BRT and Route Franchise are to be incorporated within the scope of operation of Bus, Railways and inland water transport. To accord approval for outsourcing operation of Bus/Rail/Inland water transport to Public, Private or Public-Private joint venture association/ establishment and review operation of these services. Previous Section 8 (21) to be replaced by 8 (22); 8 (22) Carrying out other responsibilities as assigned by the government	<u>New inclusion</u> Absence of any law pertaining to these issues is creating confusion. Besides, the donors are also insisting on formulation of these rules, as pre-condition for financial assistance

Source: JICA Study Team's unofficial translation of the DTCB's proposal in Bengali

Table 7.2-2 shows the proposal of amendment to Board Members of DTCB, with increase of nine members from 24 to 33 including more stakeholders. It is proposed that Chairman be changed from Mayor of DCC to Minister of Communication, because of DTCB is under control of MOC, to avoid skewed power structure.

After the approval of the Cabinet on the reorganization of DTCB as DMTA, the proposal of the revision of DTCB Act has been reviewed and the new proposal of DMTA Act has been prepared and submitted to MOC by the DTCB. At present, the discussion on the draft DMTA Act is undergoing in the MOC.

Table 7.2-2 The First DTCB's Proposal for Amendment of Constitution of Board, Art 6 of the DTCB Act

Constitution of the DTCB 2001	Proposed Board Members	Remarks
1. Mayor of Dhaka City Corporation, who shall also be the ex-officio Chairman; 2. Secretary of the Ministry for or Division of Roads and Railways, who shall also be the ex-officio Vice Chairman; 3. Two members of Parliament, nominated by the Government; 4. Divisional Chief of Infrastructure Division, Planning Commission, ex-officio; 5. Chief Engineer of RHD, ex-officio; 6. Director General of Bangladesh Railway, ex-officio; 7. Chairman of BRTC, ex-officio; 8. Divisional Commissioner of Dhaka, ex-officio; 9. Commissioner, DMP, ex-officio; 10. Chairman of RAJUK, ex-officio; 11. Chairman of BIWTA, ex-officio; 12. Chairman of BRTA, ex-officio; 13. Chief Engineer of LGED, ex-officio; 14. One representative nominated by the Ministry of LGRD and Cooperatives (Local Government Division), who must have the status of a Joint Secretary; 15. CEO of DCC, ex-officio; 16. Director General of Directorate of Environment, ex-officio; 17. President of BRTA, ex-officio; 18. President of Bangladesh Road Transport Workers Federation ex-officio; 19. President of DCCI, ex-officio;	1. Minister, MOC, who will also be the Chairman 2. Secretary, Roads & Railways Division, MOC, who will also be Vice-Chairman, by virtue of his post 3. Two Members of Parliament nominated by the Government 4. Chairman, Board of Investment (BoI), by virtue of his post 5. Division Chief, Physical Infrastructure Division, Planning Commission, by virtue of his post 6. Chief Engineer, RHD, by virtue of his post 7. Director General, Bangladesh Railways, by virtue of his post 8. Chairman, BRTC, by virtue of his post 9. Divisional Commissioner of Dhaka, by virtue of his post 10. Commissioner, DMP, by virtue of his post 11. Chairman, RAJUK, by virtue of his post 12. Chairman, BIWTA, by virtue of his post 13. Chairman, BRTA, by virtue of his post 14. Chief Engineer, LGED, by virtue of his post 15. An officer of the rank of Joint Secretary, nominated by the Local Government. Division. Of the Ministry of LGRD and Cooperatives, by virtue of his post 16. CEO, DCC, by virtue of his post 17. Director General, Directorate of Environment, by virtue of his post 18. President, Bangladesh Sharak Paribahan Samity, by virtue of his post	1. Minister, MOC has been proposed as Chairman of the Board in place of the Mayor, DCC. 2. Secretary, R&RD, MOC has been proposed as Vice-Chairman, in place of Secretary, Roads & Railways Ministry/Division 4. New Inclusion: Foreign Investment is essential for implementation of STP. In order to involve BoI, the Chairman of BoI has been proposed to be included as a Member of the Board.

Constitution of the DTCB 2001	Proposed Board Members	Remarks
20. Chairman of Tongi Municipality, ex-officio; 21. Chairman of Savar Municipality, ex-officio; 22. Chairman of Narayangonj Municipality, ex-officio; Executive Director of the Board, who shall be the Member-Secretary of the Board.	19. President, Bangladesh Sharak Paribahan Sramik Federation, by virtue of his post 20. President, DCCI, by virtue of his post 21. Chairman, BTTB (BTCL), by virtue of his post 22. Chairman, Petrobangla, by virtue of his post 23. Chairman, Dhaka WASA, by virtue of his post 24. Chairman, DESA, by virtue of his post 25. Chairman, DESCO, by virtue of his post 26. One WARD Commissioner, nominated by Mayor, DCC 27. Chairman, Tongi Municipality, by virtue of his post 28. Chairman, Savar Municipality, by virtue of his post 29. Chairman, Narayanganj Municipality, by virtue of his post 30. Chairman, Manikganj Municipality, by virtue of his post 31. Chairman, Munshiganj Municipality, by virtue of his post 32. Executive Director of the Board, who will also be the Member-Secretary	21. New inclusion 22. New inclusion 23. New inclusion 24. New inclusion 25. New inclusion 26. New inclusion 30. New inclusion 31. New inclusion

Source: DTCB Act 2001 (true translation) and JICA Study Team's unofficial translation of the DTCB's proposal in Bengali.

7.2.3 Roads and Highways Department (RHD)

(1) General

Roads and Highways Department (RHD) is responsible for construction and maintenance of roads and bridges on the main road network in the country. RHD was created in 1962 when the old 'Construction & Building (C&B) organization was split into two separate bodies (the other being Public Works Department).

(2) Objectives

The departmental goal is to provide the People of Bangladesh with a safe, cost effective and well maintained road network. And the purpose of the RHD is to plan, manage and deliver its full range of responsibilities in respect of the main road and bridge network and to be accountable for these duties.

(3) Organization

RHD has three wings: (1) Planning & Development, (2) Bridge, and (3) Mechanical, and it has eight Zonal Operations. Recently, it is proposed restructuring of RHD, which consists of five Headquarter Wings/Zones and seven Field Zones. Each field headed by an Additional Chief Engineer (ACE) who reports directly to the Chief Engineer. In addition two ACEs will be assigned to manage foreign aided projects: one for World Bank projects and one for Asian Development Bank projects. This structure involves the formation of two new Head Quarter Wings, namely the “Bridge Management Wing” and the “Management Services Wing” and many more detailed changes to the existing organization.

7.2.4 Bangladesh Road Transport Authority (BRTA)

(1) General

Bangladesh Road Transport Authority (BRTA) was established in 1988 under the Motor Vehicles Ordinance of 1983, abolishing the former Directorate of Road Transport Maintenance (DRTM). BRTA is a regulatory body to manage and ensure discipline in the road transport sector and road safety related areas in Bangladesh.

(2) Functions

The BRTA’s main activities are as follows:

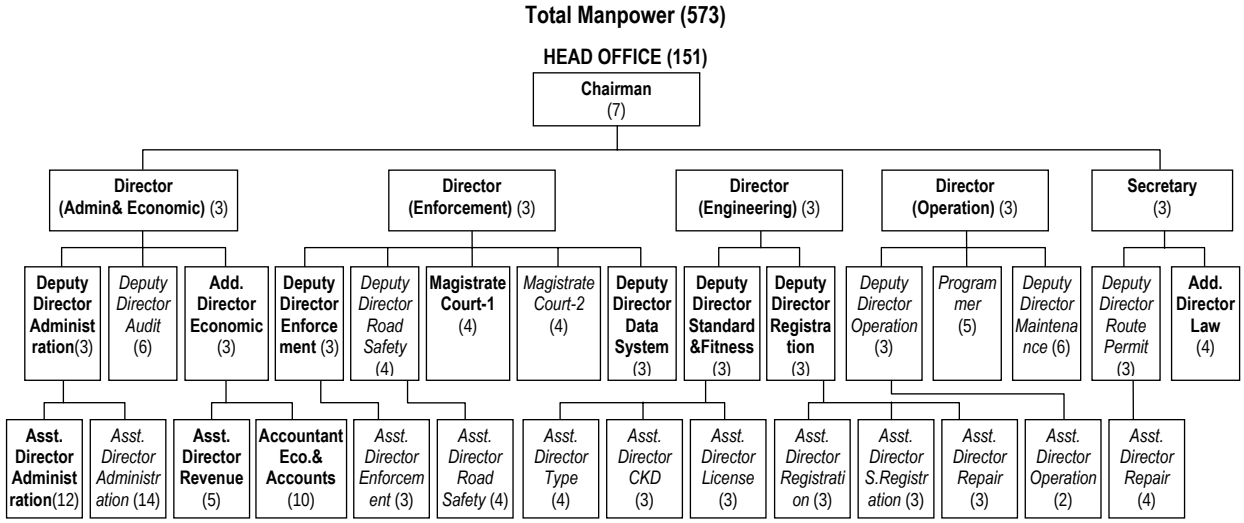
a) Controlling and regulating road transport by executing motor vehicle acts,
b) Issuing route permits and fixing rates and fares of buses and trucks
c) Conducting regular activities like: Issuing driving license, fitness certificates, registration certificates and Driving Instructor's license
d) Registering schools for motoring

e) Organizing and conducting workshop Seminars for delivering information regarding safe driving and traffic regulations

f) Making research and development for developing ideas and methodologies for safe road transport and traffic system

(3) Organization Structure

The Chairman is the chief executive of the BRTA, who exercises power and performs the functions as prescribed by rules. There are 573 sanctioned posts, out of which 282 are appointed and working today. The remaining posts are in the process of recruitment. Circle offices of BRTA are headed by Assistant Director (Engineering) and the divisional offices by Deputy Director (Engineering.).



FIELD OFFICE (TOTAL 422)

Dhaka Division (130)			Chittagong Division (86)		Rajshahi Division (90)		Khulna Division (55)	Sylhet Division (31)	Barishal Division (30)
Deputy Director (Eng.) Divisional Office (10)			*Deputy Director (Eng.) Divisional Office* (9)		*Deputy Director (Eng.) Divisional Office* (9)		Deputy Director (Eng.) Divisional Office (9)	*Deputy Director (Eng.) Divisional Office*	Deputy Director (Eng.) Divisional Office (8)
Dhaka metro (North) (5)	**Dhaka metro (South)** (5)	*Dhaka Metro-3* (5)	*Chiitagong Metro-1* (5)	*Chiitagong Metro-2* (5)	**Rajshahi** (8)	**Bogura** (7)	**Khulna** (8)	**Sylhet** (8)	**Barishal** (7)
Dhaka (26)	**Mymensingh** (6)	**Tangil** (6)	**Chittagong** (14)	**Noakhali** (6)	Chapai Nawabganj (5)	**Rangpur** (7)	*Bagerhat* (5)	Sunamganj (5)	Patuakhali & Barguna (5)
Faridpur (6)	Kishorgonj (5)	Jamalpur (5)	*Bandarban* (5)	*Lakkhipur* (5)	*Natore* (5)	Gaibandha (5)	*Satkhira* (5)	**Moulovi Bazar** (5)	*Pirojpur & Jhalokathi* (5)
Gopalgonj (5)	*Netrokona* (5)	*Sherpur* (5)	**Cox's Bazar** (5)	**Comilla** (7)	**Nawgaon** (5)	*Nilphamari* (5)	**Jessore & Narael** (7)	*Hobiganj* (5)	Bhola (5)
Rajbari (5)	**Gazipur** (5)	**Narayanganj** (6)	**Rangamati** (5)	*Chadpur* (5)	*Jaypurhat* (5)	**Shirajganj** (5)	Magura (5)		
Madaripur & Shariatpur (5)	**Manikgonj** (5)	*Munshiganj* (5)	*Khagrasori* (5)	**Brammanbaria** (5)	**Dinajpur** (7)	**Pabna** (7)	**Jhinaydah** (5)		
	Narsingdi (5)		**Feni** (5)		Thakurgaon& Panchagar (5)	Kurigram & Lalmonirhat (5)	**Kustia** (6)		
							Chuadanga & Meherpur (5)		

Note: **Bold**: Fully running, Underline: Partially running, Italic: not started yet

Figure 7.2-4 Organization Structure of BRTA

Source: http://www.brta.gov.bd/new_pdf/organogram.pdf

7.2.5 Bangladesh Road Transport Corporation (BRTC)

(1) General

Bangladesh Road Transport Corporation (BRTC) is a public corporation responsible for operation of fleet of buses and trucks, particularly approval of bus routes; thus it has been playing a vital role in the operation of public transport system in the city. The corporation should continue its operations as one of the operators but ensuring that it continues in fair competition with the private sector operators and it should be placed on an equal footing with private operators in respect to route franchising and other related matters.

(2) Activities

The major activities of BRTC are:

a) To operate road transport services for both passengers and cargo.
b) To provide safe, reliable and efficient transport service at an affordable fare.
c) To facilitate private sector in transport service and introduction of new routes.
d) To play strategic interventional role at the time of emergency.
e) To promote tourism.
f) To provide training facilities for Drivers, Mechanics and in transport management in order to develop skilled manpower in the road transport sector for both home and abroad.
g) To utilize BRTC's land and properties for additional revenue earnings for subsidizing the unprofitable bus routes and services for disabled, women's, students, government employees, poor and destitute etc.
h) To contracting out and sub-contracting the buses to the able private owners so as to promote competition for quality services and co-existence of the public-private relationship in the road transport sector for greater private sector participation in the operation of BRTC buses.
i) To research vehicle and engine types and safety considerations for bringing harmony in operation of the bus and truck services and to combat the air pollution's factor for better environment.

7.2.6 Bangladesh Railways (BR)

(1) General

Bangladesh Railways (BR) is a Government–owned and Government–managed organization responsible for all aspects of railway development, operation and maintenance in Bangladesh. The BR is at present mainly responsible for inter-city passengers and freight transport. It has a little role in urban transport system in Dhaka.

(2) Visions & Mission

BR's vision is to provide safe, reliable, cost effective and time efficient rail transport service in the country through modernizing, expanding and maintaining rail system in a manner which supports government strategies for economic, social & environmental development.

BR has the following missions:

a) Develop & maintain railway tracks & station infrastructures throughout the country.
b) Maintain & upgrade locomotives, coaches & other rolling stocks.
c) Maintain & modernize signaling & interlocking system & Telecon system of Bangladesh Railway.
d) Ensure safe, speedy & efficient train operation.
e) Implement Government transport policy in rail sector.
f) Procure modern technology related rolling stocks, Track materials & signaling systems suitable for Bangladesh Railway.
g) Manage land asset of Bangladesh Railway.
h) Ensure optimum utilization of Development Budget & Revenue Budget of Bangladesh Railway.

(3) Organization

For policy guidance, nine members of Bangladesh Railway Authority (BRA) were formed with the Minster of Communications as its Chairman. The Director General is assisted by Additional Director General and Joint Director General to perform all administrative and policy making jobs. The organization structure is shown in Figure 7.2-5 .

The railway operation is divided into two zones, east and west. The General Managers of the two zones are assisted by various specialized departments who are responsible for operation, maintenance and financial management. Each zone is again divided in two divisions, which are the basic unit of operation. The division is headed by a Divisional Railway Manager, who is assisted by Divisional Officers of various specialized Departments such as Personnel, Transportation, Commercial, Finance Mechanical, Way and Works Signaling and Telecommunication, Electrical, Medical, Nirapatta Bahini etc. Besides there are two workshop Divisions, one in each zone, located at Pahartoli and Syedpur, each being headed by a Divisional Superintendent .Further there is a locomotive workshop headed by Chief Executive at Parbatipur for general overhauling of both BG&MG locomotives.

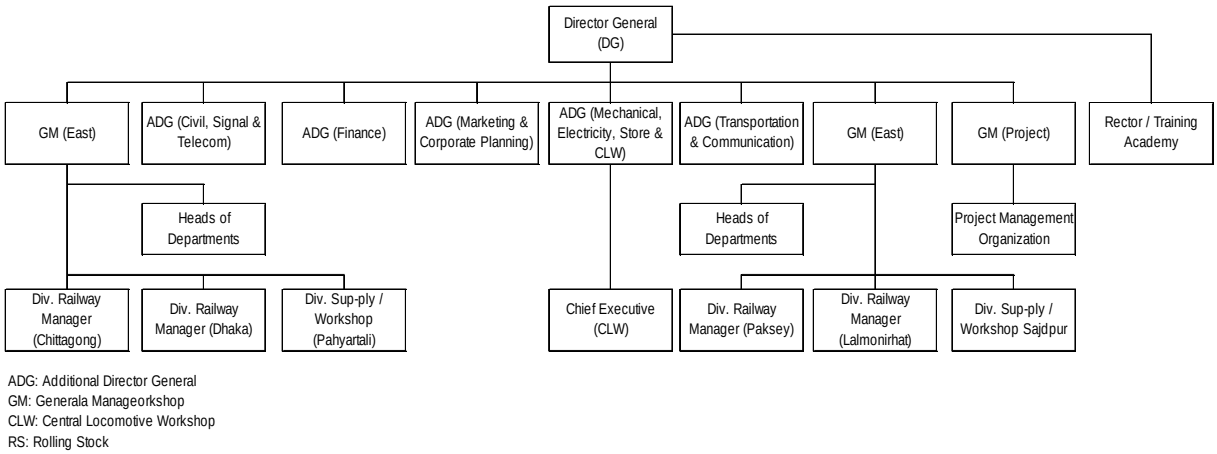


Figure 7.2-5 Organization Structure of Bangladesh Railways

Source: http://www.railway.gov.bd/organogram.asp

(4) Recent movement related to BR

BR has been implementing Railway Sector Investment Program since 2007 with the financial assistance of ADB. The Program consists of the Reform Project and the Investment Project. The Reform Project includes the reorganization of BR and its capacity development to make BR more commercially focused, and improve governance and accountability. BR's new organization structure was proposed to the Cabinet and, at present, the discussion is going on between the MOC and the Cabinet. The main discussion is to make BR independent from the Roads and Railways Division of MOC, by establishing new Railway Board chaired by the Minister. The final decision of the Government has not yet been made. It is expected that BR is transformed into a government-owned corporate entity by December 2011.

7.2.7 Government Inspector of the Bangladesh Railways (GIBR)

(1) General

GIBR is charged with the duties of inspecting all sections of railways of BR. The post of GIBR was created after liberation of Bangladesh on 10th November 1972 with the status of Joint Secretary, to meet the requirement of Railway Act of 1890, as modified on 31st March, 1969.

(2) Duties of GIBR

The duties of GIBR are:

a) To inspect railways with a view to determine whether they are fit to be opened for the public carriage of passengers, and to report thereon to the Government as required in the Act
b) To make such periodical or other inspections of any railway or of any rolling stock used thereon, as the Government may direct
c) To inspect in detail the main and subsidiary lines to the extent of 25 to 30 percent of the

route length of the railway every year

d) To make inquiry under the Act into the cause of any accident on a railway
e) To perform such other duties that are imposed on him by the Act or any other enactment of the time being in force relating to railways
f) To publish the Annual Inspection Report

Other duties, also to be performed by the GIBR include:

a) To countersign the Railway Administration Annual Maintenance Certification
b) To satisfy himself before opening of a railway that all works have been carried out as indicated in the complete drawings and schedule
c) To hold an inquiry into every accident of a passenger carrying train with lose of life or with grievous injury for every person in the train or damage to property of the value of approximately BDT 200, 000
d) To inspect new lines during construction

(3) Organization

The GIBR's organization structure is shown in Figure 7.2-6. The total staff in GIBR is nine persons. They are mostly administrative staff and there is a lack of technical and operational expertise.

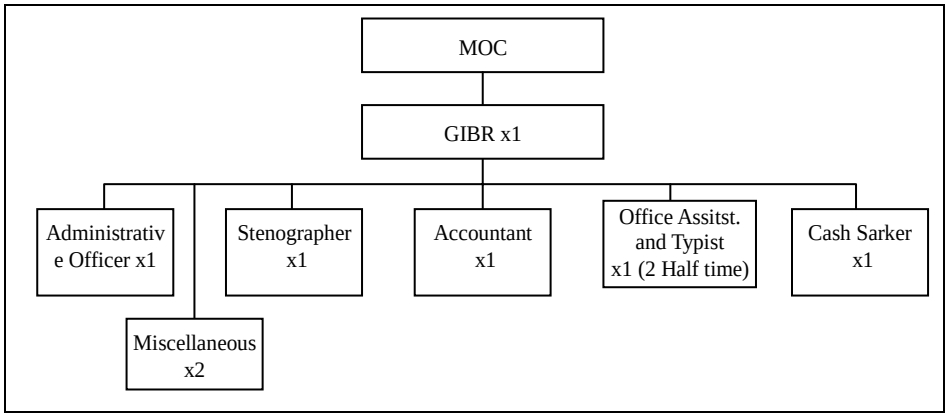


Figure 7.2-6 Organization Structure of GIBR

Source: Institutional Support for Railway Reforms, ADB and MOC

(4) Recent movement related to GIBR

Under the Railway Sector Investment Program, the Technical Assistance for Institution Support for Railway Reforms is being carried out. The TA covers the strengthening of rail safety regulatory board. The followings are the recommendations made by the consultants, though the decision has not been made by the Government:

a) The new GIBR function should be completely independent of BR.

b) GIBR should change its name to Railway Safety Commission (RSC) and be managed by a Chief Commissioner Railway Safety (CCRS).
c) CCRS should be upgraded to Additional Secretary.
d) Future organization will work under the administrative control of Minister of Communication and that CCRS reports directly to the Minister.
e) RSC should be given complementary staff resources in terms of one Commissioner for Railway Safety to support CCRS. In addition, RSC should have increased technical resources in terms of four Deputy Commissioners of Railway Safety (DCRS), one from each profession of Engineering, Mechanical, Signal and telecommunication, and Transportation and Commercial.
f) RSC office has to be strengthened with additional office support staff.

7.2.8 Inland Water Transportation

There are two major organizations pertinent to inland water transportation in Bangladesh. One is Bangladesh Inland Water Transport Authority (BIWTA) and the other is Bangladesh Inland Water Transport Corporation (BIWTC). The both organization are supervised by the Ministry of Shipping,

(1) BIWTA

BIWTA was established in 1958 to develop, maintain, and control inland water transport and certain inland navigable waterways including the circular waterways around Dhaka City. The circular waterway plays a significant role in transportation system in Dhaka to reduce burden on land transportation.

(2) BIWTC

BIWTC was established in 1972 as a government transport organization to serve for transport system for easy and safe transportation of passengers, cargo and vehicles both in inland and coastal areas.

7.2.9 Dhaka City Corporation (DCC)

(1) General

Dhaka Municipality was established on the 1st August, 1864. After the partition of India, Dhaka became the provincial capital of East Pakistan in 1947. Then, Dhaka became the capital of Bangladesh with the independence in the year 1971. The city area was divided into 50 wards in 1977. In 1978, Dhaka Municipality was awarded the status of Corporation. Dhaka Municipal Corporation was renamed as Dhaka City Corporation in 1990.

(2) Functions in transport sector

Dhaka City Corporation has the following functions in transport sector.

a) Maintenance and development of the city streets, roads and lanes;
b) Maintenance and operation of street lights and traffic signals;
c) Sweeping and clearing of streets/roads/lanes, drains, markets and public places;
d) Maintain, repair and improvement of bridges and culverts, footpaths and drains;
e) Setting up and maintenance of traffic signals at all important road crossings of the city;
f) Issuance of trade licenses, rickshaw licenses and rickshaw driver's licenses;
g) Tree plantation on public streets and other public places;
h) Construction and maintenance of bus terminals;
i) Development and maintenance of car parking;
j) Construction and maintenance of markets (of fish, vegetables & other merchandise);

(3) Organization

DCC is headed by an elected Mayor with the rank and status of a Cabinet Minister. As shown in Figure 7.2-7, there are 16 departments in the DCC, and two departments of Transport and Engineering departments are directly related to transport sector administration. Whereas the Mayor exercises overall control, some powers have been delegated to the heads of departments.

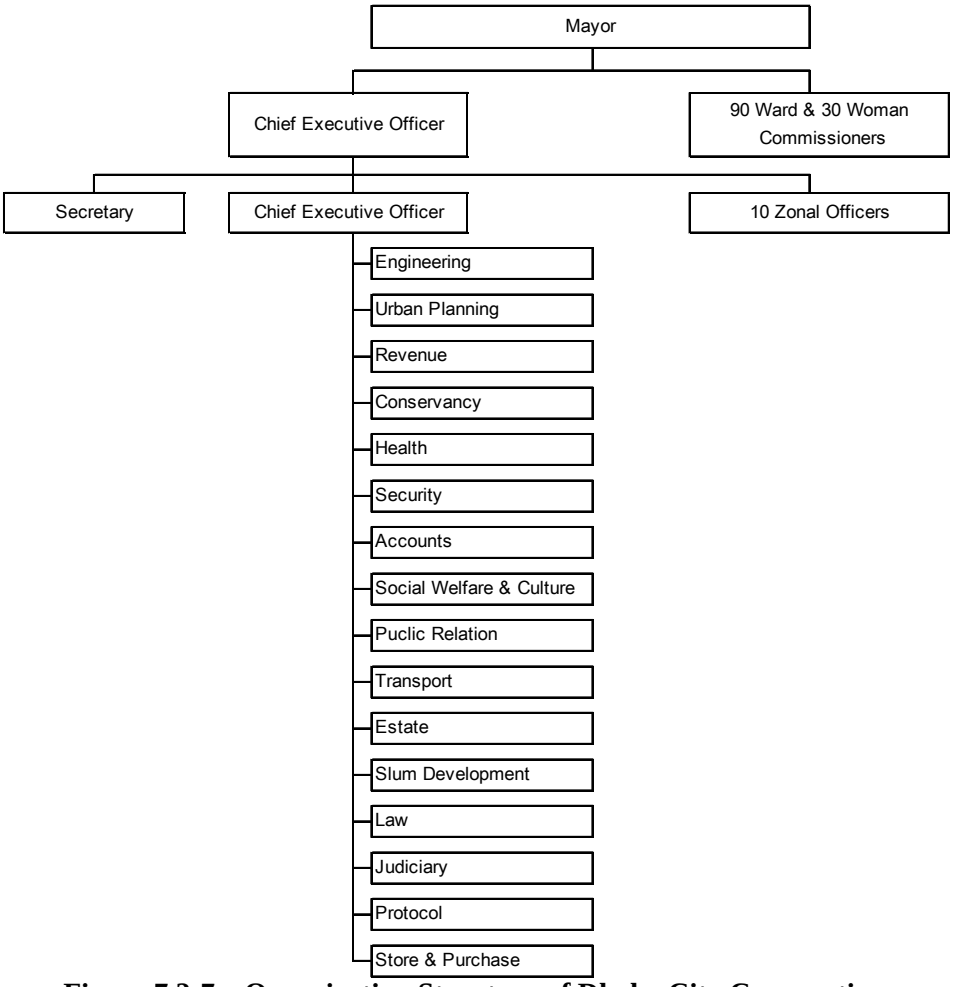


Figure 7.2-7 Organization Structure of Dhaka City Corporation

Source: http://www.dhakacity.org/Page/About/Link_1/2/List_id_1/21/Subid_1/197/Organ_gram

7.2.10 Local Government Engineering Department (LGED)

(1) Major Functions of LGED

LGED is a department under the Ministry of Local Government, Rural Development and Co-operatives. The major functions of LGED in transport sector can be categorized into: Rural infrastructure development, Urban infrastructure development and Rural infrastructure maintenance

(2) Rural Infrastructure Development Activities in LGED

LGED conducts the following infrastructure development activities in rural area:

a) Improvement of Upazila Roads, Union Roads and Village roads. (classification of roads)
b) Construction of Bridges and Culverts
c) Development of Growth Centers (GC) and rural markets.
d) Development of rural road master pan.
e) Development of technical specifications and manuals for construction of rural infrastructures.
f) Construction of Union Parishad (Council) Complex and Upazila (Sub-Disrtict) Complex
g) Construction of Jetty and boat landing.
h) Development of Upazila and Union plan book to facilitate local level planning and participation
i) Development and updating infrastructure database and digital maps.

(3) Urban Infrastructure Development Activities of LGED

LGED provides technical and management support to urban local government institutions such as City Corporations and City Councils to implement urban infrastructure development programs. Major activities of the LGED in transport sector are:

a) Planning and implementation of integrated town centre (bus terminals, markets etc.)
b) Planning and implementation of municipal roads, bridges & culverts
c) Housing & land development (pilot)
d) Land use plan, survey & mapping
e) Preparation of district town master plan.
f) Preparation of Upazila town master plan.Dhaka Metropolitan Police (DMP)

(4) General

Dhaka Metropolitan Police (DMP) was established in 1976 under Ordinance No. 3 of 1976. DMP is composed of five divisions. One is traffic division, which is empowered to control traffic movement and to enforce traffic rules. The jurisdiction of DMP is divided into four traffic divisions, i.e., East, West, North and South division. Each division is further divided into

zones based on the geographical area of Thana. There are Sutrapur, Motizheel, Demra and Sobujbag zones in East division; Mirpur, Pollobi, Tejgaon and Mohammadpur zones in West division; Uttara, Gulshan, Mohakhali and Badda zones in North division; and Ramna, Dhanmondi, Kotowali and Kamrangirchar in South division. Assistant Police Commissioner (APC) is the head of each zone.

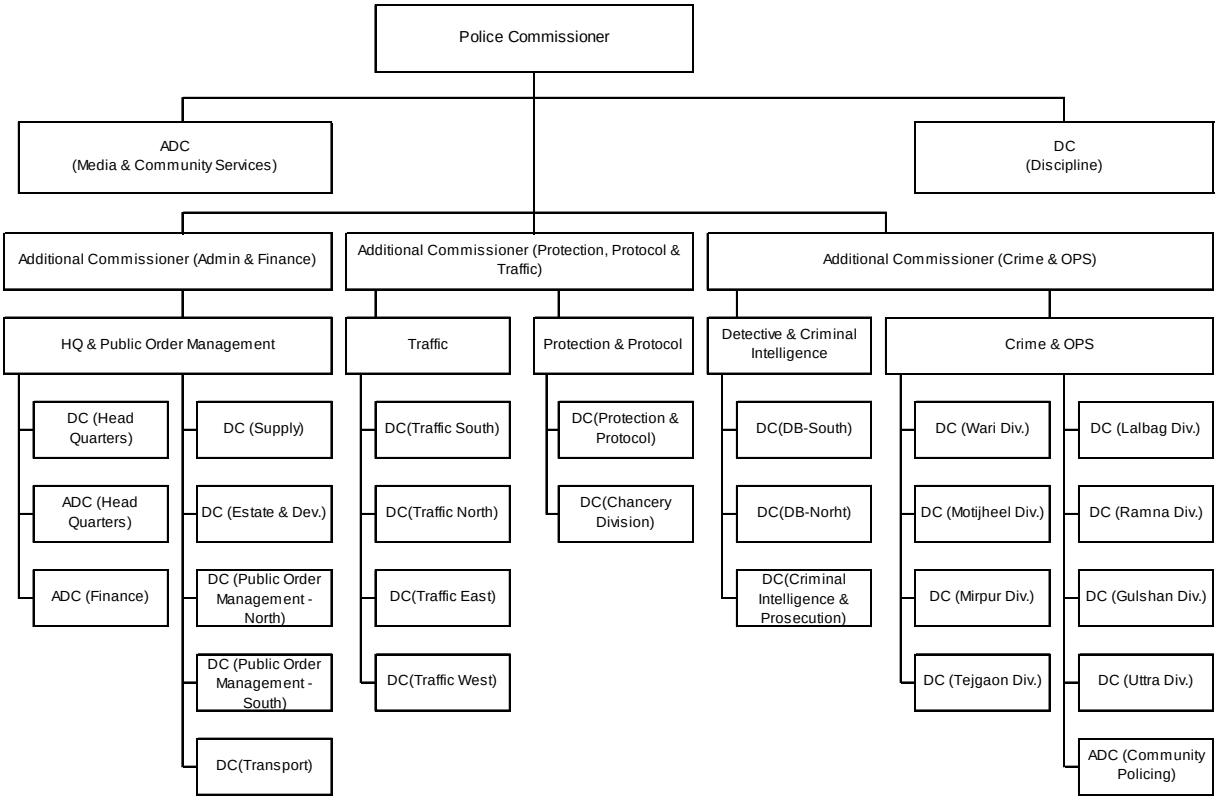
(5) Functions

DMP has the following functions:

a) To ensure smooth traffic flow every day,
b) To take actions against traffic violations,
c) To enhance comfort of the pedestrians and passengers,
d) To take measures to reduce road accidents,
e) To ensure safe and uninterrupted movement of VVIP and VIP, and
f) To collects fines imposed for traffic violation and deposit it to the treasury.

(6) Organization

Organization structure of DMP is shown below.



DC: Deputy Commissioner
ADC: Additional Deputy Commissioner

Figure 7.2-8 Organization Structure of DMP

Source: http://www.dmp.gov.bd/static/organogram.php

7.3 Summary of Planning Issues related to Urban Transport Administration in Dhaka

7.3.1 General

In this chapter, the Study Team outlines the existing organizations related to urban transportation in Dhaka. In this section, overall issues related to urban transport in Dhaka are described.

As described above, many organizations like DTCB, DTCB, RHD, BRTA, LGED, RAJUK, DCC, DMP, and so forth are involved in urban transport administration in Dhaka, without clear delineation of roles and functions. For instance, although DCC, in principle, takes responsibility to construct and maintain roads in Dhaka, there are cases where a political decision alters the implementation organization from DCC to RAJUK, LGED, RDH, Army, etc. project by project. DCC merely maintain the roads, resultantly it is recognized that DCC lacks in project implementation capacity. Under such circumstances DCC has not have enough practice to develop their own capacity of road development.

Traffic management also faces the same issues of unclear demarcation of roles and functions between DCC and DMP with overlapped scope of work. However, DMP mainly conduct traffic management with little coordination with DCC.

In urban transport administration in Dhaka with many relevant organizations, with the purpose to strengthen the capacity of plan making and coordination, DTCB was established under a World Bank study DUTP (1999-2005). Since when the DUTP was finished, however, the DTCB has not been functioning fully for the following reasons:

- Revenue budget was not allocated for payment to DTCB staff and some staff left;
- In 2007 although revenue budget was approved to cover a smaller number of staff than the original plan, the recruit was not successful and some positions were deputized by staffs of RDH and other organizations;
- Decision was not made in smooth manner due to conflict between DCC Major of Chairperson of the board of DTCB and MOC ruling organization of DTCB;

DTCB has only functions of planning and coordinating, not authority to decide projects, compelling power over other organizations. What's worse, DTCB does not have budget for project implementation which puts DTCB in weaker position, consequently, it has been rare that project implanting organization such as RAJUK, RHD, and DCC consult with, report to, provide information, and ask for instruction for projects.

During the implementation period of the DUTP, DTCB was consulted in the project approval process of Planning Commission on urban transport projects in Dhaka. DTCB, presently, is out of the approval process.

At present time, urban and land use plans are made by RAJUK while transportation plan, DTCB; these plans are not well formulated in an integrated manner to maintain consistency with a close coordination and collaboration between the two organizations. This unintegrated and ineffective manner between land use and transport plans has been recognized a big issue in STP. In order to solve this situation and enable DTCB to assume its mandate function of planning and coordination, the STP has recommended DTCB should be strengthened by reforming it into a new organization called "Unitary Authority" equipped together with the function of land use planning which RAJUK assumes.

The STP was approved by the Parliament in 2008 and is recognized widely as national transportation plan. The approval status of STP is an advantage of DTCB based on which DTCB can coordinate with other organizations related to transportation. Also, RAJUK has been reflecting the contents of the approved STP in the Detailed Area Plans of Dhaka City, which are now at finalization stage.

Even though STP has been approved by the Parliament, its smooth implementation is not necessarily an easy task because of practical constraints in budget, implementation system and coordination.

Furthermore, the implementation of the BRT and rail-based MRT, proposed by STP and also the JICA Study Team, needs enough budget, integration of the existing transport system, and reformation of the existing organizations and establishment of new organizations. STP has proposed a broad direction to be taken for such modes of public transportation, but not discussed in detail.

7.3.2 Recent movement during the JICA Study period

Urban transport problems in Dhaka has been aggravated more and more in recent years and it has become one of the most imminent issues in the nation. This situation gives more pressure from the central government on DTCB to function orderly to realize various projects so as to solve the problems as soon as possible.

In this situation, in October 2009, the Cabinet decided that DTCB Act 2001 should be amended that DTCB would be renamed to DTMA (Dhaka Mass Transit Authority), with board chairperson changed from DCC Mayor to MOC minister, and more board members. The name of DMTA weakened the DTCB's expected functions of planning and coordination, and emphasized the image of MRT implementation body instead. Roles and functions of DTCB (DMTA) have been recognized vaguely among stakeholders, which require clearer system of implementation of MRT in Dhaka.

At the same time, DTCB is taking the following actions. And although organizational structure within the MOC has been improved, coordination and collaboration with other related

organizations like DCC and RAJUK have not been progressed very smoothly.

- Traffic Management Committee (TMC)

  A committee for urban transport in Dhaka, which is composed of RAJUK, DCC, BRTA, BRTC, BIWTA, BIWTC, DMP, RHD, DPDC, DESCO, BUET, etc. with DTCB as chairperson. TMC is a target as part of institutional development component of a World Bank implementing CASE project.

- Traffic Circulation Examination Committee

  This committee examines parking lots and traffic circulation of existing and planned buildings and housing development. This shows the beginning of collaboration of RAJUK and DTCB.

7.3.3 Basic Directions of Institutional Strengthening

Based on the discussions above, the JICA Study Team has addressed the following basic directions for a broad institutional strengthening.

(1) Strengthening of functions of planning and coordination of DMTA (previous DTCB)

Provision of urban transport network will become more complicated, which includes roads and expressways, BRT, Rail-based MRT and other public transportation modes. It surely makes DMTA's task more complicated and extensive, with more planning work and coordination among the stakeholders. DMTA has to be involved in decision making process such as project approval by Planning Commission.

DMTA's functions of planning and coordination should be clearly stipulated in the DMTA Act. In addition, as for the board, which has not functioned, its roles, members and meeting frequency should be clearly stipulated. And along with this, the organization should be strengthened with more authority.

STP has proposed the creation of Unitary Authority by transferring the RAJUK's function of land use planning to DTCB. The idea is not accepted as positive by the government and seems unrealistic. Consequently, the JICA Study Team proposes the strengthening of the collaboration function through some committee or others.

(2) Addition of the regulatory organization function of MRT/BRT to DMTA (previous DTCB)'s functions

DMTA's major function in MRT/BRT development is a regulatory function, not operating one.

DMTA's function of development of MRT/BRT should be added in the DMTA Act, which is amended from DTCB Act 2001. And organizational structure of DTCB should be enhanced according to the functions strengthened.

(3) Establishment of a new operating body of MRT

A new, separate organization, Dhaka Mass Transit Company (DMTC), is to be established other than DMTA for MRT operation. In addition, it is assumed that another organization for BRT operation should be established.

(4) Establishment of Urban Transport Division in MOC

Urban transport is becoming important issues in recent years not only in Dhaka but also in other major cities in Bangladesh such as Chittagong. The Government needs to take strong initiatives to solve the urban transport problems. In this context, it is recommended to establish a new Urban Transport Division in MOC headed by a Secretary.

Proposals following the above-mention basic direction are described in Chapter 20.