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ROLE OF BUS RAPID TRANSIT (BRT) AS A TRAFFIC SOLUTION FOR DHAKA CITY

Md. Kaikobad Hossain, Executive Director, Dhaka Transport Coordination Authority (DTCA)

Bus Rapid Transit (BRT) is a large public transportation system. One of the features of the BRT is a dedicated lane for bus. It is an automated service. DTCA survey showed that 21 million trips have generated every day alone in Dhaka city. Of the total number of trips generation cars have occupied five percent and public buses twenty-five percent. Upcoming MRT-6 (Mass Rapid Transit) could only carry 2.37 percent of total trips. BRT-3 and MRT-6 are implementing according our Strategic Transport Plan (STP). STP was prepared in 2004, but it was approved in 2009. World Bank will finance the BRT-3 project. World Bank has already decided to give \$250 million loan for the BRT-3. We are trying to execute the conditions set by the World Bank.

I believe MRT is the permanent solution for express transportation. BRT is a temporary solution but it will merge with or convert to MRT. And by the advancement of technology STP-2004 has become obsolete. We have already started to prepare RSTP (Revised Strategic Transport Plan). We hope that RSTP will be finalized within September. RSTP also have mega projects like BRT and MRT. MRT-6 could not solve the problem of the traffic jam because it can only carry 2.37 percent of the passengers. According to RSTP, there are six MRTs coming soon. Route of the BRT-3 is 22 kilometers road from Airport to Jhilmil. Department of Roads and Highways is implementing another BRT from Gazipur to Airport. When the BRT from Gazipur to Jhilmil is completed, traffic pressure will be reduced to a great extent.

Md. Afil Uddin, Project Director, BRT, Roads & Highways Department

The main features of the BRT are dedicated lanes, specific alignments and booths for fare collection. We are also going to launch smart cards for bus tickets. Intersections from Gazipur to Airport Road will be conflict free. BRT will be elevated to different grades to avoid cross traffic. Inter-district bus, trucks and other vehicles are also going to travel on the mixed traffic lanes. The project is being delayed for one year, and so we expect to finish it by December 2017.

The BRT road length is 20 kilometers, including a 3.5 kilometers elevated road according to the design. There are nine flyovers in this route, but six flyovers will be separated in this portion. Flyovers are located in airport, Jasimuddin, Kunia, Open University and Gazipur Chourasta. There will be few feeder roads along with BRT to give access to nearby people. There are 141 feeder roads and total length of the road is 57 kilometers.

We also hope to establish ten-kitchen markets for rehabilitating hawkers of BRT route. Shibbari via Gazipur Chowrasta to the airport will be a corridor. There will be twenty-five stations in this corridor after every 600 to 800 meters.

Not every bus is of the same quality and type. There are mixed lanes, service lanes, and facilities for non-motor vehicles and footpath. In the BRT route, we have a different design for Uttara. We are making three mixed lanes in Uttara and service lanes will be outside of the footpath area for goods loading and unloading.

We could not give these facilities in other parts of the city because of the scarcity of space. In the Gazipur Chourasta, width of the road is only 25 meters, for that reason we have to merge mixed and non-motor vehicle lanes. BTCL will give us a land in Gazipur for the bus depot. We already called tenders for the construction of the bus depot.

We also want to construct a temporary terminal for the buses for night-long stay in airports. In the north sections, the BBA, LGED and Department of Roads and Highways are implementing it. We have three consultants-EPCM's main responsibilities are construction, design and supervision; OPEM is doing operation, forming business models and operational plans; BMCC and RPI are yet to recruit staff.

We will make a multi-model hub under the PPP near the airport and we are requesting the railway authorities for the land. We want to operate BRT buses during construction to ease people's trouble because of the construction of the dedicated lanes.

BRT passengers will use underground passages or footbridges to access the station. We have to acquire at least 4 acres of land for the project. Few of our buses take turns from Cherag Ali, Tongi College or other sub-points but they need space to stop because these are 18 meter-long buses. The main challenge for us is that we couldn't allow existing local buses in that corridor. The major challenge of the BRT project is how we can accommodate private bus service providers in the project or compensate them if they have to suspend their business.

Md. Anisur Rahman, Project Director, Clean Air and Sustainable Environment Project, DTCA

The STP for Dhaka city was drafted in 2005. STP has 3 Bus Rapid Transit and 3 Metro Railway Transit. In the revised STP there are some changes about mass transit. There will be more Metro Railway Transits. Circular MRT and east-west connection will change. The revised STP draft will be finalized in September. We will start working on BRT-3 and MRT. The BRT service is operating in 181 cities of the world. Every year, the number of BRT is



Recently Dhaka Transport Coordination Authority in association with Expressions Ltd. and The Daily Star organised a roundtable on "Role of Bus Rapid Transit (BRT) as a Traffic Solution for Dhaka City". Here we publish a summary of the discussions.

- Editor

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increasing worldwide. Compared to MRT, the investment cost of BRT is minimal. Cost of twenty kilometers of MRT is Tk 22,000 core whereas cost of twenty kilometers of BRT is Tk 2,000 core. The construction time of the BRT is less than that of the MRT. According to the plan, there are sixteen stations in BRT-3. Two lanes will be dedicated to BRT and another two lanes for the general traffic.

There could be more lanes and footpath. In the BRT-3 there are three elevator sections. We will use two existing system - one is Banani Flyover and another is Mogbazar-Mouchak Flyover. We also are going to construct another only BRT dedicated two-kilometer long flyover.

BRT will have a centre to control the traffic of BRT lanes. There are options of exclusive bus lanes and open stations. The bus door will be open for twenty seconds for entrance and departure. The government approved smart card is called Rapid Bus and its design is in the process.

BRT buses have four doors including emergency exit and seating capacity is 43. Height of the bus door is 900 millimeter. We do have two types of stations - elevated and add gate. All the subway facilities will be available in the BRT. We are trying to give access to mid section using the underpass. We will have elevators and universal access to stations. We also have ticket gates for free boarding on the bus. There will be few foot-over bridges. Where the add gate is close to the signal, add gate access will be available. We want to make Gulistan a pedestrian free area. We will reroute buses in Gulistan to solve the chaotic situation of the traffic.

There will be a refueling station at the Mohakhali Bus Depot. We will construct three-storied buildings for bus parking and a ten-storied building for the administration department. We will make the central depot at Keraniganj. We have already asked RAJUK to acquire land for the depot.

Architect Tanvir Nawaz, Chairman, Urban Habitat

DTCA is going to construct six flyovers under the BRT-3 (Gazipur-Airport). We need to know the conditions of public access through underground passage or over the footbridge. We also require information about the frequency of the bus services and the capacity of the bus. Timetable of the trips has to be specified. DTCA has to speculate how many passengers could avail this service in the beginning of the project and what will be the maximum capacity of passenger carrying during the BRT-3 operation.

Shahjalal International Airport road traffic volume is increasing and there is immense pressure on the road traffic in the Gazipur-Airport route. The Dhaka elevator expressway will start from the Airport point. The intersection of this point is wide open and requires coordination among multiple projects. There will be a massive pressure of passengers in this hub, since many transports will use it as a departure and arrival point.

Another concern is that the Kuril Flyover hardly has space for three lanes and there is no option of elevating. BRT is a priority service and dedicated lanes will minimize transport mobilization space.

BRT-3 will manage an output point in Mohakhali Bus Depot. DTCA has to ensure quality of the buses and bus services. Existing quality of the buses is very disappointing. In the last ten years, Dhaka lost 30-50 percent of its roads because of arbitrary encroachment. So we need a comprehensive BRT program for Dhaka City. The public also wants to know more about the revised RSTP. If the DTCA presents something out of nowhere, claiming that the RSTP is finalized then it will not be an acceptable proposition. We want a proper technical explanation of the RSTP.

Dr. S M Salehuddin, Chief Advisor at Humayra Enterprise and Former Executive Director, DTCA

The government has spent Tk 14 core for the STP project. And here I come to know that it has become obsolete for our city. It is very unfortunate for us. Thirty-two planners, professors, technicians and administrators designed the STP. DTCA presented the STP in 2008 to the Chief Advisor of the caretaker government.

We handed over responsibility of implementing the STP to JICA. JICA did not understand our socio-economic context and so it gave more importance to the MRT which is absurd in our context. We lost four years of BRT-3 to complete the final design. The feasibility of the BRT has already been proved and now we have to start the project soon. I believe BRT is cost effective and can be quickly implemented.

The public is hopeful that Metro-6 will solve our communication problems. If Metro-6 does not inter-connect with other projects, it will be a traffic disaster for us. Strengthening the DTCA has become a crucial factor for a better communication system of Dhaka.

Kaikobad Hossain

Apart from the mega project, many of the 74

proposals of the former STP have been implemented. At present we are doing fieldwork and working to submit the final project proposal. We have fifteen stakeholders in the DTCA project. We already wrote and held a technical dialogue with our stakeholders seeking their suggestion on twenty years STP. We do have an advisory committee. And from September to October, we will organize a series of meetings regarding our plan. The government has already set up a clearing house and approved smart card or one ticket system for all modes of public and mass transport services to reduce the problems faced by commuters. The Rapid Pass Smart Card will also be connected with online banking. However before finalizing the draft, we will discuss with all our consultants.

Tanvir Nawaz

MRT is an integrated program- MRT Line 4, MRT Line 6 and Connecting circular MRT Line 5. MRT Line 4 becomes uncertain because it goes through Dhaka Elevator Expressway project. You would not be able to make MRT in that railway line. You have to elevate it because of the Banani Flyover. This highway has the capacity of eighty thousand vehicles. On the other hand, MRT Line-4 has the capacity of providing service to 750 thousand passengers per day. The Dhaka Elevator Expressway has taken over the MRT lines. Here we will not be able to connect circular lines. I think it is time to think about the integration again.

Quazi Mohiuzzaman, Former Transport Specialist at World Bank

We have come up with a \$40 billion investment plan for the next twenty years. Now a flyover is clashing with another. We have a conceptual design of completely integrated plan. Predominately, we have 20 million trips per day, which will be sixty million after twenty years. The bus can provide service to 40 percent of the population of Dhaka city. If five MRT and three BRT complete within 20 years, it only can carry maximum ten percent of the passengers of the total trip. Another forty percent will depend on other bus services. DTCA bus network study has a full road map of Dhaka city, but unfortunately that report remains stagnant in the Ministry of Roads and Transports for a long time. It can provide a total plan and roadmap about how to improve the bus system. Its expenditure is less than 1 billion dollars. At present, there are 200 unplanned routes in Dhaka. They want to reduce it to 90 routes. A feeder link with MRT is very important. We need to have integrated feeder service to fit in this Metro Line. Otherwise, it will not be effective. We have to think about the multi-modal. We need to have a feeder line from airport to the MRT in north direction. We have to think of multi-modal linkages. We should not separate BRT and MRT. We should start implementing bus networking studies; there is no alternative to it.

Architect Salma A. Shafi, Urban Planner, Centre for Urban Studies (CUS)

We have too many agencies implementing the development programme in the Dhaka city. How do we approach to implement the master plan of the city? We need to investigate why we allow undisciplined projects like the LGED programme for building an elevated overpass. We want to know why the STP has become obsolete. Someone mentioned in another forum that it would take five years to implement the BRT. Along with BRT, we have to develop east-west connecting network. Otherwise, BRT will not be successful. People have to reach the BRT. We hope that the new mayors will work on the traffic issue in Dhaka city.

Maruf Rahman, National Advocacy Officer, WBB Trust

STP is a prescription for Dhaka City Transportation. Our mass transport system

is highly dependent on bus transportation and 28 percent or 60, 00,000 daily trips are carried out every day by buses. Violation of the STP needs to be rectified. DTCA needs to have a vision. And the positive thing is that the organisation is now more powerful than ever.

At present, the World Bank and ADB are following universally accessible design. We want universal accessibility in BRT. There are underground stations; obviously, there will be escalators, lifts, and elevated stairs. Nonetheless, people will cross the road in cycles or wheelchairs. We have to make sure that people with disability can cross the road in different locations. We need to accommodate present bus service providers. DTCA will develop a total of 141 access roads. We are very weak in terms of connectivity. We need to specify how our people will come to the BRT station. We should have smooth feeder systems. Otherwise, we will not be able to reduce the use of private cars. We need to make people understand the benefits of BRT. We have to develop a secure and sustainable transport component like BRT. Tech-time used for the disabled in foreign countries Zebra crossing and ramps for the disabled are constructed in vehicles exit and entry points. We need to create pedestrian points. DTCA needs to finalise its vision. We have to ensure mobility for all.

Khandakar Enayet Ullah, General Secretary, Bangladesh Sarak Paribahan Samity

Private bus service providers are always victims of political violence. At present the bus owner, private bus service providers do not have the right to set up ticket counters. DTCA is supposed to construct parking bays for the bus. We want to help implement the BRT project. We just want to see how they can fit us within the plan. Interconnection may create more complications. For example, inter-district buses have to go to Gulistan because of the Mayor Hanif Flyover. Those buses cannot go to Sayedabad directly. Dhaka has short space for transport maneuvering. So we should think about all these problems before implementing it.

G M Jainul Abedin, Chairman, RAJUK

The total area of Dhaka is about 1528 square kilometers. And it is home to almost 160 million people. Before starting any development project, we need to calculate the growth in the next fifty years. We are considering BRT as one of the solutions. Our main road network is extended to the North-South rather than East-West direction. We do not have wide road networks based on the mode of transportation. New DAP will start in January 2016. We want fewer errors and debates about the new DAP. We have already appointed consultants for the new DAP. The primary job of RAJUK is planning and implementing development works. RAJUK has mandate to do development and construction work. All the roads constructed by RAJUK do follow all the rules and regulations. Undoubtedly the BRT is a universally accepted solution. BRT is successful in India and Latin America. RAJUK will help to implement the BRT project in the city.

Ramendra Majumder, Managing Director, Expressions Ltd.

We need more and more dialogues with policymakers and stakeholders. One of the challenges that we have right now is how we can manage and arrange general traffic during the construction. We have to make people psychologically prepared for it. Bus owners need to integrate and adopt the new BRT project. Through this project we want to save people's money and time. Before finalising the design, it should be open to different public forums for general opinions.

Aftabuddin Talukder, Former Executive Director, DTCA

In the STP we have three BRT and three MRT projects. BRT- 3 is going to be implemented by the fund of World Bank. Feasibility study has been completed. STP was still not cancelled as per government-approved documents. "Revision" does not mean STP has become obsolete. JICA did a feasibility study about MRT. The World Bank did a survey about feasibility. We need to accommodate private transport sector in the BRT. BRT is a part of STP and it will be beneficial for city dwellers of Dhaka. It will be time saving, environment friendly and a fuel saver. We requested the World Bank to fund the construction of the BRT project and they are interested about it. We need to arrange the fund as quickly as possible and have to move on to the second phase of the construction. We are constructing a BRT from Gazipur to Airport and another from Airport to Jhilmil.

Md. Afil Uddin

Most of the stations will be underground. Footbridges will be wider and flexible for people's movement. Our passenger's volume per hour is fifteen thousand against the demand of ten thousand. At present, we are following trunk feeders. The BRT bus will only travel in the main corridor and we will not allow other buses in that corridor. If BRT passengers' volume exceeds then we will accommodate hybrid bus services. If we start the hybrid bus service then the capacity will reach twenty five thousand passengers per hour. If we could start all the BRT lines in an integrated way that would be very useful.