

Chittagong should act now

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IN Part I of this two-part article on Urban Mass Transportation for Chittagong that appeared on 8 April 2005 on this page, the discussion was on the relevant zoning, land-use pattern, development of railway and the present road transportation system as well as the present condition of railway and railway services.

In dealing with road transportation, the article focused on route wise buses and travel time, mode of mass transportation, bus terminals, performance of bus service and the problems.

In Part II the researchers BUET students Imon Chowdhoree and Kanu Kumar Das concentrate on mass railway transportation.

Implementing such a massive scheme in parts may not yield the expected positives, nor shall it be easy considering the existing infrastructure to put in place the proposal in its entirety.

The research in the least demands a roadmap by appropriate authorities to undertake further studies that should

include among others legal aspects and budgetary provisions targeting maximum beneficiaries.

The need for a means of mass transportation in Chittagong is however beyond argument. Action now in Chittagong may save it from the conflicts, uncertainty coupled with pessimism suffered by any architect, engineer and planner dealing with a future-Dhaka under present-day circumstances.

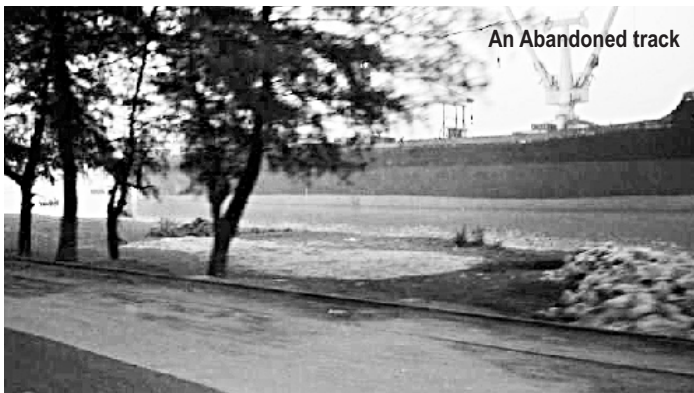
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A less used station



A less used station



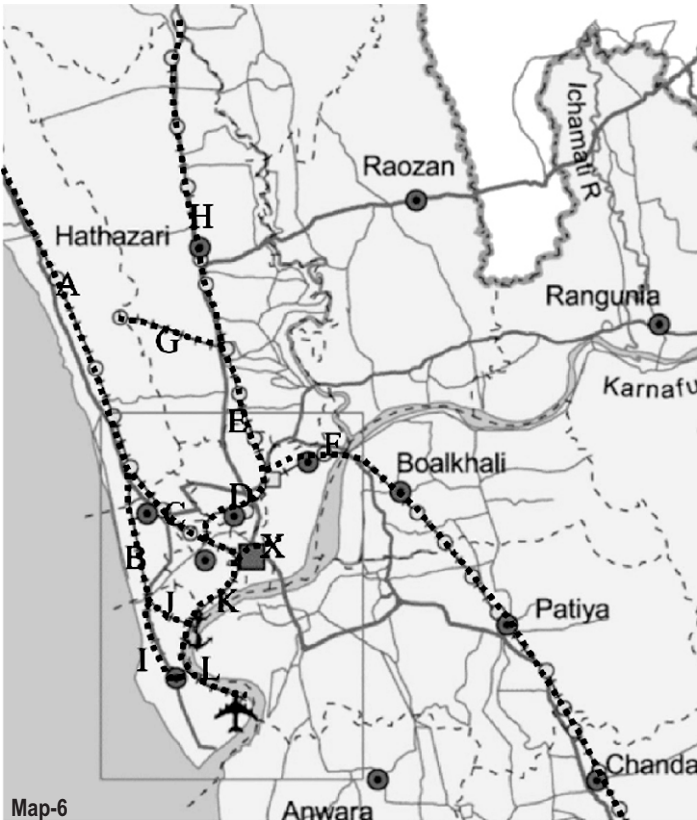
An Abandoned track

Urban Mass Transportation for Chittagong II

(Part I appeared on 8 April 2005)

IMON CHOWDHOREE AND KANU KUMAR DAS

PRESENT Scenario of Rail Tracks: (Map 6) Numbers prefixing a route designated in letters is not official but only for convenience of identification in the map.



1. X-C-A Chittagong Central RS to Sitakunda RS
2. Route usage: Local and intercity train services
3. Track condition: Very good because of intercity train services
4. Intermediate stations: Eight
5. Usage frequency: Stoppage for one local train
6. Timetable: Not followed
7. X-D-E-G Chittagong Central RS to University RS
8. Route usage: Facilitating university students and faculty
9. Track condition: Satisfactory
10. Intermediate stations: Eight
11. Condition of intermediate stations: Run down (Image 3)
12. Usage frequency: Stoppage for one local train
13. Timetable: Not followed
14. X-D-E-H Chittagong Central RS to Nazirhat RS
15. Route usage: One local train service
16. Track condition: Unsatisfactory
17. Intermediate stations: Sixteen
18. Condition of intermediate stations: Run down (Image 5 and 6)
19. Usage frequency: Stoppage for one local train
20. Timetable: Not followed
21. X-D-E-H Chittagong Central RS to Nazirhat RS
22. Route usage: One local train service
23. Track condition: Unsatisfactory
24. Intermediate stations: Fifteen
25. Condition of intermediate stations: Run down (Image 4)
26. Usage frequency: Stoppage for one local train
27. Timetable: Not followed
28. K-C-A CGPY Goods RS to Sitakunda RS
29. Route usage: Goods train service (Image 7)
30. Track condition: Satisfactory

7. J
- a. Route usage: This track is used to park trains
8. B-I
- a. Route usage: Totally out of use
- Source: Station masters and users

Essentiality of urban rail service

Two types of MRT (mass rapid transit) systems have been seen in different countries: bus based MRT and rail based MRT.

It is important to decide whether the transit system in future for Chittagong shall be bus based or rail based. There is strong pressure to make bus the principal mode of mass transit. The problem is the existing road network is not sufficiently spacious to facilitate bus transit in the congested parts of the city. In reality, it is quite difficult to protect buses from the effects of traffic congestion and provide a reliable bus service without a physically segregated bus way in the city. The attempt to afford exclusive lanes for buses in Chittagong occupied more road spaces and deteriorated the environmental quality of the city.

Urban rail becomes particularly important when high-density urban development extends to create distances that are too great for efficient bus transport, and usually when employment remains centralised for such cities. A system of urban rail with coordinated feeder services is perhaps the most efficient method of transport. (World Bank Report; 2000)

A number of authors and organisations have examined the feasibility of rail transit comparing bus ways and rail alternatives.

Argument-1: According to Mayer, Kain & Wolf (1965), an automobile all the way is cheapest with volumes of up to 5,000

passengers per hour, a bus way is generally cheapest when volume is 10,000 per hour, and rail with feeder buses for residential collection and, with a downtown subway for distribution is cheapest with a volume of at least 40,000 persons per hour.

Argument-2: Karim, Komori, Esaki and Ahammed argued in 1998 that a bus has 50 seats, an expected life of 10 years, and costs US\$ 180000 in one given economy. On the other hand a railcar has 80 seats, an expected life of 30 years, and costs US\$ 1,100,000 in the same economy. Considering interest rate, estimations show that a bus has an annual cost per seat of US\$ 536, while for railcar it is US\$ 1221. This indicates that annual cost per seat of bus is less. However it will be much higher when environmental and safety damages costs are included.

In many of the case study cities, governments have come to understand that road building alone cannot efficiently serve travel demand and that a high-capacity public transport network is essential for securing mobility and sustainability of urban transport systems.

The Chittagong Analysis

Nearest rail stations and rail tracks

LOCATION	NEAREST STATION	NEAREST TRACK	LOCATION	NEAREST STATION	NEAREST TRACK
FARHADABAD	NAZIRHAT	H	NASIRABAD I/A	-----	E
HAT HAZARI	HAT HAZARI	H	AGRABAD C/A	BANGLABAZAR	K
SITAKUNDA I/A	SITAKUNDA	A	PORT COLONY	-----	C
BHATIARY I/A	BHATIARY	A	HALISHAHAR R/A	-----	B
PATENGA I/A	-----	L	CHANDGAON R/A	-----	F
C.E.P.Z.	-----	I	KULSHI R/A	JHAUTALA	D
SAGARICA I/A	PAHARTOLI	C	NASIRABAD R/A	SHOLASHAHAR	D
KATTALI I/A	-----	B	PATIYA	PATIYA	F
KALURGHAT I/A	JALANIHAT	F	BOALKHALI	GOMDONDI	F

The chart depicts that all the mentioned locations can be served by rail transit without building any new rail tracks. However, some new stations will be needed.

time for each intermediate stations then it would take only (40.99/40+3*5/60) = 1 hour 20 minute. Then if a person starts his journey from Nazirhat at 7:20 am then he will reach Chittagong

being as it is a hilly city. **Proposals, recommendation and conclusive remarks**

To build Chittagong as a

Comparison between travels by bus and rail

ROUTE	TIME		FARE (Tk./Km.)	
	BUS	RAIL (40Km./H)	BUS	RAIL
PATIYA?SHOLASHAHAR	2H 30M	40 M	0.62	0.20
HATHAZARI?SHOLASHAHAR	1H 40 M	30 M	0.67	0.20

The chart depicts that both travel time and fare is less for rail transit.

Station at 8:40 am. *Other factors that will help to establish commuter rail service in*

purposefully important city in the world it is very much obligatory to develop it with new growth centres

Criticism on Present Rail Service: An example
Train No Local-124; highest speed 16-40km/hr; optimum speed 16-37km/hr

Station Name	Time to Reach	Time to leave	Interval time (minute)	Distance between rail stations
Nazirhat ghat	-	05:30	-	-
Nazirhat	05:40	05:42	02	-
Kathirhat	05:54	05:55	01	3.22 km
Sarkarhat	06:18	06:14	01	6.03 km
Charia Madrasa	06:27	06:28	01	2.01 km
Hathazari	06:40	06:42	02	3.22 km
Jobra	06:57	06:58	01	4.02 km
Ctg. University	-	-	-	3.22 km
Fateyabad	07:10	07:11	01	1.61 km
Choudhuryhat	07:25	07:26	01	3.62 km
Chittagong Cant.	07:35	07:54	19	1.61
Sholosahar Jang.	08:17	08:19	02	6.0 km
Chittagong Poly.	08:24	08:25	01	0.80 km
Jhautala	08:30	08:32	-	0.08 km
Chittagong Jn	-	-	-	3.22 km
Chittagong	08:50	-	-	1.61 km

Total distance Nazirhat to Chittagong = 40.99 km.

Source: Bangladesh Railway; 2003

Observations

(1) If a person of Nazirhat

Chittagong (Source: Bangladesh Railway 2003)

and boost existing growth centre, such that it would metamorphose

into a circular polycentric one. A suitable mass transport system is the key factor for developing such a city structure.

In his design of New Bombay Architect Charles Correa never considered bus as Mass Rapid Transit. According to him, a bus system breaks down as traffic grows. Commuter rail service is the only suitable MRT.

The potentialities to develop rail based MRT in Chittagong have been discussed.

Proposals

1. Within city corporation area: Existing railway tracks are connecting various important locations. Utilising these tracks city service commuter trains will run continuously. Chittagong Central, Jhautala, Pahartoli, Sholosahar Jn, Jalanihat, Kaibalyadham, Polytechnic, Fauzdarhat, Bhatiary, Chittagong University, Chowduryhat, Fateyabad, Chittagong Cantonment are stations, which are in Chittagong City Corporation area. But, Chittagong Central is the station, which is used properly. Sholosahar Jn. station is used mainly for the university service train. The condition of other stations is not satisfactory. To create an effective commuter rail some new stations should be built.

Airport, Patenga I/A, South Halisahar Jetty, CEPZ, Middle Halisahar, South Kattali, Kattali I/A, Port Colony, Dewanhat will be suitable locations for new stations. The goods station of Banglabazar and Bandar can be developed as a passenger station. Extension of marine side rail line will be built from Bandar to Kalurghat to serve as the line for commuter train and save the riverside from illegal encroachments.

2. Between city centre and satellite cities:

Sitakunda, Hathazari, Farhadabad on the northern side and Patiya, Dohazari and Boalkhali on the southern side are the urban growth points which are connected with Chittagong Central by railway. The condition of the rail tracks should be improved for running punctual fast commuter trains on a regular basis. For northern commuter rails Pahartali and Sholosahar stations will be the main hub stations and for southern commuter rails Sholosahar will be the main hub station.

Proposed loops:

Within City Corporation area:

01. Airport - Patenga I/A Junction - South Halisahar - Jetty Bandar Banglabazar - Chittagong Central

The track is suitable for goods train and allowable speed is 16 km/hr. This track should be developed for commuter rail of 40 to 60 km /h. Port employees, Agrabad CDB users and local people will be the beneficial group. All stations will be new except Chittagong Central. Airport rail station will be the hub station.

02. Airport - Patenga I/A Junction - CEPZ - Middle Halisahar Junction - South Kattali - Kattali I/A - Fauzdarhat

The track is suitable for goods train. Allowable speed is 16 km/hr. Track should be developed for commuter rail of 40 to 60 km /h. Airport passengers, tourists to Patenga beach, industry employees and local people will be the beneficial group. All stations will be new except Fauzdarhat. Airport rail station will be the hub station.

03. Chittagong Central Banglabazar - Bandar - Port Colony - Middle Halisahar Junction - South Kattali Kattali I/A - Kaibalyadham - Pahartali - Dewanhat - Chittagong Central.

This rail loop will serve residents of Port Colony, pilgrims, tourists, garment workers and local people. Kaibalyadham, Pahartoli and Chittagong Central are existing stations.

04. Chittagong Central Dewanhat Jhautala Polytechnic Sholosahar Chandgaon - Jalanihat.

Students, industrial workers and local people will be the beneficial group.

05. Airport Patenga I/A South Halisahar Jetty Bandar - Banglabazar Junction Firingbazar Shah Amanat Bridge East Bakalia Kalurghat - Janalihat

This route will include extension of marine sidetrack from Banglabazar to Kalurghat; the purpose of which is to create a peripheral commuter rail service, protect the riverside from illegal encroachment and develop a tourist travel route.

Shoppers, businessman, workers, bus passengers of South Chittagong and local people will be the beneficial group.

Between City Centre and satellite cities: (Map 8)

06. City - Sholosahar Jn- Dohazari

Route 1 (1st priority) Patiya Gomdondi - Sholosahar Jn.

Route 2 (2nd priority) Dohazari Patiya Gomdondi Janalihat - Sholosahar Jn.

Local Route (3rd priority) Dohazari Hasimpur Khanhat Kanchan Nagar Karana Chakrashala Patiya Kanmohona Dhalgat Bengura Gomdondi Janalihat Chandgaon - Sholosahar Jn.

Rail track: Presently this track is not in a good condition and the maximum train speed is 16 km/hr.

The track shall be developed for commuter train service speed of 40 to 60 km/hr.

Patiya station will serve Patiya satellite town. Gomdondi station will serve Boalkali satellite town. Dohazari station will serve Dohazari commercial area.

07. Sholosahar Jn- Nazirhat Route 3 (1st priority) Nazirhat Hathazari - Sholosahar Jn.

Local route (2nd priority) Nazirhat Katirhat Sarkarhat Chairia Madrasa Hathazari Jobra Fateyabad Choudhuryhat - Chittagong Cantonment - Sholosahar Jn.

Rail track: Presently this track is in a good condition and the maximum speed train is 40 km/h from Sholosahar Jn. to Fateyabad. But from Fateyabad to Nazirhat the track is not in a good condition and the maximum speed train is 16 km/h. The track will be developed for commuter train service of 40 to 60 km/h.

Hathazari station will serve Hathazari satellite town. Nazirhat station will serve Fohadabad town. Fateyabad station will serve Fateyabad residential urban area. Choudhuryhat station will serve Choudhuryhat urban residential area.

08. Pahartali - Sitakunda track

Route 4 (1st priority) Sitakunda - Bhatiary - Pahartali

Local route (2nd priority) Sitakunda - Barabkunda - Kumira - Bhatiary - Fauzdarhat - Kaibalya Dham - Pahartali

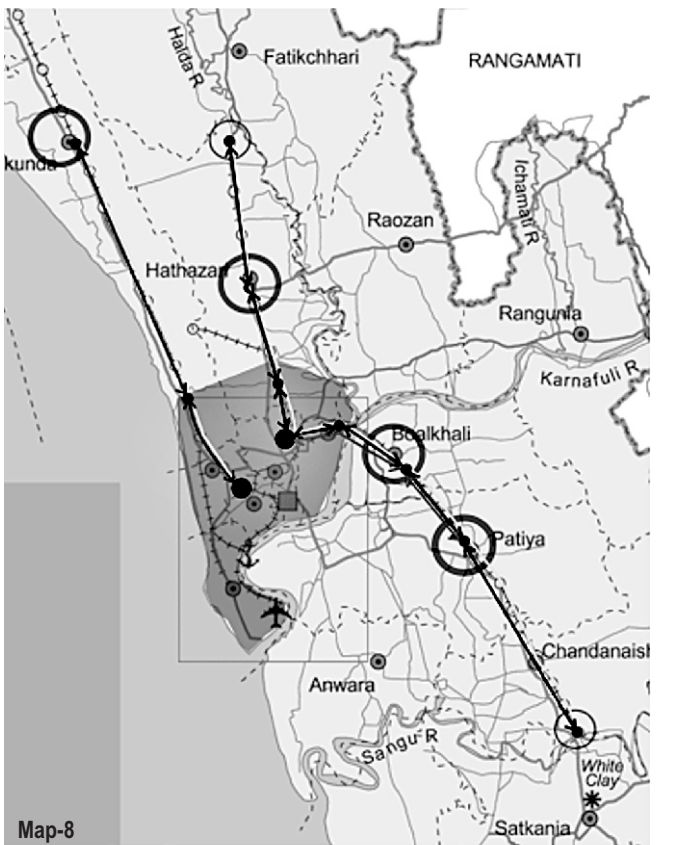
Rail track: Presently this double track is in a good condition and the maximum train speed attainable is 72 km/hr from Pahartali to Sitakunda.

Sitakunda station will serve Sitakunda satellite town. Bhatiary station will serve Bhatiary industrial area. Pahartali station will serve Pahartali residential area.

Conclusive remarks

The existing rail tracks have the potential to develop a rail-based MRT in Greater Chittagong. This rail-based MRT can present us with the possibility of an international standard city. Further development of rail tracks can be explored to cope with the future expansion of the city.

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Map-8

URBANIZED DEVELOPMENT AREA