

CHAPTER 01

INTRODUCTION

1.1 INTEGRATED TRANSPORT IN GENERAL

Transport is a key element in the infrastructure of any country. It provides services essential for promoting development. It plays a significant role in influencing the pattern of distribution of economic activity and improving productivity. It acts as a life-line linking markets, educational institutions and health institutions etc. With above all, it connects the cities, towns and villages of the country.

In general, transport system comprises a number of modes. The capacity of each has to be developed to meet its specific demand within the requirements of the transport system as a whole. The system has to be viewed at each step as an integrated structure, keeping in mind the relationship between different transport services.

An integrated public transport system is a system that has ideally two or more forms of public transport (buses, light rail/tram, commuter rail, transit rail or suburban rail) working together to adequately provide for the transport requirements of the town's/city's/region's/populace. In order to provide a better service to the public, it should have adequate facilities along with enough frequency of the service under compatible routes and timetables.

The objective of integrated transport is to foster the development of the various transport modes in a manner that will lead to the realization of an efficient, sustainable, safe and a regionally balanced transportation system. The broadly the following objectives of an integrated transport could be summarized as follows.

- Meeting the transport demand generated by a higher rate of growth of Gross Domestic Production.
- Effecting a transport development to ensures a successful participation of all regions of the country in economic development.

- Capacity augmentation, quality and productivity improvement through technology up-gradation and modernization.
- Maintenance to be given overriding priority with increased emphasis on higher maintenance standards so as to reduce need for frequent reconstruction of capacity.
- Increased generation of internal resources and also realization of optimal inter-modal mix through appropriate pricing and user charges.
- Increase in overall economic efficiency through injection of competitive impulses in provision and maintenance of transport infrastructure and services wherever possible.
- To promote sustainable transport system with increased emphasis on safety, energy efficiency, environment conservation and social impact.

The planning and implementation of an integrated public transport system is intrinsically tied in with urban/town planning. Since the planning of infrastructure is predominantly under the control of government bodies, the extent to which public transport is incorporated and integrated into planning submissions is entirely reliant on government bodies. With the support of government bodies, then the transport integrated can become significant factor. Public support and patronage can also influence for public transport services.

1.2 REQUIREMENTS OF INTEGRATED TRANSPORT SYSTEM

1.2.1 Improving Connections

The places where different transport systems are used need to be designed with passenger ease and comfort since integrated transport is the coordination of services between two or more transportation modes. Coordination must be including schedules, fares, stations and information. Transportation integration could be difficult especially in some cities where varieties of private and public operators control the transit system. An integrated public transport system needs to have different kinds of transport modes. This ensures both adequate coverage and frequency of service. Integrated public transport systems address

the problems of whether the city/area has an adequate and regular coverage of transport service. Integrated public transport system must provide access for the user and for their traveling needs as well.

There are several factors that can affect an integrated public transport system. These can be included its connectedness, cost of service used, access, travelling time, and level of both government and public support. Integrated public transport system provides passengers reasonable amount of time of their journey without much difficulty.

Passengers should allow speedy changes between buses, suitable feeder and shuttle services. La Defence in Paris has a new transport interchange integrating buses, metro, suburban trains, cars, taxis, tourist coaches and eventually, the high speed train.

1. 2.2 Co-ordinating Timetables

When people need to change one form of transport to another, two operators should ensure to minimize the waiting time of the passengers. Passengers don't need to waste the time for waiting for public transport mode. Different operators can agree to harmonize arrival and departure times. In Graz, Austria, a signal announces to a bus that an approaching tram is within a few minutes of the stop. The bus can then wait for the tram and pick up connecting passengers.

1. 2.3 Better Information

Up to date timetables and 'real time' electronic information at stops and stations tell passengers when their bus or tram is due. National travel information's service, as in Holland, could include a cheap telephone helpline and local services information. Since 1992, Dutch people have been able to ring a single national telephone number for a full door-to door timetable, fares and other information for all forms of transport. Victoria rail station in London is one of the best examples where commuters are facilitated with better information for a smooth integrated multimodal transport services.

1. 2.4 Through Tickets

Ticket systems can be simplified so that passengers can buy a single ticket at the beginning of their journey which is valid to their destinations. In Holland a single travel card can be used on public transport services anywhere in the country. The London Travel card can be used on buses, tubes and trains. After it was introduced in 1982, use of public transport increased by 16%.

1. 3 PURPOSE OF THE STUDY

At present substantial portion (66%) of the public transport around Colombo municipal Council area is shouldered by bus and Rail. But so far there is no proper integration between above two transport modes. On contrary there are lots of problems remain unsolved in the public transport system in Sri Lanka. In the bus sector, overloading, misuse behavior of bus crews, non ticket issuing, and unnecessary delays in journeys and no time schedules for buses are the main issues. In rail sector, train delays, very low conditions of user facilities, high walking distance between rail station and bus stop, no intermodal transport facilities, less accessibility at the stations, no reliability etc are the main weaknesses. These issues all together may cause short term and long term adverse impact on environmental, social, and economical state of the country.

If road network and rail network are improved then public transport system will strong enough to serve the traffic demand. In this situation, a comprehensive integrated strategy to solve above problems is a must for Colombo and its suburbs. Priority should be given to plan strategies in the integrated public transport and traffic management sectors.

Considering the above this study aims to see the feasibility to introduce a rail bus integration strategy for the passengers who travel to Colombo and suburbs by bus or rail as a remedial measure mainly for the increasing traffic congestion and passenger related issues. For this purpose, Dematagoda rail station & surrounding bus stop towards Borella was selected as the sampling point where would be a one of the platforms of the Rail/

Bus Integration in Colombo City. In this case the purpose of study was, to find the frequency of Home Based Trips (HBW), Home Based Other Trips (HBO) and Non Home Based Trips (HNB) of the bus and Rail, to select the highly demand bus route from platform station, to identify rail bus passenger's access and egress mode.

1.4 REASON FOR SELECTION OF PARTICULAR SITE

Dematagoda Station was taken as an example to identify which routes are more appropriate the linkage. With regard to daily rail passengers traveling to Colombo from different areas of the country over all 4 rail Lines (i.e. Coastal Line, Main line, Negambo Line and Kelani Vali). Dematagoda Rail Station plays a significant role as one of the busiest transfer point of the Colombo Metropolitan region. Within a short radius from the station there are number of commercial and service oriented cities, main roads and junctions where many crowded cities interconnected by several bus routes. With ongoing new office and commercial development around Sri Jayawardenapura, usage of the station as a transit point may rapidly increase within next few years. Therefore commuters often transfer to buses to their destinations directly from Dematagoda or Borella. Dematagoda station is the first station of main line from Colombo and its monthly earning could be put in the third place amongst the station in Sri Lanka.

Table 1.1 Boarding data at survey stations

Station	Survey Date	No. of boarding	Demand Routes from the rail passengers
Dehiwala	30.06.2009	3988	119,163,176,183
Wellawatta	30.06.2009		141
Bambalapitiya	02.07.2009	5296	154,177,104,112,
Kollupitiya	02.07.2009	5278	140,177,175,
Slave Island	25.06.2009	5931	138,168,
Fort	08.07.2009	36564	
Maradana	24.06.2009	24995	
Dematagoda	30.06.2009	8362	178,152,135,104,140,193,154,143,
Nugegoda	25.06.2009	986	176,183, ,119,163,159
Narahenpita	25.06.2009	972	141,103,135,178,
Kotta Road	25.06.2009	270	171,144,170,190,

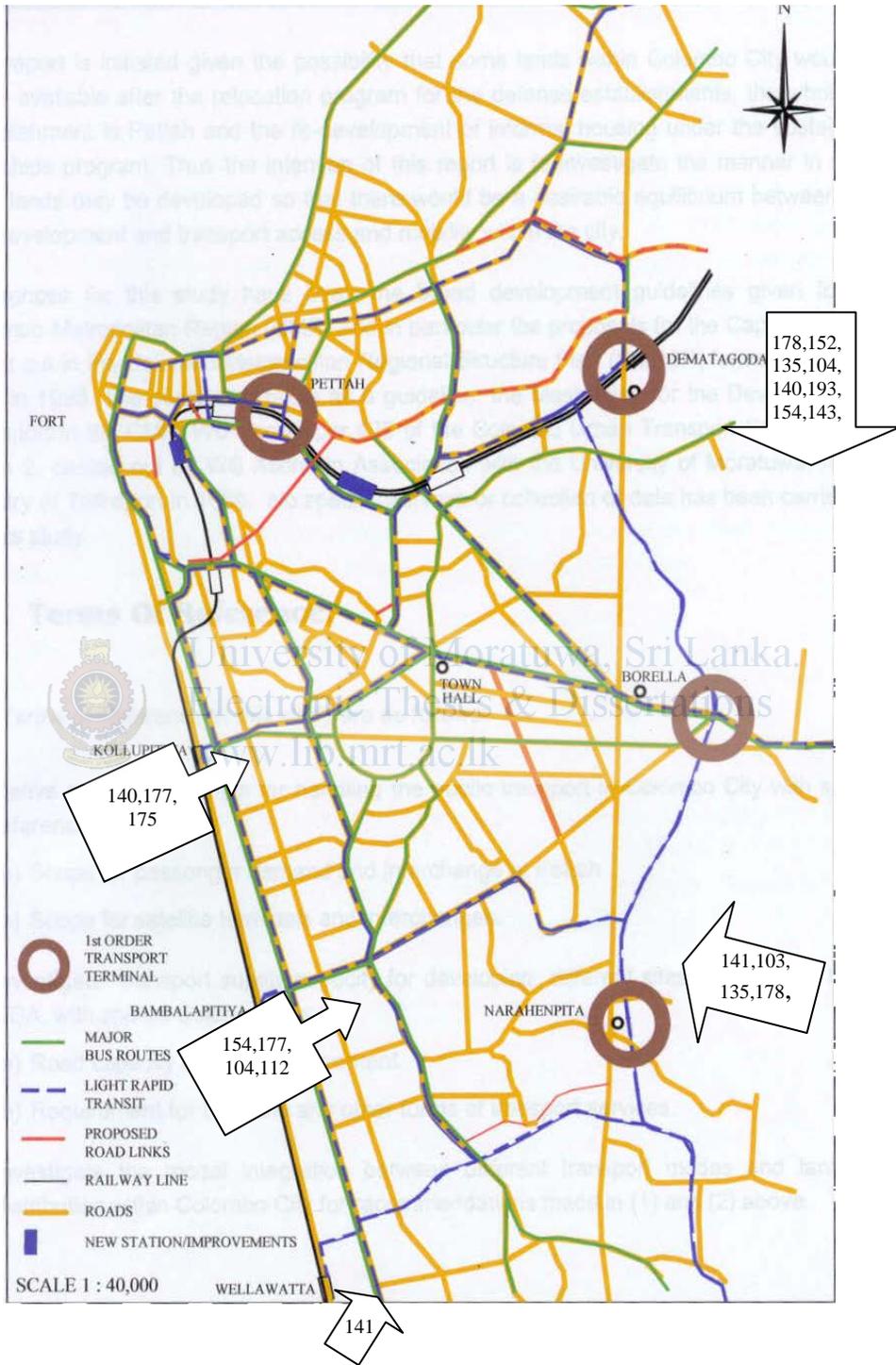


Figure 1.1: Demand Routes from the rail passengers

Maradana and Fort situated at the Colombo city center. Rail and bus passengers visit the city center to find another transport mode from the stations or main bus terminal causing a severe traffic congestion as well as increasing travel time, travel fare, travel length of themselves. In this survey it was found that there is a high demand among the passengers to Dematagoda station as a transfer point if a proper bus service is available. According to the statistics Dematagoda station acquires the highest boarding next to Fort and Maradana stations. This may due to the high frequency of busses passing over the station from various bus routes.



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk