

“Effective and Interdisciplinary Prospective of Implementing the “BRTS Transit Network” in Smart City Raipur”

Srishti Verma¹, Akshit Lamba²

¹Srishti Verma, Dept. of Civil Engineering, Kalinga University Naya Raipur, Chattishgarh, India

²Akshit Lamba Professor, Dept. of Civil Engineering, Kalinga University Naya Raipur, Chattishgarh, India

ABSTRACT: Raipur it is the capital city of the Indian state of Chhattisgarh. It is also the prime capital of the state. It has a widely assorted resident from all over the country. On industrial prospects, it has seen an exponential growth over the years. City is experiencing severe traffic congestion and pollution problems resulting from the massive increase in personalized motorized vehicle are the widely used modes of transportation system in Raipur city of Chhattisgarh is non-motorised 40% that is rickshaw, bicycle bullock carts and vehicles that are run by human power or by animal power and the means of transportation is used up to (30%), walking (10 %) and other motorized vehicles (20%).The dependency on walking and rickshaw or any private mode of transportation motorised or non-motorised and a low dependence on buses or trains, trams, are a symptom of inefficient and ineffective public transport operations. Most recently there are BRT lines that are provided in some corners of the Raipur city and in new Raipur too.

This paper in basically focus and concentrates to identify the operational aspects and pragmatic measures that should be considered towards promoting an efficient and efficient sustainable use of BRT system or smart transit system in Raipur city enabling GIS System over it and it helps to detect the status of buses during routine time.

Key words: Bus transit networking system, passenger’s serviceability, traffic congestions

1. INTRODUCTION OF BUS TRANSIT SYSTEM OR SMART TRANSIT SYSTEM

As concern, the increasing need for mass transit network system is now being addressed by various cities in India. (JNNURM) which aims to encourage reforms and way planned development in 63 cities does consider projects within the field of urban, transport. The Bus mass rapid transit System (BRTS) system project is meant to cut back traffic on roads while improving service - at no extra cost to commuters. Bus transit network is provide quick access to the users and utilize time effectively, safety by using public transportation..

In the previous few decades, Bus public transit (BRT) has emerged as an economical, flexible and environmentally sustainable variety of public transportation. BRTs began to grow in many cities across the world.

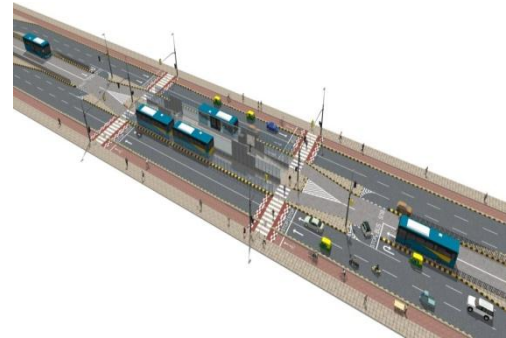


Fig- 1 Bus Rapid Networking

1.1 Need of bus rapid transit system

This study aims and focuses on the traffic increase day by day in the Raipur city. The more will be the volume of traffic on the road, the more congestion will be the case for public transport.

1.2 Analysis of transit system

A growing concern for public transporting system increasing with the high rate also effecting environment is a great concern these days. Private transit should be shifted to one single unit of public transit. In order to defeat this crisis, a more developed feeder bus network system should be established inside and outside the Raipur city for the passengers and matched schedules will play important roles.

2. SCOPE AREAS

The scope area of the BRTS system implementation is whole Raipur city, Chhattisgarh Geographically Located almost at the centre of the Chhattisgarh state, was made its capital. The study done is basically with the comparison to the Ahmadabad city BRTS which is growing with the high rate as well as helping pubic with the huge aspect, smart transit system in Raipur city enabling GIS System over it and it helps to detect the status of buses during routine time.

2.1 Problem identification and formulation

Passengers gathered at bus stops located within the topographic point wish to access their destination they go by feeder bus to any rail stations so proceed to town centre or their destination .This procedure occurs most over the globe several times on a daily basis, and it includes such a large amount of challenges and issues.

This study effort has been made to travel further into details of those problems. High volumes of commuter go by single-occupant vehicle along the foremost arterials into downtown affect the standard of life for District residents by creating tie up, together with its attendant air and noise impacts. Additionally, the requirement to accommodate this time of day traffic requires that City residents move their parked vehicles during the frenzy hour periods. Minimizing this traffic is best accomplished by providing transit service within the corridors that's both cost-and time-effective. Commuter bus ridership is going to be encouraged within the major commuter corridors by providing bus bypass lanes at intersections. These bus bypass lanes would allow the buses to drag out of traffic as they approach intersections and stop just at the intersection during the red phase of a proof. The buses are equipped with the power to pre-empt traffic signals. By calling for a brief green phase before the overall traffic green phase, buses are going to be ready to gain ground of the cars at the signal before merging into the final travel lane. Ridership exceeding the capacity of those buses would lead to the consideration of a light-weight road along the identical roadways.

2.2 Rapid motorization scenario in India

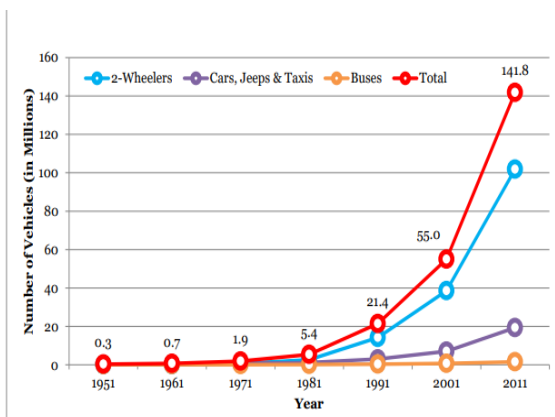


Chart-1 Rapid Motorization Scenario in India

2.3 Summary of cities and bus systems reviewed in the study

Several Indian and international guidelines have been referred to create a framework for the evaluation of universal access to and within Bus Rapid Transit (BRT) systems. Case studies are as follows:

Indore BRT system

Indore municipal corporation (IMC) and Indore development authority (IDA) integrated a in networking system. This company is equally shared by IMC and IDA. The Mayor of in Indore IMC is the Chairperson of IDA in Indore.

Jaipur BRT system

Jaipur Development authority and Nagar Nigam Jaipur (JNN) incorporated by the name of Jaipur City Transport Service Limited (JCTSL). The Chairman and Director of Rajasthan State Road Transport Corporation (RSRTC), for road transportation in Jaipur is the appointed Chairman and Director of JCTSL for transportation in Jaipur.

New Delhi BRT

System Govt. of National Capital Territory of Delhi's (GNCTD) in 2006 established a system in Delhi Integrated Multi Modal Transport Services Limited to manage the organization of public transport networking system in Delhi. Chief Secretary of GNCTD is the present Chairman of DIMTS Limited in Delhi.

Rajkot BRT system

Municipal Corporation (RMC) has built-in named Rajkot Rajpath Ltd (RRL) under Companies Act, 1956. RRL is 100% contributory of RMC. Municipal Commissioner of RMC is the Chairman and Managing Director of RRL. For transit system in Rajkot.

Surat BRT system

In Surat a BRTS cell is established which is responsible for safeguarding and function of Bus Rapid Transit System for Surat city for betterment of transportation system.

2.4 Planning

The key gaps identified in the operations, planning and management of the bus systems are classified into six key areas for newly established BRTS network this features are important to understand:

1. Strategic scheduling
2. Supporting infrastructure and management.
3. Financing system with government
4. Use of technology and informative knowledge should be proper
5. functioning efficiency
6. Institutional frameworks planning

The lack of long-standing tactical planning and sufficient financing is experimental .key gap area across all the cities and is helpful measure for construction the brts network in Raipur city. As a result, in many city where brts is new for city all the cities are observed to have a shortage in the bus fleet required to meet their mobility needs as lane is not constructed properly for future needs due to shortage of area the road lane is too short and brts network lane is too difficult to construct for now in that lanes. While cities like Bangalore and Ahmadabad are working towards installing state of the art Intelligent Transport Systems (ITS) to improve their services. This features helps to connect this system in

one single component and helps to overcome the problem in very little subsequent of point in time once this system enabled in the Raipur brts networking system it will not only help manager as helps passengers to outline the buses schedules assistance as almost instantly as possible.

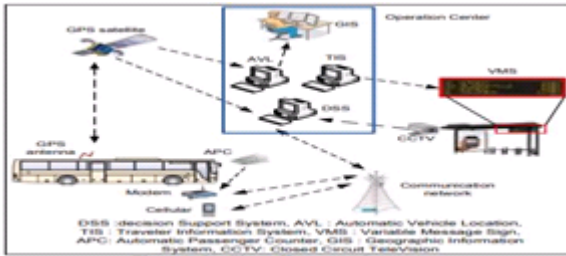


Fig-2 DSS Decision Support System

3. TERMINAL PLANNING & DESIGN

Primary elements to be measured with look upon a bus terminal's transportation growth should have the following things. These include passengers, terminal staff and bus staff for easy going transportation system, Passenger areas should have following this for benefit of better serviceability of passengers.

1. Ticketing and queuing
2. Passenger waiting area
3. Passenger conveniences (drinking water facilities and toilets)
4. Passenger circulation
5. Boarding/Departing areas
6. Tourist information
7. Security, including CCTV cameras
8. Retail, concessions and lease space

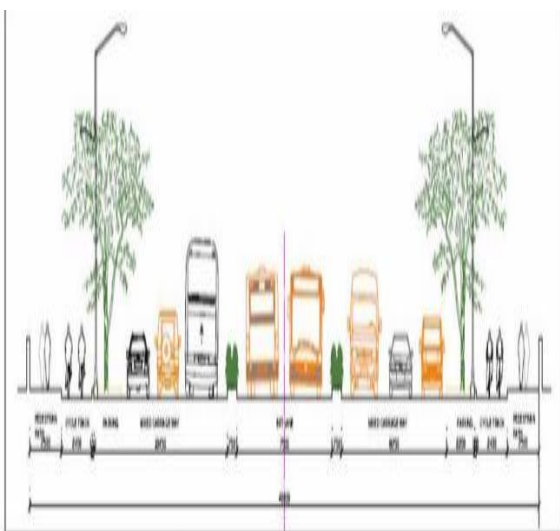


Fig -3 Cross section of right of way



Fig-4 Boarding/Departing areas

3.1 Features of bus rapid transit system

1. Segregation by vehicle type or travel mode is that the key to improving traffic flow. During a really BRT system the median and also the private lane or the left most lane are often dedicated to the bus.
2. Cost The BRT system is kind of cost effective since setting it's rather more economic, the upkeep and operational expenses are quite nominal, thus making it an inexpensive mode of transportation.
3. Flexibility is also an important advantage of BRTS is its flexibility, at the operational level, design changes in response to new concerns are relatively simple to form even after the system is under operation.
4. Stations, because the entry point to the system, are the foremost important customer interface.
5. Vehicles BRTS system can utilize a good range of vehicles, from standard buses to specialized vehicles. Options vary in term of size, system, design, internal configuration and horizontal/longitudinal control, all of which impact system performance, capacity and repair quality.
6. Other Basic Features Pre-boarding fare collection, waiting and resting areas etc.

This paper reviews the study of implementing BRT systems in whole Raipur city so as that the growing motorization decreases to a minimum of one unit keeping in mind about the environmental impact.

CONCLUSION

This study proposes several strategies for successful BRT system implementation in the most developing cities Raipur, by first determining crucial elements contributing to existing bus systems successes. These findings have motivated several strategies to address the limitation and to enhance the development of BRT system in these cities the Raipur city on aspect of high demand and also traffic congestion experiencing much higher comparison to previous years. As the government of India is planning for building 100 smart cities across the country, BRT will be a major contribution towards a sustainable and cost effective mode of transport system. With the increasing population, with expansion of the

city limits geographically there is a tremendous pressure on the existing modes of transport systems in the cities. Adoption of better techno-management practices, and proper planning, adequate budgetary provision for funding etc. can make BRTS an effective and efficient mode of public transport system in India.

ACKNOWLEDGEMENT

This paper reviews the Indian BRT systems based on various design and operation characteristics. The main future review of this BRTS system should be implanted all over the Raipur city fulfilling all componential demand and criteria of proper construction of carriage way and well the traffic increasing day by day should be control with this enabling GIS System over it and it helps to detect the status of buses during routine time.

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